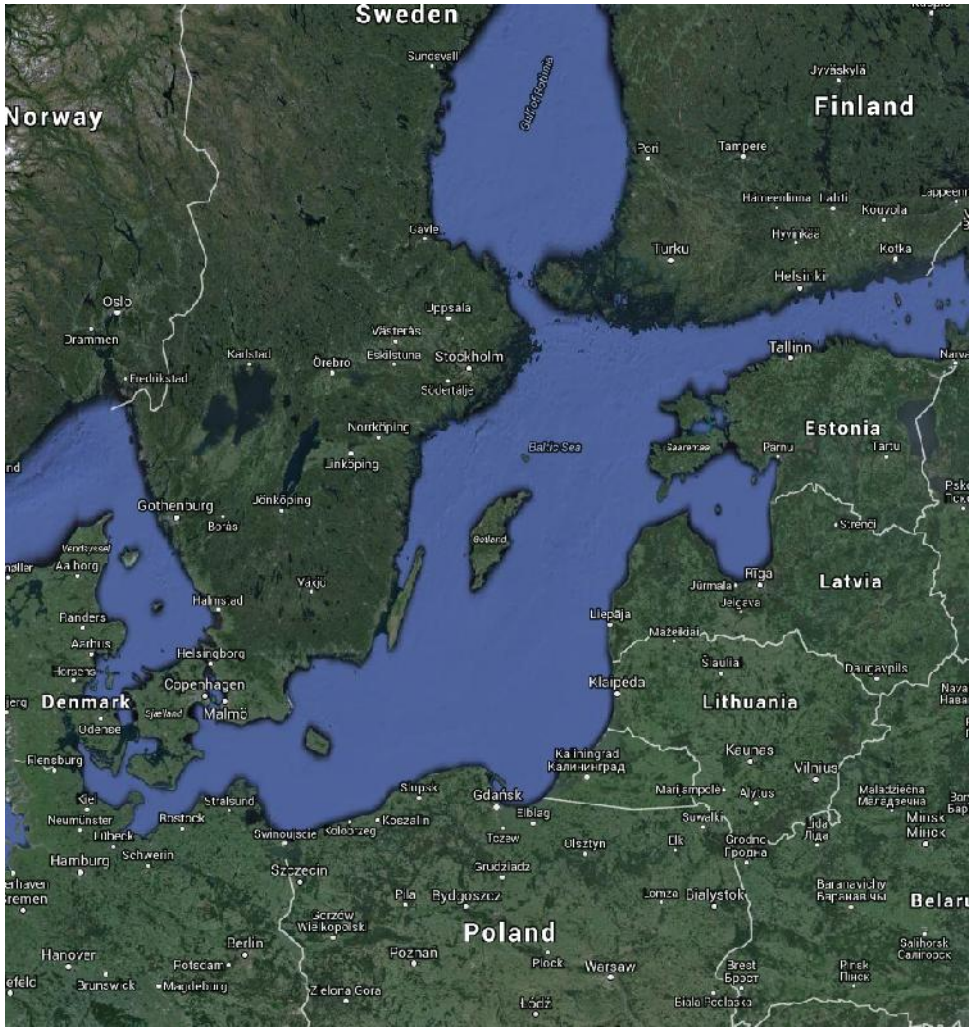
CCS Network
Task Force – Geological CO_2 storage

Storage Task Force - Participants

- Universities and/or research institutes from all countries surrounding the Cambrian sandstones of southern Baltic Sea

Finland	Geological Survey of Finland, Technical Research Centre of Finland
Sweden	Geological Survey of Sweden, Uppsala University
Estonia	Tallinn University of Technology
Lithuania	The Nature Research Centre
Latvia	Riga Technical University
Russia	All-Russia Petroleum Research Exploration Institute
Poland	Polish Geological Institute, AGH University of Science and Technology
Germany	Bundesanstalt für Geowissenschaften und Rohstoffe
UK	SLR

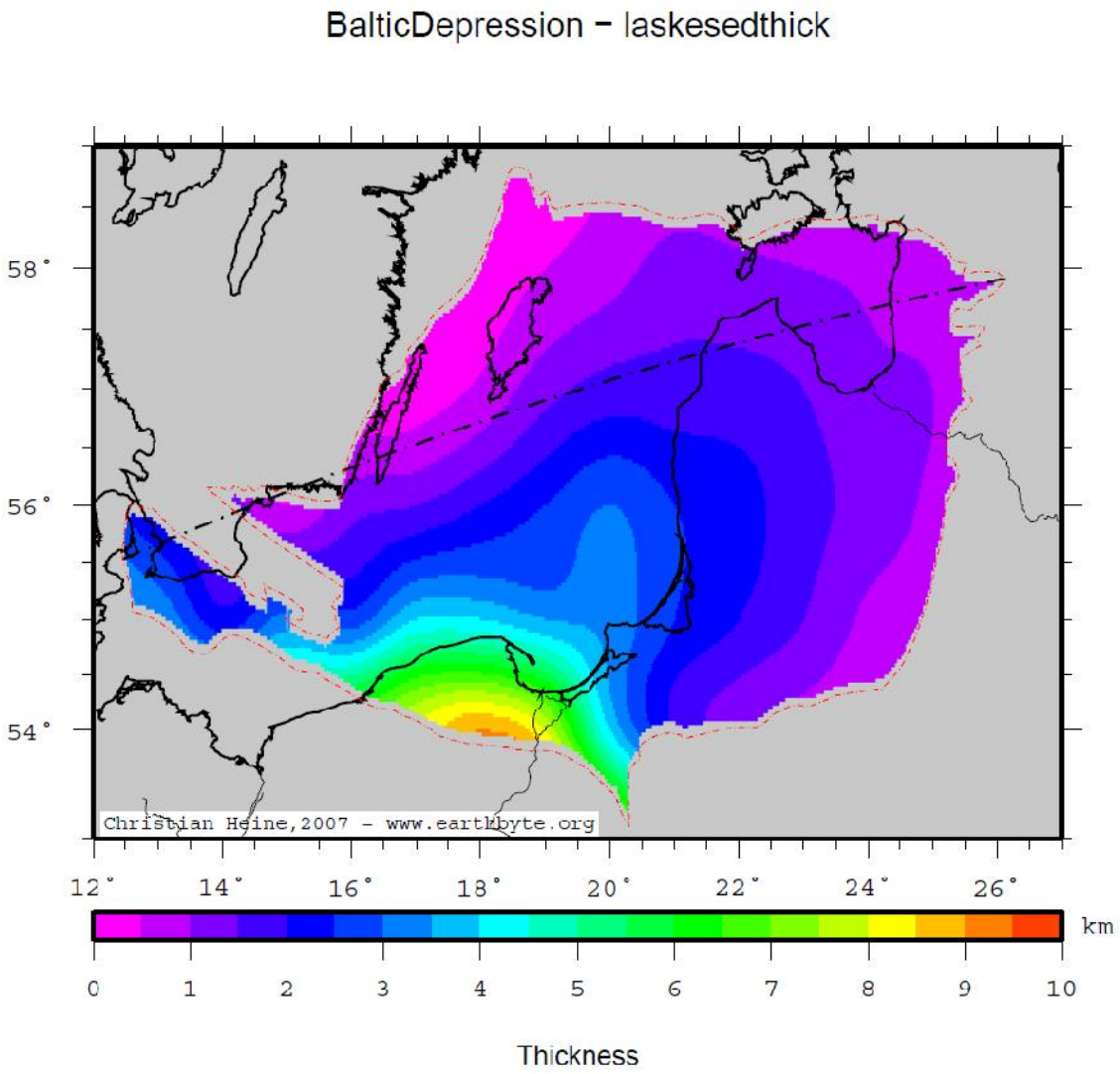


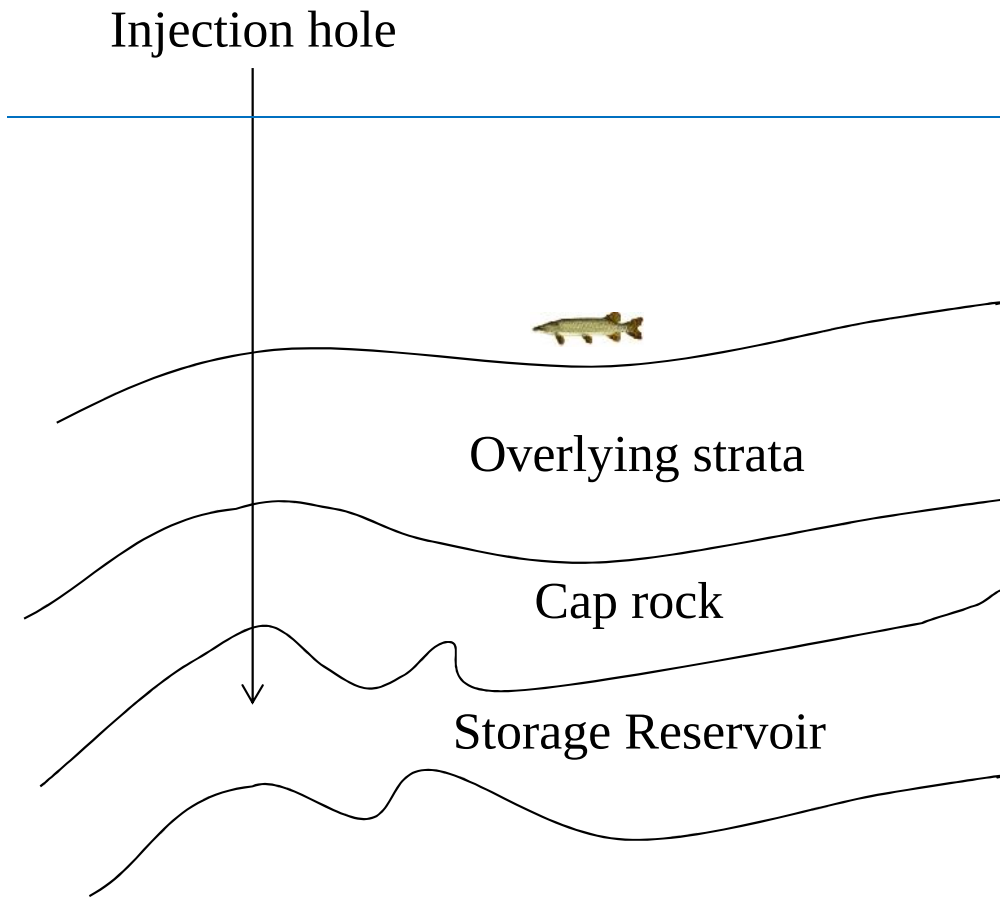
Google Maps, 13.4.2015

Storage Task Force

- Multi-state cooperation
- Broad expertise from different fields of geosciences and geological CO2 storage research
- Experienced members
  - Storage potential and reservoir assessments
  - Modelling and characterisation
  - Pilot injection and monitoring

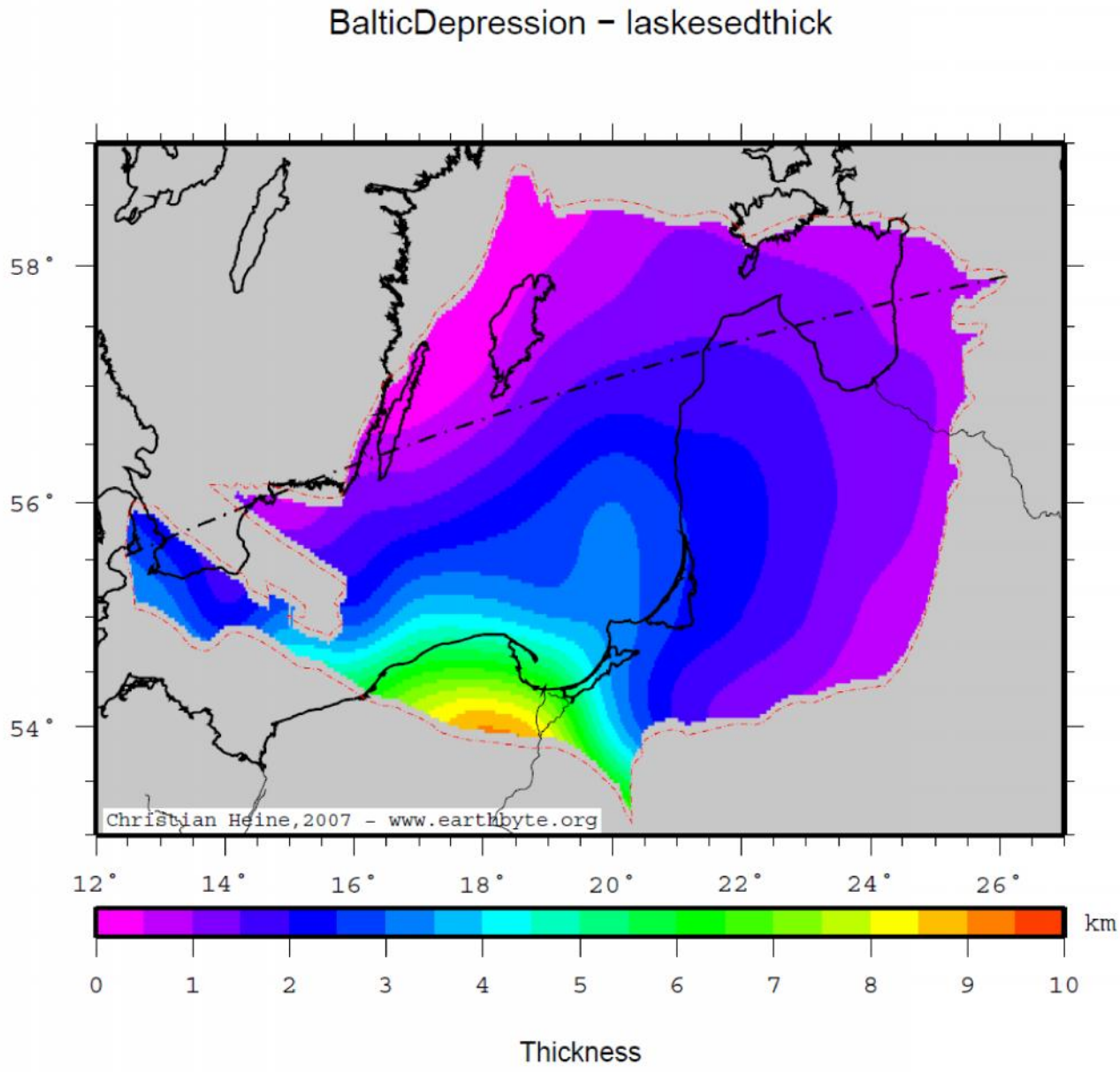
Storage potential in the Baltic Sea region





Storage potential in the Baltic Sea region

- **Sweden:** Many Gt regional theoretical capacity, limited in structures.
- **Germany:** situated outside of the Baltic Basin. Small structures identified in Baltic Sea. Many Gt capacities onshore in younger rocks.
- **Poland:** Current assessments show 861 Mt regional capacity and 7 Mt capacity for a depleted oil field in the Polish Baltic Sea sector.



- **Finland:** no suitable reservoir rocks
- **Estonia:** basin too shallow
- **Latvia:** large suitable Cambrian structures with total capacity of around 400 Mt
- **Lithuania:** small structures but large theoretical potential in regional Cambrian and Devonian aquifers
- **Kaliningrad:** small structures but large theoretical potential in regional Cambrian and Devonian aquifers

Storage Task Force – Scope 2015

- Networking and sharing of knowledge and information
  - Questionnaire, during March
  - Task Force meeting and conference 22-23.4
- Discuss and define an efficient strategy for CO2 storage research in the Baltic Sea region
- Identify research needs and sources of funding
  - Select management board for proposal
  - Prepare and submit a project proposal
- Collect stakeholder opinions and prepare position paper

Identified research needs

- Baltic Sea is by nature a shared resource and a number of cross-boundary issues emerge, from data sharing to issues of cross-boundary CO2 transport and storage. **Collaboration is not only beneficial but necessary**.

- We need a larger basin view understanding of the geology of the entire Baltic basin – basin scale modelling
  - Compilation of all publicly available data
  - Compilation of also confidential hydrocarbon prospecting data
  - Storage recommendations – CO2 storage atlas

- Increase the certainty level of storage estimates by gathering more relevant data and through additional modelling.
  - Future work should also focus on monoclinal storage options in the Cambrian and Devonian sandstones.
  - Enhance oil recovery options?

- Investigate possibilities and identify site(s) for test injection.
  - Develop and implement a test injection with appropriate monitoring.

- Detailed studies on reservoir properties, cap rock integrity, natural seeps and brittle structures.
  - Identify data gaps.
  - Trapping mechanism and migration paths.
  - Mapping and analysis of tectonic history and possible reactivation of faults, due to injection.

- Environmental and climatic assessment and impact of CO2 storage in the Baltic region and separately concerning EOR.. Feasibility studies for the Baltic cross-border CCS demonstration/pilot projects, including onshore, offshore and EOR cases.

Preliminary roadmap for CO2 storage (optimistic)

Storage task force

2015 Mission statement

2015 Establish contacts, collection of stakeholder opinions. Project preparations.

- Map possibilities for funding. Seed money etc.

2016-2017 Basin scale view of storage potential, expansion of Bastor

- Collection of all publically available data
- Collection of confidential oil company data
  - Potential for additional data from current and future activities.
- Basin scale model.
- Storage recommendations

2016-2022 Better characterisation and modelling of reservoir, cap rock, fault zones

2017-2022 (Onshore) pilot

- Baseline studies
- Test drilling
- Characterisation
- Injection
- Monitoring

2020-2030 Characterisation of commercial storage site(s)

- Site selection
- Baseline studies
- Test well
- Characterisation, risk assessment and monitoring plan etc..

2030 Commercial storage

Suggestion for next steps

- Task force organisation, assignment of responsibilities
- Mapping sources of funding
- Establish contacts and collect opinions from stakeholders (before end of year)
  - Prepare position paper (before end of year)
- Videoconference (before or directly after holiday period)
- Next physical storage task force meeting at the end of summer, possibly at Gotland?
- Prepare and submit a project proposal (before end of year)
  - Select management board for project proposal (end of May)
  - Define project goals and tasks (end of October)
  - Prepare application (October-December)

Thank you for your attention!

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