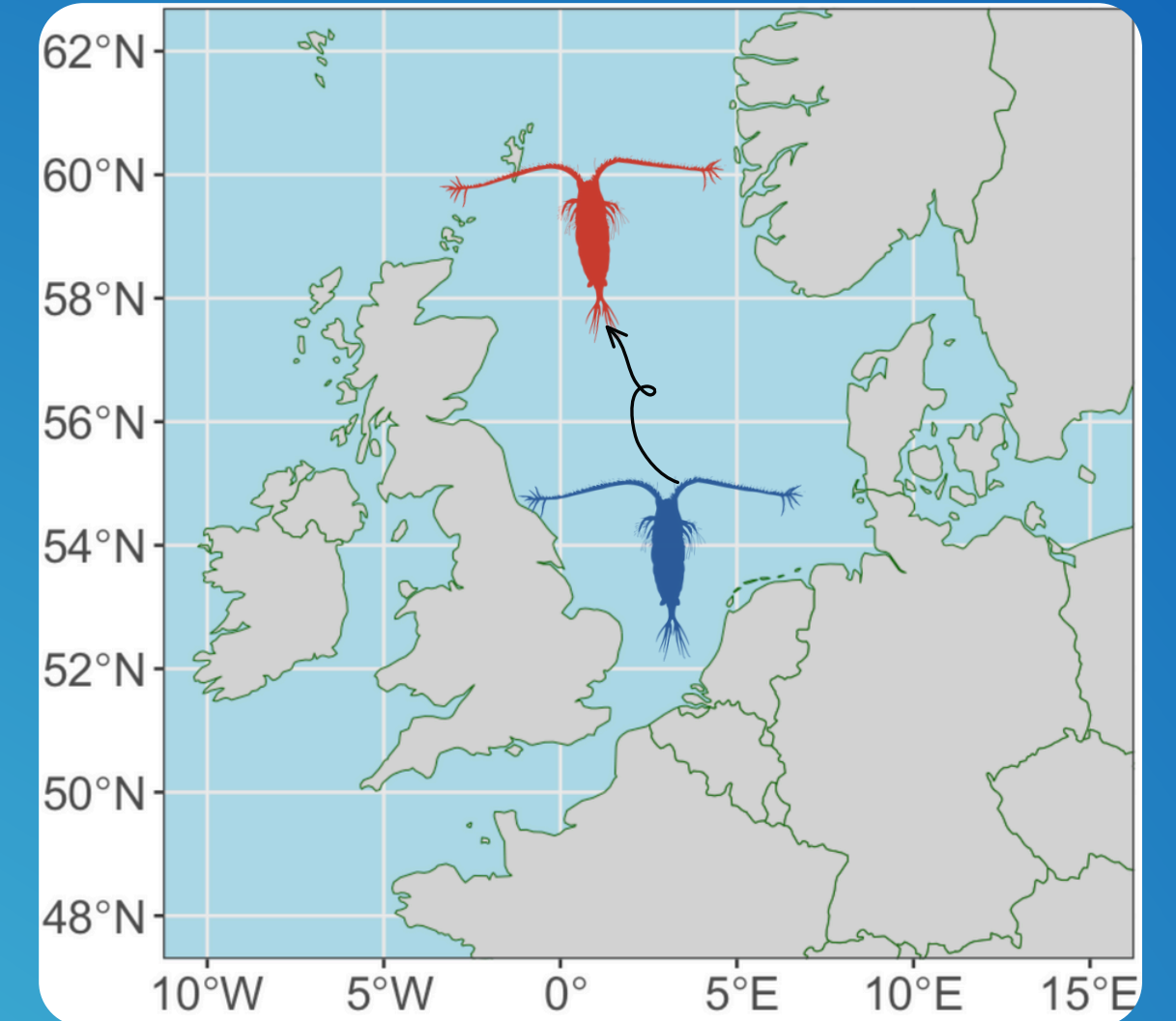


Is the Base of the North Sea Food Chain Changing?

Effect of rising sea surface temperature (SST) on abundance of two *Calanus* species

WHY IS IT IMPORTANT?

- *Calanus finmarchicus* and *Calanus helgolandicus* are the **most abundant** zooplankton in the North Atlantic.
- *C. finmarchicus* and *C. helgolandicus* are **shifting** their latitudinal range **northwards**.
- This study aimed to further analyse the **effects** on **temperature** on these species

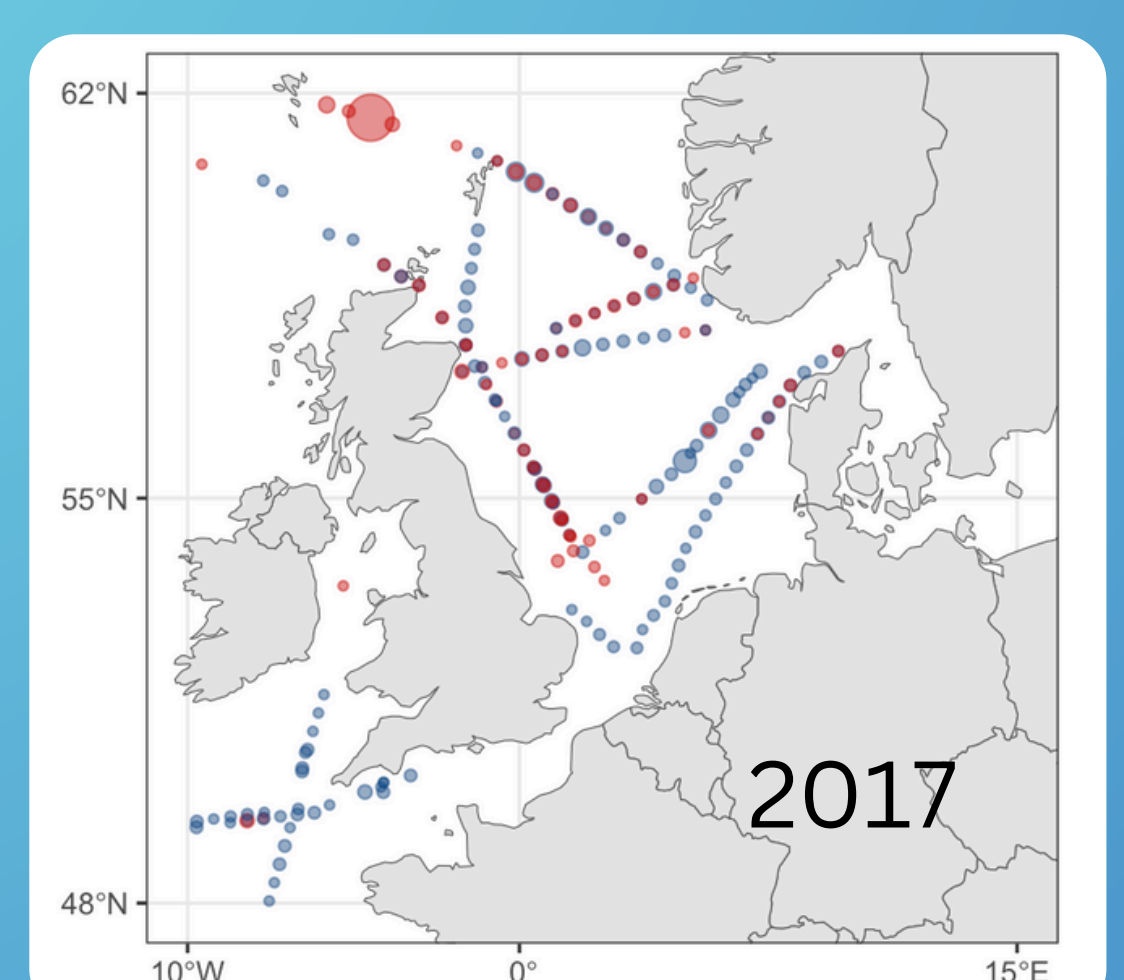
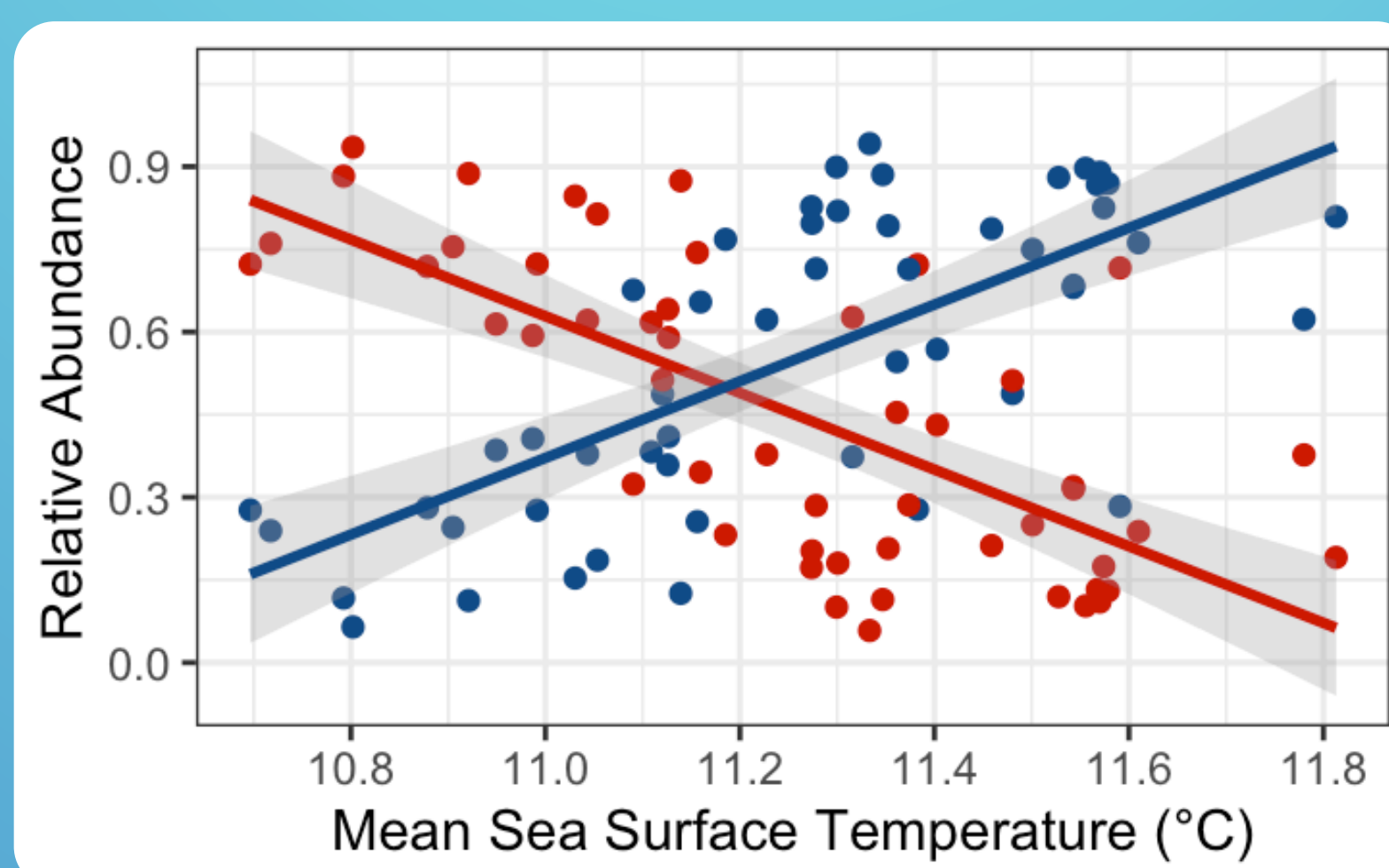
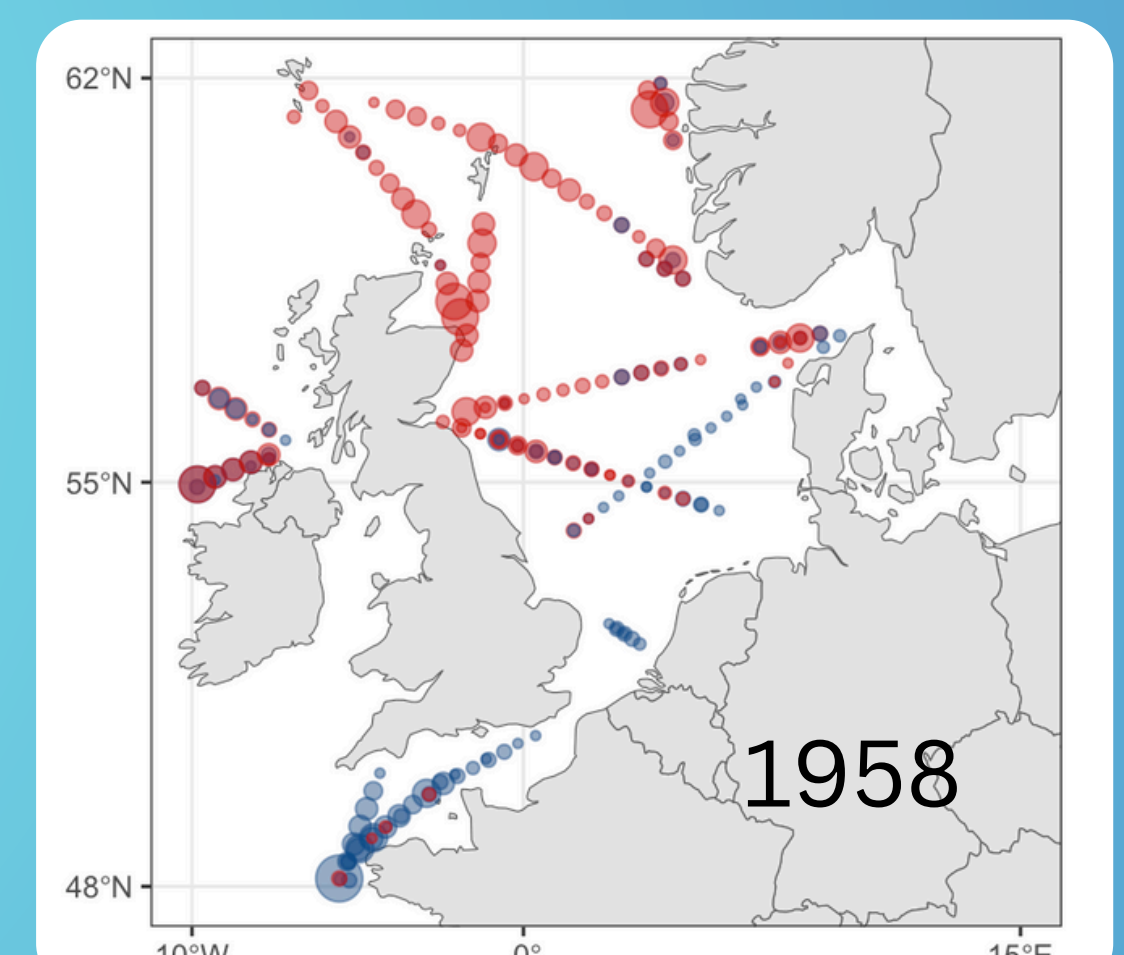
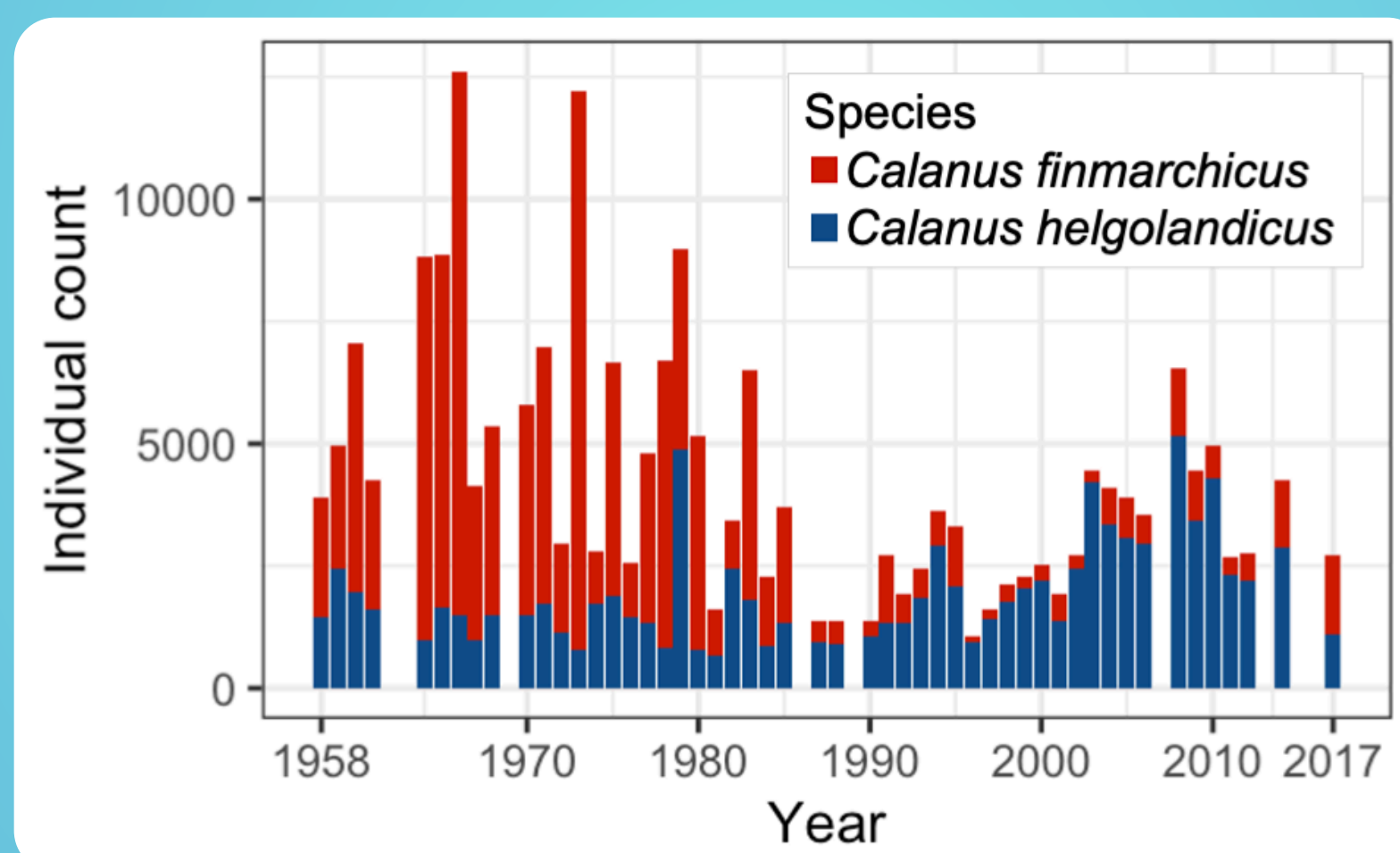


WHAT DID WE DO?

- Using a **Continuous Plankton Recorder** dataset, ranging from **1958 to 2017**, we calculated the change in relative abundance for both *Calanus* species together with **change in SST**.
- We used a **Linear regression** analysis to estimate the relationship between relative abundance and mean SST.

WHAT WE FOUND

- Relative abundance of *C. finmarchicus* has **decreased** within the time frame
- Relative abundance of *C. helgolandicus* has **increased**
- Changes **strongly correlate** to SST
- **Spatial pattern** of both species has moved **northward**



WHAT DOES IT MEAN?

- As one species replace the other, a potential **trophic mismatch** might occur.
- This study only looked at relative abundance from **July to August** (when the stratification is highest)
 - Further research should look into the latitudinal distributional change from spring to autumn
- Prioritize continued surveillance

References:

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- [4] Strand, E., Bagge, E., Edwards, M., Broms, C., Kleyer, T., 2020. Spatial distributions and seasonality of four Calanus species in the Northeast Atlantic. Prog. Oceanogr. 185, 102344.

