STopP – From sediment to Top Predator
Food webs under global and regional change

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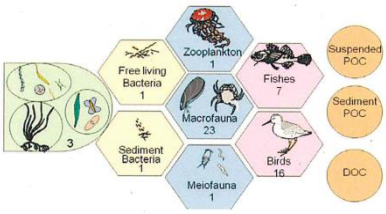
Introduction

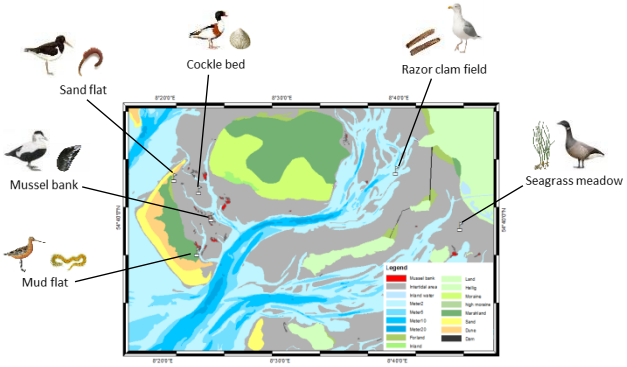
The Wadden Sea is one of the most important foraging areas for breeding and migrating birds. However, little is known about the preferred feeding places of birds and how the intense predation pressure influences the food web.

The aim of the STopP project is to determine the structure of the Wadden Sea food web and how sediment characteristics and hydrodynamics modify habitats that deal as food sources for birds.



Material and Methods

Samples for constructing the food web were taken.



Sampling sites were chosen in six different Wadden Sea habitats.

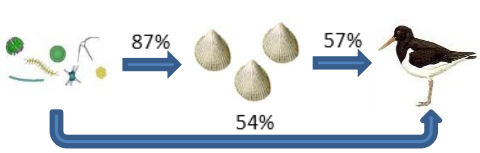
Foraging birds were counted seasonally for each habitat. Data were analysed using ENA.

Preliminary results

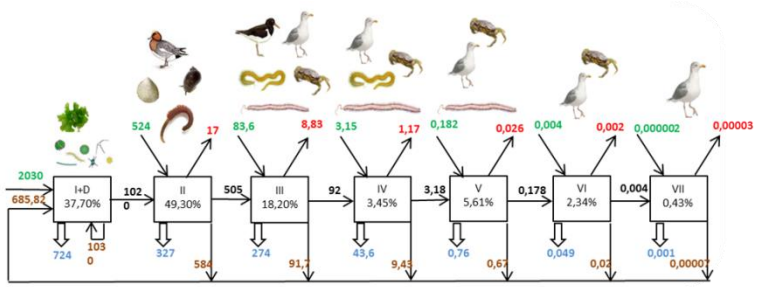
Preliminary results show that bird predation increases the complexity of the food web due to an increase in connections and a higher total system throughput. On the other hand the predation has also a destabilizing effect due to a high demand of system's carbon stocks and increased exports out of the tidal system. Furthermore, analyses show considerable indirect dependencies of birds to lower trophic levels such as sediment POC and phytoplankton.

Forecast

How would natural and anthropogenic impacts affect the Wadden Sea food web?



Direct and indirect dependencies within a food web



Cockle bed's Lindeman spine (mg C m^{-2} day^{-1}): Boxes show trophic levels, energy transfer is shown in %, arrows in and out of the boxes show im- and exports, block arrows show energy loss via respiration

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