

National T0 study of areas proposed for fisheries management measures in the Belgian part of the North Sea

Podholová Pavlína¹, Jacobsen Nils Lucas^{1,2}, Braeckman Ulrike^{1,2}, Jamar Christelle², Montereale Gavazzi Giacomo³ and Degraer Steven¹

¹ Operational Directorate Natural Environment - Marine Ecology and Management (MARECO), Institute of Natural Sciences, Vautierstraat 29, 1000 Brussel, Belgium
E-mail: ppodholova@naturalsciences.be

² Marine Biology Research Group, Ghent University, Krijgslaan 281 Campus Sterre S8, 9000 Gent, Belgium

³ Consortium for the Coordination of Research Relating to the Venice Lagoon System (CORILA); Institute of Natural Sciences, CORILA Palazzo X Savi San Polo 19. 30125 Venezia

The benthic habitats in the Belgian part of the North Sea have been facing chronic anthropogenic pressure from bottom-contacting fisheries for centuries. The latest environmental status assessment showed that both soft (shallow sandbanks) and natural hard substrate (stony reefs) habitats are in unfavourable conditions. Although marine Natura 2000 sites were established to protect valuable and threatened species and habitats, the fishing pressure is still prominent over the entirety of their spatial extent. This urges to set additional management measures to achieve the desired protection level, allowing recovery and long-term sustainability.

In response, the new Belgian Marine Spatial Plan (2020-2026) proposed the establishment of designated search zones for seabed protection where bottom-disturbing activities would be restricted. In 2021, 3 areas were designed using an interdisciplinary approach integrating biological data, habitat distribution models, along with fishing type and intensity data. Two of them will be located in the Vlaamse Banken (one of the Natura 2000 sites) and one situated further offshore at the North-West. Reducing bottom-disturbing fisheries in these areas is anticipated to be highly effective, as these zones have been identified to contain large extent of biologically valuable habitats and species.

In order to assess the effectiveness of the upcoming proposed fisheries measures, an important first step is to design a comprehensive monitoring program, starting with a baseline (T0 study) followed by long-term monitoring after the closure of the areas to bottom fisheries. The current study design is aligned with the existing monitoring programs under the European Union's Marine Strategy Framework Directive (MSFD) and the Habitats Directive (HD). Emphasis is placed on the 1110 and 1170 habitat types, in particular stony reef biotopes and *Lanice conchilega* aggregations (sand mason worm). The ecological status evaluation, including community composition and functioning, involves analysing Van Veen grab samples for soft sediments and employing non-destructive underwater video imagery sampling for hard substrates due to their higher sensitivity to disturbance. To understand further these dynamic benthic habitats, multibeam echosounder (MBES) data were additionally gathered.

In 2023 within the T0 baseline survey framework, all samples from the three sites have been collected and are currently being processed to provide better resolution on the status of these habitats and their communities. Final results and report are expected to be published at the end of 2024.

Keywords

Stony Reefs, Belgium, Marine Policy, Soft Sediments, Fisheries Impact, Video Imagery, Hydroacoustics, Ecological Status, Conservation