

# REVISITED: the soft-bottom benthic communities of the Belgian Part of the North Sea

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## WHY IS A REVISION NEEDED?

- A proper characterization of the communities is required to comply with the Marine Strategy Framework Directive (MSFD). This to describe the initial status of the benthic ecosystem, and to assess environmental status in the future.
- Although four benthic communities have previously been described (Van Hoey *et al.*, 2004, Degraer *et al.*, 2008), 10 more years of data is now available, and especially the spatial coverage (mainly offshore) has broadened.

## ALSO

- To investigate the functional characteristics of each habitat (another requirement for MSFD), data on functional traits of the benthic species have been collected.

## 5 Communities

Characteristic species, contributing to 50% of within community similarity

### *Macoma balthica*

Remains the community with lowest species richness (7 species / 0.1 m<sup>2</sup>) and low density (580 ind. / m<sup>2</sup>).



### *Abra alba*

Remains the community with highest species richness (26 species / 0.1 m<sup>2</sup>) and highest density (5763 ind. / m<sup>2</sup>).



### *Magelona – Ensis directus*

Previously regarded as a transitional community, it is now a new distinct community, with moderate diversity (12 species / 0.1 m<sup>2</sup>) and high densities (2511 ind. / m<sup>2</sup>). Also characterized by high abundance of *Ensis directus*.

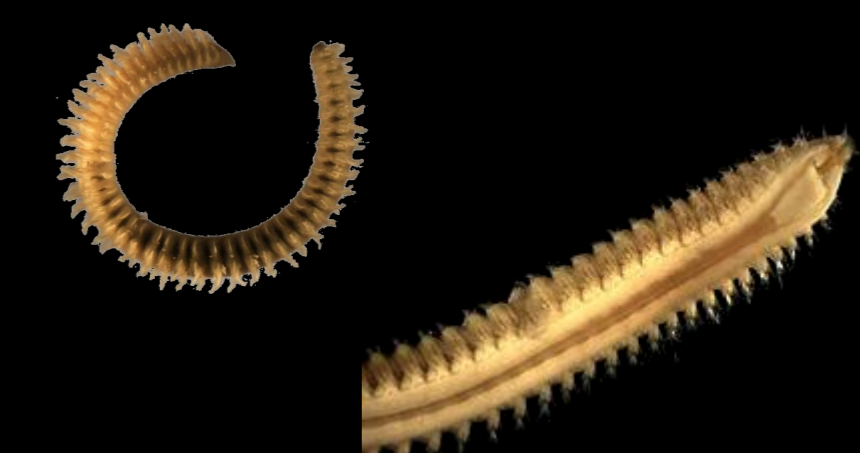
NEW

Coastal

Offshore

### *Nephtys cirrosa*

Community with second lowest species richness (9 species / 0.1 m<sup>2</sup>) and lowest density (380 ind. / m<sup>2</sup>).

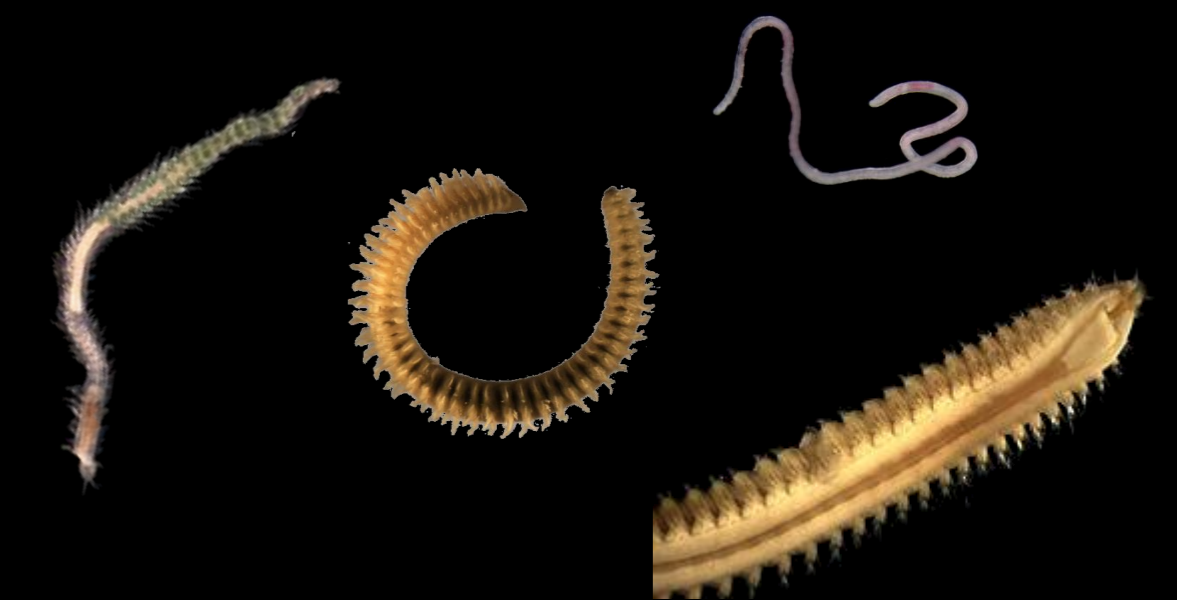


### *Hesionura elongata*

Revised

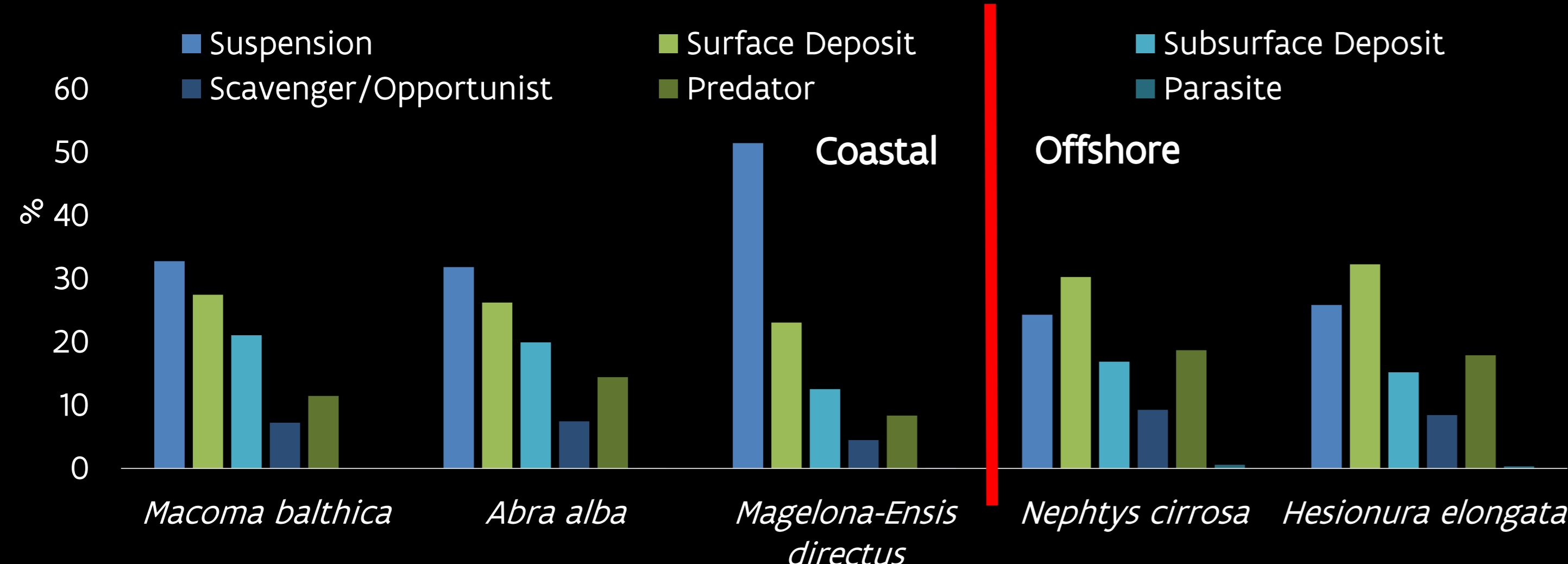
Former *Ophelia borealis* community. Now with higher species diversity (14 species / 0.1 m<sup>2</sup>) and higher densities than previously registered (780 ind. / m<sup>2</sup>).

→ Probably due to higher sampling effort in the offshore area and higher identification power for typical interstitial species occurring in the coarse, permeable sands.

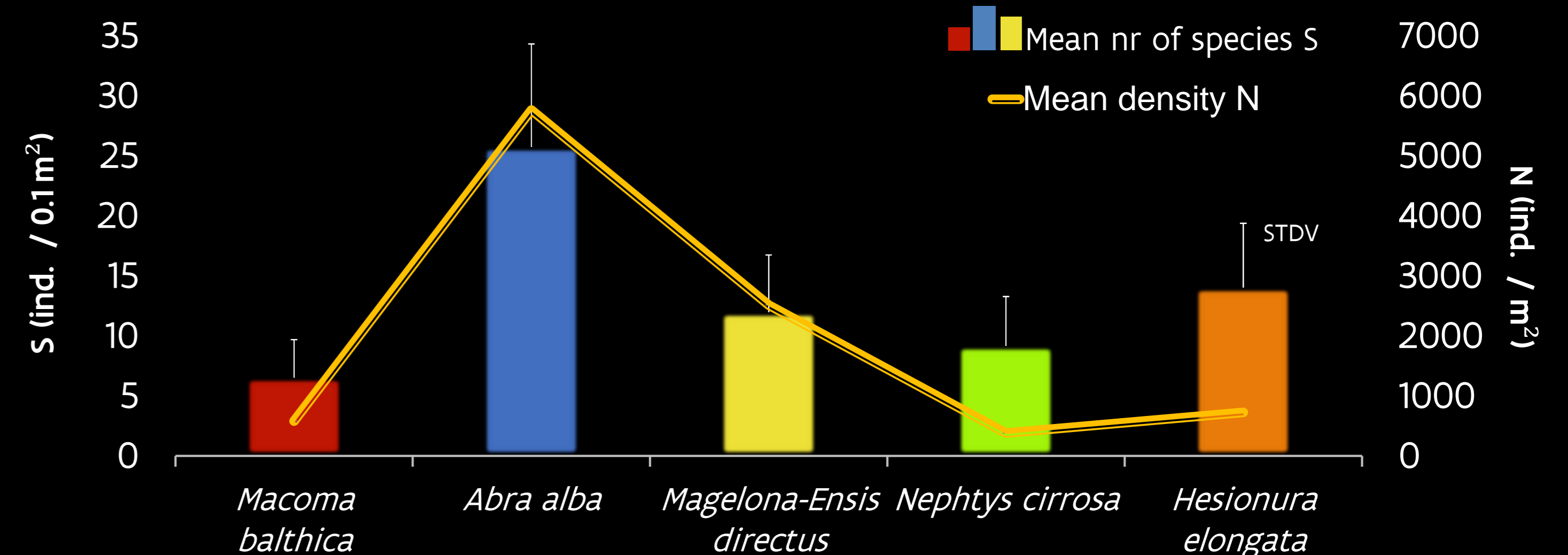


MDS 2D stress: 0.22

## Functional trait: feeding mode



## Structural characteristics



This ongoing study reveals that the benthic ecosystem we thought to know quite well, still has some unexpected secrets. A new benthic community *Magelona-Ensis directus* was found, and the former *Ophelia borealis* community is now considered to be a more species rich community named *Hesionura elongata*. Preliminary results on functional traits indicate variation within traits between communities, but the most obvious differences are seen between the coastal and the offshore communities. We intend to add sedimentological data and elaborate the functional trait analysis to further characterize the communities both physical and functional.

Many thanks to all students and scientist that sorted and identified macrobenthos in the lab at Ugent or ILVO over the last 30 years