

Removing Wrecks and Munitions from the Baltic

Date: Tuesday, 29 April 2025

Theme: Sustainable Maritime Infrastructure

The workshop addressed the environmental, safety, and economic challenges of shipwrecks and underwater munitions in the Baltic Sea. These remnants from past wars, along with hazardous substances like oil and chemical agents, represent significant risks to marine ecosystems, fisheries, and human health. The session highlighted ongoing efforts, EU-funded projects, and the need for cross-border collaboration to develop sustainable solutions for managing these risks.

The workshop *Removing Wrecks and Munitions from the Baltic Sea* addressed the significant environmental, safety, and economic risks posed by shipwrecks and underwater munitions in European seas, particularly focusing on the Baltic Sea. These remnants of maritime conflicts, such as shipwrecks and dumped munitions, represent long-lasting threats to marine biodiversity, human health, and the economic viability of coastal communities. The session emphasised the need for cross-border collaboration, the sharing of knowledge, and innovative solutions for managing these risks.

Frederick Lindgren from Sweden discussed the challenges associated with wrecks, particularly those containing hazardous substances like heavy fuel oil. Sweden's national wreck project focuses on removing oil from hazardous shipwrecks. Lindgren pointed out that, besides oil, wrecks may contain polluting bunkers and munitions. He emphasised the complexity of dealing with these wrecks, which are often submerged for decades and can leak hazardous substances into the marine environment. To address this and due to limited funding, Lindgren highlighted the need for risk-assessment-based approaches to prioritise which wrecks should be tackled first. It is essential to model risks, such as the probability of hazardous substances leaking and the extent of corrosion next to the potential impact of human activities. Cost comparison examples were presented from southeastern Sweden, illustrating the comparison of the cost of oil spill cleaning and the cost of wreck/hazardous material removal. The models and examples did not include the social or environmental costs that an oil spill would have.

Jacek Beldowski further explored the risks of chemical munitions, which are not only a historical source of pollution but also a current threat to marine ecosystems. Beldowski discussed the sediment contamination through historical pollutants, which might be exacerbated by the corrosion of munitions over time. He highlighted the significant environmental impacts of chemical munition. The legal and technical challenges around the disposal of chemical munitions remain substantial, with ongoing discussions about how these substances should be classified and managed.

Agnieszka Jedruch from IO PAN showcased the organisation's long-standing involvement in underwater munitions management. With nearly 20 years of experience, IOPAN has been part of numerous projects, such as CHEMSEA, MODUM, and Ammotrace. Jedruch highlighted the development of tools like Munimap, which provides essential data on underwater munitions in the Skagerrak and Baltic Sea regions. These tools play a vital role in policy development, monitoring, and decision-making, helping to create a roadmap for managing underwater munitions. Jedruch stressed the importance of international collaboration in developing effective frameworks and guidelines for addressing these environmental hazards.

Adam Cenian from IMP PAN discussed the practical issues related to wrecks, focusing on the uncertainty surrounding their number and the risks posed by wrecks that contain pollutants or munitions. Cenian pointed out that while some wrecks may serve as artificial reefs and provide ecological benefits, the pollution contained within certain wrecks remains a significant concern. He also highlighted the role of bioremediation, using microorganisms to mitigate oil contamination, as a promising solution. However, Cenian emphasised that the Baltic Sea presents unique challenges for bioremediation and further technological development is needed to make it more effective.

Hans Sanderson from Aarhus University expanded on the risks posed by sea-dumped munitions, noting the importance of risk assessment tools to help local authorities, government bodies, and industry experts make informed decisions about remediation. Sanderson discussed the increasing complexity of managing these risks due to the rise in seafloor activities, such as the installation of wind turbines and underwater cables. These developments require environmental impact assessments that take into account the risks posed by underwater munitions. Sanderson stressed the importance of prioritising specific areas/regions for remediation based on their environmental significance and the resources available.

The discussion, moderated by Aaron Beck from GEOMAR, highlighted the economic aspects of oil spill recovery and the complexities surrounding the legal treatment of chemical weapons dumped in the Baltic Sea. Beck facilitated conversations about the differing legal regulations across Baltic Sea states and the challenges these pose for managing chemical weapons. It was pointed out that while Sweden has a dedicated agency with sufficient funding to address these issues, other countries lack similar structures, making it essential to create a unified approach to managing these environmental hazards across the region.

The session underscored the need for continued collaboration among stakeholders from government, industry, research institutions, and local communities. While solutions vary by country and region, the workshop highlighted that sharing knowledge, aligning policies, and fostering international cooperation is critical to effectively managing the risks associated with shipwrecks and underwater munitions in the Baltic Sea.