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ΘΕΜΑ

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Ο ΔΙΕΥΘΥΝΤΗΣ ΣΧΟΛΗΣ :

**SUBJECT: SPECIAL AREAS AND PARTICULARLY SENSITIVE
SEA AREAS**



NEA MHXANIΩNA 2021

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ABSTRACT

Over the years several great accidents occurred to pollution due to cargo discharges. The greatest of all is Torrey Canyon. After that IMO had to revise MARPOL Convention and until now further more regulations and sea areas are being added to the Convention, minimizing the chances of environmental degradation

Special Areas and Particularly Sensitive Sea Areas (PSSAs) which are listed under the MARPOL 73/78 Convention, they were adopted by IMO (International Marine Organisation) and MEPC (Marine Environmental Protection Committee). The Marine Environment Protection Committee (MEPC) addresses environmental issues under IMO's remit. This includes the control and prevention of ship-source pollution covered by the MARPOL treaty, including oil, chemicals carried in bulk, sewage, garbage and emissions from ships, including air pollutants and greenhouse gas emissions. Other matters covered include ballast water management, anti-fouling systems, ship recycling, pollution preparedness and response, and identification of special areas and particularly sensitive sea areas.

The last decade MEPC adopted breakthrough amendments to the MARPOL Convention, especially including most of the Special Areas in annex VI, tightening up measures about greenhouse emissions and ships operations in these areas, trying to minimize the greenhouse effect around the globe. In addition, MEPC continues adopting new amendments eliminating the consequences of international trade to the environment and constructing a big plan which is called Green Shipping contributing towards improving the present environmental condition of the world.

INTRODUCTION

In 1948 the United Nations created IMO (International Maritime Organization) by a convention adopted at the UN Maritime Conference. The convention of IMO would resolve, through treaties and mechanisms, safety measures in the branch of international trade and maritime shipping to discourage discriminatory, restrictive practices and unfair practices by shipping concerns and to reduce maritime pollution. The convention came into force on 17 of March in 1958 and until now it has more than 170 country members.



Picture 0: IMO conference.

IMO is composed by other committees and subcommittees dealing with specific issues, such as the environment, legal issues, the transport of dangerous goods, radio communications, fire protection, ship design and equipment, lifesaving appliances, and cargoes and containers. In the first decade of the 21st century, the IMO adopted a wide variety of new conventions related to the maritime environment like, Protocol on Preparedness, Response and Co-operation to pollution Incidents by Hazardous and Noxious Substances, 2000 (OPRC-HNS Protocol) International Convention on the

Control of Harmful Anti-fouling Systems on Ships (AFS), 2001 International Convention for the Control and Management of Ships' Ballast Water and Sediments, 2004 The Hong Kong International Convention for the Safe and Environmentally Sound Recycling of Ships, 2009 and others which were adopted before 21st century like, International Convention Relating to Intervention on the High Seas in Cases of Oil Pollution Casualties (INTERVENTION), 1969 Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter(LC), 1972 (and the 1996 London Protocol) International Convention on Oil Pollution Preparedness, Response and Co-operation(OPRC), 1990.

The only Convention which is related to the environment and it is assumed as a Key Convention is MARPOL (International Convention for the Prevention of Pollution from Ships), 1973, as modified by the Protocol of 1978 relating thereto and by the Protocol of 1997. The MARPOL Convention was adopted on 2 November 1973 at IMO. The Protocol of 1978 was adopted in response to a spate of tanker accidents in 1976-1977. As the 1973 MARPOL Convention had not yet entered into force, the 1978 MARPOL Protocol absorbed the parent Convention. The combined instrument entered into force on 2 October 1983. In 1997, a Protocol was adopted to amend the Convention and a new Annex VI was added which entered into force on 19 May 2005. MARPOL has been updated by amendments through the years. The Convention includes regulations aimed at preventing and minimizing different types of pollution from ships - both accidental pollution and that from routine operations - and currently includes six technical Annexes. Special Areas with strict controls on operational discharges are included in most Annexes.

1. Special Areas

1.1 General information about Special Areas

According to the definition in Annex I, Regulation 1, to the MARPOL Convention 73/78, a ‘special area’ is a sea area where for recognized technical reasons in relation to its oceanographical and ecological condition and to the particular character of its traffic, the adoption of special mandatory methods for the prevention of sea pollution by oil is required. Identical definitions are incorporated in Annex II (‘Regulations for the Control of Pollution by Noxious Liquid Substances in Bulk’) and Annex V (‘Regulations for the Prevention of Pollution by Garbage from Ships’).

Special areas are listed depending in the Annexes to the MARPOL Convention 73/78 that they belong.

Adoption, entry into force & date of taking effect of Special Areas			
Special areas	Adopted #	Date of Entry into Force	In effect
Annex I: Oil			
Mediterranean Sea	2 Nov 1973	2 Oct 1983	2 Oct 1983
Baltic Sea	2 Nov 1973	2 Oct 1983	2 Oct 1983
Black Sea	2 Nov 1973	2 Oct 1983	2 Oct 1983
Red Sea	2 Nov 1973	2 Oct 1983	*
“Gulfs area”	2 Nov 1973	2 Oct 1983	1 Aug 2008
Gulf of Aden	1 Dec 1987	1 Apr 1989	*
Antarctic area	16 Nov 1990	17 Mar 1992	17 Mar 1992
North West European Waters	25 Sept 1997	1 Feb 1999	1 Aug 1999
Oman area of the Arabian Sea	15 Oct 2004	1 Jan 2007	*
Southern South African waters	13 Oct 2006	1 Mar 2008	1 Aug 2008
Annex II: Noxious liquid Substances			
Antarctic area	30 Oct 1992	1 Jul 1994	1 Jul 1994

Annex IV: Sewage			
Baltic Sea	15 Jul 2011	1 Jan 2013	**
Annex V: Garbage			
Mediterranean Sea	2 Nov 1973	31 Dec 1988	1 May 2009
Baltic Sea	2 Nov 1973	31 Dec 1988	1 Oct 1989
Black Sea	2 Nov 1973	31 Dec 1988	*
Red Sea	2 Nov 1973	31 Dec 1988	*
“Gulfs area”	2 Nov 1973	31 Dec 1988	1 Aug 2008
North Sea	17 Oct 1989	18 Feb 1991	18 Feb 1991
Antarctic area (south of latitude 60 degrees south)	16 Nov 1990	17 Mar 1992	17 Mar 1992
Wider Caribbean region including the Gulf of Mexico and the Caribbean Sea	4 July 1991	4 Apr 1993	*
Annex VI: Prevention of air pollution by ships (Emission Control Areas)			
Baltic Sea (Sox) (NOx)	26 Sept 1997 7 July 2017	19 May 2005 1 Jan 2019	19 May 2006 1 Jan 2021*****
North Sea (Sox) (NOx)	22 July 2005 7 July 2017	22 Nov 2006 1 Jan 2019	22 Nov 2007 1 Jan 2021*****
North American ECA (SOx and PM) (NOx)	26 Mar 2010	1 Aug 2011	1 Aug 2012 1 Jan 2016*****
United States Caribbean Sea ECA (Sox and PM) (NOx)	26 Jul 2011	1 Jan 2013	1 Jan 2014 1 Jan 2016*****

Table 1.1: Special areas under MARPOL



1.1: MARPOL Special Areas.

Status of multilateral conventions and instruments in respect of which the International Maritime Organization or its Secretary-General perform depositary or other functions as at 31 December 2002.

* The Special Area requirements for these areas have not taken effect because of lack of notifications from MARPOL Parties whose coastlines border the relevant special areas on the existence of adequate reception facilities (regulations 38.6 of MARPOL Annex I and 5(4) of MARPOL Annex V).

** The new special area requirements, which entered into force on 1 January 2013, will only take effect upon receipt of sufficient notifications on the existence of adequate reception facilities from Parties to MARPOL Annex IV whose coastlines border the relevant special area (regulation 13.2 of the revised MARPOL Annex IV, which was adopted by resolution MEPC.200(62) and which entered into force on 1 January 2013).

*** A ship constructed on or after 1 January 2016 and is operating in these emission control areas shall comply with NO_x Tier III standards set forth in regulation 13.5 of MARPOL Annex VI.

**** A ship constructed on or after 1 January 2021 and is operating in these emission control areas shall comply with NO_x Tier III standards set forth in regulation 13.5 of MARPOL Annex VI.

1.2 Regulations which affect Special Areas under Annex I

Annex I refers to the regulations for the prevention of pollution by oil from ships. (Entered into force 2 October 1983). The special areas which are referred in this Annex are the following:

- Mediterranean Sea
- Baltic Sea
- Black Sea
- Gulfs area
- Gulf of Aden
- Antarctic area
- North West European waters
- Oman area of the Arabian Sea
- Southern South Africa waters



Picture 1.2: Marine pollution from oil spill.

According to the regulation 15.3B discharges in special areas any discharge into the sea of oil or oily mixtures from ships of 400 gross tonnage and above shall be prohibited except when all of the following conditions are satisfied:

1. The ship is proceeding en route.
2. The oily mixture is processed through an oil filtering equipment meeting the requirements of this Annex.
3. The oil content of the effluent without dilution does not exceed 15 ppm.
4. The oily mixture does not originate from cargo pump-room bilges on oil tankers.

5. The oily mixture, in case of oil tankers, is not mixed with cargo residues.

Reg 15.4: In respect of the Antarctic area, any discharge into the sea of oil or oily mixtures from any ship shall be prohibited.

Reg 15.5: Nothing in this regulation shall prohibit a ship on a voyage only part of which is in a special area from discharging outside a special area.

For the ships less than 400 gross tonnage the only difference is:

1) That the ship has in operation equipment of a design approved by Administration that ensures that the oil content of the effluent without dilution does not exceed 15 ppm.

Regulation 34

Control of discharge of oil.

A. Discharges outside special areas except in Arctic waters.

Any discharge into the ocean of oil or oily mixtures from the hold of an oil tanker shall be prohibited except when all the subsequent conditions are satisfied:

1. the tanker isn't within a special area.
2. the tanker is more than 50 nautical miles from the closest land.
3. the tanker is proceeding en route.
4. the instantaneous rate of discharge doesn't exceed 30 liters per nautical mile.
5. the overall quantity of oil discharged into the sea doesn't exceed for tankers delivered on or before 31st of December 1979, 1/15000 of the whole quantity of the actual cargo of which the residue formed a part, and for tankers delivered after 31st of December 1979, 1/30000 of the total quantity of the actual cargo of which the residue formed a part.
6. the tanker is operating an oil discharge monitoring and control system and a slop tank arrangement as needed.

Taking into consideration that the discharges inside special areas are prohibited from cargo area of an oil tanker, in case of discharging clean or segregated ballast, the previous provisions shall not apply with this ship's operation.

Regulation 38

B Reception facilities within special areas

5 The Government Parties present to the Convention whose coastline borders on any given special area shall make sure that all oil loading terminals and repair ports within a special area are provided with facilities adequate for the reception and treatment of all the dirty ballast and tank washing water from oil tankers. Additionally, all within a special area shall be supplied with adequate reception facilities for other residues or other oily mixtures from all ships. Such facilities shall have adequate capacity meeting every ship's needs without causing undue delay.

These regulations can minimize the size of the dimensions of the pollution by oil in case of emergency, inside a special area. Trying to eliminate the consequences, of the ocean flora and fauna destruction.

6 Small Island Developing States may satisfy these requirements in paragraph 5 of this regulation through regional arrangements, when such arrangements are the sole practical means to satisfy these requirements. Parties participating in an exceedingly regional arrangement shall develop a Regional Reception Facilities Plan, taking into consideration the guidelines developed by the Organization.

The Government of every Party participating in the arrangement shall consult with the Organization for circulation to the Parties of the current Convention:

1. How the Regional Facilities Plan takes into account the rules
2. Particulars of the identified Regional Ships Waste Reception Centers and
3. Particulars of these ports with only limited facilities.

7 Every Party to this Convention having under its jurisdiction entrances to seawater courses with low depth contour which might require a reduction of draught by the discharge of ballast shall make sure the provision of the facilities referred in paragraph 5 of this regulation but with proviso that ships required to discharge slops or dirty ballast can be subject some delay.

8 With respect to the Red Sea area, Gulfs area, Gulf of Aden area and Oman area of the Arabian Sea:

.1 Each Party concerned shall notify the Organization of the measures taken pursuant to provisions of paragraphs 4 and 5 of this regulation. Upon receipt of sufficient notifications, the Organization shall establish a date from which the discharge requirements of regulations 15 and 34 of this Annex

in respect of the area in question shall take effect. The Organization shall notify all Parties of the date so established no less than twelve months beforehand of that date.

.2 During the period between the entry into force of the present Convention and the date so established, ships while navigating within the special area shall comply with the requirements of regulations 15 and 34 of this Annex as regards discharges outside special areas.

.3 After such date, oil tankers loading in ports in these special areas where such facilities don't seem to be yet available shall also fully comply with the requirements of regulations 15 and 34 of this Annex as regards discharges within special areas. However, oil tankers entering these special areas for the purpose of loading shall make every effort to enter the area with only clean ballast on board.

.4 After the date on which the requirements for the special area in question take effect, each Party shall notify the Organization for transmission to the Parties concerned of all cases where the facilities are alleged to be inadequate.

.5 At least the reception facilities as prescribed in paragraphs 1, 2 and 3 of this regulation shall be provided one year after the date of entry into force of this Convention.

9 Notwithstanding paragraphs 4, 5 and 6 of this regulation, the following rules apply to the Antarctic area:

.1 The Government of each Party to the current Convention at whose ports ships depart en route to or arrive from the Antarctic area undertakes to confirm that as soon as practicable adequate facilities are provided for the reception of all sludge, dirty ballast, tank washing water, and other oily residues and mixtures from all ships, without causing undue delay, and according to the needs of the ships using them. Annex I

.2 The Government of each Party of this Convention shall make sure that all ships entitled to fly its flag, before entering the Antarctic area, are fitted with a tank or tanks of sufficient capacity on board for the retention of all sludge, dirty ballast, tank washing water and other oily residues and mixtures while operating within the area and have concluded arrangements to discharge such oily residues at a reception facility after leaving the area.

C General requirements

10 Each Party shall notify the Organization for transmission to the Parties concerned of all cases where the facilities provided under this regulation are speculated to be inadequate.

Regulation 43

Special requirements for the use or carriage of oils in the Antarctic area

1 With the exception of vessels engaged in securing the safety of ships or in a search and rescue operation the carriage in bulk as cargo, use as ballast, or carriage and use as fuel of the following:

- .1 crude oils having a density at 15 degrees Celsius higher than 900 kg/m^3
- .2 oils, apart from crude oils, having a density at 15 degrees Celsius more than 900 kg/m^3 or a kinematic viscosity at 50 degrees Celsius on top of $180 \text{ mm}^2/\text{s}$ or
- .3 bitumen, tar and their emulsions

, shall be prohibited within the Antarctic area.

2 When prior operations have included the carriage or use of oils listed in previous paragraphs 1.1 to 1.3 of this regulation, the cleaning or flushing of tanks or pipelines isn't required.

1.3 Regulations which affect Special Areas under Annex II

Annex II refers to the regulations for the control of pollution by noxious liquid substances. (Entered into force 2 October 1983). The special area which is referred in this Annex is the following:

- Antarctic area



Picture 1.3.: Chemical tanker transporting noxious liquid substances in bulk.

In Annex II the only regulation affecting a Special Area is regulation 8 which refers to the Discharges in the Antarctic Area, that means the sea area south of latitude of 60 degrees south.

In the Antarctic Area is prohibited any discharge of noxious liquid substances or mixtures containing such substances of category X, Y, and Z. The rest of the other Special Areas are under the provisions of regulation 13 of this Annex, including all sea areas, about the control of discharges of residues of noxious liquid substances.

1.4 Regulations which affect Special Areas under Annex IV

Annex IV refers to the regulations for the prevention of pollution by sewage discharge from ships. (Entered into force 27 September 2003). The special area which is referred in this Annex is the following:

- Baltic Sea



Picture 1.4: Pollution from sewage discharge from a ship.

Regulation 11

B Discharge of sewage from passenger ships within a special area

According to the provisions of regulation 3 of this Annex regulation 11 does not apply on ships:

.1 discharging sewage for the purpose of securing the safety of the ship and those on board or saving life at sea; or

.2 discharging of sewage caused from a damage to a ship or its equipment if all reasonable measures have been taken before and after the occurrence of the damage, for the purpose of preventing or reducing as much as possible the discharge.

The discharge of sewage from a passenger ship in a special area shall be prohibited:

.1 for new passenger ships on, or after 1 January 2016, subject to paragraph 2 of regulation 13 and .2 for existing passenger ships on, or after 1 January 2018, subject to paragraph 2 of regulation 13 except when the subsequent reasons are satisfied:

the ship has operative an approved sewage treatment plant which has been certified by the Administration to fulfill the operational requirements referred to in regulation 9.2.1 of this Annex and also the effluent shall not produce visible floating solids nor cause discoloration of the surrounding water.

Regulation 13

Reception facilities for passenger ships in special areas.

1 Each party's coastline which borders a special area, undertakes to confirm that:

.1 the reception of sewage from the facilities are provided in ports and terminals which are in special areas and which are utilized by passenger ships

.2 the facilities are adequate meet the wants of these passenger ships and

.3 the facilities are operated so as not to cause further delay of these passenger ships

2 The Government of every Party interested shall notify the Organization of those measures taken pursuant to paragraph 1 of this regulation and the Organization shall establish backdate which the wants of regulation 11.3 in respect of the area in question shall become. The Organization shall acquaint all the Parties of the date so established no minimum of 12 months ahead of that date.

Until the date so established, ships while navigating within the special area shall conform with the provisions of regulation 11.1 of this Annex.

1.5 Regulations which affect Special Areas under Annex V

Annex V refers to the regulations for the prevention of pollution by Garbage from ships. (Entered into force 31 December 1988). The special areas which are referred in this Annex are the following:

- Mediterranean Sea
- Baltic Sea
- Black Sea
- Red Sea
- “Gulfs” area
- North Sea
- Antarctic area (south of latitude 60 degrees south)
- Wider Caribbean region including the Gulf of Mexico and the Caribbean Sea



Picture 1.5: Garbage waste at sea.

Regulation 6

Discharge of garbage within special areas.

1 Discharge of the following garbage into the ocean within special areas shall only be permitted while the ship is on the way and as follows:

.1 Food wastes to be discharged as far as possible from the closest land, but not less than 12 nautical miles from the closest land or the closest ice shelves. Food wastes shall be comminuted or ground and shall be able of passing through a wire mesh no bigger than 25 millimeters. Food wastes shall not be contaminated by the other types of garbage. Discharge of introduced avian products, not excepting

poultry and poultry parts, isn't permitted within the Antarctic area unless it's been treated to be made sterile.

.2 Discharge of cargo residues that can't be recovered using ordinary available methods for unloading, where all the subsequent conditions are satisfied:

.1 cargo residues, cleaning agents or additives, contained in hold washing water don't include any substances classified as harmful to the marine environment, taking under consideration guidelines developed by the Organization;

.2 both the port of departure and thus the next port of call are within the special area and therefore the ship won't navigate outside the special area between those ports;

.3 no sufficient reception facilities are available at those ports taking into consideration Organization's guidelines that developed; and

.4 where the provisions of subparagraphs 2.1, 2.2 and 2.3 of this paragraph are satisfied discharge of enclosure washing water from the cargo area containing residues shall be made as far as able to be done from the closest land or the closest ice shelf, but a minimum of 12 nautical miles from the closest land or the closest ice shelf.

2 Non harmful for the marine environment cleaning agents or additives contained in deck and external surfaces wash water may be discharged into the ocean, taking into consideration guidelines developed by the Organization.

3 Small Island Developing States may satisfy the necessities in paragraphs 1 and 2.1 of this regulation through regional arrangements when, thanks to those States unique circumstances, such arrangements shall develop a Regional Reception Facilities Plan, taking into consideration the guidelines developed by the Organization.

The Government of every Party participating within the Arrangement shall consult with the Organization for circulation to the parties of the current Convention:

- .1 how the Regional Reception Facilities Plan takes into consideration the Guidelines;
- .2 particulars of the identified Regional Ships Waste Reception Centers;
- .3 particulars of those ports with only limited facilities.

4 Every Party shall apprise the Organization for transmission to the Contracting Parties concerned of all cases where the facilities provided under this regulation are alleged inadequate.

In addition whenever a ship of 400 gross tonnage and above, and every ship which is certified to carry 15 or more persons engaged in voyages, is discharging garbage into the sea or, a completed incineration, or delivering in a reception facility which belong inside or either outside a special area, the officer who is in charge has to make an entry in garbage log book which is required by the Organization and the local authorities to be completed accordingly.

1.6 Regulations which affect Special Areas under Annex VI

Annex VI refers to the regulations for the prevention of air pollution from ships. (Entered into force 19 May 2005). The special areas which are referred in this Annex are the following:

- Baltic Sea (SO_x) (NO_x)
- North Sea (SO_x) (NO_x)
- North American ECA (SO_x and PM) (NO_x)
- United States Caribbean Sea ECA (SO_x and PM) (NO_x)



Picture 1.6: Air pollution from a ship.

Regulation 14

Requirements within emission control areas

4 While ships are operating within an emission control area, the sulphur content of fuel oil used on board ships shall not exceed the following limits:

.1 1.50% m/m prior to July 2010

.2 1.00% m/m on and after 1 July 2010; and

.3 0.10% m/m on and after 1 January 2015.

.4 Prior to 1 January 2020, the sulphur content of fuel oil referred to in paragraph 4 of this regulation shall not apply to ships operating in the North America area or the United States Caribbean Sea area defined in paragraph 3, built on or before 1 August 2011 that are powered by propulsion boilers that were not originally designed for continued operation on marine distillate fuel or natural gas.

5 The sulphur content of fuel oil referred to in paragraph 1 and paragraph 4 of this regulation shall be documented by its supplier as required by regulation 18 of Annex VI.

6 Those ships using separate fuel oils to comply with paragraph 4 of this regulation and entering or leaving an emission control area set forth in paragraph 3 of this regulation shall carry a written procedure showing how the fuel oil changeover is to be done, allowing sufficient time for the fuel oil service system to be fully flushed of all fuel oils exceeding the applicable sulphur content specified in paragraph 4 of this regulation prior to entry into an emission control area. The volume of low sulphur fuel oils in each tank as well as the date, time and position of the ship when any fuel oil changeover operation is completed before the entry into an emission control area or commenced after exit from such an area shall be recorded in such logbook as prescribed by the Administration.

7 During the first 12 months immediately following entry into force of an amendment designating a specific emission control area under paragraph 3 of this regulation, ships operating in that emission control area are exempt from the requirements in paragraphs 4 and 6 of this regulation and from the requirements of paragraph 5 of this regulation insofar as they relate to paragraph 4 of this regulation.



Picture 1.6.1: Chart of Emission Control Areas.

2. PSSAs (Particularly Sensitive Sea Areas)

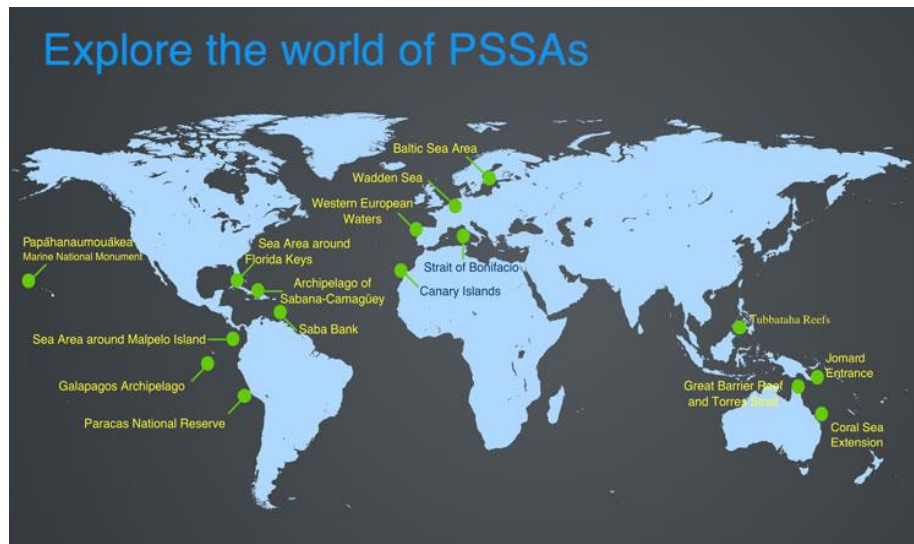
2.1 General information about PSSAs

The IMO Assembly in November-December 2005 at its 24th session adopted revised Guidelines for the Identification and Designation of Particularly Sensitive Sea Areas (PSSAs).

A Particularly Sensitive Sea Area (PSSA) is an area that needs special protection through action by IMO because of its significance for recognized ecological or socio-economic or scientific reasons and which may be vulnerable to damage by international maritime activities. The criteria for the identification of particularly sensitive sea areas and the criteria for the designation of special areas are not mutually exclusive.

In many cases a Particularly Sensitive Sea Area may be identified within a Special Area and vice versa. Guidelines on designating a "particularly sensitive sea area" (PSSA) are contained in resolution A.982(24). Revised guidelines for the identification and designation of Particularly Sensitive Sea Areas (PSSAs). These guidelines include criteria to allow areas to be designated a PSSA if they fulfil a number of criteria, including: ecological criteria, such as unique or rare ecosystem, diversity of the ecosystem or vulnerability to degradation by natural events or human activities; social, cultural and economic criteria, such as significance of the area for recreation or tourism; and scientific and educational criteria, such as biological research or historical value.

When an area is approved as a particularly sensitive sea area, specific measures can be used to control the maritime activities in that area, such as routing measures, strict application of MARPOL discharge and equipment requirements for ships, such as oil tankers; and installation of Vessel Traffic Services (VTS).



Picture 2.1: Chart of Particuarly Sensitive Areas.

A PSSA can be protected by ships routing measures - such as an area to be avoided: an area within defined limits in which either navigation is particularly hazardous or it is exceptionally important to avoid casualties and which should be avoided by all ships, or by certain classes of ships. The IMO Publication Ships' Routeing includes General provisions on ships' routeing, first adopted by IMO in 1973, and subsequently amended over the years, which are aimed at standardizing the design, development, charted presentation and use of routeing measures adopted by IMO. The first PSSA was the Great Barrier Reef, created in 1990.

PSSAs aim to tackle a wide variety of environmental threats which could affect sea fauna and flora and bring harmful effects in ecosystems with critical damages to sea life. Ships can cause physical harm to marine organisms and their habitats through anti-fouling systems, anchors, ship strikes or cargo discharges. Decisions to designate the PSSA are made by the Marine Environment Protection Committee (MPEC), which holds the primary responsibility in considering PSSA applications. Four out of fifteen PSSAs, prior to their designation, were already regulated as MARPOL Special Areas. The Sabana-Camagüey Archipelago and Saba Bank were included in the Special Area of the Wider Caribbean Region under MARPOL Annex V.61 The Wadden Sea was listed as a Special Area under MARPOL Annexes I and V.62 with the Baltic Sea being included in a Special Area under Annexes I, IV, V, and V.



Picture 2.2: Colorful reef fish found in Papahānaumokuākea. Credit: NOAA (National Oceanic and Atmospheric Administration)

2.2 List of designated PSSAs

PSSA	Proposing State(s)	Associated Protective Measures ¹	MEPC resolution
Great Barrier Reef	Australia	IMO-recommended Australian system of pilotage; mandatory ship reporting system	September 1990 (Resolution MEPC.44(30))
Archipelago of Sabana-Camaguey	Cuba	Area to be avoided	September 1997 (Resolution MEPC.74(40))
Sea Area Around Malpelo Island	Colombia	Area to be avoided	March 2002 (Resolution MEPC.97(47))
Marine Area Around the Florida Keys	United States	Areas to be avoided; mandatory no anchoring areas	March 2002 (Resolution MEPC.98(47))
Wadden Sea	Netherlands, Denmark, Germany	Mandatory deep water route	October 2002 (Resolution MEPC.101(48))
Paracas National Reserve	Peru	Area to be avoided	July 2003 (Resolution MEPC.106(49))
Western European Waters	Belgium, France, Ireland, Portugal, Spain, and the	Mandatory ship reporting system	October 2004 (Resolution MEPC.121(52))

	United Kingdom Peru		
Torres Strait as an extension to GBR PSSA	Australia and Papua New Guinea	IMO-recommended Australian system of pilotage; two-way route	July 2003 (Resolution MEPC.133(53))
Canary Islands	Spain	Areas to be avoided; traffic separation systems; recommended routes; mandatory ship reporting system	March 2004 (Resolution MEPC.134(53))
Galapagos Archipelago	Ecuador	Area to be avoided; mandatory ship reporting system; recommended tracks	March 2004 (Resolution MEPC.135(53))
Baltic Sea Area	Denmark, Estonia, Finland, Germany, Latvia, Lithuania, Poland and Sweden	Traffic separation schemes, deepwater route, areas to be avoided, mandatory ship reporting system, MARPOL Special Area; MARPOL So _x Emission Control Area	March 2004 (Resolution MEPC.136(53))
Papahānaumokuākea Marine National Monument (North-western Hawaiian Islands)	United States	Areas to be avoided; recommended/mandatory ship reporting system	March 2007 (Resolution MEPC.171(57))
Strait of Bonifacio	France and Italy	Recommendation on navigation	July 2011 (Resolution MEPC.204(62))
Saba Bank (Caribbean Island of Saba)	The Netherlands	Area to be avoided; Mandatory no anchoring area	Approved in principle in July 2011. To be formally designated by MEPC 64 in Oct 2012

Table 2: List of PSSAS designated by MEPC

2.3 Criteria for the identification of a Particularly Sensitive Area

Applications for the identification of a PSSA are submitted to the IMO by Member Governments. In order to be identified as a PSSA, the area should meet at least one of the ecological, socio-economic or scientific criteria listed below. In addition to meeting at least one of these criteria listed, the area should be at risk from international shipping activities. Furthermore, there must be measures that can be adopted by the IMO to protect the area. For example, the IMO is better placed to address the threats of shipping rather than other threats to biodiversity such as overfishing.

Ecological criteria

- Uniqueness or rarity – An area or ecosystem is unique if it is “the only one of its kind”.
- Critical habitat – A sea area that may be essential for the survival, function, or recovery of fish stocks or rare or endangered marine species, or for the support of large marine ecosystems.
- Dependency – An area where ecological processes are highly dependent on biotically structured systems (e.g. coral reefs, kelp forests, mangrove forests, seagrass beds).
- Representativeness – An area that is an outstanding and illustrative example of specific biodiversity, ecosystems, ecological or physiographic processes, or community or habitat types or other natural characteristics.
- Diversity – An area that may have an exceptional variety of species or genetic diversity or includes highly varied ecosystems, habitats, and communities.
- Productivity – An area that has a particularly high rate of natural biological production.
- Spawning or breeding grounds – An area that may be a critical spawning or breeding ground or nursery area for marine species which may spend the rest of their life-cycle elsewhere, or is recognized as migratory routes for fish, reptiles, birds, mammals, or invertebrates.
- Naturalness – An area that has experienced a relative lack of human-induced disturbance or degradation.
- Integrity – An area that is a biologically functional unit, an effective, self-sustaining ecological entity.
- Fragility – An area that is highly susceptible to degradation by natural events or by the activities of people.
- Bio-geographic importance – An area that either contains rare biogeographic qualities or is representative of a biogeographic “type” or types, or contains unique or unusual biological, chemical, physical, or geological features.

Social, cultural and economic criteria

- Social or economic dependency – An area where the environmental quality and the use of living marine resources are of particular social or economic importance, including fishing, recreation, tourism, and the livelihoods of people who depend on access to the area.
- Human dependency – An area that is of particular importance for the support of traditional subsistence or food production activities or for the protection of the cultural resources of the local human populations.

- Cultural heritage – An area that is of particular importance because of the presence of significant historical and archaeological sites.

Scientific and educational criteria

- Research – An area that has high scientific interest.
- Baseline for monitoring studies – An area that provides suitable baseline conditions with regard to biota or environmental characteristics, because it has not had substantial perturbations or has been in such a state for a long period of time such that it is considered to be in a natural or near-natural condition.
- Education – An area that offers an exceptional opportunity to demonstrate particular natural phenomena.

2.4 Vulnerability to impacts from international shipping

In addition to meeting at least one of the criteria listed in 4.4, the recognized attributes of the area should be at risk from international shipping activities. This involves consideration of the following factors: Vessel traffic characteristics:

- Operational factors – Types of maritime activities (e.g. small fishing boats, small pleasure craft, oil and gas rigs) in the proposed area that by their presence may reduce the safety of navigation.
- Vessel types – Types of vessels passing through or adjacent to the area (e.g. high-speed vessels, large tankers, or bulk carriers with small under-keel clearance).
- Traffic characteristics – Volume or concentration of traffic, vessel interaction, distance offshore or other dangers to navigation, are such as to involve greater risk of collision or grounding.
- Harmful substances carried – Type and quantity of substances on board, whether cargo, fuel or stores, that would be harmful if released into the sea. Natural factors
- Hydrographical – Water depth, bottom and coastline topography, lack of proximate safe anchorages and other factors which call for increased navigational caution.
- Meteorological – Prevailing weather, wind strength and direction, atmospheric visibility and other factors which increase the risk of collision and grounding and also the risk of damage to the sea area from discharges.

- Oceanographic – Tidal streams, ocean currents, ice, and other factors which increase the risk of collision and grounding and also the risk of damage to the sea area from discharges.

In proposing an area as a PSSA and in considering the associated protective measures to prevent, reduce, or eliminate the identified vulnerability, other information that might be helpful includes the following:

- any evidence that international shipping activities are causing or may cause damage to the attributes of the proposed area, including the significance or risk of the potential damage, the degree of harm that may be expected to cause damage, and whether such damage is reasonably foreseeable, as well as whether damage is of a recurring or cumulative nature;
- any history of groundings, collisions, or spills in the area and any consequences of such incidents;
- any adverse impacts to the environment outside the proposed PSSA expected to be caused by changes to international shipping activities as a result of PSSA designation;
- stresses from other environmental sources; and any measures already in effect and their actual or anticipated beneficial impact.

2.5 International shipping activities and the marine environment

Shipping activity can constitute an environmental hazard to the marine environment in general and consequently even more so to environmentally and/or ecologically sensitive areas. Environmental hazards associated with shipping include:

- .1 operational discharges;
- .2 accidental or intentional pollution; and
- .3 physical damage to marine habitats or organisms.

Adverse effects and damage may occur to the marine environment and therefore the living resources of the ocean as a result of shipping activities. With the rise in global trade, shipping activities are increasing, thus including greater potential for adverse effects and damage. Within the course of routine operations, accidents, and wilful acts of pollution, ships may release a wide variety of substances either directly into the marine environment or indirectly through the atmosphere. Such releases include oil and oily mixtures, noxious liquid substances, sewage, garbage, noxious solid substances, anti-fouling systems, harmful aquatic organisms and pathogens, and even noise.

additionally, ships may cause harm to marine organisms and their habitats through physical impact. These impacts may include the smothering of habitats, contamination by anti-fouling systems or other substances through groundings, and ship strikes of marine mammals.

2.6 Implementation of designated PSSAs and the associated protective measures

When a PSSA receives final designation, all associated protective measures should be identified on charts in accordance with the symbols and methods of the International Hydrographic Organization (IHO). A proposing Member Government should ensure that any associated protective measure is implemented in accordance with international law as reflected in the United Nations Convention on the Law of the Sea. Member Governments should take all appropriate steps to ensure that ships flying their flag comply with the associated protective measures adopted to protect the designated PSSA. Those Member Governments which have received information of an alleged violation of an associated protective measure by a ship flying their flag should provide the Government which has reported the offence with the details of any appropriate action taken.

3. MARPOL Amendments regarding Special Areas and PSSAs

3.1 Amendments entered into force in 21st century

Amendment: 2018 (Annex VI) amendments (MEPC.305(73)) (Amendments to MARPOL Annex VI (Prohibition on the carriage of non-compliant fuel oil for combustion purposes for propulsion or operation on board a ship))

Date of entry into force: 1 March 2020

Amendments to regulation 14 of MARPOL Annex VI to:

- Prohibit the carriage of non-compliant fuel oil for combustion purposes for propulsion or operation on board a ship.
- Include the North Sea Emission Control Area (ECA).
- Remove expired sulphur limits for ships operating inside and outside of ECAs, and to remove other outdated references (i.e. to a review provision for the sulphur limit applicable for ships operating outside an ECA).
- Amendments to the form of International Air Pollution Prevention (IAPP) Certificate to prohibit the carriage of non-compliant fuel

Implementation in Commonwealth legislation:

Amendments to the Protection of the Sea (Prevention of Pollution from Ships) Act 1983 and minor amendments to Marine Order 97 to:

Update the prescribed limit for sulphur content in fuel oil used by ships to 0.50 per cent (effective 1 January 2020).

Implement provisions for the prohibition on the carriage of non-compliant fuel by ships (effective 1 March 2020).

Provide for the use of a MARPOL Annex VI approved equivalent (e.g. exhaust gas cleaning system (EGCS)) both inside and outside an emission control area (ECA) for Australian ships and for foreign ships within Australian waters, as an alternative to using compliant fuel.

Mandate fuel oil non-availability reporting (FONAR) for Australian ships both inside and outside ECAs and foreign ships within Australian waters.

Amendment: 2018 (Annex VI) amendments (MEPC.301(72)) (Amendments to MARPOL Annex VI (ECAs and required EEDI for ro-ro cargo ships and ro-ro passenger ships))

Date of entry into force: 1 September 2019

- Emission control areas: The amendments to regulation 13 of MARPOL Annex VI refine the language in the regulation.
- EEDI for ro-ro cargo ships and ro-ro passenger ships The amendments to regulation 21 update the parameters for determination of reference values for ro-ro cargo ships and ro-ro passenger ships.

Implementation in Commonwealth legislation:

It is not expected that these amendments will require legislative changes.

Amendment: 2017 (Annex VI) amendments (MEPC.286(71)) (Amendments to MARPOL Annex VI (Designation of the Baltic Sea and the North Sea Emission Control Areas for NOX Tier III control and Information to be included in the bunker delivery note))

Date of entry into force: 1 January 2019

Baltic and North Sea NOX Emission Control Area:

- The amendments to regulation 13 of MARPOL Annex VI give effect to the Baltic and North Sea NOX Emission Control Area
- The amendments also introduce a new exemption paragraph to allow ships that do not comply with the Tier III requirements to be built, converted, repaired and/or maintained at shipyards in the North Sea area.

Bunker Delivery Note:

- Amendments to appendix V of MARPOL Annex VI change the bunker delivery note to reflect that a ship may be using high sulphur fuel because they have in place an alternative method to manage their sulphur emissions (e.g. a scrubber).
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Amendment: 2016 (Annex IV) amendments (MEPC.274(69)) (Amendments to regulation 1 and 11 and the Form of the International Sewage Pollution Prevention Certificate)

Date of entry into force: 1 September 2017

Amendments to establish effective dates for the Baltic Sea Special Area and consequential changes and editorial improvements to the form of the International Sewage Pollution Prevention Certificate.

Amendment: 2016 (Annex VI) amendments (MEPC.271(69)) (Amendments to regulation 13 – Record requirements for operational compliance with NOx Tier III Emission Control Areas)

Date of entry into force: 1 September 2017

Amendments to require certain ships to maintain records of the operational status of their marine diesel engines, together with the date, time and position of the ship when operating in NOx Emission Control Areas (NECAs). These amendments ensure authorities are able verify whether a ship's engines have been operated in compliance with NECA requirements.

Amendment: 2015 (Annexes I, II, IV and V) amendments (MEPC.265(68)) (Amendments to MARPOL Annexes I, II, IV and V to make the use of the environment-related provisions of the Polar Code mandatory)

Date of entry into force: 1 January 2017

Amendments to make the environment-related provisions of the polar code mandatory

Amendment: 2014 (Annex I) amendments (MEPC.256(67)) (Regulation 43- Special requirements for the use or carriage of oils in the Antarctic area)

Date of entry into force: 1 March 2016

Amendments to provisions relating to special requirements for the use or carriage of oils in the Antarctic area to clarify that oils cannot be carried as ballast, in addition to prohibition as carriage in bulk or carriage and use as fuel.

Amendment: 2011 (Annex IV) amendments (MEPC.200(62)) (Special Area Provisions and the Designation of the Baltic Sea as a Special Area under MARPOL Annex IV)

Date of entry into force: 1 January 2013

Addition of a new special area under Annex IV and discharge provisions for ships operating in Annex IV Special Areas. Amendments to the form of International Sewage Pollution Prevention Certificate.

Amendment: 2011 (Annex VI) amendments (MEPC.202(62)) (Designation of the Caribbean Sea Emission Control Area)

Date of entry into force: 1 January 2013

Addition of a new emission control area.

Amendment: 2010 (Annex I) amendments – (MEPC.189(60)) (amendments to Annex I)

Date of entry into force: 1 August 2011

Addition of a new chapter 9 on special requirements for the use or carriage of oils in the Antarctic area.

Amendment: 2010 (Annex VI) amendments – (MEPC.190(60)) (North American Emission Control Area)

Date of entry into force: 1 August 2011

Addition of a new emission control area.

Amendment: 2008 (Annex VI) amendments – (MEPC.176(58)) (revised Annex VI)

Date of entry into force: 1 July 2010

Completely revised to establish more stringent regulations to further reduce air emissions from ships. Various amendments made including, requirements for ozone depleting substances record books and VOC management plans; addition of NO_x Tier II and Tier III performance standards and NO_x emission control areas; provisions related to sulphur content of fuel oil to progressively reduce SO_x emissions; provisions to ensure fuel oil quality and availability and reception facilities.

Amendment: 2006 (Annex I) amendments – (MEPC.154(55)) (designation of the Southern South Africa Sea area as a Special Area)

Date of entry into force: 1 March 2008

Addition of a new special area under Annex I.

3.2 Amendments entered into force in 20th century

Amendment: 1997 (Annex I) amendments (MEPC.75(40)) (designation of North West European waters as a special area; new regulation 25A)

Date of entry into force: 1 February 1999

Addition of a new special area under Annex I and regulation 25A relating to intact stability.

Amendment: 1992 (Annex II) amendments (MEPC.57(33)) (list of chemicals and the designation of the Antarctic as a Special Area)

Date of entry into force: 1 July 1994

Addition of a new special area under Annex II. Amendments to various discharge provisions of Annex II and to the lists of chemicals in Appendices II and III to provide reference to the International Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk (IBC Code).

Amendment: 1991 (Annex V) amendments (MEPC.48(31)) (designation of the Wider Caribbean area as a special area)

Date of entry into force: 4 April 1993

Addition of a new special area under Annex V.

Amendment: 1990 (Annexes I and V) amendments (MEPC.42(30)) (designation of the Antarctic area as a special area)

Date of entry into force: 17 March 1992

Addition of a new special area under Annexes I and V.

Amendment: 1989 (Annex V) amendments (MEPC.36(28)) (designation of the North Sea as a special area)

Date of entry into force: 18 February 1991

Addition of a new special area under Annex V.

Amendment: 1987 (Annex I) amendments (MEPC.29(25)) (designation of the Gulf of Aden as a special area)

Date of entry into force: 1 April 1989

Addition of a new special area under Annex I.

Amendment: 1984 (Annex 1) amendments (MEPC.14(20))

Date of entry into force: 7 January 1986

Extensive amendments to Annex I including provisions for the control of oil discharges; operations in Special Areas; oil discharge monitoring and control systems; crude oil washing; oily-water separating equipment; pumping, piping and discharge arrangements; damage stability criteria; the IOPP Certificate; and Oil Record Book

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PICTURES

Picture 0. IMO Conference (Source web site:
<https://www.imo.org/en/OurWork/Conferences/Pages/Default.aspx>)

Picture 1.1. MARPOL Special Areas (Source web site:
https://www.cadcorp.com/files/uploads/resource-files/Maritime_Maps.pdf)

Picture 1.2 Marine pollution from oil spill (Source web site:
<https://marine.copernicus.eu/services/use-cases/oserit-oil-spill-model-support-ems>)

Picture 1.3. Chemical tanker transporting noxious liquid substances in bulk (Source web site:
<https://www.stjms.co.uk/portfolio-category/chemical-tanker/>)

Picture 1.4. Pollution from sewage discharge from a ship (Source web site:
<https://odomankoma.com/2020/12/29/amendments-to-marpol-annex-iv-coming-into-force-in-june-2021/>)

Picture 1.5. Garbage waste at sea (Source web site: <https://www.ship-technology.com/features/scourge-of-the-seas-handling-shipping-waste/>)

Picture 1.6. Air pollution from a ship (Source web site: <https://gcaptain.com/european-commission-eu-action-on-ship-emissions-helping-to-reduce-air-pollution-in-ports-and-along-coastlines/>)

Picture 1.6.1. Chart of Emission Control Areas (Source web site:
<https://www.hallmarkfuels.com/eca>)

Picture 2.1. Chart of Particularly Sensitive Areas (Source web site:
<https://www.myseatime.com/discussion/can-we-dispose-food-waste-in-pssa1>)

Picture 2.2. Colorful reef fish found in Papahānaumokuākea (Source web site: <https://sanctuaries.noaa.gov/science/sentinel-site-program/papahanaumokuakea/>)

TABLES

Table 1. Special areas under MARPOL (2002)

<https://www.imo.org/en/OurWork/Environment/Pages/Special-Areas-Marpol.aspx>

Table 2. List of PSSAS designated by MEPC (2012)

https://puc.overheid.nl/nsi/doc/PUC_1637_14/2/