

The Wadden Sea at Risk: Bottom Trawling and Fossil Fuel Exploitation in Marine Protected Areas

Deutsche Umwelthilfe

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The Wadden Sea World Heritage is the largest unbroken system of intertidal sand and mudflats in the world, spanning Danish, Dutch and German coastal waters. It has been shaped by natural forces such as tidal patterns and currents since it originated about 7,500 years ago. Intensifying human activities in the 20th century have become the most important factor impacting this ecosystem. The Wadden Sea has seen a reduction of large predators such as groundfish, grey seals and harbor porpoises, and biodiversity overall, as 144 species amounting to one-fifth of total macrobiota have been made extinct or severely reduced. It has also seen the degradation of complex three-dimensional habitats such as mussel beds and oyster banks, seagrass meadows and reefs of the sand coral *Sabellaria spinulosa*.¹

Recent conservation efforts have reversed some of the negative trends, but the pressure from human activities remains too high and is even increasing despite the Wadden Sea's protected status. After the World War I, crab fishing with motorised vessels and bottom trawls established itself as the dominant technique to catch the North Sea Brown Shrimp (*Crangon crangon*). This fishery is damaging the sensitive seabed, causing high levels of bycatch.

Recently, there has also been a rise in energy infrastructure developments and exploitation of gas, oil and sand. The effects of these activities are compounded by pollution, eutrophication, invasive species and climate change. The Wadden Sea World Heritage is far from being a pristine ecosystem, and management measures are urgently needed to conserve this special site. The German NGO Deutsche Umwelthilfe is taking action against bottom trawling and the exploitation of fossil fuels in the German Wadden Sea National Parks of Lower Saxony and Schleswig-Holstein, which are also EU Natura 2000 sites.

Bottom trawling inside the world heritage property

Failure to fulfil the legal obligation of protection

Germany is currently failing to effectively implement the EU Habitats Directive, the EU Nature Restoration Law, the EU Biodiversity Strategy and the Kunming-Montreal Agreement, which requires it to protect and restore the Wadden Sea. The systematic breach of Article 6 of the Habitats Directive (92/43/EEC) by

German authorities is especially blatant. It holds that Member States need to take the required appropriate measures to maintain or restore habitats to a favourable conservation state (1), prevent a risk of habitat deterioration (2), and/or assess the risk posed by plans or projects on the integrity of the sites (3).

In April 2025, Deutsche Umwelthilfe, alongside the Environmental Justice Foundation (EJF), the Blue Marine Foundation, ClientEarth, and Défense des Milieux Aquatiques (DMA), filed a formal complaint to the European Commission regarding bottom trawling in marine protected areas in Germany, France and Italy.² According to Global Fishing Watch, even the protected habitat types of reefs, large shallow inlets and bays, and sandbanks were regularly fished with bottom trawls from 2020-2024. As of May 2026, the complaint is pending, and this destructive practice continues in the Wadden Sea National Park.

Significant damage caused to sensitive habitats and species in Wadden Sea

Bottom trawling functions by dragging nets across the seabed to catch ground-dwelling brown shrimp. A recent systematic review of the impacts in the Wadden Sea showed demonstrable ecological effects on benthic ecosystems, through physical seafloor disturbance and mortality of benthic organisms. The impacts affect the entire food web due to high bycatch rates, especially for juvenile fish.³ This resulted in a loss of biodiversity and a shift in species composition due to the decline of large, long-lived species and an increase in small, opportunistic species. In addition, important biogeochemical processes were altered, resulting in a reduction of the sediment's carbon storage capacity. The most recent assessment for the EU Marine Strategy Framework Directive identified widespread bottom trawling as one of the key drivers of the unfavorable condition of German habitats and as having the "greatest impact on benthic habitats" in the North Sea.⁴

Evaluating the impact of bottom trawling activities is complicated by the "shifting baseline" phenomenon: Studies often take recent benthic communities as a baseline due to data availability, thus failing to capture significant and long-lasting changes that took place over the last century. The effects depend on the specific local context due to the dynamic nature



Fig. 1: Bottom trawling for brown shrimp in the Wadden Sea clearly physically disturbs the seafloor, leading to several ecological effects on benthic ecosystems.

M. Stock/wattenmeerbilder.de

of the ecosystems and impacts from tides and currents. Regardless of the methodological challenges, it is clear that bottom trawling has had significant negative impacts on the Wadden Sea. This is also a problem for the fishery itself. More than a century of crab fishing in the Wadden Sea is having a negative effect on the recruitment of *Cragnon cragnon*, threatening the long-term stability of the population.⁵ This underlines the urgent need for management measures of the crab fishery in the German Wadden Sea.

Lack of political will and action despite scientific and legal urgency

The problem of bottom trawling in marine protected areas in the Wadden Sea is neither new nor unknown, but until now no sufficient action has been taken. In Germany, a lack of political will, pressure from the fishing sector, and institutional fragmentation between the federal and the state level have locked in a state of ongoing breach of law and ecological degradation. This has been compounded by a lack of understanding for the severity of the degradation of the Wadden Sea, which is even at risk of losing its World Heritage status.

In 2024-2025 a confidential negotiation process concerning fisheries management and possible area closures in the Wadden Sea National Park took place in the state of Schleswig-Holstein, but ended without an agreement. A similar process has been initiated in the state of Lower Saxony in April 2025, but has not yet delivered any result. These intransparent processes are taking place behind closed doors, have no binding timelines, and are characterized by the unbalanced influence of industry stakeholders. Regardless of the scientific and legal urgency, it seems currently unlikely that political processes will deliver the necessary protection from bottom trawling for the Wadden Sea in Germany.

Fossil fuel expansion inside the World Heritage Property

Fossil Project "Mittelplate" (DE)

Harbour Energy currently operates the Mittelplate oil platform in a special fossil enclave in southern Schleswig-Holstein under a permit that runs until 2041. On top of the danger that the almost 40-year-old platform and the severe risks an oil spill would pose to the Wadden Sea, it has now become public that the operation of the platform has been unlawful since the early 2000s. In March 2026, a German court ruled that the operation was unlawful due to the absence of a mandatory assessment according to the EU-Flora-Fauna-Habitat-Directive.

Harbour Energy has appealed the decision; the verdict in second instance has suspended immediate enforcement of the platform's closure. A decision on the legality of operating the platform is still pending in the main proceedings. In light of this revelation, we ask Germany to present a binding plan for an immediate phase-out of fossil fuel extraction in the Wadden Sea.

Fossil Project "GEMS" (NL-DE)

ONE-Dyas' GEMS/N05-A project about 20 km off Borkum is set to be expanded into a cross-border gas project targeting several Dutch and German fields, using multiple platforms⁶ and threatening the Wadden Sea's Outstanding Universal Value.⁷ While the Dutch permit was struck down by the District Court of The Hague in April 2024 and remains legally disputed, the German mining authority approved the project on 13 August 2024 and has since issued further operational approvals. The risks are substantial: damage to sensitive reef habitats, underwater noise exceeding German noise limits endangering passing porpoises seeking refuge in the WHS, the discharge of lead- and mercury-contaminated water, and seabed subsidence caused by extraction. The platform's accident probability of 0.25 is exceptionally high and remains unaddressed by any authority of Germany or the Netherlands.⁸

LNG-Terminals (DE, NL)

Three sites Liquefied Natural Gas (LNG) terminals are in operation or under construction in the Wadden Sea or its estuaries: Eemshaven, Wilhelmshaven (two Floating Storage and Regasification Units [FSRUs] and one planned onshore terminal) and Brunsbüttel (one FSRU and one planned onshore terminal). These result in increased pollution from oils, NO_x, SO₂, particulate matter, and methane, damage to fish stocks and disruption from increased shipping and construction. The FSRU in Wilhelmshaven uses chlorine to clean its seawater pipes, which

is particularly damaging. Seawater is also used in regasification and then returned to the sea at a warmer temperature. This affects lower trophic species' composition and fish behaviour. The extraction of seawater entrains fish and other organisms into the hull of the vessel, killing them. Not only has the Wadden Sea ecosystem been damaged by the construction of the current FS-RUs (deepening of harbour facilities, construction of jetties, prolonged noise-intensive pile driving, maintenance dredging and laying of pipelines), but their operation and the planned onshore infrastructure will cause additional damage.⁹



Fig. 2: In Wilhelmshaven, the floating LNG terminal Höegh Esperanza operates with negative impacts on the Wadden Sea including chlorine and wastewater discharge.

Photo: Julia Dade / DUH

Conclusion

The cumulative pressure on the Wadden Sea property, including from fossil fuel exploitation and bottom trawling, is too high and a risk for its World Heritage Status. We call upon the World Heritage Committee to recommend at its 48th session to reaffirm its earlier decisions and in particular to:

- *Request* Germany to carry out the missing environmental impact assessments for North Sea shrimp fisheries in its Wadden Sea protected areas, as stipulated by the EU Habitats Directive Article 6(3);
- *Call on* Germany to establish designated no-take zones, in accordance with international conservation standards, especially the IUCN rule that 75% of a protected area should be managed for its primary conservation objective;
- *Urge* the State Parties to implement Decision 45 COM 7B.23 and 46 COM 7B.51, notably to stop extractive activities such as oil, gas and salt in the vicinity or underneath of the property in particular the GEMS, Ternaard, Mittelplate and Balllastplaat projects;
- Request the State Parties to reject any future proposals for extractive activities inside or in close proximity to the property;
- *Request* the Netherlands and Germany to carry out the missing assessment of the GEMS project on the OUV;
- *Request* Germany to oblige Harbour Energy to put in place financial safeguards to ensure that the Mittelplate's oil platform is dismantled without damage to the property, and to commit to full transparency in this process, including the publication of the agreement between the regional government and the operator;

- *Urge* the State Party of Germany to immediately stop the LNG projects in Wilhelmshaven and Brunsbüttel, and to stop the use of biocides at the Wilhelmshaven terminal;
- *Call* on Germany to nominate the enclaves originally foreseen for fossil fuel drilling or extraction for inclusion in the property as soon as possible.

Notes

- 1 Lotze, H. et al. (2005). Human transformations of the Wadden Sea ecosystem through time: A synthesis. *Helgoland Marine Research*, 59(1), 84–95. <https://doi.org/10.1007/s10152-004-0209-z>
- 2 Deutsche Umwelthilfe. (2025, April 28). Meeresnaturschutzgebiete massiv geschädigt: Umweltschutzorganisationen reichen rechtliche Beschwerde bei EU-Kommission gegen Deutschland, Frankreich und Italien ein [Press release]. <https://www.duh.de/presse/pressemitteilungen/pressemitteilung/meeresnaturschutzgebiete-massiv-geschadigt-umweltschutzorganisationen-reichen-rechtliche-beschwerde/>
- 3 Eijsackers, H. J. P. et al. (2023). Beroordeling van ecologische effecten van garnaalenvisserij op bodem en biota (WMR Report C053/23). Wageningen Marine Research & Waddenacademie.
- 4 Bund/Länder-Arbeitsgemeinschaft Nord- und Ostsee. (2024, October 15). Zustand der deutschen Nordseegewässer 2024: Aktualisierung der Anfangsbewertung nach § 45c, der Beschreibung des guten Zustands der Meeresgewässer nach § 45d und der Festlegung von Zielen nach § 45e des Wasserhaushaltsgesetzes zur Umsetzung der Meeresstrategie-Rahmenrichtlinie. <https://mitglieder.meeresschutz.info/de/berichte/zustandsbewertungen-art8-10.htm>
- 5 Respondek, G. et al. (2022). Connectivity of local sub-stocks of Crangon crangon in the North Sea and the risk of local recruitment overfishing. *Journal of Sea Research*, 181. <https://doi.org/10.1016/j.seares.2022.102173>
- 6 <https://www.handelsblatt.com/unternehmen/energie/energie-konzern-will-sechs-gasfelder-vor-borkum-anbohren/100202561.html>
- 7 <https://www.bundestag.de/resource/blob/1128754/Stellungnahme-Stadt-Borkum.pdf>
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- 9 <https://www.duh.de/Ing/> ; <https://energy-terminal.de/de/terminals>