Bundesamt für
Wehrtechnik und
Beschaffung

Sediment Information in North and Baltic Seas - Relevant for Ammunition Detection

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Bundeswehr

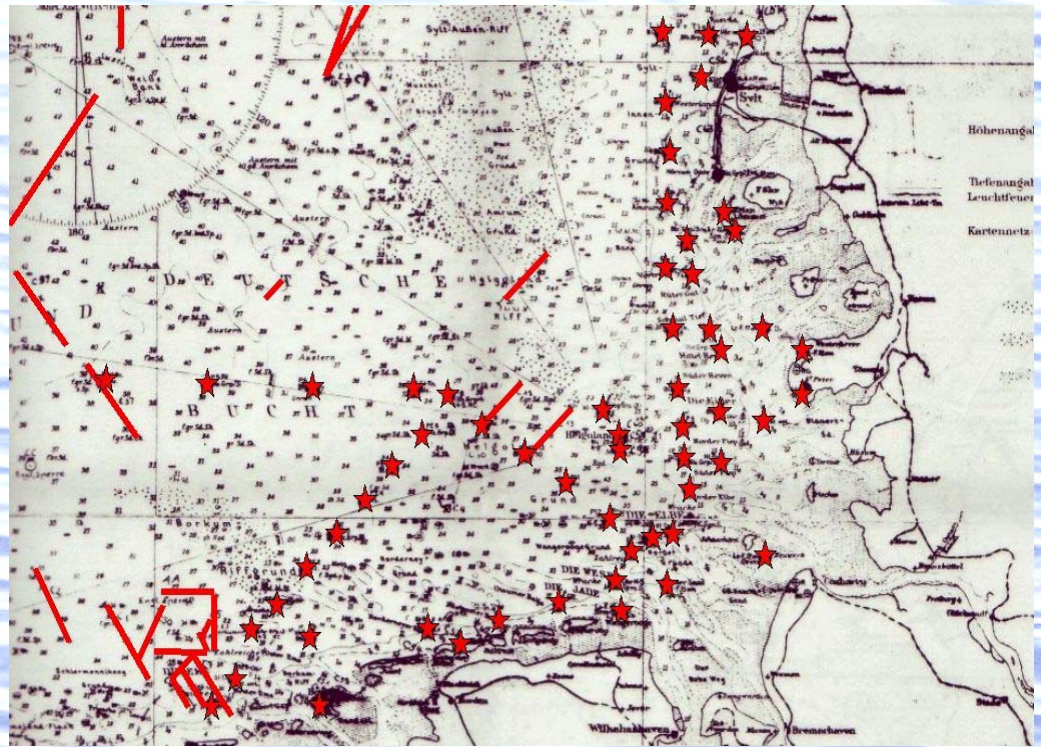
Ammunition at Sea

WW I and WW II:
several 100,000 sea mines in North Sea and Baltic Sea

Post WW I and WW II:
leftover in depots
was dumped at sea

Positions are inexact
– if at all available

Additional difficulty:
dumping en route to
designated dumping areas



Some German mine fields/barriers (WW II)

Ammunition Search

Official ammunition cleaning of seaways in Germany until 1972!

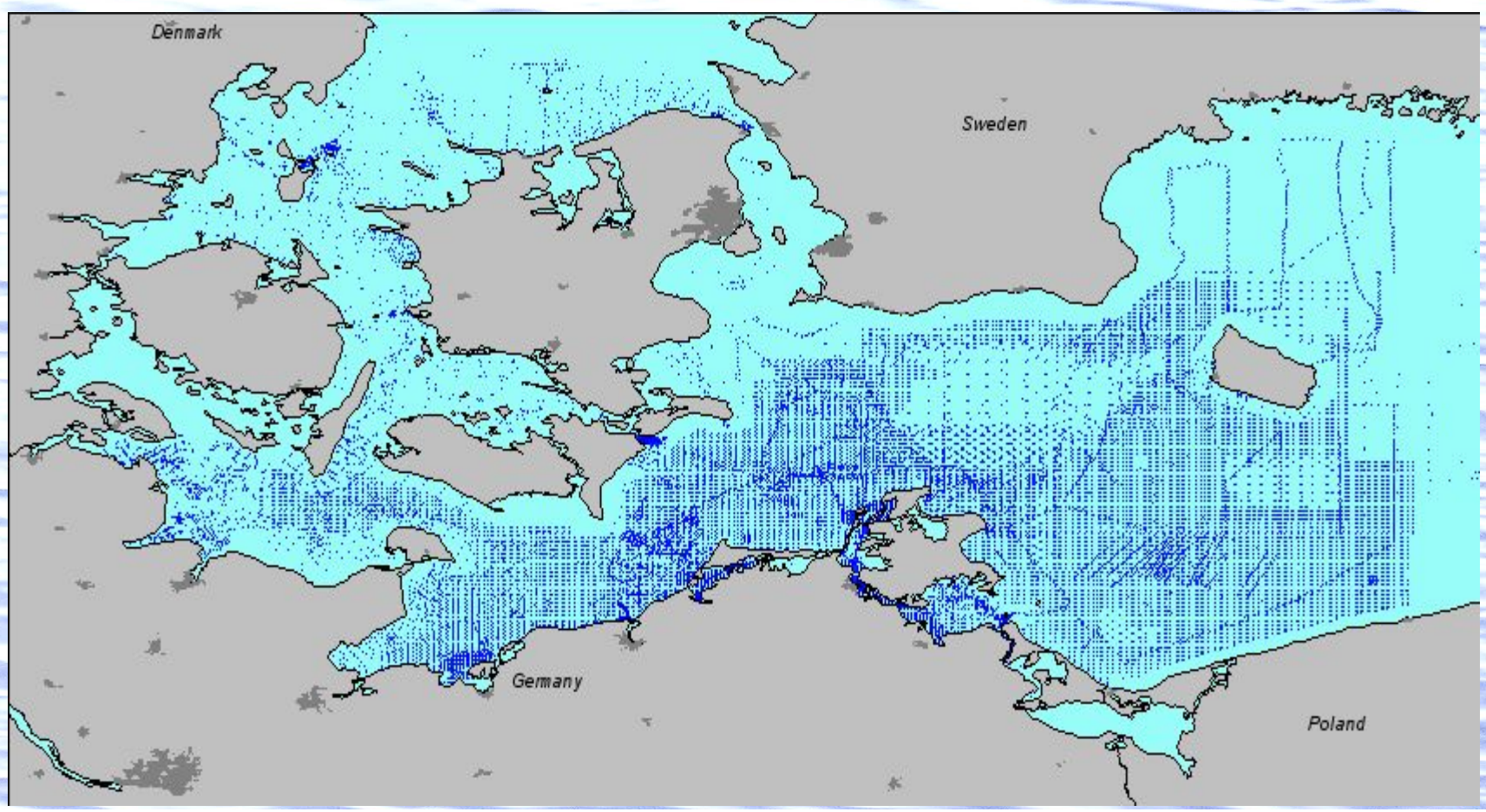
Many dumping positions are known
but still often ammunition is detected by chance

Targeted search is hampered by position uncertainties

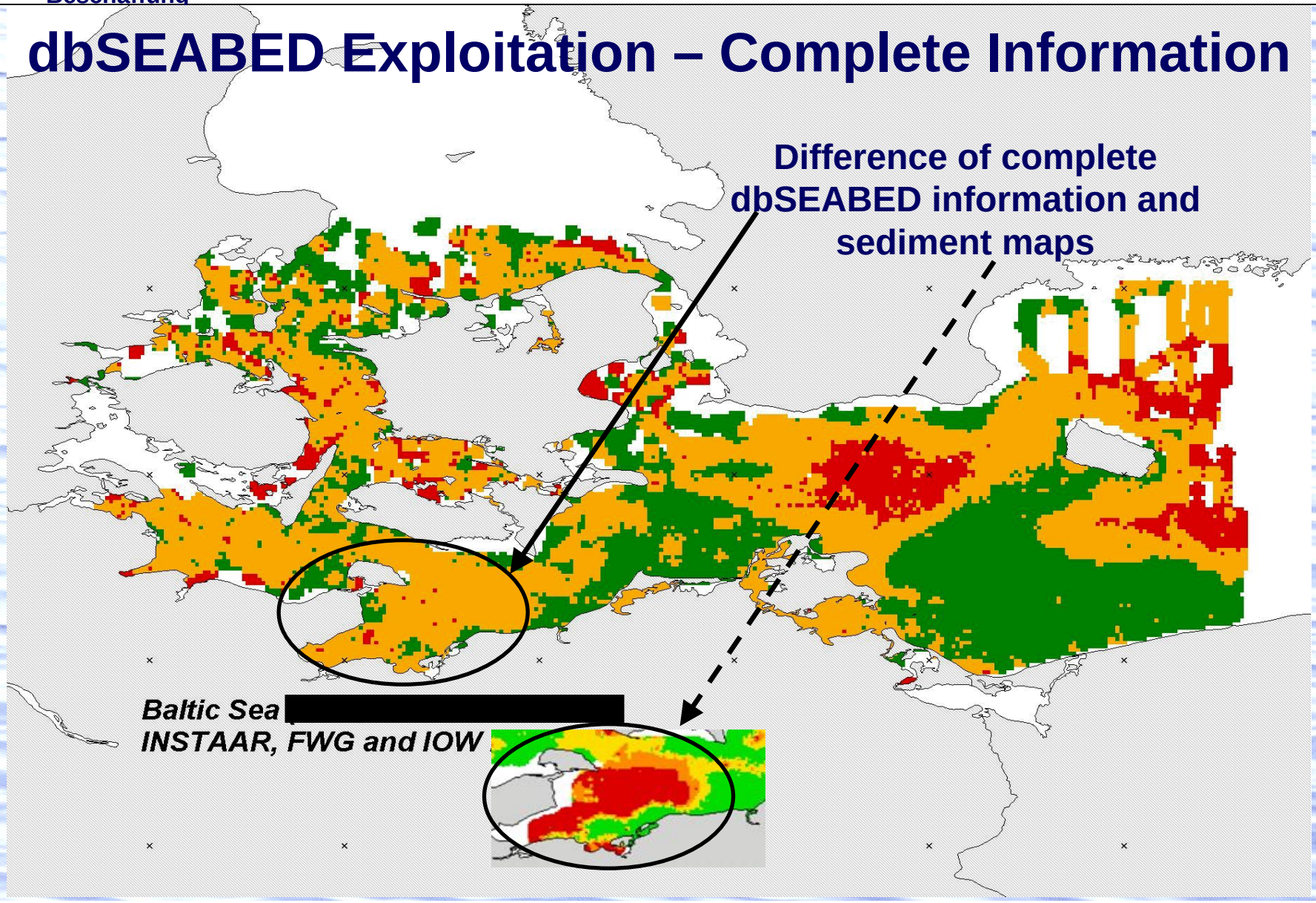
Targeted search is expensive (costs and time)
→ Investment useful only for "promising" areas
→ Problem: where are "promising" areas?

Data Base

Ca. 30,000 sediment samples are available in the map area (all in dbSEABED format)



dbSEABED Exploitation – Complete Information



dbSEABED

…has many aspects:

Biggest seafloor sediment data base worldwide

System for preparation of data for any following graphical display

„Cooperative system“, supports authorities and agencies

System for extended data analysis (derivation of parameters)

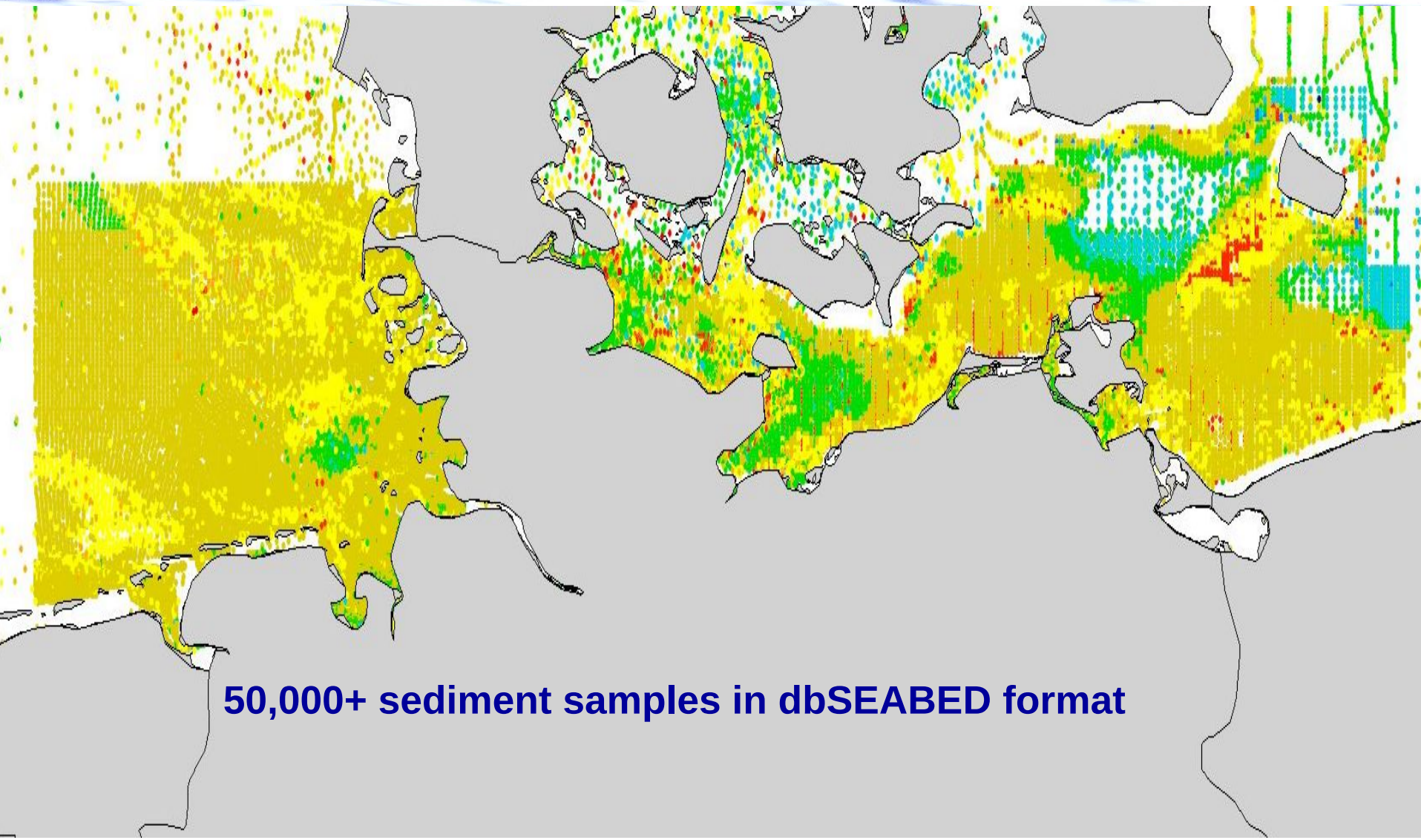
System for the change of data into useful information

Language engine, saves original information

Translator into a worldwide unified terminology

dbSEABED Info: google for “dbSEABED”, “Jenkins”

Data Base & Doctrines



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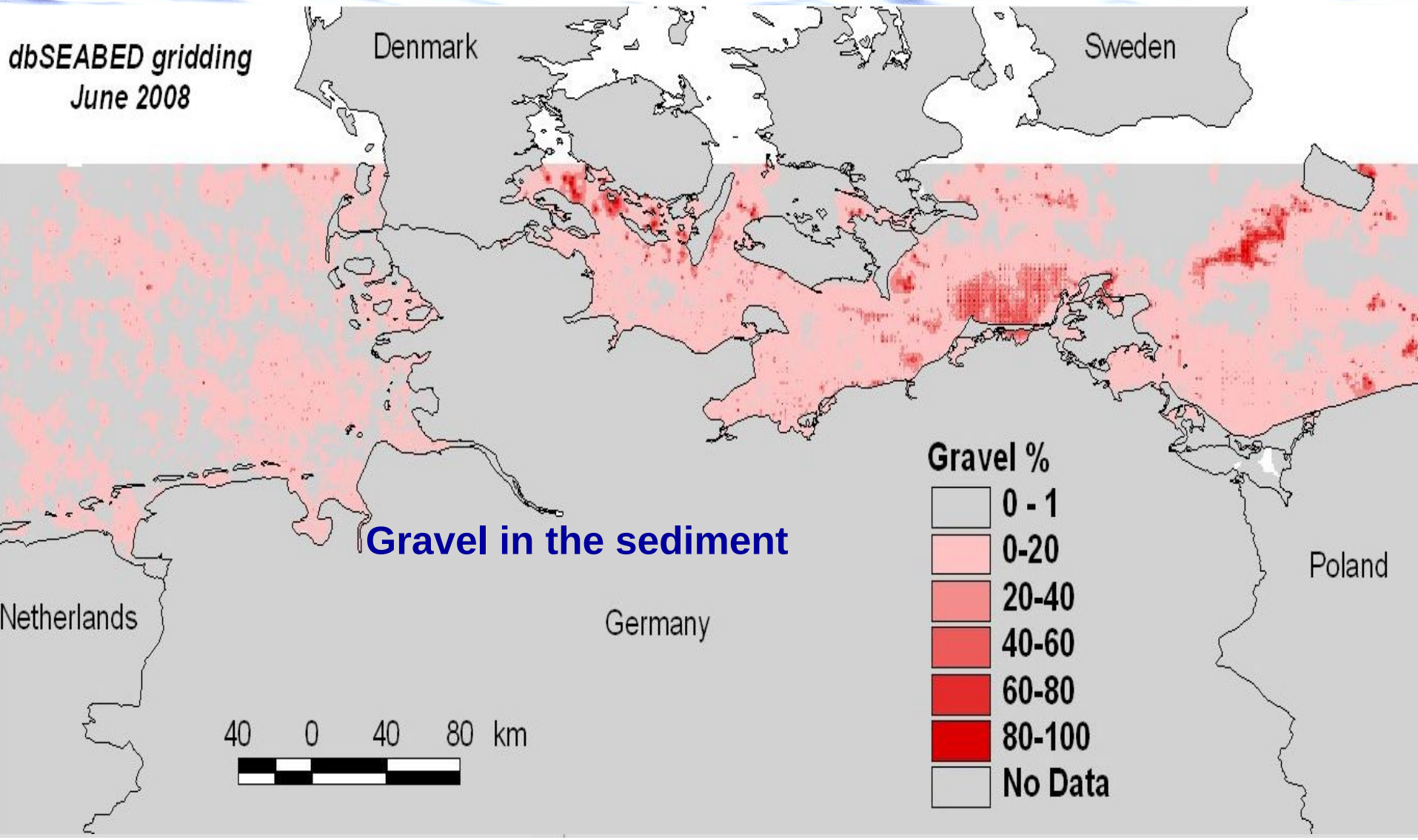

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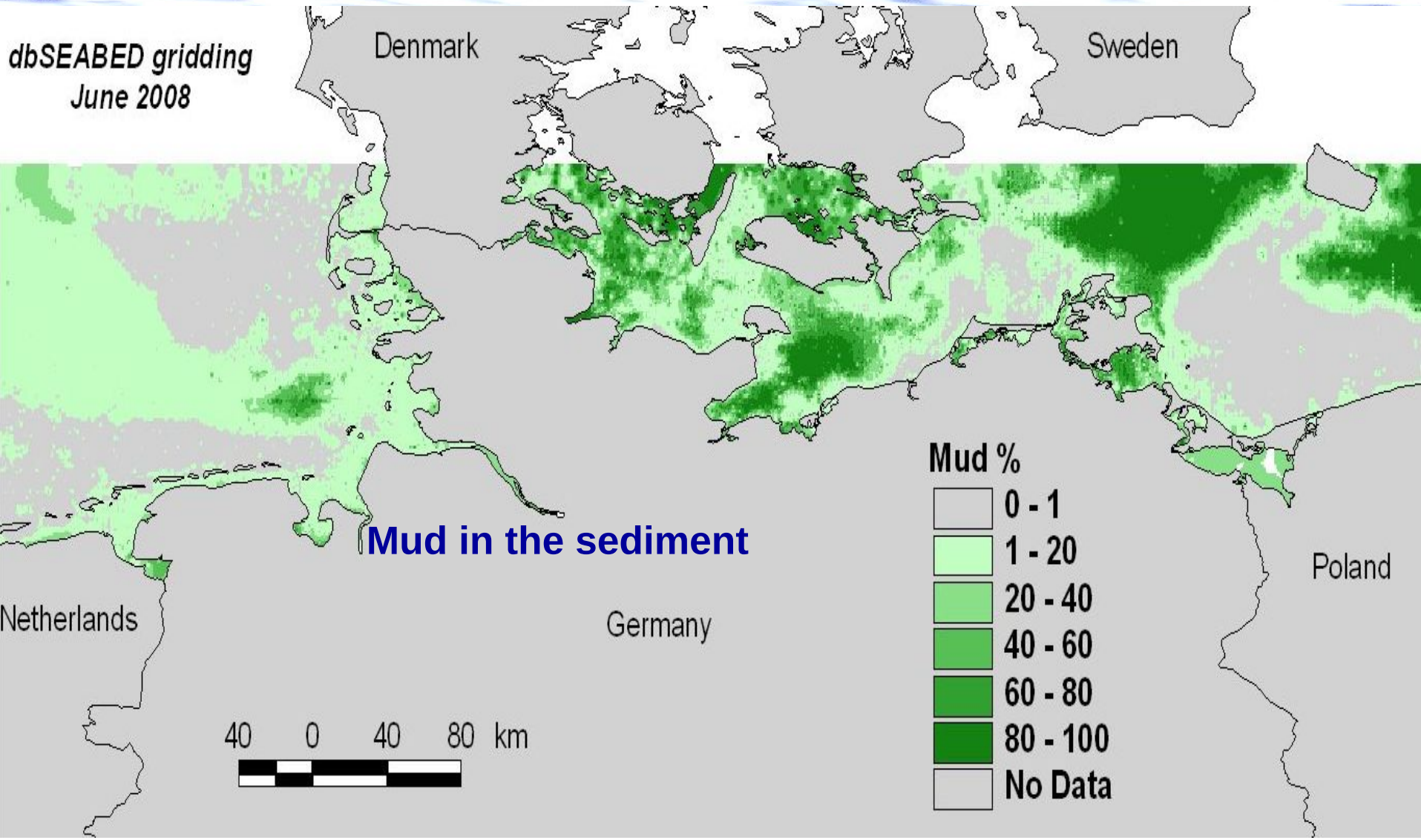

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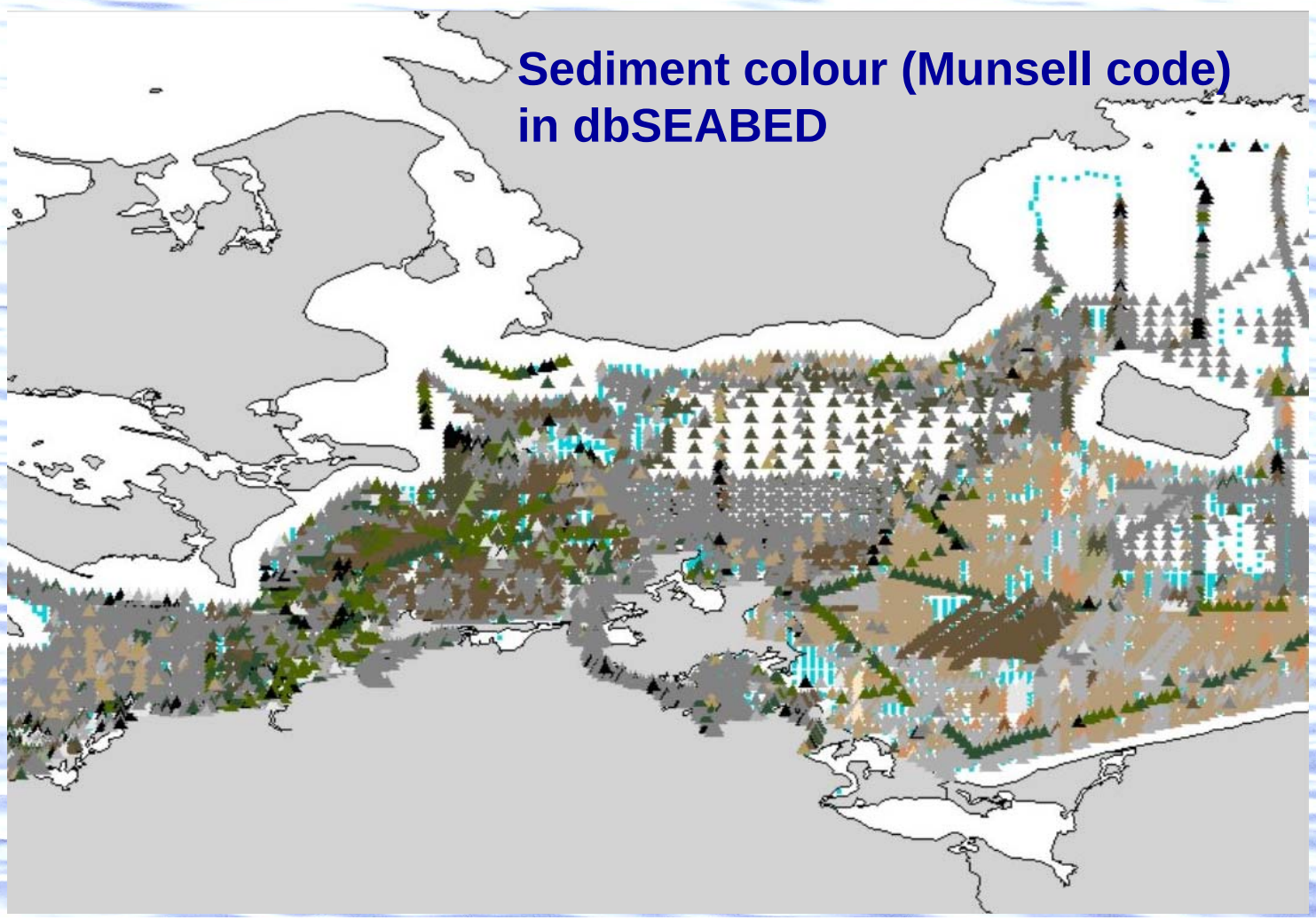
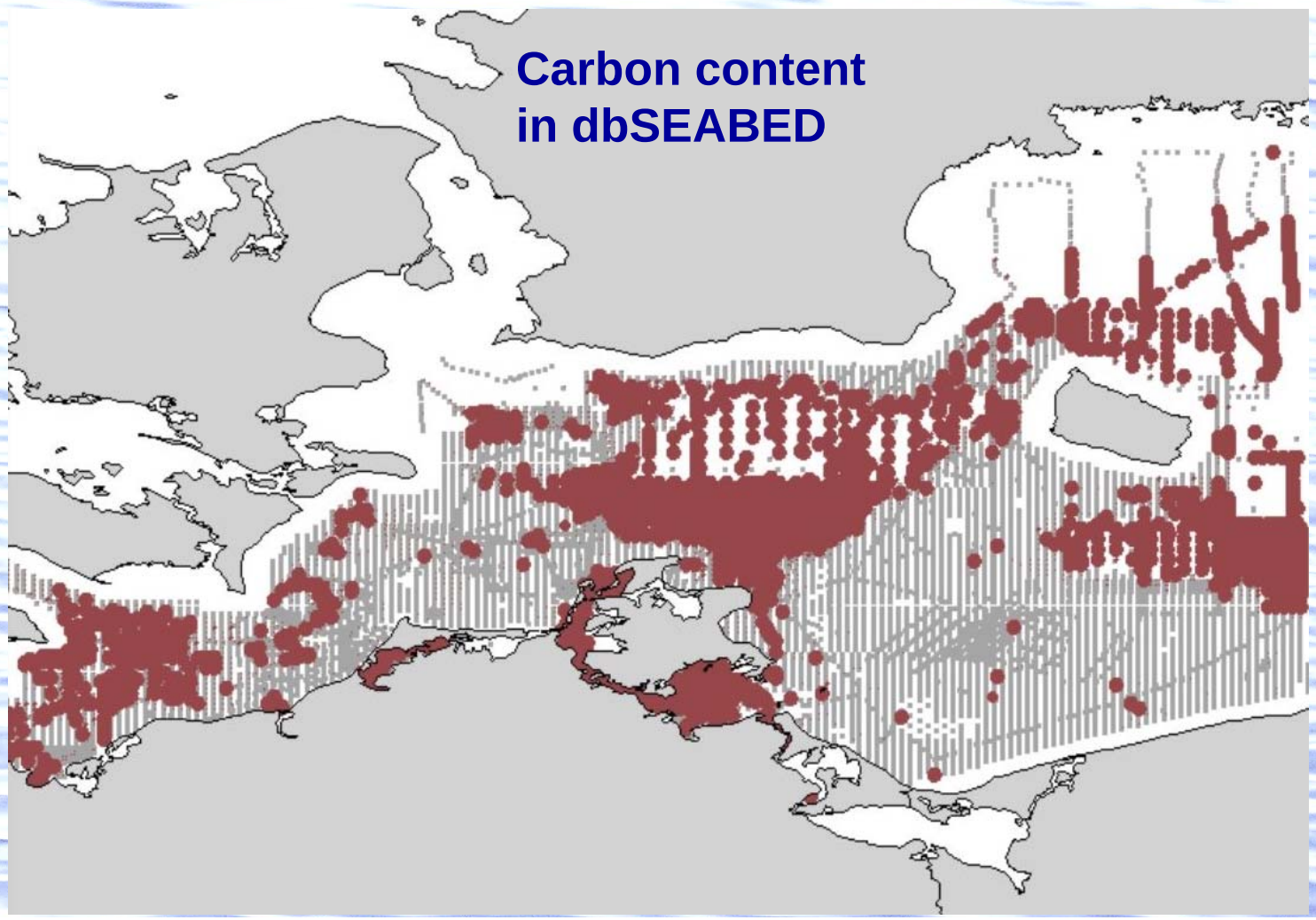


Data Base & Doctrines



Data Base & Doctrines

Missing (or under- represented for ammunition problems):

- pore water chemistry
- trace elements
- bio data on the seafloor
- bio data within the seafloor
- …

Additional information ("not classical geological data") may:

- allow status estimates of ammunition containers (corrosion, …)
- allow status estimates of active agents
- …
- will permit better decisions

Summary & Conclusions

Decisions related to the safe ammunition treatment

→ depend on information →rarely available, … then

→ depend on reliable status estimates

Ammunition treatment decisions require

→ good (i.e., filled) geo-/bio-/chemo sediment data bases

Suggestion: To start an effort to collect
all available seafloor information
including biology and chemistry
in one data base such as dbSEABED
… and make it available to qualified institutions

The solution for
ammunition
removal?