Toxic Legacies of War

North Sea Wrecks Symposium | April 19-20, 2023

Alfred-Wegener-Institute, Bremerhaven (Germany) & online participation via videoconference

Should we be concerned about war remnants in the North Sea and other oceans? What knowledge do we have about the hazards that war wrecks, underwater munition (UXO) and chemicals such as TNT in the water may pose? Are we to be more concerned about this environmental problem?

In the **North Sea Wrecks project**, we explored these questions and investigated the extent to which munitions in the sea pose a threat to the environment and the marine food chain. In this project, financed by the EU Interreg North Sea program, nine institutions from five countries have cooperated to gather more knowledge about that problem. After 4.5 years of work, we want to present our results and discuss with scientists, politicians and the interested public how we want to deal with this challenge in the future. We present our scientific research results, public awareness and science communication methods and the risk assessment tool developed in the project. Our travelling exhibition will be on-site.

Important: As places on-site are limited (first come, first serve), there will also be moderated online participation via video conference. Please indicate when registering whether you would prefer to participate on-site or online. More details will follow after your registration. **Deadline: March 31, 2023.**

Registration and information:	www.dsm.museum/nsw_symposium2023
Project website:	nsw.dsm.museum
Contact:	Sven Bergmann & Cornelia Riml (Project Management): symposium.nsw@dsm.museum

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North Sea Wrecks (NSW) project partners:

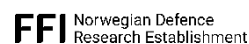|	
German Maritime Museum – Leibniz Institute for Maritime History (DSM)	north.io GmbH
Alfred-Wegener-Institute – Helmholtz Centre for Polar and Marine Research (AWI)	Periplus Consultancy BV
Aarhus University – Department of Geoscience (AU)	Norwegian Defence Research Establishment (FFI)
Flanders Marine Institute (VLIZ)	University Medical School Schleswig-Holstein, Institute of Toxicology and Pharmacology (UKSH)
NHL Stenden University of Applied Sciences, Maritime Institute Willem Barentsz (NHL)	

DAY 1 – Wednesday, April 19, 2023

9.00   Reception open

10.00   **Greetings and Organizational Remarks:**
              Ruth Schilling (Managing Director of German Maritime Museum/DSM);
              Uwe Nixdorf (Directorate Alfred-Wegener-Institute/AWI)

10.30   **Keynote I: Guilherme Lotufo** (US Army Engineer Research and Development
              Center): *"Underwater Munitions as an Environmental Hazard"*,
              Chair: Edmund Maser (UKSH)

11.10   **Short Coffee Break**

11.20   **Keynote II: Jacek Bełdowski** (Institute of Oceanology, Polish Academy of
              Sciences): *"A Decade of Chemical Munitions Studies in the Baltic Sea and New
              Perspectives"*, Chair: Katrin Kleemann (DSM)

12.00   **Lunch Break (press talk with the experts of the NSW project at the same time)**

13:30   **North Sea Wrecks (NSW) – Presentation of the central topics and results of the
              project,** led by the experts of the NSW project, moderated by Welmoed van
              der Velde (NHL Stenden):

              - Overview and Conceptual Approach of NSW
              - From the Archive to the Wreck Site: Research and Data Collection
              - Biomonitoring, Toxicological Analyses and First Results
              - Risk Assessment and Policy Recommendations
              - Follow-up, Transnational Cooperation and Raising Public Awareness

15.30   **Coffee Break & Exhibition Space (on-site and online)**

              - Demonstration of Wreck Risk Assessment Tool (north.io)
              - Data Repository/Uxo Warehouse (Periplus Consultancy)
              - Travelling exhibition "Toxic Legacies of War – North Sea Wrecks" (DSM)
              - Travelling exhibition on-line session (DSM)
              - Breakout-Sessions for networking among online participants

16:30   **Round Table Discussion: (Different) European Perspectives on Munition at
              Seas and Transnational Efforts, with:**

              - **Andrea Klomp** (Dutch Ministry of Education, Culture and Science,
                Cultural Heritage Agency)
              - **Polly Hill/Matthew Skelhorn** (UK Ministry of Defence)
              - **Anita Künitzer** (German Environment Agency)
              - **Marnix Pieters** (Flanders Heritage Agency)
              - **Lars Møller Pedersen** (Danish Royal Navy)

              moderated by **Jens Sternheim** (NSW Advisory Board)

18.00   **End of first day**

19.30   **Conference dinner (optional) at Villa Seebeck**

Day 2 – Thursday, April 20, 2023: Scientific Workshops

9.00 **Workshop Session 1: Alterations of Wrecks on the Seafloor,**
Chair: Jennifer Strehse (UKSH)

- Effects of Geological/Seafloor Processes and Risks for War Wrecks –
  Insights From Two Wrecks in the Danish North Sea
  (Katrine Juul Andresen, Aarhus University)
- The Corrosion Rate of Steel Wrecks in the Belgian North Sea, an In Situ
  Research (Kris De Baere, Antwerp Maritime Academy)

9.40 **Workshop Session 2: Effects on Organisms,**
Chair: Sven Bergmann (DSM)

- Long-term Blue Mussel Samples From the German Environmental
  Specimen Bank Show First Evidence of Munition Contaminants Uptake
  (Jennifer Strehse, Tobias Bünning, Edmund Maser, UKSH)
- Microbial Community Responses to a Wartime Wreck: the John Mahn
  Case Study (Maarten De Rijcke, VLIZ)
- Measuring Biological Effects in the Field and Laboratory and Translating
  Them into Risk Monitoring (Matthias Brenner, AWI; Simon van der Wulp,
  north.io)

10:40 **Coffee Break**

11.10 **Workshop Session 3: Consequences and Dealing with Disaster,**
Chair: Matthias Brenner (AWI)

- Communicating Slow Disasters as a Matter of Concern in Transdisciplinary
  Research – Experiences in NSW and Other Projects (Sven Bergmann, DSM)
- Consequences from a Total Collapse of a Shipwreck in Skagerrak Filled
  with Chemical Ammunition (John Aa. Tørnes, FFI)
- Munitions in the Sea – Chemical Analyses Alongside (Underwater) Blast in
  Place Operations (Edmund Maser, Tobias Bünning, Jennifer Strehse, UKSH)

12:10 **Lunch Break**

13.30 **Keynote III: Alex Souchen** (University of Guelph, Canada):
*"What Can History Tell Us About Underwater Munitions? Methods, Meaning,
and Missing Records"*, Chair: Sven Bergmann (DSM)

14:15 **Final plenary discussion: How to communicate environmental problems:
success and limits**

- With experts in museum, public awareness and project management

15:30 **Coffee & Farewells**

16.00 **End of Symposium**