

International Maritime Organization (IMO) Measures for Area-Based Protection NOAA General Counsel - International Section

The International Maritime Organization (IMO) is the United Nations' specialized agency responsible for the safety and security of shipping and the prevention of atmospheric and marine pollution from ships. Through a comprehensive body of international conventions, the IMO has developed numerous measures—both recommendatory and mandatory—that can be used to help protect the marine environment from negative effects caused by international shipping activities. This paper provides an overview of area-based protection measures that the IMO can adopt. These tools, which offer the benefit of international endorsement and awareness, can be included in the array of options available to IMO Member States who are considering methods for protecting specific marine environments. The IMO measures include, among others, the following:

I. Particularly Sensitive Sea Areas

Designation of a Particularly Sensitive Sea Area (PSSA) is a comprehensive management tool at the international level for reviewing attributes within an area that are vulnerable to damage by international shipping and for determining the most appropriate protective measures available through the IMO to address that vulnerability. A Particularly Sensitive Sea Area (PSSA) is an area of the marine environment that merits 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. Although designation as a PSSA does not directly confer protection of a marine area, the process for designation includes identification of appropriate IMO protective measures in the area. Additionally, the inclusion of PSSAs on nautical charts worldwide highlights the area as deserving additional protection and promotes stewardship within the maritime community. To date, the IMO has designated 17 PSSAs worldwide.¹ In 2005, the IMO Assembly adopted the *Revised Guidelines for the Identification and Designation of PSSAs (Revised PSSA Guidelines)*.² The *Revised PSSA Guidelines* provide guidance to IMO Member Governments in the

¹ The 17 PSSA designations to date are: The Great Barrier Reef, the Sabana-Camaguey Archipelago (Cuba), Malpelo Island (Colombia), the sea area around the Florida Keys, the Wadden Sea, Paracas National Reserve (Peru), Western European Waters, Extension of the Great Barrier Reef PSSA to encompass the Torres Strait, Canary Islands, the Galapagos Archipelago, Baltic Sea area, Papahānaumokuākea Marine National Monument, the Strait of Bonifacio, the Saba Bank, Extension of the Great Barrier Reef and Torres Strait to encompass part of the Coral Sea, the Jomard Entrance (Papua New Guinea), and the Tubbataha Reefs National Park (Philippines). See *Particularly Sensitive Sea Areas*, IMO, <http://www.imo.org/OurWork/Environment/PollutionPrevention/PSSAs/Pages/Default.aspx> (last visited March 12, 2020).

² See *Revised Guidelines for the Identification and Designation of Particularly Sensitive Sea Areas*, adopted Dec. 1, 2005, IMO Resolution A.982(24) [hereinafter *Revised PSSA Guidelines*].

development, drafting, and submission of PSSA proposals, and provide the IMO with the assessment criteria for such proposals.³

A. Identifying a potential PSSA

The *Revised PSSA Guidelines* set forth detailed requirements that must be included in an application for PSSA designation. To be identified as a PSSA, three elements must be present: (1) the area must have certain attributes as identified by the *Revised PSSA Guidelines*; (2) the area must be vulnerable to damage by international shipping activities; and (3) there must be an available associated protective measure within the competence of the IMO to prevent, reduce, or eliminate the risks from international shipping activities in the area.⁴

To satisfy the first required element above, the area must meet at least one of the following criteria: (1) ecological criteria such as uniqueness or rarity of an ecosystem, diversity of an ecosystem, or an ecosystem's vulnerability to degradation by natural events or human activity; (2) social, cultural and economic criteria such as the significance of the area for recreation and/or tourism; and (3) scientific and educational criteria such as the provision of baseline criteria for biota.

B. Process for the designation of PSSAs

An IMO Member Government may submit a PSSA application to the IMO's Marine Environment Protection Committee (MEPC), which meets approximately every eight months.⁵ It is important to note that a PSSA designation is not a stand-alone measure—it can only be achieved in connection with one or more associated protective measures (APM) that are to be, or have been, approved by the IMO. APMs are indispensable to a PSSA in that they “define the means by and the extent to which a PSSA is protected against environmental threats posed by international shipping.”⁶ Thus, any PSSA application must contain a proposal(s) for at least one APM that the IMO Member Government intends to submit to the appropriate IMO body. If APMs are already located within the area proposed for designation as a PSSA,⁷ then the PSSA application must identify the threat of or actual damage being caused and show how the area is already being protected from such identified vulnerability by the existing APM. The MEPC will not make a final decision on PSSA designation until the accompanying APM(s) is considered

³ See also *Guidance Document for Submission of PSSA Proposals to IMO*, MEPC.1/Circ.510 (May 10, 2006) [hereinafter *PSSA Proposal Guidance Document*] (providing guidance to assist IMO Member Governments in meeting the requirements of the revised 2005 PSSA Guidelines, resolution A.982(24)).

⁴ See *id.* at 1.2.

⁵ Any IMO Member Government, regardless of whether it borders the area of the High Seas included in the PSSA proposal, may submit a PSSA proposal to MEPC.

⁶ Markus J. Kachel, *Particularly Sensitive Sea Areas: The IMO's Role in Protecting Vulnerable Marine Areas*, 13 HAMBURG STUDIES ON MARITIME AFFAIRS, 2008, at 1, 184-85.

⁷ Protective measures may be established to protect an area in the absence of, or prior to, PSSA designation. See *Revised PSSA Guidelines*, *supra* note 3, at 7.2; see also *infra* at Section II, Other IMO Tools.

and adopted by the Maritime Safety Committee. Once MSC adopts the APMs, MEPC will formally designate the area an official PSSA through a formal resolution.

II. Other IMO Measures (or Associated Protective Measures)

The IMO has developed an array of measures in addition to PSSAs that may be used to establish protections for the marine environment from international shipping activities. When IMO Member Governments pursue such measures in conjunction with a PSSA application, they are referred to as ‘associated protective measures.’ However, Member Governments may, alternatively, pursue such IMO measures independently—without a PSSA application—and, when doing so, must present such measure(s) to the appropriate IMO bodies for approval and/or amendment. Available measures fall into two general categories: (A) Navigational Aids (ships’ routing systems and ship reporting systems); and (B) Discharge Restrictions (special areas and emission control areas). The following sections describe each of these categories.

A. Navigational Aids

i. Ships’ Routing Systems

Regulation 10 of Chapter V of the *International Convention for the Safety of Life at Sea* (SOLAS), as amended, provides for the establishment of ships’ routing systems and recognizes the IMO as the international body with the authority to establish and adopt such measures.⁸ Ships’ routing systems are systems of predetermined routes and corollary measures that are “recommended for use by, and may be made mandatory for, all ships, certain categories of ships or ships carrying certain cargoes when adopted and implemented in accordance with the guidelines and criteria developed by the [IMO]” and are designed to “contribute to the safety of life at sea, safety and efficiency of navigation, and/or protection of the marine environment.”⁹ The *General Provisions on Ships’ Routing*¹⁰ recognize a number of ships’ routing systems, including, among others, the following:

1. Area To Be Avoided

An Area to be Avoided (ATBA) is an area within defined limits that should be avoided by all ships or certain classes of ships, in which navigation is particularly hazardous or in which it is exceptionally important to avoid casualties.¹¹ In general, ATBAs should be established only in places where:

⁸ See *International Convention for the Safety of Life at Sea*, Nov. 1, 1974, 1184 U.N.T.S. 2, ch. V, reg. 10. [hereinafter SOLAS].

⁹ *Id.*, ch. V, reg. 10, para. 1

¹⁰ *General Provisions on Ships’ Routing*, adopted Nov. 20, 1985, IMO Resolution A.572(14), as amended [hereinafter *Ships’ Routing*].

¹¹ *Id.*, at 2.1.13.

- inadequate survey or insufficient provision of aids to navigation may lead to danger of stranding;
- where local knowledge is considered essential for safe passage;
- where there is the possibility that unacceptable damage to the environment could result from a casualty; or
- where there might be hazard to a vital aid to navigation.

2. *No-Anchoring Area*

A No-Anchoring Area is an area “within defined limits where anchoring is hazardous or could result in unacceptable damage to the marine environment. Anchoring in a no-anchoring area should be avoided by all ships or certain classes of ships, except in cases of immediate danger to the ship or the persons onboard.”¹²

3. *Traffic Separation Scheme*

A Traffic Separation Scheme separates opposing streams of vessel traffic, and segregates inshore traffic, by appropriate means—for example, separations lines or zones—and by the establishment of traffic lanes.¹³ Additional lanes may be provided within a traffic separation scheme for ships carrying hazardous liquid substances in bulk, as specified by the *International Convention for the Prevention of Marine Pollution from Ships* (“MARPOL”).¹⁴

4. *Traffic lane*

Traffic lane is an “area within defined limits in which one-way traffic is established. Natural obstacles, including those forming separation zones, may constitute a boundary.”¹⁵

5. *Recommended Route*

A Recommended Route is a “route of undefined width, for the convenience of ships to transit, which is often marked by centerline buoys.”¹⁶

6. *Recommended Track*

¹² See *id.*, at 2.1.14; see also *id.*, at 5.6 (providing guidance on the planning of No-Anchoring Areas).

¹³ See *id.* at 2.1.3, 6.8-6.11.

¹⁴ *International Convention for the Prevention of Marine Pollution from Ships*, Nov. 2, 1973, 1340 U.N.T.S. 184, as modified by *Protocol*, Feb. 17, 1978, 1340 U.N.T.S. 61 [hereinafter MARPOL 73/78].

¹⁵ *Ships’ Routeing*, *supra* note 10, at 2.1.5.

¹⁶ *Id.*, at 2.1.19.

A Recommended Track is a “route that has been specially examined to ensure so far as possible that it is free of dangers and along which ships are advised to navigate.”¹⁷

7. Two-Way Route

A Two-Way Route is a “route within defined limits inside which two-way traffic is established, aimed at providing safe passage of ships through waters where navigation is difficult or dangerous.”¹⁸

8. Inshore Traffic Zone

An Inshore Traffic Zone is a “routeing measure comprising a designated area between the landward boundary of a traffic separation scheme and the adjacent coast, to be used in accordance with the provisions of rule 10(d), as amended, of the *International Regulations for Preventing Collisions at Sea, 1972* [COLREGS].”¹⁹

9. Roundabout

A Roundabout is a “routeing measure comprising a separation point or circular separation zone and a circular traffic lane within defined limits. Traffic within the roundabout is separated by moving in a counterclockwise direction around the separation point or zone.”²⁰

10. Precautionary Area

A Precautionary Area is a “routeing measure comprising an area within defined limits where ships must navigate with particular caution and within which the direction of traffic flow may be recommended.”²¹

11. Deep-Water Route

A Deep-Water Route is a “route within defined limits which has been accurately surveyed for clearance of sea bottom and submerged obstacles as indicated on the chart.”²²

12. Speed Recommendation

¹⁷ *Id.* at 2.1.10.

¹⁸ *Id.*, at 2.1.8.

¹⁹ *Id.*, at 2.1.7 (emphasis added).

²⁰ *Id.*, at 2.1.

²¹ *Id.*, at 2.1.12.

²² *Id.*, at 2.1.11.

The International Maritime Organization,²³ in May 2014, adopted a traffic separation scheme on the Pacific Coast of Panama to enhance maritime safety and create a safer environment for the humpback whales that breed near the canal's entrance. The traffic separation scheme is intended to enhance navigational safety by reducing collisions, other marine accidents and the risk of vessel collisions with humpback whales. Along with the traffic separation scheme the IMO adopted a seasonal recommendatory 10-knot maximum speed limit to reduce the risk of ship collisions with humpback whales.

ii. Ship Reporting Systems

Ship reporting systems (SRSs) are designed to provide coastal States with notice of the presence of all or specified categories of ships within a specific zone of adjacent waters.²⁴ In general, SRS increase knowledge of ship movements and can facilitate a timely response to any developing maritime emergency. A SRS will provide for covered ships to report the vessel name, radio call sign, position, course, and speed to a shore-based authority and such authority should have the capability of interaction with such vessels. Regulation 11 of SOLAS, as amended, provides for the establishment of ship reporting systems and recognizes the IMO as the international body with the authority to establish SRSs.²⁵ The IMO *SRS Guidelines* set forth guidelines for voluntary systems as well as the criteria for the development of mandatory systems²⁶ for “all ships, certain categories of ships or ships carrying certain cargoes.”²⁷

B. Discharge Restrictions

i. Special Areas

The International Convention for the Prevention of Pollution from Ships (“MARPOL”) provides for the designation of particular areas of the ocean as “special areas” where vessels are subject to stricter controls regarding discharges than under generally applicable international standards. Although MARPOL has six annexes that address marine pollution from the discharge or emission from ships of harmful substances, special area designation is only available under Annex I (oil), Annex II (noxious liquid substances in bulk), Annex IV (sewage), and Annex V (garbage).²⁸ A special area is defined as “a sea area where for recognised technical reasons in relation to its oceanographical and ecological conditions and to the particular character of its

²³ See Report of the Maritime Safety Committee on its Ninety-Third Session, MSC 93/22 (30 May 2014).

²⁴ JULIAN ROBERTS, MARINE ENVIRONMENT PROTECTION AND BIODIVERSITY CONSERVATION: THE APPLICATION AND FUTURE DEVELOPMENT OF THE IMO’S PARTICULARLY SENSITIVE SEA AREA CONCEPT 129 (2007).

²⁵ See SOLAS, *supra* note 8, ch. V, reg. 11.

²⁶ See *Guidelines and Criteria for Ship Reporting Systems*, adopted Dec. 9 1994, IMO Resolution MSC.43(64) [hereinafter *SRS Guidelines*].

²⁷ SOLAS, *supra* note 8, ch. V, reg. 11, para. 1.

²⁸ See Report of the Marine Environment Protection Committee on its Sixty-Third Session, *approved* Mar. 14, 2012, IMO MEPC 63/23/Add.1, annex 27 [hereinafter *2013 Special Area Guidelines*].

traffic, the adoption of special mandatory methods for the prevention of sea pollution by oil, noxious liquid substances, sewage, or garbage, as applicable, is required."²⁹

In 2002, the IMO Assembly adopted the Guidelines for the Designation of Special Areas under MARPOL 73/78 (*Special Area Guidelines*),³⁰ which provide guidance to MARPOL Contracting Parties in the formulation and submission of applications for the designation of Special Areas. To obtain special area designation, a proposing government must show that the area requires a higher level of protection from ship-generated pollution than other areas, and that basic MARPOL requirements do not provide adequate protection for the identified area. A special area may encompass or straddle the maritime zones of two or more States, or even an entire enclosed or semi-enclosed marine area.

Designation of special areas is to be made on the basis of three criteria: (1) oceanographic conditions; (2) ecological conditions; and (3) vessel traffic characteristics. The first criterion, oceanographic conditions, determines whether the conditions of the area may cause harmful substances to be concentrated or retained in the waters and/or sediments of the area—including circulation patterns or stratifications (salinity or temperature), low flushing rates leading to long residence time, extreme ice state, or adverse wind conditions. The second criterion considers whether ecological conditions indicate the need to protect the area from harmful substances in order to preserve certain area resources—including endangered marine species, areas of high natural productivity, migratory routes for sea birds, and critical habitats for fish stocks. The last of the three criterion, vessel traffic characteristics, asks whether the vessel traffic of the area is such that MARPOL requirements for areas other than special areas would be insufficient to control the discharge of harmful substances by ships given the oceanographic and ecological conditions of the area. Information on the availability of adequate reception facilities in the proposed Special Area is also taken into consideration in the review of a Special Area proposal as adequate port waste reception facilities are one of the necessary preconditions for bringing into effect “Special Areas” adopted by the IMO.

Unlike PSSA designation, Special Area designation is effected through an amendment to the respective MARPOL Annex. A MARPOL Contracting Party(ies) may submit to MEPC, for its consideration, a proposal to designate a given sea area as a Special Area.³¹ The Special Area proposal should contain a draft amendment to MARPOL 73/78 as the formal basis for designation, and a background document setting forth all the relevant information to demonstrate that the area fulfills the criteria put forth in the *Special Area Guidelines*. “The

²⁹ *Id.* at 2.1.

³⁰ See *Guidelines for the Designation of Special Areas Under MARPOL 73/78 and Guidelines for the Identification and Designation of Particularly Sensitive Sea Areas*, adopted Jan. 15 2002, IMO Resolution A.927(22), annex I [hereinafter *Special Area Guidelines*]. MEPC 63 approved revised Guidelines for Special Areas in 2012. See 2013 *Special Area Guidelines*, *supra* note 25.

³¹ *Id.* at 3.1.

formal amendment procedure applicable to proposals for the designation of Special Areas is set out in article 16 of MARPOL 73/78.”³²

ii. Emission Control Areas

MARPOL Annex VI provides for the designation of Emission Control Areas (ECA): areas where the adoption of special mandatory measures for emissions from ships is required to prevent, reduce, and control air pollution from nitrogen oxides (NO_x), or sulphur oxides (SO_x) and particulate matter, or all three types of emissions.³³ ECAs are designed to prevent, reduce, and control air pollution from ship emissions as well as adverse impacts on land and sea areas caused by such emissions. MARPOL Annex VI imposes a global cap on sulphur content in fuel used onboard any ship³⁴ as well as a significantly lower cap for ships operating within a designated ECA.³⁵ An alternative to the low-sulphur fuel requirement is the use of an exhaust gas cleaning system or other technological methods that equivalently limit SO_x emissions. Annex VI similarly imposes caps on nitrogen emissions and particulate matter, with more stringent standards in designated ECAs, and prohibits any deliberate emission of ozone-depleting substances.

Appendix III to MARPOL Annex VI provides a list of criteria that must be fulfilled in order to obtain ECA designation. Criteria include such things as information pertinent to the meteorological conditions of the area, the nature of the ship traffic, and assessment of the types of pollutants from ships operating in the area.

Similar to a Special Area designation, the designation of an ECA is effected through an amendment to MARPOL Annex VI. A Contracting Party(ies) to Annex VI may submit an ECA designation proposal to the IMO for its consideration.³⁶ “The formal amendment procedure applicable to proposals for the designation of ECAs is set out in article 16 of MARPOL 73/78.”³⁷

Disclaimer

Information included in this paper:

- is for general informational purposes only;

³² *Id.*, at 3.4; *see also* MARPOL 73/78, *supra* note 14, art. 16.

³³ *See* MARPOL 73/78, *supra* note 14, annex VI, reg. 2, para. 8.

³⁴ The global cap on sulphur content in onboard fuel was originally set at 4.5%, was reduced to 3.5%, effective January 1, 2012, and is set to be reduced to 0.5% in 2020. *See id.* annex VI, reg. 14.

³⁵ The current global cap on sulphur content in onboard fuel for vessels operating within an ECA is set at 1.0% and is set to be lowered to 0.1% in January of 2015. *See id.*

³⁶ MARPOL 73/78, *supra* note 14, annex VI, app. III, para. 2.2.

³⁷ *Id.*, para. 4.3.

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