

## **A MARINE BIOLOGICAL VALUATION MAP FOR THE BELGIAN PART OF THE NORTH SEA**

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Policy makers and marine managers request reliable and meaningful biological baseline maps to be able to make well-deliberated choices concerning sustainable use and conservation in the marine environment. When such maps are lacking one is often obliged to base value assessments on the best available expert judgment. Biological valuation maps compile and summarize all available biological and ecological information for a marine area and allocate an integrated biological value to subzones. Derous *et al.* (in press) developed a valuation concept around a selected set of valuation criteria (rarity, fitness consequences, aggregation, naturalness and proportional importance). The concept allows the assessment of the intrinsic value of the subzones within an area, on a relative basis. In order to develop a marine biological valuation map for the Belgian part of the North Sea (BPNS), a protocol for the practical application of this valuation concept was developed. After dividing the area into subzones and collecting the available biological data, the protocol allows the scoring of the valuation criteria by answering specific assessment questions. These questions are relevant for the different criteria and incorporate all organizational levels of biodiversity (from the genetic to the ecosystem level). Applying this protocol to the data of the BPNS allowed producing a full-coverage biological valuation map for the area, which integrates knowledge on seabirds, macrobenthos, demersal fish and epibenthos. Separate valuation maps for each ecosystem component are also available, next to reliability maps for each valuation map. These maps can be used as baseline maps for future spatial planning in the BPNS.

### References

Derous S., T. Agardy, H. Hillewaert, K. Hostens, G. Jamieson, L. Lieberknecht, J. Mees, I. Moulaert, S. Olenin, D. Paelinckx, M. Rabaut, E. Rachor, J. Roff, E.W.M. Stienen, J.T. van der Wal, V. Van Lancker, E. Verfaillie, M. Vincx, J.M. Weslawski and S. Degraer. (in press). A concept for biological valuation in the marine environment. *Oceanologia*.