




Strategic Priorities

1. Support international instruments developed to minimize the introduction of invasive alien species in the Mediterranean
2. Maintain capacity-building activities and initiatives in the Mediterranean region
3. Develop advanced knowledge on environmental condition of the Mediterranean and ships' mediated introduction of invasive alien species
4. Use risk assessment as a reliable tool to assist in ballast water management decision-making and in compliance, monitoring and enforcement procedures



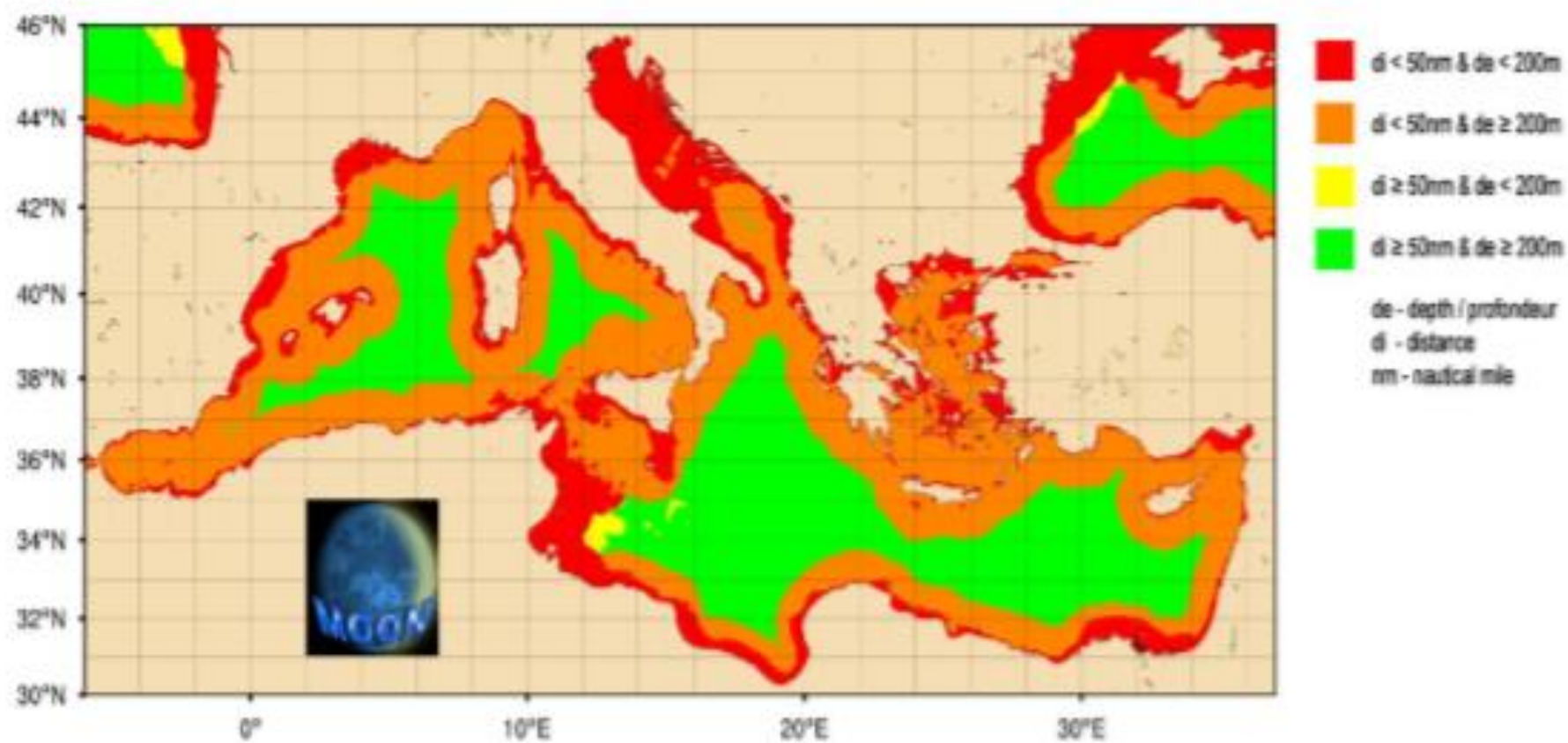
5. Decide upon voluntary regional arrangements in the Mediterranean and ensure sub-regional and national strategies are in line with these

6. Consider other regional seas strategies and initiatives

7. Keep the Strategy and Action plan under review and assess their implementation progress

8. Work on the identification of adequate resources to implement activities under the Strategy and Action Plan

Implemented by 8 Action Points



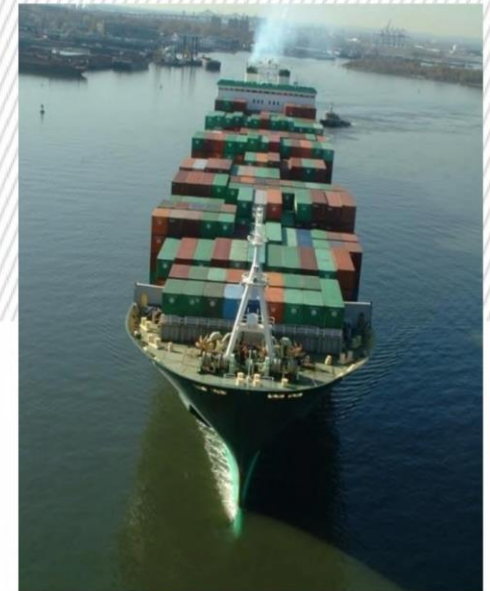
Same Risk Area

BCSea Training on the BWM Convention

Brian Elliott/

Senior Project Officer for Training and
Capacity Building

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Exceptions, Reg. A-3



- Uptake/discharge of BW necessary to ensure safety in **emergency situations, safety of life at sea** and **minimise pollution**
- Accidental discharges resulting from **damage to ship/equipment**
- Uptake/Discharge in the **high seas of same BW**
- Discharge in same location where the BW was originally taken with **no mixing occurred**



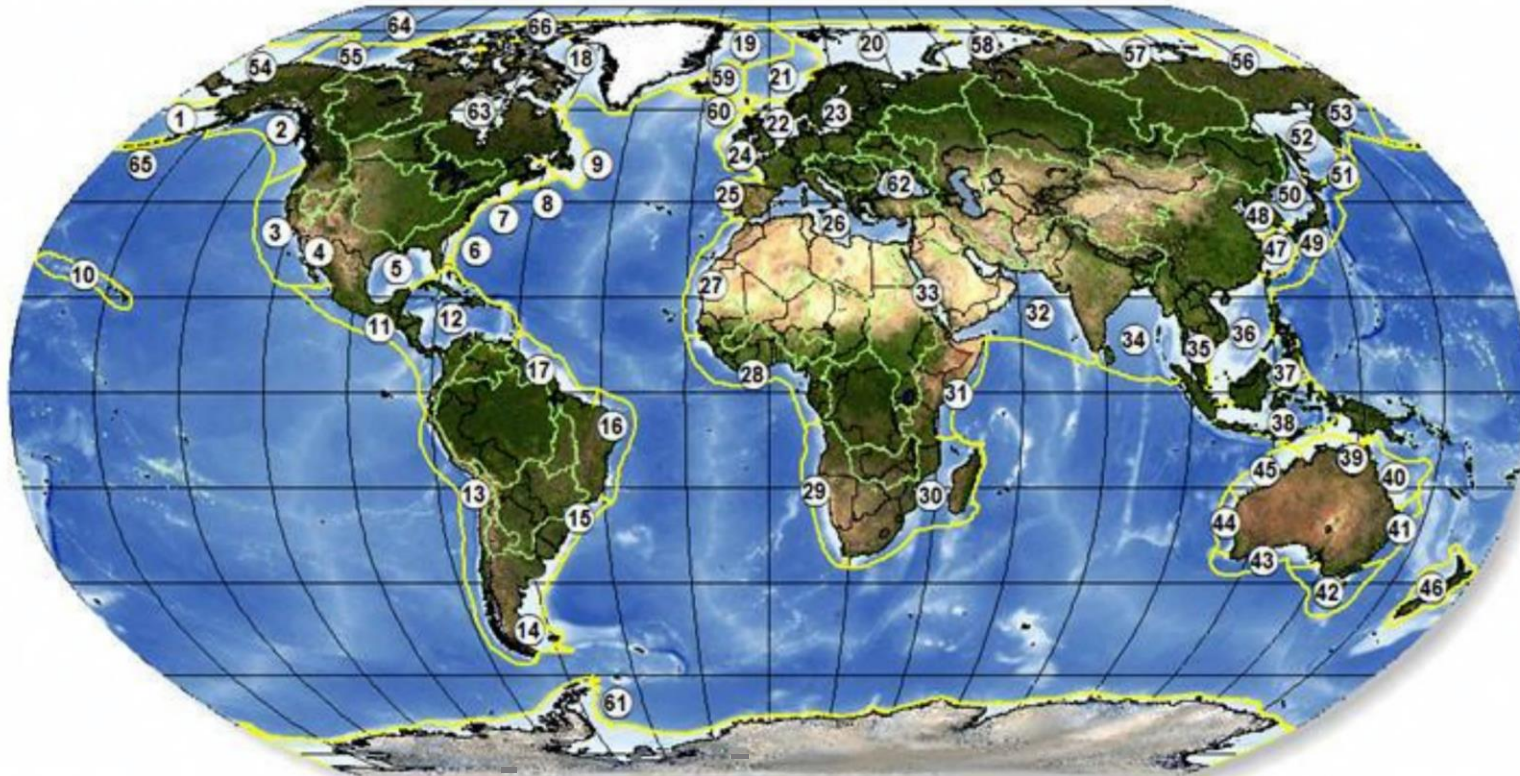
Exemptions, Reg. A-4

- Ships on **voyage or operating exclusively between specific ports**
- For **up to 5 years**, subject to intermediate review
- Based on **G7, GLs for Risk Assessment**
- To be communicated to IMO
- To be **recorded in the BW Record Book**

Concept Origins

- G7 Guidelines for Risk Assessment under Regulation A-4 of the Ballast Water Convention
- Exemptions - short sea traffic industry is concerned over the feasibility of obtaining survey data generated for the risk assessments and the ownership of these data
- Environmental Matching Risk Assessment
- Bio-Geographic Regions
- Identification Native Species to reduce the burden and data need
- Various bio-geographic models can be used

Large Marine Ecosystems of the World and Linked Watersheds



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|-----------------------------------|-----------------------------|-----------------------------------|-----------------------------------|---------------------------|
| 1. East Bering Sea | 15. South Brazil Shelf | 28. Guinea Current | 42. Southeast Australian Shelf | 56. Beaufort Sea |
| 2. Gulf of Alaska | 16. East Brazil Shelf | 29. Benguela Current | 43. Southwest Australian Shelf | 57. Laptev Sea |
| 3. California Current | 17. North Brazil Shelf | 30. Agulhas Current | 44. West-Central Australian Shelf | 58. Kara Sea |
| 4. Gulf of California | 18. Canadian Eastern Arctic | 31. Somali Coastal Current | 45. Northwest Australian Shelf | 59. Iceland Shelf and Sea |
| 5. Gulf of Mexico | 19. West Greenland | 32. Arabian Sea | 46. New Zealand Shelf | 60. Faroe Plateau |
| 6. Southeast US Continental Shelf | 20. Greenland Sea | 33. Red Sea | 47. East China Sea | 61. Antarctic |
| 7. Northeast US Continental Shelf | 21. Barents Sea | 34. Bay of Bengal | 48. Yellow Sea | 62. Black Sea |
| 8. Scotian Shelf | 22. Norwegian Sea | 35. Gulf of Thailand | 49. Kuroshio Current | 63. Hudson Bay Complex |
| 9. Newfoundland-Labrador Shelf | 23. North Sea | 36. South China Sea | 50. Sea of Japan/East Sea | 64. Central Arctic Ocean |
| 10. Insular Pacific-Hawaiian | 24. Baltic Sea | 37. Sulu-Celebes Sea | 51. Oyashio Current | 65. Aleutian Islands |
| 11. Pacific Central-American | 25. Celtic-Biscay Shelf | 38. Indonesian Sea | 52. Sea of Okhotsk | 66. Canadian High Arctic |
| 12. Caribbean Sea | 26. Iberian Coastal | 39. North Australian Shelf | 53. West Bering Sea | North Greenland |
| 13. Humboldt Current | 27. Mediterranean | 40. Northeast Australian Shelf | 54. Northern Bering | |
| 14. Patagonian Shelf | Current | 41. East-Central Australian Shelf | Chukchi Seas | |

Refining Concept

- Using the concept on a local basis
- Environmental Matching still used
- Domestic Shipping
- Problems with Applying D1 and D2 over short distances
- Connectivity - the coherence between {sub}• populations of a species, i.e. the extent populations receive and deliver individuals from/to each other.
- Fecundity

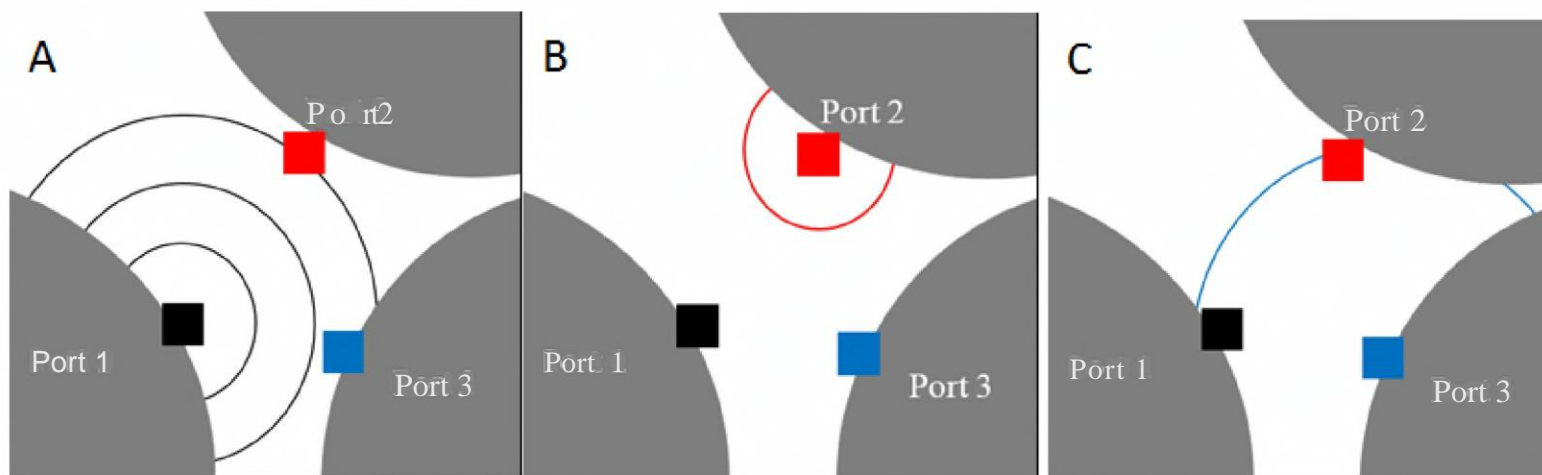


The SRA

- risk assessment method for estimating zones of dispersal resulting in acceptable low risk for transfer of invasive species.
- one risk assessment to be applied to all ports and locations within that area
- grant exemptions to vessels operating in that area in accordance with the BWMC Regulation A-4.
- the authorities appointing a SRA are those accepting risk assessments and determining the acceptable level of risk in each instance

The summarised key elements of SRA concept are

- it defines an area that exhibits same risk regarding of transfer of target species using estimates of natural dispersal over time;
- exemptions can be granted to vessels operating exclusively in this area or not mixing water and sediments from originating outside of the area with water and sediments of the area.



A: Data exists on a target species in Port 1. The species has a medium dispersal capability. Analysis of species dispersal reveals that the species after a few generations (black circles) will reach Port 2 and Port 3 through natural dispersal. All three ports may be perceived as belonging to the same SRA


B: Data exists on a target species in Port 2. The species has no pelagic larval stage and slow dispersal. Analysis of species' dispersal and/or historic distribution data show that the species is incapable of spreading (red circle) to Port 1 or Port 3 within the timeframe considered. Port 2 is not perceived as belonging to an **SRA**

C: Data exists on a target species in Port 3. The species has a large dispersal capability. Analysis of species dispersal reveals that the species after one generation (blue circle) will reach Port 1 and Port 2 through natural dispersal and all three ports will belong to a SRA for this species.



The SRA assessment and exemption process would include the following:

1. Two or more states agree to investigate the possible use of SRA in water body shared by the states.
2. The states propose and agree the target species list for the ports in question. The relevant parameters used of assessment must also be agreed in advance.
3. To arrive at an SRA the risk assessment of the target species in area is needed to determine the extent of the area.
4. Vessels trading in the SRA may apply for exemption under the terms of A-4. Vessels can apply in any of the SRA states for exemption.
5. The exemption granted (or rejected) is communicated to the other SRA states and to the IMO.
6. Each vessel is issued the exemption to be recorded in the ballast water record book.



Same Risk Area concept (SRA) was approved by MEPC 71 as a risk assessment mechanism under the 2017 Guidelines for risk assessment under regulation A-4 of the BWM Convention (G7) (resolution MEPC.289(71)).

No or limited data - No SRA




Application to the Kattegat and the Danish Straits

- ro-pax ferry lines operate between Denmark and Sweden, and a small number of coastal operators trade between ports in the two countries.
- key driver of the SRA concept is the busy ferry lines operated between the ports of Helsingborg in Sweden and Esbjerg in Denmark, where the less than 5km is crossed by ferries leaving port every 15 minutes for most of the day and night. In the Kattegat, ferries operate with daily departures in both countries.

The hydrodynamic and ecological complexity and habitat distribution were challenging to the assessment

- high-resolution scale
- distribution probability of their natural dispersal, can be modelled

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- Invasive species were identified in the databases relevant for the Kattegat and the Sound region.
 - 84 marine invasive species identified for the Kattegat and Sound region, 23 species were selected for the case study by excluding species meeting one of the criteria listed below:
 - species with the entire life cycle in the water column {not limiting to **SRA**};
 - species that are already fully established in the region {excluded as per Guidelines {G7}};
 - 3 species with a salinity tolerance < 10 PSU {**SRA** only to cover marine ports}; and
 - 4 macroalgae and macrophytes {typically only a few metres dispersal or in case of rafting not considered limiting to **SRA**}.

Life-history traits of these species were collected or estimated.



- **Habitat Maps**
- **Connectivity Matrix and modelling compiled**
- **The study showed that**
 - intolerance to higher salinities was an important cause of lack of connectivity in Kattegat and consequently that exemptions may be considered in a larger area as such species would be unlikely to disperse in the area.
 - It underlines that a species specific risk assessment is required based on the characteristics of the potentially invasive species to inform the risk assessment of biological traits and characteristics that are not part of the connectivity modelling in SRA.

Emergency Issues:

Options for the Vessel

- PSC may allow the ship to
 - 1). Remain where it is until the deficiencies are rectified
 - 2). Move to a safe anchorage to allow this to happen (depends on stability)
 - 3). Leave the port to rectify the situation – with appropriate controls on their Ballast Water discharges.
- Appropriate tests need to be undertaken to ensure deficiencies are overcome



- Options when a vessel warns that there is a problem before entry
 - - Can also be used post detention
- 1). Treatment of ballast water using a mobile or another ships ballast water treatment system
- 2). Delivery to Land Based Facilities
- 3). Delivery to another ship that needs ballast water
- 4). Retain ballast water – which will limit cargo operations



- Options when a vessel warns that there is a problem before entry (cont...)
 - 5). Return to point of origin to discharge
 - 6). Leave and exchange in a acceptable area
 - 7). Treatment of Ballast Water with salt (last option)
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- Must be agreed and logged in the BWM Record Book



- If a ship has a problem they should report the following to PSC or the coastal State as soon as possible:
 - IMO Number
 - Name
 - Position
 - Intended arrival port and time
 - Amount of Ballast Water to be treated
 - Draft
 - What the problem is
 - Ballast Water origin
 - Any Navigation problems
 - Risk Assessment



Brian.Elliott@emsa.europa.eu

£7 twitter.com/emsa_lisbon

7 facebook.com/emsa.lisbon

