

too much - too little -
or too polluted?

water resources for society and nature on a changing planet

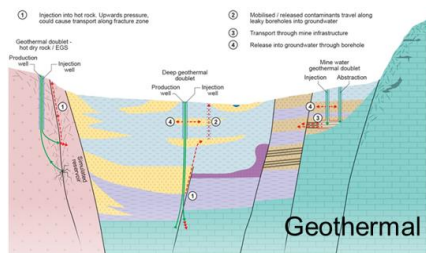
Brief introduction to research and information
products of the four GeoERA groundwater projects

Klaus Hinsby (GEUS, khi@geus.dk),

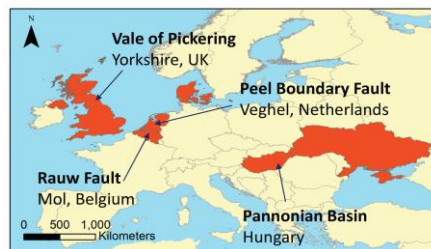
Laurence Gourcy, BRGM, Hans Peter Broers, TNO, Peter van der Keur, GEUS, Marco Bianchi, BGS

The four GeoERA groundwater projects and their main contributions to EGDl and sustainable groundwater management aligned with EU and UN policies:

Conceptual models and decision support tool for assessment of groundwater vulnerability to energy-related activities



Reports from pilot study sites in BE, HU, NL & UK

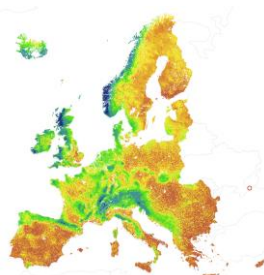


Groundwater vulnerability to deep energy related activities

Salt water intrusion into coastal aquifers at local scale



Groundwater recharge studies at local to Pan-European scale



Groundwater quality travel times, vulnerability and age



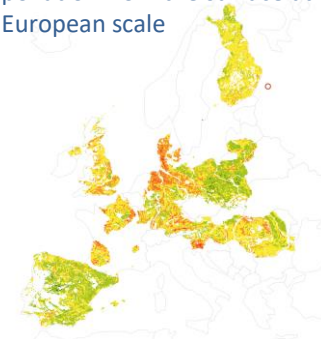
Groundwater and climate change impacts and adaption

Research and Information products from local to Pan-European scale from the four projects include:

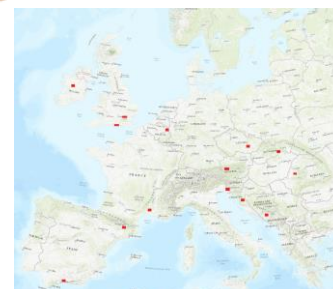
Degradation of contaminants at specific points in the groundwater – surface water transition zone



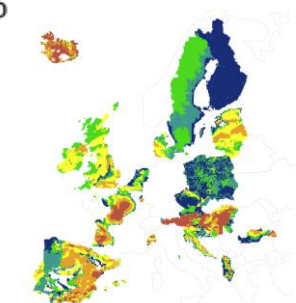
Groundwater vulnerability to pollution from the surface at European scale



Groundwater quantity Pan-EU groundwater resources map



Depth and volume of groundwater resources at European scale

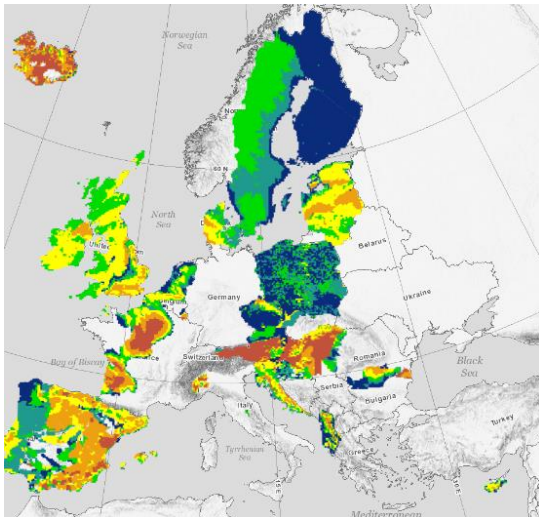


Local studies of karst and chalk springs and aquifers

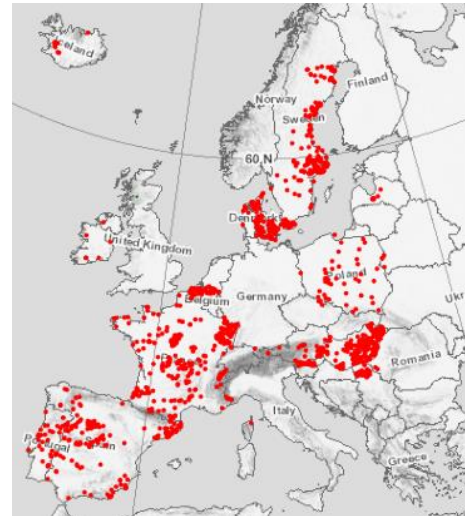


Examples of contributions for expected GeoERA groundwater impacts according to the GeoERA Grant Agreement include:

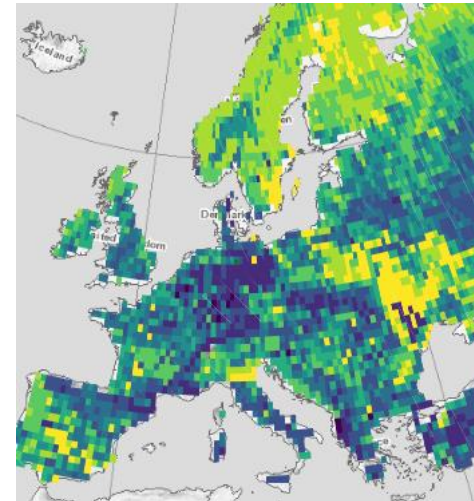
1) Improved access to downloadable groundwater quantity and quality data at local to Pan European scale – examples include:



Water volumes and aquifer characteristics in European aquifers



Groundwater quality in European aquifers: here $As > DWS$ ($HGT > 1$)



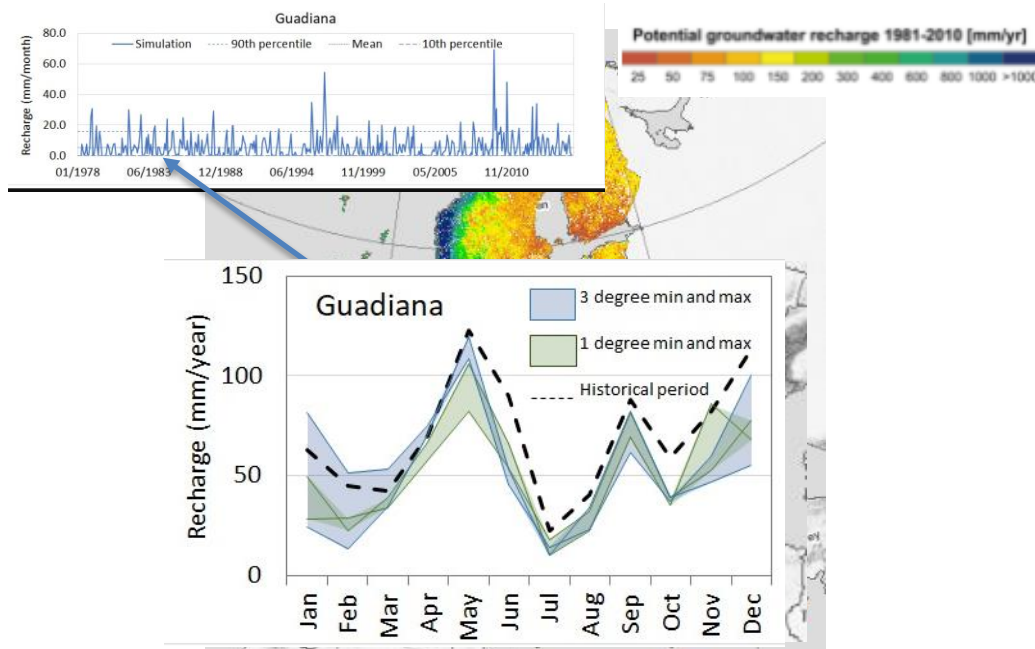
Nitrate in the unsaturated zone infiltrating to groundwater



Decision Support Tool for assessment of groundwater vulnerability to deep energy related activity

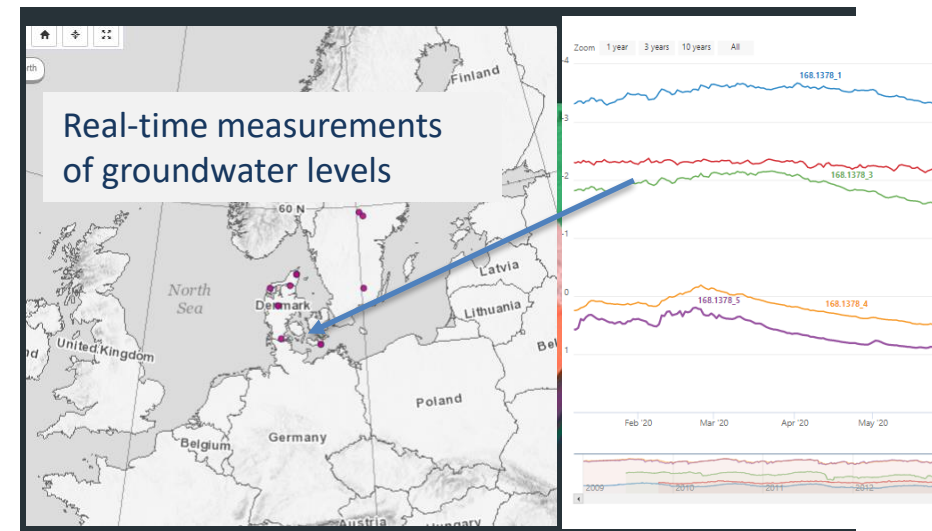
Further examples of contributions for expected GeoERA groundwater impacts according to GA include:

3) Tools for assessment of climate change impacts, mitigation and adaptation strategies examples include:



Average groundwater recharge for Europe as well as measured and simulated historical, current and future recharge at different scales and climate change scenarios

4) Opportunities for and collaboration with private companies and research institutions to develop new EGDI add on services for groundwater – examples include:



Collaboration with SMEs e.g. for 1) visualisation of 3D models for hydrogeological assessments and 2) real-time water table measurements and visualization



THANK YOU
for your attention



<https://geoera.eu/themes/groundwater/>



This project has received funding from the European Union Horizon 2020 research and innovation programme under grant agreement No 731166. Scientific work is co-funded by the Geological Surveys and national funds allocated for science within the period 2018-2022

