

Comment

Coastal State Jurisdiction Under UNCLOS: The *Shen Neng 1* Grounding on the Great Barrier Reef

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I. INTRODUCTION

On April 3, 2010, the bulk coal carrier *Shen Neng 1* ran aground on the Great Barrier Reef (Reef). A Chinese-registered ship staffed by twenty-three Chinese nationals,¹ *Shen Neng 1* had picked up 65,000 tons of coal from a port on the coast of Queensland and was heading to China using the Outer Route of the Reef when it deviated from its planned course.² It entered a restricted area of the Great Barrier Reef Marine Park and ran aground on a shoal.³ It appears the shipmaster and first mate caused the accident; the shipmaster had deviated from the ship's intended course in order to take a shortcut, but the extremely sleep-deprived first mate failed to correct course at the appropriate time.⁴ He realized too late that the ship had entered restricted waters and was dangerously close to the shoal. The ship grounded before he could move it to safety.⁵

The ship tore into a two-mile-long section of coral and leaked several tons of oil, seriously damaging the Reef.⁶ The ecological consequences of the grounding have been immense. Not only did the *Shen Neng 1* release three tons of fuel oil into the ocean, but it also “crushed and smeared potentially toxic paint” onto two miles of coral.⁷ It could take two decades for this area of the Reef to recover.⁸ Australian authorities quickly moved to stabilize the ship and prevent further damage,⁹ but poor weather and rough seas prevented Australia

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1. AUSTRALIAN TRANSPORT SAFETY BUREAU, ATSB TRANSPORT SAFETY REPORT, MARINE OCCURRENCE INVESTIGATION NO. 274, GROUNDING OF THE BULK CARRIER *SHEN NENG 1* AT DOUGLAS SHOAL, QUEENSLAND 2 (2010), available at http://www.atsb.gov.au/media/1371728/mo2010003_prelim.pdf.

2. Press Release, Queensland Government, Ship Grounding off Great Keppel Island (Apr. 3, 2010), <http://www.msq.qld.gov.au/~media/msqfiles/home/about-us/msq-headlines/shenneng1v110pm3april.pdf>.

3. AUSTRALIAN TRANSPORT SAFETY BUREAU, *supra* note 1, at 5-6.

4. Press Release, Australian Transport Safety Bureau, *Shen Neng 1* Media Conference Talking Points 2 (Apr. 15, 2010), http://www.atsb.gov.au/media/1371608/mo201000_talking%20points.pdf.

5. *Id.*

6. Keith Bradsher, *Long Recovery for Barrier Reef*, N.Y. TIMES, Apr. 4, 2010, at A8.

7. Kristin Gelineau, *2-Mile Scar on Barrier Reef from Ship*, MSNBC.COM (Apr. 13, 2010), http://www.msnbc.msn.com/id/36459923/ns/world_news-world_environment/.

8. *Id.*

9. Emma Chalmers et al., *Stricken Carrier Shen Neng 1 May Have Tried Shortcut Before*

from bringing the ship quickly into a port.¹⁰ On May 30, the Queensland and Australian governments finally completed their salvage operation, and the *Shen Neng 1* left Australian waters.¹¹

In the wake of the *Shen Neng 1* grounding, Australian officials and environmentalists have called for heightened protective measures throughout the Reef.¹² But most of the Reef—including the area where the *Shen Neng 1* wreck occurred—lies within Australia's Exclusive Economic Zone (EEZ). The EEZ is the area of water adjacent to a coastal state's territorial sea, extending up to two hundred nautical miles¹³ out to sea from a coastal state's baseline, or low-water line.¹⁴ Under the law of the sea, Australia has the right and the obligation to protect marine resources in its EEZ. At the same time, Australia cannot interfere with other states' traditional right of navigation in the EEZ. This constraint leaves Australia largely unable to impose or enforce effective protective measures on ships traversing the Reef.

The difficulty Australia faces in preventing pollution from wrecks in its EEZ reflects a tension in the law of the sea. As part of the United Nations Convention on the Law of the Sea (UNCLOS),¹⁵ the international community established the EEZ in an attempt to balance navigational freedom with coastal state jurisdiction, including the coastal states' right to protect marine resources.¹⁶ The end result, however, weighs too heavily in favor of the freedom of navigation. Coastal states lack the ability to impose or enforce effective antipollution measures before catastrophic accidents occur, even in EEZ areas with special ecological significance.

Existing structures under UNCLOS provide room for correcting this imbalance between navigational freedom and coastal state jurisdiction in EEZs. The International Maritime Organization (IMO), the international organization that sets maritime rules and standards, may authorize coastal states to impose protective measures that restrict the freedom of navigation in ecologically sensitive marine areas.¹⁷ It has been reluctant to do so in the past, however. Recognizing the increasing threat posed by maritime trade to dwindling marine

Barrier Reef Grounding, COURIER-MAIL (Apr. 5, 2010), <http://www.couriermail.com.au/news/queensland/stricken-carrier-shen-neng-1-may-have-tried-shortcut-before-barrier-reef-grounding/story-e6freoof-1225850073928>.

10. Ben Sharples, *Damaged Chinese Coal Ship Won't Enter Port Until May (Update2)*, BUS. WK. (Apr. 22, 2010), <http://www.businessweek.com/news/2010-04-22/damaged-chinese-coal-ship-won-t-enter-port-until-may-update2-.html>.

11. Press Release, Queensl. Gov't, *Shen Neng Departs* (May 31, 2010), http://www.msq.qld.gov.au/-/media/01caaa78-b1a6-41c9-a161-f14cfdc6ea97/pdf_shen_neng_1_31_may.pdf.

12. Phil Mercer, *Australia Plans Tough Great Barrier Reef Shipping Laws*, BBC (Apr. 19, 2010), <http://news.bbc.co.uk/2/hi/asia-pacific/8628893.stm>.

13. One nautical mile is equivalent to approximately 1.15 miles.

14. United Nations Convention on the Law of the Sea arts. 56-57, Dec. 10, 1982, 1833 U.N.T.S. 397 [hereinafter UNCLOS]; see also Zouhair A. Kronfol, *The Exclusive Economic Zone: A Critique of Contemporary Law of the Sea*, 9 J. MAR. L. & COM. 461, 461 (1977).

15. UNCLOS, *supra* note 14.

16. See Lakshman Guruswamy, *The Promise of the United Nations Convention on the Law of the Sea (UNCLOS): Justice in Trade and Environment Disputes*, 25 ECOLOGY L.Q. 189, 209 (1998) (describing UNCLOS).

17. Int'l Maritime Org. [IMO], *Implications of the United Nations Convention on the Law of the Sea for the International Maritime Organization*, at 7-10, LEG/MISC.6 (Sept. 10, 2008).

resources, the IMO should allow increased coastal state jurisdiction over EEZs. It should permit coastal states like Australia to introduce effective protective measures throughout ecologically sensitive areas like the Reef.

II. THE EEZ AS A FAILED ATTEMPT TO BALANCE COASTAL STATE JURISDICTION AND NAVIGATIONAL FREEDOM

The United Nations held a series of conferences on the law of the sea between 1958 and 1982 to negotiate UNCLOS,¹⁸ which Australia ratified in 1994.¹⁹ One outcome of this decades-long effort was the creation of the EEZ. The EEZ reflected a compromise between navigational freedom and coastal states' need for jurisdiction over marine resources,²⁰ but UNCLOS's resulting balance weighs too heavily in favor of navigational freedom, leaving coastal states like Australia unable to protect natural resources. Throughout the mid-twentieth century, coastal nations "extend[ed] seaward their claims to jurisdiction over what [was] traditionally . . . recognized as the free seas," arguing that they had exclusive jurisdiction over territories ranging up to two hundred nautical miles from their baselines.²¹ Coastal states have strong incentives to claim jurisdiction over this water: most fish stocks and oil and gas deposits lie within two hundred nautical miles of coasts, and most marine, scientific, and shipping activity takes place there.²² But this "ocean enclosure movement" ran counter to the longstanding international norm that seas must remain free for navigation.²³

The concept of the EEZ—"the most fundamental change" brought by UNCLOS²⁴—was established at the final Conference on the Law of the Sea (UNCLOS III).²⁵ It converted the area extending two hundred nautical miles out to sea from a coastal state's baseline²⁶ from a part of the high seas into this new type of area.²⁷ Under UNCLOS, there are now three types of maritime

18. Lewis M. Alexander, *The Ocean Enclosure Movement: Inventory and Prospect*, 20 SAN DIEGO L. REV. 561, 566-67 (1982).

19. U.N. Div. for Ocean Affairs and the Law of the Sea, *United Nations Convention on the Law of the Sea, Chronological List of Ratifications as at 15 November 2010*, UNITED NATIONS (Nov. 15, 2010), http://www.un.org/Depts/los/reference_files/chronological_lists_of_ratifications.htm.

20. See AUSTL. MAR. SAFETY AUTH., REPORT OF THE GREAT BARRIER REEF SHIPPING REVIEW STEERING COMMITTEE, REVIEW OF SHIP SAFETY AND POLLUTION PREVENTION MEASURES IN THE GREAT BARRIER REEF ¶ 2.40 (2001), available at http://www.amsa.gov.au/Shipping_Safety/Great_Barrier_Reef_and_Torres_Strait/GBR_Review_Report/Documents/gbr.pdf (noting that UNCLOS "represents a delicate balance between the increasing and often competing demands of coastal States and those of traditional freedoms of navigation"); David M. Dzidzornu, *Coastal State Obligations and Powers Respecting EEZ Environmental Protection Under Part XII of the UNCLOS: A Descriptive Analysis*, 8 COLO. J. INT'L ENVTL. L. & POL'Y 283, 292 (1997) (explaining that "UNCLOS balances the coastal state's interests within its EEZ against the maritime interests of other states in that zone"); see also Kronfol, *supra* note 14, at 461 (describing the EEZ concept as a "compromise").

21. Alexander, *supra* note 18, at 561.

22. Kronfol, *supra* note 14, at 463.

23. Alexander, *supra* note 18, at 562.

24. Kronfol, *supra* note 14, at 461.

25. Alexander, *supra* note 18, at 570. For the first appearance of the EEZ as a concept, see Kenya, Draft Articles on Exclusive Economic Zone Concept, U.N. Doc. A/AC.138/SC.II/L.10; GAOR, 27th Sess., Supp. No. 21, U.N. Doc. A/8721, at 180 (1972).

26. UNCLOS, *supra* note 14, arts. 56, 57; see also Kronfol, *supra* note 14, at 461.

27. Horace B. Robertson, Jr., *Navigation in the Exclusive Economic Zone*, 24 VA. J. INT'L L.

zones with different governing legal regimes. Coastal states have a high degree of jurisdictional control over the territorial sea,²⁸ which extends twelve nautical miles outward from the baseline; here, their authority is limited only by other states' right of innocent passage.²⁹ By contrast, coastal states have no jurisdictional control over the high seas.³⁰ Jurisdiction in the EEZ falls between these two extremes. A coastal state may exercise jurisdiction in its EEZ, but only over resources and economic activities.³¹ Furthermore, in asserting jurisdiction over its EEZ, a state may not exercise the "nearly absolute authority" over resources and activities in its EEZ that it may over its territorial sea³²—it must "have due regard to the rights and duties of other states" guaranteed by UNCLOS,³³ especially the freedom of navigation.³⁴

By creating the EEZ, UNCLOS gave coastal states significantly greater control than they had previously enjoyed over the waters adjacent to their territorial seas.³⁵ UNCLOS also made coastal states responsible for protecting marine resources in their EEZs through national legislation and regulation.³⁶ Despite giving coastal states increased control and responsibility over their EEZs, the EEZ compromise continues to favor the freedom of navigation over coastal state jurisdiction—UNCLOS's requirement that coastal states have "due regard" for the freedom of navigation sharply constrains their ability to impose and enforce environmental efforts.³⁷

UNCLOS limits coastal state environmental regulatory efforts in order to protect the freedom of navigation in three ways. First, UNCLOS stipulates that any environmental protective measures must conform to international standards: "[L]aws and regulations for the prevention, reduction and control of pollution from vessels [must conform] to and [give] effect to generally

865, 865 (1983).

28. *Id.*

29. Daniel Bodansky, *Protecting the Marine Environment from Vessel-Source Pollution: UNCLOS III and Beyond*, 18 *ECOLOGY L.Q.* 719, 738 (1991).

30. Robert B. Krueger & Myron H. Nordquist, *The Evolution of the 200-Mile Exclusive Economic Zone: State Practice in the Pacific Basin*, 19 *VA. J. INT'L L.* 321, 322-23 (1979).

31. Robertson, *supra* note 27, at 865.

32. Krueger & Nordquist, *supra* note 30, at 322.

33. UNCLOS, *supra* note 14, art. 56(2).

34. *Id.* art. 58(1).

35. Bodansky, *supra* note 29, at 741; *see also* Emeka Duruigbo, *Reforming the International Law and Policy on Marine Oil Pollution*, 31 *J. MAR. L. & COM.* 65, 76 (2000) (noting that coastal states "recorded some achievements" in jurisdiction over their EEZs); Dzidzornu, *supra* note 20, at 294 (noting that UNCLOS "recognizes and affirms a coastal state's inherent powers over the natural resources within its EEZ").

36. Robertson, *supra* note 27, at 896-97; *see also* UNCLOS, *supra* note 14, art. 220(3) (describing antipollution enforcement powers of coastal states in EEZs); David S. Ardia, *Does the Emperor Have No Clothes? Enforcement of International Laws Protecting the Marine Environment*, 19 *MICH. J. INT'L L.* 497, 534-35 (1997) (describing the obligations of coastal states to conserve and manage natural resources and to "[determine] the allowable catch of living resources" in EEZs); Duruigbo, *supra* note 35, at 76 (noting that UNCLOS "creates legally binding obligations on states to protect the marine environment"); Dzidzornu, *supra* note 20, at 292 (noting that UNCLOS "obligates the coastal state to adopt laws and regulations to prevent, reduce, and control pollution of the marine environment").

37. Bodansky, *supra* note 29, at 720; *see also* Jon M. Van Dyke, *Balancing Navigational Freedom with Environmental and Security Concerns*, 15 *COLO. J. INT'L ENVTL. L. & POL'Y* 19, 28 (2004).

accepted international rules and standards.”³⁸ The source of these international rules and standards is “the competent international organization or general diplomatic conference,”³⁹ which is the IMO.⁴⁰ The benefit to navigational freedom from having only one source for standards in EEZs is clear: ships passing through different states’ EEZs will always encounter the same environmental standards and therefore will not need to adjust their equipment, staffing, or practices.⁴¹ The requirement that antipollution measures conform to international standards, however, restricts coastal states’ ability to protect their own marine resources. When international standards for environmental protection are insufficient, coastal states cannot act unilaterally to protect their resources but must instead submit a request and receive approval from the IMO to implement heightened protective measures.⁴² Petitioning the IMO is often futile, since the IMO has been reluctant to alter international shipping rules and standards to accord with environmental concerns.⁴³ The IMO is “*primarily* a forum for merchant marine interests,” not for environmental protection.⁴⁴ If the IMO denies a coastal state’s request to authorize heightened protective measures, the coastal state must settle for implementing international standards that are often insufficient.

The second way UNCLOS ensures that coastal state environmental efforts do not interfere with the freedom of navigation in EEZs is by limiting coastal states’ ability to enforce protective measures. A coastal state may not enforce antipollution measures unless the threat of pollution presented by a vessel in its EEZ “crosses a certain threshold”⁴⁵—the coastal state must have “clear grounds for believing that a vessel” has “committed a violation of applicable international rules and standards for the prevention, reduction and control of pollution from vessels or laws and regulations of that State conforming and giving effect to such rules and standards.”⁴⁶ Even then, the coastal state may only “requir[e] the vessel to give information regarding its identity and port of registry, its last and next port-of-call and other relevant information to establish whether a violation has occurred.”⁴⁷ It may engage in more direct enforcement action, such as inspecting a ship, only when the state

38. UNCLOS, *supra* note 14, art. 211(5).

39. *Id.* Importantly, coastal states “cannot prescribe national standards of construction, design, equipment, or manning of vessels . . . that do not give effect to generally accepted rules or standards . . . established by the IMO.” Dzidzormu, *supra* note 20, at 299.

40. Robertson, *supra* note 27, at 899.

41. Paul Stephen Dempsey, *Compliance and Enforcement in International Law—Oil Pollution of the Marine Environment by Ocean Vessels*, 6 NW. J. INT’L L. & BUS. 459, 542 (1984); see also Andrew W. Anderson, *National and International Efforts To Prevent Traumatic Vessel Source Oil Pollution*, 30 U. MIAMI L. REV. 985, 1000 (1975) (explaining that “[p]ractical considerations dictate that a ship which visits many countries each year should not be subjected to conflicting requirements as to construction and equipment by each nation, but rather should be required to comply only with uniform international standards”).

42. UNCLOS *supra* note 14, art. 211(6)(a).

43. See *infra* Part III.

44. Ardia, *supra* note 36, at 528 (emphasis added).

45. Robertson, *supra* note 27, at 899.

46. UNCLOS, *supra* note 14, art. 220(3).

47. Robertson, *supra* note 27, at 899.

has “clear grounds for believing” that a vessel has “committed a violation . . . resulting in a substantial discharge [of pollution].”⁴⁸ If there is “clear objective evidence” of that violation, the coastal state can “institute proceedings, including the detention of the vessel.”⁴⁹ But the flag state⁵⁰ of the vessel accused of the violation may, within six months of the start of the proceedings, suspend them and remove the proceedings to the flag state, unless the violation caused major damage or the flag state “has repeatedly disregarded its obligation to enforce effectively the applicable international rules and standards in respect of violations committed by its vessels.”⁵¹ A coastal state’s ability to enforce environmental rules is therefore significantly curtailed; only when a vessel has already emitted substantial pollution can a coastal state take any action against the vessel beyond asking for the vessel’s basic information.

Finally, UNCLOS limits coastal state environmental efforts in order to protect the freedom of navigation by providing coastal states with few options for imposing protective measures even in navigationally challenging or ecologically sensitive areas. Article 211(6)(a) provides that where an area in an EEZ is particularly navigationally challenging or ecologically sensitive, a coastal state may “petition the [IMO] to permit more stringent regulations” in that area.⁵² This clause provides states with few effective options, however, because requested restrictions cannot include “design, construction, manning or equipment standards other than generally accepted international rules and standards.”⁵³

In short, UNCLOS protects navigational freedom by placing heavy constraints on coastal states’ jurisdiction in their EEZs. In so doing, the Convention curtails the ability of coastal states to implement and enforce measures protecting marine resources.

III. EXPANDING COASTAL STATE JURISDICTION IN EEZS: THE PARTICULARLY SENSITIVE SEA AREA

UNCLOS has failed to appropriately balance coastal state jurisdiction and the freedom of navigation. With the creation of Particularly Sensitive Sea Areas, the IMO took a step toward correcting this problem by expanding coastal state jurisdiction in limited areas of EEZs, but it has not yet made effective use of this new framework.

At the request of coastal states,⁵⁴ the IMO passed IMO Assembly Resolution 720(17), establishing “guidelines for designating special zones and

48. UNCLOS, *supra* note 14, art. 220(5).

49. *Id.* art. 220(6).

50. The flag state is the state that registers or licenses a vessel.

51. UNCLOS, *supra* note 14, art. 228(1).

52. Dempsey, *supra* note 41, at 545 (citing UNCLOS, *supra* note 14, art. 211(6)(a)).

53. Robertson, *supra* note 27, at 904-5 (citing UNCLOS, *supra* note 14, art. 211(6)(c)); see also James Peter Aston, *Regulating the Environmental and Socioeconomic Impacts of Shipping and Other Vessel Based Activities in the Great Barrier Reef Marine Park and World Heritage Area 92-93* (2008) (unpublished Ph.D thesis, University of Wollongong), available at <http://ro.uow.edu.au/theses/64/>.

54. Bodansky, *supra* note 29, at 766.

identifying Particularly Sensitive Sea Areas (PSSAs).”⁵⁵ PSSAs are “areas with ‘ecological, socio-economic, or scientific’ importance.”⁵⁶ The IMO can designate areas as PSSAs in states’ territorial seas and EEZs.⁵⁷ After determining that the Reef was an area of ecological, social, cultural, economic, and scientific importance,⁵⁸ the IMO designated the Great Barrier Reef the world’s first PSSA in 1990.⁵⁹ The area of the Reef covered by the PSSA is known as the Great Barrier Reef Region,⁶⁰ which “extends 2,300 kilometres along the east coast of Queensland and covers an area of 346,000 square kilometres,”⁶¹ passing through both Australia’s territorial sea and its EEZ. The Torres Strait is not part of the Great Barrier Reef Region, but the IMO extended the Reef PSSA to the Torres Strait in 2005.⁶²

In theory, the PSSA is a powerful tool for protecting environmentally sensitive areas in EEZs. When an area is designated as a PSSA, a coastal state can ask the IMO for permission to issue requirements for vessels that would “impose[] considerable restrictions on the freedom of the seas and passage” in the PSSA.⁶³ The IMO must approve all protective measures for PSSAs, and these measures must help protect maritime life or make ships safer.⁶⁴ Resolution 720(17) strongly reflects the language of Article 211(6)(a) of UNCLOS, but the PSSA designation goes one step further: it allows the IMO to impose “new or non mandatory measures to be taken in all maritime zones of a coastal State,” including measures that affect design, construction, manning, or equipment standards.⁶⁵ The creation of the PSSA mechanism was a step forward in expanding coastal states’ ability to protect marine resources, as it allows the IMO to impose new restrictive measures in sensitive areas of EEZs.

Nevertheless, the PSSA regime has not lived up to its potential. Because “[i]dentification as a [PSSA] is nothing more . . . than a qualification and a basis on which protective measures may be taken” by the IMO,⁶⁶ an area’s designation as a PSSA has no value if the IMO chooses not to authorize

55. Hélène Lefebvre-Chalain, *Fifteen Years of Particularly Sensitive Sea Areas: A Concept in Development*, 13 OCEAN & COASTAL L.J. 47, 47 (2007).

56. *Id.* at 48 (quoting IMO, *Revised Guidelines for the Identification and Designation of Particularly Sensitive Areas*, Annex ¶ 1.2, IMO Assemb. Res. A. 982 (24) (Feb. 6, 2006), available at http://www5.imo.org/SharePoint/blastDataHelper.asp/data_id%3D25322/A982%2824%29.pdf).

57. Robert C. Beckman, *PSSAs and Transit Passage—Australia’s Pilotage System in the Torres Strait Challenges the IMO and UNCLOS*, 38 OCEAN DEV. & INT’L L.J. 325, 327 (2008).

58. Aston, *supra* note 53, at 92.

59. Lefebvre-Chalain, *supra* note 55, at 48.

60. Aston, *supra* note 53, at xiii, 92; see also Lefebvre-Chalain, *supra* note 55, at 66 fig.2 (showing the geographical bounds of the Great Barrier Reef Region); IMO, *Identification of the Great Barrier Reef Region as a Particularly Sensitive Area*, Annex, IMO Marine Env’t Prot. Comm. Res. 44 (30) (Nov. 16, 1990), available at http://www5.imo.org/SharePoint/blastDataHelper.asp/data_id%3D17630/44%2830%29.pdf (setting forth a geographical description of the Great Barrier Reef Region).

61. Aston, *supra* note 53, at 1. The area is also a Marine Protected Area under Australian domestic law and a Special Area under the International Convention for the Prevention of Pollution from Ships. *Id.* at 88-90.

62. *The Torres Strait Particularly Sensitive Sea Area*, AUSTL. MAR. SAFETY AUTH., http://www.amsa.gov.au/Marine_Environment_Protection/Torres_Strait (last visited Dec. 4, 2010).

63. Lefebvre-Chalain, *supra* note 55, at 50.

64. *Id.* at 54-55.

65. Aston, *supra* note 53, at 93.

66. Peet, *supra* note 60, at 469-70.

protective measures. While the IMO in theory can institute new measures affecting design, construction, manning, or equipment standards in all maritime zones of a PSSA—including the EEZ—it has been reluctant to do so in practice. In the Reef PSSA, for example, the IMO has authorized stringent regulations only in two very navigationally challenging areas: the northern part of the Inner Route and the Torres Strait. In the northern part of the Inner Route, vessels are subject to mandatory pilotage—meaning that they must hire highly skilled, experienced marine pilots to steer them through the area⁶⁷—and to the Great Barrier Reef and Torres Strait Vessel Traffic Service (REEFVTS), Australia’s mandatory reporting and surveillance system.⁶⁸ In the Torres Strait, vessels are subject to REEFVTS but not mandatory pilotage.⁶⁹

Furthermore, the IMO has refused to extend either mandatory pilotage or mandatory reporting elsewhere in the PSSA. After a container ship grounded on the Reef outside of the mandatory pilotage area in 2000, environmentalists called for “compulsory pilotage to be extended for the entire length of the Great Barrier Reef Marine Park.”⁷⁰ The governments of Australia and Papua New Guinea instead petitioned the IMO to authorize mandatory pilotage specifically in the Torres Strait. Other members of the IMO—especially the United States⁷¹ and Singapore—opposed authorizing mandatory pilotage in the area, arguing that it would interfere with maritime states’ freedom of navigation through the international strait.⁷² The IMO came to the conclusion that it could not endorse mandatory pilotage in the strait “despite the obvious environmental vulnerability of [the] area and the risk posed by international traffic.”⁷³ It agreed only to recommend voluntary pilotage.

UNCLOS did not strike the appropriate balance between coastal state jurisdiction and the freedom of navigation. While UNCLOS gave coastal states the right and the obligation to protect marine resources in their EEZs, its requirement that protective measures respect the freedom of navigation leaves coastal states largely unable to impose or enforce effective protective measures. Although the IMO could readjust this balance using a mechanism of its own creation—the PSSA—it has not done so, failing to authorize protective measures throughout PSSAs. The consequences of the IMO’s failure are serious: coastal states cannot engage in needed environmental efforts even in EEZ areas that have been designated as having special ecological significance.

67. AUSTL. MAR. SAFETY AUTH., *supra* note 20, ¶ 3.1.

68. See Aston, *supra* note 53, at 151; Beckman, *supra* note 57, at 329; Peter Ottesen, Stephen Sparks & Colin Trinder, *Shipping Threats and Protection of the Great Barrier Reef Marine Park—The Role of the Particularly Sensitive Sea Area Concept*, 9 INT’L J. MARINE & COASTAL L. 507, 509 (1994). REEFVTS was previously known as the Great Barrier Reef Ship Reporting System (REEFREP). Aston, *supra* note 53, at 143.

69. Austl. Transp. Safety Bureau, *REEFVTS: Great Barrier Reef and Torres Strait Vessel Traffic Service (VTS)*, AUSTL. MAR. SAFETY AUTH., http://www.amsa.gov.au/shipping_safety/REEFVTS/ (last visited Oct. 1, 2010).

70. AUSTL. MAR. SAFETY AUTH., *supra* note 20, ¶ 3.12.

71. The United States is not a party to UNCLOS but is a member of the IMO.

72. Julian Roberts, *Compulsory Pilotage in International Straits: The Torres Strait PSSA Proposal*, 37 OCEAN DEV. & INT’L L. 93, 93 (2006).

73. *Id.* at 106.

IV. THE NEED TO FURTHER EXPAND COASTAL STATE JURISDICTION IN EEZS

The IMO should strengthen the protective power of coastal states by authorizing restrictive measures where needed throughout PSSAs. In Australia, the IMO should authorize mandatory pilotage and reporting throughout the Reef. These measures would help prevent accidents like the *Shen Neng 1* grounding. The institution of mandatory pilotage and reporting requirements in portions of the Reef was a “significant step forward in reducing the risk of major oil spills.”⁷⁴ The accident rate has fallen by over fifty percent in the northern part of the Inner Route since mandatory pilotage was introduced there.⁷⁵ REEFVTS “has the capability to predict potential traffic conflicts ahead of time and advise on appropriate action such as when a ship may be standing into shallow water or deviating from a recommended route.”⁷⁶ One expert estimated that the system “averted at least five near misses” from 2002 to 2005.⁷⁷

Indeed, Australia could probably have prevented the *Shen Neng 1* wreck if it had employed mandatory pilotage and mandatory reporting throughout the Reef. Pilotage would have been of great help to the *Shen Neng 1*, since a marine pilot would likely have avoided the mistakes committed by the crew. Marine pilots “have highly developed navigation and ship handling skills, as well as intimate knowledge of the local area and its environment”⁷⁸—in contrast to the sleep-deprived first mate of the *Shen Neng 1*, who had never before navigated the passage his shipmaster was attempting to use as a short cut. REEFVTS also could have prevented the accident; if the *Shen Neng 1* crew had participated in REEFVTS, Australia could have alerted the crew to change course before the ship grounded. When the shipmaster changed the *Shen Neng 1*'s route, he did not input a new route into the ship's GPS unit, so the ship's alarms did not sound when the ship veered off the new route, and the crew did not realize that that the ship was in peril until it had already grounded.⁷⁹ Australia's REEFVTS system prevents such errors—it automatically detects when a ship veers off course and notifies the crew.

Because the IMO has not permitted mandatory pilotage or reporting in the area of the Reef where the *Shen Neng 1* wreck occurred, Australia could take no effective measures to prevent the accident. Instead, Australia could only respond to the accident after it had already occurred, an inadequate tool for fighting catastrophic marine pollution. On April 14, Australian police arrested *Shen Neng 1*'s shipmaster, charging him with “being liable for a vessel causing damage in a marine park,” and its chief officer, charging him with “the more serious breach of being in charge of the vessel at the time the accident

74. Wendy Craik, Protecting the Great Barrier Reef from an Oil Spill 9 (undated) (unpublished conference paper) (on file with the International Oil Spill Conference), available at <http://www.iosc.org/Papers/01751.pdf> (last visited Dec. 8, 2010).

75. Aston, *supra* note 53, at 151.

76. *Id.* at 153.

77. *Id.*

78. AUSTL. MAR. SAFETY AUTH., *supra* note 20, ¶ 3.1.

79. AUSTL. TRANSP. SAFETY BUREAU, *supra* note 1, at 4-6.

occurred.”⁸⁰ Both men could be fined if convicted—\$51,200 and \$205,000 respectively—and the chief officer could be sentenced to three years in prison.⁸¹ COSCO, the Chinese-owned corporation that owns the *Shen Neng 1*, also faces a \$1 million fine.⁸² Liability is a limited tool, however, because it only addresses catastrophes that have already occurred, and it does not adequately compensate for “irreversible” environmental harm.⁸³ It is more effective to prevent environmental damages than to respond to them after the fact.⁸⁴

Australia would be better able to prevent accidents like the *Shen Neng 1* grounding if the IMO were to authorize mandatory pilotage and reporting throughout the Reef. However, Australia faces major obstacles in convincing the IMO to authorize these measures. First, as noted above, the IMO has refused to grant Australia permission to impose protective measures anywhere but in the most navigationally hazardous parts of the Reef. The Outer Route, where the *Shen Neng 1* wreck occurred, is not navigationally challenging; it is “considerably simpler to navigate” than the Inner Route.⁸⁵ A sleep-deprived first mate—not ocean dangers—likely caused the grounding of the *Shen Neng 1*. Furthermore, Australia has not argued that the Outer Route is more ecologically sensitive than the areas where the IMO has previously refused to authorize mandatory pilotage. Finally, other states in the IMO would likely oppose any enhanced protective measures in the Reef, arguing that the cost of enhanced environmental protection would unduly infringe upon maritime states’ ability to navigate freely through Australia’s EEZ.⁸⁶ Tracking and reporting mechanisms, for example, might require that ships be fitted with expensive new technology. Mandatory pilotage would require vessels to hire experienced pilots, an expensive endeavor. Perhaps anticipating Australia’s requests for heightened regulation, the IMO recently reiterated that it can only recommend, not require, compulsory pilotage in the Outer Route.⁸⁷

Nevertheless, the increasing threat posed by maritime trade to dwindling marine resources justifies enhancing coastal state jurisdiction over EEZs.

80. Meraiah Foley, *Australia Arrests Chinese Crew of Ship in Reef Accident*, N.Y. TIMES, Apr. 14, 2010, at A15. Since there was objective evidence that the Chinese carrier had violated Australian law by entering a prohibited area, Australia had the authority under Article 220(6) of UNCLOS to institute domestic proceedings against the ship.

81. *Id.*

82. Kristie Thong, *Cosco Could Face US\$1m Fine*, PROCUREMENTASIA (Apr. 5, 2010), <http://www.procurement-online.com/news/18830>.

83. Anderson, *supra* note 41, at 987; see also Steve Raaymakers, *Ship Sourced Oil Pollution in the Great Barrier Reef: Causes, Frequency, Response and Prevention*, in HULLS, HAZARDS AND HARD QUESTIONS: SHIPPING IN THE GREAT BARRIER REEF: REDUCING THE RISK OF SPILLING OIL AND OTHER HAZARDOUS SUBSTANCES 11, 16 (Peter Ottesen ed., 1994), available at http://www.gbrmpa.gov.au/_data/assets/pdf_file/0010/4213/ws019_paper_01.pdf (noting the difficulties in responding to oil spills after they have occurred).

84. Raaymakers, *supra* note 83.

85. Aston, *supra* note 53, at 28.

86. The Australian government itself has expressed concerns about the costs related to extending compulsory pilotage. AUSTL. MAR. SAFETY AUTH., *supra* note 20, ¶¶ 3.43-3.53.

87. Michelle Wiese Bockmann, *Barrier Reef at Risk from Failure of Diplomacy*, AUSTL. (Apr. 10, 2010), <http://www.theaustralian.com.au/news/nation/barrier-reef-at-risk-from-failure-of-diplomacy/story-e6frg6nf-1225852024655>.

Shipping in the Reef poses a serious environmental threat, harming marine life and human livelihoods in the region.⁸⁸ This presents a coastal state like Australia with two impossible alternatives. It cannot cease to trade, as it is dependent on international shipping.⁸⁹ At the same time, it cannot permit traffic to destroy the Reef, “a priceless asset both nationally and internationally” that “sustains a variety of commercial and recreational activities and livelihoods.”⁹⁰ Australia has an obligation under UNCLOS to protect the natural resources in its EEZ and guard itself against costly and environmentally devastating accidents like the *Shen Neng I* grounding. Mandatory pilotage and reporting offer a solution—they provide two tested means of preventing catastrophic accidents while still permitting marine traffic to pass through Australia’s water.

V. CONCLUSION

UNCLOS created the EEZ as a compromise after nearly thirty years of debate about how to balance coastal state jurisdiction with the traditional freedom of the sea. In the twenty years since the ratification of UNCLOS, international shipping has increased dramatically while the global marine environment has degraded rapidly. For example, one third of coral reef species are now facing extinction.⁹¹ The balance UNCLOS struck is no longer sufficient to permit coastal states to protect their natural resources—their right and responsibility under UNCLOS. The *Shen Neng I* incident illustrates this problem: while protective measures like mandatory reportage and REEFVTS—which are authorized elsewhere in the Reef—could prevent similar accidents, the IMO has not authorized the use of these tools throughout the Reef PSSA.

Coastal states must be given the ability to protect the natural resources of their EEZs. The IMO can give them this ability, allowing states to protect their natural reasons while continuing to respect navigational freedom. The IMO should act under Resolution 720(17) to authorize protective measures uniformly throughout PSSAs. In Australia, the IMO should authorize mandatory pilotage and reporting throughout the Reef, enabling it to prevent environmental disasters like the *Shen Neng I* grounding before they occur.

88. Aston, *supra* note 53, at 36, 46.

89. Gregory French, *Protecting the Marine Environment of the Great Barrier Reef: What Is the Role of International Law?*, in HULLS, HAZARDS AND HARD QUESTIONS: SHIPPING IN THE GREAT BARRIER REEF: REDUCING THE RISK OF SPILLING OIL AND OTHER HAZARDOUS SUBSTANCES, *supra* note 83, at 132, 132, available at http://www.gbmpa.gov.au/_data/assets/pdf_file/0014/4226/ws019_paper_11.pdf.

90. Aston, *supra* note 53, at 1.

91. Jenny Marder, *Study: One-third of Coral Reef Species Face Extinction*, PBS (July 11, 2008), http://www.pbs.org/newshour/updates/science/july-dec08/coral_07-11.html.

