


The catchability of the European lobster (*Homarus gammarus*) and the edible crab (*Cancer pagurus*) around the island of Helgoland (North Sea, German Bight)

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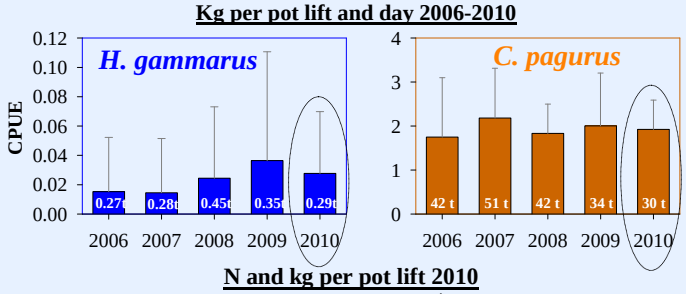
Commercial pot fishery (1, 2)

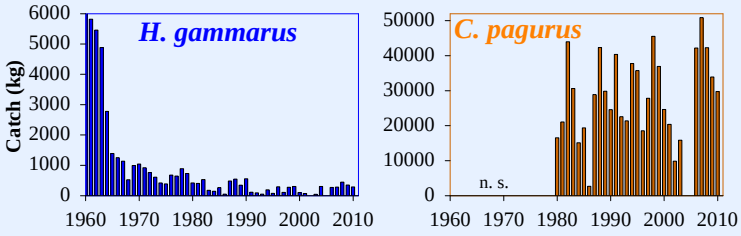
At Helgoland waters, the population size of *H. gammarus* has declined dramatically since the 1960s, and commercial landings of lobsters have been fluctuating over the past decades at a low level of only a few hundred kg per year.

The main competitor of the lobster for food and shelter is the edible crab, *C. pagurus*.

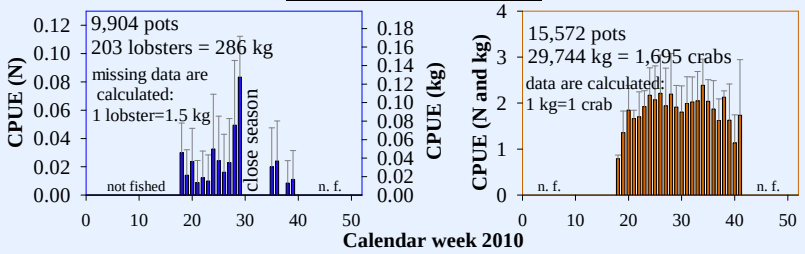
Kg per pot lift and day 2006-2010



Catch (kg) 1960-2010



N and kg per pot lift 2010

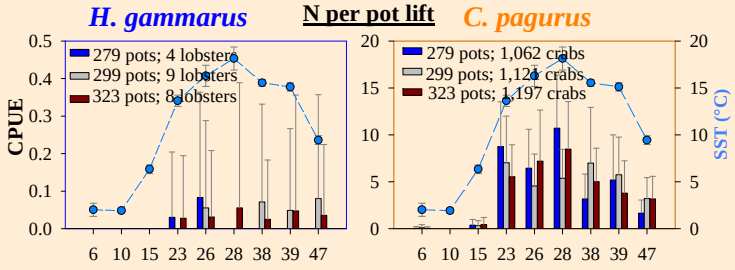


Monitoring 2010

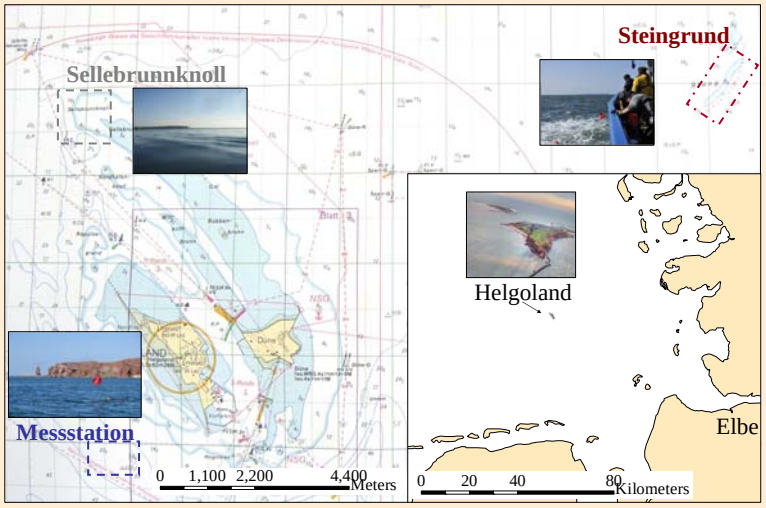
In 2010, lobsters and crabs were sampled with pots from February to November at three different stations.

Sea surface water temperature (SST) — Messstation — Sellebrunnknoll — Steingrund

H. gammarus — **N per pot lift** — **C. pagurus**

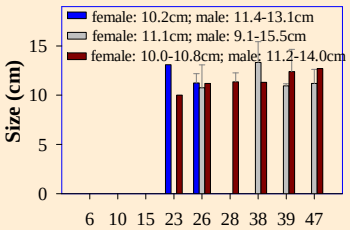


The size of crabs increased while the percentage of females decreased with increasing water temperature. Berried crabs were not captured around Helgoland.

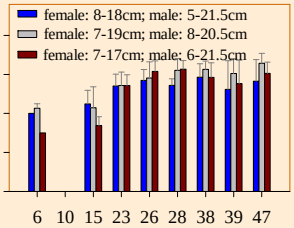


The catch per unit effort of lobsters and crabs varied from 0 lobster and 0.04 crabs per pot in winter to 0.08 lobsters and 11 crabs in summer.

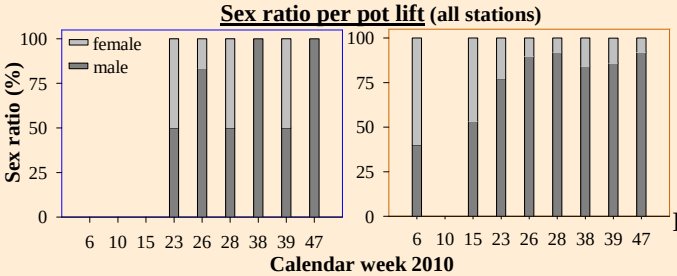
Carapace length per pot lift



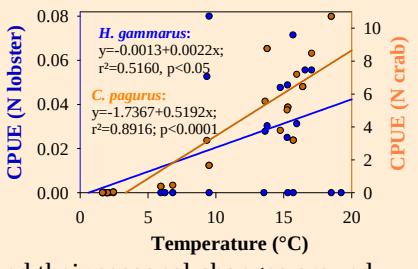
Carapace width per pot lift



Sex ratio per pot lift (all stations)



CPUE vs. temperature



The catchability of lobsters and crabs is related to several environmental variables such as the water temperature and is dependent on their size, sex and specific behavioural patterns.

Data on catch rates of lobsters and crabs and their seasonal changes around Helgoland may be helpful for fishery and management regulations.

References: (1) Schmalenbach, I., Mehrtens, F., Janke, M., Buchholz, F. (2011). A mark-recapture study of hatchery-reared juvenile European lobsters, *Homarus gammarus*, released at the rocky island of Helgoland (German Bight, North Sea) from 2000 to 2009. Fisheries Research 108, 22-30, see doi:10.1594/PANGAEA.727206 for supplementary data. (2) Schmalenbach, I. (2011). Landings of European lobster (*Homarus gammarus*) and edible crab (*Cancer pagurus*) in 2010, Helgoland, North Sea. Alfred Wegener Institute for Polar and Marine Research - Biological Institute Helgoland, doi:10.1594/PANGAEA.755534. Pictures: T. Meyer, U. Nettelmann, B. Rauch, I. Schmalenbach, C. Wanke

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