

Setting the scene: The Extent of the Problem, Potentially Polluting Wrecks in the Baltic Sea

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Wrecks as Environmental Risks: The Legal Framework
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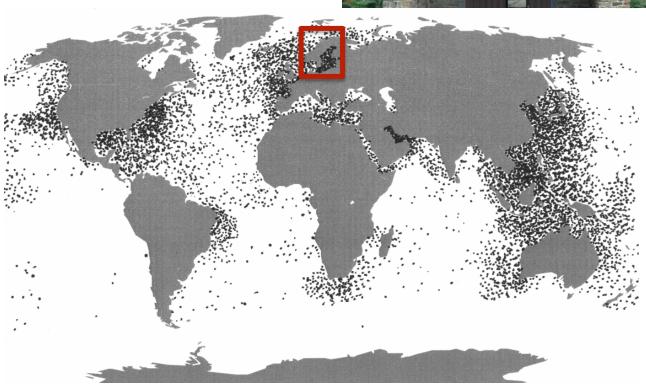
Outline

- Definitions
- Inter- and transdisciplinarity
- Handling of polluting shipwrecks
- The way forward



Different definitions different figures







Interdisciplinarity

Marine chemistry

Corrosion science

Marine archaeology

Marine biology

National

Military history

Marine ecotoxicology

Law International

Nautical science

Maritime

Oceanography

Insurances

Maritime operations

Oil spill science

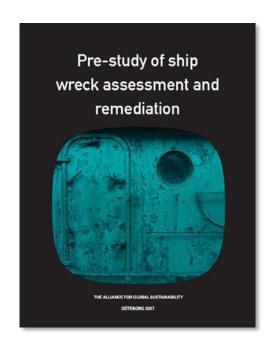
Naval architecture

Bathymetry

Marine engineering

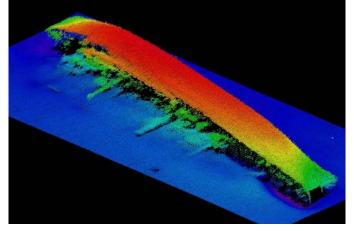
Underwater technology

Risk assessment



Transdisciplinarity

- Maritime Administration
- Coastguard
- Maritime museums
- Navy
- Countyboards
- Coastal municipalities
- SMHI
- Geological Survey
- Wreck divers
- Salvage enterprises



Courtesy: Swedish Maritime Administration



Courtesy: Maritime Museum of Gothenburg





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http://www.lighthouse.nu/node/1142



Handling of polluting shipwrecks

- Recognition; many wrecks around
- Need for wreck inventory, prioritization and risk assessment
- No liable owners nor appointed responsible national authorities
- Need for inter- and transdisciplinary approaches to ensure successful operations and overall resource efficiency



Activities related to polluting shipwrecks

State	Registration by authorities	Reasons (1) Potential pollution (2) Safety of navigation	Work on potential pollution risks	On-site investigations	Oil removal from old shipwrecks
Finland	Yes	1/2	Yes (G)	Yes	Yes
Russia	-	-	-	-	-
Estonia	Yes	1/2	Yes	Yes	Yes
Latvia	Yes	2	Yes		
Lithuania	Yes	2	Yes		
Poland	Yes	1/2	Yes	Yes	Yes
Germany	Yes	1/2	Yes	Yes	Yes
Denmark	Yes	2	Yes		

2017 (?)

G = Governmental

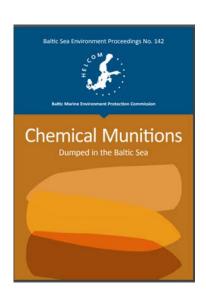
E. Svensson, **2010**. Potential Shipwreck Pollution in the Baltic Sea Overview of Work in the Baltic Sea States

12/12/2017 Chalmers



Wrecks and dumped munitions

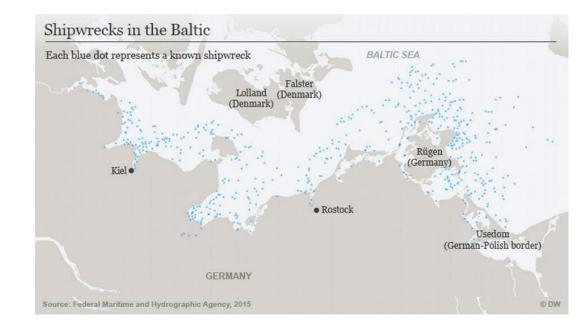
- Helcom Submerged
- Research projects
 - EU BSR CHEMSEA
 - NATO MODUM
 - EU BONUS SWERA
 - EU Interreg BSR DAIMON





Potentially polluting shipwrecks in the Baltic Sea

- Some thousands
- Some hundred highly prioritized





Cost-benefit analysis

Cost of remediation



Environmental benefit, Ecosystem services valuation



The way forward

- Challenge to prioritize remediation; need for risk assessment
- Transfer of generic knowledge/experience
- Time frame, deteroriation
- Triple helix
- Legal aspects obstacles?



Agenda 2030 A challenge driven approach

Required actions to reach goals 2030?

Thank you for your attention!

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