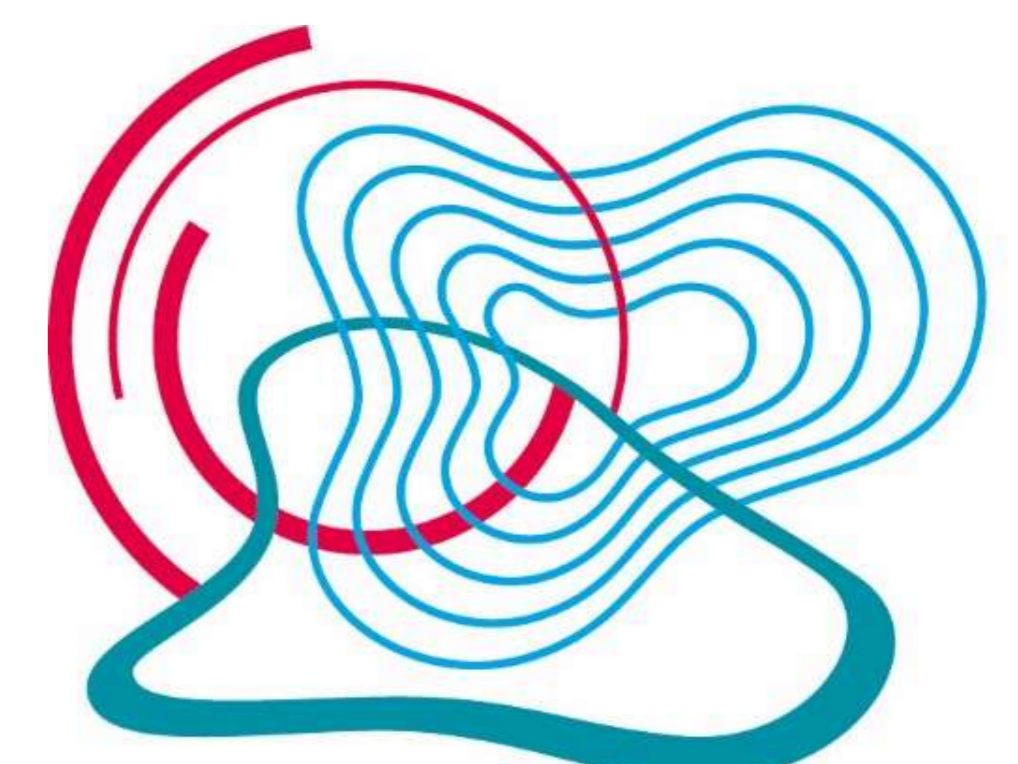


Offshore wind farms and Maritime Spatial Planning in Germany



Helmholtz-Zentrum
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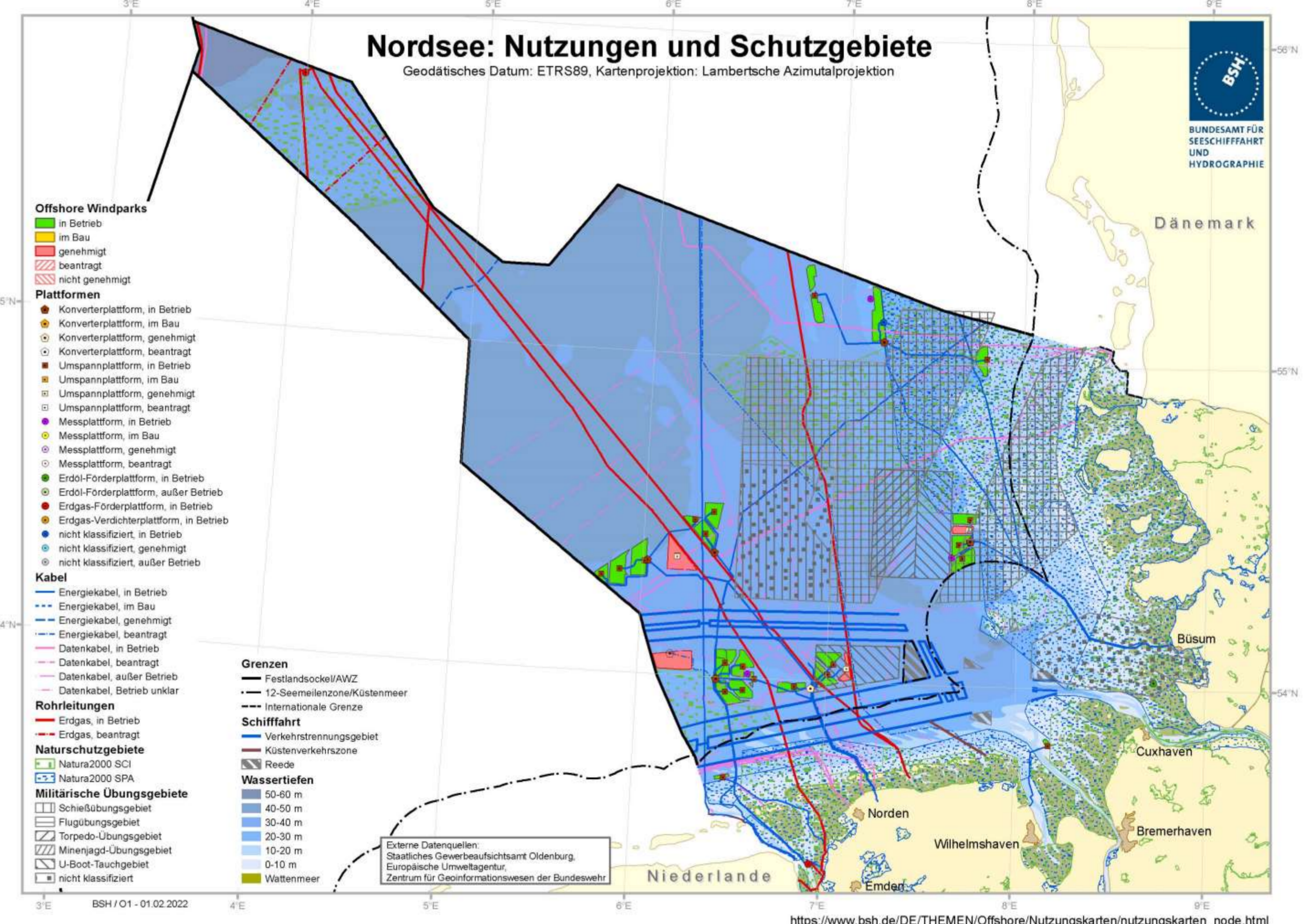
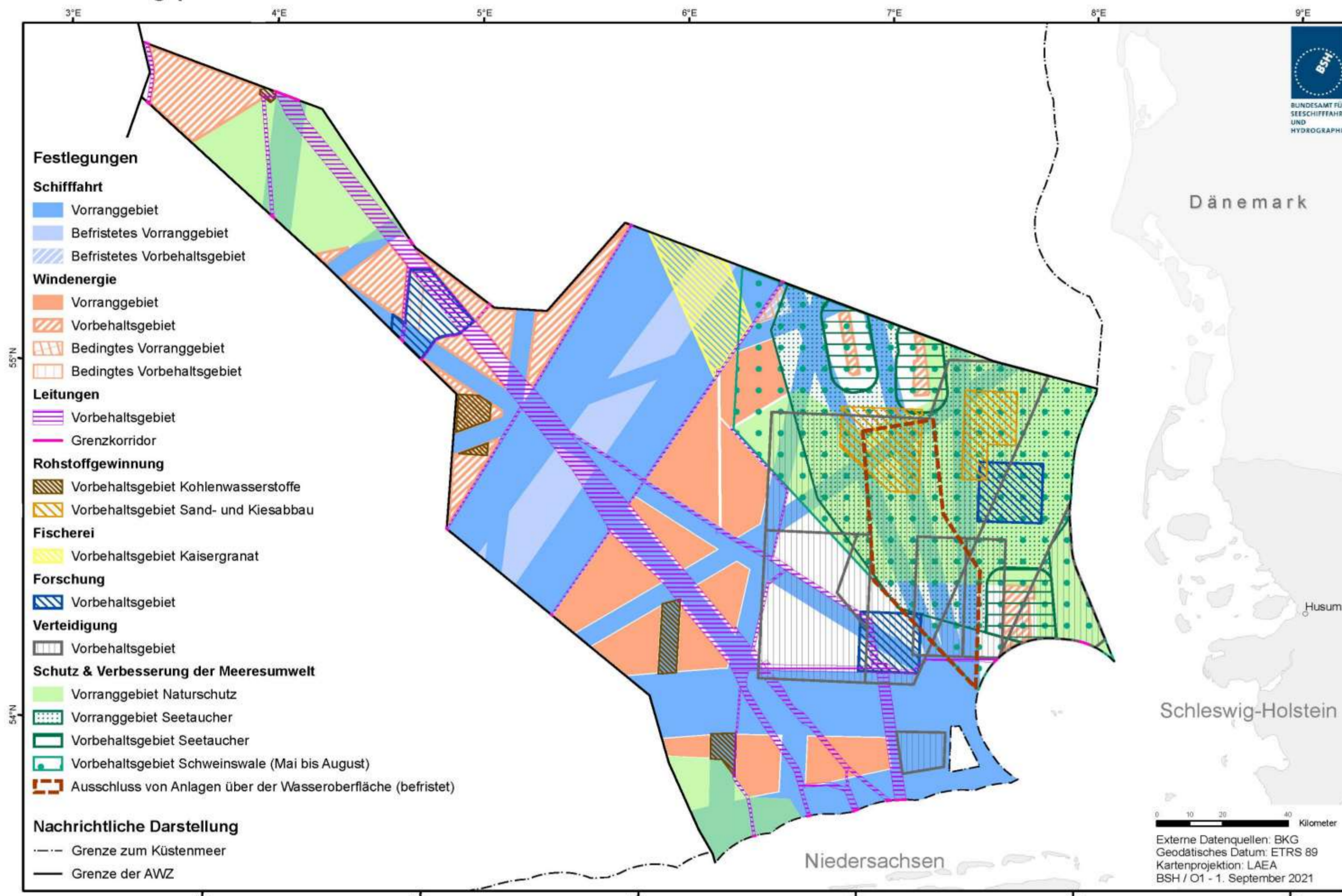
Dr. Andreas Kannen and Dr. Jürgen Schaper, Human Dimensions of Coastal Areas
Institute for Coastal Systems - Analysis and Modeling, Helmholtz-Zentrum Hereon, Geesthacht

The problem: Huge dynamics towards intensified use of marine areas

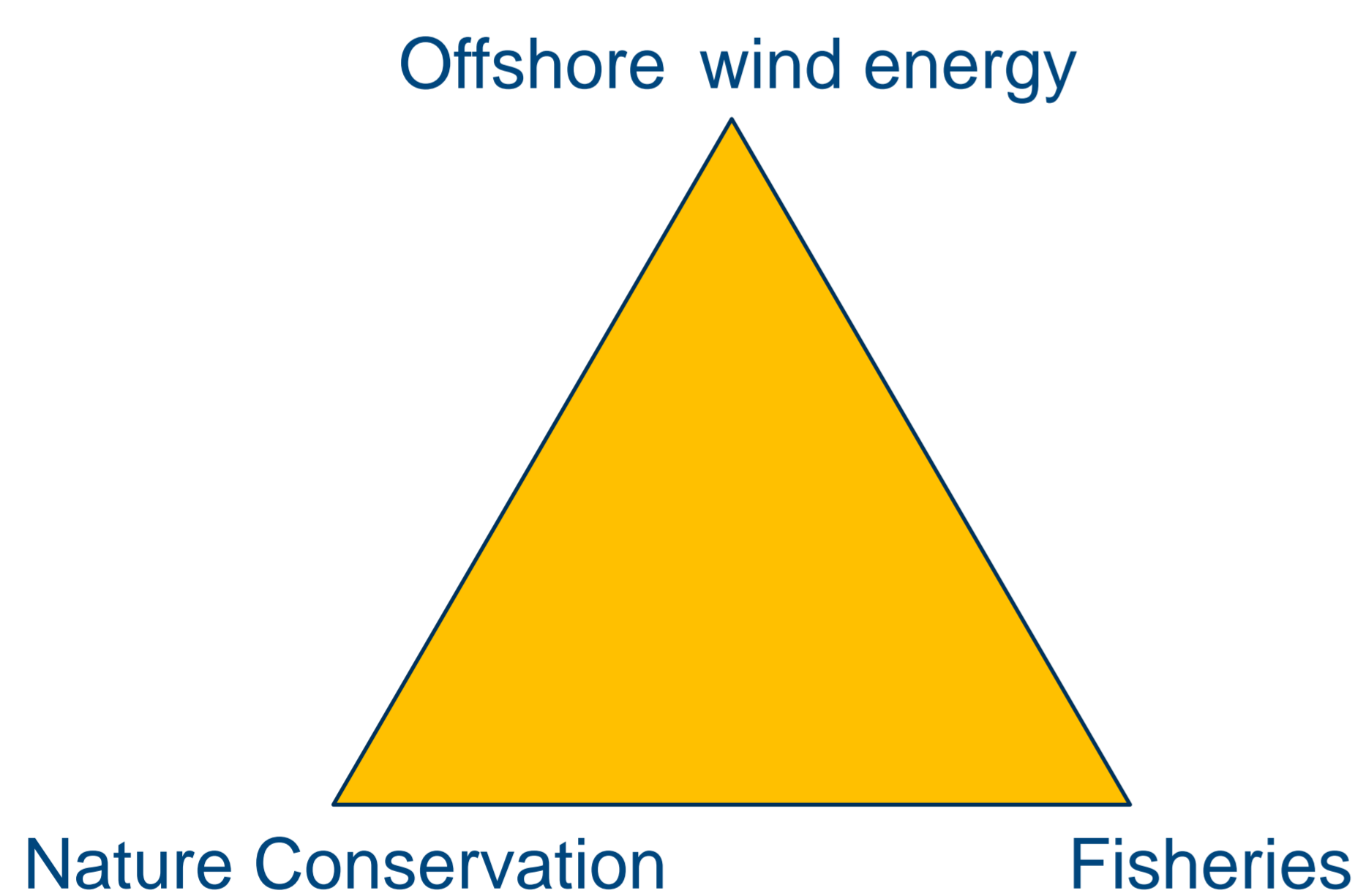
In most Northern European countries Offshore Wind has been the major driver to develop Maritime Spatial Planning processes and maritime spatial plans. For Germany this becomes obvious with the amount of areas in orange colours in the spatial plan from 2021, describing priority areas for the installation of offshore wind farms in the future. Since 2022 even more areas might be required because the German government enshrined in law to install 70 GW of offshore wind by 2045 (compared to 8 GW of installed capacity in early 2023), most of this in the North Sea EEZ. Similar developments take place in neighbouring countries. Germany, Belgium, the Netherlands and Denmark have agreed in May 2022 to expand offshore wind power generation capacity in the North Sea tenfold to at least 150 gigawatts (GW) by 2050. Large scale plans also exist for the UK. In addition in German waters and more so in neighbouring countries the production of offshore hydrogen might increase the pressure on other uses, particularly on nature conservation and fisheries. Therefore, offshore renewable energies are about to change marine basins such as the North Sea fundamentally, from an ecological perspective as well as from human perception.

Maritime spatial plan, sea use and marine protected areas in the German EEZ

Raumordnungsplan für die deutsche ausschließliche Wirtschaftszone in der Nordsee und in der Ostsee - Kartenteil Nordsee



Triangle of key actors:



The political pressure from climate change and energy policies towards development of marine renewable energies poses significant challenges for other actors in the marine space. In most cases offshore wind farm areas are closed for fisheries and particularly for bottom-trawling. Therefore the fisheries sector fears to lose a significant amount of fishing areas throughout the North Sea, which also increases fishing pressure in other areas. In addition fisheries is under pressure from closures of areas in Marine Protected Areas. Concepts for co-use of areas are urgently needed and require dialogue and joint development of ideas and concepts among all three sectors. Nature conservation also fears that in some cases protected areas might be used for offshore wind farms in the future. As well, wind farms and large scale wind farm patterns may change habitat structures and create artificial reefs. To which degree this may have positive as well as negative impacts is rather unknown today.

Social science research in marine use conflicts

From a social science perspective the main aim is to understand how the different marine actors look at marine use changes taking into account their history and the path dependency in their own sector developments. Understanding this perception, which is usually not only based on rational interests, but also on emotions and traditions, is key for constructive dialogues between sectors, but also for transdisciplinary dialogue between the various scientific disciplines on the one hand and the various marine user groups and sectors on the other hand.

Research topics and methods

- Understanding political and regulatory dynamics and related policy risks
- Analysing cross-sectoral maritime governance and regulation
- Analysing or developing (narrative) scenarios for future marine use
- Analysing actor relations and conflicts
- Developing transdisciplinary research and dialogue processes
- Communication, cooperation and possible options for action (co-design)
- Interviews, observation and dialogue procedures based on qualitative social science research methods
- Qualitative risk assessment based on expert input to support cross-sectoral and transdisciplinary dialogues