

ECSA 2017

Where Land Meets Ocean: The Vulnerable Interface

16.–20. Oct. 2017

Shanghai



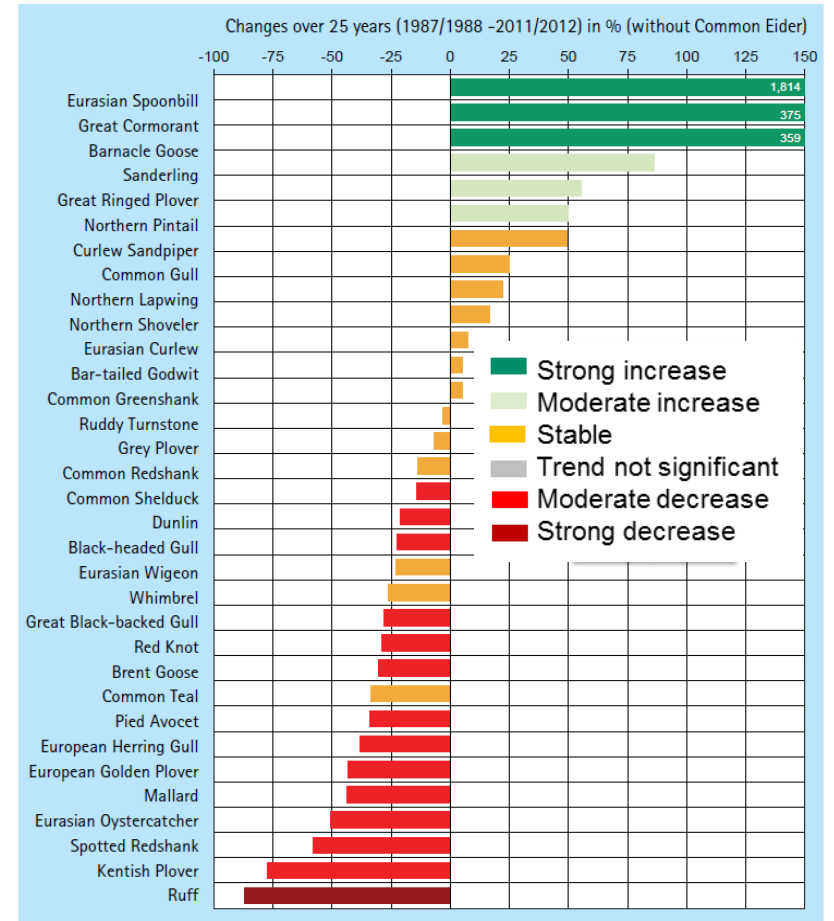
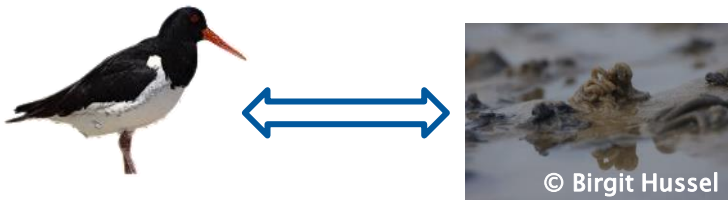
The influence of birds on the structure and functioning of coastal food webs

Sabine Horn, Camille de la Vega, Ragnhild Asmus, Philipp Schwemmer,
Leonie Enners, Stefan Garthe, Harald Asmus

Introduction



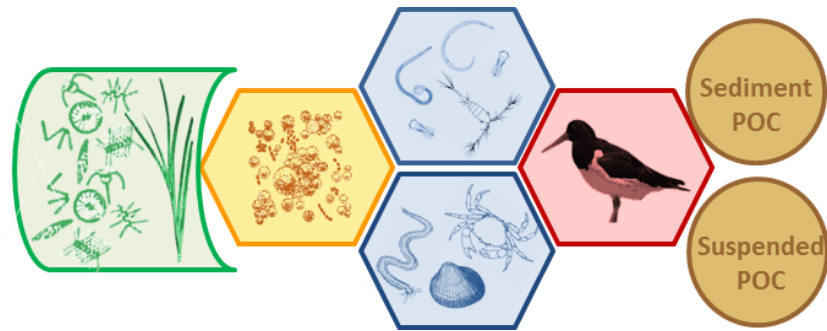
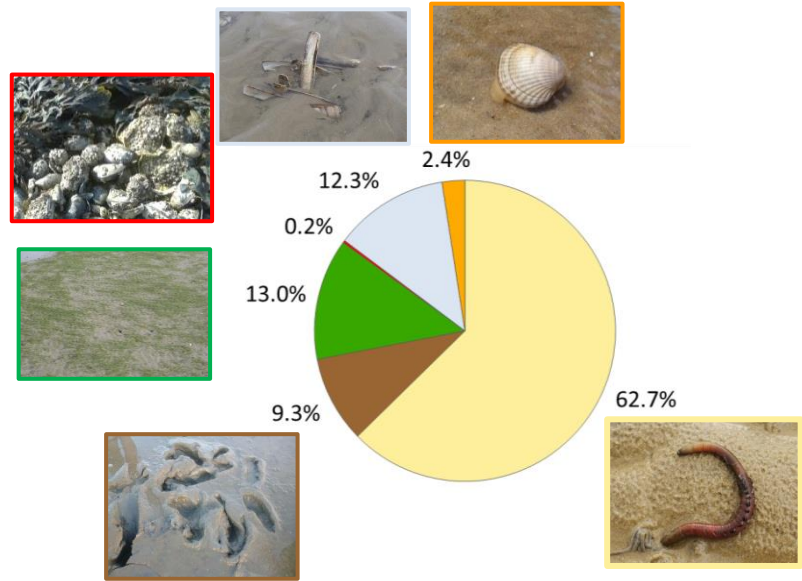
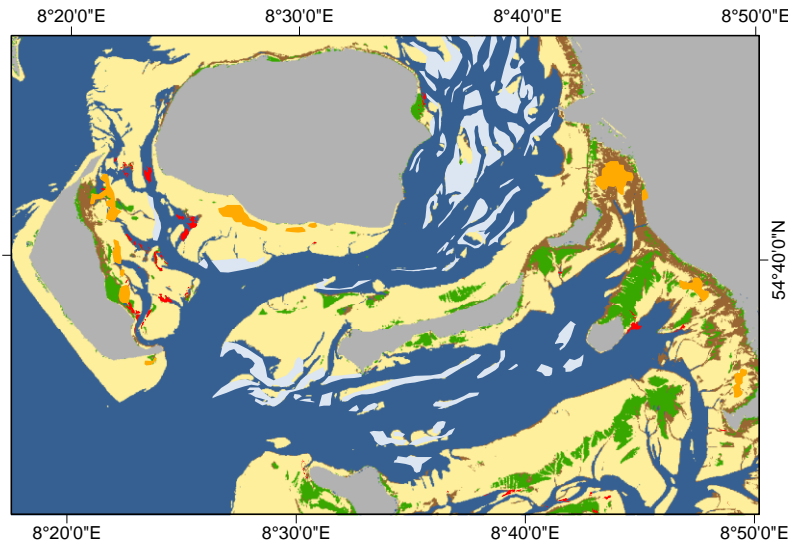
Introduction



Blew et al. (2015)

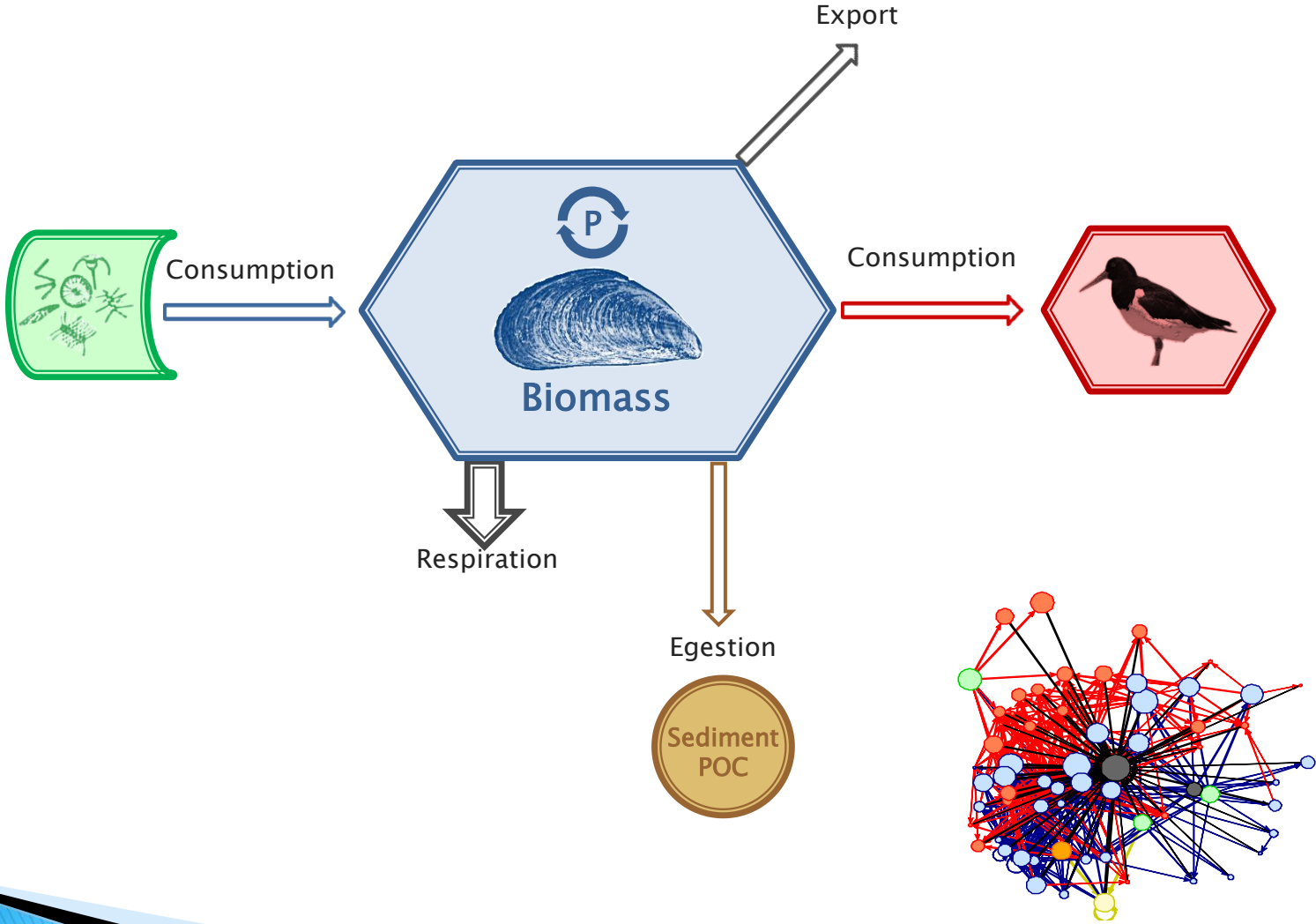
Holistic approach – Ecological network analysis

Study site



mg Carbon per m²

Ecological network analysis

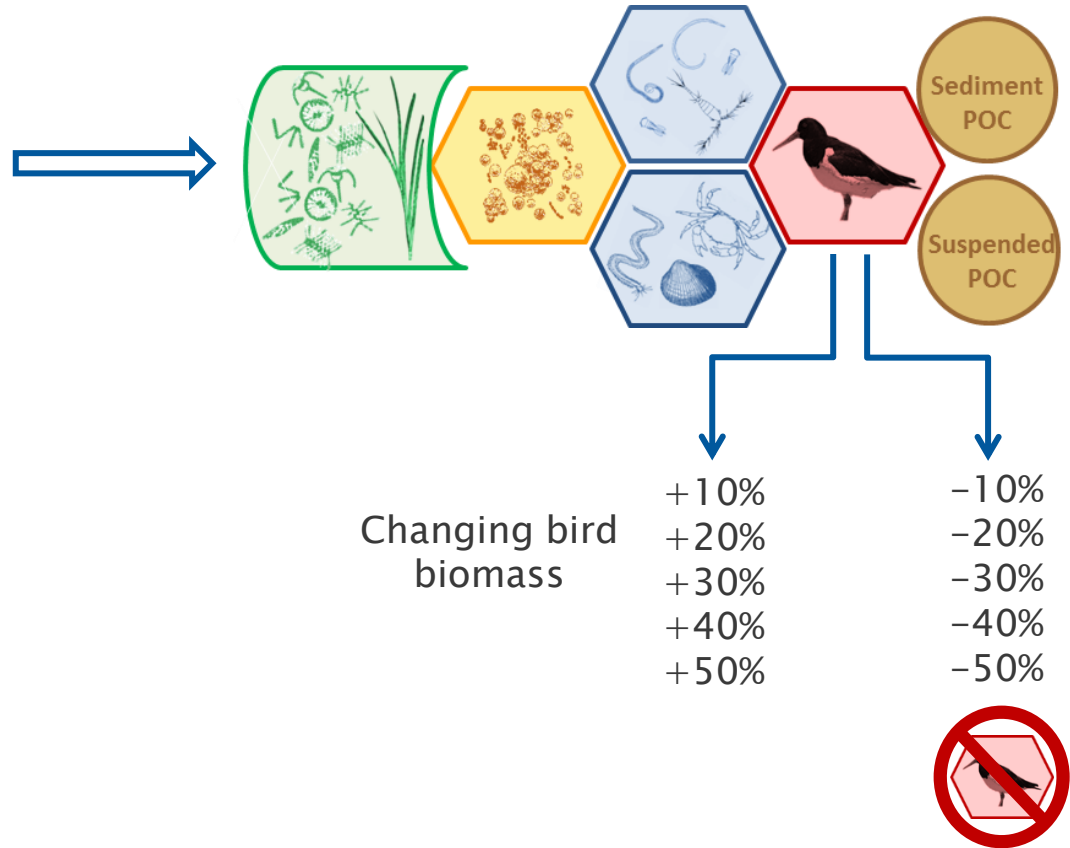
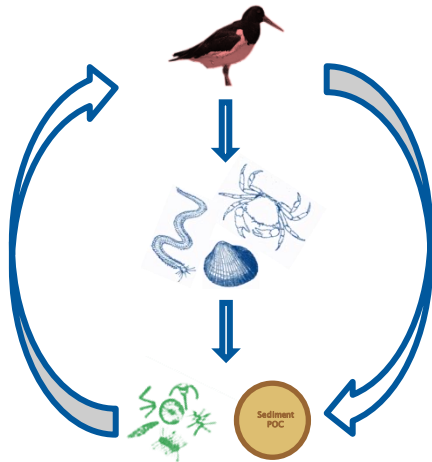


Methods to assess the avian influence

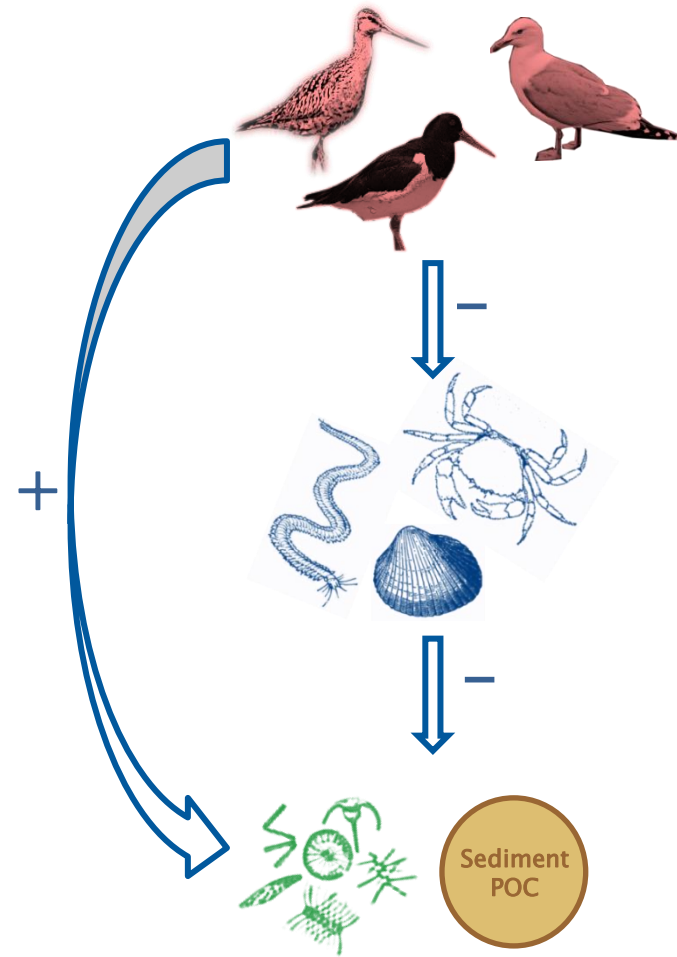
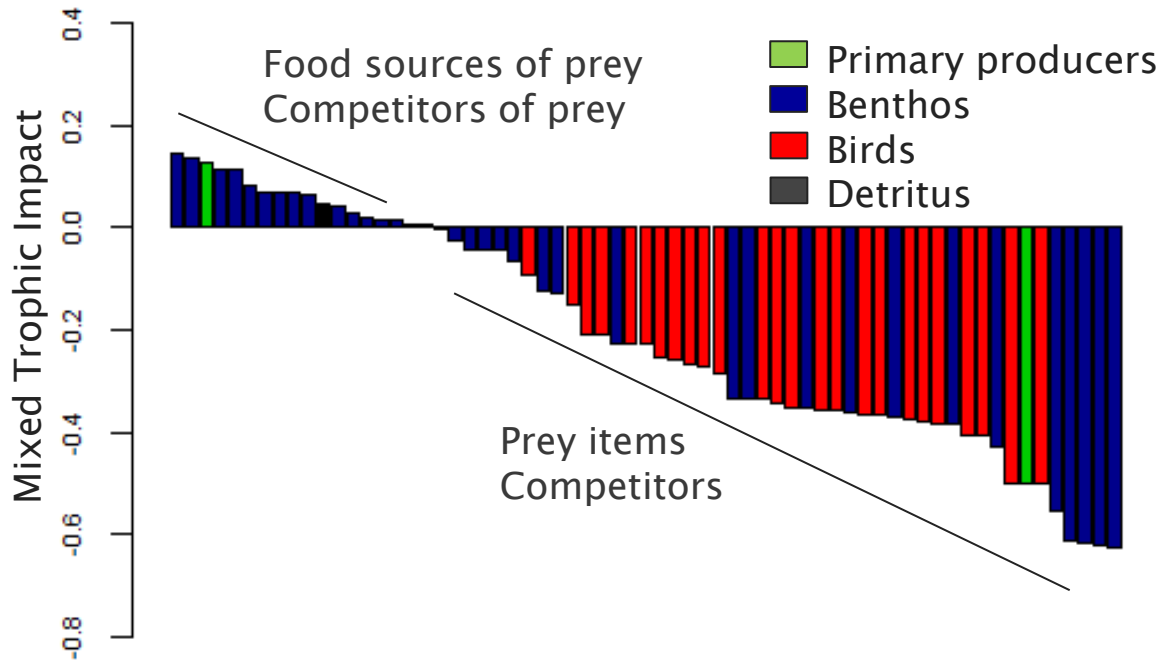


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Impact analysis

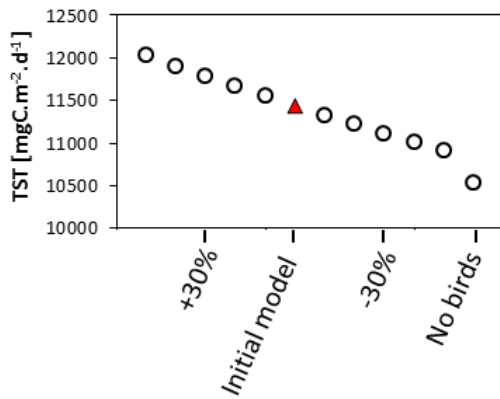


Impact analysis

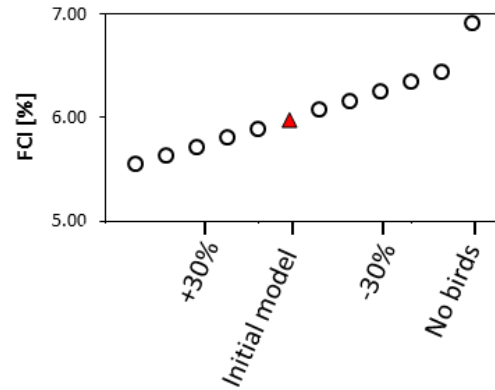


Bird sensitivity analysis

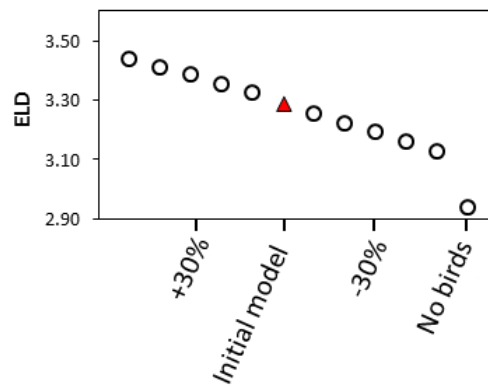
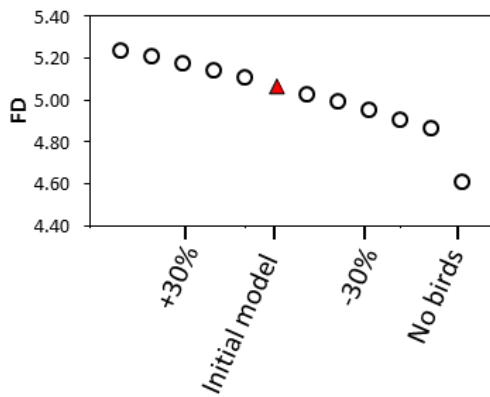
Size and activity



Recycling



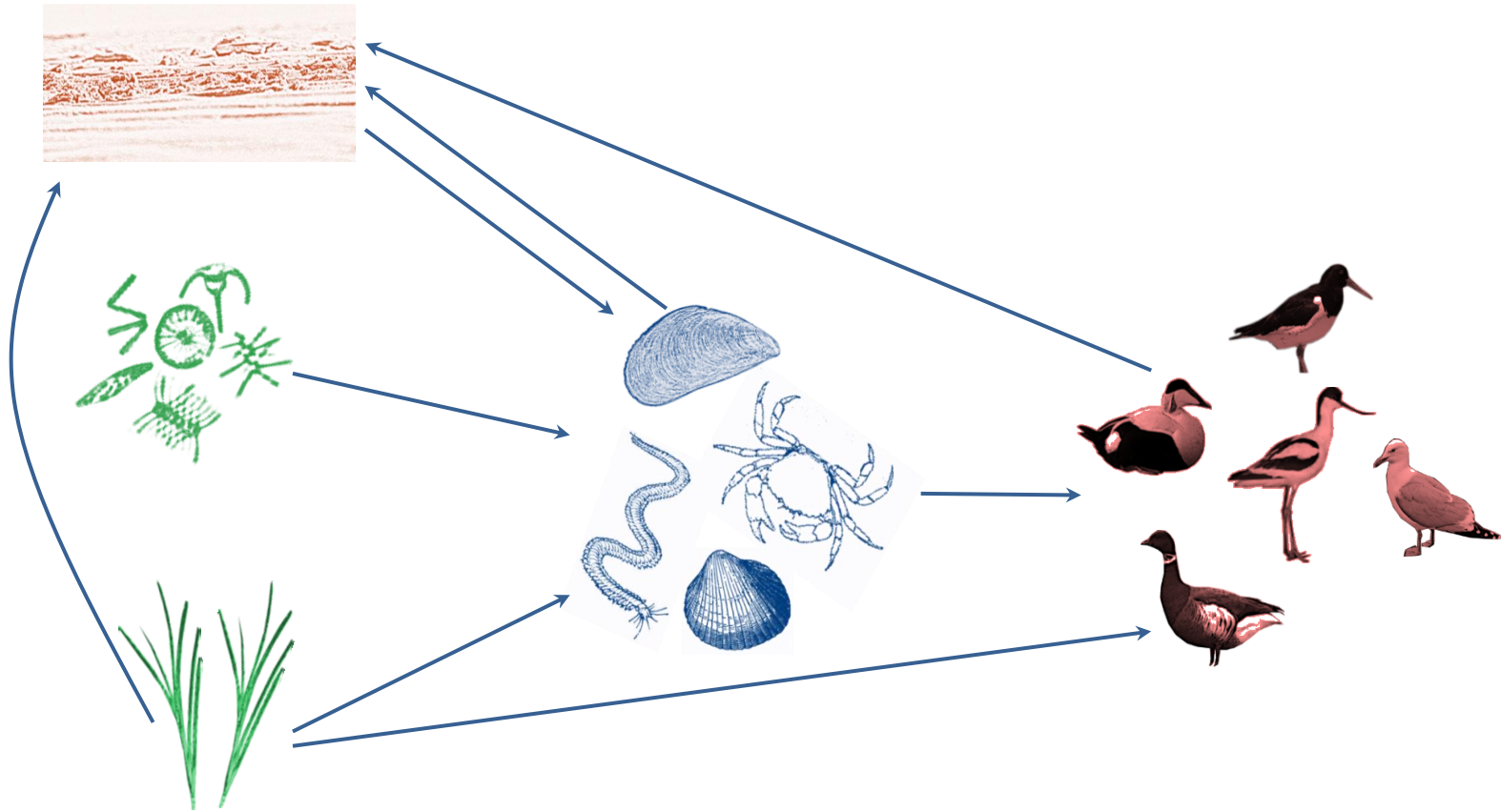
Flow structure



TST: Total System Throughput
FD: Flow Diversity
ELD: Effective Link-Density
FCI: Finn Cycling Index

Decrease in bird biomass = Decrease in stability and resistance

Application of results



Better implementation of mangement strategies by taking into account relationships in ecosystem

Thank you!



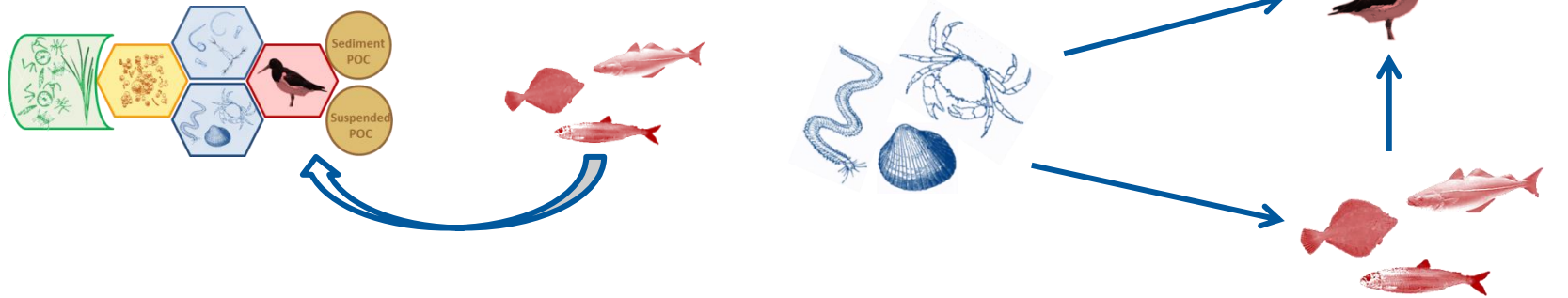
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Conclusion and forecast

Conclusion

- Birds are important predators in intertidal food webs
- Included in direct and indirect pathways
- Changes in the bird population induce alterations in the food web structure

Inclusion of fish compartments



Uncertainty analysis

- Significant differences when bird biomass decreases?