

Citizen science highlights changing seas in the Southwest UK

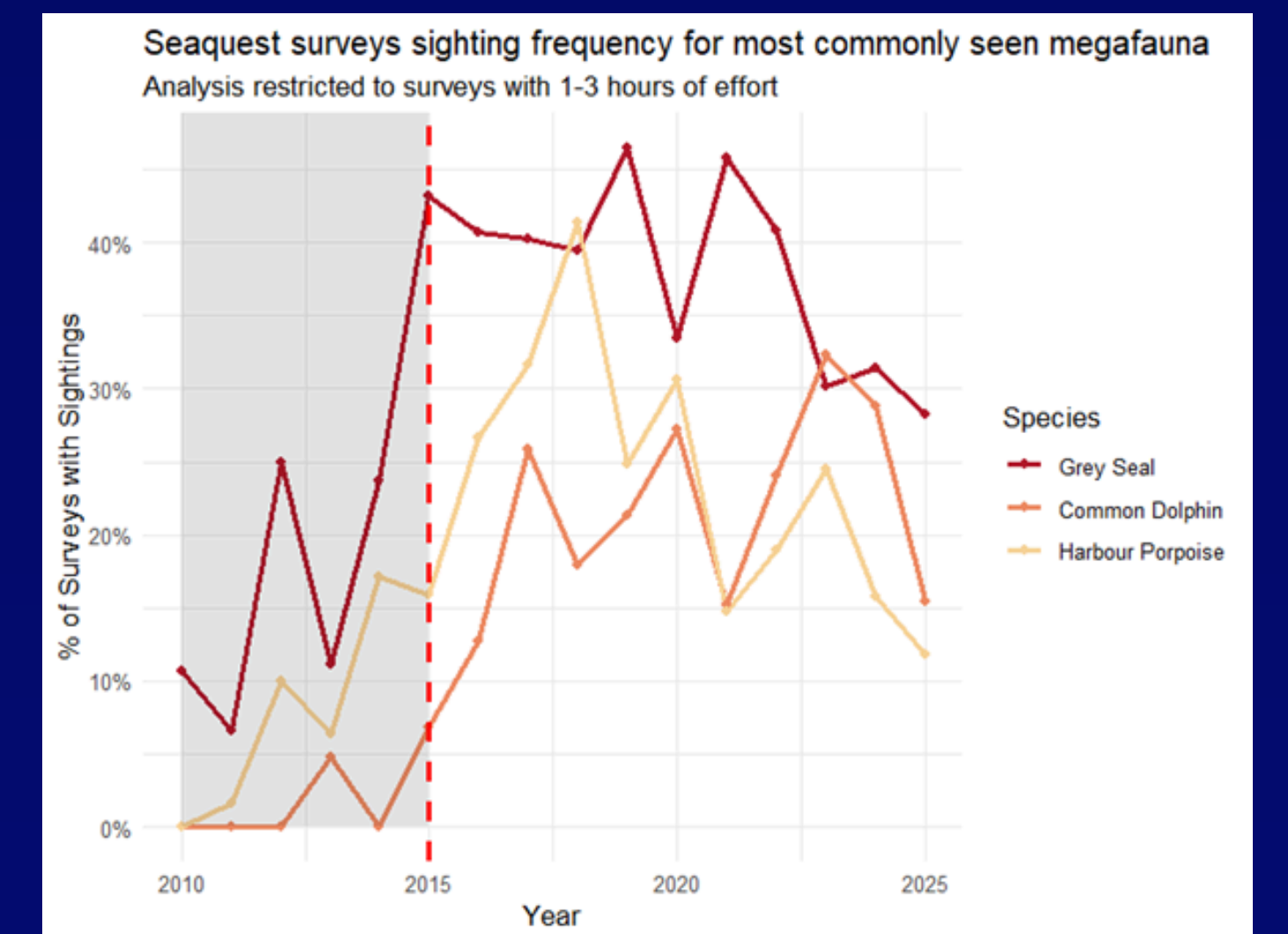
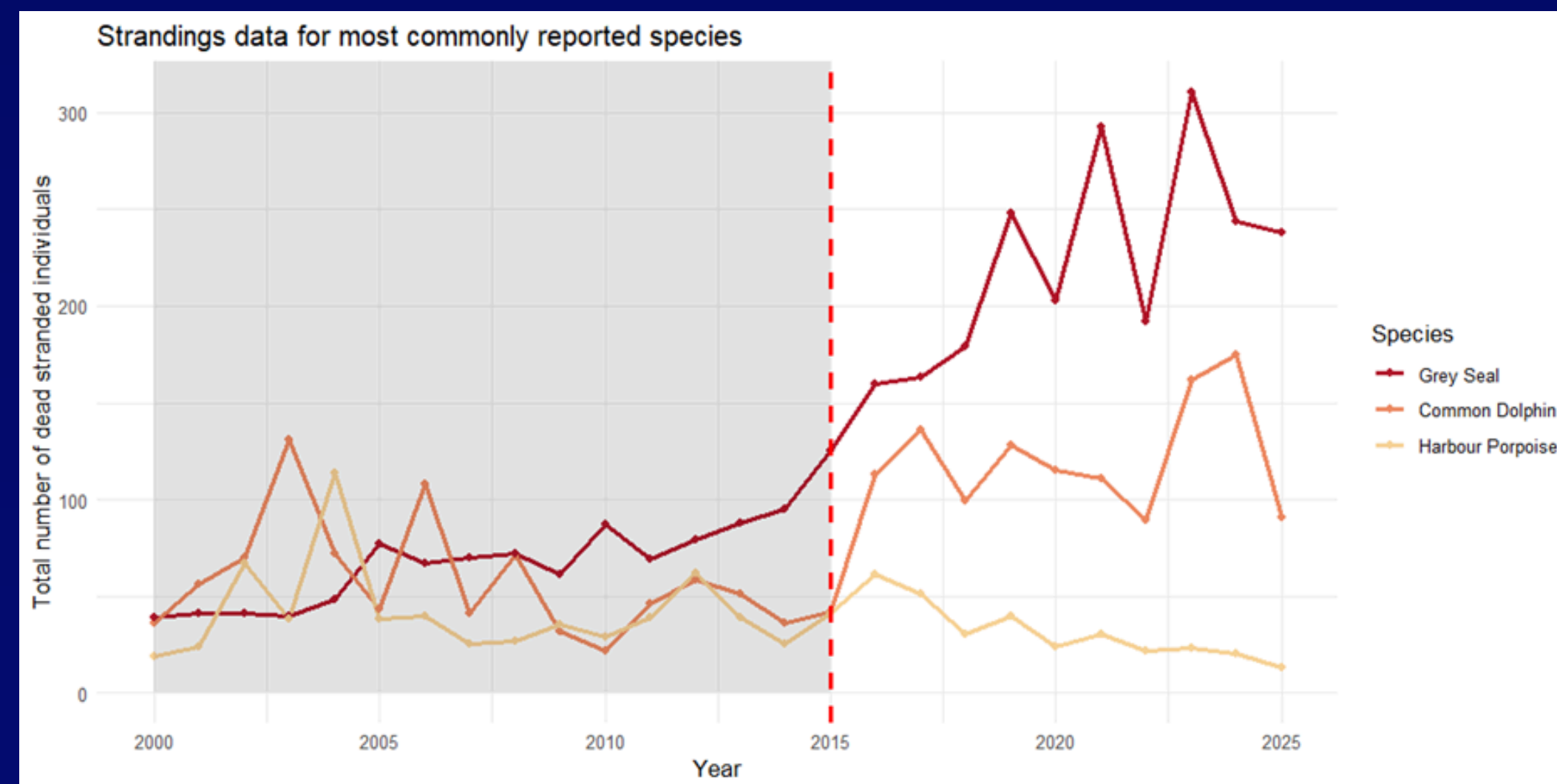
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Analysis of long-term citizen science data indicates a regime shift in Cornwall's marine megafauna pivoting around 2015, characterised by changing species composition. These findings underscore the power of high-quality citizen science to document ecosystem restructuring in response to a rapidly warming North East Atlantic and highlight significant implications for conservation management.

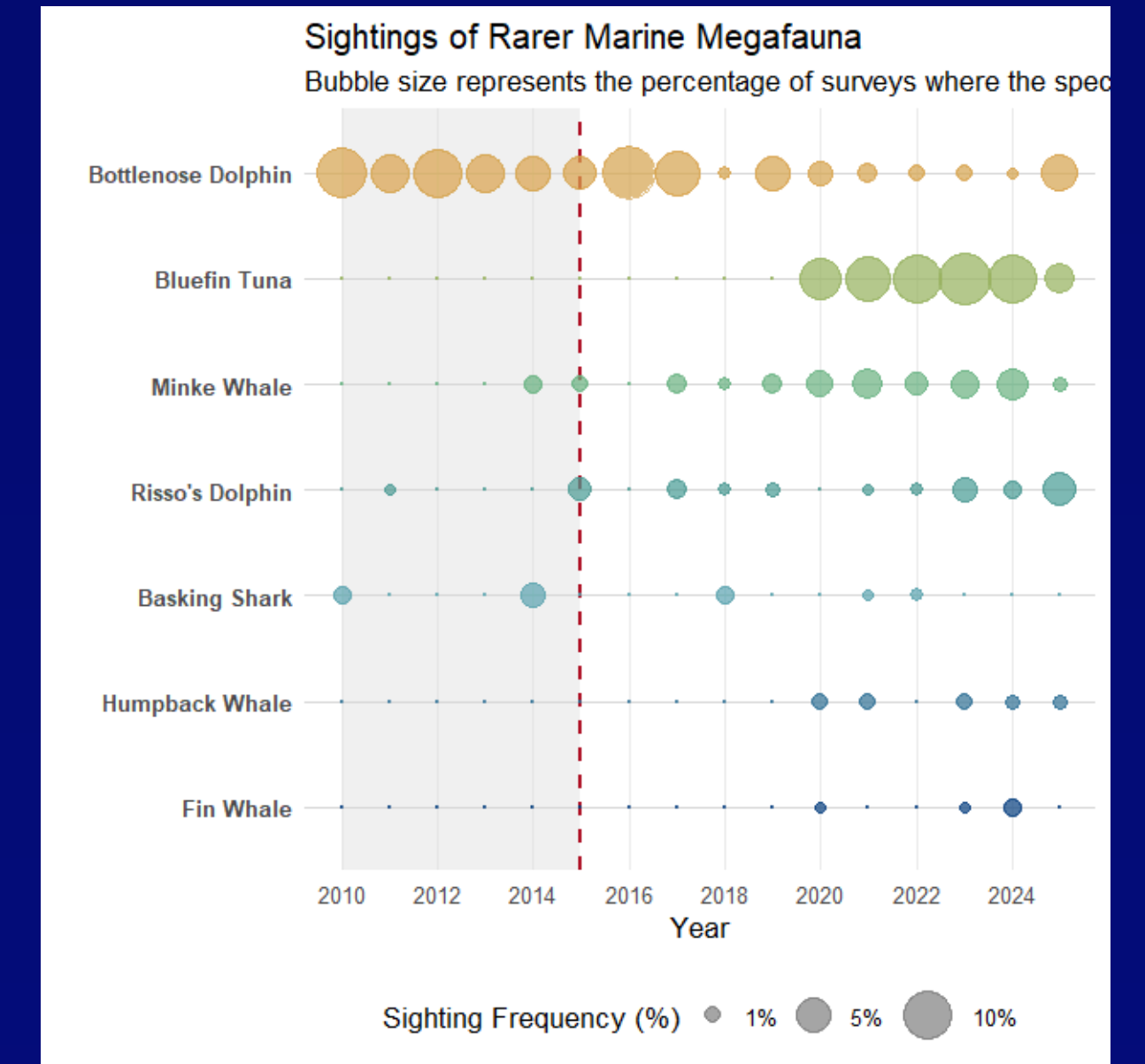
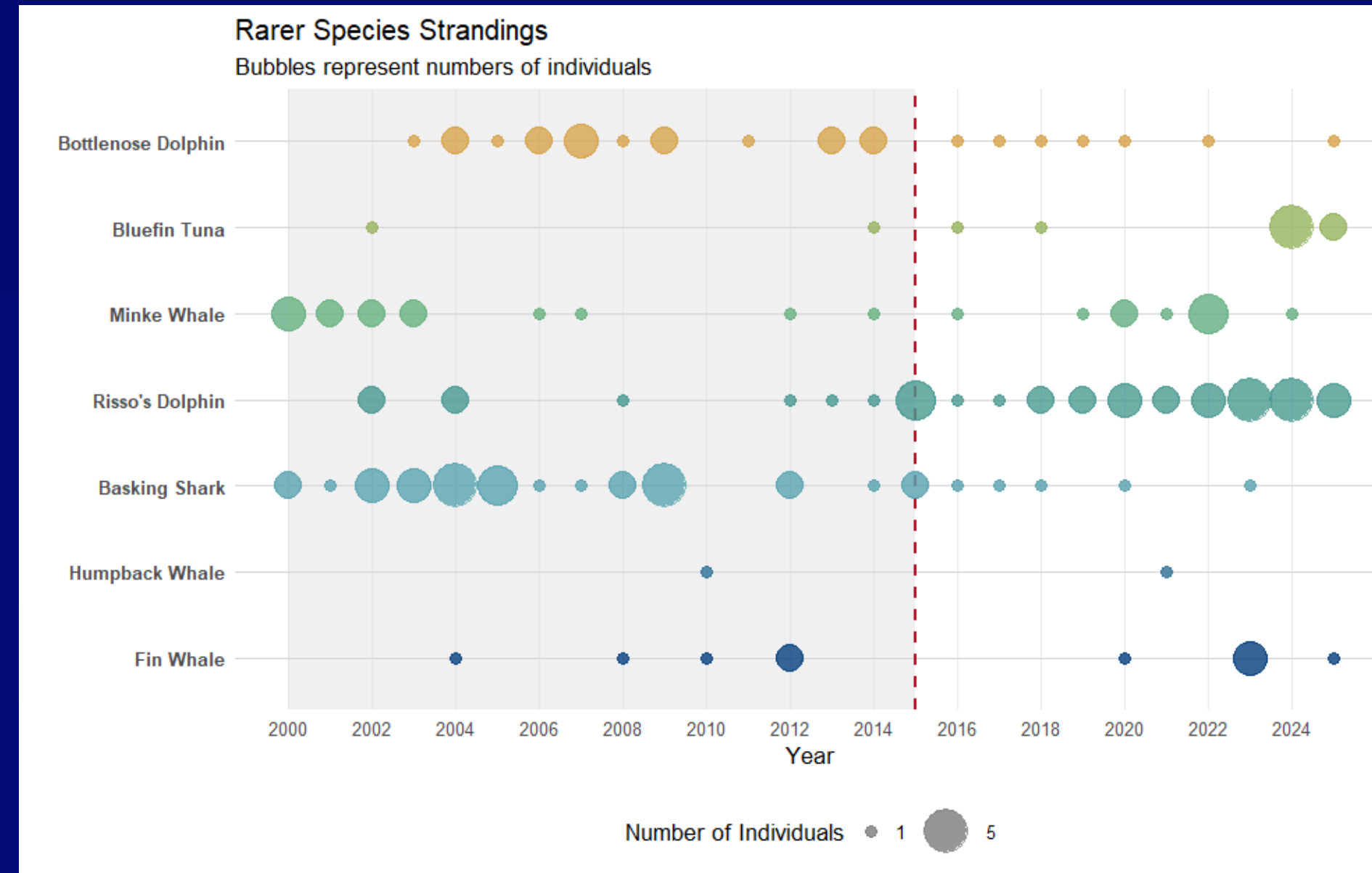
Cornwall Wildlife Trust (CWT) has two long running citizen science projects that record data on marine mammals (and other marine megafauna) around the Cornish Coast. Our Seaquest Southwest project has been running for 14 years and collects effort-based survey data from coastal locations. The Marine Strandings Network (MSN), which has been running for thirty years, trains volunteers to document dead marine wildlife washed up around the coast.

For both projects volunteers undergo training in marine species ID and recording methodology. Data is verified and confirmed by experienced coordinators.



Changing species

The two projects indicate a shift in predominant species in the coastal waters of this most Southwestern county of the UK over the last two decades with a pivot point around 2015. The presence of some species is decreasing (bottlenose dolphins and basking sharks) whilst that of others has increased, most notably common dolphin and grey seals and there are also increasing sightings of more rarely seen species such as Risso's dolphin, minke, fin and humpback whales.

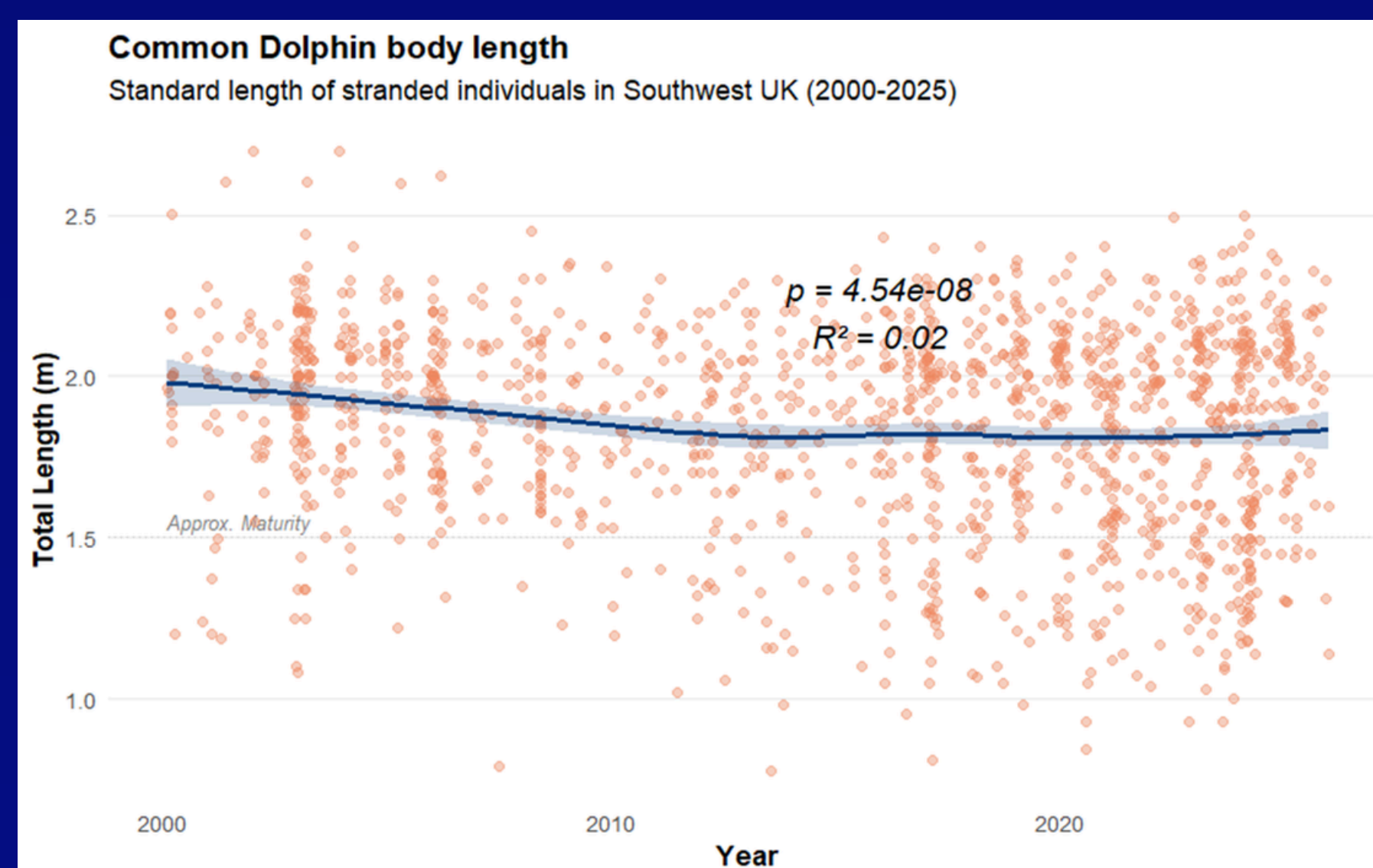


Common dolphin explosion

Common dolphins have shown a dramatic increase in their presence in Cornish inshore waters. Before 2015 they were rarely seen during surveys but in the last decade they have made an appearance in 28% of them (to the delight of all participants).

However, their presence in the strandings record has also increased, doubling since 2015 to an annual average of 200 individuals.

Analysis of size data of dead stranded individuals shows a decrease in average length suggesting that younger animals are more prevalent than they were previously.



Conservation concerns

An increase in presence inshore also brings with it an increased risk from anthropogenic activities in busy Cornish seas. There have been large increases in the numbers of seals and common dolphins reported to the Marine Strandings Network.

Where possible cetaceans and seals are either retrieved for post mortem or examined by experienced assessors for external evidence of cause of death. On average 26% of cetaceans and 10% of seals which were assessed show external evidence of having been bycaught. Of common dolphins examined by PME since 2010 37% (99 of 266 cases examined) had evidence of being bycaught.

Conclusion

The North Atlantic is warming rapidly and it is likely that this and the resultant change in prey distribution are behind the changes in megafauna we are witnessing. The increase in strandings highlights that rapid changes also bring rapidly evolving threats. Coastal and fisheries management need to be dynamic and flexible in the face of rapid change and its repercussions if we are to reduce impacts on these important and charismatic species.

