MEDITERRANEAN ACTION PLAN (MAP)
REGIONAL MARINE POLLUTION EMERGENCY RESPONSE CENTRE FOR THE MEDITERRANEAN SEA (REMPEC)

Sixteenth Meeting of the Focal Points of the Regional Marine Pollution Emergency Response Centre for the Mediterranean Sea (REMPEC)

Sliema, Malta, 13-15 May 2025

REMPEC/WG.61/6/2
14 March 2025
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Agenda Item 6: Illegal and accidental oil and HNS pollution from ships

Lowering of the Threshold for Reporting on Oil spills

REMPEC
Malta, 2025

Note by the Secretariat

The document provides an overview of the information provided by the consulted institutions and provides a proposal for lowering the threshold for reporting on Oil spills.

Background

1. The 23rd Meeting of the Contracting Parties to the Barcelona Convention (Slovenia, December 2023) adopted Decision IG.26/3 on the 2023 Mediterranean Quality Status Report and a Renewed Ecosystem Approach Policy (EcAp) in the Mediterranean. This decision includes requirements to improve quantity and quality of data for the Integrated Monitoring and Assessment Programme of the Mediterranean Sea and Coast (IMAP) Common Indicator 19 (CI 19[1]). It also requests the United Nations Environment Programme (UNEP)/Mediterranean Action Plan (MAP) and the Regional Marine Pollution Emergency Response Centre for the Mediterranean Sea (REMPEC) to align the definition of the minimum threshold for reporting with that used under other regional sea conventions and within the framework of the Marine Strategy Framework Directive (MSFD).

2. The Regional Workshop on Data Sharing, Monitoring, and Reporting (MEDEXPOL 2024) organized by REMPEC in Malta, on the 25-26 September 2024, in accordance with the recommendation of the 15th Meeting of the Focal Points of REMPEC (Malta, May 2023), was aimed at assisting the Contracting Parties to the Barcelona Convention in fulfilling their obligations under the International and Regional Convention and Protocols related to Preparedness and Response to Marine Pollution Incidents in terms of Reporting, Monitoring, and Data Sharing.

3. The Workshop highlighted the need to further work on a threshold for reporting and on the definition of assessment criteria for acute pollution, and mandated REMPEC to prepare a proposal for lowering the minimum threshold for reporting (on oil spills), taking into consideration the work of other regional sea conventions, as well as the MSFD, for submission to the 16th Meeting of REMPEC Focal Points (Malta, 13-15 May, 2025).

4. In order to gather background information for the preparation of a proposal on lowering the threshold for reporting, REMPEC undertook an informal consultation with the relevant competent organisations on this matter including UNEP/MAP-MEDPOL, the IMO/MED, HELCOM, OSPAR and the Bonn Agreement, the European Commission and ITOPF.

Measurement unit of spills

5. Different units to measure the volume of petroleum products are used by the industry. European and Asian markets use litres, metric tons and cubic meters while in the United States barrels and gallons are the most common measurement units. Metric tons (t) and cubic meters (m^3) are the units generally considered for reporting oil spill events. Conversion between these units poses challenges because of the different density of petroleum products.

6. The density of crude oil is very variable, depending on the field characteristics. It usually ranges from approximately 0.8 for the lighter crude oils to over 1.0 for heavy crude oil and bitumen. The variation of density with temperature, coefficient of expansion, is a property of great technical importance, since most petroleum products are sold by volume and specific gravity is usually determined at the prevailing temperature (21°C, 70°F) rather than at the standard temperature (60°F, 15.6°C)[2].

7. For various petroleum products, density ranges and volume-mass equivalence are reported by industries, with reference with their own products. For example. for crude oil OPEC (2019) [3] reports 1 t = 1.165 m^3; 1 m^3 = 0.858 t. REFRAT (2019)[4] reports the following equivalences (not to be considered

[1] IMAP CI 19:'' Occurrence, origin (where possible), extent of acute pollution events (e.g. slicks from oil, oil products and hazardous substances), and their impact on biota affected by this pollution''

[2] Speight J., G., 2002. Handbook of Petroleum Product Analysis. John Wiley & Sons, Inc., Hoboken, New Jersey. ISBN: 0-471-20346-7

[3] OPEC 2019. Conversion Factors (volume to mass and vice versa). Presentation by Dr. Hossein Hassani.

[4] REFRAT, 2019. Units of Trade: Conversion rules in the global oil industry. Tonnes, barrels, cubic meters and gallons

as accurate and only provided for general understanding of the conversion factors): Diesel fuel: 1 t = 1.18 m^3; Aviation Kerosene (Jet A1): 1 t = 1.26 m^3; Gasoline: 1 t = 1.34 m^3; High sulphur fuel oil: 1 t = 1.02 m^3; Motor oil: 1 ton = 1.13 m^3.

8. Despite the heterogeneity of density for crude oil and the different petroleum derivates, **for operational purposes only, and with the aim to provide simple and applicable guidelines for reporting on oil spills, the present concept note considers the measurements units "t" = metric tonne and "m^3" cubic meter as exchangeable**. Considerations regarding different toxicity of the spilled substances are not encompassed by the present concept note which is focused on minimum threshold for reporting with no consideration of the eventual impact of spills.

Acute pollution from spills

9. The wording "acute" pollution is understood as related to a "short-term" event, irrespective of its ecological impact or the severity of its consequences. This terminology is adopted in the present concept note.

10. The European Commission (EC) defines "acute pollution" as "*events which can cause short time and severe pollution to the marine environment. They can be deliberate or accidental, e.g. illegal discharges and oil spills*" (Marine Strategy Framework Directive - Directive - 2008/56, Descriptor 8).

11. The "significance" of acute pollution events has not been formally defined at international level, nor in the European Union. This is a complex concept, depending on the nature of pollutant released, the environmental conditions and the ecological characteristics of the areas where the spill has occurred.

12. The minimum threshold for reporting has only an operational purpose and it DOES NOT coincide with the significance of the spill.

Reporting obligations on oil spills in the Mediterranean and spill trend

13. Contracting Parties of the UNEP/MAP Barcelona Convention are committed to report on spills under the Prevention and Emergency Protocol. The Protocol establishes a reporting procedure on incidents (Article 9) whereby information must be reported using a mutually agreed standard form, as stated by Article 9.8.

14. In relation to their obligations under Article 9, at the Fifth Ordinary Meeting in 1987, the Contracting Parties adopted the Guidelines for Co-operation in combating Marine Oil Pollution in the Mediterranean (UNEP/IG.74/5, UNEP/MAP, 1987), which recommend Parties to report to REMPEC at least all spillages or discharges of oil in excess of 100 cubic metres. This was a first threshold used in the framework of the Barcelona Convention.

15. In 2018, the Fifteen Ordinary Meeting, the Contracting Parties adopted the Mediterranean Guide on Cooperation and Mutual Assistance in Responding to Marine Pollution Incidents (2018)[5] which recommends Parties to report to REMPEC at least all spillages or discharges of oil **in excess of 50 cubic metres**. The Meeting considered that the threshold of 100 cubic meters was not appropriate anymore and a reference was made to MARPOL threshold of 50 tonnes. The Meeting concluded that spills of 50 cubic metres should be reported, whereas countries could also opt to report on spillages of lower amounts (UNEP(DEPI)/MED WG.417/17).

[5] REMPEC (2018). Mediterranean Guide on Cooperation and Mutual Assistance in Responding to Marine Pollution Incidents.

16. Thus, **at present, under the Barcelona Convention, spills above 50 cubic meters are to be reported**, whereas countries could also opt to report on spillages of lower amounts.

17. Despite a recent increase in the number of CPs submitting their reports (REMPEC analysis of data on reporting on the "2002 Emergency Protocol" and the Offshore Protocol for the biennium 2020-2021, presented at the 14th Meeting of REMPEC Focal Points), still only a limited number of reports is provided. Therefore, the Barcelona Convention repository for data oil spills, MEDGIS-MAR, presents some data gaps.

18. **Despite the limited number of reports and the fact that only some countries are reporting**, data on oil spills reported in the MEDGIS-MAR can be used to illustrate the trend of records, as shown in Figure 1 for the period 2002-2021 (the figure considers only those events for which the spilled substance is identified as volatile or non-volatile oil in the dataset). In the figure, spills events are classified according to the ITOPF categorisation of spilled volumes. Large spills above 700t have not been recorded since 2015 and medium size spills (7-700t) that represented the most frequent class until 2017 (e.g. 68% in 2012, 50% in 2013 and 44% in 2017) have not been recorded in the last four years. In conclusion, based on the available data, the overall number of (reported) spills has significantly decreased in the last four years, but the number of small spills (<7t) have increased. **However, this evidence can be linked to the incompleteness' of the MEDGIS-MAR data set**

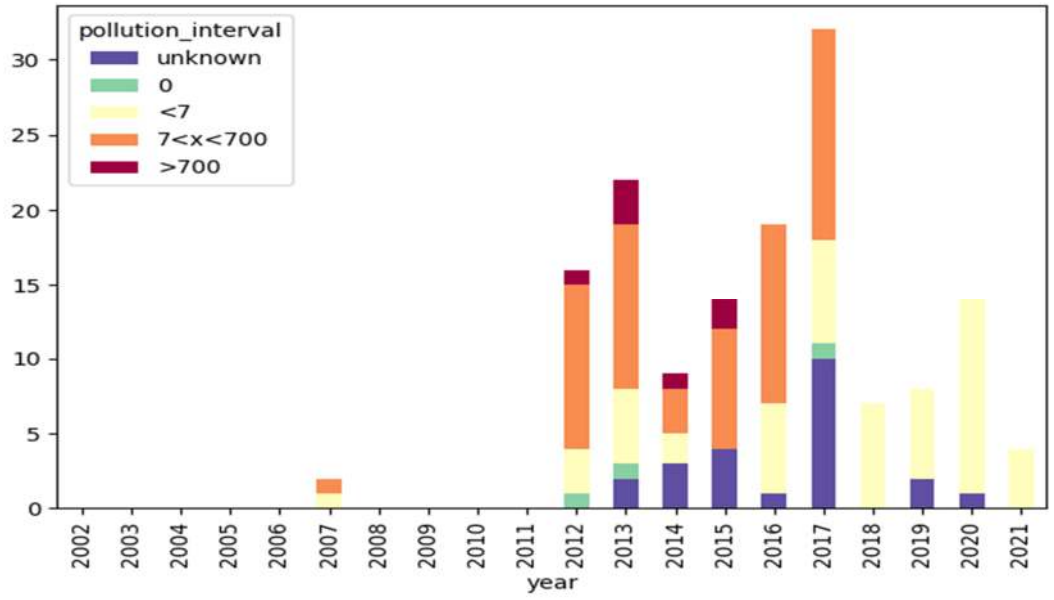


Figure 1. Number of oil spills events (volatile and non-volatile oil) per year in the period 2002-2021 in the Mediterranean. Events are categorised according to ITOPF classes of spilled volumes (values in legend = tonnes). Data source: MEDGIS-MAR. Source of the figure: [6]

State of play within other regional sea conventions and organisations

OSPAR-Bonn Agreement (North Sea)

19. In the North Sea, the Bonn Agreement (BA) - a mechanism by which ten Governments together with EU cooperate for pollution by oil and other harmful substances in the North Sea - addresses accidental and illegal pollution from shipping, offshore oil and gas operations and other maritime activities. The BA has been reflecting, for several years, on the definition of significant acute pollution

[6] UNEP/MAP (2023). The Results of Marine Environment Assessment for IMAP Common Indicator 19 in the Mediterranean. UNEP/MED WG.550/Inf.14.

events and the set-up of threshold values for their monitoring and assessment.

20. **The BA reports use 10 t/m³ as threshold**, in line with the orders of magnitude that are used in application of the Bonn Agreement Oil Appearance Code (BAOAC) volume estimation method.

21. BA CPs report all aerial surveillance detections irrespective from spill size or source. All detections are included in the annual reports. An example of the results from the aerial surveillance is given in Figure 2 where spills detected in 2022 are shown, together with their estimated size.

22. Oil spill detections that are quantified are classified in 5 categories according to their volume:
.1 <0.1 m^3
.2 0.1-1 m^3
.3 1-10 m^3
.4 10-100 m^3
.5 >100 m3.

23. On top of the oil spill detections, the following detections are reported: Other Substances, Unknown Detections, Garbage, Litter and Objects.

24. The Bonn Agreement considers that the evaluation on whether a spill incident is a significant acute pollution or not, should be multifactorial, and not limited to spilled volume.

25. Based on the last six-year available surveillance data the following average values have been reported for each volume oil spill category:
.1 <0.1 m^3 = 57
.2 0.1-1 m^3 = 20
.3 1-10 m^3 = 6
.4 10-100 m^3 = 2
.5 >100 m^3 = 0.

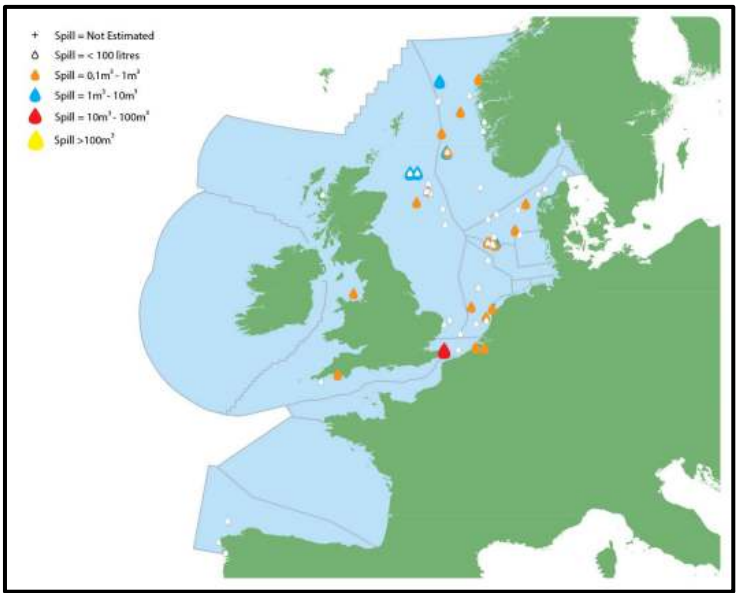


Figure 2. Location and size estimate of oil slicks in the North Sea in 2022. Source for the figure: [[7]].

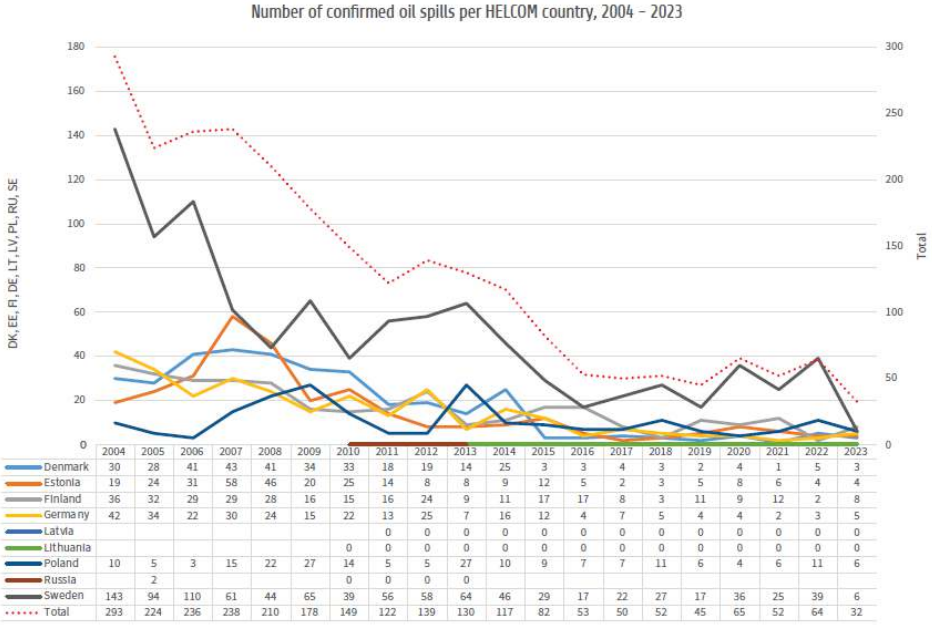
[7] Bonn Agreement - 2022 Annual Report on Aerial Surveillance.

HELCOM (Baltic Sea Sea)

26. The Baltic Marine Environment Protection Commission – the Helsinki Commission (HELCOM) – also considers acute pollution reporting obligations. **HELCOM does not have a threshold for reporting observed spills**. The HELCOM Core Indicator for oil spills have individual threshold values for different sub-basins of the Baltic Sea, ranging from 0,0007 m³ to 14 m³ per year. For annual reporting purposes by HELCOM Contracting Parties, there is no minimum threshold.

27. The threshold values of the HELCOM core indicator have been derived for the purpose of evaluating the status of the marine environment, and exceeding the target is considered as having a harmful effect on the environment. However, reaching the level of zero spills is be strived for in the long-term.

28. The HELCOM Annual report on discharges observed during aerial surveillance in the Baltic Sea, 2023. HELCOM (2024) shows that the majority of spills observed and reported in the Baltic Sea in 2023 were below 0,1 m³ in volume (Figure 3).



	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Denmark	30	28	41	43	41	34	33	18	19	14	25	3	3	4	3	2	4	1	5	3
Estonia	19	24	31	58	46	20	25	14	8	8	9	12	5	2	3	5	8	6	4	4
Finland	36	32	29	29	28	16	15	16	24	9	11	17	17	8	3	11	9	12	2	8
Germany	42	34	22	30	24	15	22	13	25	7	16	12	4	7	5	4	4	2	3	5
Latvia								0	0	0	0	0	0	0	0	0	0	0	0	0
Lithuania							0	0	0	0	0	0	0	0	0	0	0	0	0	0
Poland	10	5	3	15	22	27	14	5	5	27	10	9	7	7	11	6	4	6	11	6
Russia		2					0	0	0	0										
Sweden	143	94	110	61	44	65	39	56	58	64	46	29	17	22	27	17	36	25	39	6
Total	293	224	236	238	210	178	149	122	139	130	117	82	53	50	52	45	65	52	64	32

Figure 3. Number of confirmed oil spills per HELCOM country, 2004-2023. Note that the total number of spills is indicated on the v axis on the right, which uses a different scale. Source of figure:[8].

European Commission - Expert Network on Marine Contaminants under the Marine Strategy Framework Directive (MSFD)

29. At European level, a key framework is the Marine Strategy Framework Directive (MSFD), which also tackles chemical contaminants, being one of the pressures affecting the GES of marine waters. Chemical contaminants are considered under Descriptor 8 (Contaminants are at a level not giving rise to pollution effects). The MSFD defines four criteria and methodological standards that shall be used for assessing Descriptor 8. Particularly, D8C1 refers to the concentration and type of contaminants that should be considered within coastal and territorial waters; D8C2 considers the effects of contaminants on the health of species and the condition of habitats; D8C3 addresses significant acute

[8] HELCOM (2024). HELCOM Annual report on discharges observed during aerial surveillance in the Baltic Sea, 2023

pollution events in terms of spatial extent and duration of such events; and D8C4 defines the conditions to evaluate when a significant acute pollution event has occurred. The EU Member States (MS) assess and report on D8, despite many factors defining the criteria are not commonly agreed and hence the parameters used vary highly among MS.

30. The Expert Network on Marine Contaminants under MSFD is working on the Assessment and Data reporting of Significant Acute Pollution events under the Marine Strategy Framework Directive. A Technical Report on this topic will be published in early 2025 by the Joint Research Centre of the European Commission.

31. The focus of the Expert Network work is the **definition of acute pollution events.** In fact, the Network is **discussing on the significance of mineral oil spills under the MSFD**. Two options are under discussion, both taking into consideration the lack of knowledge about the impacts of relatively small oil spills on ecosystems.

32. **Option 1. "All mineral oil spills are significant".** In line with the precautionary approach and the final aim of the MSFD to ensuring the protection of the marine environment, minor spills of mineral oil, or those that disperse in water and/or evaporate quickly in the atmosphere with reduced immediate risk for the impacted area:

.1 still participate to large-scale air and sea pollution by their frequency,

.2 could still damage the impacted area, particularly if occurring at high frequency at the same location, and notably if the impacted area hosts sensitive habitats or species.

33. Under this option, all spills, irrespective of their volume, are significant under the MSFD, i.e. they and their effects should be minimised under D8C3 and D8C4.

34. **Option 2 "A significance limit of mineral oil volume of 5 m^3**, and a potential significance with multifactorial evaluation if below". For practical implementation and harmonisation of MSFD D8C3 and D8C4 assessments, all mineral oil spills of volume equal or above 5 m^3 should be regarded as 'significant', while a multifactorial evaluation would be needed below this limit to determine 'significance'.

35. In addition, the ongoing discussion considers the fact that the spill volume alone does not fully determine the severity of a spill, therefore additional criteria are essential to assess the impact on ecosystems of spills.

36. Moreover, discussion is ongoing also on the classification of the recorder spills in categories according to their volume (e.g. five categories: < 5 m^3; 5-10 m^3; 10-100 m^3; > 100 m^3).

International Tanker Owners Pollution Federation Limited (ITOPF)

37. **ITOPF considers oil spills classified into three categories, in relation to the size of the spills, with no reference to the severity of environmental impact; <7 tonnes, 7-700 tonnes and >700 tonnes.** This approach ensures continuity in the database and reflects the absence of any perceived practical need for change. In fact, such thresholds reflect legacy data collection practices and the need to maintain consistency in spill classification. Threshold values of 50 and 5,000 barrels (bbl) were chosen based on practical considerations related to tank size on tanker vessels and typical operational spills (a spill mass/weight of 700 MT is roughly equivalent to 5,000 bbl of standard crude oil). When the UK transitioned to the metric system, ITOPF decided not to alter the established classification criteria for minor, medium, and major spills.

38. In relation with the reflection on the threshold for oil spill, it is worth noting that, from ITOPF records, the number of large (>700 tonnes) and medium spills (7-700 tonnes) have decreased significantly from the 70es of the previous century to the present (Figure 4). Small spills (<7 tonnes) forms over 80% of spills recorded since 1970 (ITOPF, 2025).

39. Regarding the quantification of spill volumes inferred from aerial surveillance, ITOPF has, as outlined in the latest edition of our Aerial surveillance of marine oil spills Technical Information Paper, fully adopted the Bonn Agreement Oil Appearance Code (BAOAC) volume estimation method. Additionally, ITOPF has introduced a sixth category (>1mm thickness) to the BAOAC system. This new category accounts for the potential presence of emulsified oil within a slick.

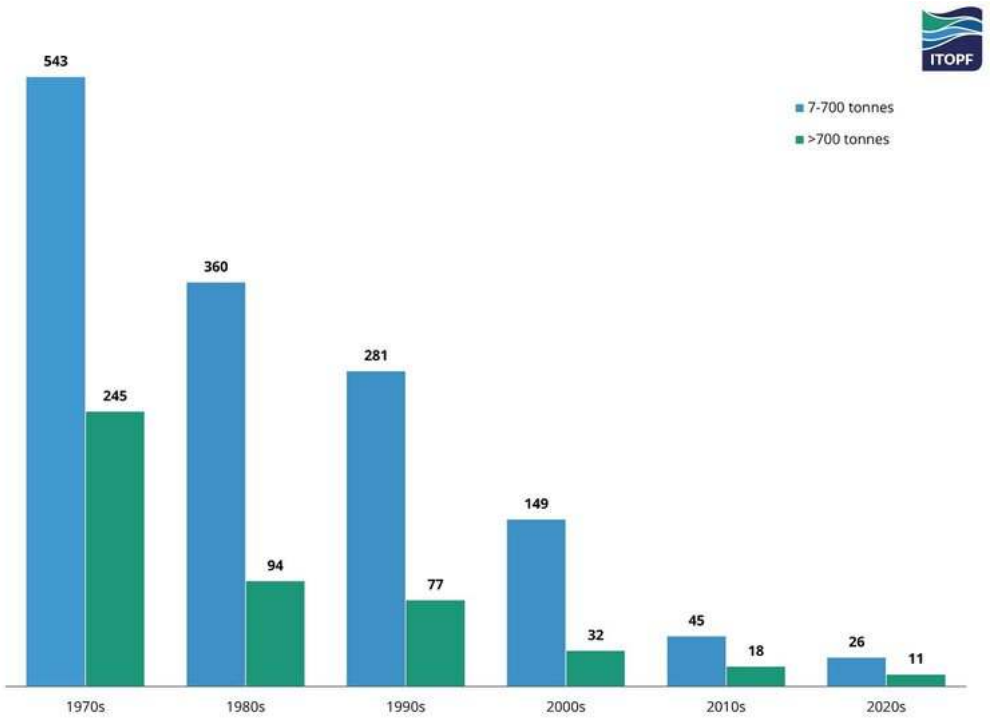


Figure 4. Number of medium (7-700 tonnes) and large (>700 tonnes) tankers spills (1970s-2020s). Source of figure: [9].

Conclusions

40. Oil spill data recorded in MEDGIS-MAR indicate for the Mediterranean a sharp decrease in the number of large spills, together with an increase in the number of small spills (>7 tonnes). Reduction in the frequency of large spills is confirmed in other regional seas and worldwide.

41. Bonn Agreement reports use 10 t/m³ as threshold, in line with the orders of magnitude that are used in application of the Bonn Agreement Oil Appearance Code (BAOAC) volume estimation method.

42. At European level, a threshold level for reporting is not being discussed under MSFD where the debate is focusing instead on the definition of significance limit for oil spill events (above which value and oil spill should be considered significant, and trigger monitoring of biological effects). The two

[9] ITOPF (2025). Oil Tanker Spill Statistics – 2024.

options under consideration with regard to significance of oil spills are either: "All mineral oil spills are significant" either "A significance limit of mineral oil volume of 5 m^3". Both options are lower than 10 t/m^3.

43. In line with above considerations, a lower minimum threshold for reporting oil spill events is recommended for the Mediterranean Sea. This could be the lowest category defined by ITOPF, corresponding to 7 tonnes of oil, thus allowing comparability with ITOPF records for statistics. In case of a volumetric estimation (e.g. for aerial survey) an indicative threshold of 7 m^3 could be equally considered. However, ITOPF considers the 7 tonnes as purely statistical threshold values.

44. The following Table 1 summarises the evidences collected from the different organizations:

Table 1. Evidences collected from the different organizations

Organization	**Threshold for reporting on oil spills**	**Notes**
OSPAR-Bonn Agreement (North Sea)	10 t/m^3	-
HELCOM (Baltic Sea Sea)	No threshold	-
European Commission	Not defined	Reporting threshold is not under discussion, instead two options for the **significance limit for oil spill events** are under discussion[10]: - No limit: all spills are significant - 5 m^3
ITOPF	Not applicable	<7 tonnes, 7-700 tonnes and >700 tonnes classes are used for statistical purposes only, no relation with the reporting threshold.

Way Forward

45. In order to align practices and to be able to effectively record the spills that mostly occur in the Mediterranean, **it is recommended to lower to 10 t/m^3 the minimum threshold for reporting in the Barcelona Convention system**. **This threshold value should be considered as mandatory.**

46. **For statistical purposes, transmission of values below 10 t/m^3 is strongly encouraged too,** classifying detected spills into 5 categories according to their volume: < 5 m^3; 5-10 m^3; 10-100 m^3; > 100 m^3

Actions requested by the Meeting

47. **The Meeting is invited to**:

.1 **take note** of the information provided in the present document; and
.2 **comment** as deemed appropriate.
.3 **endorse** actions provided in paragraphs 45 and 46.

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[10] Note by the Secretariat: logically, it is expected to be equal or higher than the any related reporting threshold.