Was Selden Right? The Expansion of Closed Seas and its Consequences

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Introduction

The Deepwater Horizon oil spill, arguably the greatest environmental disaster in U.S. history costing more than $6 billion as of August 2010, has a legacy beyond the estimated 207 million gallons of crude oil that is now slowly dissipating in the Gulf of Mexico. Not only did the spill disrupt if not derail the negotiations on climate and energy legislation in the U.S. Congress while highlighting the myriad costs associated with remaining addicted to oil, but it may also be a harbinger of things to come. This is because one of the biggest territorial grabs in history is now underway. It is a scramble for offshore resources pitting nations around the world against one another in a race to secure energy reserves, including petroleum and methane hydrates that may contain more stored energy than all known deposits of fossil fuels. In essence, nations are exploiting ambiguities in the United Nations Convention on the Law of the Sea (UNCLOS) Article 76 to expand their continental shelf claims into what had once been the “deep seabed,” which is the seafloor existing beyond national jurisdiction. This is in effect nationalizing

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5 The Scramble for the Seabed, Suddenly, a wider world below the waterline, ECONOMIST, May 14, 2009.

part of this historic first area of the “transnational commons.” Already more than 51 overlapping claims have been made to the UN Commission on the Limits of the Continental Shelf (CLCS), which is the UN body that decides the merits of “continental shelf” claims by States parties to UNCLOS, with many more to come. For example, most of the Arctic is continental shelf, meaning that eventually the entire Arctic Ocean save for a one hundred square mile area around the North Pole will be allotted to one of the five Arctic States. While Professor Klaus Dodds worries about Article 76 claims being used to “re-territorialize the Antarctic and reinvigorate claimant and non-claimant States alike” potentially creating a twenty-first century “Antarctic problem.”

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7 The “transnational commons” or “global commons” are regions to which all nations have legal access, such as the high seas, outer space, the atmosphere, and cyberspace. See generally William D. Nordhaus, Managing the Global Commons: The Economics of Climate Change 1 (1994); and Thomas Bräuninger & Thomas König, Making Rules for Governing Global Commons: The Case of Deep-Sea Mining, 44 J. CONFLICT RESOL. 604, 610 (2000). A global commons then is “a resource that it is difficult or impossible to exclude others from enjoying but that is degraded by use.” See Robert O. Keohane and David G. Victor, The Regime Complex for Climate Change, REGIMECOMPLEX Nov. 24, 2009, at 10. For clarity’s sake, I use the term “transnational commons” instead of “global commons” as this broader term includes regions outside the Earth’s geographic constraints, namely outer space and cyberspace. It should be noted though that the term “transnational commons” has been used in the literature before. See for example P. Dasgupta, KG Maller, & A. Vercelli, The Economics of the Transnational Commons (1997); and R. Dorfman, Protecting the Transnational Commons (1998).

8 UNCLOS III, supra note 6, art. 76 (defining the continental shelf as: “seabed and subsoil of the submarine areas that extend beyond a coastal state’s territorial sea throughout the natural prolongation of its land territory to the outer edge of the continental margin, or to a distance of 200 nautical miles from the baselines from which the breadth of the territorial sea is measured where the outer edge of the continental margin does not extend up to that distance.”).

9 The CLCS has twenty-one member nations, and was organized to facilitate delineation beyond a 322-km (200-mile) economic zone that Russia, the United States, Canada, Norway, and Denmark have in the Arctic under UNCLOS III, demonstrating the importance of the Arctic continental shelf even at the birth of UNCLOS. See Commission on the Limits of the Continental Shelf (CLCS), Purpose, functions and sessions, 2010, available at http://www.un.org/Depts/los/clcs_new/commission_purpose.htm#Purpose.


11 Interview with Klaus Dodds, Professor of Geopolitics, Royal Holloway University, British Library, London, (Apr. 7, 2010).

And what is happening at the Poles is not unique. Shaw argues that there has been a gradual shift in the Law of the Seas (LOS) towards the enlargement of territorial seas, which have grown from 3 to 12 miles over the past 40 years, coupled with the assertion of sovereign rights out to 200 miles through the extension of Exclusive Economic Zones (EEZs). Further expansion of national control is now occurring through the CLCS process with continental shelf claims extending to more than 350 miles, meaning that more than 40% of the world’s oceans and over 90% of offshore resources are already under the control of coastal States. Annual oil production from the U.S. continental shelf alone is valued at more than $300 billion. Landlocked States are restricted to whatever share of resources they may secure from the diminishing deep seabed. And due to the CLCS’s limited resources, the organization is being overwhelmed at a time when the world’s largest “commons” is being at least in part

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13 As of January 2010, five of the seven claimants to the Antarctic (Australia, Argentina, New Zealand, Norway and the UK) have presented claims to the CLCS. Australia’s was the first to be submitted, and the first to be acted on save for the portion dealing with the Antarctic outer continental shelf. See James Crawford, The Antarctic Treaty After Fifty Years 11 (2010). Argentina is asserting control over continental shelf delimitations extending all the way to the South Pole threatening the stability of the Antarctic Treaty System and potentially giving birth to a twenty-first century “Antarctic problem.” Jorge Guzman, International Law and Antarctic Neoterritorialism: Enforcing UNCLOS Provisions on Continental Shelf and the Challenges for the Antarctic Treaty System and the “Modus Vivendi” in the South Cone of America, Lecture at the Centre for Latin American Studies, University of Cambridge, Cambridge, UK Feb. 25, 2010; W. Hunter Christie, The Antarctic Problem 1 (1951). Article VI of the Antarctic Treaty states that: “nothing in the present Treaty shall prejudice or in any way affect the rights, or the exercise of the rights, of any State under international law with regard to the high seas within that area.” Antarctic Treaty art. VI., Dec. 1, 1959, 12 U.S.T. 794, 402 U.N.T.S. 72. In effect, through State practice this allows the UNCLOS to be applicable within the ATS. According to Crawford, the current view is that “the Treaty does not affect existing rights of high seas navigation in the Southern Ocean but that subject to this proviso, it does apply there.” Crawford, supra note 13, at 4. This is in part because the doctrine on continental shelves was in existence prior to the ATS, even though it was significantly altered as a result of the 1982 UNCLOS III negotiations. See Geneva Convention on the Continental Shelf, 29 April 1958: 499 UNTS 311 (entry into force, 10 June 1964, after the Antarctic Treaty); 1833 UNTS 396.

14 Under UNCLOS, EEZs are measured from a defined baseline, normally the low-water line along the coast. See Malcolm Shaw, International Law, 5th Ed. 391 (2003).


18 DCDC, supra note 10, at 24 (defining the global commons as: “those regions used jointly by the members of a community. They include, but are not limited to, those parts of the earth’s surface beyond national jurisdictions such as the open ocean and the living resources found there, the atmosphere and orbital Space. The only landmass that may be regarded as part of the ‘global commons’ is Antarctica.”).
nationalized along the lines advocated by John Selden nearly 400 years ago.\textsuperscript{19} Given that the LOS continues to be “in a state of flux” due to the ambiguities in Article 76, more and more offshore resources are falling under national control fragmenting governance and creating collective action problems,\textsuperscript{20} thus challenging the supranational management of deep seabed resources under the common heritage of mankind (CHM) concept, which requires the peaceful, equitable use of commons resources through the International Seabed Authority (ISA).\textsuperscript{21}

This Article focuses on the relationship between the legal regimes governing offshore resources in the continental shelves and the deep seabed, particularly in reference to the extent to which continental shelf claims are encroaching on the deep seabed. The question of how well these respective legal regimes regulate resource exploitation will also be considered, along with an analysis of the underlying reasons driving change in these governance structures. I argue that the primary issue is one of whether vague rules, particularly UNCLOS Article 76, are working in terms of incentivizing sustainable, peaceful development of offshore resources.

Fueled by the vagaries of Article 76, three primary independent variables are driving the encroachment of continental shelves into the deep seabed and are consequently putting pressure on the legal regimes governing this part of the transnational commons. These include: (1) technological advancements opening up the

\textsuperscript{19} Interview with Samuel McDonald, U.S. Department of State, Office of the Legal Advisor, Wash., D.C. (Jan. 29, 2010).
\textsuperscript{20} SHAW, supra note 14, at 391.
\textsuperscript{21} See Jennifer Frakes, The Common Heritage of Mankind Principle and the Deep Seabed, Outer Space, and Antarctica: Will Developed and Developing Nations Reach a Compromise?, 21 WIS. INT’L L.J. 409, 410 (2003). There remains no consensual definition of the CHM concept amongst legal scholars or policymakers. Developing and developed nations disagree over the extent of international regulation required to equitably manage common pool resources, and the degree of sovereignty nations may exercise over these resources. See John H. Jackson, Sovereignty-Modern: A New Approach to an Outdated Concept, 97 AJIL 782, 786 (2003). Although no universal definition exists, most conceptions of the CHM share five primary elements. First, there can be no private or public appropriation of the commons. Second, representatives from all nations must manage common resources. Third, all nations must actively share in the benefits acquired through exploitation of the common heritage region. Frakes, supra note 21, at 412. Fifth, the commons should be preserved for the benefit of future generations. But disputes are rampant in the international community over the continued applicability of these principles, and indeed whether the concept of the transnational commons still resonates at a time in which the reason for its existence is being challenged due to technology opening up these areas to economic development and occupation.
continental shelves and the seabed to exploitation; (2) growing scarcity driving the demand for resources; and (3) domestic politics, such as in the U.S. Senate, as well as the structural variable of “multipolar” international affairs. Together, these variables are catalyzing the partial nationalization of the seabed by incentivizing States to exploit the ambiguities in UNCLOS Article 76 to extend their territorial seas. Moreover, these variables have in turn helped to ensure legal ambiguity throughout the history of the LOS, as is discussed below in Part II. This process will be addressed generally, but with particular emphasis on the Arctic, since that area represents an end game in which near total nationalization of what once had been the deep seabed is already a de facto reality as a result of the extension of EEZs and pending CLCS claims. It thus offers an opportunity to examine the consequences of this change in governance. Other outstanding issues in the LOS generally and in the Arctic in particular, such as shipping and the opening of the Northwest Passage, although important are beyond the scope of this Article. Antarctic outer continental shelf claims will be briefly analyzed to the extent that they underscore a tension between UNCLOS and the Antarctic Treaty System (ATS), opening up the potential for environmental calamities in the Southern Ocean like what is occurring in the High North as resource extraction expands.

In essence then, this Article analyzes the evolution of the governance structure of the seabed and how increasingly continental shelf claims driven by technology, scarcity, and politics are impacting that system. It then moves on to summarize what the environmental and security consequences of this transition have been both in terms of

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22 See DCDC, supra note 10, at 11 (noting that since most of the remaining unexploited resources across the world are located within the transnational commons, technology could move these areas long at the frontiers of international relations could move to the core).
23 Id. at 15 & 46 (arguing that the transnational commons is increasingly a resource domain vital to the world economy, and predicting that, “The economic prosperity of many states will depend on functioning globalised markets and access to the global commons…[and that] access to the ‘global commons’… will be a priority for virtually all states.”). The economic potential of the commons renders global cooperation a primary imperative for policymakers, including the proactive development of appropriate legal frameworks. Yet the international community is reassessing commons management given the changing geopolitical context, rapid technological advances, and rising scarcity. As a result, the twenty-first century is so far reminiscent of the twentieth in that the commons remain an arena of both international cooperation and conflict.
24 Id. at 15 (predicting that the rise of multipolar politics in which emerging markets gain increased international power in an age of increasing resource scarcity will be a primary driver of international conflict, both currently and over the next 40 years). Cf Robert N. Haass, The Age of Nonpolarity: What Will Follow U.S. Dominance, 87 FOREIGN AFF. 44, 44 (2008).
25 See infra p.11.
sustainable development and conflict over scarce resources by referencing Deepwater Horizon as an illustrative example of what is at stake at the Poles and the deep seabed generally. In economic terms, I ask how well the current legal regimes are functioning to avoid collective action problems. Legally, does the proliferation of continental shelf claims represent a challenge to the CHM concept and its principle of the supranational governance of common pool resources? And politically, is a “regime complex,” i.e. a collective of partially overlapping and nonhierarchical regimes,26 forming to govern offshore resources, and if so what have been the consequences of this system to date?

Before proceeding with this analysis though, it is first important to summarize the importance of the three independent variables, and then demonstrate how these forces have influenced the evolution of the legal regime for offshore resource extraction. It will then be possible to demonstrate how the deep seabed regime is being encroached upon by continental shelf claims. The LOS is after all the branch of international law governing “international spaces” with the longest, and arguably most complex history.27 Unlike the ATS, for example, which is comparatively modern and relatively stable, the ocean regime has evolved over centuries and today contains a mixture of custom and treaties. Briefly reviewing how and why the LOS developed in the way that it has, focusing on the roles played by the three variables in driving the growth of territorial seas and encouraging legal ambiguity, lays a foundation for an investigation into the lessons of Deepwater Horizon and how future environmental disasters may be avoided. The oceans are in many ways the heart of the commons; they contain valuable resources, are the premier international highways, are a dumping ground for waste, and maintain the climate. Thus, ensuring their peaceful development and use is a critical case study in commons management.

This Article is structured as follows. Part One introduces the independent variables of technology, politics, and resource scarcity and summarizes their impact on

27 International spaces are analogous to the transnational commons, though they are typically limited geographically and do not include cyberspace or the atmosphere. See Paul A. Berkman, International Spaces Promote Peace, 462(26) NATURE 412, 412 (Nov. 2009) (noting that during the 1960 ratification debate in the U.S. Senate, the polar scientist and explorer Laurence Gould testified that the Antarctic Treaty was “a document unique in history that may take its place alongside the Magna Carta and other great symbols of man’s quest for enlightenment and order.”).
the governance of offshore resources. Part Two moves on to discuss the evolution of the LOS from its Roman Law origins to the 1994 New York Amendments of UNCLOS III with special attention paid to the growth of the territorial seas. Finally, Part Three analyzes the recent spate of continental shelf claims to CLCS and their impact on the governance regimes applicable to offshore resources, using the Arctic and Antarctic as illustrative examples and the Deepwater Horizon spill as a case study throughout.

I. The Impact of Technology, Politics, and Resource Scarcity on the Governance of Offshore Resources

Three independent variables are driving the evolution of the governance regime for offshore resources including the encroachment of continental shelf claims. First, technological advancements are opening up the shelves and the seabed to exploitation. Second, domestic politics, as illustrated by the U.S. Senate, as well as the structural variable of multipolar international relations is making reaching multilateral agreement on the governance of the seabed difficult, catalyzing the growth of regime complexes. And third, growing scarcity is increasing the demand for offshore resources. Each variable will be introduced in turn, and then returned to throughout the Article.

A. Technological Advancements

“[T]echnology has caught up with desire…[f]or most of human history, the … global commons … remained unclaimed due to a lack of technology for extracting their value and for establishing and sustaining property rights. To our peril, the technology for extracting value from these … domains has developed more rapidly than have the appropriate legal mechanisms for establishing an effective property regime. The treasured resources for all mankind are threatened by the very technological abilities that we have mastered during recent eras. This is indeed a Grotian moment.”

As technology has progressed, so too has the desire by States to appropriate the transnational commons. For example, advances in deep seabed mining technology are

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29 Examples for how technology has influenced the management of the transnational commons abounds. Technology used to measure greenhouse gas emissions has allowed for the widespread use of emission
allowing corporations to exploit mineral resources in almost any part of the oceans including the Arctic, “challenging fundamental concepts of international law and ... influencing the formulation of new rules in relation to the exploitation and distribution of benefits derived from seabed resources.”

This is because many States increasingly prefer national ownership to supranational management of the transnational commons, leading in the oceans to the decline of the CHM concept and the ISA. In essence, technological change places added pressure on communal-property mechanisms, causing them to breakdown while at the same time opening up new areas of the commons for development. While continuous increases in harvesting technology for example could turn all economies into “open access” economies ripe for tragedies of the commons to unfold. This process will be demonstrated in this Article’s analysis of property rights in the Arctic. In addition to technological capabilities, the governance structures of the commons are largely dictated by politics.

B. Domestic and Multipolar International Politics

As with most treaty making, domestic politics plays a central role in the governance of the transnational commons. This fact is illustrated by the case of the U.S.
Senate’s failure to ratify UNCLOS III despite broad bipartisan support in Congress as well as the support of four consecutive presidential administrations. Beyond domestic politics, the end of the Cold War also brought to an end the happy convergence of political interests that allowed for the golden age of UN multilateral treaty making over the transnational commons. With the concurrent rise of multipolar politics, it is increasingly difficult to reach consensus on globally binding agreements, as was made evident by the failure of the Copenhagen climate change negotiations to reach negotiate a binding multilateral agreement. As a result, the political value of the CHM concept remaining undefined has changed, causing it to risk obsolescence if it is interpreted to mandate control at the international level through consensus-driven UN treaties. To remain politically and legally relevant, it is essential that the CHM concept keep pace with political changes, as well as increasing resource scarcity.

C. Resource Scarcity

By 2050 the world’s population is on track to exceed eight billion. Developing countries with over three quarters of the global population will see the most dramatic increases, but currently account for just 25 percent of energy consumption. Within several decades though this will change. Energy consumption in emerging markets such as China and India will soon double or even triple comprising nearly one third of global energy demand. In the developed world, energy demand will likewise soar to

36 Keohane & Victor, supra note 7, at 1 (arguing that “the structural and interest diversity inherent in contemporary world politics tends to generate the formation of regime complexes rather than a comprehensive, integrated climate regime.”).
37 Joyner for example alone uses five different terms in his article on the CHM, including: concept, notion, doctrine, regime, and ideal. C. C. Joyner, Legal Implications of the Concept of the Common Heritage of Mankind, 35 ICLQ 190, 198 (1986).
38 BASLAR, supra note 15, at 4.
unprecedented heights putting new strains on existing energy infrastructures and requiring the creation of new on and offshore renewable and nonrenewable sources of power. Efficiency gains, new technologies, and the 2008 financial crisis and resulting recession have all helped to abate this surging demand for energy. Recently though, commodity prices have begun to climb anew, particularly for oil and natural gas, which are found in the continental shelves. This is in turn fueling growing demand for offshore resources, and is contributing to the quickening pace of continental shelf claims thereby bypassing the International Seabed Authority machinery setup by UNCLOS. Regulatory change must keep pace with technical, political, and economic change if the tragedy of the transnational commons is to be avoided. In order to determine whether this is taking place, it is important to examine the development of the legal regimes for the deep seabed and the continental shelves.

II. The Evolution of the Law of the Seas as Applied to the Governance of Offshore Resources

This Part provides an overview of the legal regimes governing the exploitation of offshore resources, such as oil in the Gulf of Mexico. Section A begins with an analysis of the birth of the freedom of the seas concept in international law. Section B provides an

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42 Clifford Krauss, Commodity Prices Tumble, N.Y. TIMES, Oct. 13, 2008, available at http://www.nytimes.com/2008/10/14/business/economy/14commodities.html; I. D. Ivanov, The Meaning of Interdependence and its Implications for the Future of Global Cooperation, in J. P. Renninger, THE FUTURE OF THE UNITED NATIONS IN AN INTERDEPENDENT WORLD 139 (1988) (noting that up to one-third of metals are now made from recycled materials, while new cars contain more than a quarter less steel and three times less copper now than they did in the 1950s.). For example, deep seabed exploitation was initially overvalued, owing to underestimated costs, low metal prices, excess land-based capacity, risk, environmental considerations, and the fact that many of these minerals were found in abundance in areas now under national jurisdiction. S. Mahmoudi, THE LAW OF THE SEABED MINING 335 (1987). As a result, it is unlikely that exploitation of the deep seabed will occur in the next two decades. See P. Hoagland, Manganese Nodule Price Trends: Dim Prospects for the Commercialization of Deep Seabed Mining 19/4 RESOURCES POLICY 287, 288 (1993).


45 It should be noted that the legal regimes governing the transnational commons, save UNCLOS, were not designed with commercial exploitation in mind. This is hampering the exploitation of scarce resources found in the commons. Without cooperation to craft updated property rights regimes, developed nations acting alone or in regional groupings could exploit global common pool resources without considering the needs of developing nations or in keeping with policies of sustainable development. Such overexploitation may result in tragedies of the transnational commons if left unchecked.
investigation of the development of the territorial seas. Section C then discusses the rapid expansion of EEZs and the continental shelf in international law. Finally, Section D catalogs the negotiation and ratification of UNCLOS ending with a summary of the 1994 New York Amendments. Throughout this Part, it will be demonstrated how the forces of technology, politics and international relations have shaped the evolution of the LOS generally, and the growth of the territorial seas in particular.

A. Early Regulation of the Seas

Some of the earliest written records on the law of the seas proclaim the freedom of the seas. The first recorded statement on the LOS was a second-century work of the Roman jurist Marcianus, which declared that the seas were *ommunes omnium naturali jure*, or common to all humankind. This freedom was made possible paradoxically since the Romans were the masters of the Mediterranean; it was a Roman *mare nostrum* (our sea). Beginning in the Middle Ages though, European principalities began asserting sovereignty over the oceans and coastal waters as the first colonies developed, demonstrating the influence of international relations on the LOS even prior to the Treaty of Westphalia. But all coastal European nations did agree that coastal States were entitled to claim some portion of the contiguous seas—they just could not agree how much.

The question of how extensive territorial seas should be split scholars and policymakers in Medieval Europe, as it continues to do today. From the beginning though, claims were linked to the state of existing technology, and the extent to which

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46 BUCK, supra note 28, at 75.
49 BUCK, supra note 28, at 75-76. In the tenth century England claimed the North Sea and the English Channel as its exclusive “Britannic Ocean.” See JASENTULIYANA, supra note 48, at 3. By 1269, the Venetians were charging tolls for all vessels entering the Adriatic Sea, a practice that continued until the seventeenth century. SAYRE A. SWARZTRAUBER, *THE THREE-MILE LIMIT OF TERRITORIAL SEAS* 11 (1972); BUCK, supra note 28, at 76. The Baltic Sea came under competing claims from Denmark, Sweden, and Poland. See THOMAS W. FULTON, *THE SOVEREIGNTY OF THE SEA* 7-15 (Kraus Reprint, 1976).
50 BUCK, supra note 28, at 76.
territorial seas and shipping could be commercially exploited. For example, early Italian jurists suggested ranges for territorial seas based on how far a ship could travel in one or two days, i.e. between 60 and 100 miles.\textsuperscript{51} Maritime powers sought large territorial seas initially as a response to piracy, but over time this became a national prerogative and eventually a basis for jurisdiction.\textsuperscript{52} The ultimate grant of oceanic control came in June 1494 when the Treaty of Tordesillas divided the world into two hemispheres, one under Spanish control, the other Portuguese. This state of affairs ultimately lasted for less than a century due to the rise of the English, Dutch, and French empires.\textsuperscript{53} These new powers claimed that the seas were \textit{res communes}, or common property, free for all to use. So it was that international relations, embodied through Spanish and Portuguese claims challenging these other rising powers, framed the debate over the freedom of the seas that continues in modern international law.

Overlapping claims on territorial seas led to wars to secure access to these vital areas, causing both early jurists and policymakers to attempt to define sovereignty over the seas.\textsuperscript{54} This came to a head when in 1602 the Dutch East India Company seized a Portuguese galleon in retaliation for Portuguese resistance to Dutch trade in the East Indies. Hugo Grotius was commissioned by the Dutch to write the legal brief in the case, which would become the first serious philosophical work on the LOS, his 1609 \textit{Mare Liberum} (The Freedom of the Seas, part of \textit{On the Law of Spoils}).\textsuperscript{55} In this work, Grotius set forth reasons why the “high seas,” which came to be defined as the open ocean existing beyond national control, must be open for trade and exploration.\textsuperscript{56} All property, he wrote, is grounded upon occupation—the sea then, like the air, cannot be appropriated: “Whatever cannot be seized or enclosed is not capable of being a subject of property . . . meaning that the vagrant waters of the ocean are necessarily free.”\textsuperscript{57} But Grotius was not

\textsuperscript{51} \textit{Id.} at 77.
\textsuperscript{52} \textit{FULTON}, \textit{supra} note 49, at 6; \textit{Id.} at 77.
\textsuperscript{53} \textit{BUCK}, \textit{supra} note 28, at 78.
\textsuperscript{54} \textit{Id.} at 75.
\textsuperscript{55} See Mónica Vieira, \textit{Mare Liberum vs. Mare Clausum: Grotius, Freitas, and Selden’s Debate on Dominion over the Seas}, 64 J. Hist. Ideas 361, 361 (2003) (noting that the freedom of the seas was not originally a norm, but a general value).
\textsuperscript{56} See Meaning of “High Seas,” 7(6) \textit{HARVARD L. REV.} 372-73 (Jan. 25, 1894).
\textsuperscript{57} JASENTULIYANA, \textit{supra} note 48, at 4. For a general discussion on how the LOS regime has influenced Arctic governance, see CHRISTOPHER C. JOYNER & SUDHIR K. CHOPRA, \textit{THE ANTARCTIC LEGAL REGIME} (1988). Grotius also argued that the Pope could not exercise authority over the oceans for two reasons: (1)
operating in a political vacuum. He was being paid by the Dutch to write a brief in
support of his client’s position against the Portuguese, again illustrating the influence of
international relations at the birth of the LOS.

In answer to Grotius, and to uphold the English claim on exclusive use of the
North Sea, John Selden wrote *Mare Clausum* (Closed Seas) in 1618. Over time,
Selden’s closed sea arguments lost favor and the world accepted Grotius’ freedom of the
seas concept, though “Selden may still have the last word as States continue to increase
their claims to territorial seas.” Throughout the nineteenth and early twentieth
centuries, the high seas were laissez-faire domains to be used by all nations and protected
by the naval superiority of the British Navy: no State could subject the high seas to its
sovereignty. Yet agreement over the extent of territorial seas was lacking. By the
sixteenth century, Norway and Sweden entered the controversies over territorial seas due
to their fishing interests, and in May 1598 the Danes ordered the capture of any English
vessels that entered what they considered to be their territorial domain. From the
beginning then, the line delineating the high seas from the territorial seas was blurry at
best, and largely dependent on the state of technology, international relations, and
resource scarcity.

**B. Determining the Extent of the Territorial Seas**

As enforcement of territorial claims in the high seas is difficult making them
largely open access areas, nations focused more on coastal waters. Even Grotius did
not reject the notion of territorial seas. In 1625, he published *De jure belli ac Pacis* (On
the law of war and peace) in which he reasoned that nations could exercise sovereignty
over coastal waters if a fleet was present to enforce claims, i.e., to exercise control. In
the seventeenth century, control was established as the length of a cannon shot for

the oceans are uninhabited, meaning that there was no spiritual authority; and (2) Jesus renounced temporal
authority, so the Pope cannot have power that God renounced. *See* BUCK, *supra* note 28, at 79.
59 *Id.* *See also* Scott Allen, *National Interest and Collective Security in the Ocean Regime, in Thomas
60 *See* RAM PRakash ANAND, ORIGIN AND DEVELOPMENT OF THE LAW OF THE SEA 1 (1983). This period
of time may be compared to the Roman domination of the Mediterranean.
61 BUCK, *supra* note 28, at 78.
62 *Id.* at 79.
63 *Id.*
security purposes, though not for commercial activities. Thus, once again the limits of the territorial seas were defined by the available technology of the day. But even then, technology was changing rapidly with canons soon able to reach more than a mile and a half. In response, Spain, which initially joined with the Italian States, Portugal, the United States, England, and Russia in support of the rule, argued instead for a two-mile domain. By the eighteenth century, the practical rule became that the territorial sea extended so far as a nation was able to enforce its control through onshore artillery—beyond that lie the high seas. Eventually, this was changed to one league, or three miles, first recognized by the Fishing Convention of 1818. Even the preeminent sea power Britain finally limited itself to a three-mile limit off the coast of its possessions with the Customs consolidation Act of 1876, the Territorial Waters Jurisdiction Act of 1878, and the Sea Fisheries Act of 1883.

The three-mile limit was confirmed in British case law, first with the Twee Gebroeders dispute. There, the British High Court of Admiralty ordered three seized Dutch ships returned as they were captured within the three-mile extent of Prussian territorial waters. This decision was affirmed in The Anna, in which a United States vessel was returned as it was also improperly seized within territorial waters. United States jurisprudence also followed the three-mile rule during this period, as seen in The Brig Ann case in which Justice Storey of Massachusetts held that the brig had been within

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64 Id. at 80 (arguing that the cannon-shot rule was advocated first by the Dutch in 1610, and soon thereafter by the Belgians and the French to protest English naval supremacy).
65 FULTON, supra note 49, at 541-47 (noting that other ideas used the mid-channel principle, line of sight, and the notion that the territorial sea should be measured by the nation’s dependence on fishing, none of which gained widespread acceptance.).
66 Id. at 549; BUCK, supra note 28, at 81.
67 BUCK, supra note 28, at 81 (stating that three miles was the distance used by the United States in 1793 when it defined its neutral coastal zone during the war between Britain and France).
69 See SWARZTRAUBER, supra note 49, at 70-71. The three-mile limit was confirmed in the five treaties that Great Britain signed with France between 1839 and 1882. By 1853, Britain passed laws establishing the three-mile limit for its possessions in North America, in 1877 for the Pacific, and in 1881 Cyprus, and Australia. These treaties are the Convention of 1839, the Convention of 1857, the Convention of 1859 (not ratified by France), the Convention of 1867 (terms similar to the 1859 convention), and the multilateral North Sea Fisheries Convention of 1882. BUCK, supra note 28, at 81.
70 3 C. Robinson 162 [1800].
71 5 C. Robinson 373 [1805].
U.S. waters when seized.\textsuperscript{72} Most of the rest of Europe save Russia followed Britain’s lead.\textsuperscript{73} The large maritime powers with extensive fishing interests in particular had a vested interest in limiting the territorial sea, whereas smaller coastal States that depended on income from fishing favored an extensive territorial sea.\textsuperscript{74} For example, Chile claimed a three-mile territorial sea, but a four-league sea for national security and customs in 1855.\textsuperscript{75} Then, in 1870 it established a 150-mile neutrality zone during the Franco-Prussian War, demonstrating the link between resource scarcity, international political tensions and the extension of the territorial sea. Other Latin American nations followed suit.\textsuperscript{76}

After WWI, the League of Nations began a process of codifying the LOS. Among the topics that were included in the negotiations was the three-mile limit, which was widely accepted in Europe but not by newly independent States. Consensus was difficult to achieve, as demonstrated by the failure in this regard of the 1930 Hague Conference for the Progressive Codification of International Law.\textsuperscript{77} The extent of the territorial seas continued to be disputed. And not just over fisheries, but also the right of innocent passage, which was at issue in the International Court of Justice (ICJ) \textit{Corfu Channel Case}.\textsuperscript{78} In this case, Albania had mined the Corfu Strait, and the British Royal Navy was suing due to the damages and loss of life it sustained as a result of ships colliding with the mines. Ultimately though the Court did not decide the extent of territorial seas, giving States a free hand to push their claims further into the seas as offshore resources were discovered.\textsuperscript{79}

\begin{thebibliography}{99}
\bibitem{72} I Gallison 62 [1812].
\bibitem{73} The chronology is as follows: Spain (1828), Belgium (1832), Greece (1869), the Netherlands (1882), Denmark (1882), Italy (1888), and the Ottoman Empire (1893). \textsc{Buck, supra} note 28, at 82. Spain soon though changed its policy to a six-mile zone. Japan adopted the three-mile zone in 1879. \textsc{Herbert A. Smith, Ed., Great Britain and the Law of Nations: A Selection of Documents Illustrating the Views of the Government in the United Kingdom Upon Matters of International Law}, 2 vols. 183-184 (1932-1935). Russia proclaimed a limit 100-mile to protect its seal resources highlighting the importance of resource scarcity in national claims on the oceans, though it eventually relented through bilateral conventions to the three-mile rule. \textit{Id.} This occurred in separate treaties with the United States (1824), and Britain (1825). Thomas Bay, \textit{The Three-Mile Limit}, 22 AJIL 520, 521 (July 1928).
\bibitem{74} Friedmann, \textit{supra} note 17, at 768.
\bibitem{75} \textsc{Buck, supra} note 28, at 82.
\bibitem{76} The chronology is: Ecuador (1857), El Salvador (1860), Argentina (1869), and Honduras (1880). \textit{Id.} at 83.
\bibitem{77} \textit{Id.} at 4ff.
\bibitem{78} The Corfu Channel Case (United Kingdom-Albania), 1949 I.C.J. 4ff.
\bibitem{79} It would not be until Articles 34-45 of UNCLOS III that international straits would be regulated. \textsc{See Michael Adkhurst, A Modern Introduction to International Law}, 6th ed. 172 (1987). These
C. The Birth and Rapid Expansion of EEZs and the Continental Shelf in International Law

Conflict over the extent of territorial seas intensified following World War II with the discovery of valuable offshore resources, coinciding with the invention of the submarine, offshore drilling, and the expansion of EEZs allowing for the extension of sovereignty further out into coastal waters. As nations took interest in what lay below the seas, they sought to modify the traditional laissez-faire regime governing the seabed. Technological progress simultaneously caused a sea change in common perceptions of the high seas. Once mysterious, inhospitable and seemingly infinite regions, they were now finite zones of potential commercial activity in which limited occupation became feasible.

The process to allow for greater national control over offshore resources began in 1945 when President Truman issued a proclamation stating that the natural resources of the seabed and subsoil of the United States’ continental shelf were exclusively U.S. property. At the time, this proclamation was inconsistent with pre-existing international law. Truman’s proclamation was the result of the discovery of huge reserves of oil and natural gas off the U.S. coast. The United States also announced extended fishing zones, which was a challenge to the tradition of open seas, demonstrating that offshore development was a primary goal of U.S. ocean policy and again illustrating the role of resource scarcity in developing the LOS. But this U.S. practice was soon followed by articles established a liberal regime for right of passage, making it so halting a ship in transit was only permitted if it had violated international regulations for the protection of the marine environment. See Bernard H. Oxman, Summary of the Law of the Sea Convention, in BERNARD OXMAN, DAVID CARON, AND CHARLES BUDERI, THE LAW OF THE SEA: U.S. POLICY DILEMMA 151 (1983).

See Penelope Warne, Arctic Scramble: International Law and the Continental Shelf, ABERDEEN PRESS & J., Oct. 1, 2007, at 24. EEZs were created as a response to the overexploitation of coastal fisheries by a handful of developed nations under the freedom of the seas—a classic application of the tragedy of the unmanaged commons. The notion was to suffocate the res communes regime and protect local fisheries, which garnered early support from developing nations. BUCK, supra note 28, at 82. See also R.R. CHURCHILL & A.V. LOWE, THE LAW OF THE SEA 142-43 (3d ed. 1999) (noting that before this time, any State could establish property rights over the high seas through occupation).

80 See MICHAEL BYERS, CUSTOM, POWER AND THE POWER OF RULES: INTERNATIONAL RELATIONS AND CUSTOMARY INTERNATIONAL LAW 91-92 (1999) (noting that the Truman proclamation was so successful due to three reasons: (1) the dominant political position of the United States in 1945; (2) there was no requirement of occupation, which was attractive to small developing States; and (3) many States stood to benefit due to the commonality of continental shelves). See also R.R. CHURCHILL & A.V. LOWE, THE LAW OF THE SEA 142-43 (3d ed. 1999) (noting that before this time, any State could establish property rights over the high seas through occupation).
nations around the world, giving birth to the customary international law concept of the continental shelf as well as the EEZ. 83 From its beginning, the term “continental shelf” was a legal concept based on territorial integrity, rather than a scientific term. 84 This was due to the growing importance of offshore resources and the desire by coastal States to claim them for their exclusive use. Thus after the Truman Proclamation, resource scarcity enabled by technological advances became an even more potent driver of regulatory change in the LOS.

The ICJ in Anglo-Norwegian Fisheries further undermined the concept of the three-mile rule when in 1935 it accepted a Norwegian royal decree of four miles for a territorial fishing limit. 85 As a result, the time had come to codify existing customary LOS paying special attention to the territorial seas, which was begun by the International Law Commission (ILC) in 1950. 86 The urgency of this process was further catalyzed by the birth of the contemporary “closed seas” movement begun by the 1952 Declaration of Santiago on the Marine Zone, in which Chile, Ecuador, and Peru proclaimed sole jurisdiction and sovereignty over an arbitrary 200-mile area extending from their coasts to make up for their lack of gradually descending continental shelves. 87 In North Sea Continental Shelf, the ICJ affirmed the existence of an ipso jure right of the coastal State to their continental shelves, rejected the applicability of the equidistance principle, and held “certain principles of general equity as applicable to the delimitation of the

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86 MARVIN SOROS, BEYOND SOVEREIGNTY 268 (1986).
87 Friedmann, supra note 17, at 763.
continental shelves between three of the coastal states of the North Sea.” But the Court did not settle the issue of continental shelf delimitation in international law.

Over the next four decades, including in the four Geneva Conventions beginning with UNCLOS I in 1958, the closed sea argument was in part codified in international law through the establishment of EEZs and the legal concept of the continental shelf. These treaties demonstrated the power of Grotius’ freedom of the seas concept as applied to accessible offshore resources—as nations became able to “occupy” portions of the seabed that had hitherto been unreachable, the frontiers of national control were pushed out challenging the fundamental premise upon which Grotius built his freedom of the seas argument. Differing layers of national jurisdiction extending to territorial waters and the continental shelf were gradually created under these treaties. This left the high seas and the deep seabed under it as the sole remaining commons area of the seas, at least until occupation there too becomes economically advantageous. Before turning to the current state of oceanic governance and the impact that continental shelf claims are having on it, the history of UNCLOS and the roles that technology, scarcity, and politics played in its evolution will be briefly summarized to provide a foundation for discussion.

89 Friedmann, supra note 88, at 235.
91 Baslar, supra note 15, at 43-45.
D. UNCLOS and the New York Amendments

The three UNCLOS treaties (1958, 1960, and 1982) codified the law of the seas. Each major legal step to UNCLOS III will be discussed, with particular attention being paid to UNCLOS III itself along with the 1994 New York Amendments that modified the treaty. Technology, politics and resource scarcity drove the changes from UNCLOS I to UNCLOS III, which may be understood in part as efforts to define the extent of national control permitted for offshore resources.

1. Enclosure in UNCLOS I

The first UN Convention on the Law of the Sea was signed in 1958, along with the Convention on the Continental Shelf and the Convention on the Territorial Sea and the Contiguous Zone (Territorial Seas Convention). UNCLOS I may be summarized as a classic example of “enclosure,” further codifying the closed seas argument in the LOS. Enclosure was the British notion in which an individual may assert property rights over land that he owns but that had traditionally been a res commune, as the high seas had been. At the time of UNCLOS I, most States still accepted the three-mile territorial sea limit. But many States wanted to extend this limit in response to: the presence of

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93 See Territorial Seas Convention, supra note 90; and Continental Shelf Convention, supra note 90.
valuable coastal resources, growing scarcity, the availability of technology to exploit
resources, the desire to regulate pollution, and protect national security. Even though
four conventions were ultimately adopted following UNCLOS I, consensus was not
reached, and international conflicts over resources in the territorial seas escalated.

2. Resource Scarcity and UNCLOS II

UNCLOS II, like UNCLOS I, was driven by international politics, technology,
and especially resource scarcity. In fact, the conference was prompted by a “cod war”
between Iceland and the U.K., in which Iceland tried to use Norway’s principle of
extending its territorial sea into areas in which the British fishing fleets were traditionally
active. Iceland asserted a 12-mile fishing limit, which the U.K. eventually accepted.

Little was accomplished at UNCLOS II, mostly due to political opposition from Arab
States and the Communist bloc. Political economy was driving the debate, including
the need to reach an agreement on equitable resource distribution, which led directly to
UNCLOS III. For a full understanding though of the dynamics at play in UNCLOS III as
they relate to the exploitation of offshore resources, it is necessary to review the
international political economy of the deep seabed regime notably with regards to the
New International Economic Order (NIEO), as well as the development of the CHM
concept within UNCLOS.

a) Mining the Deep Seabed and the Politics of the NIEO

Like the territorial seas before it, the deep seabed has long garnered investors’
attention. This vast region, which comprises more than 65% of Earth’s surface, was not

95 BUCK, supra note 28, at 85. Well-defined property rights are of paramount importance in the success of
natural resource governance. See Tracy Yandle, Property Rights and Ocean Governance, 314(5799)
SCIENCE 593, 593 (2006) (noting that “Property rights are not a unitary concept, but rather a bundle of
separable rights that can be split or shared in different ways, including: access (right to enter), withdrawal
(right to extract), management (right to regulate use), exclusion (right to deny access), and alienation (right
to sell, lease, or transfer”).
1049 [1974].
L. Q. 412, 412 (Apr. 1988) (stating that it was not until the development of the Chunnel that Britain passed
the Territorial Sea Act of 1987, arguing that it would be easier to work if jurisdiction was established). See
98 BUCK, supra note 28, at 86.
originally included in the UNCLOS negotiations because neither the knowledge of mineral wealth in this area nor the technology to exploit it existed at the time.\textsuperscript{99} The situation changed though with the discovery of an important deep seabed resource outside national jurisdiction: manganese nodules. These nodules are valuable because they are exceptionally rich in 37 metals.\textsuperscript{100} With the 1960s Green Revolution and the growing realization that certain resources were finite, the deep seabed and its mineral wealth garnered newfound industrial attention.\textsuperscript{101} Once again, the transnational commons was threatened due to technological progress and increased resource competition. However, in the 1970s newly independent developing nations seeking to overcome the legacy of colonialism were becoming a powerful force in international relations. As their numbers increased so too did their demands for equitable benefit sharing and technology transfer.\textsuperscript{102}

This new wave of demands was part of the NIEO\textsuperscript{103} that was embodied in UN General Assembly (UNGA) Resolution 3021 in 1974.\textsuperscript{104} The NIEO was heralded as a tool to lessen global poverty and give developing countries greater bargaining power in

\begin{quote}
\textsuperscript{99} BASLAR, supra note 15, at 226-27.
\textsuperscript{100} The HMS \textit{Challenger}, a British survey ship, first discovered manganese nodules in the 1870s. The nodules look like brown or black potatoes, vary in size from .5 to 15 centimeters in diameter, and are composed of 37 elements, four of which in particular are valuable: manganese, iron, copper, and cobalt. They generally only occur at a depth of 2-4 miles, and grow very slowly. It is estimated that there are roughly 70 pounds per square mile of manganese nodules, and that 1.5 trillion tons of manganese, nickel, copper, and cobalt in the form of nodules lie on the seabed, mainly in the Pacific Ocean. \textit{See} BUCK, supra note 28, at 90.

\textsuperscript{101} \textit{Id.} at 31-32.

\textsuperscript{102} Prominent during the UNCLOS negotiations was the “Group 77” (G77), composed of a large proportion of the 90 States that had gained independence since 1945. Most were coastal nations and had considerable voting strength as a whole. Together with the older developing countries, these newcomers were conscious of the need to redefine international law doctrines to better reflect their interests. Private entities and the two superpowers also held strong opinions regarding UNCLOS, though the U.S. and U.S.S.R. differed with respect to the CHM concept. The Soviet bloc feared monopolization of the resources of the deep seabed by the technologically advanced Western States. The U.S. insisted that seabed mining was lawful and could be carried out at any time. Such a bifurcation of approaches reflects a varying philosophical and cultural bent. \textit{Id.} at 41-49. \textit{See also} Friedmann, \textit{supra} note 17, at 768.

\textsuperscript{103} The NIEO was born in part from lack of development aid from the developed nations to the developing world, with assistance falling from .53% to .3% of total developed world GDP from the 1960s to the 1980s. \textit{See} T. M. Franck, \textit{Lessons of the failure of the NIEO}, 15 \textit{CANADIAN COUNCIL OF INT’L L.} 82, 82 (1985) (noting that developing States were emboldened by the success of the OPEC oil embargo and tried to make up for this shortfall through the redistribution of the natural resources in the transnational commons).

the international system. Among other areas, the NIEO applied to the exploitation of offshore resources found in the transnational commons. During UNCLOS, like the Moon Treaty negotiations before it, developing nations sought to keep developed countries from monopolizing the natural resources found in the commons by placing them under supranational control. The NIEO demonstrates the effect that power blocs in international relations have on the development of international law, particularly with regards to resource exploitation in the transnational commons. What remained was introducing an overarching legal theory that would codify the stance of developing nations. Enter the CHM concept.

During the twenty-second session of the UNGA, Arvid Pardo called for an international regime to “govern the deep seabed, to mine manganese nodules, and to distribute the profits from their sale to the poorest countries” in the name of rapid economic development. He proposed that the seabed should be declared a res communes CHM area. UNGA Resolution 2749, the Declaration of Principles Governing the Seabed and Ocean Floor, was eventually adopted by 108 States (including the United States) and stated that the deep seabed was to be “exploited for the benefits of mankind as a whole, and taking into particular consideration the interests and needs of the developing countries.”

Developing countries and especially landlocked States sought the inclusion of the CHM concept into UNCLOS III because they viewed the concept as placing a moratorium on development, though most legal scholars did not support this argument. These countries did not want developed coastal States to divide up the

106 LOTTA VIKARI, FROM MANGANESE NODULES TO LUNAR REGOLITH; A COMPARATIVE LEGAL STUDY OF THE UTILIZATION OF NATURAL RESOURCES IN THE DEEP SEABED AND OUTER SPACE 42 (2002).
108 VIKARI, supra note 106, at 33.
111 VIKARI, supra note 106, at 44-47. See also Friedmann, supra note 17, at 768; and Graham Nicholson, The Common Heritage of Mankind and Mining: An Analysis of the Law as to the High Seas, Outer Space, the Antarctic, and World Heritage, 6 N.Z. J. ENVTL. L. 177, 177 (2002).
resources between them. Support for the CHM concept though did not stop with developing nations. Companies in developed nations that were involved in land-based mining saw the CHM concept as a way to keep prices high. And the superpowers, not wanting to see a destabilizing scramble for resources, also initially acquiesced to the CHM concept. But the various stakeholders could not agree on the CHM’s interpretation, or the extent of the deep seabed. As a result, the stage was set for a sea change in the governance of the oceans with the inclusion of a vague CHM concept in the LOS, which as will be shown, was catalyzed by the changing shape of international politics, growing resource scarcity, and advances in technology.

Figure 2: Critical Dates in the Chronology of the Law of the Sea

<table>
<thead>
<tr>
<th>Date</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>1493</td>
<td>Papal bull <em>Inter caetera</em></td>
</tr>
<tr>
<td>1494</td>
<td>Treaty of Tordesillas</td>
</tr>
<tr>
<td>1588</td>
<td>British defeat the Spanish Armada</td>
</tr>
<tr>
<td>1608</td>
<td>Freedom of the Seas (Grotius)</td>
</tr>
<tr>
<td>1635</td>
<td><em>Mare clausum</em> (The right and dominion of the sea) (Selden)</td>
</tr>
<tr>
<td>1818</td>
<td>Fishing Convention of 1818 (three-mile limit)</td>
</tr>
<tr>
<td>1954</td>
<td>International Convention for the Prevention of Pollution of the Sea by Oil (in force 1958)</td>
</tr>
<tr>
<td>1958</td>
<td>Convention on the Continental Shelf (in force 1964)</td>
</tr>
<tr>
<td>1958</td>
<td>Convention on the Territorial Sea and the Contiguous Zone (Territorial Seas Convention) (in force 1964)</td>
</tr>
</tbody>
</table>

BUCK, *supra* note 28, at 87. Arguably, that division is exactly what is happening now in the Arctic, which will be discussed further on p.37.

Id.

Id. at 84.
3. **The Politics of Governing the Deep Seabed in UNCLOS III**

The negotiations on the lead up to UNCLOS III began in 1973, with the lofty goal of developing a new legal regime for the oceans that included an equitable resource distribution policy for the deep seabed.\textsuperscript{115} As a result, the primary purpose of UNCLOS III became to regulate the use, exploration and exploitation of all living and non-living resources of the high seas and the seabed extending in the “Area” beyond territorial waters.\textsuperscript{116} Beyond the developing versus developed nation divide, the negotiations also pitted coastal against landlocked States, and “wide-margin” States that had continental shelves extending beyond 200 miles against those that did not. It was the debate over deep seabed mining in particular that served as an impetus for UNCLOS III, which was held from 1973 to 1982. Ultimately 320 Articles were adopted with a roll call of 130 votes to four, with 17 abstentions and 160 nations overall participating.\textsuperscript{117} However, most of the 130 signing States did not ultimately ratify the agreement largely due to the supranational management and mandatory technology transfer provisions that it included.

Part of the reason for UNCLOS III’s initial failure was its dual goals of developing legal regimes for both the high seas and the deep seabed.\textsuperscript{118} These negotiations were watched closely, particularly by the United States and Western European nations, as it was thought that they would set a precedent for the exploitation of other resources in the transnational commons, including Antarctica and outer space.\textsuperscript{119} The two looming questions related to deep seabed mining that UNCLOS III addressed were: (1) who would actually do the mining, and (2) how would operations be financed?

\textsuperscript{115} Marcel Berlins, *A Sea of Troubles for International Law Makers*, THE TIMES (London), June 12, 1974, at 16(A). To accomplish its goals, the Conference was organized into three Committees. Committee I was for the seabed. Committee II for maritime law related to the territorial seas and EEZs, among other topics. And Committee III dealt with technology transfer, scientific research, and marine pollution. BUCK, supra note 28, at 87-88.

\textsuperscript{116} Id. at 50.

\textsuperscript{117} Id. at 38. These 340 Articles may be contrasted with the 14 Articles in the Antarctic Treaty.

\textsuperscript{118} Robert A. Goldwin, *Common Sense vs. ‘The Common Heritage,’* in OXMAN, CARON, & BUDERI, supra note 79, at 60.

\textsuperscript{119} BUCK, supra note 28, at 88.
Developing, communist, and developed nations could not agree, and the resulting mining regime satisfied no one.\textsuperscript{120}

The International Seabed Authority was tasked with the distribution of economic benefits to parties, development of resources, and encouraging the transfer of technology on behalf of all mankind.\textsuperscript{121} Developed nations wanted the ISA to operate as a claims registry since they possessed the technological edge to exploit these resources, while developing nations wanted “the Enterprise” to be the actual mining operator so that they would receive equitable shares.\textsuperscript{122} Gradually a parallel system began to emerge in which private and State-sponsored organizations were permitted to mine the deep seabed alongside the Enterprise by operating at a nearby site. This would save the UN the cost of exploration. In essence then, the ISA enshrined a mixture of private property and common property approaches. But manganese nodules are a poor choice for communal management.\textsuperscript{123} And there were still problems of uncertain data, high opportunity costs, and corporate risk to consider. As a result, developed nations eventually backed away from UNCLOS III due to the ISA.

Many developed countries had concerns about the ISA from its outset, especially regarding its establishment of a precedent for technology transfer in international negotiations.\textsuperscript{124} Nevertheless, technology transfer requirements were imposed. Because developed nations were reluctant to give up their technological edge or share the benefits of development, the United States,\textsuperscript{125} the Federal Republic of Germany, the United Kingdom, and most developed nations elected not to sign the accord.\textsuperscript{126} Instead,

\begin{itemize}
  \item Communist nations in particular were caught in the middle of developed and developing nations since they had the technical capabilities to mine the deep seabed, but often lacked the resources. \textit{Id.}
  \item UNCLOS, \textit{supra} note 7, art. 137, para. 2.
  \item Friedmann, \textit{supra} note 17, at 768.
  \item \textit{Id.} at 89.
  \item BUCK, \textit{supra} note 28, at 90 (noting that developed nations balked at Part XI of UNCLOS III in particular, which can be read as an instrument heralding a shift to socialism that had no place in a capitalist global economy.).
  \item Amongst other things, the United States objected to Article 103, the Supremacy of UNCLOS law (\textit{cf.} Treaty Establishing the European Economic Community, arts. 81, 82, Mar. 25, 1957, 298 U.N.T.S. 4; Treaty on European Union, Jul. 29, 1992, 1992 O.J. (C191) 109); and the compulsory jurisdiction concept. \textit{See} NATALIE KLEIN, \textIT{DISPUTE SETTLEMENT IN THE UN CONVENTION ON THE LAW OF THE SEA} 41 (2005).
  \item VIKARI, \textit{supra} note 106, at 70-72. For a general discussion of America’s approach to multilateral institutions see INIS L. CLAUDE, JR., STATES AND THE GLOBAL SYSTEM: POLITICS, LAW AND ORGANIZATION 102-111 (1988). UNCLOS also underscored the political tension in the 1980s, illustrated by the Reagan Administration rhetoric, which privileged market capitalism and individual freedom above
\end{itemize}
developed nations starting with the United States and Germany passed domestic legislation governing the deep seabed.\textsuperscript{127}

Despite its shortcomings, UNCLOS III did clarify the 12-mile fishing limit of the territorial sea; the continental shelf to its natural margin or 200 nautical miles, whichever is farther; and that an EEZ not to exceed 200 miles.\textsuperscript{128} From 200 to 350 miles offshore, States can exploit the seabed under UNCLOS as well as undertake search and rescue, maritime surveillance, and limit oceanic pollution, but do not have control over fisheries. The oceanic commons shrinks by more than 40\% with national regulation out to 350 miles, underscoring a move away from supranational to national control of the seabed.\textsuperscript{129}

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\textsuperscript{127} For example, the United States claimed that three billion acres of coastal seabed in its EEZ were open to drilling. Deep Seabed Hard Mineral Resources Act of 1980, Pub. L. No. 96-283; Act of Interim Regulation of Deep Seabed Mining, Bundesgesetzblatt part 1, 9080 (Aug. 22, 1980). West Germany (1980, amended 1982), the UK (1981), France (1981), the USSR (1982), Japan (1982) and Italy (1985) followed suit, pursuing national legislation and other schemes to develop the deep seabed. V\textsc{ii}k\textsc{a}r\textsc{i}, \textit{supra} note 106, at 70-72.

\textsuperscript{128} In international maritime law, an EEZ is an area over which a State has special rights over the exploration and use of marine resources. Generally an EEZ extends to a distance of 200 nautical miles. The coastal State may set laws, regulate use and exploit resources within its territorial waters. Ships and vessels from any State have “the right of innocent passage through the territorial waters of any coastal State (except in wartime), meaning they may pass peacefully and expeditiously without stopping at any port of the coastal State.” Warne, \textit{supra} note 80, at 24; UNCLOS, \textit{supra} note 7, art. 17. A coastal State may also claim a zone extending to twelve nautical miles beyond its territorial waters, which is called the contiguous zone. The coastal State may exercise certain special rights within its contiguous zone, such as control of illegal immigration and enforcing laws against smuggling. \textit{Id.}, art. 33.

\textsuperscript{129} B\textsc{a}sl\textsc{a}r, \textit{supra} note 28, at 226-27.
Under UNCLOS, States now had the benefit of exploring, exploiting, and managing all natural resources within their EEZs.\textsuperscript{131} Having claimed its EEZ, a State may then enforce its fishing rights within the zone and can even build artificial islands, such as offshore oil platforms like Deepwater Horizon. EEZs are an example of how the transnational commons is impacted (and typically diminished) when technologically advanced States seek to capitalize on new economic opportunities. Communal sovereignty then may be seen as a temporary placeholder in international law that exists until technology enables occupation of property, and resource scarcity makes it worthwhile for States to assert national sovereignty. UNCLOS thus demonstrates the limits of internationally acceptable equitable benefit sharing, technology transfer, and the imposition of supranational authority to manage extraction.\textsuperscript{132} In future negotiations over the commons, these topics may well be off limits. To understand why, it is necessary to

\begin{itemize}
  \item \textsuperscript{130} DCDC, \textit{supra} note 10, at 67 (predicting that the Arctic will be subject to a strong potential for frontier conflict under the current governance regime).
  \item \textsuperscript{131} BUCK, \textit{supra} note 28, at 94 (noting that EEZs are also important with regards to fishing since the majority of the ocean’s fish are located with 200 miles of shore in areas of shall continental shelf).
\end{itemize}
briefly review the role of the CHM concept in the deep seabed.

a) The CHM Concept in the Law of the Sea

From the beginning, the deep seabed has been at the forefront of defining the status of the CHM concept. Indeed, Part XI of UNCLOS III is the only full-fledged development of the CHM concept in international law. Specifically, Article 136 of the Convention states: “The Area and its resources are the common heritage of mankind.” No explicit definition is offered, though the implicit outlines of the concept may be identified: “Area” signifies the seabed, seafloor and subsoil thereof, beyond the limits of national jurisdiction, and “resources” means all solid, liquid or gaseous mineral resources in the Area. Articles 31 and 32 of the Vienna Convention on the Law of Treaties permit recourse to the preamble, annexes, and the preparatory work of the LOSC in determining the extent of the CHM concept. Important secondary sources include a number of UNGARs. Articles 136 and 137 of UNCLOS III in particular are nearly a verbatim reiteration of paragraph 204 of the 1970 Declaration of Principles. Paragraph 9 of that Declaration spells out an international regime for the peaceful and equitable
management of the resources of the deep seabed, reaffirmed in Articles 140(2) and 150(b)(i) of UNCLOS III.\textsuperscript{140}

The traditional five-pronged elements of the CHM concept in the deep seabed include: (1) non-appropriation of the Area and its resources; (2) international management through the Authority; (3) sharing of the benefits of deep seabed mining; (4) peaceful uses of the deep seabed, and (5) protection of the seas for posterity.\textsuperscript{141} But it was these principles that were amongst the main stumbling blocks keeping UNCLOS from entering into force for 12 years until the 1994 New York Amendments. As a result, a final round of negotiations were needed to amend UNCLOS III and pave the way for widespread ratification.

4. **Resurrecting UNCLOS in the 1994 New York Amendments**

The spate of domestic legislation by developed nations purporting to manage the seabed was the opening shot by interested nations seeking to circumvent the UN framework for oceanic governance.\textsuperscript{142} To ward off this possibility, UN Secretary General Javier Perez de Cuellar sought to obtain developed nation support before the treaty came into force in November 1994 as after that time amendment would be difficult. Developed nations were open to the idea since the demands for technology and resources had not yet materialized, and the CHM concept was “fading from the world of practical politics.”\textsuperscript{143} A series of meetings was then held, and finally on July 28, 1994 the final text of the Agreement Relating to the Implementation of Part XI of UNCLOS was adopted, with six main changes: (1) initial operations would be joint collaborations between the Enterprise and mining States; (2) developed nations have more control over formal decisions; (3) there is no required technology transfer; (4) or production limitations; (5) the CHM is preserved, but the ISA is modified; and (6) assistance is offered to land-based mining concerns.\textsuperscript{144} As a result, the ISA became much more decentralized and deregulated after

\textsuperscript{140} 1970 Declaration, \textit{supra} note 109, para. 9.
\textsuperscript{142} YUWEN LI, \textit{TRANSFER OF TECHNOLOGY FOR DEEP SEA-BED MINING: THE 1982 LAW OF THE SEA CONVENTION AND BEYOND} 89-90 (1994).
\textsuperscript{143} BUCK, \textit{supra} note 28, at 91.
\textsuperscript{144} \textit{Id.}
the 1994 Amendments, and the resources of the deep seabed were reaffirmed to be part of the CHM. Part of its success was achieved by putting off defining how the deep seabed-mining would operate.

In summary then, the deep seabed-mining provisions of UNCLOS III Part XI ultimately proved unsatisfactory to the developed world, so the 1994 Agreement changed the nature of the ISA into a market-based concept fully compatible with private economic activity. Yet today, the deep seabed-mining regime remains largely symbolic. For example, Shaw argues that it is too early to predict the success or failure of the CHM concept given that UNCLOS had only recently entered into force. Similarly, Evans discusses the CHM in reference to UNCLOS, noting that the 1994 New York Amendments saved the general principles underpinning the ISA while providing for efficient and equitable resource extraction. This claim though seems premature, given that since 2001 the ISA has entered into only eight contracts, all of which are primarily research oriented with none expressing serious interest in commercial exploitation. Two corporations from developing nations have applied for development rights in the Pacific.

147 President Clinton remarked of the 1994 Amendments that: “by restructuring the seabed mining regime along with free market lines, [the Agreement] endorses the consistent view of the United States that the common heritage principle fully comports with private economic activity in accordance with market principles.” President Clinton, Message from the President of the United States and Commentary Accompanying the United Nations Convention on the Law of the Sea and the Agreement relating to the Implementation of the Part XI upon their Transmittal to the United States Senate for its Advice and Consent, 7(1) GEORGETOWN INT’L ENVIRONMENTAL L. REV. 77, 153 (1994). Other US Presidential pronouncements on the CHM concept include both Presidents Roosevelt, and Johnson. President Roosevelt stated: “Just as we believe that the assets which may accrue to man from his exploration of outer space should be shared universally, so we believe that what he finds beneath the sea may be used for international benefit without infringing on the sovereign rights of nations.” N. S. REMBE, AFRICA AND INTERNATIONAL LAW OF THE SEA 37 (1980). While President Johnson said in 1966 that: “we must ensure that the deep seas and the ocean bottom are, and remain, the legacy of all human beings.” President’s Remarks at the Commissioning of the new Research Ship, the Oceanographer, 2 WEEKLY COMPILATION OF PRESIDENTIAL DOCUMENTS (1966).
148 VIKARI, supra note 106, at 78. The U.K.-based Kennecott Consortium (KCON) and three U.S.-based consortia including Ocean Management Incorporated (OMI), Ocean Minerals Company (OMCO), and Ocean Mining Associates (OMA) have engaged in preliminary deep seabed mining. See FILLMORE C. F. EARNEY, MARINE MINERAL RESOURCES 58 (1990).
149 SHAW, supra note 14, at 362.
150 EVANS, supra note 282, at 646.
but their applications have been deferred. So far then, developing nations have not reaped significant benefits from UNCLOS.  

It is also important to note that despite the New York Agreement, the United States has still not yet ratified UNCLOS due to domestic politics. Until 2003, Senators outside the Foreign Relations Committee had not even reviewed UNCLOS due to opposition by political conservatives. By designating oceanic resources as a CHM, the opposition feared that the legislature risked placing limitations on national sovereignty in the commons that would potentially lead to the under-exploitation of available resources. Instead, this group advocates establishing private property rights in the seabed, thereby creating incentives for preservation by giving owners an economic interest in protecting the long-term value of their property. However, with the rush to claim large tracts of the Arctic for natural gas and oil exploitation as energy prices begin to increase again, political realities have changed as offshore drilling has gained popularity as a partial stopgap to bring down energy prices, at least until the April 2010 Deepwater Horizon oil spill. Still due to other domestic political priorities U.S.


153 Even if the United States did ratify UNCLOS III, it is an open question whether implementing legislation would be required in order for the treaty to take domestic effect, a legal question on which the U.S. State Department Office of the Legal Advisor is working. This has opened up discussions of whether UNCLOS III, and indeed other treaties as well, should instead be implemented through Congressional Executive Agreements. Such agreements would only require a majority in both houses, versus a supermajority in the Senate. The line between treaties and executive agreements is blurry to say the least in the United States. But even if such an approach could pass legal muster, it would surely run across entrenched political opposition. This would come in the form of Senators, particularly on the Foreign Relations Committee, who do not wish to see their power usurped. McDonald, supra note 19.


ratification will not occur until 2011 at the earliest, demonstrating the role that domestic politics can play in the LOS.\textsuperscript{156}

As for the overall success of UNCLOS III, results are mixed. As applied to fishing, overexploitation remains common, as evidenced by the closing of the Newfoundland cod fishery.\textsuperscript{157} Problems have also arisen on the high seas with frequent overfishing reported resulting in coastal States proposing regulations that would allow them to seize vessels fishing illegally in internationally waters. This could effectively “end the high seas as an open-access resource domain.”\textsuperscript{158} Currently there is little monitoring or enforcement of the regulations that do exist, such as protecting migrating fish stocks from the EEZ to the high seas. Scientific data is difficult to verify, where it exists, and in the United States leading scientists are sometimes forbidden to publish their findings after environmental disasters for a given period of time due to the terms of their funding agreements.\textsuperscript{159} Overlapping political jurisdictions exacerbates these issues.

Marine pollution is also a significant problem. Scientists estimate that as many as 450,000 marine birds die each year from oil pollution alone.\textsuperscript{160} Since sources of pollutants are widespread, international regulation is difficult.\textsuperscript{161} And many nations that have experienced some of the biggest oil spills in history continue to suffer from ill-defined or enforced environmental laws, including: Kuwait, the USA, Mexico, Trinidad and Tabago, Russia, Iran, South Africa, France, and Angola. As closed seas expand, weak national regulation and enforcement will continue to undermine the ill-defined environmental protections laid out in UNCLOS III.

\begin{thebibliography}{99}
\bibitem{BUCK} \textit{BUCK}, supra note 28, at 95.
\bibitem{MARPOL} International Convention for the Prevention of Pollution from ships (MARPOL) was first adopted in 1973 and amended in 1978. More than 85% of the world shipping fleet has ratified MARPOL. Many scholars agree though that MARPOL and the Dumping Convention have been incorporated into UNCLOS III. \textit{BUCK}, supra note 28, at 97.
\end{thebibliography}
Figure 4: Top 10 Largest Oil Spills in History\textsuperscript{162}

<table>
<thead>
<tr>
<th>Oil Spills</th>
<th>Spill Jurisdiction and Location</th>
<th>Amount Spilled (in millions of gallons)</th>
<th>Date spill commenced</th>
</tr>
</thead>
<tbody>
<tr>
<td>Deepwater Horizon</td>
<td>United States, Gulf of Mexico</td>
<td>206 (est.)</td>
<td>Apr. 22, 2010</td>
</tr>
<tr>
<td>Ixtoc</td>
<td>Mexico, Bay of Campeche</td>
<td>140</td>
<td>June 3, 1979</td>
</tr>
<tr>
<td>Atlantic Empress</td>
<td>Trinidad and Tabago</td>
<td>90</td>
<td>July 19, 1979</td>
</tr>
<tr>
<td>Kolva River</td>
<td>Russia, Kolva River</td>
<td>84</td>
<td>Aug. 6, 1983</td>
</tr>
<tr>
<td>Nowruz Oil Field</td>
<td>Iran, Persian Gulf</td>
<td>80</td>
<td>Feb. 10, 1983</td>
</tr>
<tr>
<td>Castillo de Bellver</td>
<td>South Africa, Saldanha Bay</td>
<td>79</td>
<td>Aug. 6, 1983</td>
</tr>
<tr>
<td>Amoco Cadiz</td>
<td>France, Portsall</td>
<td>69</td>
<td>Mar. 16, 1978</td>
</tr>
<tr>
<td>ABT Summer</td>
<td>Angola</td>
<td>51-81</td>
<td>May 28, 1991</td>
</tr>
<tr>
<td>M/T Haven Tanker</td>
<td>Italy, Genoa</td>
<td>45</td>
<td>Apr. 11, 1991</td>
</tr>
<tr>
<td>Odyssey</td>
<td>Canada, Nova Scotia</td>
<td>40.7</td>
<td>Nov. 10, 1988</td>
</tr>
<tr>
<td>The Sea Star</td>
<td>Gulf of Oman</td>
<td>35.3</td>
<td>Dec. 19, 1972</td>
</tr>
</tbody>
</table>

But UNCLOS III is not a failure. Rather, its effectiveness has been curtailed due to legal ambiguities resulting from the forces of technology, resource scarcity, and politics. The differences in international politics in particular between the 1970s when Part XI of UNCLOS III was negotiated to the present are vast, with the end of the Soviet Union, the NIEO, and the triumph of liberalism\textsuperscript{163} challenging the continued applicability


\textsuperscript{163} BSLAR, \textit{supra} note 15, at 216 (arguing that the NIEO failed in large part because developing nations realized that it was not possible to create a new international order without the support of the developed nations).
of the CHM concept.\textsuperscript{164} This interpretation is buttressed by analyzing the spate of continental shelf claims now encroaching on the deep seabed, showcasing the gradual transition of offshore resources from international to national control.\textsuperscript{165}

III. Was Selden Right? Continental Shelf Claims and their Impact on the Deep Seabed Regime

This Part of the Article argues that the deep seabed-mining regime has become increasingly irrelevant due to the expansion of EEZs and continental shelf claims that have together extended national control over offshore resources. As a result, resource extraction is increasingly a national endeavor, as opposed to the supranational management envisioned under the ISA. This encroachment has been made possible by the legal ambiguity in UNCLOS Article 76, which is due to the lack of guiding precedent given the relatively recent widespread ratification of UNCLOS and the opaque nature of the CLCS process.\textsuperscript{166} Nations are asserting control over offshore resources because of the confluence of three variables that have been active throughout the long history of the LOS, including: (1) technology allowing for increased occupation of hitherto

\textsuperscript{164} Baslar argues that the CHM concept survived the 1994 Amendments for four reasons. First, no State claimed national jurisdiction over the seabed. For example, the U.S. Deep Seabed Hard Mineral Resources Act of 1980 states that the aim of the Act is “to encourage the successful conclusion of a comprehensive Law of the Sea Treaty, which will give legal definition to the principle that the hard mineral resources of the deep seabed are the common heritage of mankind.” United States Public Law 96-283 of 28 June 1980, Section 2(b)(1). Second, the national acts were intended to only last until UNCLOS III entered into force. Third, most of the domestic legislation included a tax aimed to assist developing nations. In the U.S. context, the Act imposed a special tax on seabed miners of .75% of the processed value of the metals. \textit{Id.}, Section 403. And fourth, much of this legislation explicitly endorsed the CHM concept, albeit in vague terms. BASLAR, supra note 15, at 216. Yet Baslar also has stated that it is now “unlikely that the common heritage of mankind...will be a tool in the establishment of a just world order.” \textit{Id}.

\textsuperscript{165} Some scholars argue that the refusal by States to accept the CHM does not defeat the applicability of the concept generally, since the current manifestation of the CHM is consistent with the original 1970 Declaration of Principles. Franck, supra note 103. This is unlike UNCLOS III, in which profits were intended vaguely for ‘all mankind’ and were managed through a centralized global regulatory agency that was largely under the control of developing States. UNCLOS, supra note 7, arts. 156-85. It was also foreseen that the Enterprise would regulate commodity prices due to its market power, particularly for cobalt, nickel, copper, and manganese. UNCLOS, supra note 7, art. 151(9). Transfer of technology was also required through the ISA, both under UNCLOS III and the Moon Treaty, as a tool of wealth equalization. UNCLOS, supra note 7, art. 144. In practice though, it became clear that the Enterprise would consume most of any gains through administrative expenses and for the Compensation Fund for developing country land-based producers. BASLAR, supra note 15, at 213; G. Miles, \textit{The Structure and Effects of the Decision Process in the Seabed Committee and the Third United Nations Conference on the Law of the Sea}, 31 INT’L ORG. 207, 208 (1977). One study put the annual total benefit per capita of the CHM concept on the forty poorest nations at just $.50 cents per capita. A. V. LOWE & R. CHURCHILL, \textit{THE LAW OF THE SEA} 219 (1988).

\textsuperscript{166} See Cavnar, supra note 6, at 388.
unreachable resources; (2) resource scarcity driving demand and thus the desire of nations to appropriate the commons; and (3) multipolar politics making it more difficult to reach multilateral agreements and thus leading to the growth of regime complexes.

The Part begins with a brief discussion of EEZs, and then moves on to analyze the recent spate of continental shelf claims. The Arctic is the focus of this investigation due to the critical role that it plays as a bellwether for both the future of UNCLOS and other areas of the transnational commons, including the Antarctic. Results will be briefly compared and contrasted against the status of continental shelf claims in the Antarctic Outer Continental shelf. The Article concludes with a summary and discussion of how these findings inform the evolving lessons from the Deepwater Horizon spill.

A. Extending EEZs to Nationalize Offshore Resources

How far should EEZs extend, and what activities may be permitted in them? Pardo believed that the seabed included the area beyond 200 meters in depth, and the 1970 Declaration of Principles similarly referred to the seabed as the area “beyond national jurisdiction,” which at that time was the 200-meter standard. The United States suggested establishing a “Trusteeship Zone” between a depth of 200-meters and the edge of the continental shelf, which Baslar argues introduced the CHM concept into the territorial seas. Indeed, at one time the United States was willing to share revenues from exploitation within its 200-mile EEZ. But starting after the OPEC oil embargo at a time of increasing resource scarcity, the race was on to divide up the resources of the oceans.

By the 1980s, the deep seabed was reduced by 30% from the area proposed in the 1970 Declaration of Principles through the gradual nationalization of offshore resources. Today as has been stated more than 40% of the ocean space in which the

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167 The Future of Antarctica, British Library, Apr. 7, 2010. Participants included: Robert Kelshow (Deputy Director British Antarctica Survey); Klaus Dodds (Professor of Geopolitics at Royal Hallaway); and Sara Wheeler (author).
168 BASLAR, supra note 15, at 223.
most valuable resources are located is under the jurisdiction of coastal States through their EEZs and continental shelf claims. In fact, “all known commercially-exploitable hydrocarbon deposits, various minerals and most phosphoric nodule deposits, several manganese deposits, over 90% of commercially exploited living resources of the sea and all known sites suitable for the production of energy from the sea” are within the EEZs of States. And States are not stopping there. Attempts have been underway since 1990 to capture the remaining 10% of oil and natural gas by way of presentational sea claims or of extending exclusive national jurisdiction to the continental margin. In essence then, wide-margin coastal States and their allies sought and received the most valuable and easily accessible offshore resources through UNCLOS III, rather than reserving them for supranational management. That is why Pardo called the CHM regime of the deep seabed “a disaster.”

In contrast to the long history of the law of the sea, UNCLOS is still relatively new. As a result, significant disagreement remains about what activities can and cannot be prohibited by States within their EEZs. For example, States may exploit fishing resources and the seabed, and have responsibility for management and to limit pollution within their EEZs. But it is unclear under what circumstances these rights may be exercised, and the extent to which States have responsibility to manage transboundary pollution emanating from their EEZs such as is the case with the Deepwater Horizon. Should the United States be liable to neighboring countries, like Mexico, which have also suffered from the spill? Could Russia decide to prohibit nuclear-powered vessels, like U.S. aircraft carriers, from operating offshore due to environmental concerns? China already interprets its EEZ to allow it to control virtually any activity within its coastal seas, partly to strengthen its naval position vis-à-vis the United States in a potential future

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172 Id. at 226.
173 M. W. Zacher & J. G. McConnell, Down to the Sea with Stakes: the Evolving Law of the Sea and the Future of the Deep Seabed Regime, 21 ODIL 657, 657 (1990). In all, 25 States control 76% of the total EEZs, 13 of which are developed States. Out of 34 million square miles covered by the EEZs, 10 countries share 13 million. BASLAR, supra note 15, at 227; UNCLOS, supra note 7, art. 57. This process omits most developing nations from the benefits of the seabed.
174 Friedmann, supra note 17, at 768.
conflict over Taiwan. Another area of dispute is interpreting Article 234 of UNCLOS III dealing with ice-covered areas. The Canadians and Russians argue that they can enforce non-discriminatory regulations for the prevention and control of pollution in ice-covered areas, like the Arctic. It is particularly ironic that the EEZ began as a tool to stop overexploitation, but has resulted in exactly that. This illustrates the drawbacks of nationalization as a potential solution to the management of the transnational commons. Frequently shortsighted national political and economic goals prevail over sustainable management of EEZs. Article 62 of UNCLOS III mentions sustainable management in EEZs, but falls short of prescribing how that management should be carried out. And no such requirements whatsoever exist for the continental shelf, which is a worrying problem as States scramble to extract new wealth from the oceans through the CLCS process.

**B. Regulating the Continental Shelf Under UNCLOS III**

Article 76(1) of UNCLOS III defines the continental shelf as comprising “the seabed and subsoil of the submarine areas extending either to the outer edge of the continental margin, or to a distance of 200 nautical miles from the baselines.” This definition reflects the preference of wide-margin States, and includes the shelf, slope, and rise. Article 76 allows coastal States to claim the continuation of their continental margin, whenever this margin “extends beyond 200 nautical miles from the baselines.”

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178 See *Canadian Arctic Waters Pollution Prevention (CAWPP) Act* (R.S., 1985, c. A-12).  
180 Other issues also remained unresolved. For example, developing nations with EEZs but with insufficient technology to exploit these resources could franchise out their property rights in the seabed, like Equatorial African States do now with oil drilling. Narry, *supra* note 176. And then there is the issue of private military security needed to police such operations, potentially driving the further growth of private armies such as the now infamous Blackwater, recently renamed Xe Services LLC. *Profile: Blackwater Worldwide*, BBC NEWS, (Aug. 20, 2009), available at http://news.bbc.co.uk/1/hi/7000645.stm.  
182 UNCLOS, *supra* note 7, art. 62.  
184 *Id.* at art. 76(1).  
185 Cavnar, *supra* note 6, at 396.
from which the breadth of the territorial sea is measured.\textsuperscript{186} This Article thus permits States to exclusively manage the exploitation of shelf resources. But the State must first submit a claim to the CLCS on the limits of its continental shelf, as provided for under UNCLOS Article 2.\textsuperscript{187} This review is largely carried out in secret through closed meetings and restricting access to complete submissions and recommendations to the Commissioners.\textsuperscript{188} The review process involves “monstrously complicated formulas” for recognizing extended claims, which States can mix and match to make the most advantageous claim possible.\textsuperscript{189} Article 76 does not adopt the standard geological definitions of continental margins, but nor does it disregard scientific data. Instead, Article 76 creates a unique process for obtaining and measuring evidence that serves a legal definition beneficial to wide-margin States that is not necessarily tied to physical reality, and as a result raises more questions than it answers.\textsuperscript{190} Article 76 is thus “written ambiguously so everyone can take what they want out of their interpretation of the convention.”\textsuperscript{191} With the complex provisions of UNCLOS III on the continental shelf, the geographical scope of the CHM concept and the equitable benefit sharing it enshrined is being limited.\textsuperscript{192} Originally it was thought that there would only be a small number of nations with extended continental shelves submitting claims to the CLCS. But with increasing resource scarcity, advancing technology, and the multipolar state of international politics, this has not been the case.

\textsuperscript{186} Crawford, \textit{supra} note 13, at 10.
\textsuperscript{188} Cavnar, \textit{supra} note 6, at 390.
\textsuperscript{189} \textit{Id.} at 397-98 (noting that “according to article 76, a state’s extended continental shelf hits its outer limit at any point where the thickness of the sedimentary rock is less than one percent of the distance between that point and the foot of the continental slope … The foot of the continental slope is the point of maximum change in the gradient of the slope’s base. To mark these outer limits, states use either of the two formulas to measure a collection of outer points at intervals of sixty nautical miles or less, and then draw a straight line from point-to-point. This line is the official boundary - beyond it lies the deep seabed - and it can extend no further than 350 nautical miles from the territorial sea boundaries or ‘100 nautical miles from the 2,500 meter isobath, which is a straight line connecting the depth of 2,500 meters’ … This is intended to allow wide-margin states to maximize their claims within the constraints of the outer limit requirements.”).
\textsuperscript{190} \textit{Id.} at 400.
\textsuperscript{191} Gronewold, \textit{supra} note 183.
\textsuperscript{192} The CHM concept is not explicitly applicable in the continental shelf, though under Article 82(2) there is some development aid provisioned for the loss of potential common heritage resources. UNCLOS, \textit{supra} note 7, art. 77; cf 1958 Continental Shelf Convention, \textit{supra} note 13, arts. 1, 2(1-2). No provision of UNCLOS III Part VI requires coastal States to share natural resources of the continental shelf within 200 miles of shore. UNCLOS, \textit{supra} note 7, art. 77.
The recent wave of continental shelf delimitation claims has been a surprise, least of which to the CLCS itself, which with a staff of only 21 has announced that it will not be able to rule on all pending claims until after 2030.193 There have been more than 51 submissions, and even more “preliminary informations” indicating an intent to submit a claim.194 The concern now is, as expressed by Samuel McDonald of the U.S. State Department Office of the Legal Advisor, “if it takes 20 years to decide a claim, does that de-legitimize the process, and if so what will the result be?”195

Figure 3: Sovereign Rights in the Continental Shelf and EEZ under UNCLOS III196

Establishing property rights through extending EEZs and making continental shelf claims has been seen in the Western world as the solution to commons management; once occupation of a territory is possible, then property rights become necessary to catalyze

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193 McDonald, supra note 19. The CLCS is not a UN body. It is constituted under the UN, but paid for by States, though developing nations are often unable to pay for their share. Since administration is not centralized, quality also varies substantially across subcommittees within the CLCS. Additional funding for the CLCS will be difficult, both because the United States is not a member of UNCLOS, and due to the US’s position on budgetary growth for the UN. Id.


195 Id.

196 Figure redrawn from Frances B. Michaelis, International Year of the Oceans-1998, Australia’s Policies, Programs and Legislation, Australian Parliamentary Library, Dec. 8, 1988.
development. The U.S. Congress has been receptive to such arguments. But despite U.S. hesitancy, and thanks to common acceptance of the 1994 New York Agreement, UNCLOS has now gained widespread support in the international community. Yet the legacy of the common heritage experience in UNCLOS has cast the governance of other regions in the transnational commons into doubt. This redrafting of the LOS to favor property rights and promote economic development illustrates the powerful impact that technological progress has on international law. The debate over this impact will be shown to have significant ramifications across the transnational commons, including the Arctic, Antarctic, and closer to home.

1. Polar Property Rights: Continental Shelf Claims and Emerging Arctic Governance

“The current interest in the Arctic . . . is a perfect storm seeded with political opportunism, national pride, military muscle flexing, high energy prices and the arcane exigencies of international law.”

For much of its history, a single legal regime based on the freedom of the seas largely governed the high seas. But the forces of technological advancement, resource scarcity, and politics have driven the extension of national control and resulted in a fragmentation of governance, a process legitimized by UNCLOS III. As with other areas of the transnational commons, this process is playing out in the Arctic Ocean, which is now home to a number of multi-level governance systems that together comprise the expanding “Arctic regime complex.” UNCLOS III applies to the entire Arctic Basin and is in force in all of the Arctic States save for the United States, which

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197 This support is exemplified by the Deep Seabed Mining Act, which states that three conditions have to be met before the US acquiesces to UNCLOS: (1) non-discriminatory access to mineral resources, (2) a legal definition to CHM, and (3) environmental protection. But now, with changing technological and political realities, these constraints appear likely to fall away. See generally John A. Duff, The United States and the Law of the Sea Convention: Sliding Back from Accession and Ratification, 11 OCEAN & COASTAL L.J. 1, 1 (2005).
198 VIKARI, supra note 106, at 78.
201 Id.
202 Dodds, supra note 11; T. Koivurova & E. J. Molenaar, International Governance and Regulation of the Marine Arctic: Overview and Gap Analysis, WORLD WILDLIFE FUND INTERNATIONAL ARCTIC PROGRAMME 16 (2009).
recognizes the relevant provisions as customary international law. Under UNCLOS Article 76, the Arctic States are engaging in continental shelf boundary delimitation beyond the limits of their EEZs. National legislation is also being applied to the Arctic, such as the U.S. Environmental Protection Act, and the Canadian Arctic Waters Pollution Prevention Act. All of the Arctic States also belong to the Spitsbergen Treaty, the North Atlantic Coastguard Forum, and the Conference of the Parliamentarians of the Arctic Region. While the 1973-78 Convention for the Prevention of Pollution from Ships and the 1995 UN Fish Stocks Agreement are also fully applicable to the Arctic. Finally, the intergovernmental forum of the Arctic Council is increasingly important in Arctic governance, especially since part of its mission is the promotion of “sustainable development” in the Arctic, though this does not have the same urgency as a security dialogue as the body is not active in conflict prevention. The challenge in Arctic governance is strengthening this regime complex by encouraging mutual reinforcement to form an interlocking suite of governance systems in which “the idea of stewardship is central and the whole is greater than the sum of the parts.” As a result, the Arctic is a microcosm of the forces at work within the UNCLOS treaty regime with regards to offshore resource exploitation as well as being a showcase for the benefits and drawbacks of regime complexes.

203 McDonald, supra note 19.
204 The U.S. Congress enacted NEPA in order to require federal agencies to incorporate environmental concerns into the decision-making process. 42 U.S.C. § 4331(a). The broad goal of NEPA is “[t]o declare a national policy which will encourage productive and enjoyable harmony between man and his environment; to promote efforts which will prevent or eliminate damage to the environment and biosphere and stimulate the health and welfare of man.” 42 U.S.C. § 4321 (1988). See also CAWPP, supra note 178.
205 Oran Young, The Arctic Governance Project, SCOTT POLAR RESEARCH INSTITUTE, Apr. 15, 2010, at 4 (noting that the legal regime created the 1920 Treaty of Spitsbergen, which is still in force, features an arrangement whereby all parties recognize Norway’s sovereignty over the Svalbard Archipelago in return for assurance of demilitarization and equal rights to the archipelago’s natural resources, as well as promoting scientific research and establishing an equitable administrative system).
209 Young, supra note 205, at 13 (noting that other applicable legal systems in the Arctic include multilateral environmental and economic agreements, as well as administrative bodies, including many UN agencies and programs).
The Arctic is also experiencing an “environmental state change” that is transforming it from “a perpetually ice-covered region to a seasonally ice-free sea within the next few decades.” This dramatic change is awakening interest in the Arctic, ranging from energy exploration and fishing, to shipping and tourism. Consequently, the Arctic region is experiencing geopolitical instabilities as Arctic States collectively and individually assert their sovereignty over the area. Non-Arctic entities like the EU are also increasingly interested in the High North. But the Arctic Council provides an opportunity to address environmental concerns cooperatively. It also highlights the central importance of international scientific collaboration as being the currency of public diplomacy at the Poles.

Territorial claims on the Arctic began with George Nares’ first Arctic voyage in 1875. Yet due to limiting factors, it quickly became evident that typical notions of territorial sovereignty were inappropriate in this inhospitable region. Regardless, many States carved out supposed “polar sectors” extending from the northern boundaries of States bordering the Arctic to the North Pole. This was largely due to the fact that the Arctic region has significant geopolitical importance and immense resources. Consequently little multilateral cooperation has been successful, with the exception of

210 Interview with Paul Berkman, Head, Arctic Ocean Geopolitics Programme at the Scott Polar Research Institute and Research Professor at the Bren School of Environmental Science & Management at the University of California Santa Barbara, Cambridge, U.K., Apr. 27, 2010.
211 Berkman & Young, supra note 31, at 339. See also M. M. Holland, C. M. Bitz, & B. Tremblay, Future abrupt reductions in the summer Arctic sea ice, 33 GEOPHYS. RES. LETT., L23503 (2006); and Arctic Climate Impact Assessment, Impacts of a Warming Arctic: Arctic Climate Assessment (2004).
214 Berkman & Young, supra note 31, at 339.
215 Id. (arguing that successful science diplomacy requires “knowledge-sharing and the steady generation of scientific findings.”).
217 See generally A. R. Clute, The Ownership of the North Pole, 5 CAN. BAR REV. 1, 19-26 (1927); GUSTAV SMEDAL, ACQUISITION OF SOVEREIGNTY OVER POLAR AREAS (1931); James Brown Scott, Arctic Exploration and International Law, 3 AM. J. INT’L L. 797, 797 (1909).
limited collaboration in the area of environmental protection. One manifestation of this is the flurry of Arctic continental shelf claims as provided for under UNCLOS Article 76 based on scientific investigations measuring the extent of the continental shelves of the petitioners.

Depending on the outcome and veracity of these studies, it is possible or even probable that much of the Arctic is already or soon could become the property of one or more of the Arctic States. By effectively nationalizing the Arctic, the CHM concept could be further eroded and the potential for overexploitation increased. Though this worry may be diluted if the Arctic States agree to cooperate to address the outstanding issues facing the Arctic. Without such agreement, and with industrial activities advancing as the ice retreats, nationalization also could lead to environmental collective action problems as it has in the Gulf of Mexico. Thus the Arctic also illustrates the cycle seen in other commons regimes in which classic notions of Westphalian sovereignty give way to international management, until technological progress makes it economically advantageous to occupy the territory. Advances have already diminished the risk to capital and labor in the Arctic, and have made enforcement easier through radar and satellite coverage. In effect, “nations now have very long cannons.” These advances are putting pressure on the ISA, which at the least will “need considerable modification before it can be implemented successfully.” An analysis of the geopolitical instabilities in the Arctic is a prerequisite to identifying the necessary governance infrastructure. Consequently, the forces of geopolitics and resource scarcity will be focused on to determine how they are influencing the interpretation of the ambiguous Arctic regime complex. Only then may it be possible to determine not only the likely end state of the Arctic, but also whether current trends are beneficial to Arctic States, the environment, and the international community.

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221 BUCK, supra note 28, at 100.
222 Id. at 101.
2. The Geopolitics of the High North

At present the major players in the Arctic include the Russians, Norwegians, and the Canadians. Russia though is the dominant power in the region. It is the only nation with millions of its citizens living within the Arctic Circle, and it has by far the largest military presence. In comparison with the Russian Northern Fleet of more than 100 vessels, the United States has only two ships, neither of which are warships, regularly committed to the Arctic. The United Kingdom has only one ship in the Arctic. Russia sees the Arctic like the United States viewed its Western frontier—as an expansion area. The Norwegians view the Arctic as a national security concern. Finland, Sweden, Denmark, and perhaps soon Iceland are all EU members, making the EU a player in the area. The Arctic is also covered by NATO, which has still not developed a High North strategy. But the Arctic Council, bilateral and regional agreements, and most importantly the Arctic States themselves are the most critical actors in Arctic governance. Thus, at a time in which environmental changes are altering the geostrategic dynamics of the Arctic making governance of the area a “matter of global security,” an inclusive dialogue has been slow to develop. Part of the reason for this lack of progress is the injunction in the 1996 Ottawa Declaration against the Arctic Council dealing with security matters. Targeted efforts have had some success, but a coherent approach to Arctic governance has yet to emerge.

Why is there such recent interest in the Arctic? Besides geopolitics, resource scarcity is driving the process forward. For example, many developed nations and emerging markets outside of the Arctic Circle, including France, Germany, and China,

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223 Narry, supra note 176.
225 See Ebinger & Zambetakis, supra note 7, at 1215.
226 Berkman & Young, supra note 31, at 340.
227 Declaration on Establishment of The Arctic Council (The Ottawa Declaration), Ottawa, 1996.
228 Declaration on Arctic Military Environmental Cooperation between the United States, Russian Federation, and Norway (Bergen, Norway, Sep. 26, 1996).
are interested in the Arctic. This could cause added tensions as commodity prices increase.

3. Developing the Top of the World

In August, 2007, Norway’s state-owned petroleum firm Statoil began the first Arctic oil-and-gas operation outside of Alaska, which is expected to deliver $1.4 billion worth of liquefied natural gas annually for the next twenty-five years. With oil prices increasing, nations and private companies alike are interested in new sources of petroleum. A 2000 U.S. Geological Survey (USGS) estimated that the Arctic could contain twenty-five percent of the world’s undiscovered oil reserves. In 2007, the USGS put total reserves in the East Greenland Rift Basins at 31.4 billion barrels of “oil equivalent,” mostly in the form of natural gas (analogous to four years of US oil consumption). Russian geologists have previously estimated the Arctic seabed to contain at least 66 to 73.3 billion barrels of oil equivalent, a significant portion of which are located within Russia’s zone of Arctic control. Greenland alone, with a population of just over 57,000, could have hydrocarbon reserves the size of Kuwait. The U.K. Ministry of Defense predicts, “The Arctic is likely to become a significant global source of fossil fuels and strategic minerals.” Significant mineral deposits also exist, as they do in Antarctica, but the technology to extract them is still not economical. Resource competition, primarily over hydrocarbons, is thus driving the new wave of at times

229 McDonald, supra note 19.
231 Rothwell, supra note 219.
234 Graff, supra note 199.
236 Narry, supra note 176.
237 DCDC, supra note 10, at 63.
overlapping claims on the Arctic including in the United States,\textsuperscript{238} which could “cause huge problems when resources are developed.”\textsuperscript{239} Other regions of the Arctic, the deep seabed, and eventually Antarctica may follow suit if demand remains high and technology continues to advance.\textsuperscript{240} To understand how this process may play out elsewhere, it is necessary to examine the current state of continental shelf claims in the Arctic.

4. The Great Arctic Territorial Grab

Since Russia’s August, 2007 attempt to claim the Arctic by planting a Russian flag on the North Pole, the race to establish ownership of this vast region of untapped gas and oil reserves has only intensified. Canada, Denmark, Norway, Russia, and the United

\textsuperscript{238}Holly Rosenkrantz, Bush Urges Congress to Expand Oil Drilling After August Recess, BLOOMBERG News, Aug. 2, 2008, available at http://www.bloomberg.com/apps/news?pid=20601103&sid=aRH.rMQskL0&refer=us. Already many members of Congress want increased offshore oil and gas drilling. For example, areas of the Chukchi Sea have been opened to petroleum exploration by the US Department of the Interior, Minerals Management Service (MMS). The MMS coordinates leasing of offshore lands for oil and gas development. The Chukchi Sea lease sale contained approximately 29.3 million acres of land. 72 Fed. Reg. 32,860 (June 14, 2007). Shell Gulf of Mexico was the high bidder on many of the blocks; its winning bids totaled $2.1 billion USD. Yereth Rosen, Shell Bullish on Chukchi Oil and Gas Potential, REUTERS U.K., Apr. 4, 2008, http://uk.reuters.com/article/UK_SMALLCAPSRPT/idUKN044320582008080405. Of the total acreage offered, bids were only received on 498 blocks (about 2.7 million acres). Two more lease sales are planned in the Chukchi Sea under the MMS Outer Continental Shelf Oil and Gas Leasing Program 2007-2012, as are five other sales in nearby seas. 70 Fed. Reg. 54,406-1 (Sep. 15, 2005). Recently, the Obama Administration gave its approval to continue scientific studies and exploration of the Chukchi Sea through 2017. Alisa Opar, Obama Breaks His Word, Pursues Offshore Drilling in Alaska’s Chukchi Sea, AUDOBON MAGAZINE, March 31, 2010, available at http://magblog.audubon.org/obama-breaks-his-word-pursues-offshore-drilling-alaska%E2%80%99s-chukchi-sea. But even if all U.S. coastal areas were opened to drilling, the Department of Energy estimates they would barely impact oil prices in the long term. DEP’T ENERGY, ENERGY INFO. ADMIN., Impacts of Increased Access to Oil and Natural Gas Resources in the Lower 48 Federal Outer Continental Shelf (2007), available at http://www.eia.doe.gov/oiaf/aéo/otheranalysis/ongr.html.

\textsuperscript{239}Interview with Sophie Lane, UK Ministry of Defense DCDC, Shrewnport, UK, January 12, 2010.

\textsuperscript{240}Graff, supra note 199. In addition to providing increased opportunities to exploit natural resources, continued Arctic thawing has resulted in the opening of a seasonally ice-free Northwest Passage between Asia and Europe. This happened for the first time in recorded history in 2007. The ice cap, which floats atop much of the Arctic Ocean, is now 15% below average. NASA Earth Observatory, Record Low for June Sea Ice, available at http://earthobservatory.nasa.gov/IOTD/view.php?id=5690; Brian Handwerk, Arctic Melting Fast; May Swamp US Coasts by 2099, NAT’L GEOGRAPHIC NEWS, Nov. 9, 2004, available at http://news.nationalgeographic.com/news/2004/11/1109_041109_polar_ice.html. A commercially viable Northwest Passage would cut more than 5,000 miles off the trip from Asia to Europe than the alternative through the Panama Canal, intensifying shipping traffic through the area. Graff, supra note 199. Yet the primary shipping channel through the Northwest Passage remains shallow, which would limit the size of the container ships that could pass through it, likely in favor of LNG tankers with less draft. Narry, supra note 176. Moreover, the route will remain ice-free for only a few months per year, thereby limiting its commercial viability. Id.
States all control territory within the Arctic Circle through their EEZs and continental shelves.\textsuperscript{241} These nations have exclusive economic rights to the sea’s resources within 200 nautical miles of their coasts.\textsuperscript{242} But parties to UNCLOS can claim even more territory if a country can scientifically demonstrate that its continental shelf stretches beyond the 200-mile limit.\textsuperscript{243} This illustrates how nations may use ambiguities in treaties, like UNCLOS Article 76, to appropriate the commons when the forces of technology, scarcity and politics align to make it worthwhile. Such nationalization in and of itself should not be a grave concern, though it does omit non-Arctic States, so long as it is followed by binding pledges of international cooperation to protect the environment and peacefully resolve disputes as the United States, Canada, Russia, Denmark and Norway agreed to do in principle in 2009.\textsuperscript{244} This is important since as Berkman states, “in the absence of peace nothing is possible, but with peace everything becomes possible.”\textsuperscript{245} Yet nations such as Russia are still aggressively pursuing their individual claims.

Russia first lodged a claim with CLCS in 2001 under the Article 76(1) theory of “natural prolongation.”\textsuperscript{246} However, a natural promulgation means that the area has the potential to be included in the continental shelf of the petitioning country. The CLCS process is not automatic,\textsuperscript{247} and a petition by itself is not determinative.\textsuperscript{248} That is why

\begin{itemize}
\item \textsuperscript{241}Sweeney, supra note 235.
\item \textsuperscript{242}UNCLOS, supra note 7, art. 55. UNCLOS has now been ratified by 157 States. United Nations, Chronological lists of ratifications of accessions and successions to UNCLOS, available at http://www.un.org/Depts/los/reference_files/chronological_lists_of_ratifications.htm.
\item \textsuperscript{243}Graff, supra note 199.
\item \textsuperscript{244}Five nations agree to allow U.N. to settle Arctic claims, 14 PETROLEUM NEWS 57, available at http://www.petroleumnews.com/newsbulletin/520483138.html. For a general discussion about the benefits and drawbacks of multilateral action in the Arctic, see Rob Huebert, Multilateral versus Unilateral Actions: Balancing the Needs for International Governance in the New Arctic, Position paper for the 5th NRF open Assembly, Sep. 24, 2008, available at http://old.nrf.is/Open\%20Meetings/Anchorage/Position\%20Papers/Huebert_5thNRF_position_paper_session1\%20(2).pdf.
\item \textsuperscript{245}Berkman, supra note 210.
\item \textsuperscript{246}UNCLOS, supra note 7, art. 76, para. 1 (proving that “continental shelf of a coastal State comprises the seabed and the subsoil of the submarine areas that extend beyond its territorial sea throughout the natural prolongation of its land territory to the outer edge of the continental margin.”)
\item \textsuperscript{247}Warne, supra note 80.
\item \textsuperscript{248}The first limit is found in UNCLOS art. 76, para. 4, which provides two formulas for establishing the “Outer Limit Line.” The second limit to the breadth of the continental shelf appears in UNCLOS art. 76, para. 5 and relates to the maximum distance seaward that this outer limit line can lie. Norway has developed sophisticated software that it has given away to other coastal States allowing them to use mathematical ambiguities in Article 76 to extend their continental shelf claims. Guzman, supra note 13.
\end{itemize}
even though Russia claimed title to 460,000 square miles of the Arctic as a continuation of its continental shelf, the UN has demanded more evidence and Russia’s application remains under review.

Figure 5: Territories and Claims within the Arctic Circle as of August 1, 2010

Russia’s actions have unleashed a flurry of activity by other interested nations. Denmark announced in August 2007 that it would speed up its own scientific efforts to establish a similar legal basis to justify control of the Arctic through Greenland, a Danish dependency now favoring independence. Denmark goes to a great deal of effort to reinforce its sovereignty claim, including dispatching frigates, and placing its citizens and a flag on the icecap. The U.S. Coast Guard dispatched the cutter and research icebreaker USCGC Healy on a mission north of Alaska. The purpose of the mapping work aboard the Healy is to determine the extent of the continental shelf north of

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249 The ridge runs “under the Pole from north of Canada’s Ellesmere Island and Denmark’s Greenland to the New Siberian Islands of Russia.” Graff, supra note 199.
251 DCDC, supra note 10, at 64.
253 Narry, supra note 176.
254 Graff, supra note 89; Shackelford, supra note x, at 124-25.
Alaska. However, it is not military conflict, but environmental damage that Canadians and many policymakers fear most.

5. Analysis of the Polar Environment: A Collective Action Problem that is Heating Up

A mixture of customary international law, regional accords, and global treaties such as UNCLOS III currently regulates the Arctic—there are no emerging legal principles in the Arctic. The Arctic Council serves as the primary intergovernmental forum in the area, but it is first and foremost scientific and has no regulatory authority at present. However, the Council has already achieved considerable success in generating knowledge about the Arctic and bringing added attention to the area in global forums. Aside from the Council, other intermediate regulatory arrangements are also emerging. These include voluntary arrangements put out by the International Maritime Organization on shipping in ice-covered Arctic waters, as well as regional fisheries management organizations (RFMOs) created pursuant to UNCLOS Article 118 (e.g., the Northeast Atlantic Fisheries Commission). The 1992 Convention for the Protection of the Marine Environment of the North-East Atlantic, which focuses on pollution, is

256 Graff, supra note 199.
257 Id.
259 This underscores the extent to which science is the currency of public diplomacy in the transnational commons. Examples of the main scientific reports that the Arctic Council has put out include: 1997 State of the Arctic Environment Report, 2004 Arctic Climate Impact Assessment, 2004 Arctic Human Development Report, and the 2008 Arctic Oil and Gas Assessment. Berkman & Young, supra note 31, at 340.
260 Berkman & Young, supra note 31, at 340 (stating that the negotiating committee produced the 2001 Stockholm Convention on Persistent Organic Pollutants, partly as a result of action by the Arctic Council).
261 Id.; O. Jensen, The IMO Guidelines for Ships Operating in Arctic Ice-Covered Waters (Fridtjof Nansen Institute, Lysaker, Norway, 2007); E. J. Molenaar, R. Corell, Arctisheries: Background Paper for the Arctic TRANSFORM project of the European Commission (Ecological, Berlin, Feb. 9, 2009).
applicable in the Arctic Ocean. Other bodies of law also play a role, but these largely have the same rules in place as UNCLOS III.

This jumbled regime complex, regardless of the outcomes reached by the CLCS, has so far proven unable to address the Arctic’s growing list of issues. Environmental degradation, particularly air pollution and black soot related to climate change, is increasing in the Arctic. And as has been shown, military interest in the Arctic is growing as warming trends lead to easier access for Arctic States. Why? Due to the influences of technology, resource scarcity, and politics, which are driving the evolution of the Arctic regime complex towards fragmented national governance rather than international collaboration to address common environmental and security problems. The open question then is whether the Arctic regime complex should be supplemented with a new multilateral governance regime.

Some have advocated for an ATS-like regime in the Arctic, or a binding Polar Code. Being the first nuclear-arms control agreement and the first institution to govern all human activities in a region beyond national control, the Antarctic Treaty is a hugely successful instrument that may deserve emulation in other areas of the transnational commons. But “1950s Antarctica is rather different to the contemporary Arctic,” ruling out an ATS for the Arctic at present, even though issues regarding the regulation of the Antarctic Outer Continental Shelf are similar to that of the Arctic. Preliminary data suggests that much of Antarctica’s continental shelf may extend beyond 200 nautical miles from the baseline, and that some sub-Antarctic Islands have shelves that extend into

264 See Ebinger & Zambetakis, supra note 7, at 1215.
266 Young, supra note 205, at 2.
267 Berkman, supra note 27, at 412. For example, the WWF is calling for a new international accord to regulate commercial activity in the Arctic. Randy Boswell, WWF Calls for International Accord to Govern Arctic Activity, MONTREAL GAZETTE, Apr. 26, 2010, available at http://www.montrealgazette.com/business/calls+international+accord+govern+Arctic+activity/2950536/story.html.
268 Dodds, supra note 11; Berkman & Young, supra note 31, at 340.
the Antarctic Treaty Area (ATA). What this means is that the Antarctic Shelf may be claimed through UNCLOS Art. 76, even though such claims are barred by Article 4 of the Antarctic Treaty. As of January 2010, five of the seven claimants (Australia, Argentina, New Zealand, Norway and the United Kingdom) have presented claims to CLCS. Australia’s was the first to be submitted, and the first to be acted on save for its Antarctic outer continental shelf claim, which has been shelved for the time being. The only nation to officially claim part of the Antarctic outer continental shelf to date has been Argentina, which submitted a claim to the CLCS in 2009 that covered extensive submarine territories of the South Atlantic, the Southern-Antarctic Ocean and of the Drake Passage, and includes areas in which claims have been put abeyance by Article IV of the ATS. Politically, this submission threatens the continuity of the ATS, as well as the stability of British-Argentinean and Argentine-Chilean relations. If ultimately successful, Argentina’s claim could bring the ATS and UNCLOS in conflict, creating a new era of geopolitical competition and instability in Antarctica. Since the ATS is not an ideal model for the Arctic at present, what other options exist?

Thus far the 1991 Arctic Environmental Protection Strategy (AEPS) represents the main advancement with regards to environmental protection in the region. The AEPS contains a series of multilateral goals and obligations intended to enhance cooperative environmental protection amongst Arctic States. Despite these intentions, however, there is currently no legal regime to ensure implementation. Building on AEPS by providing enforceable legal rights would allay fears of impending environmental damage posed by increased industrial activities in the Arctic. In addition, the Arctic

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270 Id. at 11.
273 Although a long history exists for unilateral State action in the Arctic, multilateral cooperation to deal with international environmental issues also has precedent. For example, consider the 1911 Treaty for the Preservation and Protection of Fur Seals, July 7, 1911, 37 Stat. 1542, and the 1920 Treaty between the United States and Other Powers relating to Spitsbergen, art. 1, Feb. 9, 1920, 43 Stat. 1892, 2 L.N.T.S. 7.
States may give the Arctic Council added powers.\textsuperscript{274} This may naturally occur due to mission creep causing the mandate of the Council to grow.\textsuperscript{275} Other options for avoiding collective action problems abound, but are less likely.\textsuperscript{276} But even with sector-specific regimes in place, there is still a persistent danger of institutional fragmentation due to a lack of integrated governance.\textsuperscript{277} This points to the need for a type of treaty that practices ecosystem-based management like the 1980 Convention on the Conservation of Antarctic Marine Living Resources.\textsuperscript{278}

What is the future of Arctic governance? Two approaches seem evident. The first is to proceed with building a sector-based regime complex, which seems the most politically viable option at present. The second would be to parse out regions of the Arctic, such as by treating the central Arctic as a part of the transnational commons, and then to draw a clear distinction between the overlying water column and the seabed, which are legally and ecologically distinct.\textsuperscript{279} This would divorce the CLCS process and the seabed from the high seas, allowing the Arctic Ocean to remain part of the transnational commons even if its seabed is in effect nationalized by the Arctic States. Moreover, this could be done without the need for a new treaty, and within the UNCLOS framework in concert with the Arctic Council and other stakeholder institutions and States. Of course, harmonization of international law through UNCLOS with national approaches is difficult, especially “without detracting from the authority of Arctic rim

\begin{thebibliography}{99}
\bibitem{berkman2009} Berkman and Young also suggest the development of: a mandatory polar code covering all forms of shipping; an Arctic-wide agreement designed to control marine pollution; a region-wide system of RFMOs; strengthening of the International Arctic Science Committee to build off the success of the International Polar year 2007-09; and a regulatory regime for tourism along the lines of the International Association of Antarctic Tour Operators. International Arctic Science Committee, IASC in Transition: Facing New Challenges in Arctic Science, Open Forum Discussion, Arctic Science Summit Week, Bergen, Norway, Mar. 25, 2009; Berkman & Young, supra note 31, at 340.
\bibitem{coastal} For example, a clarifying ICIJ continental shelf decision could offer a comprehensive solution for all concerned parties, while ISA fees could finance a dedicated Arctic fund. Warne, supra note 80 (noting that “Coastal states are required to contribute a percentage of the revenue derived from the exploitation of mineral resources beyond 200 miles to the ISA. However, no contributions are required during the first five years of exploitation and not from developing countries that are net importers of the mineral in question.”).
\bibitem{crowder} L. B. Crowder et al., Resolving Mismatches in U.S. Ocean Governance, 313(4787) Science 617, 617 (2006) (noting that “In the United States, at least 20 federal agencies implement over 140 federal ocean-related statutes” and arguing for ecosystem-based management).
\bibitem{berkman2009} Berkman & Young, supra note 31, at 340.
\bibitem{berkman2009} Id.
\end{thebibliography}
states over their coastal and continental shelf regions.” Whether or not the Arctic remains part of the transnational commons, a region dedicated to peaceful use and sustainable development, hangs in the balance. With statesmanship, as Berkman argues, “the high seas surrounding the North Pole cold become the next pole of peace.”

Conclusion

This Article has analyzed the evolution of the legal regimes governing offshore resource extraction in the deep seabed and the continental shelf. It has been demonstrated both how and why the governance of offshore resources has become increasingly a national endeavor rather than the outcome of international cooperation through the ISA due to the vagaries of UNCLOS Article 76, technological advancements, resource scarcity, and politics. This argument was illustrated by reviewing the UNCLOS III negotiations, the outcome of which Evans notes “satisfied few and was considered completely unacceptable by the developed world in general and the USA in particular.”

Particular attention was paid to the Arctic to illustrate the consequences of this transition, in which continental shelf claims submitted to the CLCS have effectively nationalized this area. “There is no race for the Arctic, it’s already over,” confirms McDonald.

What have been the economic, legal, and political results of the fragmentation in governance evident in territorial waters? Economically, it has been shown that little progress has been made in the Arctic towards addressing collective action problems especially with regards to limiting transboundary pollution or fears of a military buildup, calling into question the regime effectiveness of the Arctic legal systems. Legally, while the CHM concept is still the law of the deep seabed, for practical purposes nearly all offshore resource extraction takes place today through national control. This is because technological progress, rapid economic development, resource scarcity, the end of the Cold War and the rise of multipolar politics has all worked together to undermine the CHM concept and with it the governance regime for the deep seabed. For example,

\begin{itemize}
\item[280] Id.
\item[281] Id.
\item[282] See MALCOLM D. EVANS, INTERNATIONAL LAW, 2nd ed. 646 (2006).
\item[283] McDonald, supra note 19.
\end{itemize}
Jonathan Pershing, U.S. special envoy on climate change, argues that the CHM concept is now only a “common interest” concern. Consequently, as this quotation illustrates the CHM concept has lost vitality as a vehicle for equitable benefit sharing in the seabed, as it has across the transnational commons. While politically, the growth of a regime complex is evident in the Arctic as it is in the Antarctic, with a number of organizations, bodies of law, and the Arctic States themselves competing for influence. Thus, this Article has demonstrated that the oceans are no longer seen as an infinite resource domain in the international community; instead, technology, politics and resource scarcity has encouraged the evolution of private property rights through the extension of EEZs and the continental shelf. As a result, the future of oceanic governance, as is the case for the atmosphere and the Southern Ocean, may well involve a regime complex with the myriad benefits and challenges that it entails.

The forces of technology, politics, and resource scarcity have also influenced the course of the response to the Deepwater Horizon spill. For example, the spill has illustrated the current technological limitations of effectively dealing with environmental contamination in the Gulf of Mexico. It also brought the partisan gridlock in large part characterizing the 111th Congress into sharp relief, while highlighting the degree to which concerns over resource scarcity have driven the debate over the moratorium on offshore drilling. But most of all, the spill has demonstrated that it is the United States, and in particular BP, which is responsible for cleaning up the resulting contamination. Loftier concerns over engagement by the international community in the management of what once was the transnational commons has been limited, though six nations are helping with the cleanup. Thus, this episode underscores the extent to which nations first and

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284 Interview with John Pershing, U.S. Department of State, Special Advisor on Climate Change, in Wash., D.C. (Jan. 29, 2010) (arguing that “It’s [the CHM concept] mostly focused on inter-generational equity, and a sense of responsibility from developing to developed nations, and in this way is tied into broader development goals.”).
285 BUCK, supra note 28, at 100.
286 Preliminary data suggests that much of Antarctica’s continental shelf may extend beyond 200 nautical miles from the baseline, and that some sub-Antarctic Islands have shelves that extend into the Antarctic Treaty Area (ATA). Crawford, supra note 13, at 11.
foremost are and will continue to dictate both the development and environmental protection over offshore areas.

Yet this Article has also demonstrated that “traditional management regimes have become inadequate” in managing the seabed and the continental shelves. The drawbacks of the nationalization of offshore resources in particular are a case in point. Chief among these drawbacks is the problem that the State is both the developer and protector of natural resources. This puts short-term economic interests in conflict with longer-term sustainable development policies. A famous example occurred in Nepal in 1957 when the government nationalization its forests to stop deforestation. Instead, with local communities no longer having the incentive to take care of their forests, deforestation increased forcing the government to backpedal in 1976. Like in Nepal, the MMS’s “cozy” relationship with oil firms like BP places the U.S. government’s role as protector of the nation’s coastlines in conflict with its interest in developing offshore oil. The consequence has been the third biggest oil spill in history. This begs the question, if the United States can fail so badly in the protection of its environment a mere 50 miles off the coast of Louisiana and within the U.S. EEZ, how effective have other nations been?

As shown in Figure 4, national laws are all over the map, no pun intended. Canadian regulations, for example, appear less stringent and detailed than the likes of Norway or the United Kingdom. While many other nations either do not have laws in place at all, or lack the resources to enforce them effectively. This should be a key concern for the international community since the future of offshore resource exploitation is largely national. If other oil spills are to be avoided, regulations around the world must be strengthened. This is no small task. The Obama Administration took a

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292 See supra, p.34.
293 Crawford, supra note 13, at 11.
step forwards in this direction with its proposals to revamp the MMS. But this is just a first step on a marathon. Better-defined definitions for corporate liabilities are needed so that companies know in which jurisdictions they may be held liable—a problem of increasing urgency as regime complexes expand. The Administration should also push the Senate to finally ratify UNCLOS. And amendments to the treaty should be proposed that would help fill in some of the gaps related to environmental protection.

The United States’ historic leadership in the LOS, stretching back to the 1948 Truman Proclamation, gives it some sway. Yet international cooperation continues to be inhibited in the seas due to the multipolar status of world politics, economic, constraints, as well as steady technological advancement that have made res communis obsolete as applied to offshore resources. The ambiguity of applicable international law also makes progress difficult. Certain countries, like China, are investing in the legal resources necessary to favorably interpret ambiguous UNCLOS provisions, which may put these States at a long-term competitive advantage. In response, the CHM concept may be extended, since it is not non-appropriation but non-exclusive use that is one of its principles as a “public trust” notion. This could help stop overexploitation, avoid collective action problems, and protect the fragile and unique Arctic environment. But it is fraught with difficulties, and politically is likely a non-starter, especially in the wake of the Deepwater Horizon spill and the continued volatility of energy prices.

Was Selden right after all? Is the future of oceanic governance largely a fragmented national endeavor with only haphazard international cooperation occurring? Or is this a Grotian moment? For those areas that lie beyond the

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295 Crawford, supra note 13, at 11. (noting that Article 117 of UNCLOS III mentions the duty of States to cooperate to conserve resources in the high seas, like fishing stocks, but leaves practical application ambiguous).
296 Berkman, supra note 210.
297 BASLAR, supra note 15, at 235.
298 See Ebinger & Zambetakis, supra note 7, at 1215.
299 Id. at 234 (arguing that had the CHM concept been applied to the territorial seas as well, the UN never would have accepted it).
300 Peter Prows, Tough Love: The Dramatic Birth and Looming Demise of UNCLOS Property Law (and What is to Be Done About It), 42 TEX. INT’L L. J. 241, 296, n. 370 (2007) (arguing that Selden’s mare clausum and res nullius view of the oceans would have “been at odds with all of Part XI and also Article
continental shelves, the vague CHM concept still governs resource exploitation in the deep seabed and likely will continue to do so for the foreseeable future. As has been discussed, little commercial activity is yet happening in the deep seabed due to a lack of resource scarcity and the necessary technology. But as the situation changes, the same forces that have resulted in the creeping appropriation of the continental shelf could occur in the seabed, further weakening the stake of landlocked States in offshore resources. As illustrated by property regimes in the Arctic and in the 1994 New York Amendments, finding compromises that allow for the necessary exploitation of dwindling resources, while still providing for environmental protection—especially for strained areas at the Poles—is essential. If environmental protection is not made a priority, oil and gas drilling in ecologically sensitive areas like the Arctic may exacerbate the growing effects of climate change by adding additional greenhouse gases into the atmosphere as well as increasing incidents of regional oil spills and pollution. The future of the Arctic should not rest solely on the technicalities of continental shelf delimitation. It is in the collective, if not the individual best interest of all the Arctic States to collaborate to avoid transboundary tragedies of the commons. The Arctic, and the oceans generally, are facing a classic collective action problem in which multilateral regulation is required to mitigate transboundary problems, but implementing such regulation is politically difficult especially in a multipolar world. It is necessary then, as it is across the transnational commons, for new regulations to promote ecosystem-based management through international cooperation so as to limit discord and promote the peaceful use of common pool resources.

The only constant in the commons is change, and if governance structures are to evolve to keep pace with mounting environmental and security threats, the lessons from the successes and failures of the LOS generally and Deepwater Horizon in particular

87(2), which requires that States exercise high seas freedoms ‘with due regard’ to other States’ freedoms and Part XI.”).

301 Warne, supra note 80 (stating that according to existing international law, the future of the Arctic will turn on: (1) “[t]he point at which the thickness of sedimentary rocks becomes less than 1% of the distance to the foot of the continental slope (sediment thickness formula);” (2) “[o]r up to 60 nautical miles from the foot of the continental slope (distance formula), up to a limit of 350 nautical miles from the baseline or 100 nautical miles from the 2,500m isobath . . . The coastal state has the right to use whatever combination of constraint lines and formula lines is most advantageous in extending the outer edge of its continental shelf.”).
must be learned and deep collaboration incentivized to sustainably manage offshore resources for ourselves, and our posterity. As bad as it was, the Deepwater Horizon oil spill is not going to stop offshore drilling around the world. 302 The potential economic gains are simply too great. But now is the time to reshape the national and international regulatory framework governing offshore resources so as to fulfill the promise of this potential “Grotian Moment,” 303 and not make it a “Selden Moment,” such that the Deepwater Horizon spill is the last, and not the first offshore environmental disaster in this new closed seas era.
