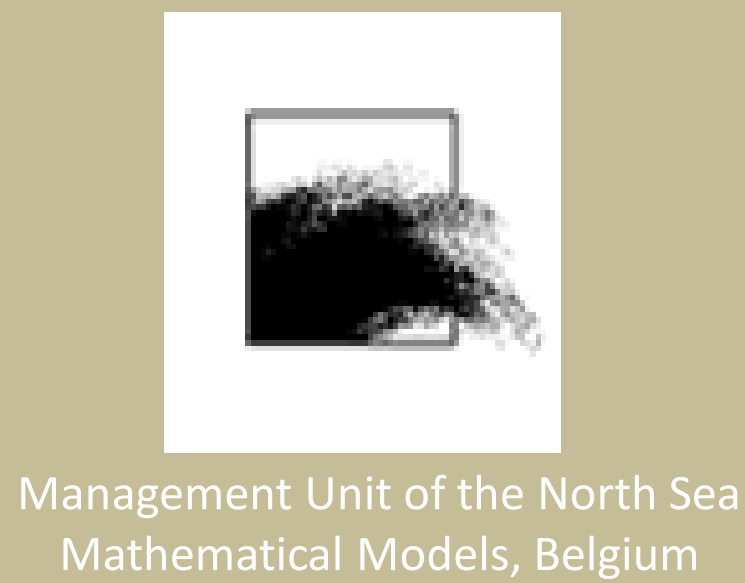


# A close up on the soft-sediment macrobenthos around offshore wind turbines



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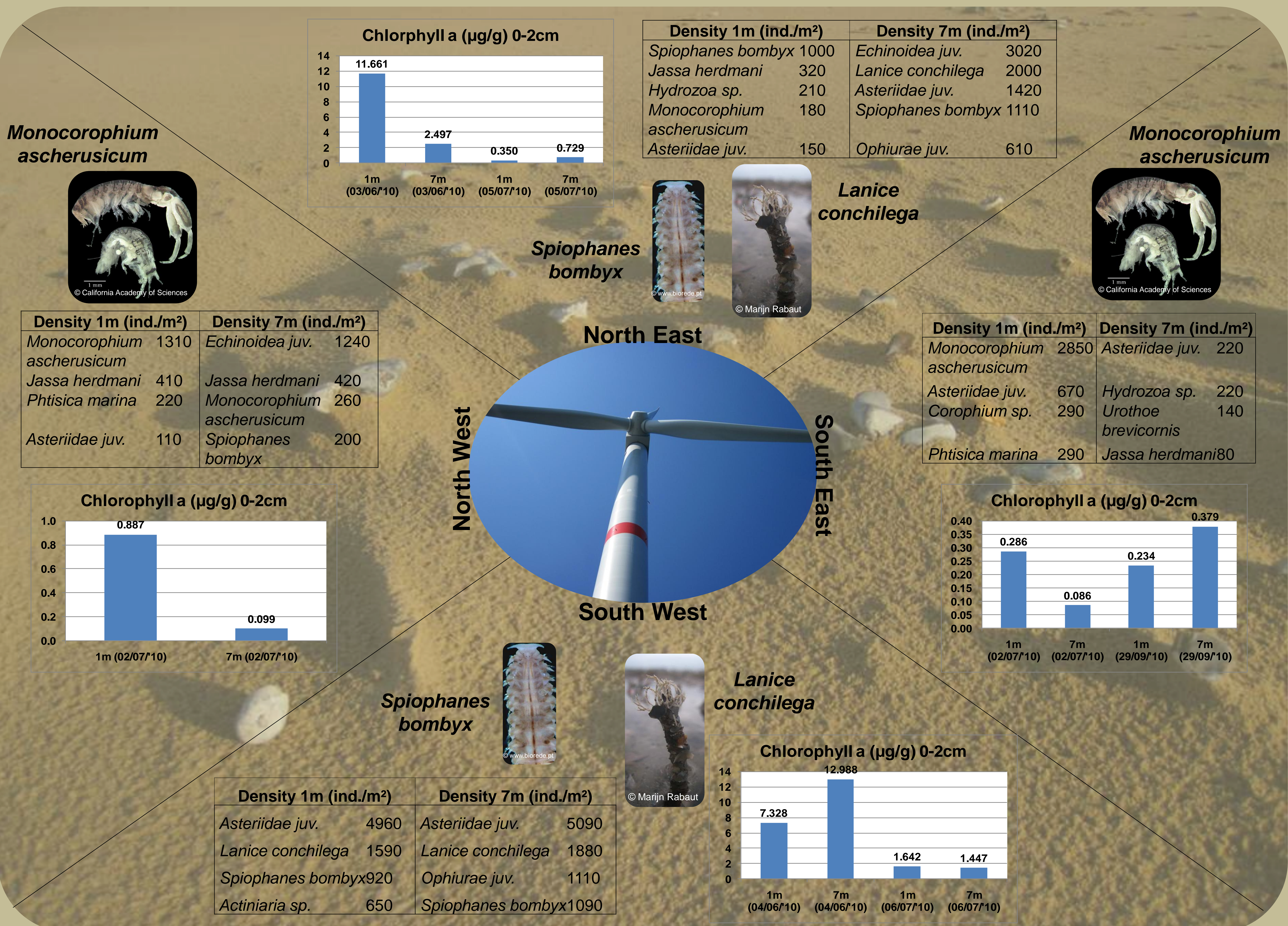


## Introduction

- During 2009 and 2010 two offshore windfarms became functional in the Belgian part of the North Sea. Since then, no large scale impacts have been detected on the soft-sediment macrobenthos
- A small scale sampling strategy was carried out during 2010 to detect impacts on the macrobenthic communities around the fifth gravity based wind turbine on the Thorntonbank
- Macrobenthic communities can be highly dependent of sedimentological characteristics → median grain size and organic matter content

## Methods

- Samples taken in four gradients → 2 perpendicular and 2 parallel to the currents
- 1 and 7m from scour protection system → Divers
- 15, 25, 50, 100 and 200 m → Van Veen grab
- Biotic factors: Macrobenthic density, diversity, biomass etc.
- Abiotic factors: grain size partition, total organic matter, chlorophyll a concentrations from 0-2cm depth



## Conclusions

- There is a decline in grain size partition compared to previous studies but still in the medium grain size range (250-500µm)
- Chlorophyll a concentrations are very high for sediments with a medium grain size and the concentrations drop rapidly in time (June → July) due to the high sediment permeability
- Densities of generally rare macrobenthic species in this sediment type (*L. conchilega* and *M. ascherusicum*) highly increased (cfr. Large scale monitoring 2005-2010)
- A small-scale monitoring strategy is important to determine the effects of wind turbines on the soft-sediment macrobenthos

A special thanks to the crew of the RV Zeeleeuw and all volunteering, scientific divers