



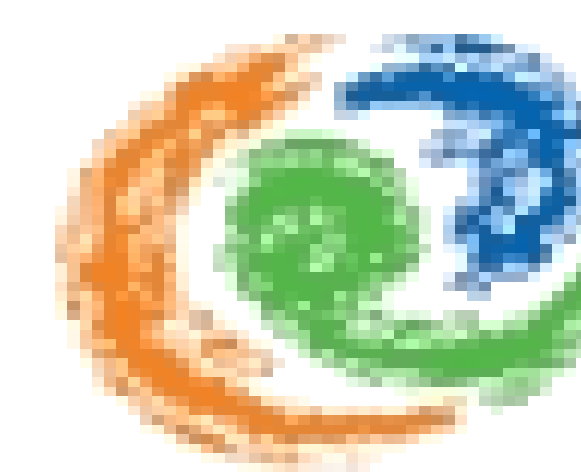
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STILL A SEA OF PLENTY?

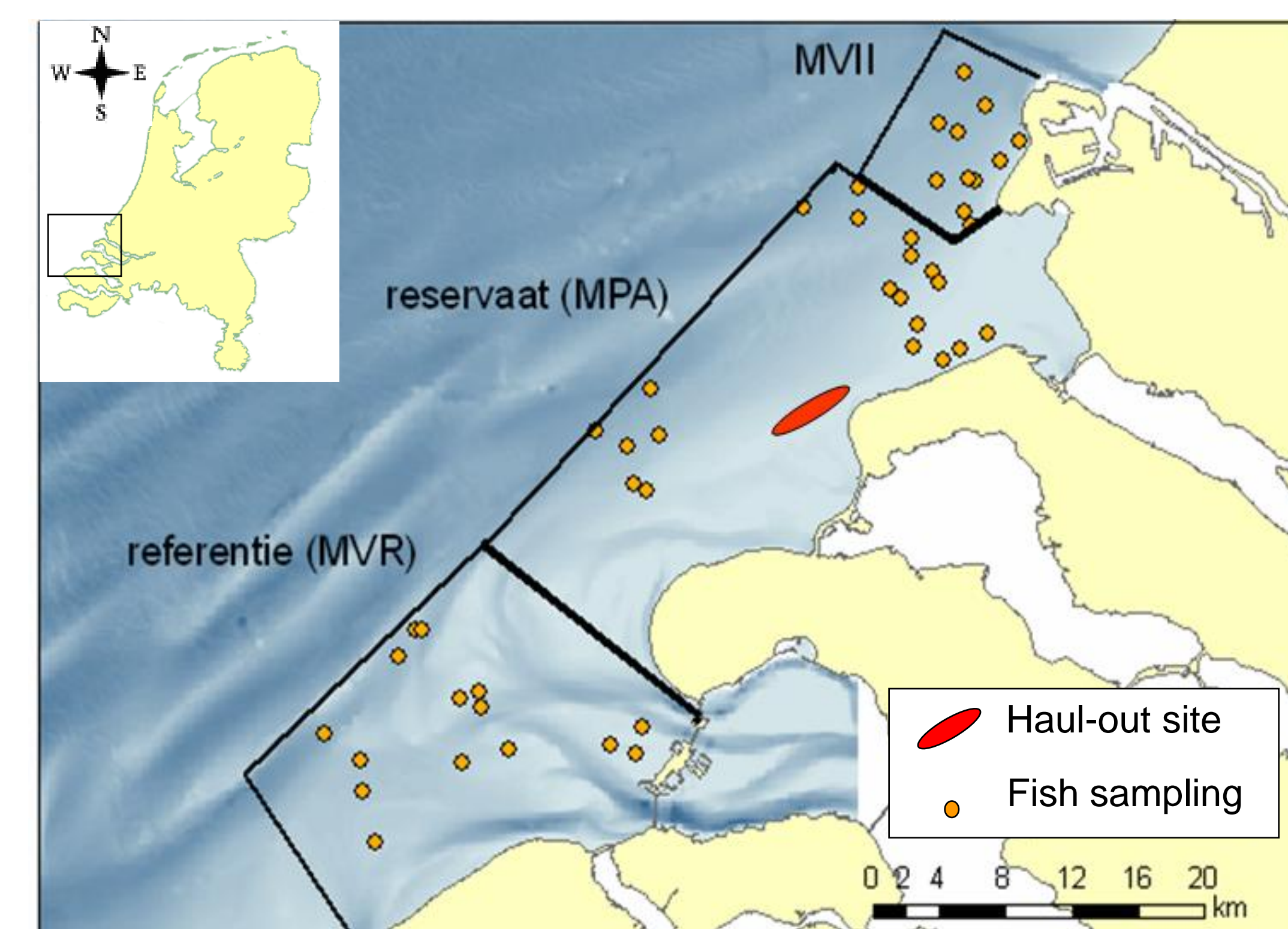
Seals and soles in the Southeastern North Sea

Introduction

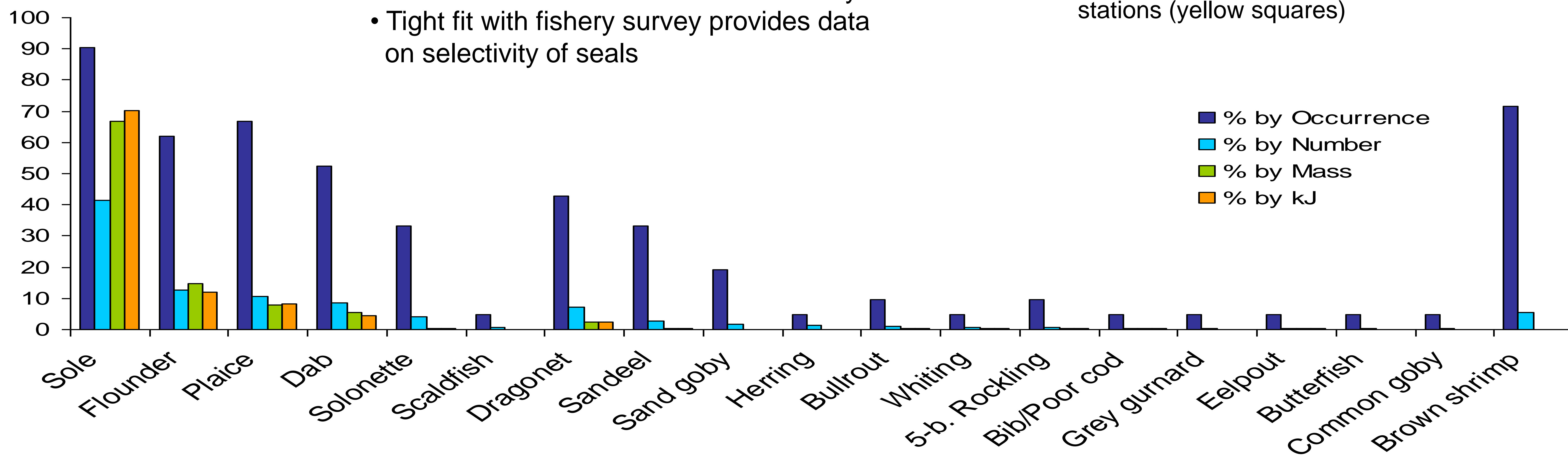
Many fish stocks in the North Sea are depleted and both the fisheries and several natural piscivorous predators suffer the consequences. Perhaps surprisingly in this situation, numbers of Grey Seals have largely been increasing over the last decades. We conducted the first diet study of Grey Seals in the SE North Sea, from scats collected in March/April 2007 in the Dutch Voordelta (map). The diet was compared to fish presence in the area, estimated from 46 randomly dispersed fish hauls around the seals' haul-out site.

Advantages of this approach

- Non-evasive research, easy to repeat
- Sampling on adequate spatial scale
- In addition to traditional fisheries surveys
- Tight fit with fishery survey provides data on selectivity of seals



Research Area, with haul-out site *Bollen van de Ooster* (red oval) and fish sampling stations (yellow squares)



Grey seal diet in the Voordelta, March/April 2007 expressed as % of occurrence (% of scats containing certain prey), % by numbers, % by mass and % by energy contribution to the diet (% kJ).

Results

Using the odds ratio (Fleiss, 1981), Sole, Flounder and Dragonet were taken respectively 77 times, 39 times and 4 times more than their relative presence in the catches would suggest. Herring was the most abundant fish in the Voordelta according to the trawl survey, but these were hardly eaten by the seals (48 times less often than their relative presence in the catches). If only the 18 fish species are considered that were found as prey, only Sole and Flounder are prey that were clearly selected for.

Conclusion

Sole *Solea solea* was the main prey species, both in terms of relative occurrence and prey numbers as in terms of relative prey mass or energetic contribution to the diet. The Grey seals were highly selective in their feeding, as Sole made up about 70% to the diet in terms of relative prey mass. For the time being, there seems to be plenty of Sole in the sea, as numbers of grey seals are steeply increasing in the Voordelta and Wadden Sea.

41 Grey seals, 2 Harbour seals (43 & 45) and 2 ?-seals (1 & 24) hauled out on March 31st 2007 the *Bollen van de Ooster*, prior to scat sampling.

