



Baltic Marine Environment Protection Commission

Expert Group on environmental risks of hazardous
submerged objects
Gothenburg, Sweden, 14-15 October 2015

SUBMERGED 3-2015

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Background

The attached document contains the Outcome of the Second Meeting of the Expert Group on environmental risks of hazardous submerged objects (HELCOM SUBMERGED 2-2015).

Action required

The Meeting is invited to make use of the information as appropriate.



Outcome of the second meeting of the HELCOM Expert Group on environmental risks of hazardous submerged objects (SUBMERGED 2-2015)

Contents

Introduction.....	2
Agenda Item 1 Adoption of the Agenda	2
Agenda Item 2 Matters arising from other HELCOM meetings	2
Agenda Item 3 SUBMERGED Assessment current status.....	3
Agenda Item 4 Draft chapter on warfare materials.....	4
Agenda Item 5 Warfare materials: geographic distribution	4
Agenda Item 6 Warfare materials: environmental issues	5
Agenda Item 7 Warfare materials: risk assessment.....	5
Agenda Item 8 Warfare materials: remediation/salvage measures.....	6
Agenda Item 9 Work plan and future meetings.....	6
Agenda Item 10 Outcome of the meeting.....	7
Annex 1 List of Participants	8
Annex 2 Draft structure for SUBMERGED report – section on warfare materials in the Baltic Sea.....	9
Annex 3 Work plan for future work.....	11



Outcome of the second meeting of the HELCOM Expert Group on environmental risks of hazardous submerged objects (SUBMERGED 2-2015)

Introduction

0.1 In accordance with the decisions of RESPONSE 19-2014, HOD 47-2014 and subsequent correspondence between the host, Chairs and the Secretariat, the second Meeting of the HELCOM Expert Group on environmental risks of hazardous submerged objects (HELCOM SUBMERGED 2-2015) was held on 22-23 April 2015 in Bonn, Germany.

0.2 The Meeting was attended by representatives from the Contracting Parties Estonia, Finland, Germany and Poland as well as from the Observer organizations BirdLife International, European Community Shipowners' Associations (ECSA), International Dialogue on Underwater Munitions (IDUM), and UNEP/ASCOBANS Secretariat. The List of Participants is contained in **Annex 1**.

0.3 The second meeting of the SUBMERGED EWG focused on warfare materials and the corresponding warfare materials chapter of the submerged hazardous objects assessment.

0.4 The Meeting was welcomed by Ms. Monika Luxem-Fritsch on behalf of the host, the Federal Ministry for the Environment, Nature Protection, Building and Nuclear Safety (BMUB).

0.5 The Meeting was chaired by Mr. Jacek Beldowski, Poland, and Mr. Jens Sternheim, Germany – Co-chairs of HELCOM SUBMERGED. Mr. Hermann Backer, Professional Secretary, and Ms. Minna Pyhälä, Assisting Professional Secretary, acted as Secretaries of the Meeting.

Agenda Item 1 Adoption of the Agenda

Documents: 1-1

1.1 The Meeting adopted the Agenda as contained in document 1-1.

Agenda Item 2 Matters arising from other HELCOM meetings

Documents: 2-1

2.1 The Meeting recalled the outcome of the last meeting of the expert group (HELCOM SUBMERGED 1-2014) as contained in document 2-1.

2.2 The Meeting took note that HELCOM HOD 47-2014 urged all Contracting Parties to participate in the work of HELCOM SUBMERGED (§3.21 or the Outcome of HELCOM HOD 47-2014) and welcomed the information that Denmark and Latvia have expressed interest in being involved in the work of SUBMERGED in the future.

2.3 The Meeting took note that other HELCOM activities are very interested in the work of the SUBMERGED expert group and that the results are expected to support efforts to elaborate a thematic assessment a maritime activities, the next HELCOM holistic assessment on the ecosystem health of the Baltic Sea (HOLAS II) as well as marine spatial planning related project activities and the HELCOM-VASAB MSP WG.

Agenda Item 3 SUBMERGED Assessment current status

Documents: 3-1

- 3.1 The Meeting recalled the agreed outline of the SUBMERGED Assessment (Annex 3 of document 2-1) and the currently indicated chapter leads (Annex 5 of document 2-1).
- 3.2 The Meeting took note of an update regarding the overall status of material at the [HELCOM SUBMERGED SharePoint workspace](#).
- 3.3 The Meeting welcomed the information of wrecks in the Baltic Sea compiled by Finland as presented Mr. Jari Rintamaa (Presentation 1).
- 3.4 The Meeting welcomed the information by Estonia on their national registry on wreck which is publicly available via the internet (<http://195.80.112.238:8080/HIS/Avalik?REQUEST=Main>).
- 3.5 The Meeting noted that national GIS wreck databases are available but that the HELCOM SUBMERGED assessment needs a joint regional GIS wreck dataset for overview. Finland and the Secretariat could consider steps to enable such a joint regional wreck dataset intersessionally.
- 3.6 The Meeting welcomed the information by Poland on submerged hazardous substances (wrecks, waste, cargo) in Polish marine areas as presented by Mr. Andrzej Podscianski, Poland (Presentation 2, document 3-1).
- 3.7 The Meeting welcomed the information on hazards of seabed contamination by oil products from motor ship wrecks based on the example of the „Stuttgart” ship wreck as presented by Mr. Benjamin Hac (Presentation 3, www.zoo.im.gda.pl).
- 3.8 The Meeting welcomed the information on the Nairobi International Convention on the Removal of Wrecks as presented by Mr. Kari Rinne, ECSA (Presentation 4).
- 3.9 The Meeting took note that a lot of work has been put in the definitions and risk assessment procedures included in the IMO International Convention on the Removal of Wrecks (2007 Nairobi) and that HELCOM could use the approaches as defined.
- 3.10 The Meeting noted that the issue of polluting wrecks has been raised at the European Parliament where MEPs have called for the ratification of the Nairobi Convention in EU.
- 3.11 The Meeting highlighted the importance of compiling a complete list of known wrecks and encouraged all Contracting Parties to provide input to the Baltic-wide registry being compiled by Finland (Jorma.Rytkonen@ymparisto.fi).
- 3.12 The Meeting took note that information on planned activities on derelict ghost nets retrieval from the Baltic Sea has been uploaded to the [SUBMERGED SharePoint workspace](#).
- 3.13 The Meeting took note of an update regarding the status of the Chapter on dumped hazardous waste and lost cargo by the Secretariat (Presentation 5).
- 3.14 The Meeting noted that the chapters on warfare material and wrecks would likely be in an advanced form already during 2015, while less information is readily available for the dumped waste/ lost cargo section and that the SUBMERGED group could ask HOD for advice in how to best complete its terms of reference e.g. shortening the chapter on hazardous objects, or publication of this chapter as a separate paper at a later stage. The Meeting welcomed the offer of Mr. Andrzej Jagusiewicz to raise this point at HOD 48-2015.

Agenda Item 4 Draft chapter on warfare materials

Documents: 4-1, 4-1-Rev.1

4.1 The Meeting considered the initial proposals for the content of Chapter 2 of the Assessment on environmental risks of hazardous submerged objects as contained in document 4-1 and updated it based on the discussions during the meeting as contained in document 4-1-Rev.1.

4.2 The Meeting agreed on the new structure of the warfare materials chapter as contained in **Annex 2** and agreed that Contracting Parties should provide their national input using the agreed structure. Contracting Parties are invited to upload their national information to the [SUBMERGED SharePoint workspace](#) in the HELCOM Meeting Portal **by 29 May 2015** and to inform Mr. Jacek Beldowski (hyron@iopan.gda.pl) once the information is available.

4.3 The Meeting discussed the next steps for elaborating the chapter on warfare materials and agreed on the following division of tasks:

- Jacek Beldowski to provide latest information on chemical munitions from CHEMSEA and MODUM (e.g. exposure studies) by 29 May 2015.
- Contracting Parties are invited to submit information about studies and journal papers on the toxicity of TNT and other explosives to the environment. The Contracting Parties are invited to look for interested experts to contribute to such a section. IDUM can contribute to the section.
- IDUM will provide an annex with the types of substances in the munitions in the Baltic Sea region.
- Germany has provided information on eco-toxicological based a German report which is available via the [SUBMERGED SharePoint workspace](#) in the HELCOM Meeting Portal.

4.4 The Meeting welcomed the introduction to ordnance and explosives as presented by Mr. Terrance Long, Chair of IDUM (Presentation 6). The Meeting took note of the request by Mr. Long for the HELCOM community to support the establishment of a UN Conference on sea dumped munitions.

4.5 The Meeting agreed that the draft chapter should be further developed based on the discussions summarised in the discussions under Agenda Items 5-8.

Agenda Item 5 Warfare materials: geographic distribution

5.1 The Meeting welcomed the information on the geographic distribution of chemical munitions in the Baltic Sea as presented by Mr. Jacek Beldowski, Poland (Presentation 7 & 8).

5.2 The Meeting welcomed information on national investigations on distribution of munitions in German waters as presented by Mr. Claus Böttcher, Germany (Presentation 9).

5.3 The Meeting welcomed the information presented by Mr. Gunnar Möller, Sweden, on the progress in compiling geodata in a database on munition dumpsites in the Baltic Sea for the SUBMERGED process (Presentation 10).

5.4 The Meeting also welcomed the information on new data on ammunitions in the German waters based on recent archival research as presented by Mr. Uwe Wichert, Germany (Presentation 11).

5.5 The Meeting emphasized the importance of compiling a comprehensive list of dumping areas.

5.6 The Meeting discussed the level of data detail to be included in the database and recognized that there are challenges in including very detailed information on the geographic location since the actual location of the mines do not necessarily correspond to coordinates registered in the archives.

- 5.7 The Meeting discussed the level of openness of the contents of the database and recalled that according to the United Nations Economic Commission for Europe (UNECE) [Convention on Access to Information, Public Participation in Decision-Making and Access to Justice in Environmental Matters](#) (Aarhus Convention), this data should be publicly available.
- 5.8 The Meeting requested Mr. Möller to forward the dataset in GIS format to the Contracting Parties **by 30 April 2015** and agreed that Contracting Parties should check and verify the contents of the database as well as provide possible updates, corrections and additional national data **by 29 May 2015** to Gunnar Möller (gunnar.moller@mil.se). The Meeting also agreed that Contracting Parties should inform on whether the data contained in the database can be made publicly available and if not create and submit a public version of the information. The Meeting recommended that Contracting Parties make all information in the database publicly available.
- 5.9 The Meeting encouraged all Contracting Parties to carry out, especially in the long term, national archival studies in order to provide more reliable information on geographic distribution.
- 5.10 The Meeting encouraged Contracting Parties to investigate when they have last carried out underwater dumping of munitions, and what the dumping was.
- 5.11 The Meeting invited Contracting Parties to inform on the state of corrosion of the munitions when they report information on dumped munitions.
- 5.12 The Meeting updated the draft chapter section on geographical distribution in accordance with the discussions of the meeting (cf. Annex 2).

Agenda Item 6 Warfare materials: environmental issues

Documents: 6-1

- 6.1 The Meeting took note of information on studies on environment issues related to dumped warfare materials, especially the results of the CHEMSEA project, as presented by Mr. Jacek Beldowski, Poland (Presentation 8).
- 6.2 The Meeting was of the opinion that there is limited knowledge of biomarkers pertaining to the environmental impacts of munitions on organisms.
- 6.3 The Meeting took note of information contained in document 6-1 suggesting that the recent salt water inflow may increase the number of fishing incidents with chemical warfare occurring in 2015 by a change in behavior of fish and fishermen, as presented by Mr. Sven Koschinski, Birdlife International (Presentation 12).
- 6.4 The Meeting noted that since the MUNI report does not cover conventional munitions there is a need to compile information on their compounds and toxicity. Therefore, the Meeting invited Contracting Parties and Observers to provide summary information on available information.
- 6.5 The Meeting exchanged available information on environmental issues related to submerged warfare materials and edited the draft chapter accordingly (cf. Annex 2).

Agenda Item 7 Warfare materials: risk assessment

- 7.1 The Meeting exchanged available information and approaches to risk assessments related to submerged warfare materials and edited the draft chapter accordingly.
- 7.2 The Meeting was of the view that there is a need for development of recommendations on how to use risk assessment results for making decisions.

- 7.3 The Meeting discussed the risk of contaminated fish reaching fish processing plants.
- 7.4 The Meeting discussed approaches to risk assessments related to submerged warfare materials and edited the draft chapter accordingly.

Agenda Item 8 Warfare materials: remediation/salvage measures

- 8.1 The Meeting welcomed the information on Underwater Explosive Ordnance Disposal (UW-EOD) operations in Finland as presented by Jukka-Pekka Nummila, Finland (Presentation 13).
- 8.2 The Meeting agreed to include a subchapter on mitigation measures. The Meeting welcomed the offers of Sven Koschinski (BirdLife International) to provide information on mitigation measures to minimize impacts on marine organisms and Germany to provide information on their national studies related to the use of bubble curtains.
- 8.3 The Meeting agreed on the importance of exchanging available information on experience with remediation and salvage measures and invited Contracting Parties to provide summary information on their experiences with remediation activities.
- 8.4 The Meeting welcomed the offer of Mr. Terrance Long, IDUM, to provide information on environmentally friendly methods for salvaging and disposing of underwater munitions.
- 8.5 The Meeting took note of the view of Germany and Poland that there is a need for resources and international commitments to develop solutions for reducing the risks of munition. In order to support this work there is a need for projects on dumped chemical munitions, possibly focusing on the Gdansk Deep and the Little Belt. Life+ could be one source for such a project.
- 8.6 The Meeting noted the information by IDUM that underwater detonation of munitions release contaminants into the marine environment and that smaller parts of the munition after the detonation, might be equally or even more dangerous than the intact munition. Using a bubble curtain to minimize the energetic impact of underwater detonation does not address the environmental effects of the contaminants.
- 8.7 The Meeting edited the draft outline of the chapter section on remediation/salvage measures (cf. Annex 2).

Agenda Item 9 Work plan and future meetings

- 9.1 The Meeting considered and updated the work plan of the Group (cf. Annex 5 of document 2-1) as contained in **Annex 3** to this Outcome.
- 9.2 The Meeting considered the list of SUBMERGED contacts/members (cf. Annex 4 of document 2-1) and noted that there are no changes for the time being.
- 9.3 The Meeting welcomed the proposal by Finland to organize the next Meeting of the SUBMERGED expert group (SUBMERGED 3-2015) in Gothenburg Sweden directly after the conference "Wrecks of the World III" <http://www.lighthouse.nu/project/wrecks-world-iii-shipwreck-risk-assessment> and agreed to hold the meeting on 14-15 October 2015 pending final checks with Sweden. The Meeting also agreed that SUBMERGED 3-2015 should focus on the SUBMERGED Assessment chapter on wrecks.
- 9.4 The Meeting took note of information by IDUM that on 12-14 October 2015 there will be a NATO conference on ecotoxicology underwater defence research establishments in Prague, Czech Republic.
- 9.5 The Meeting agreed to organise the 4th meeting of HELCOM SUBMERGED 4 as an online meeting and welcomed the information that Estonia is considering possibilities of arranging SUBMERGED 5 as a face-to face meeting during spring 2016, in Tallinn, Estonia.

- x but also maps and descriptions showing overlap of conventional and chemical munitions distribution and historical context
 - full list of areas will likely be suitable for placing in the annex
- x **Environmental issues**
 - o (applicable hazards should be described in this chapter => description of likelihood and resulting risk will be addressed under 'risk assessment')
 - o **Hazards of intact munitions**
 - To keep in mind that munitions are inherently dangerous, i.a.:
detonation: Shockwave, shrapnel, etc.
 - o **Deterioration of munitions casings and constituents**
 - (general description)
 - Corrosion
 - Ageing of munitions constituents, e.g.:
 - x increased instability of aged explosive formulations
 - x formation of sulfur mustard lumps
 - Transformation & degradation
 - o **Spreading of munitions constituents**
 - (also recalling relocation as a process promoting subsequent large-scale spreading)
 - General considerations on leaking & spreading (compound-specific considerations to be addressed in the subsequent section), i.a.:
 - x Dissolved compounds vs. particles/lumps
 - o **Hazards of munitions constituents**
 - Focus on conventional munitions: explosives and white phosphorus
 - Concise description of CWA (refer to MUNI report for more comprehensive information)
- x **Risk assessment**
 - o (making use of incident descriptions throughout to explain the basis for likelihood estimation)
 - o **With regard to humans**
 - Divided according to different user groups (see MUNI report), i.a.: fishermen, construction workers, beach visitors
 - o **With regard to the environment**
 - (also taking the introduction of energy [detonation] into consideration)
 - o **With regard to maritime infrastructure**
 - i.a. cables, pipelines, offshore wind farms
 - shortly address risks to humans and the environment ensuing from this
- x **Remediation/salvage measures**
 - o **Principal considerations**
 - (also discussing mitigation measures, e.g. with regard to marine mammals)
 - o **Techniques**
 - i.a. action by divers, ROV and other recovery systems
 - o **Lessons learned**
 - (From past measures)
- x **(Conclusions and recommendations)**
 - o (Likely to be placed at the end of the complete SUBMERGED report)

Annex 3 Work plan for future work

Deadline	Task
14-15 October 2015 (HELCOM SUBMERGED 3-2015) Gothenburg, Sweden [tbc]	Meeting focused on wrecks. First drafts of the warfare materials and wreck chapters available. Discuss input by countries.
[February 2016] (HELCOM SUBMERGED 4-2016) Online meeting	Second drafts of munition and wrecks chapters available. First draft of a chapter on dumped hazardous waste and lost cargo, if possible.
[May 2016] (HELCOM SUBMERGED 5-2016) [Estonia is considering hosting possibilities]	Completion of the draft report for wider circulation to HELCOM RESPONSE Contacts.
[Autumn 2016] (HELCOM RESPONSE 2016)	Endorsement of final assessment report
[December 2016] HELCOM HOD	Approval of final assessment report