

# Eat what's on your plate!

## Feeding of demersal fish in different habitats

Philipp Krämer\*, Jennifer Dannheim & Alexander Schröder  
 Alfred-Wegener Institute for Polar and Marine Research, Bremerhaven, Germany  
 \*email: philipp.kraemer@awi.de



### Introduction

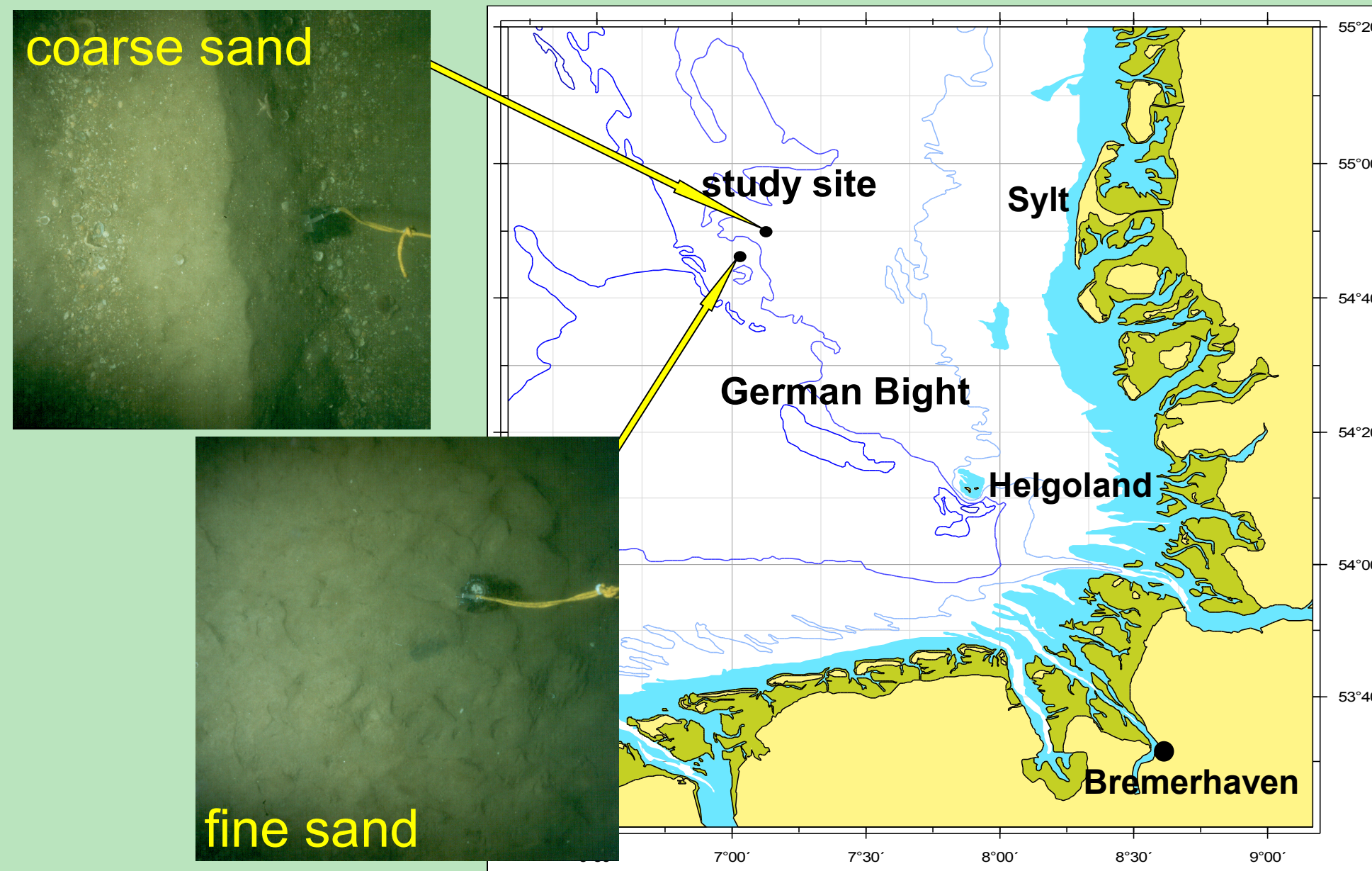
Trophic interactions are major structuring factors in benthic communities. A wide spectrum of benthic organisms provides diverse food resources for demersal fish. Due to their mobility fish potentially migrate between spatially separated feeding grounds.

**Are demersal fishes stationary predators or do they connect benthic food webs by browsing different habitats?**

### Study site

Demersal fish were sampled with otter and beam trawl.

Sampling proceeded in April 2007 in a coarse sand area and a fine sand area at the Sylter Outer Reef. Both areas were separated by a distance of 9.4 km.



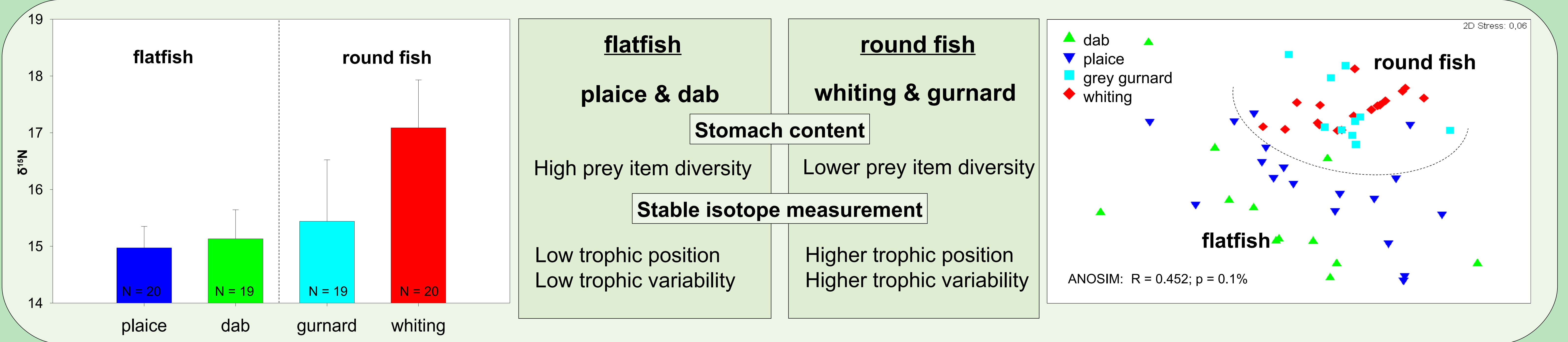
### Material and methods

Diets of whiting (*Merlangius merlangus*), grey gurnard (*Chelidonichthys gurnardus*), plaice (*Pleuronectes platessa*) and dab (*Limanda limanda*) were compared by the following methods:

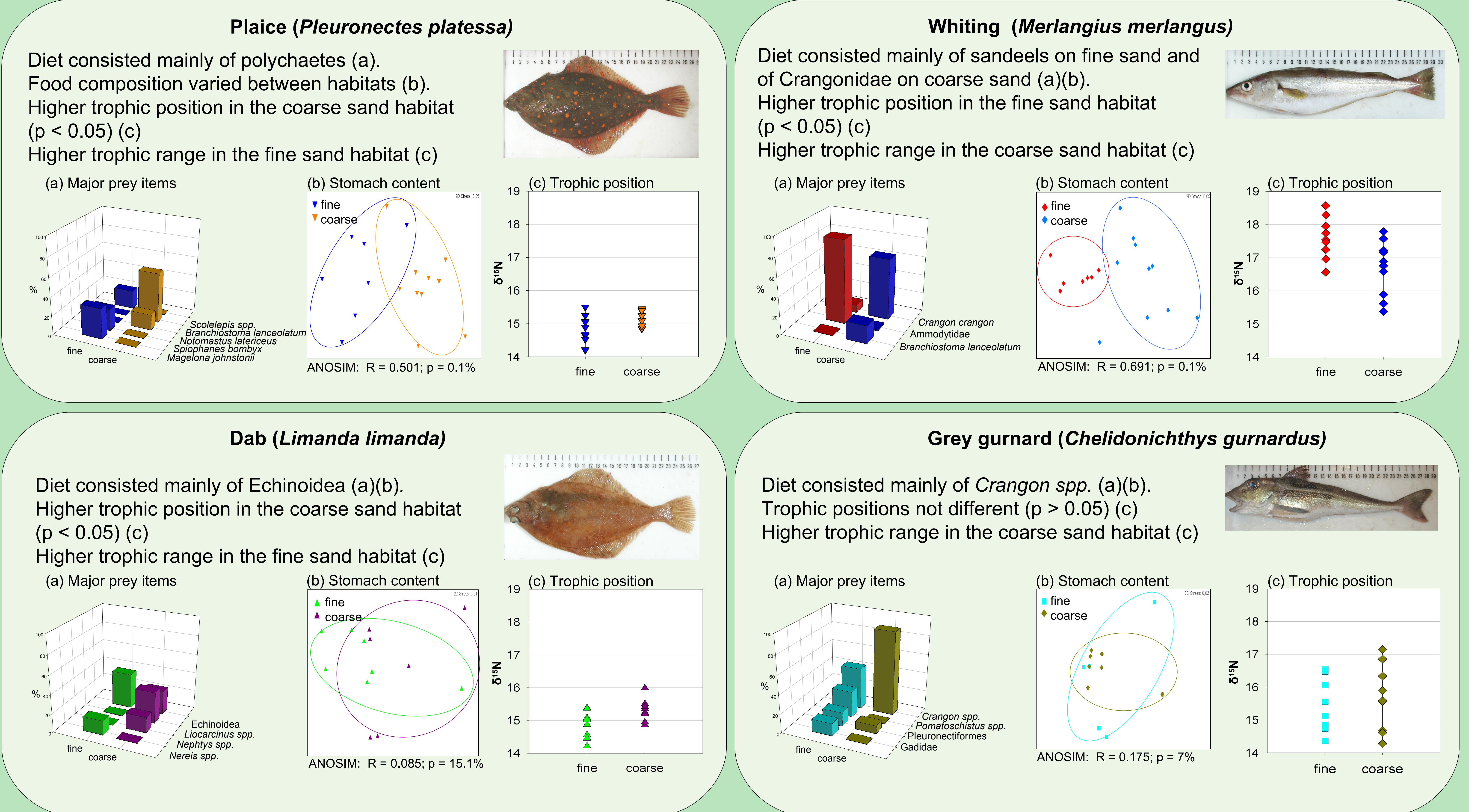
- **stomach content analysis**
  - "dietary snapshot": identifies recently ingested prey items
- (b) **nitrogen stable isotopes analysis**
  - integrates diet over longer time scales: tissue- $\delta^{15}\text{N}$  ( $^{15}\text{N}/^{14}\text{N}$ ) indicates an organism's position within the trophic hierarchy of an ecosystem ( $^{15}\text{N}$  is enriched with assimilation)

### Results

#### Differential feeding in flatfish and round fish



#### Differential intra-specific feeding in different habitats (fine and coarse sand)



### Conclusion

Results from dab were inconsistent. Different site specific trophic positions despite similar prey compositions in both habitats might indicate structural differences on lower trophic levels of the local food webs. An artefact due to empty stomachs and advanced digestion, however, cannot be excluded for this species.

Demersal fish species such as plaice and whiting are stationary predators with habitat dependent food spectra.

Others such as the grey gurnard roam different feeding grounds potentially connecting local food webs of sites separated by tens of kilometres.