

CSD 3.4 Report

Comparing the Diet of Harbour and Grey Seals in Scotland and Eastern England

Executive summary

Harbour seal populations in some areas around Scotland have declined since around 2000 but the cause(s) of these declines are unknown. Reduced availability of prey is one potential contributory cause, including the possibility of competition between grey seals and harbour seals. To contribute new information regarding this question, regional and seasonal similarities and differences in the diet of harbour and grey seals in relation to regional differences in population trajectories of harbour seals, were examined.

Grey seal diet was dominated by sandeel in all regions of the North Sea. Sandeel were also dominant in the diet of harbour seals in the Moray Firth but, to the south, their diet was more varied and also included flatfish, sandy benthic and large gadid prey. In Orkney and Shetland, harbour and grey seal diet comprised mostly sandeel, large gadids and pelagic prey. The largest differences were in Orkney in spring/summer, where harbour seals ate more sandeel, and in Orkney in autumn/winter and all year in Shetland where harbour seals ate more pelagic fish. West of Scotland, large gadids were the main prey in the diet of both harbour and grey seals. Pelagic fish were also important in harbour seal diet and sandeel and sandy benthic prey in grey seal diet. Despite some differences in diet between grey and harbour seals, there was no clear evidence of seasonal variation in these differences that may be related to the different life cycles of these two species.

Although there was considerable seasonal and regional variation in the diet of both harbour and grey seals, there was no unequivocal pattern to explain differences in diet between species in regions where harbour seals have and have not declined.

However, there was some evidence that sandeel may play an important role in the diet of harbour seal populations in the North Sea and Northern Isles. In regions where harbour seals have declined (northern and eastern Scotland) sandeel stocks have also declined and, although their contribution to the diet has declined, they remain an important component. In regions where harbour seals have not declined (west coast of Scotland and southern North Sea), sandeel were and remain unimportant in the diet. Grey seal populations are stable or increasing, regardless of the importance of sandeel in the diet.

Overall, the diet of harbour seals was less diverse and at least partially reliant on declining sandeel stocks in regions where population declines have been observed, and was more diverse and not reliant on sandeels in regions where population declines have not been observed. A tentative conclusion is that declines in harbour seal abundance in northern regions may be linked to a decline in the abundance of sandeels.

More information is needed to improve the understanding of whether or not changes in prey availability, including any influence of competition between harbour and grey seals, may have led to changes in the ability of harbour seals to meet their nutritional requirements and, hence, ultimately to population declines. This information includes, at appropriate temporal and spatial resolutions, prey distribution and abundance, the availability of that prey to seals, and the foraging behaviour of seals in relation to their life history.