

**Cooperation for the Safety of Navigation in East Asia:
“Legal Arrangements and Political Implications**

Organized by the National Institute for South China Sea Studies

November 17-18, 2011, Haikou, China

Panel IV: Navigation in the South China Sea

The Use of PSSAs in the South China Sea

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A. Introduction

The South China Sea contains one of the most bio-diverse ecosystems of the world.¹ Not only is it a rich fishing ground, it accounts for a large proportion of the world's coral reefs.² However, it is subject to increasing levels of competing uses, particularly from shipping activities. Several international shipping routes pass through the South China Sea. International shipping poses a substantial risk of oil pollution which could have grave consequences for the marine environment in the South China Sea.

The 1982 United Nations Convention on the Law of the Sea (UNCLOS or the 'Convention')³ gives coastal States varying degrees of authority to regulate pollution from vessels in both the territorial sea and in the exclusive economic zone. However, the complex territorial disputes over the features in the South China Sea, including the Spratly Islands and the Paracels, limits the efforts of littoral States in the South China Sea to take unilateral measures to regulate ship-source pollution in waters surrounding the disputed features. Any such unilateral measures will be subject to protest and counter-protest and will undoubtedly escalate tensions presently simmering in the region.

The purpose of this Paper is to examine whether States surrounding the South China Sea could cooperate to enhance navigational safety and protect the marine environment from ship-source pollution by establishing a Particularly Sensitive Sea Area (PSSA) in the South China Sea.

*The authors would like to thank Youna Lyons, Adjunct Senior Research Fellow at the Centre for International Law, NUS, for her contribution in the making of this Paper.

¹ See PKL Ng and KS Tan, 'The State of Marine Biodiversity in the South China Sea', (2000) Raffles Bulletin of Zoology, Supp Ser No 8, at 3 -7; see also SH Tan and LS Chen, 'Aquatic Biodiversity of the South China Sea', (2008) Raffles Bulletin of Zoology, Supp Ser No 19, at 292.

² See UNEP/GEF, *Project Document: Reversing Environmental Degradation Trends in the South China Sea and Gulf of Thailand*, (2001), at 1, online: UNEP/GEF <http://www.unepscs.org/index.php?option=com_remository&Itemid=132&func=fileinfo&id=381>.

³ The *United Nations Convention on the Law of the Sea*, 10 December 1982, UNTS 1833 at 3 (entered into force 16 November 1994) [UNCLOS], online: United Nations <http://www.un.org/Depts/los/convention_agreements/convention_overview_convention.htm>.

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B. Regulation of Ship-Source Pollution under UNCLOS

Parts II, III and IV of UNCLOS contain general provisions setting out the powers of coastal States and archipelagic States to regulate pollution from ships exercising the rights of innocent passage, transit passage or archipelagic sea lanes passage through their waters.⁴ Article 19 provides that if a ship exercising passage in the territorial sea carries out an act of wilful and serious pollution, its passage is deemed not innocent.⁵

The Convention provides that ships exercising the rights of transit passage and archipelagic sea lanes passage must comply with 'generally accepted international regulations, procedures and practices for the prevention, reduction and control of pollution from ships'.⁶ This phrase in effect 'incorporates by reference' the international regulations adopted by the International Maritime Organization (IMO) on ship-source pollution, and ensures that ships must comply with new and amended regulations once they become generally accepted.⁷ It is generally agreed that the generally accepted international regulations, procedures and practices referred to in the UNCLOS provisions are those set out in the International Convention for the Prevention of Pollution From Ships 1973 as modified by the Protocol of 1978 (MARPOL).⁸ The special provision on the enforcement powers of littoral States with respect to serious threats to pollution in straits used for international navigation is set out in Article 233 of UNCLOS.

The prescriptive jurisdiction of States to deal with pollution from vessels is set out in Article 211 of UNCLOS. As in maritime zones under the sovereignty of the coastal State, the rights of States to deal with ship-based pollution are based upon 'generally accepted international regulations, procedures and practices for the prevention, reduction and control of pollution from ships'. Flag States must adopt laws that 'at least have the same effect' as generally accepted international regulations.⁹ Although coastal States have fairly broad powers to regulate ship-source pollution in their territorial sea, their powers to

⁴ *Ibid*, Articles 21, 42 and 54.

⁵ See also David Anderson, *Modern Law of the Sea: Selected Essays*, (Martinus Nijhoff, 2008) at 262 – 263.

⁶ UNCLOS, *supra* note 3, Articles 39(2)(b) and 54.

⁷ The expression 'competent international organization' when used in the singular in UNCLOS, applies exclusively to the IMO as the specialized agency within the United Nations system responsible for the international regulation of shipping, see International Maritime Organization, *Implications of the United Nations Convention on the Law of the Sea for the International Maritime Organization*, Study by the Secretariat of the International Maritime Organization [IMO Study], 10 September 2008, at 7 – 10, online: IMO <<http://www.imo.org/ourwork/legal/documents/6.pdf>>.

⁸ The *1973 International Convention for the Prevention of Pollution from Ships as amended by the Protocol of 1978*, 17 February 1978, 1340 UNTS 61; 1988 ATS 29; 17 ILM 546 (1978) (entered into force 2 October 1983), online: CIL <<http://cil.nus.edu.sg/1978/1973-international-convention-for-the-prevention-of-pollution-from-ships-as-amended-by-the-protocol-of-1978-marpol-7378/>>; See IMO Study, *ibid*, at 50.

⁹ UNCLOS, *supra* note 3, Article 211(2).

regulate ship-source pollution in the exclusive economic zones (EEZ) are more limited.¹⁰ The general rule is set out in Article 211(5), which provides that in the EEZ the coastal State may only adopt laws and regulations 'conforming to and giving effect to' generally accepted international rules and standards.

Article 211(6) of the Convention, however, provides an exception. It provides that coastal States can adopt stricter laws and regulations in a particular, clearly defined area of their respective EEZ if necessary for environmental reasons and if approved by the IMO. Although there is no provision in UNCLOS specifically referring to PSSAs, it is generally agreed that this article provides authority for the establishment of PSSAs in the EEZ.¹¹

C. Particularly Sensitive Sea Areas (PSSA)

A PSSA is an area that needs special protection through action by the IMO because of its significance for recognized ecological, socio-economic, or scientific attributes where such attributes may be vulnerable to damage by international shipping activities.¹² A PSSA can be designated by the IMO in specific areas of the territorial sea or the EEZ or both which are vulnerable to damage from international shipping activities with a view toward adopting specific measures to address that vulnerability in order to protect the marine environment.¹³ If the IMO designates a PSSA, it also approves 'associated protective measures' to reduce the threat of ship-source pollution in the PSSA.¹⁴ PSSAs are most likely to be proposed by coastal States when the area concerned is within both their territorial sea and their EEZ, since if a proposed PSSA is solely within the territorial sea of one coastal state, there may not be much advantage in declaring it a PSSA because the coastal State may have sufficient powers to adopt the same measures within its territorial sea without designating the area a PSSA.¹⁵ Therefore, the effect of a PSSA can be to impose measures to reduce ship-source pollution in the EEZ which a coastal State has no authority to impose unilaterally.¹⁶

¹⁰ See also Chelsea Purvis, 'Coastal State Jurisdiction under UNCLOS: The *Shen Neng 1* Grounding on the Great Barrier Reef' (2011) 36 Yale J Int'l L 207, at 210.

¹¹ IMO Study, *supra* note 7, at 63; See also Julian Roberts, *Marine Environment Protection and Biodiversity Conservation: The Application and Future Development of the IMO's Particularly Sensitive Sea Area Concept*, (Springer, 2010), at 100.

¹² *Revised Guidelines For The Identification And Designation Of Particularly Sensitive Sea Areas*, IMO Res A.982, 24th Sess (2005) at para 1.2, online: IMO <<http://docs.imo.org/Shared/Download.aspx?did=35657>>.

¹³ Robert C Beckman, 'PSSAs and Transit Passage-Australia's Pilotage System in the Torres Strait Challenges the IMO and UNCLOS' (2007) 38 Ocean Devel & Int'l L 325, at 327.

¹⁴ *Ibid*; see also IMO Study, *supra* note 7, at 63.

¹⁵ Beckman, *supra* note 13, at 328.

¹⁶ On the history of PSSAs, see Gerard Peet, 'Particularly Sensitive Sea Areas-A Documentary History,' (1994) 9 Int'l J Marine and Coastal L 469.

The designation of an area as a PSSA must be proposed by a Member Government (or Governments) to the IMO.¹⁷ Proposal must meet three requirements.¹⁸ First, the proposal must include information and supporting documentation to show that the proposed area has recognized ecological, socio-economic, or scientific attributes. Second, the proposal must include information and supporting documentation to show that the area is vulnerable from shipping activities. Third, the proposal must state that 'associated protective measures' within the competence of the IMO are available to prevent, reduce or eliminate the risk of pollution from shipping activities.

The associated protective measures which can be imposed in a PSSA are limited to actions that are to be, or have been, approved or adopted by IMO. They include the following:¹⁹

1. Designation of an area as a Special Area under MARPOL Annexes I, II or V, or a SOx emission control area under MARPOL Annex VI, or application of special discharge restrictions to vessels operating in the PSSA;
2. Adoption of ships' routing and reporting systems near or in the area, under the International Convention for the Safety of Life at Sea (SOLAS)²⁰ and in accordance with the General Provisions on Ships' Routing²¹ and the Guidelines and Criteria for Ship Reporting Systems.²² Examples include areas to be avoided, ships' routing measures or reporting systems;²³
3. Development and adoption of other measures aimed at protecting specific sea areas against environmental damage from ships, provided that they have an identified legal basis.

Where two or more Governments have a common interest in a particular area, they can formulate a co-ordinated proposal.²⁴ The co-ordinated proposal should contain integrated measures and procedures for co-operation between the proposing Member Governments. The application for a PSSA should clearly specify the category or categories of ships to which the proposed associated protective measures would apply, consistent with the provisions of UNCLOS, including provisions relating to vessels entitled to

¹⁷ *Supra* note 12, at para 3.1.

¹⁸ *Supra* note 12, at para 1.5.

¹⁹ *Supra* note 12, at para 6.1.

²⁰ The 1974 *International Convention for the Safety of Life at Sea*, 1 November 1974, 1184 UNTS 2; 1983 ATS No 22; 14 ILM 959; UKTS 46 (1980), Cmnd 7874 (entered into force 25 May 1980) [SOLAS], online: CIL <<http://cil.nus.edu.sg/1974/1974-international-convention-for-the-safety-of-life-at-sea/>>.

²¹ SOLAS, *ibid*, Chapter V, Regulation 10.

²² SOLAS, *supra* note 20, Chapter V, Regulation 11.

²³ *Supra* note 12, at para 7.5.2(4).

²⁴ *Supra* note 12, at para 3.1.

sovereign immunity.²⁵ The proposing State is also required to include in the application the details of action to be taken pursuant to domestic law for the failure of a ship to comply with the requirements of the associated protective measures and to ensure that any action taken should be consistent with international law as reflected in UNCLOS.²⁶

D. Existing PSSAs and Associated Protective Measures

The first PSSA to be designated was the Great Barrier Reef in Australia in 1990.²⁷ To date, a total of 13 PSSAs have been designated.²⁸ However, despite the fact that the richest marine biodiversity in the world is in Southeast Asia, no PSSAs have been designated in this region. The PSSAs which have been designated to date are:²⁹

1. The Great Barrier Reef, Australia (designated a PSSA in 1990);
2. The Sabana-Camagüey Archipelago in Cuba (1997);
3. Malpelo Island, Colombia (2002);
4. The sea around the Florida Keys, United States (2002);
5. The Wadden Sea, Denmark, Germany, Netherlands (2002);
6. Paracas National Reserve, Peru (2003);
7. Western European Waters (2004);
8. Extension of the existing Great Barrier Reef PSSA to include the Torres Strait (proposed by Australia and Papua New Guinea) (2005);
9. Canary Islands, Spain (2005);
10. The Galapagos Archipelago, Ecuador (2005);

²⁵ *Supra* note 12, at para 7.5.2(5).

²⁶ *Supra* note 12, at para 7.9.

²⁷ IMO, *Report of the Marine Environment Protection Committee on Its Thirtieth Session*, 8 January 1991, MEPC 30/24, Annex 17 [MEPC 30/24].

²⁸ The latest PSSA designated by the IMO was the Strait of Bonifacio; see *Designation of the Strait of Bonifacio as a Particularly Sensitive Sea Area*, MPEC Res 204, IMO, 62nd Sess (2011).

²⁹ *List of Adopted PSSAs*, online: IMO <<http://www.imo.org/OurWork/Environment/PollutionPrevention/PSSAs/Pages/Default.aspx>>.

11. The Baltic Sea area, Denmark, Estonia, Finland, Germany, Latvia, Lithuania, Poland and Sweden (2005);
12. The Papahānaumokuākea Marine National Monument, United States (2007); and
13. The Strait of Bonifacio, France and Italy (2011).

The coastal States proposing the designation of a PSSA will be required to set out the associated protective measures which are being proposed to protect the sensitive sea areas from shipping activities. The associated protective measures which have been adopted in the existing PSSAs include:³⁰

1. Areas to be avoided;
2. Area to be avoided (for ships > 200 gt carrying hydrocarbons and hazardous liquids in bulk);
3. Recommended routes;
4. Recommended tracks;
5. Mandatory no anchoring areas;
6. Mandatory deep water route;
7. Recommended/mandatory ship reporting scheme;
8. Mandatory reporting for single hull tankers carrying heavy grades of fuel oil;
9. Traffic separation scheme;
10. MARPOL Special Area; and
11. SOx Emission Control Area.

E. Sensitive Sea Areas in the South China Sea

The South China Sea contains many coral reefs.³¹ Much of the Spratly Islands area is designated as 'dangerous ground'³² on navigational maps because there are numerous coral reefs that are very

³⁰ See IMO, *Additional Protection for Particularly Sensitive Sea Areas (PSSAs)*, IMO/MPEC 46/6/1, 19 January 2001.

³¹ *Supra* note 2; see also John W McManus, *et al*, 'Towards Establishing a Spratly Islands International Marine Peace Park: Ecological Importance and Supportive Collaborative Activities with an Emphasis on the Role of Taiwan', (2010) 41 *Ocean Devel & Int'l L* 270, at 271.

shallow.³³ There is no map of the seas of South East Asia identifying marine sensitive sea areas or any comprehensive regional database documenting the sensitive sea areas. However, satellite mapping shows the proximity of many coral reefs and seamounts to shipping lanes, particularly where the shipping lane follows the Spratlys' dangerous grounds.³⁴

Publications by marine scientists from Southeast Asia point to the fact that the Spratlys' reefs appear to be ecologically critical and in need of urgent protection. Research has been conducted for conservation efforts focusing on the biodiversity on the northern Spratlys, including South Reef, North East Cay and Jackson Island.³⁵ In addition to a unique assemblage of species and biodiversity, the Spratly islands coral reefs might be a critical source for the renewal of reefs in the South China Sea; and thus, be equally critical to their resilience to other environmental stresses.³⁶ Alino also emphasized the importance of protecting the Spratly islands from a Filipino perspective.³⁷ More recently, there were talks to propose the establishment of a marine peace park in the Spratlys.³⁸ It was concluded that the Spratly Islands have considerable ecological and biodiversity value, both intrinsically, and as the source of larvae for coastal ecosystems throughout the South China Sea.³⁹

³² See generally Clive Schofield, 'Dangerous Ground – A Geopolitical Overview of the South China Sea', in S Bateman and R Emmers, eds, *The South China Sea: Towards a Cooperative Management Regime* (London: Routledge, 2009), at 7-25.

³³ For further details on the geographical description of the features in the Spratly Islands, see David Hancox & Victor Prescott, 'A Geographical Description of the Spratly Islands and an Account of Hydrographic Surveys Amongst those Islands' (1995) 1:6 IBRU Maritime Briefings 1.

³⁴ Halpin PN, et al (eds), *OBIS Data Set: Mapping Marine Mammals, Birds And Turtles* (2011), online: OBIS-SEAMAP <<http://seamap.env.duke.edu/>> and <http://www.comlmaps.org/extra/ngs/Ocean_Life-Diversity_Distribution-300dpi.pdf>.

³⁵ Nguyen Van Long, et al, 'Status of the Marine Biodiversity in the Northern Spratlys Islands', in Proceedings of the Conference on the Results of the Philippines-Vietnam Joint Oceanographic and Marine Scientific Research Expedition in the South China Sea (JOMSRE I to IV), 26-29 March 2008, Ha Long City, Vietnam.

³⁶ JW McManus and LAB Menez, 'The Proposed International Spratly Island Marine Park: Ecological Considerations', (1997) Proceedings of the 8th International Coral Reef Sym, vol 2, at 1943-1948.

³⁷ Portifirio M Alino, et al, 'Moving towards a Network of Marine Sanctuaries in the South China Sea: a View from the Philippines Shores', (2006) in the Proceedings of the 10th International Coral Reef Symposium, at 1477-1482.

³⁸ John W McManus, *supra* note 31.

³⁹ John W McManus, *supra* note 31, at 278.

F. Shipping Activities in the South China Sea

The South China Sea is host to a series of Sea Lanes of Communication (SLOCs) of regional and global significance.⁴⁰ These SLOCs connect constricting ‘chokepoints’ that provide entry to and egress from the South China Sea. The entry points include the following:⁴¹

1. Entry at the south-western entrance to the South China Sea, from the Straits of Malacca and Singapore, which is the most important sea lane in the region;
2. Entry in the southwest from the Karimata Strait, which provides access to the Java Sea and Indonesia’s archipelagic waters;
3. Entry in the north through the Taiwan Strait between Taiwan and mainland China;
4. Entry in the northeast, through the Bashi and Balintang Channels located between Taiwan and the Philippines main island of Luzon;
5. Entry from the east via the Mindoro Strait and Cape Verde Passage, connecting to the Sulu Sea within the archipelagic waters of the Philippines; and
6. Entry from the south via the Straits of Lombok and Makassar and then the Balabac Strait between the Philippines archipelago and Borneo.

Most of the reef areas in the Kalayaan Island Group claimed by the Philippines are designated as ‘areas to be avoided’ on navigational charts. The route which seems to pose the greatest threat to the marine environment is the route from the Singapore Strait up to Northeast Asia, which passes between Spratly Island and Vanguard Bank, within the claimed EEZ of Vietnam. Another route which poses a potential risk would be the route from Ho Chi Minh City to Manila, which passes just north of North Danger Reef, in the northeast corner of the Kalayaan Island Group. If a proposal to designate a PSSA is considered, research will have to be conducted to determine whether shipping activities pose a risk to vulnerable areas which might be included in a PSSA.

⁴⁰ Clive Schofield and Ian Townsend-Gault, ‘Brokering Cooperation Amidst Competing Maritime Claims: Preventative Diplomacy in the Gulf of Thailand and South China Sea’, in Aldo Chirop, *et al*, eds, *The Future of Ocean Regime-Building* (Martinus Nijhoff, 2009) at 647-648.

⁴¹ See generally Clive Schofield, “What’s at Stake in the South China Sea? – Geographical and Geopolitical Considerations” (Paper presented at the CIL Conference on Joint Development and the South China Sea, 16-17 June 2011) [unpublished].

G. Legal Basis for Cooperation among Claimant States in Proposing a PSSA

If a PSSA is to be designated in the South China Sea, it should be done as a cooperative measure among four or five of the claimant States.⁴² Such cooperation would be consistent with article 123 of UNCLOS, which calls for cooperation of States bordering semi-enclosed seas. In particular, it calls for States bordering a semi-enclosed sea to coordinate the implementation of their rights and duties with respect to the protection and preservation of the marine environment.

Such cooperation would also be consistent with Article 74 on the delimitation of the EEZ boundaries. Article 74 specifically provides that pending a final agreement on the maritime boundaries, ‘the States concerned, in a spirit of understanding and cooperation, shall make every effort to enter into provisional arrangements of a practical nature and, during this transitional period, not to jeopardize or hamper the reaching of the final agreement’.⁴³ It further provides that such arrangements shall be without prejudice to the final delimitation.⁴⁴ This means that nothing in the arrangement can be deemed as a renunciation of the claim of any party to sovereignty over the features or sovereign rights in the surrounding waters. UNCLOS does not mandate the type of provisional arrangements States can enter into, but leaves it to the discretion of the States concerned.⁴⁵ The designation of a PSSA in the South China Sea could be such a provisional arrangement.

In addition, cooperation among the claimant States to designate a PSSA (or PSSAs) in the South China Sea would be consistent with the *2002 Declaration on the Conduct of Parties in the South China Sea* (2002 DOC) that was adopted by the Foreign Ministers of ASEAN and the People’s Republic of China at the 8th ASEAN Summit in Phnom Penh on 4 November 2002.⁴⁶ The DOC provides that pending a comprehensive and durable settlement of the disputes, the Parties concerned may explore or undertake cooperative activities, including activities on marine environmental protection and safety of navigation.⁴⁷

⁴² Aldo Chirop, ‘The Designation of Particularly Sensitive Sea Areas: A New Layer in the Regime for Marine Environmental Protection from International Shipping’, in Aldo Chirop, *et al*, *ibid*, at 596-597.

⁴³ *Guyana/Suriname Arbitration*, UN Law of the Sea Annex VII Arb Trib, award on 17 September 2007, at para 480, online: Permanent Court of Arbitration <<http://www.pca-cpa.org/upload/files/Guyana-Suriname%20Award.pdf>>.

⁴⁴ UNCLOS, Article 74(3), *supra* note 3; *Guyana/Suriname Arbitration*, *ibid*; see also Ranier Lagoni, ‘Interim Measures Pending Maritime Delimitation Agreements’ (1984) 78 AJIL 345 at 358.

⁴⁵ Natalie Klein, ‘Provisional Measures and Provisional Arrangements in Maritime Boundary Disputes’ (2006) 21 Int’l J Mar & Coast L 423, at 444; see also Sun Pyo Kim, *Maritime Delimitation and Interim Arrangements in North East Asia* (The Netherlands: Martinus Nijhoff Publishers, 2004) at 94.

⁴⁶ *2002 Declaration on the Conduct of Parties in the South China Sea*, signed at the 8th ASEAN Summit on 4 November 2002 in Phnom Penh, Cambodia by the Foreign Ministers of ASEAN and the People’s Republic of China, online: CIL Documents Database <<http://cil.nus.edu.sg/2002/2002-declaration-on-the-conduct-of-parties-in-the-south-china-sea-signed-on-4-november-2002-in-phnom-penh-cambodia-by-the-foreign-ministers/>>.

⁴⁷ *Ibid*, at para 6.

H. Compliance with Associated Protective Measures in PSSA

The PSSA Guidelines place an obligation on all IMO Member Governments to ensure that ships flying their flag comply with the associated protective measures adopted to protect the designated PSSA.⁴⁸ If a PSSA is designated by the IMO, notices or circulars will be issued by the IMO to all member States advising all ships of the measures. All ships are then required to comply with such notices. Any enforcement issues are dealt with by flag States, not coastal States.⁴⁹

Nevertheless, in submitting proposals for associated protective measures as part of a PSSA submission, proposing member Governments need to give careful consideration to strategies for ensuring compliance. The 2005 PSSA Guidelines suggest that an effective compliance programme should incorporate all of the following elements:

1. Compliance monitoring through routine inspections, surveys, and/or examinations;
2. Detection and policing 'patrols';
3. Reporting procedures and incentives, including incentives for self-reporting;
4. Adequate investigations of violations reported or otherwise detected;
5. A system of adequate sanctions in respect of violations;
6. Education and public awareness programmes; and
7. Cooperation and coordination with other State parties.

The claimant States would be required to cooperate on the recommended strategies for ensuring compliance. Given the sensitivities of the disputes concerning sovereignty and jurisdiction in the South China Sea, the claimant States would have to work out strategies which promote compliance without raising sensitive issues of sovereignty and jurisdiction in disputed areas.

I. Conclusion

The States claiming sovereignty over the islands in the South China Sea should seriously consider the possibility of establishing PSSAs in the South China Sea. The South China Sea has one of the richest marine ecosystems in the world, and such ecosystems should be protected from shipping activities which pose a threat to them.

⁴⁸ *Supra* note 12, at para 9.3.

⁴⁹ *Ibid.*

If the claimant States are to seriously consider the prospects for proposing the designation of PSSAs in the South China Sea, further research will be required on the attributes of areas of the South China Sea to ensure that the criteria set out in the 2005 PSSA Guidelines are met. In addition, further research will be required on the vulnerability of such areas from shipping activities. Such research could be done either by Governments of the claimant States or by research institutes in the claimant States. Advice could also be sought from international experts.

The claimant States should cooperate to conduct the research required on the attributes of sensitive sea areas in the South China Sea, on their vulnerability to shipping activities, and on whether associated protective measures could be adopted by the IMO to protect the sensitive sea areas. Such cooperation would be consistent with their obligations to cooperate under UNCLOS as well as with the 2002 DOC.

A major advantage of the establishment of a PSSA in the South China Sea is that its enforcement would not be an issue, as notices or circulars on the associated protective measures would be circulated by the IMO, and it would be the responsibility of flag States to ensure that their vessels complied.