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Mediterranean Action Plan Barcelona Convention

REMPEC

IMO INTERNATIONAL MARITIME ORGANIZATION

BALLAST WATER MANAGEMENT STRATEGY

for the Mediterranean Sea

(2022-2027)

Ballast Water Management Strategy for the Mediterranean Sea (2022-2027)

Decision 25/17

The Contracting Parties to the Convention for the Protection of the Marine Environment and the Coastal Region of the Mediterranean (Barcelona Convention) and its Protocols at their 22nd Meeting,

Recalling the United Nations General Assembly resolution 70/1 of 25 September 2015, entitled "Transforming our world: the 2030 Agenda for Sustainable Development",

Recalling also the United Nations Environment Assembly resolution UNEP/EA.4/Res. 21 of 15 March 2019, entitled "Towards a pollution-free planet",

Having regard to the Barcelona Convention, in particular Article 6 thereof, whereby Contracting Parties shall take all measures in conformity with international law to prevent, abate, combat and to the fullest possible extent eliminate pollution of the Mediterranean Sea Area caused by discharges from ships and to ensure the effective implementation in that Area of the rules which are generally recognised at the international level relating to the control of this type of pollution,

Having also regard to the Protocol concerning Cooperation in Preventing Pollution from Ships and, in Cases of Emergency, Combating Pollution of the Mediterranean Sea, in particular Article 4 paragraph 2 thereof, whereby the Parties shall take measures in conformity with international law to prevent the pollution of the Mediterranean Sea Area from ships in order to ensure the effective implementation in that Area of the relevant international conventions in their capacity as flag State, port State and coastal State, and their applicable legislation, as well as Article 18 thereof, whereby the function of the meeting of the Contracting Parties shall be to formulate and adopt strategies, action plans and programmes for the implementation of this Protocol,

Having further regard to the Protocol concerning Specially Protected Areas and Biological Diversity in the Mediterranean, in particular Article 13 paragraph 1 thereof, whereby the Parties shall take all appropriate measures to regulate the intentional or accidental introduction of non-indigenous or genetically modified species to the wild and prohibit those that may have harmful impacts on the ecosystems, habitats or species in the area where this Protocol applies,

Acknowledging the role of the International Maritime Organization (IMO) and the importance of cooperating within the framework of this Organisation, in particular in promoting the adoption and the development of international rules and standards to prevent, reduce and control pollution of the marine environment from ships,

Having regard to the International Convention for the Control and Management of Ships' Ballast Water and Sediments, 2004 (the "BWM Convention"), in particular Article 13 paragraph 3 thereof, whereby, in order to further the objectives of this Convention, Parties with common interests to protect the environment, human health, property and resources in a given geographical area, in particular, those Parties bordering enclosed and semi-enclosed seas, shall endeavour, taking into account characteristic regional features, to enhance regional co-operation, including through the conclusion of regional agreements consistent with this Convention,

Acknowledging that, since the adoption of the Mediterranean Strategy on Ships' Ballast Water Management by Contracting Parties at their 17th Meeting (COP 17) (Paris, France, 8-10 February, 2012), key global and regional developments have rendered it obsolete in a number of respects, namely the entry into force of the BWM Convention in 2017, the adoption and entry into force of a number of amendments to the BWM Convention and associated Guidelines, the adoption of

the Integrated Monitoring and Assessment Programme of the Mediterranean Sea and Coast and Related Assessment Criteria (IMAP) and of the updated Action Plan concerning Species Introductions and Invasive Species in the Mediterranean Sea, as well as the development of the Mediterranean Strategy for the Prevention, Preparedness, and Response to Marine Pollution from Ships (2022-2031),

Desirous to continue addressing the risk arising from the introduction of invasive alien species through ships' ballast water in the Mediterranean region, which has been recognised as one of the four greatest threats to the world's oceans and which can cause extremely severe and irreversible environmental, economic and public health impacts,

Noting further that achieving Good Environmental Status (GES) in the Mediterranean region cannot be done solely by the management of ships' ballast water, but also the management of all pathways and vectors – including ships' biofouling,

Recalling the mandates of the Regional Marine Pollution Emergency Response Centre for the Mediterranean Sea (REMPEC) and the Regional Activity Centre for Specially Protected Areas (SPA/RAC) as laid down in Decision IG. 19/5 on the Mandates of the Components of MAP, adopted by the Contracting Parties at their 16th Meeting (COP 16) (Marrakesh, Morocco, 3-5 November 2009) and their relevance to the implementation of this Decision,

Having considered the reports of the Fourteenth Meeting of the Focal Points of REMPEC (online, 31 May-2 June 2021) and of the Fifteenth Meeting of SPA/BD Focal Points (videoconference, 23-25 June 2021),

1. *Adopt* the Ballast Water Management Strategy for the Mediterranean Sea (2022-2027), hereinafter referred to as "the Mediterranean BWM Strategy (2022-2027)", set out in the Annex to this Decision;
2. *Call upon* the Contracting Parties to take effective measures to implement the Mediterranean BWM Strategy (2022-2027), thus enhancing the implementation of the Protocol concerning Cooperation in Preventing Pollution from Ships and, in Cases of Emergency, Combating Pollution of the Mediterranean Sea as well as of the Protocol concerning Specially Protected Areas and Biological Diversity in the Mediterranean;
3. *Urge* the Contracting Parties, which have not yet done so, to ratify the Protocol concerning Cooperation in Preventing Pollution from Ships and, in Cases of Emergency, Combating Pollution of the Mediterranean Sea, as well as the Protocol concerning Specially Protected Areas and Biological Diversity in the Mediterranean, in order to achieve universally the objectives of the Protocols in the Mediterranean region;
4. *Encourage* the Contracting Parties, which have not yet done so, to ratify and effectively implement the BWM Convention, as soon as possible; and
5. *Request* the Secretariat (REMPEC and SPA/RAC) to provide technical support for the implementation of the Mediterranean BWM Strategy (2022-2027), in synergy with the International Maritime Organization (IMO), through technical cooperation and capacity building activities, including resource mobilisation (internal and external).

BALLAST WATER MANAGEMENT STRATEGY

for the Mediterranean Sea

(2022-2027)

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Abbreviations and definitions

BSC: Commission on the Protection of the Black Sea Against Pollution or Black Sea Commission

BWE: Ballast Water Exchange

BWM: Ballast Water Management

BWMC: Ballast Water Management Convention

BWMPs: Ballast Water Management Plans

BWMS: Ballast Water Management System

BWRB: Ballast Water Record Book

CBD: Convention on Biological Diversity

cfu: colony-forming unit

CME: Compliance Monitoring and Enforcement

COP: Ordinary Meeting of the Contracting Parties to the Barcelona Convention and its Protocols

CSO: Common Strategic Objective

DDs: Data Dictionaries

DSs: Data Standards

dwt: deadweight ton

EBP: Experience-building phase associated with the BWM Convention

EcAp: Ecosystem Approach

GBO: Global Biodiversity Outlook

GEF: Global Environment Facility

GES: Good Environmental Status

GISIS: Global Integrated Shipping Information System

HELCOM: Baltic Marine Environment Protection Commission or Helsinki Commission

IAS: Invasive Alien Species

IBWMC: International Ballast Water Management Certificate

IMAP: Integrated Monitoring and Assessment Programme of the Mediterranean Sea and Coast and Related Assessment Criteria

IMO: International Maritime Organization

ITCP: Integrated Technical Cooperation Programme

MAMIAS: Marine Mediterranean non-indigenous and Invasive Species Database

MAP: Mediterranean Action Plan

MEPC: Marine Environment Protection Committee

NGO: Non-governmental organisation

NIS: Non-indigenous species

NIS Action Plan: Action Plan concerning species introductions and invasive species in the Mediterranean Sea

PCU: Project Coordination Unit

PERSGA: Regional Organization for the conservation of the Environment of the Red Sea and Gulf of Aden

Post-2020 SAP BIO: Post-2020 Strategic Action Programme for the Conservation of Biodiversity and Sustainable Management of Natural Resources in the Mediterranean Region

PSC: Port State Control

REMPEC: Regional Marine Pollution Emergency Response Centre for the Mediterranean Sea

RIS: Regional Information System

ROPME: Regional Organization for the Protection of the Marine Environment

SRA: Same Risk Area

SEIS: Shared Environmental Information System

SPA: Specially Protected Areas

SPA/BD: Specially Protected Areas and Biological Diversity

SPA/RAC: Regional Activity Centre for Specially Protected Areas

UNDP: United Nations Development Programme

UNEP/MAP: Mediterranean Action Plan of the United Nations Environment Programme

1. BACKGROUND

The present document is entitled the *"Ballast Water Management Strategy for the Mediterranean Sea (2022-2027)"* ("this Strategy").

1.1. Shipping as a pathway for introduction of alien and invasive species

Alien or non-indigenous species (NIS) are species that have been translocated from their natural distribution range to new geographic areas either intentionally (e.g., for fisheries purposes) or unintentionally (e.g., in ships' ballast water or via biofouling). Should these alien species survive and establish viable populations in these new areas, they may become "invasive". Invasive Alien Species (IAS) are those that have serious economic, environmental, and human health impacts. They are now recognised as one of the greatest threats to biodiversity globally. In marine and coastal environments, IAS have been identified as one of the four greatest threats to the world's oceans.

Shipping is of particular concern as a pathway for the introduction of IAS because of its international nature with vessels moving between different marine environments around the world on a regular basis. The large quantities of ballast water that are taken on board at "source ports" before being discharged at the "destination ports" may translocate thousands of species given that just one m^3 of ballast water may contain up to 50,000 zooplankton species (Locke et al., 1993 [(1)]; Kabler, 1996 [(2)]) or 10 million phytoplankton cells (Subba Rao et al., 1994 [(3)]). The sediments that accumulate in ballast water tanks are also of concern as they provide a substrate for a variety of marine species, notably dinoflagellates. Ships also translocate alien species via biofouling.

The Mediterranean Sea comprises less than 1% of the global oceans but, because of its strategic location, it has a significant volume of shipping traffic. Passenger and merchant vessels making port calls, together with ships just transiting the area, represent just over 24% of global shipping. In 2019 this included some 27% of the global fleet of oil and chemical tankers, and 17.3% of worldwide cruises, while the number of port calls was 453,000 made by 14,403 ships. In the same year, ships transiting the area numbered 5,251. Importantly, the majority of commercial maritime traffic is intra-Mediterranean (REMPEC, 2020 [(4)]). The annual density of maritime traffic for 2018 is shown in Figure 1 below.

Information on NIS in the Mediterranean varies considerably depending on the source – both with respect to the number of introductions and the relative importance of pathways of introduction. In relation to pathways, this is due to a number of factors including differences in the terminology used in different analyses, the fact that the importance of any particular pathway can change over time, and that the importance may differ from one sub-region to the next. Corridors, for example, are of particular importance for introductions in the Eastern Mediterranean whereas the majority of introductions to the Western Mediterranean have been linked to maritime transport (as stowaways in the ballast water or biofouling on ships) (Tsiamis et al, 2018 [(5)]). The most up-to-date data available through the Marine Mediterranean non-indigenous and Invasive Species Database (MAMIAS) [(6)] suggests that – although the degree of certainty in the numbers is quite low – for the Mediterranean as a whole, stowaways linked to shipping comprise over 70% of the recorded NIS (see Figure 2 below).

(1) Locke, A.; Reid, D.M.; van Leeuwen, H.C.; Sprules, W.G. & Carlton, J.T. 1993. Ballast water exchange as a means of controlling dispersal of freshwater organisms by ships. *Can. J. Fish. Aquat. Sci.,* 50, 2086-2093.

(2) Kabler, L.V. 1996. Ballast water invaders: breaches in the bulwark. Bd. 1, *Aquatic Nuisance Species Digest,* 1: pp. 34-35.

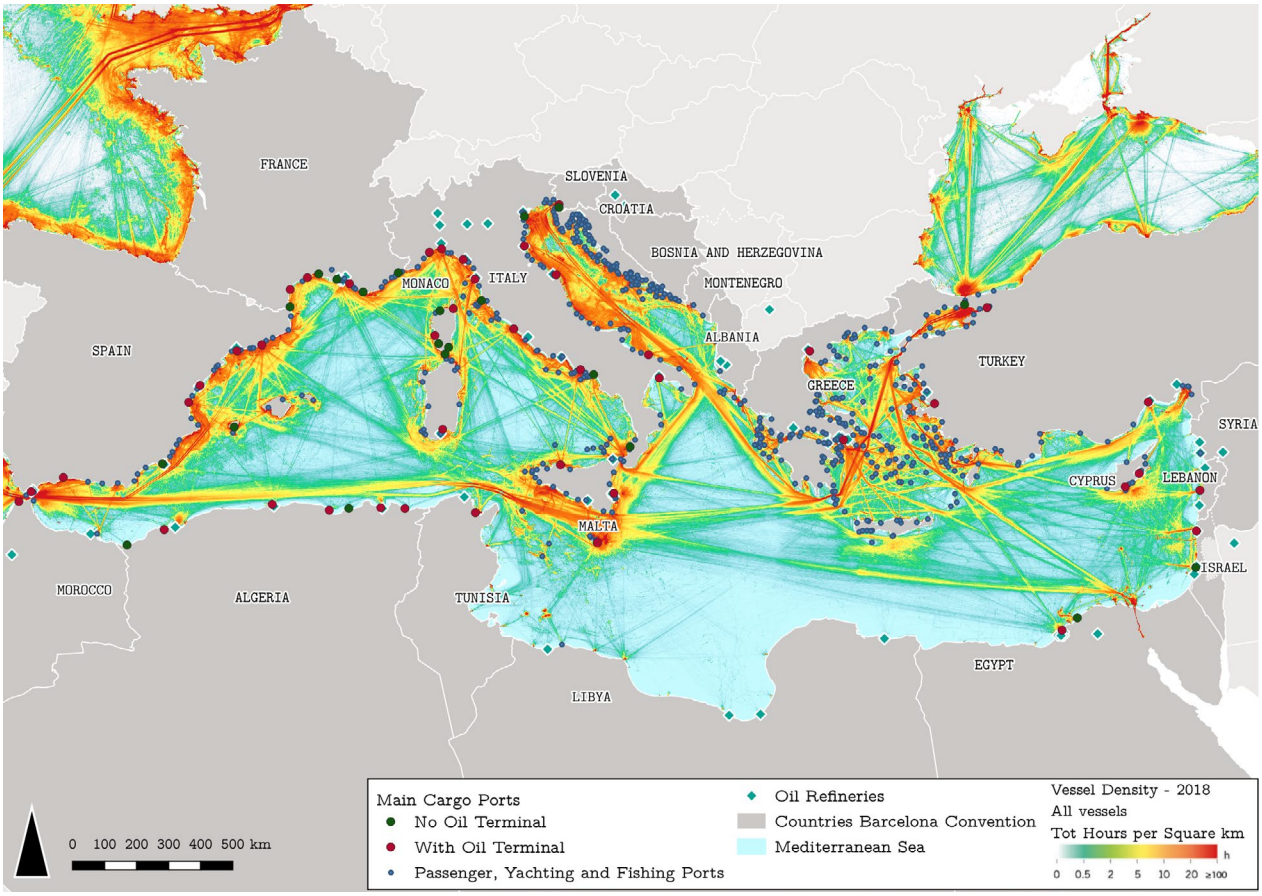
(3) Subba Rao, D.V.; Sprules, W.G.; Locke, A. & Carlton, J.T. 1994. Exotic phytoplankton from ships' ballast waters: risk of potential spread to mariculture sites on Canada's East coast. *Can.Data Rep. Fish. Aquatic. Sci.,* 937: pp. 1-51.

(4) REMPEC 2020. Study on trends and outlook of marine pollution from ships and activities and of maritime traffic and offshore activities in the Mediterranean.

(5) Tsiamis et al (2018). The native distribution range of the European marine non-indigenous species. *Aquatic Invasions* Vol. 13. https://doi.org/10.3391/ai.2018.13.2.01.

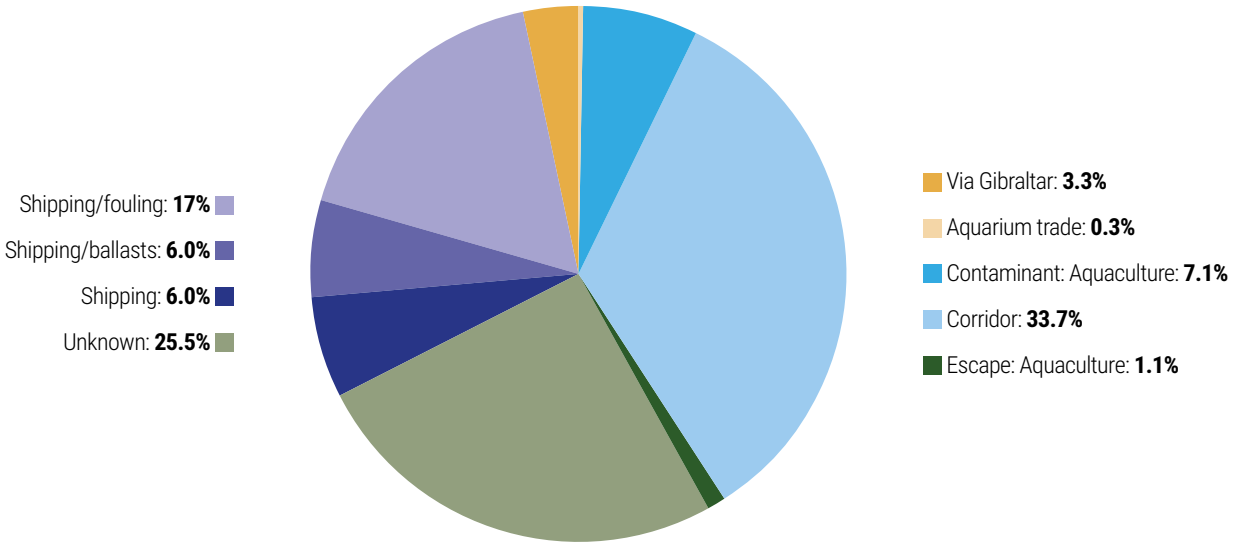
(6) Available at: http://dev.mamias.org/services/dash/med and will soon be released at http://www.mamias.org.

Figure 1. Annual density (2018) of vessels transiting in the Mediterranean



Source: *REMPEC, 2020*

Figure 2. Number of reported NIS per pathway (CBD terminology)



Source: *MAMIAS*

Regardless of origin, alien or NIS that become invasive are one of the main threats to the marine and coastal biodiversity of the Mediterranean. There are currently about 1,000 NIS in the Mediterranean, two thirds of which have established viable populations (Zenetos & Galanidi, 2020 [7]). They are therefore considered a high priority for the Post-2020 Strategic Action Programme for the Conservation of Biodiversity and Sustainable Management of Natural Resources in the Mediterranean Region (Post-2020 SAP BIO) developed within the framework of the Mediterranean Action Plan of the United Nations Environment Programme (UNEP/MAP). The Post-2020 SAP BIO is aligned with the Sustainable Development Goals and the Post-2020 Global Biodiversity Framework of the Convention on Biological Diversity (CBD).

1.2. The Ballast Water Management Convention

Concern over the introduction of IAS via ballast water was raised by Member States of the International Maritime Organization (IMO) – the specialised agency of the United Nations responsible for the regulation of shipping – at a meeting of the IMO's Marine Environment Protection Committee (MEPC) in the late 1980's [8]. This led to the establishment of a Ballast Water Working Group by the IMO's MEPC. The activities of this group led ultimately to the development of an international legal instrument, the International Convention for the Control and Management of Ships' Ballast Water and Sediments, 2004 – commonly known as the Ballast Water Management (BWM) Convention. This was adopted by consensus at a Diplomatic Conference at IMO Headquarters in London on 13 February 2004 and entered into force on 8 September 2017. To date, it has been ratified by eighty-six (86) States, the combined merchant fleets of which constitute approximately 91.12% of the gross tonnage of the world's merchant fleet, including thirteen (13) Mediterranean coastal States that are Contracting Parties to the Convention for the Protection of the Marine Environment and the Coastal Region of the Mediterranean (the "Barcelona Convention").

The BWM Convention sets out the general rights and responsibilities of Parties thereto in its preamble and articles, with regulations on more specific matters (e.g., the application of and exceptions to the BWM Convention, BWM standards, Ballast Water Management Plans (BWMPs), recording requirements, and designation of special areas with differing requirements) encapsulated in the Annex.

Article 13.3 of the BWM Convention specifically encourages **regional cooperation** in its implementation stating that: *"…Parties with common interests to protect the environment, human health, property and resources in a given geographic area, in particular, those Parties bordering enclosed and semi-enclosed seas, shall endeavour, taking into account characteristic regional features, to enhance regional co-operation, including through the conclusion of regional agreements consistent with this Convention. Parties shall seek to co-operate with the Parties to regional agreements to develop harmonized procedures."*

1.3. The 2012 Ballast Water Management Strategy for the Mediterranean Sea

In keeping with the above, COP 17 [9] in 2012 adopted the Mediterranean Strategy on Ships' Ballast Water Management, including its Action Plan and Timetable [10] (the "2012 Mediterranean BWM Strategy"), the general objectives of which were to establish a framework for a regional harmonised approach in the Mediterranean on ships' ballast water control and management that was consistent with the requirements and standards of the BWM Convention.

COP 17 requested the Regional Marine Pollution Emergency Response Centre for the Mediterranean Sea (REMPEC) and the Regional Activity Centre for Specially Protected Areas (SPA/RAC) to assist the Contracting Parties to the Barcelona Convention in the implementation of the 2012 Mediterranean BWM Strategy.

(7) Zenetos, A. and Galanidi, M. (2020). Mediterranean non indigenous species at the start of the 2020s: recent changes. Marine Biodiversity Records 13(10). Available at: https://doi.org/10.1186/s41200-020-00191-4.

(8) More information is available at: https://www.imo.org/en/OurWork/Environment/Pages/BallastWaterManagement.aspx.

(9) Seventeenth Ordinary Meeting of the Contracting Parties to the Barcelona Convention and its Protocols (Paris, France, 8-10 February 2012).

(10) UNEP(DEPI)/MED IG.20/8, Decision IG.20/11.

Strategic Priority 7 of the 2012 Mediterranean BWM Strategy stipulated that *"the Strategy and Action Plan should be subject to periodic review to take into account emerging issues, outcomes of research and development (R&D) activities and experience gained"*. In this context, the Eleventh Meeting of the Focal Points of REMPEC (Attard, Malta, 15-17 June 2015) agreed that the relevance and effectiveness of the 2012 Mediterranean BWM Strategy be evaluated. At the same time, it agreed that the Contracting Parties to the Barcelona Convention should continue implementing the said Strategy, including its Action Plan, irrespective of its original Timetable.

An assessment of the level of implementation of the 2012 Mediterranean BWM Strategy was carried out in 2016, the outcome of which [(11)] was submitted to the Twelfth Meeting of the Focal Points of REMPEC (St. Julian's, Malta, 23-25 May 2017) for consideration. At this meeting, it was acknowledged that the 2012 Mediterranean BWM Strategy was still relevant and that activities carried out under its Action Plan had been effective. It was agreed that it was a crucial time for technical support to Contracting Parties to the Barcelona Convention to assist with the ratification and effective implementation of the BWM Convention to continue, especially given the availability of the assets developed within the framework of the Global Environment Facility (GEF)-United Nations Development Programme (UNDP)-IMO GloBallast Partnerships Programme. The meeting also concurred that it was not an appropriate time for a formal revision of the 2012 Mediterranean BWM Strategy, which would be time-consuming and resource-demanding for both the Secretariat and the Contracting Parties to the Barcelona Convention without the immediate added value required for effective implementation.

This was however subsequently reconsidered at COP 21 [(12)] in 2019 and provision was made in the UNEP/MAP Programme of Work and Budget 2020-2021 [(13)] for a specific activity, as follows: *3.2.1.3 (a) "Mediterranean Strategy and Action Plan on Ships' Ballast Water Management updated to achieve GES"*.

1.4. Key developments

Since 2016, there have been a number of key developments that are of direct relevance to BWM in the Mediterranean. These include: the entry into force of the BWM Convention in 2017; the adoption of a number of amendments to the BWM Convention and associated Guidelines; the entry into force of some of these amendments in 2019; the adoption of the Integrated Monitoring and Assessment Programme of the Mediterranean Sea and Coast and Related Assessment Criteria (IMAP) in 2016; the adoption of the Updated Action Plan concerning Species Introductions and Invasive Species in the Mediterranean Sea in 2016; and the adoption of the Mediterranean Strategy for the Prevention, Preparedness, and Response to Marine Pollution from Ships (2022-2031) in 2021.

1.4.1. Amendments to the BWM Convention and associated Guidelines

A number of amendments to the BWM Convention were adopted, some at the seventy-second session of the IMO's MEPC in 2018 (MEPC 72) and others at the seventy-fifth session of the IMO's MEPC in 2020 (MEPC 75). The amendments adopted in 2018 entered into force in October 2019, while those adopted in 2020 are expected to enter into force in June 2022 [(14)]. In addition, amendments were made to a number of Guidelines and other relevant guidance documents that play a key role in supporting implementation of the BWM Convention.

(11) REMPEC/WG.41/7.

(12) Twenty-first Ordinary Meeting of the Contracting Parties to the Barcelona Convention and its Protocols (Naples, Italy, 2-5 December 2019).

(13) UNEP/MED IG.24/22, Decision IG.24/14.

(14) More information is available at: https://www.imo.org/en/OurWork/Environment/Pages/BWMConventionandGuidelines.aspx.

It is also noted that the experience-building phase associated with the BWM Convention (EBP), which was established by the IMO in 2017 through resolution MEPC.290(71), includes a systematic and evidence-based process for reviewing and improving the BWM Convention. This process is therefore likely to lead to future amendments to the BWM Convention.

The amendments to the BWM Convention, which entered into force in 2019, include:

- Amendments to regulations A-1 and D-3 of the BWM Convention, which make the Code for Approval of Ballast Water Management Systems (BWMS Code) mandatory (resolution MEPC.296(72)) [(15)];
- Amendments to regulation B-3 of the BWM Convention concerning the implementation schedule of ballast water management for ships (resolution MEPC.297(72)); and
- Amendments to regulations E-1 and E-5 of the BWM Convention concerning endorsements of additional surveys on the International Ballast Water Management Certificate (resolution MEPC.299(72)).

MEPC 72 also adopted two resolutions which are of relevance to BWM:

- Resolution MEPC.298(72) which deals with the determination of the survey referred to in regulation B-3, as amended, of the BWM Convention; and
- Resolution MEPC.300(72) in which the BWMS Code was adopted, and which revoked the *2016 Guidelines for approval of ballast water management systems* (G8) (resolution MEPC.279(70)) from when the BWMS Code took effect (13 October 2019).

MEPC 75 adopted amendments to regulation E-1 and appendix I of the BWM Convention concerning the commissioning testing of ballast water management systems and form of the International Ballast Water Management Certificate (resolution MEPC.325(75)). It also approved the *2020 Guidance for the commissioning testing of ballast water management systems* (BWM.2/Circ.70/Rev.1) and the 2020 *Guidance on ballast water sampling and analysis for trial use in accordance with the BWM Convention and Guidelines* (G2) (BWM.2/Circ.42/Rev.2).

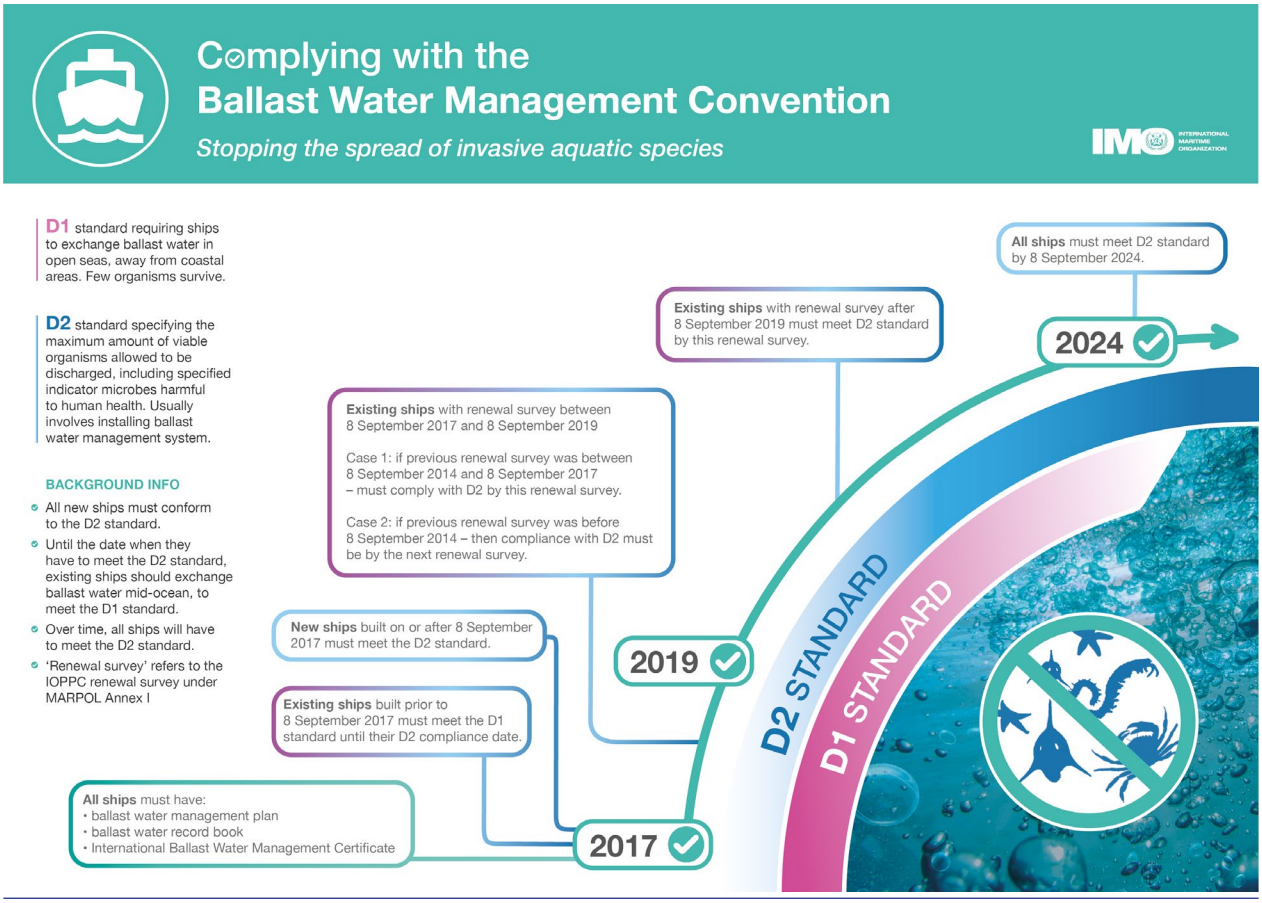
The main Guidelines to which there have been amendments include:

- the *Guidelines for ballast water exchange* (G6) (resolution MEPC.124(53)), which were revoked and superseded by the *2017 Guidelines for ballast water exchange* (G6) (resolution MEPC.288(71)) (the "2017 Guidelines (G6)");
- the *Guidelines for risk assessment under regulation A-4 of the BWM Convention* (G7) (resolution MEPC.162(56)), which are superseded by the *2017 Guidelines for risk assessment under regulation A-4 of the BWM Convention* (G7) (resolution MEPC.289(71)) (the "2017 Guidelines (G7)"); and
- the *Guidelines for ballast water management and development of ballast water management plans* (G4) (resolution MEPC.127(53), as amended by resolution MEPC.306(73)).

The amendment of regulation B-3 of the BWM Convention, which formalises the schedule for transition from the D-1 (ballast water exchange (BWE)) to the D 2 standard (which requires ballast water to meet specific biological criteria prior to discharge), is of particular relevance to this Strategy. It will result in the phasing out of the D1 Standard by 2024 (thus during the timeframe of this Strategy – see Figure 3 below). This is a key development since, although it is not prescribed in the BWM Convention, in practice it will mean, amongst others, that most vessels will likely choose to install BWM equipment to meet the D-2 standard – unless they have been granted exemptions. Therefore, there is also likely to be an increase in applications for such exemptions.

(15) The BWMS Code has specific requirements for BWMS testing, test reporting, type approval certificates, and control and monitoring. All BWMS installed onboard ships on or after 28 October 2020 will need to be approved in accordance with the BWMS Code.

Figure 3. Transition from D-1 to D-2 standards for BWM



Source: *OMI*

1.4.2. Ecosystem Approach and IMAP

The Ecosystem Approach (EcAp) in the Mediterranean is being implemented in accordance with a seven-step roadmap. It is now fully integrated into the MAP and Barcelona Convention framework and is in line with the Directive 2008/56/EC of the European Parliament and of the Council of 17 June 2008 establishing a framework for community action in the field of marine environmental policy (Marine Strategy Framework Directive), as amended, and the decisions of the CBD regarding the ecosystem approach and the "Aichi Biodiversity Targets".

Monitoring and assessment of the sea and coast, based on scientific knowledge, are the indispensable basis for the management of human activities, in view of promoting the sustainable use of the seas and coasts and conserving marine ecosystems and their sustainable development.

COP 19 [(16)] in 2016 adopted the Integrated Monitoring and Assessment Programme of the Mediterranean Sea and Coast and Related Assessment Criteria (IMAP) [(17)]. IMAP was an outcome of the EcAp process that has been central to the vision for the Mediterranean from as early as 2008. It has introduced a quantitative, integrated mechanism for the analysis of the state of the marine and coastal environment, with criteria covering pollution, marine litter, biodiversity and NIS, as

(16) Nineteenth Ordinary Meeting of the Contracting Parties to the Barcelona Convention and its Protocols (Athens, Greece, 9-12 February 2016).
(17) UNEP(DEPI)/MED IG.22/28, Decision IG.22/7.

well as coast and hydrography. The descriptors for these criteria have evolved over time. The Integrated list of Mediterranean Good Environmental Status and related targets [(18)] adopted at COP 18 [(19)] set out specific Good Environmental Status (GES) and targets for the Mediterranean in relation to the specific operational objectives and indicators of the agreed ecological objectives related to NIS, as follows:

Operational Objectives:
- Invasive non-indigenous species introductions are minimized; and
- The impact of non-indigenous particularly invasive species on ecosystems is limited.

Indicators:
- Spatial distribution, origin and population status (established vs. vagrant) of non-indigenous species;
- Trends in the abundance of introduced species, notably in risk areas;
- Ecosystem impacts of particularly invasive species; and
- Ratio between non-indigenous invasive species and native species in some well-studied taxonomic groups.

The GES Definition:
- Introduction and spread of NIS linked to human activities are minimised, in particular for potential IAS;
- Decreasing abundance of introduced NIS in risk areas;
- No decrease in native species abundance, no decline of habitats and no change in community structure that have been generated by IAS via competition, predation or any other direct or indirect effect; and
- Stable or decreasing proportion of NIS in different habitats.

GES Targets:
- State (1): The number of species and abundance of IAS introduced as a result of human activities is reduced;
- Pressure/Response (1): (i) Improved management of the main human related pathways and vectors of NIS introduction (Mediterranean Strategy for the management of ballast waters, Aquaculture early warning systems, etc.); and (ii) Action plans developed to address high risk NIS should they appear in the Mediterranean;
- State (2): Abundance of NIS introduced by human activities reduced to levels giving no detectable impact;
- Pressure/Response (2): Impacts of NIS reduced to the feasible minimum; and
- State (3): To be set upon species choice and their related impact degree of the invasive upon the indigenous ones, taking into account the role of Climate Change in accelerating the establishment of NIS populations.

The IMAP implementation is in line with Article 12 of the Barcelona Convention and several monitoring related provisions under different Protocols to the Barcelona Convention, with the main objective to assess GES, based on twenty-seven (27) common indicators. The one in relation to NIS under Ecological Objective (EO) 2 (Non-indigenous species introduced by human activities are at levels that do not adversely alter the ecosystem) is: *"Common Indicator 6: Trends in abundance, temporal occurrence, and spatial distribution of non-indigenous species, particularly invasive, non-indigenous species, notably in risk areas (EO2, in relation to the main vectors and pathways of spreading of such species in the water column and seabed, as appropriate)"*.

The IMAP monitoring programme for Common Indicator 6 under EO 2 is aligned with the Marine Strategy Framework Directive.

IMAP also envisages the establishment of an information system based on a regional pool of data and Shared Environmental Information System (SEIS) principles that will allow the production of common indicator assessment reports in an integrated manner, following the monitoring specifics and data provided, which ensures comparability across the Mediterranean region.

(18) UNEP(DEPI)/MED IG.21/9, Decision IG.21/3.

(19) Eighteenth Ordinary Meeting of the Contracting Parties to the Barcelona Convention and its Protocols (Istanbul, Turkey, 3-6 December 2013).

1.4.3. Updated Action Plan concerning Species Introductions and Invasive Species in the Mediterranean Sea

COP 19 in 2016 adopted the Updated Action Plan concerning Species Introductions and Invasive Species in the Mediterranean Sea [(20)] (the "updated NIS Action Plan"). The main objective of the updated NIS Action Plan is to promote the development of coordinated efforts and management measures throughout the Mediterranean region in order to prevent as appropriate, minimise and limit, monitor, and control marine biological invasions and their impacts on biodiversity, human health, and ecosystem services, particularly by:

- strengthening the capacity of the Mediterranean countries to deal with the issue of alien species, within the framework of the EcAp;
- supporting a regional information network for the efficient exploitation of alien species data and support to regional policies on biological invasions;
- further developing MAMIAS, an online platform for the collection, exploitation, and dissemination of information on marine biological invasions in the Mediterranean Sea to support relevant regional and international policies;
- strengthening the institutional and legislative frameworks at the level of the countries of the region;
- conducting baseline studies and establishing monitoring programmes, within the framework of IMAP, to collect reliable and pertinent scientific data that can be used for decision-making where necessary;
- setting up mechanisms for cooperation and the exchange of information among the Mediterranean countries;
- elaborating guidelines and any other technical documentation.

The updated NIS Action Plan elaborates a number of actions at both national and regional level aimed at achieving these objectives some of which are pertinent to this Strategy. Therefore, this Strategy should be closely aligned with the updated NIS Action Plan. This should be taken into consideration during the next revision of the updated NIS Action Plan during 2022-2023 such that it complements the provisions of this Strategy.

1.4.4. Mediterranean Strategy for the Prevention, Preparedness, and Response to Marine Pollution from Ships (2022-2031)

COP 22 [(21)] in 2021 adopted the Mediterranean Strategy for the Prevention, Preparedness, and Response to Marine Pollution from Ships (2022-2031) (the "Mediterranean Strategy (2022-2031)"), as a follow-up to the Regional Strategy for Prevention of and Response to Marine Pollution from Ships (2016-2021) [(22)] adopted by COP 19 in 2016. The Mediterranean Strategy (2022-2031) was developed on the basis of an extensive analysis and consultation process, following discussions at the Regional Meeting of National Experts on the Mediterranean Strategy for the Prevention of, and Response to Marine Pollution from Ships (2022-2031) (online, 10 March 2021), the Fourteenth Meeting of the Focal Points of REMPEC (online, 31 May-2 June 2021) and the Meeting of the MAP Focal Points (Teleconference, 10-17 September 2021).

The Mediterranean Strategy (2022-2031) includes a Common Strategic Objective (CSO) related to NIS, namely CSO 5 *(Eliminate the introduction of non-indigenous species by shipping activities).* It is noted that the Action Plan associated with the Mediterranean Strategy (2022-2031) includes numerous activities under CSO 5, which directly overlap with this Strategy.

(20) UNEP(DEPI)/MED IG.22/28, Decision IG.22/12.
(21) Twenty-second Ordinary Meeting of the Contracting Parties to the Barcelona Convention and its Protocols (Antalya, Turkey, 7-10 December 2021).
(22) UNEP(DEPI)/MED IG.22/28, Decision IG.22/4.

2. THE BALLAST WATER MANAGEMENT STRATEGY FOR THE MEDITERRANEAN SEA (2022-2027)

2.1. Introduction

The 2012 Mediterranean BWM Strategy initially covered the period 2011-2015, but its implementation carried on thereafter following discussions at the Eleventh Meeting of the Focal Points of REMPEC (Attard, Malta, 15-17 June 2015) and the Twelfth Meeting of the Focal Points of REMPEC (St. Julian's, Malta, 23-25 May 2017), as described in Section 1.3 above. However, the key developments outlined in Section 1.4 above rendered it obsolete in a number of respects and COP 21 in 2019 made provision in the UNEP/MAP Programme of Work and Budget 2020-2021 for the updating of the 2012 Mediterranean BWM Strategy with a view to producing a *"Mediterranean Strategy and Action Plan on Ships' Ballast Water Management updated to achieve GES"*.

2.2. Scope and Objectives

As noted above, the COP decision which led to the updating of this Strategy specified that it should achieve GES. As detailed in Section 1.4.2, the NIS descriptors for GES include a target on pathways and vectors which reads: *"Improved management of the main human related pathways and vectors of NIS introduction"*. Figure 2 indicates that transport stowaways (i.e. alien species in ships' ballast water and biofouling) are the source of some 70% of the introductions to the Mediterranean. It is therefore critical to the achievement of GES that management of the shipping pathway as a whole be improved – rather than just one of the associated vectors. In this context, while the focus of this Strategy remains on ballast water, the scope has been expanded to include some preliminary activities on biofouling. This will also allow the countries implementing this Strategy to derive some benefit from the GEF-UNDP-IMO GloFouling Partnerships Project which is currently being implemented by the IMO.

The overall objectives of this Strategy are to:

- establish a framework for a regional harmonised approach in the Mediterranean on ships' ballast water control and management which is consistent with the requirements and standards of the BWM Convention, as outlined in its Article 13.3;
- initiate some preliminary activities related to the management of ships' biofouling in the Mediterranean region; and
- contribute to the achievement of GES with respect to NIS as defined in IMAP.

2.3. Definitions

The **Mediterranean Sea** refers to the area as defined in Article 1 of the Barcelona Convention.

There are a variety of terms which are used in the context of alien and invasive species. The BWM Convention, for example, uses the term **"Harmful Aquatic Organisms and Pathogens"** which is defined in Article 1.8 to mean: *"aquatic organisms or pathogens which, if introduced into the sea including estuaries, or into fresh water courses, may create hazards to the environment, human health, property or resources, impair biological diversity or interfere with other legitimate uses of such areas"*. The *2011 Guidelines for the control and management of ships' biofouling to minimize the transfer of invasive aquatic species* (resolution MEPC.207(62)) (the "Biofouling Guidelines") use the term **"Invasive aquatic species"** which are defined as "species which may pose threats to human, animal and plant life, economic and cultural activities and the aquatic environment".

The CBD uses the terms Alien and Invasive. **"Alien species"** refers to a "species, subspecies or lower taxon, introduced outside its natural past or present distribution; including any part, gametes, seeds, eggs, or propagules of such species that might survive and subsequently reproduce". The CBD defines an **"Invasive Alien Species"** (IAS) as an "alien species whose establishment and spread threatens ecosystems, habitats or species with economic or environmental harm".

The updated NIS Action Plan and IMAP use the term **"Non-indigenous species"** (NIS) which they define as species, subspecies, or lower taxa introduced outside of their natural range (past or present) and outside of their natural dispersal potential while noting that synonyms for NIS include **alien,** exotic, and non-native.

IMAP defines **"Invasive alien species"** (IAS) as a subset of established NIS which have spread, are spreading, or have demonstrated their potential to spread elsewhere, and which have an effect on biological diversity and ecosystem functioning (by competing with and on some occasions replacing native species), socioeconomic values, and/or human health in invaded regions.

For purposes of this Strategy:

- the terms NIS and alien species are used interchangeably; and
- the term IAS is taken to encompass the terms "Harmful Aquatic Organisms and Pathogens" and "Invasive aquatic species" as defined in the BWM Convention and the Biofouling Guidelines, respectively.

A **pathway** is broadly defined as the means (e.g., aircraft, vessel, or person), purpose or activity (e.g. mariculture, shipping, or aquarium trade), or commodity (e.g. fisheries) by which an alien species may be transported to a new location, either intentionally or unintentionally. The more specific mechanism for species transfer - linked to the pathway – is referred to as a vector. Thus, for example, shipping is a pathway, which has associated with it, a number of different vectors, including ballast water, hull-fouling, and cargo.

2.4. Structure

This Strategy comprises six (6) Strategic Priorities as outlined in Section 3, each of which is supported by a number of Actions and Activities that are described in more detail in the Action Plan (Section 4). Appendix 1 sets out a work plan and implementation timetable while Appendix 2 outlines supplementary information for regional harmonisation of BWM measures.

3. STRATEGIC PRIORITIES

The objectives of this Strategy will be met through the implementation of the following Strategic Priorities:
1. Support ratification and implementation of the BWM Convention;
2. Contribute to the achievement of Good Environmental Status (GES);
3. Enhance expertise for the management of ballast water and biofouling in the Mediterranean region;
4. Build political will for the implementation of ballast water and biofouling management measures in the Mediterranean;
5. Keep this Strategy under review and assess progress of implementation on a regular basis; and
6. Identify and secure adequate resources to implement the activities under this Strategy.

3.1. STRATEGIC PRIORITY 1: Support ratification and implementation of the BWM Convention

The most recent data available through MAMIAS [(23)] indicates that stowaways linked to shipping (i.e. alien species in ballast water and biofouling) comprise over 70% of the recorded NIS in the Mediterranean (as shown in Figure 2). Moreover, the 2017 Mediterranean Quality Status Report (2017 MED QSR) suggested that there is an increasing trend in the rate of new alien species introductions, and Zenetos and Galanidi (2020) [(24)] reported that there are currently about 1,000 NIS in the Mediterranean two thirds of which have established viable populations. There is therefore an urgent need to escalate efforts to manage the pathways and vectors which lead to these introductions, including the ballast water and biofouling vectors associated with shipping.

As of 21 April 2021, only thirteen (13) of the twenty-one (21) Mediterranean coastal States that are Contracting Parties to the Barcelona Convention ratified the BWM Convention. Moreover, the assessment of the level of implementation of the 2012 Mediterranean BWM Strategy carried out in 2016 reported that only five (5) of the responding countries had developed national law. Therefore, there is still a need to provide support to those countries that are in the process of ratification, or that are considering it. In addition, support may be required to facilitate incorporation of its provisions into national law. When national law is needed to carry out the obligations laid down in a convention, countries must ensure that this is done. Otherwise, countries risk being in breach of their convention obligations, as well as liable in international law. Moreover, if the implementation by a Party is flawed, it undermines the BWM Convention global regime to protect the marine environment from the threat of introduction of IAS via ballast water. Therefore, all Parties to the BWM Convention have a mutual interest in securing full implementation.

At the same time, with the entry into force of the BWM Convention in 2017 as well as the amendments in 2019 – and bearing in mind the additional amendments adopted and anticipated - there is a need to take appropriate actions to enhance implementation of the BWM Convention in a harmonised manner across the region.

The Contracting Parties to the Barcelona Convention support the work for the minimisation of the introduction of IAS carried out by the relevant organisations and fora, particularly the work of the IMO, and are committed to take all appropriate actions towards the ratification and implementation of the BWM Convention in the Mediterranean.

The associated Actions are, as follows:
- **Action 1:** Ratification of the BWM Convention;
- **Action 2:** Harmonisation of BWM measures in the Mediterranean region;

(23) Available at: http://dev.mamias.org/services/dash/med and will soon be released at http://www.mamias.org.

(24) Zenetos, A. and Galanidi, M. (2020). Mediterranean non indigenous species at the start of the 2020s: recent changes. Marine Biodiversity Records 13(10). Available at: https://doi.org/10.1186/s41200-020-00191-4.

- **Action 3:** Development, adoption, and implementation of a regional protocol for port baseline surveys and biological monitoring in Mediterranean ports;
- **Action 4:** Promotion of the use of risk assessment as a tool to assist in ballast water (and, more generally, IAS) management and decision-making; and
- **Action 5:** Alignment of BWM measures with neighbouring regions.

3.2. STRATEGIC PRIORITY 2: Contribute to the Achievement of Good Environmental Status (GES)

Shipping is but one of numerous pathways for the introduction of NIS to the Mediterranean. Moreover, ballast water is not the only vector for the introduction of NIS by shipping. Thus, while managing ships' ballast water through ratification and implementation of the BWM Convention will contribute to achieving GES, it is important to recognise that in order to achieve the Operational Objectives for NIS, **all vectors** associated with shipping – as well as **all other pathways** – must be effectively managed. In addition, species that have already established must be eradicated where possible, or at least be controlled.

There is already a strong legal framework for the broader management of NIS both internationally and at the regional level. Article 8(h) of the CBD, for example, provides the basis for measures to protect biodiversity against IAS (Article 8(h)) and comprehensive Guiding Principles for the Implementation of Article 8(h) were adopted in 2002. The Strategic Plan for Biodiversity 2011-2020 of the CBD included the "Aichi Biodiversity Targets" of which Target 9 stated: *"By 2020, invasive alien species and pathways are identified and prioritized, priority species are controlled or eradicated, and measures are in place to manage pathways to prevent their introduction and establishment."* According to the Fifth Global Biodiversity Outlook (GBO 5), this target has only been partially achieved. It will be, in any event, replaced by a new target in the Post-2020 Global Biodiversity Framework of the CBD to be adopted at the fifteenth Meeting of the Conference of the Parties to the CBD. There have been a number of proposals in this regard, including that from the IUCN that has proposed that the target should address pathways, species, and sites; that it should be quantitative, be supplemented by a set of indicators that can be applied to track progress, and that it should be evaluated at medium-term (2030) and long-term (2050) time horizons (Essl et al, 2020 [(25)]).

At the regional level, Article 13.1 of the Protocol concerning Specially Protected Areas and Biological Diversity in the Mediterranean to the Barcelona Convention (the "SPA/BD Protocol"), which was adopted in 1995 and entered into force in 1999, provides for Contracting Parties thereto to *"take all appropriate measures to regulate the intentional or accidental introduction of non-indigenous or genetically modified species to the wild and prohibit those that may have harmful impacts on the ecosystems, habitats or species in the area where this Protocol applies"* [(26)]. The SPA/BD Protocol is complemented by the updated NIS Action Plan, the main objective of which is to promote the development of coordinated efforts and management measures throughout the Mediterranean to prevent, minimise, monitor, and control biological invasions and their impacts. Objectives include strengthening capacity, supporting a regional information network, further development of MAMIAS, strengthening institutional and legal frameworks at national level, baseline studies, monitoring programmes and development of guidelines. There are also various NIS-related criteria in IMAP as described in Section 1.4.2. Finally, NIS are a high priority for the Post-2020 SAP BIO, which is aligned with the Sustainable Development Goals and the Post-2020 Global Biodiversity Framework of the CBD.

There is therefore significant potential for overlap between the updated NIS Action Plan and this Strategy as well as the implementation of IMAP. Care must therefore be taken to align these initiatives and avoid duplication of efforts. The Actions proposed in support of this Strategic Priority are therefore focussed on the shipping pathway, including the management of biofouling on vessels, port baseline surveys etc. With respect to biofouling, the IMO developed the Biofouling Guidelines. REMPEC organised, in cooperation with IMO, the IMO Regional Workshop on the International Convention on

(25) Essl et al (2020). The Convention on Biological Diversity (CBD)'s Post-2020 target on invasive alien species – what should it include and how should it be monitored? Neobiota 62: 99–121 (2020). Available at: https://doi.org/10.3897/neobiota.62.53972.

(26) Article 7(e) of the Protocol Concerning Mediterranean Specially Protected Areas (the "SPA Protocol"), which was adopted in 1982 and entered into force in 1986, also prohibited introduction of exotic species.

the Control of Harmful Anti-Fouling Systems on Ships, 2001 (AFS Convention) and the Biofouling Guidelines in November 2019. The workshop was intended to provide, amongst others, the necessary knowledge and information to support further steps by the Governments of the region towards implementation of the Biofouling Guidelines. This Strategy builds on the outcomes of that workshop [(27)].

The Contracting Parties to the Barcelona Convention support the work for the minimisation of the introduction of IAS carried out within the framework of the Barcelona Convention through the SPA/BD Protocol, IMAP, and the updated NIS Action Plan, as well as the work on the control and management of ships' ballast water and biofouling carried out by the IMO, and are committed to take all appropriate actions towards achieving the NIS-related objectives in the region.

The associated Actions are, as follows:
- **Action 6:** Ratification of the SPA/BD Protocol;
- **Action 7:** Initiation of preliminary activities to address the threat of biofouling on ships; and
- **Action 8:** Establishment and maintenance of a web-based Regional Information System (RIS).

3.3. STRATEGIC PRIORITY 3: Enhance expertise for the management of ballast water and biofouling in the Mediterranean region

There is a clear need to continue efforts made in the region to enhance capacity building, knowledge transfer and training of personnel with specific emphasis on the activities required to support the ratification and implementation of the BWM Convention and the other Actions identified in this Strategy. Such training should be extended to all relevant personnel including those from environmental and maritime administrations as well as port authorities. These initiatives should involve relevant international and regional co-operation mechanisms, non-governmental organisations and agencies and should promote the use of new information and communication technologies.

Although there is potentially support for capacity building initiatives from a wide range of organisations, the IMO has played – and will likely continue to play – a key role in developing capacity related to the management of shipping as a pathway. While the GEF-UNDP-IMO GloBallast Partnerships Programme ended in June 2017, support is still available through the Technical Cooperation Division. Moreover, a project on biofouling – the GEF-UNDP-IMO GloFouling Partnerships Project [(28)] – was initiated in December 2018 and will run until December 2023. Project activities include the identification of appropriate strategies for legal, policy and institutional reform with a view to implementing the Biofouling Guidelines and other relevant codes of conduct or industry standards.

The Contracting Parties to the Barcelona Convention stress the need to continue efforts in the region to enhance capacity building, knowledge transfer and training of personnel and to involve relevant international and regional co-operation mechanisms, non-governmental organisations, and agencies as appropriate.

The associated Action is, as follows:
- **Action 9:** Development and implementation of a capacity building programme.

(27) It is noted that, although the workshop also addressed the ratification and implementation of the AFS Convention, this Convention deals primarily with concerns regarding the toxicity of anti-fouling systems and is therefore not included here.

(28) More information is available at: https://www.glofouling.imo.org.

3.4. STRATEGIC PRIORITY 4: Build political will for the implementation of ballast water and biofouling management measures in the Mediterranean

The support of decision-makers as well as the general public and especially stakeholders with an interest in environmental issues is key to obtaining government commitment and funding for issues such as the management of NIS. Stakeholders can also play an important role in identifying new introductions, tracking existing ones through citizen science initiatives, and encouraging the implementation of management measures (for example, ballast water and/or biofouling management on recreational craft). Activities to raise knowledge and awareness on the subject are therefore important to the implementation of this Strategy.

The Contracting Parties to the Barcelona Convention agree to promote, individually or through regional co-operation, efforts to raise awareness amongst decision-makers and the general public of the impacts of and need to effectively manage NIS in the Mediterranean.

The associated Action is, as follows:

- **Action 10:** Enhancement of awareness of NIS amongst decision-makers and the general public.

3.5. STRATEGIC PRIORITY 5: Keep this Strategy under review and assess progress of implementation on a regular basis

This Strategy should be subject to periodic review to take into account emerging issues, outcomes of research and development (R&D) activities and experience gained from its operation and implementation. Particular attention should be given to the anticipated amendments to the BWM Convention, including those already adopted but yet to come into force, and those that might arise through the EBP.

Progress in terms of implementation of this Strategy should be assessed at Meetings of the Focal Points of REMPEC and Meetings of the SPA/BD Focal Points, as appropriate.

The Contracting Parties to the Barcelona Convention call for the establishment of a mechanism to review and evaluate the ongoing relevance of this Strategy, and to assess progress in the implementation thereof.

The associated Action is, as follows:

- **Action 11:** Completion of regular reviews of this Strategy.

3.6. STRATEGIC PRIORITY 6: Identify and secure adequate resources to implement the activities under this Strategy

Resources for implementing this Strategy should be identified and secured. Potential sources of funding include the Mediterranean Trust Fund (MTF), the IMO's Integrated Technical Cooperation Programme (ITCP), regional and international shipping and port industries, bilateral and multilateral donors, and other technical cooperation programmes.

The Contracting Parties to the Barcelona Convention agree to work towards ensuring the sustainability and continuity of activities from self-financing sources within the region in the longer term.

The associated Action is, as follows:

- **Action 12:** Development and implementation of a resource mobilisation plan to support implementation of this Strategy.

4. ACTION PLAN

The present Action Plan identifies twelve (12) main actions to be taken as well as thirty-nine (39) associated activities to be carried out at the regional, sub-regional or national level in accordance with the Strategic Priorities, and include a work plan and implementation timetable (Appendix 1).

4.1. ACTION 1: Ratification of the BWM Convention

As of 21 April 2021, thirteen (13) of the twenty-one (21) Mediterranean coastal States that are Contracting Parties to the Barcelona Convention ratified the BWM Convention. With the entry into force of the BWM Convention in 2017, those countries that have already ratified it should have incorporated it into national law and should be implementing it. At the same time, its effectiveness at the regional level is dependent on all countries of the region implementing the same measures. It is therefore important that:

- Those countries in the region that have not yet ratified the BWM Convention be provided with the support needed to do so;
- Those countries in the region that have ratified the BWM Convention but have not as yet incorporated it into their national law be provided with the support to do so. Countries that ratify the BWM Convention during the period covered by this Strategy should also be provided with such support;
- During this process, countries also need to be made aware of both existing and anticipated amendments to the BWM Convention and the actions required to make these applicable at the national level.

Given that all ships will be required to comply with the D2 standard of the BWM Convention by September 8, 2024, the target date for completion of ratification of the BWM Convention and its incorporation into national law should be August 2024.

The Contracting Parties to the Barcelona Convention agree to:

At the regional level:

i) Circulate a questionnaire to the Contracting Parties to the Barcelona Convention with a view to confirming the status of ratification of the BWM Convention – and its incorporation into national law – in each country [(29)];

ii) Draft guidelines for the development of national law to give effect to the BWM Convention once ratified, as well as secondary regulations and technical arrangements for its enforcement;

At the national level (as necessary):

iii) Establish national policy working groups to lead the process towards the ratification of the BWM Convention, including drafting of the instrument of ratification; and

iv) Draft national law to give effect to the BWM Convention once ratified, as well as secondary regulations and technical arrangements for its enforcement, and submission through relevant governmental channels for endorsement.

4.2. ACTION 2: Harmonisation of BWM measures in the Mediterranean region

As with most international agreements, implementation, and enforcement of the BWM Convention is intended to take place at national level – through national law - with Parties thereto having obligations as flag and/or coastal or port States. Port or coastal States also have the right to intervene on board foreign ships in their waters or ports and may –

(29) This information can then be used to determine the extent of support required to achieve ratification by all Contracting Parties to the Barcelona Convention – including incorporation of relevant provisions into their national law.

individually or jointly with other Parties to the BWM Convention – impose more stringent requirements than those in the BWM Convention.

However, as previously noted, Article 13.3 of the BWM Convention specifically encourages regional cooperation of its implementation stating that: *"…Parties with common interests to protect the environment, human health, property and resources in a given geographic area, in particular, those Parties bordering enclosed and semi-enclosed seas, shall endeavour, taking into account characteristic regional features, to enhance regional co-operation, including through the conclusion of regional agreements consistent with this Convention. Parties shall seek to co-operate with the Parties to regional agreements to develop harmonized procedures."*

Given the international nature of shipping, the fact that an estimated 58% of the commercial maritime traffic in the Mediterranean Sea is internal (REMPEC, 2020), and the semi-enclosed nature of the Mediterranean, harmonisation of BWM measures in the region is especially important. Supplementary information in this regard is provided in Appendix 2.

The relevant Memoranda of Understanding (MoU) on port State Control (PSC) in the Mediterranean region are the Mediterranean MoU on PSC and the Paris MoU on PSC.

The Contracting Parties to the Barcelona Convention agree to:

i) Establish a regional online BWM Working Group to drive the process towards harmonisation of BWM measures in the region coordinated by REMPEC in cooperation with SPA/RAC;
ii) Organise a regional workshop on PSC in relation to the BWM Convention, in collaboration with existing PSC bodies (e.g. Mediterranean MoU on PSC, Paris MoU);
iii) Develop and implement a regionally harmonised, mandatory ballast water reporting system for ships arriving at Mediterranean ports [(30)];
iv) Establish and maintain a regional communication system to allow exchange of data, experience and tracking of violations for PSC purposes;
v) Develop and adopt a regional protocol for sampling of ballast water for purposes of PSC;
vi) Undertake an assessment of the status of BWE in the Mediterranean (including information on designated BWE areas in national waters);
vii) Develop, adopt, and implement a comprehensive Regional Procedure for the Granting of Exemptions under the BWM Convention;
viii) Develop a regional action plan for the provision of port reception facilities for sediments (to be informed by a study on shipping traffic).

4.3. ACTION 3: Development, adoption, and implementation of a regional protocol for port baseline surveys and biological monitoring in Mediterranean ports

Port Baseline Surveys are a crucial tool in the decision-making process related to BWM. The primary aim of such surveys is to provide inventories of the marine life in and around commercial ports which are frequented by ships carrying ballast water (although they may also be used for managing other vectors or pathways which introduce NIS to port environments). A key objective is to determine the presence, abundance, and distribution of NIS that may have been introduced by shipping, either in ballast water or attached to hulls, as well as by other vectors. They also provide a baseline of biological data against which future changes in the structure and function of marine communities can be measured. The information generated by port surveys is also crucial for risk assessment purposes (see Section 4.4).

(30) To be preferably done under the auspices of the relevant MoU on PSC, namely the Mediterranean MoU on PSC, in cooperation with the Paris MoU on PSC.

Given that shipping traffic moves in and out of ports on a daily basis, the threat of introduction of new NIS is an ongoing one. There is therefore a need for regular surveys and monitoring. IMAP Common Indicator Guidance Factsheets (Biodiversity and Fisheries) propose Monitoring at "hot-spots" and "steppingstone areas" for NIS introductions should involve more intense monitoring effort, e.g. sampling at least once a year at ports and their wider area and once every two years in smaller harbours, marinas, and aquaculture sites.

The assessment of the level of implementation of the 2012 Mediterranean BWM Strategy carried out in 2016 indicated that although some sub-regions had been quite well surveyed and studied, comprehensive inventories of marine species were not available for others. The assessment report also noted that there are several different guidelines or protocols for biological sampling and monitoring of invasive species in the Mediterranean. These should be standardised for use across the region.

The Contracting Parties to the Barcelona Convention agree to:

i) Circulate a questionnaire to the Contracting Parties to the Barcelona Convention with a view to obtaining up-to-date information on the status of port surveys in the region;
ii) Identify key ports to be surveyed based on the questionnaire and provide support to the relevant authorities to undertake such surveys to fill the gaps;
iii) Develop a regional protocol for port surveys, taking into account the *Guidance on Port Biological Baseline Surveys* [(31)] that was developed within the framework of the GEF-UNDP-IMO GloBallast Partnerships Programme, the regional guidance provided for standardisation of survey and monitoring approaches through SPA/RAC via the EcAp roadmap and IMAP, as well as the HELCOM-OSPAR Joint Harmonized Procedure for BWMC A-4 Exemptions [(32)] that includes a Port Survey Protocol; and
iv) Review and adapt the IMAP Guidance Fact Sheet for Common Indicator 6 under EO 2, as well as define related Data Standards (DSs) and Data Dictionaries (DDs) to ensure integration of data in the IMAP Info System [(33)].

4.4. ACTION 4: Promotion of the use of risk assessment as a tool to assist in ballast water (and, more generally, IAS) management and decision-making

Risk assessments are a key tool in the application of BWM measures and are used in:
- Identifying high-risk ships so that they can be targeted for PSC purposes (pre-arrival risk assessment which are based largely on the information provided in the reporting forms);
- Issuing exemptions in the context of the BWM Convention.

Three risk assessment methods have been established to support decisions on exemptions under regulation A-4 of the BWM Convention: environmental matching risk assessment, species' biogeographical risk assessment and species-specific risk assessment. The methods may be combined to enhance the quality of the Risk Assessment.

(31) Awad, A., Haag, F., Anil, A.C., Abdulla, A. 2014. GEF-UNDP-IMO GloBallast Partnerships Programme, IOI, CSIR-NIO and IUCN. Guidance on Port Biological Baseline Surveys. GEF-UNDP-IMO GloBallast Partnerships, London, UK. GloBallast Monograph No. 22.

(32) Joint Harmonised Procedure for the Contracting Parties of HELCOM and OSPAR on the granting of exemptions under International Convention for the Control and Management of Ships' Ballast Water and Sediments, Regulation A-4.

(33) Available at: http://www.info-rac.org/en/infomap-system/imap-pilot-platform.

The 2017 Guidelines (G7) describe the risk assessment methods and explain the relationship between risk assessment and the Same Risk Area (SRA) approach. An SRA is an agreed geographical area based on the completion of a risk assessment and which is defined by the extent of connectivity of populations of target species. It is based on the premise that ships operating exclusively within such areas are not considered high risk. The SRA concept is in line with the 2017 Guidelines (G7).

The Contracting Parties to the Barcelona Convention agree to:

i) Develop and adopt a regional protocol for risk assessment; and
ii) Undertake a regional risk assessment of key ports in the Mediterranean Sea.

4.5. ACTION 5: Alignment of BWM measures with neighbouring regions

Harmonisation of approaches to BWM across regional seas is essential to help achieve the goals of the BWM Convention. Communication and alignment with regions which are closely connected geographically, politically and/or through trade and travel and their BWM structures will promote consistency between the regimes, and the sharing of information and experience. The regions concerned include the Red Sea and Gulf of Aden [(34)], the Black Sea [(35)], the North-East Atlantic [(36)], the North Sea [(37)], the Baltic Sea [(38)] and the ROPME Sea Area [(39)].

The Contracting Parties to the Barcelona Convention agree to:

i) Organise a Joint Conference on BWM with neighbouring regions to share experiences and promote further alignment.

4.6. ACTION 6: Ratification of the SPA/BD Protocol

Article 13.1 of the SPA/BD Protocol provides for the Contracting Parties thereto to *"take all appropriate measures to regulate the intentional or accidental introduction of non-indigenous or genetically modified species to the wild and prohibit those that may have harmful impacts on the ecosystems, habitats or species in the area where this Protocol applies"*. The SPA/BD Protocol is complemented by the updated NIS Action Plan, the main objective of which is to promote the development of coordinated efforts and management measures throughout the Mediterranean to prevent, minimise, monitor, and control biological invasions and their impacts.

As of 21 April 2021, there are five (5) Contracting Parties to the Barcelona Convention that have not yet ratified the SPA/BD Protocol, and although they ratified the SPA Protocol, the Article 7(e) of which prohibited the introduction of exotic species, securing full ratification of the SPA/BD Protocol will strengthen the legal basis for and hopefully the commitment to implementing measures to prevent and respond to marine and coastal biological invasions in the region. It is noted, however, that the SPA/BD Protocol is broader than NIS. Thus securing ratification under this Strategy will be dependent on whether the barriers to ratification are NIS-related or not.

(34) The Regional Organization for the conservation of the Environment of the Red Sea and Gulf of Aden (PERSGA) was established by the Regional Convention for the Conservation of the Red Sea and Gulf of Aden (the "Jeddah Convention").

(35) The Commission on the Protection of the Black Sea Against Pollution (the Black Sea Commission or BSC) was established by the Convention on the Protection of the Black Sea Against Pollution (the "Bucharest Convention").

(36) The OSPAR Commission was established by the Convention for the Protection of the Marine Environment of the North-East Atlantic (the "OSPAR Convention").

(37) Agreement for Cooperation in Dealing with Pollution of the North Sea by Oil and Other Harmful Substances, 1983 (the "Bonn Agreement").

(38) The Baltic Marine Environment Protection Commission (Helsinki Commission or HELCOM) was established by the Convention on the Protection of the Marine Environment of the Baltic Sea Area (the "Helsinki Convention").

(39) The Regional Organization for the Protection of the Marine Environment (ROPME) was established by the Kuwait Regional Convention for Co-operation on the Protection of the Marine Environment from Pollution (the "Kuwait Convention").

The Contracting Parties to the Barcelona Convention agree to:

i) Circulate a questionnaire to those Contracting Parties to the Barcelona Convention that have not yet ratified the SPA/BD Protocol with a view to better understanding the barriers or challenges to such ratification; and
ii) Organise a workshop aimed at addressing these concerns.

4.7. ACTION 7: Initiation of preliminary activities to address the threat of biofouling on ships

Figure 2 shows that shipping –via both ballast water and biofouling vectors - is the pathway responsible for the majority of alien species introductions. At the same time, Strategic Priority 2 acknowledges that in order to achieve the Operational Objective for NIS, all pathways and associated vectors must be effectively managed. In this context, the scope of this Strategy has been broadened to include preliminary activities on ship-related biofouling.

This reflects developments at the international level where the IMO's MEPC adopted the Biofouling Guidelines that are currently being reviewed and assessed.

Concern around biofouling also led to the establishment of the GEF-UNDP-IMO GloFouling Partnerships Project in December 2018, which will run until December 2023. In 2021, the Project issued two guidance documents to assist countries in conducting national status assessments and in developing national strategies and action plans to manage biofouling. The Project also developed a number of training courses on biofouling.

Although no Mediterranean countries are direct partners in the GEF-UNDP-IMO GloFouling Partnerships Project, these guidance documents will be available to all countries. Moreover, there is potential for countries to engage with the Project Coordination Unit (PCU) as 'second-tier' countries.

The Contracting Parties to the Barcelona Convention agree to:

i) Organise a regional workshop to initiate biofouling-related activities in the region;
ii) Undertake National Status Assessments of Biofouling; and
iii) Develop national strategies and action plans to manage biofouling.

4.8. ACTION 8: Establishment and maintenance of a web-based Regional Information System (RIS)

A wide variety of information is required for the effective management of ballast water from environmental and biological data from the local ports as well as source ports, to information on BWM practices on board arriving ships. Such data can be collected through activities such as reporting by arriving vessels, sampling of ballast water, port surveys and monitoring.

It is crucial that this information is accessible across the region and Annex 4 of the 2012 Mediterranean BWM Strategy made detailed proposals regarding the establishment of an appropriate mechanism for exchanging information through a web based Regional Information System (RIS) that covers all kinds of information to be collected through contributions from Contracting Parties to the Barcelona Convention.

The assessment of the level of implementation of the 2012 Mediterranean BWM Strategy carried out in 2016 concluded that, although the proposed centralised system had not yet been realised, there had been progress in that some of the components had been incorporated into national and sub-regional approaches. Furthermore, SPA/RAC had conducted a feasibility study for a regional mechanism for collecting, compiling, and circulating information on marine alien species

in the Mediterranean (MAMIAS). MAMIAS is now in the final stage of development and will be available online in the near future [(40)]. It will make available essential data to assist BWM and complement the proposed RIS.

The Contracting Parties to the Barcelona Convention agree to:

i) Undertake a study to:
- assess the specific information needs relative to various aspects of BWM;
- identify existing websites, etc., which provide the type of information required (including national and sub-regional web-based or linked systems); and
- develop a regional information and decision support system or tool, taking note of recent developments and focusing on areas identified to be of common regional priority to assist with a standardised approach to BWM [(41)].

ii) Establish and maintain the RIS based on the recommendations of the study.

4.9. ACTION 9: Development and implementation of a capacity building programme

Given that a number of Mediterranean States have not yet ratified the BWM Convention, that in some cases even where they have ratified, it has not been incorporated into national law, and there are relatively few technical initiatives related to BWM, it is clear that there is an ongoing need for capacity building. A Capacity Building programme including training, knowledge transfer and technical cooperation should therefore be developed and implemented to assist in carrying out activities which will assist in implementing this Strategy. This should be available to all relevant personnel including those from environmental and maritime administrations as well as port authorities.

Capacity building activities should cover the following:
- drafting of instruments of ratification, national ballast water law and regulations;
- communication and awareness raising activities;
- port biota baseline surveys, monitoring and ballast water risk assessment;
- assessment and management of biofouling;
- research and development projects;
- PSC for BWM;
- developing national BWM strategies and action plans; and
- developing self-financing mechanisms.

It should be noted that materials on most of these topics are already in existence.

Training programmes and other capacity-building activities should be included in the regular programme of work of the relevant Regional Activity Centres of MAP. They should be organised at regional and sub-regional level taking into consideration similarities such as the geographical areas concerned (i.e. Eastern and Western Mediterranean countries), the language, the status of ratification etc.). Training should be offered to all relevant personnel including those from environmental and maritime administrations as well as port authorities. In addition, these training activities should be carried out using the "Train the Trainer approach", where appropriate, and used by countries to replicate these training activities at national level. Moreover, the "hubs of expertise" on port surveys and monitoring identified in the assessment report should be made available to assist in other sub-regions where possible.

(40) Available at: http://www.mamias.org. In the interim, the MAMIAS beta version can be accessed at: http://dev.mamias.org.

(41) This should include proposals regarding the body that will be responsible for hosting and maintaining the web-based RIS. The proposals that were made in the 2012 Mediterranean BWM Strategy should serve as a starting point for this study. It is also recommended that the outcome related to supporting information systems both globally and within the region from the IMO/GloBallast Expert Workshop on developing a Risk-based Decision Support System for cost effective Compliance Monitoring and Enforcement (CME) of the BWM Convention (London, United Kingdom, 25-26 April 2016) be considered.

The Contracting Parties to the Barcelona Convention agree to:

i) Undertake a training needs assessment to determine what type of training is most required and where;
ii) Organise regional training workshops based on the outcomes of the need assessment;
iii) Replicate regional workshops at national level, as necessary;
iv) Disseminate protocols and tools for standardisation of technical approaches that could be used to conduct regional and national activities; and
v) Promote e-learning opportunities.

4.10. ACTION 10: Enhancement of awareness of NIS amongst decision-makers and the general public

The support of decision-makers, as well as the general public and especially stakeholders with an interest in environmental issues, or who engage in activities which may result in the translocation of invasive species (such as recreational boating), is key to obtaining government commitment and funding for issues such as the management of NIS. Stakeholders can also play an important role in identifying new introductions, tracking existing ones through citizen science initiatives, and encouraging the implementation of management measures (for example, biofouling management on recreational craft). Activities to raise knowledge and awareness on the subject are therefore important to the implementation of this Strategy.

Some awareness-raising materials are already available through existing projects but should, where necessary, be translated into local languages. Where possible, collaborative partnerships should be forged between countries, and with non-governmental organisations (NGO) and other public interest groups to aid in organising targeted public awareness campaigns.

The Contracting Parties to the Barcelona Convention agree to:

i) Organise a high-level seminar on ballast water and biofouling for decision-makers in the region (e.g. at a COP);
ii) Produce and/or circulate relevant materials including those from IMO projects [(42)] as well as translate these into local languages for dissemination at national level;
iii) Organise national seminars and workshops to raise awareness about the issue among various stakeholders; and
iv) Develop local case studies for use in awareness campaigns and for leveraging support within the Mediterranean region and its sub-regions [(43)].

4.11. ACTION 11: Completion of regular reviews of this Strategy

The implementation of this Strategy should be coordinated by REMPEC in collaboration with SPA/RAC and should be a standing item on the agenda of the Meetings of the Focal Points of REMPEC and the Meetings of the SPA/BD Focal Points, as appropriate, with a view to evaluating the ongoing relevance of this Strategy and assessing progress in the implementation thereof.

(42) The materials developed within the framework of the GEF-UNDP-IMO GloBallast Partnerships Programme are available at: http://archive.iwlearn.net/globallast.imo.org/index.html.

(43) These can include species-specific awareness and/or management plans.

In addition, given the ongoing developments in the field – and particularly amendments to the BWM Convention – there should be mid-term and final reviews of this Strategy. The process to update or revise this Strategy to cater for the amendments to the BWM Convention and, amongst others, clearly cover both ballast water and biofouling – should be initiated in time prior to the end of the implementation period.

The Contracting Parties to the Barcelona Convention agree to:

i) Review the status of implementation of this Strategy at the Meetings of the Focal Points of REMPEC and the Meetings of the SPA/BD Focal Points, as appropriate;
ii) Undertake mid-term and final reviews of this Strategy; and
iii) Update or revise this Strategy to consider any new developments, including amendments to the BWM Convention.

4.12. ACTION 12: Development and implementation of a resource mobilisation plan to support implementation of this Strategy

The successful implementation of this Strategy is dependent on identifying the resources required for carrying out the proposed activities. To this end, the activities should be costed, and a resource mobilisation plan developed to cover these costs. Contributions to the required resources could include both financial resources as well as in-kind contributions such as technical expertise. For example, countries from the region which already have specific expertise on ballast water or biofouling management could support relevant activities by making such expertise available for national, sub-regional or regional training sessions. Potential sources of funding include the MTF, the IMO's ITCP, amongst others.

The Contracting Parties to the Barcelona Convention agree to:

i) Develop and implement a resource mobilisation plan including an estimation of costs, analysis of funding opportunities and identification of potential sources of technical expertise within the region which could be made available as in-kind contributions.

5. APPENDICES

Appendix 1: Work Plan and Implementation Timetable

Actions	Activities	Year					
		2022	2023	2024	2025	2026	2027
1. Ratification of the BWM Convention	i) Circulate a questionnaire to the Contracting Parties to the Barcelona Convention with a view to confirming the status of ratification of the BWM Convention – and its incorporation into national law – in each country;	X					
	ii) Draft guidelines for the development of national law to give effect to the BWM Convention once ratified, as well as secondary regulations and technical arrangements for its enforcement;	X	X				
	iii) Establish national policy working groups to lead the process towards the ratification of the BWM Convention, including drafting of the instrument of ratification; and	X	X	X			
	iv) Draft national law to give effect to the BWM Convention once ratified, as well as secondary regulations and technical arrangements for its enforcement, and submission through relevant governmental channels for endorsement.	X	X	X			
2. Harmonisation of BWM measures in the Mediterranean region	i) Establish a regional online BWM Working Group to drive the process towards harmonisation of BWM measures in the region coordinated by REMPEC in cooperation with SPA/RAC;	X	X	X	X	X	X
	ii) Organise a regional workshop on PSC in relation to the BWM Convention, in collaboration with existing PSC bodies (e.g. Mediterranean MoU on PSC, Paris MoU);		X				
	iii) Develop and implement a regionally harmonised, mandatory ballast water reporting system for ships arriving at Mediterranean ports;	X	X	X	X	X	X
	iv) Establish and maintain a regional communication system to allow exchange of data, experience and tracking of violations for PSC purposes;		X	X	X	X	X
	v) Develop and adopt a regional protocol for sampling of ballast water for purposes of PSC;	X	X				
	vi) Undertake an assessment of the status of BWE in the Mediterranean (including information on designated BWE areas in national waters);	X	X				
	vii) Develop, adopt, and implement a comprehensive Regional Procedure for the Granting of Exemptions under the BWM Convention;	X	X	X	X	X	X
	viii) Develop a regional action plan for the provision of port reception facilities for sediments (to be informed by a study on shipping traffic).		X	X	X		

Actions	Activities	Year					
		2022	2023	2024	2025	2026	2027
3. Development, adoption, and implementation of a regional protocol for port baseline surveys and biological monitoring in Mediterranean ports	i) Circulate a questionnaire to the Contracting Parties to the Barcelona Convention with a view to obtaining up-to-date information on the status of port surveys in the region;	X					
	ii) Identify key ports to be surveyed based on the questionnaire and provide support to the relevant authorities to undertake such surveys to fill the gaps;		X	X	X	X	X
	iii) Develop a regional protocol for port surveys, taking into account the *Guidance on Port Biological Baseline Surveys* that was developed within the framework of the GEF-UNDP-IMO GloBallast Partnerships Programme, the regional guidance provided for standardisation of survey and monitoring approaches through SPA/RAC via the EcAp roadmap and IMAP, as well as the HELCOM-OSPAR Joint Harmonized Procedure for BWMC A-4 Exemptions that includes a Port Survey Protocol; and	X	X				
	iv) Review and adapt the IMAP Guidance Fact Sheet for Common Indicator 6 under EO 2, as well as define related Data Standards (DSs) and Data Dictionaries (DDs) to ensure integration of data in the IMAP Info System.	X	X				
4. Promotion of the use of risk assessment as a tool to assist in ballast water (and, more generally, IAS) management and decision-making	i) Develop and adopt a regional protocol for risk assessment; and	X	X				
	ii) Undertake a regional risk assessment of key ports in the Mediterranean Sea.		X	X	X		
5. Alignment of BWM measures with neighbouring regions	i) Organise a Joint Conference on BWM with neighbouring regions to share experiences and promote further alignment.		X				
6. Ratification of the SPA/BD Protocol	i) Circulate a questionnaire to those Contracting Parties to the Barcelona Convention that have not yet ratified the SPA/BD Protocol with a view to better understanding the barriers or challenges to such ratification; and	X					
	ii) Organise a workshop aimed at addressing these concerns.		X				

Actions	Activities	Year					
		2022	2023	2024	2025	2026	2027
7. Initiation of preliminary activities to address the threat of biofouling on ships	i) Organise a regional workshop to initiate biofouling-related activities in the region;	X					
	ii) Undertake National Status Assessments of Biofouling; and		X	X	X		
	iii) Develop national strategies and action plans to manage biofouling.				X	X	X
8. Establishment and maintenance of a web-based Regional Information System (RIS)	i) Undertake a study to: • assess the specific information needs relative to various aspects of BWM; • identify existing websites, etc., which provide the type of information required (including national and sub-regional web-based or linked systems); and • develop a regional information and decision support system or tool, taking note of recent developments and focusing on areas identified to be of common regional priority to assist with a standardised approach to BWM.	X	X				
	ii) Establish and maintain the RIS based on the recommendations of the study.		X	X	X	X	X
9. Development and implementation of a capacity building programme	i) Undertake a training needs assessment to determine what type of training is most required and where;	X					
	ii) Organise regional training workshops based on the outcomes of the need assessment;	X	X	X	X	X	
	iii) Replicate regional workshops at national level, as necessary;		X	X	X	X	
	iv) Disseminate protocols and tools for standardisation of technical approaches that could be used to conduct regional and national activities; and	X	X	X	X	X	X
	v) Promote e-learning opportunities.	X	X	X	X	X	X
10. Enhancement of awareness of NIS amongst decision-makers and the general public	i) Organise a high-level seminar on ballast water and biofouling for decision-makers in the region (e.g. at a COP);		X				
	ii) Produce and/or circulate relevant materials including those from IMO projects as well as translate these into local languages for dissemination at national level;	X	X	X	X	X	
	iii) Organise national seminars and workshops to raise awareness about the issue among various stakeholders; and		X	X	X	X	
	iv) Develop local case studies for use in awareness campaigns and for leveraging support within the Mediterranean region and its sub-regions.		X	X	X	X	

Actions	Activities	Year					
		2022	2023	2024	2025	2026	2027
11. Completion of regular reviews of this Strategy	i) Review the status of implementation of this Strategy at the Meetings of the Focal Points of REMPEC and the Meetings of the SPA/BD Focal Points, as appropriate;		X		X		X
	ii) Undertake mid-term and final reviews of this Strategy; and			X		X	
	iii) Update or revise this Strategy to consider any new developments, including amendments to the BWM Convention.					X	X
12. Development and implementation of a resource mobilisation plan to support implementation of this Strategy	i) Develop and implement a resource mobilisation plan including an estimation of costs, analysis of funding opportunities and identification of potential sources of technical expertise within the region which could be made available as in-kind contributions.	X	X	X	X	X	X

Appendix 2: Supplementary Information for Regional Harmonisation of BWM Measures

1. INTRODUCTION

As with most international agreements, implementation, and enforcement of the BWM Convention is intended to take place at national level – through national law - with Parties thereto having obligations as flag and/or coastal or port States. Port or coastal States also have the right to intervene on board foreign ships in their waters or ports and may – individually or jointly with other Parties to the BWM Convention – impose more stringent requirements than those in the BWM Convention.

However, Article 13.3 of the BWM Convention specifically encourages regional cooperation of its implementation stating that: *"…Parties with common interests to protect the environment, human health, property and resources in a given geographic area, in particular, those Parties bordering enclosed and semi-enclosed seas, shall endeavour, taking into account characteristic regional features, to enhance regional co-operation, including through the conclusion of regional agreements consistent with this Convention. Parties shall seek to co-operate with the Parties to regional agreements to develop harmonized procedures."*

Given the international nature of shipping, the fact that an estimated 58% of the commercial maritime traffic in the Mediterranean Sea is internal (REMPEC, 2020), and the semi-enclosed nature of the Mediterranean, harmonisation of BWM measures in the region is especially important.

There is already a strong basis for regional cooperation on BWM measures. Article 13.1 of the SPA/BD Protocol provides for the Contracting Parties thereto to *"take all appropriate measures to regulate the intentional or accidental introduction of non-indigenous or genetically modified species to the wild and prohibit those that may have harmful impacts on the ecosystems, habitats or species in the area where this Protocol applies"*. The SPA/BD Protocol is complemented by the updated NIS Action Plan as well as i) *Guidelines for Controlling the Vectors of Introduction into the Mediterranean of Non-indigenous Species and Invasive Marine Species* [(44)]; and ii) Guide for Risk Analysis Assessing the Impacts of the Introduction of Non-indigenous Species [(45)].

While the updated NIS Action Plan deals with alien and invasive species in a more generic way, the *Guidelines for Controlling the Vectors of Introduction into the Mediterranean of Non-indigenous Species and Invasive Marine Species* specifically recommended that the following ballast water-related issues be addressed at regional level:

- Designation of Ballast Water Exchange (BWE) areas;
- Exemptions (for intra-Mediterranean voyages); and
- Establishment of an early warning system to inform the designation of no-uptake areas.

In addition, it is recommended here that there is regional harmonisation of activities which are necessarily implemented at national level, including:

- PSC measures;
- Additional measures; and
- Reporting and data collection – which should be consolidated into a regional "clearing house mechanism" or regional information centre so that it can be available for decision-support purposes.

2. OBLIGATIONS OF PARTIES TO THE BWM CONVENTION

In accordance with Article 2 of the BWM Convention, Parties thereto undertake to give full and complete effect to the provisions of the BWM Convention and the Annex in order to prevent, minimise and ultimately eliminate the transfer of harmful aquatic organisms and pathogens through the control and management of ships' ballast water and sediments.

(44) UNEP/MAP-RAC/SPA. 2008. Guidelines for Controlling the Vectors of Introduction into the Mediterranean of Non-indigenous Species and Invasive Marine Species. Ed. RAC/SPA, Tunis. 18 pp.

(45) UNEP/MAP-RAC/SPA. 2008. Guide for Risk Analysis assessing the Impacts of the Introduction of Non-indigenous Species. Ed. RAC/SPA, Tunis. 30 pp.

Parties to the BWM Convention also have the right to take, individually or jointly with other Parties thereto, and subject to certain conditions, more stringent measures for this purpose. More specific obligations of Parties to the BWM Convention can be separated into their flag State obligations (where appropriate), and their port or coastal State obligations.

The primary obligation of **flag States** is to ensure that vessels flying their flag are in compliance with the BWM Convention. This includes:

i) Surveying ships and issuing BWM certificates;
ii) The approval of BWMPs and Ballast Water Record Books (BWRBs);
iii) Taking action when a violation by a ship flying its flag is reported;
iv) Training their officers on the implementation and enforcement of the BWM Convention; and
v) Evaluating the performance of any equipment installed to achieve compliance with the BWM Convention noting that liability lies with the flag State.

The primary obligation of **coastal or port States** is to enforce the BWM Convention with a view to protecting their coastal waters. This includes:

i) Carrying out PSC inspections to ensure visiting ships are compliant with the BWM Convention;
ii) Providing reception facilities for sediments (in those ports and terminals where ballast tanks are cleaned or repaired) (Article 5);
iii) Taking action when a violation by a ship in a port or within their jurisdiction is detected (warning, detention, etc.); and
iv) States are also required to notify IMO and other Parties to the BWM Convention of their national requirements and procedures for BWM including the location of reception facilities and any requirements for ships unable to comply with.

Port or coastal States also have the right to impose, individually or jointly with other Parties the BWM Convention, and subject to certain conditions, additional, more stringent requirements (regulation C-1 thereof) in their waters provided that the IMO and other Parties thereto are notified.

In order to give effect to the provisions of the BWM Convention in their waters and on ships flying their flag, Parties thereto must enact **national law.** National law should therefore include *inter alia* provisions for:

- flag State obligations such as survey and certification;
- port State Inspections;
- reporting by vessels arriving in ports of the Party to the BWM Convention;
- designation of BWE, discharge and/or uptake areas;
- exceptions and exemptions;
- ballast water sampling;
- designation of sensitive areas; and
- procedures or alternative disposal methods for ballast water unsuitable for discharge.

National law must also provide for offences and penalties.

3. PORT STATE CONTROL MEASURES

Under the BWM Convention, ships (as per Article 3 thereof) are required (amongst others):

- To discharge ballast water in compliance with the Annex of the BWM Convention;
- To have an International Ballast Water Management Certificate (IBWMC);
- To have on board and implement an approved BWMP (regulation B-1 thereof) with a detailed description of the management measures to be taken to meet the requirements of the BWM Convention including the ballast water standards (D-1 or D-2); and
- To have on board a BWRB (regulation B-2 thereof) to record information regarding the uptake, management, and discharge of ballast water.

Management measures must be such that ballast water exchanged with natural seawater or discharged into the sea must meet either the D-1 or D2 standards depending on the date of construction of the ship and on the date of renewal

of the ship's IOPPC (for existing ships [46]). However, it is noted that, in terms of the 2019 amendment to regulation B-3 of the BWM Convention, **all** ships will be required to meet the D-2 standard by 8 September 2024 **unless** they have been granted an exemption in terms of regulation A-4 of the BWM Convention (see Figure A below).

Provisions at the national level should cover inspections to determine compliance with these requirements as well as for sanctions and penalties in the case of non-compliance.

National provisions for **PSC inspections** should be in line with the *Guidelines for port State control under the BWM Convention* (resolution MEPC.252(67)). They should comprise a 4-stage inspection:

1. Stage 1 – focusses on determining whether the ship has the appropriate documentation (as described above);
2. Stage 2 – looks at operation indicators related to the BWM system;
3. Stage 3 – involves ballast water sampling and an indicative analysis to determine compliance with the D-2 standard; and
4. Stage 4 – ballast water sampling with a detailed analysis to verify compliance with the D-2 standard.

Where sampling is undertaken, it should be consistent with the *Guidelines for ballast water sampling* (G2) (resolution MEPC.173(58)).

Non-compliance situations (Violations) can be divided into two types:

1. Non-compliance resulting in potential risks which could be:
   - a situation outside the control of the ship, for example where severe weather conditions have prevented a ship from managing its ballast water as required by the Port State, or
   - deliberate non-compliance with the Port State's BWM requirements.

2. Non-compliance NOT resulting in potential risks such as:
   - Incomplete record keeping by a ship with a strong record of compliance.

Each situation of **non-compliance** should be treated on its merits with all factors being taken into account before any enforcement action is taken. Penalties and sanctions could be applied with different levels ranging from none in cases of situations outside the control of the ship, to very high in cases of deliberate non-compliance such as deliberate discharge of untreated / un-exchanged ballast water with full knowledge of the Port state BWM requirements.

Enforcement measures should be applied in case it is established that a ship is non-compliant, i.e., the ship is in violation of the BWM requirements of the BWM Convention and/or any other requirements of the port State, such as ballast water emergency measures, BWE zones or additional measures (given that such requirements have been communicated to the ship before arrival by the Port State).

In the event that samples are found not to meet the D1 or D2 standards of the BWM Convention during PSC, either through "clear grounds" identified in PSC, or through indicative analysis or full scale/indicative sampling, the ship may be required to stop the discharge of ballast water in a port. If this is the case, then the ship would have to fix the problem before continuing to discharge ballast water.

Regional harmonisation: The approach to PSC measures should be harmonised across the region. It is recommended that the penalties and sanctions regime set up for the BWM Convention is aligned with any existing penalties and sanctions applied to shipping for MARPOL related violations.

(46) Existing ships are those constructed prior to the date of entry into force of the BWM Convention (8 September 2017).

4. BALLAST WATER EXCHANGE

In general terms, there are two main approaches to the management of ballast water so that it can be discharged into the ocean namely i) BWE in the open ocean (D-1 standard); and ii) BWM to meet the D-2 standard. Ballast water may also be discharged to sea in emergency situations (exceptions) or to port reception facilities should they be available.

BWE was included in the BWM Convention as an interim measure to allow existing ships to continue operating until such time as it was possible to meet the D-2 standard. This was due to the fact that BWE does not produce ballast water which meets the D-2 standard (which is the preferred objective) and, while it may reduce the risk, introductions of alien species can still occur. It may also compromise the safety of the ship. BWE is therefore in the process of being phased out and will no longer be accepted under the BWM Convention from 2024 (see Figure A below).

As long as BWE does take place, it is provided for under regulation B-4 of the BWM Convention which requires ships to conduct BWE at least 200 nautical miles from the nearest land in water at least 200 meters in depth. Where this is not possible then at least 50 nautical miles from shore in water at least 200 meters in depth. In areas where neither of these parameters can be met – generally enclosed or semi-enclosed seas – the port State/s concerned may designate BWE areas.

Regulation B-4 of the BWM Convention also provides that i) ships may be exempted from the requirement to undertake BWE where the safety of the ship is threatened; ii) the recording of reasons for non-compliance in the BWRB; and iii) that ships should not normally be required to deviate from their voyage planned route or unduly delay their arrival for the purpose of meeting these requirements.

The 2017 Guidelines (G6) are aimed at providing shipowners and operators with general guidance on the development of ship specific procedures for conducting BWE.

Annex 2 of the 2012 Mediterranean BWM Strategy set out *"Harmonized voluntary arrangements for ballast water management in the Mediterranean region"* [(47)]. Although, with the entry into force of the BWM Convention, they are now obsolete, those which are pertinent to BWE are summarised below as a possible basis for arrangements for regulation of BWE in the interim period until 2024 when BWE is phased out.

Proposed arrangements for regulation of BWE in the Mediterranean

Ships entering the waters of Mediterranean Sea area from the Atlantic Ocean (Straits of Gibraltar), or from the Indian Ocean through the Red Sea (Suez Canal) or leaving the waters of the Mediterranean Sea area to the Atlantic Ocean (Strait of Gibraltar) or to the Indian Ocean through the Red Sea (Suez Canal), should:

(a) undertake BWE before entering the Mediterranean Sea area, or after leaving the Mediterranean Sea area, as applicable, according to the standard set out in the D-1 standard of the BWM Convention, and at least 200 nautical miles from the nearest land and in waters at least 200 meters in depth [(48)]; and

(b) in situations where this is not possible, either due to deviating the ship from its intended voyage or delaying the ship, or for safety reasons, such exchange should be undertaken before entering the Mediterranean Sea area, or after leaving the Mediterranean Sea area, as applicable, according to the standard set out in the D-1 standard of the BWM Convention, as far from the nearest land as possible, and in all cases in waters at least 50 nautical miles from the nearest land and in waters of at least 200 meters depth [(49)].

(47) These were communicated to the IMO by REMPEC following the Tenth Meeting of the Focal Points of REMPEC (Malta, 3-5 May 2011) and then circulated by the IMO (BWM.2/Circ.35) on 15 August 2011.

(48) These geographical parameters are those set by regulation B-4.1.1 of the BWM Convention.

(49) These geographical parameters are those set by regulation B-4.1.2 of the BWM Convention.

Ships should, when engaged in traffic between:

- ports located within the Mediterranean Sea area; or
- a port located in the Black Sea [(50)] area and a port located in the Red Sea [(51)] area; or
- a port located in the Black Sea and a port located in the Mediterranean Sea area; or
- a port located in the Red Sea area and a port located in the Mediterranean Sea area.

(a) undertake BWE as far from the nearest land as possible, and in all cases in waters at least 50 nautical miles from the nearest land and in waters of at least 200 meters depth. The areas, one of which being unfit for BWE due its size, where such requirements are met in the Mediterranean Sea area, appear in the map provided in Figure B below;

(b) in situation where this is not possible either due to deviating the ship from its intended voyage or delaying the ship, or for safety reasons, BWE should be undertaken in areas designated by the port State for that purpose [(52)];

and, if a port State decides to designate BWE areas,

(c) such areas shall be assessed in accordance with the *Guidelines on designation of areas for ballast water exchange* (G14) (resolution MEPC.151(55)) (the "Guidelines (G14)"), and in consultation with adjacent States and all interested States.

As per regulation B-4 of the BWM Convention, if the safety or stability of the ship is threatened by a BWE operation, this operation should not be undertaken. The reasons should be entered in the BWRB and a Report should be submitted to the maritime authorities of the Port of destination.

It should be noted that should the Contracting Parties to the Barcelona Convention intend to designate areas for BWE under regulation B-4.2 of the BWM Convention, this intention must be communicated to the Organization (IMO) prior to the implementation of the designated exchange area for ballast water.

5. MEETING THE D-2 STANDARD

By 2024, ships will only be able to discharge ballast water which meets the D-2 standard unless they have been granted an exemption.

To meet the **D-2 standard,** ballast water must contain:

- fewer than 10 viable organisms per cubic metre that are greater than or equal to 50 micrometres in minimum dimension;
- fewer than 10 viable organisms per millilitre that are less than 50 micrometres in minimum dimension and greater than or equal to 10 micrometres in minimum dimension; and
- indicator microbes must not exceed the specified concentrations.

The indicator microbes, as a human health standard, include, but are not limited to:

- Toxicogenic vibrio cholerae (O1 and O139) with less than 1 colony-forming unit (cfu) per 100 millilitres or less than 1 cfu per 1 gram (wet weight) zooplankton samples;
- *Escherichia coli* – less than 250 cfu per 100 millilitres; and
- Intestinal enterococci – less than 100 cfu per 100 millilitres.

Adherence to these standards can be checked by sampling during PSC inspections as described above.

In practice, in order to meet the D-2 standard, the majority of ships are likely to choose to install ballast water management systems (BWMS) on board that include some form of treatment.

(50) *Black Sea area* means the Black Sea proper with the boundary between the Mediterranean and the Black Sea constituted by the parallel 41°.

(51) *Red Sea area* means the red sea proper including the Gulfs of Suez and Aqaba bounded at the south by the rhumb line between Ras si Ane (12°28'.5 N, 043°19'.6 E) and Husn Murad (12°40'.4 N, 043°30'.2 E).

(52) Regulation B-4.2 of the BWM Convention.

6. EXEMPTIONS

Regulation A-4 of the BWM Convention allows Parties thereto to grant exemptions to the requirement for ships to conduct BWM (as per Regulation B-3 thereof) or to comply with any Additional Measures (as per Regulation C-1 thereof). Such exemptions may, however, only be granted to ships on voyages between specified ports or locations or to a ship operating exclusively between specified ports or locations.

The exemptions must also:

- only be effective for a period of 5 years or less;
- only be granted to ships that do not mix ballast water or sediments other than from the ports or locations specified; and
- be based on the 2017 Guidelines (G7).

The 2017 Guidelines (G7) describe the risk assessment methods and explain the relationship between risk assessment and the Same Risk Area (SRA) approach. An SRA is an agreed geographical area based on the completion of a risk assessment and which is defined by the extent of connectivity of populations of target species. It is based on the premise that ships operating exclusively within such areas are not considered high risk. The SRA concept is in line with the 2017 Guidelines (G7).

The entry into force of the D-2 standard for all ships in 2024 is likely to increase the demand for exemptions. The process of granting exemptions is comprehensive and time-consuming and includes a risk assessment – which, in turn, requires a substantial amount of data. It is therefore recommended that a regionally harmonised procedure for exemptions to ships operating in the Mediterranean be developed. This could use, as a starting point, the HELCOM-OSPAR Joint Harmonized Procedure for BWMC A-4 Exemptions initially adopted in 2013 and amended in 2015 and 2020 [(53)]. This procedure includes the following:

- Port Survey Protocol;
- Target Species;
- Data Storage;
- Risk Assessment;
- Decision Support Tool and; and
- Administrative Procedures.

7. BALLAST WATER SEDIMENTS

Sediments which accumulate in ballast tanks harbour a variety of species which could become invasive should they be discharged into new geographical areas. Of particular concern are dinoflagellates, many of which cause Harmful Algal Blooms. Disposal of these sediments therefore has potentially regional implications and needs to be carefully managed. It is therefore recommended that a plan for managing sediment disposal be developed.

Article 5 of the BWM Convention provides that Parties thereto should ensure that adequate facilities are provided for the reception of sediments collected during the cleaning or repairing operations of ballast tanks. A first step in the development of a plan for the management of sediments disposal should therefore be to gather information on existing sediment reception facilities in the region.

The *Guidelines for sediment reception facilities* (G1) (resolution MEPC.152(55)) (the "Guidelines (G1)") are aimed at providing guidance for the provision of facilities for the reception of sediments that are provided in accordance with Article 5 of the BWM Convention. The guidance is also intended to encourage a worldwide uniform interface between such facilities and the ships without prescribing dedicated shoreside reception plants.

In the interim, in the absence of such facilities, as proposed in the 2012 Mediterranean BWM Strategy, sediments should be discharged beyond 200 nautical miles from the nearest land of the coastline when the ship is sailing in the Mediterranean Sea area.

(53) And/or any updates thereof.

8. VESSEL REPORTING AND DATA COLLECTION

Effective management of the potential impacts of ballast water discharges is dependent to a large extent on the availability of reliable data and information to support decision-making processes, in particular risk assessments. Data can be collected through a variety of activities including mandatory reporting by vessels on arrival at ports, sampling of ballast water, port surveys and monitoring.

Mandatory reporting: ports in the Mediterranean should implement a mandatory reporting requirement for arriving ships. This can be used to gather data from the ship such as the port of origin of ballast water, BWE records, any ballast water treatment regime, volume of treated or untreated water to be discharged, where and when the discharge is likely to take place, etc. This can assist with:

- Assessing the risk of harmful aquatic organisms being introduced into an area through the ballast water discharges of a ship;
- Identifying potentially toxic phytoplankton or other organisms that could be dangerous to public health (e.g. fish-shell toxins) and that could be imported into the region through ballast water; and
- Building the information base required for the granting of exemptions and development of additional measures.

While reporting at ports is to national port authorities, there should be a common reporting form and the information should be consolidated at the regional level.

Sampling of ballast water: where sampling of ballast water has been conducted as part of the PSC Inspection, the information obtained can be added to a centralised database of relevant information. Sampling could also be undertaken for research purposes but would have to be done with the consent of the vessel/s concerned.

Port biological baseline surveys: these are scientific surveys of ports with an emphasis on obtaining a detailed insight into the ports´ biology. At best, all port habitats should be sampled, including organisms from the water column and bottom living organisms in soft sediment and also the fouling community on hard substrates. When carrying out such a study species should be recorded on both natural and modified habitat, such as coastal defence structures, docks, harbour walls, jetties, shipwrecks, bridge abutments etc. Discharges into the port – for example, cooling water from power plants - should also be recorded as they may provide opportunities for introduced species to become established. The initial detailed baseline survey should be repeated approximately every five years.

A regional protocol for port surveys should be developed. A *Guidance on Port Biological Baseline Surveys* [(54)] was developed with the framework of the GEF-UNDP-IMO GloBallast Partnerships Programme. Moreover, the HELCOM-OSPAR Joint Harmonized Procedure for BWMC A-4 Exemptions includes a Port Survey Protocol.

Monitoring: There should also be ongoing monitoring programmes, especially in high-risk areas such as ports, aimed at early detection of newly introduced species with a view to preventing full-scale incursions.

All of the information generated by the above activities should be made available at the regional level through a centralised **information exchange/clearing house mechanism.**

(54) Awad, A., Haag, F., Anil, A.C., Abdulla, A. 2014. GEF-UNDP-IMO GloBallast Partnerships Programme, IOI, CSIR-NIO and IUCN. Guidance on Port Biological Baseline Surveys. GEF-UNDP-IMO GloBallast Partnerships, London, UK. GloBallast Monograph No. 22.

9. REPORTING OBLIGATIONS UNDER THE BWM CONVENTION

There are several mandatory reporting requirements under the BWM Convention and Parties thereto are required to provide information to IMO on a number of items as outlined below. The required information is provided to the IMO through the Global Integrated Shipping Information System (GISIS), except for the last item described below, which must be done through submission of information documents to the IMO's MEPC:

- **Exemptions granted to ships under regulation A-4 of the BWM Convention.** Parties to the BWM Convention, in waters under their jurisdiction, may grant exemptions to any requirements to apply regulations B-3 or C-1 thereof, under certain conditions and taking into account the 2017 Guidelines (G7) (resolution **MEPC.289(71)**). Such exemptions are only effective after communication to the Organization (IMO) and shall be recorded in the ship's record book of ballast water. In accordance with regulation A-4.1 of the BWM Convention, the conditions for exemptions include geographical and temporal limitations and these shall be specified in the information provided (e.g. voyage or voyages between specified ports or locations or operations exclusively between specified ports or locations; effective period which can be no more than five years subject to intermediate review; etc.). Each Party to the BWM Convention must also establish a point or points of contact for receipt of applications and relevant contact details should be submitted to the Organization (IMO).

- **BWE areas designated under regulation B-4.2 of the BWM Convention.** Ships conducting BWE should do so in accordance with the provisions of regulation B-4.1 of the BWM Convention relating to water depth and distance from land. However, where this is not possible (which is the case in the Mediterranean Sea) the port State may designate areas, in consultation with adjacent or other States, as appropriate, where a ship may conduct BWE, taking into account the Guidelines (G14) (resolution **MEPC.151(55)**). A Party or Parties to the BWM Convention intending to designate areas for BWE under regulation B-4.2 thereof must communicate this intention to the Organization (IMO) prior to the implementation of the designated exchange area for ballast water. Such communication must include:
  - the precise geographical coordinates, depth limit and/or distance from the nearest land that defines the designated BWE area;
  - other information that may be relevant to facilitate ships' identification of the designated BWE area, for example navigation aids; and
  - details of the characteristics of the designated BWE area that may be relevant to assist ships to plan their voyage, including: use of area by other traffic, current and tidal flow, wind and swell conditions, seasonal events (cyclones, typhoons, ice, etc.).

- **Additional measures under regulation C-1 of the BWM Convention.** If necessary to prevent, reduce, or eliminate the transfer of invasive aquatic species through ships' ballast water and sediments, Parties to the BWM Convention may, consistent with international law, require ships to meet specified standards or requirements beyond those of the BWM Convention, taking into account the *Guidelines for additional measures regarding ballast water management including emergency situations* (G13) (resolution **MEPC.161(56)**). Parties to the BWM Convention shall communicate their intention to establish additional measure(s) to the Organization (IMO) at least 6 months prior to the projected date of implementation of the measure(s), except in emergency or epidemic situations. In these latter cases, the additional measures should be communicated to the Organization (IMO) as soon as possible (to the extent required by customary international law as reflected in UNCLOS, as appropriate, Parties to the BWM Convention may also have to obtain the approval of the Organization (IMO)). Such communication shall include:
  - the precise co-ordinates where additional measure(s) is/are applicable;
  - the need and reasoning for the application of the additional measure(s), including, whenever possible, benefits;
  - a description of the additional measure(s); and
  - any arrangements that may be provided to facilitate ships' compliance with the additional measure(s).

- **Warnings concerning ballast water uptake** in certain areas and related flag State measures under regulation C-2 of the BWM Convention. Parties to the BWM Convention shall endeavour to notify mariners and the Organization (IMO) of areas under their jurisdiction where ships should not uptake ballast water due to known conditions (e.g. areas known to contain outbreaks, infestations, or populations (e.g. toxic algal blooms) which are likely to be of relevance to ballast water uptake or discharge; near sewage outfalls; or where tidal flushing is poor or specific times during which a tidal stream is known to be more turbid). The notice to the Organization (IMO) and any potentially affected coastal States shall include the precise coordinates of the area or areas and, where possible, the location of any alternative area or areas for the uptake of ballast water. The notice shall include advice to ships requiring to uptake ballast water in the

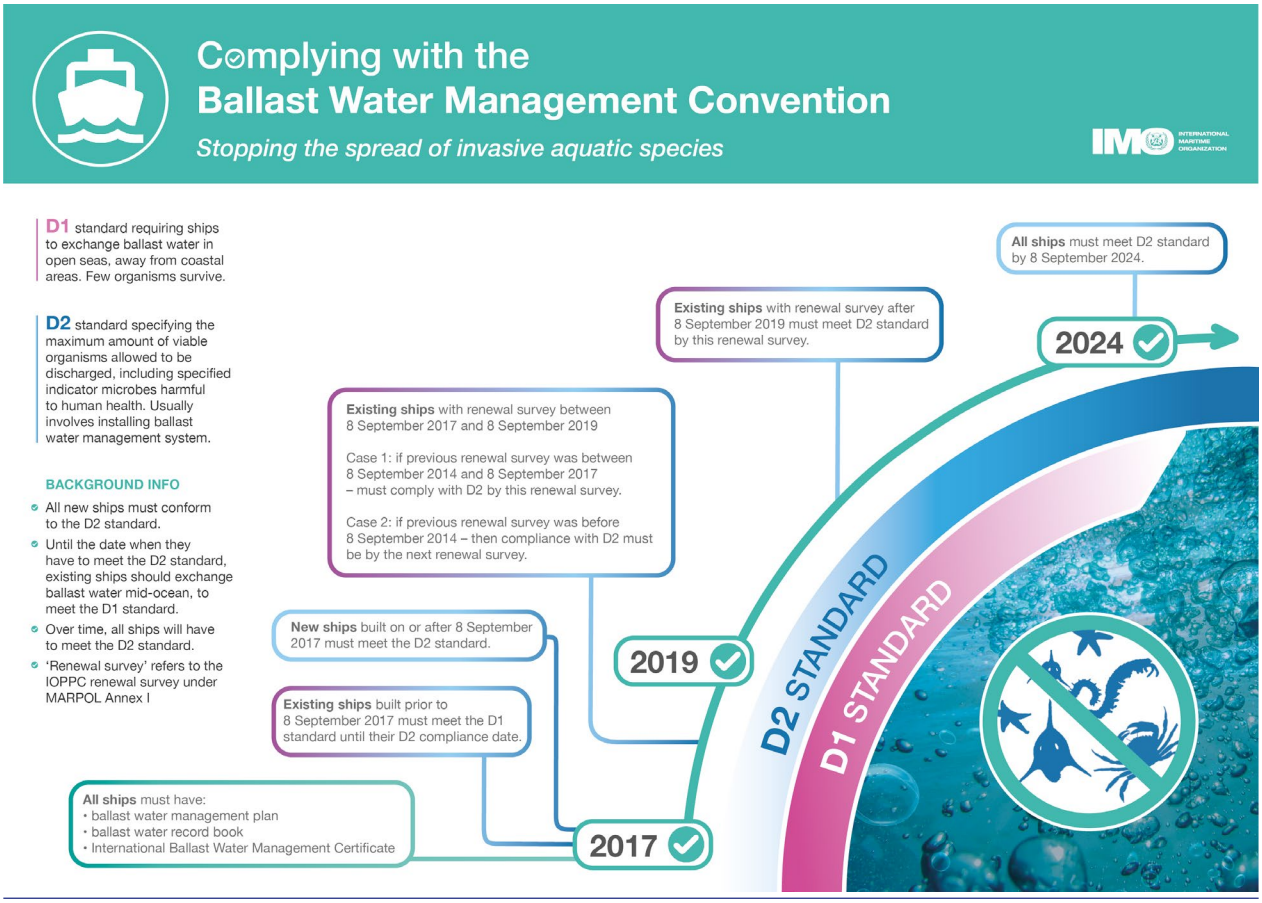
area, describing arrangements made for alternative supplies. The Party to the BWM Convention shall also notify mariners, the Organization (IMO) and any potentially affected coastal States when a given warning is no longer applicable.

- **Availability of reception facilities for ballast water and sediments and alleged inadequacies** related to sediment reception facilities in accordance with Article 5 and Article 14 of the BWM Convention. In accordance with Article 5.1 of the BWM Convention, Parties thereto undertake to ensure that, in designated ports and terminals where cleaning or repair of ballast tanks occurs, adequate facilities are provided for the reception of sediments, taking into account the Guidelines (G1) (resolution **MEPC.152(55)**). In accordance with Article 14.1(b) of the BWM Convention, Parties thereto shall report to the Organization (IMO) the availability and location of any reception facilities for the environmentally safe disposal of ballast water and sediments. In addition, in accordance with Article 5.2 of the BWM Convention, Parties thereto shall notify the Organization (IMO) of all cases where any facilities provided as above are alleged to be inadequate.

- **Responsibilities and conditions of the authority delegated to nominated surveyors** or recognised organisations in accordance with regulation E-1 of the BWM Convention. In accordance with regulation E-1.5 of the BWM Convention, the Administration shall notify the Organization (IMO) of the specific responsibilities and conditions of the authority delegated to the nominated surveyors or recognised organisations for conducting surveys under the BWM Convention.

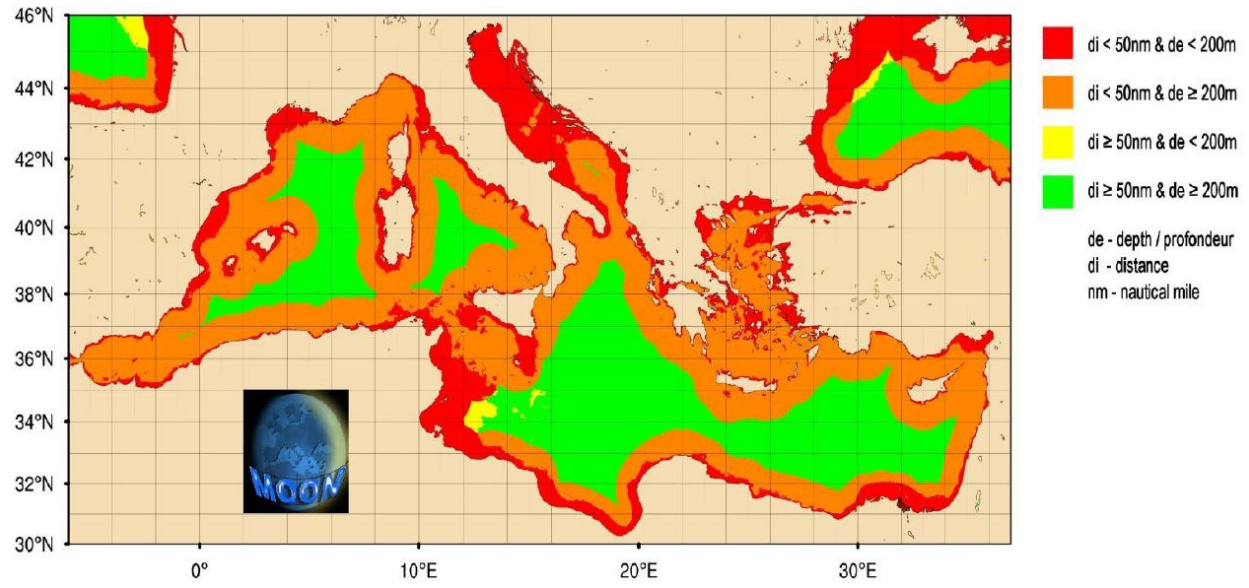
- Information **on BWMS** approved under regulation D-3 of the BWM Convention. In accordance with paragraph 7.2 of the annex to the BWMS Code (resolution **MEPC.300(72)**), Parties to the BWM Convention, when approving a BWMS used to comply with regulation D-2 thereof, shall submit to the Organization (IMO) the type approval report. The required information is listed under the aforementioned paragraph of the BWMS Code and is not repeated here due to its extent; a summary of the required information reporting on type approved BWMS (as outlined in resolution **MEPC.228(65)**) includes:
  - approval date;
  - name of the Administration;
  - name of the BWMS;
  - a copy of the Type Approval Certificate and any appendices which includes details on all imposed limiting conditions on the operation of the BWMS;
  - an annex to the Type Approval Certificate which contains the test results of each land-based and shipboard test run;
  - the protocol according to which testing was undertaken;
  - a description of the Active Substance(s); and
  - the identification of the specific IMO's MEPC report and paragraph number granting final approval.

Figure A. Schematic showing transition from D-1 to D-2 standards for BWM



Source: *OMI*

Figure B. Areas in the Mediterranean Sea meeting the requirements set out in regulation B-4.1.2 of the BWM Convention (at least 50 nautical miles from the nearest land in waters of at least 200 meters depth)



Source: *Mediterranean Strategy and Action Plan on Ships' Ballast Water Management. UNEP(DEPI)/MED IG 20/8 Annex II*

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Mediterranean Action Plan
Barcelona Convention

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