

**Breine Naomi**

Institute for Agricultural and Fisheries Research (ILVO)

*Author(s): Naomi T. Breine<sup>1</sup>, Annelies De Backer<sup>1</sup>, Carl van Coolen<sup>2</sup>, Tom Moens<sup>2</sup>, Gert van Hoey<sup>1</sup>, Kris Hostens<sup>1</sup>*

*Affiliation(s) : <sup>1</sup>Institute for Agricultural and Fisheries Research (ILVO), Aquatic Environment and Quality, Bio-environmental research group, Belgium*

*<sup>2</sup>Ghent University, Department of Biology, Marine Biology Research Group, Belgium*

## ***Update on the soft-bottom benthic habitats in the Belgian Part of the North Sea, with new functional information***

Soft-bottom macrobenthic habitats are an essential part of the marine ecosystem and so their healthy status is strived for. Previously, four soft-bottom macrobenthic habitats were distinguished in the Belgian part of the North Sea: the coastal *Macoma balthica* and *Abra alba* habitats, and the offshore *Nephtys cirrosa* and *Ophelia borealis* habitats. The current study provides a revision, based on an enlarged dataset with 10 more years of data (1994-2012) and an increased spatial coverage. In addition, the habitats are also described functionally by means of biological traits. The structural characteristics in the muddy *Macoma balthica*, fine muddy sand *Abra alba*, and well sorted medium sand *Nephtys cirrosa* habitats showed no obvious changes compared to previous studies. However, a new coastal fine muddy sand *Magelona-Ensis directus* habitat is described, with low diversity values and a dominance of alien species *Ensis directus*. Also, the offshore *Ophelia borealis* habitat, previously characterized by low diversity and abundance, is now renamed as *Hesionura elongata*, still characterized by medium to coarse sands, but now showing high diversity and moderate abundances. Functionally, the most remarkable differences were observed between the coastal and the offshore habitats. In the relative coarser, permeable sands in the offshore area, we find more free living, mobile polychaetes and crustaceans, whilst the finer sand habitats have more sessile, tube building and burrow dwelling species. This is apparent in differing trait values for living habit, feeding mode, mobility and bioturbation. This study illustrates how an appropriate spatial and temporal coverage within a baseline dataset is required as a proper starting point to assess the structural and functional state of an area.

*Keywords: macrobenthic habitats, Belgian part of the North Sea, structural and functional traits*