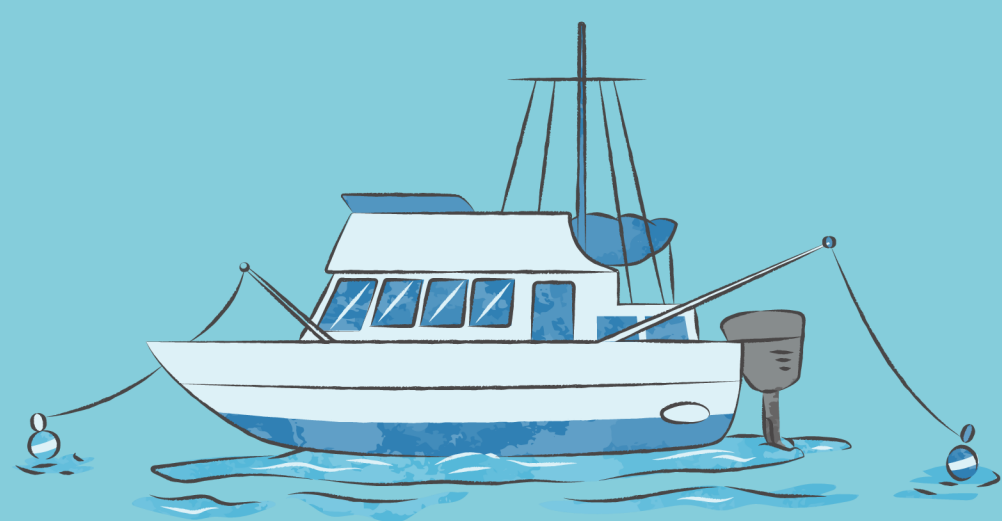


FISHING FOR ANSWERS: CAN FISHERIES CATCHES BE USED TO PREDICT SEABIRD DIET AND SURVIVAL?



BACKGROUND

Seabirds are important parts of coastal ecosystems (Signa et al., 2021), but several seabird species have had declining populations in recent decades (R. Barrett et al., 2012). Many prey species for seabirds are also commercially fished species in Norway and catches are reported annually.



BLACK-LEGGED KITTIWAKE
(PHOTO: PETE MANNING)



ATLANTIC PUFFIN
(PHOTO: PETE MANNING)

OBJECTIVE

To use fisheries catch data combined with survival- and diet composition data for Atlantic Puffin and Black-legged Kittiwakes, and test for correlations. Our hypothesis was that higher catches meant higher prey abundance for the seabirds, and thereby higher survival rates of fledglings.

METHODOLOGY

We gathered data from Fiskeridirektoratet and SeaPop by NINA. We created a quasibinomial statistical model in order to determine if catches of bird prey species corresponded with fledgling survival rates.



MAIN FINDINGS

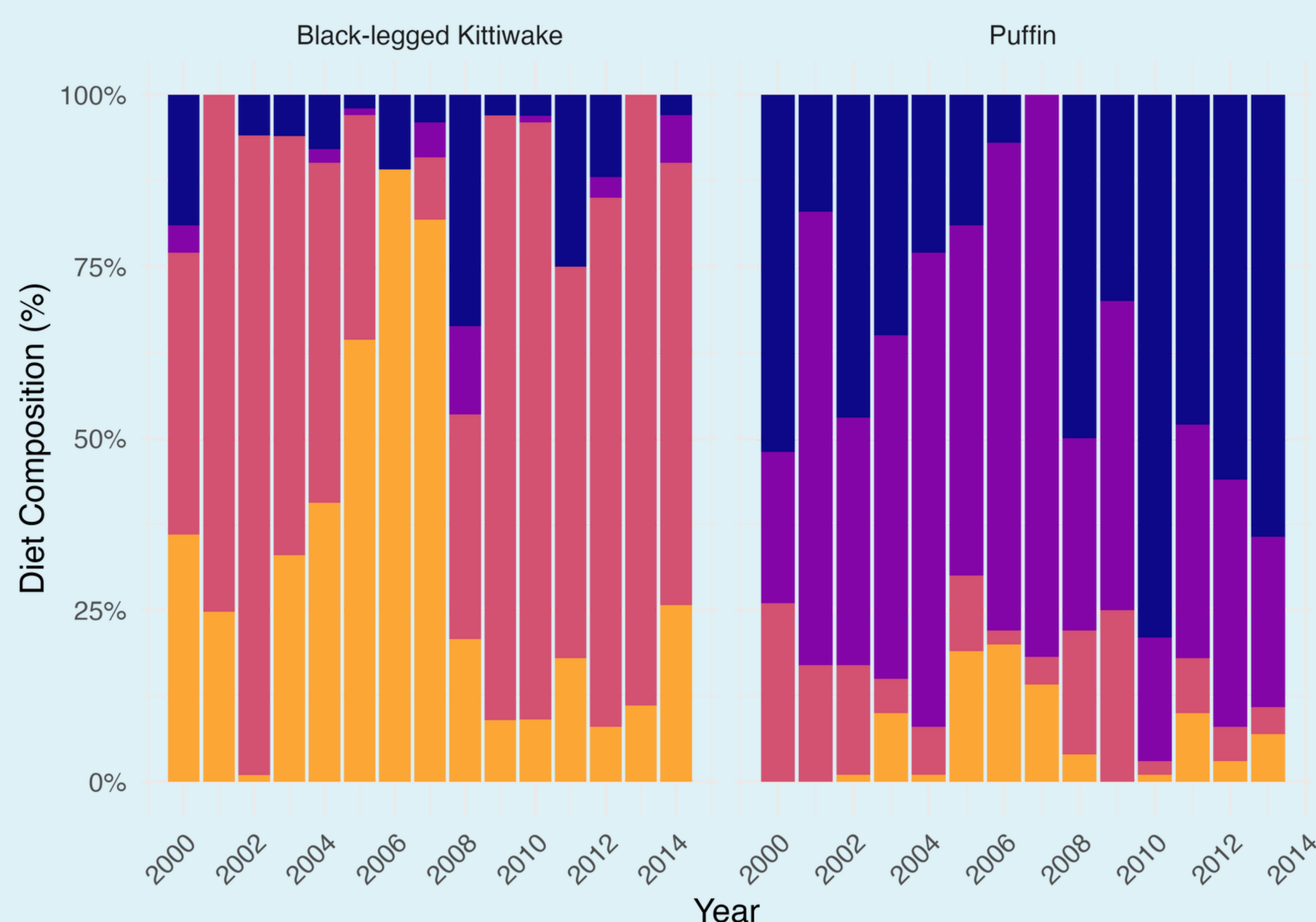


Figure 1: Diet composition of kittiwakes and puffins at Hornøya (2000-2014)

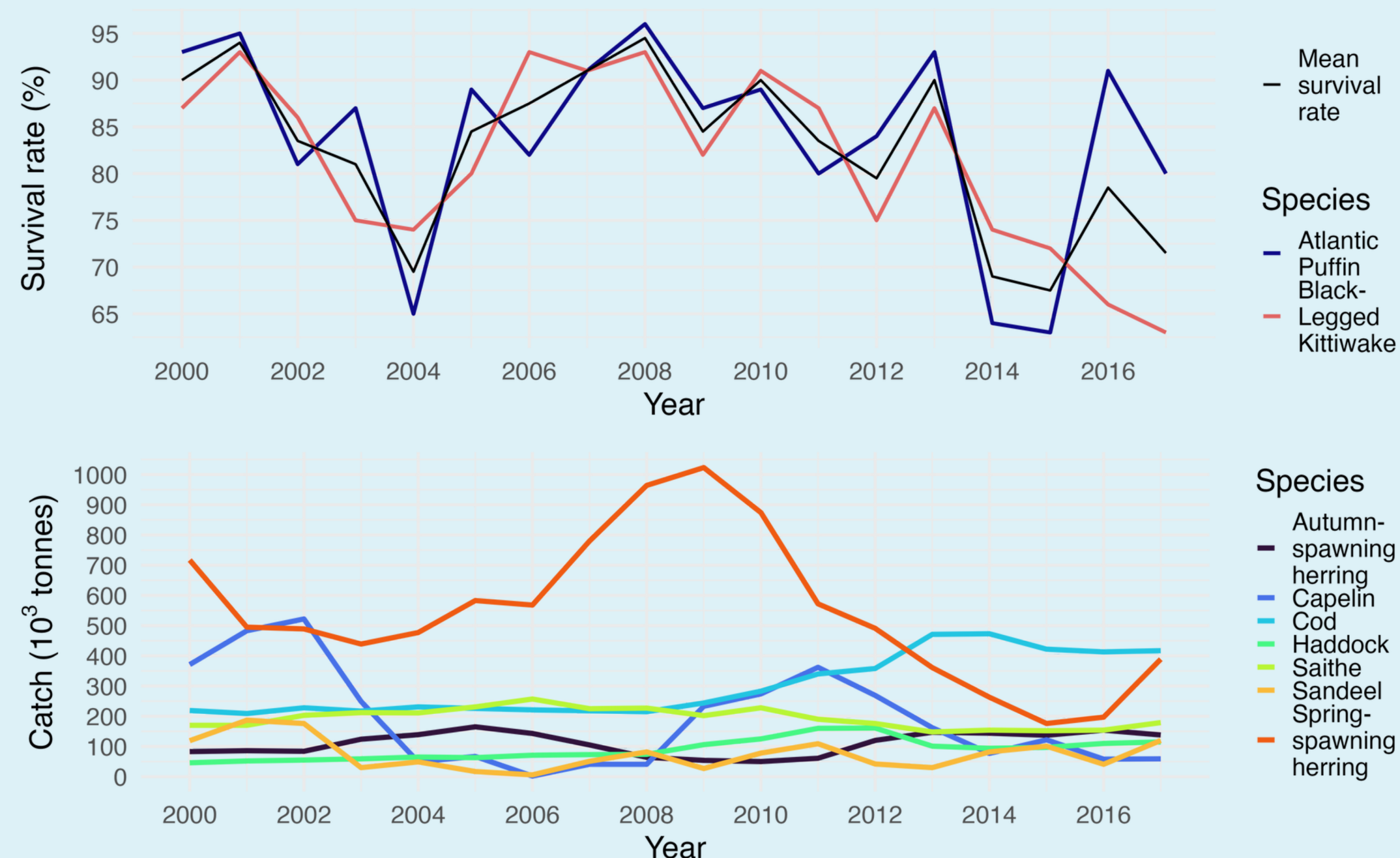


Figure 2: Survivability of kittiwakes and puffins, and catch data for prey species (2000-2017)

- **Finding 1:** We found no significant trends between the landed catches and seabird survival or diet composition.
- **Finding 2:** There is a great deal of inter-annual variation in diet composition in both species, indicating a robustness to changes in prey availability.
- **Finding 3:** Fish species recruitment may be a more viable predictor for seabird survival, since they primarily feed on juveniles or larvae fish (Eilertsen et al., 2008)

CONCLUSION

- We conclude that catches cannot be used as an accurate predictor for survival of seabirds, using our limited dataset.
- We only looked at two species, in one locality, so expanding the study site and including more species could potentially yield different results.
- More research on spawning sites and larval ecology of prey species is needed.

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