

7.–8. nóvember í Hörpu

**Stjórnun
fiskveiða**

– svo miklu meira en kvóti

Geta umhverfisgögn bætt spágetu okkar af fiskigengd: dæmi af loðnu (á ensku)

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HAMPIÐJAN



HÁSKÓLINN Í REYKJAVÍK
REYKJAVÍK UNIVERSITY

ICELANDAIR
CARGO

ISI ICELAND
SEAFOOD



marel

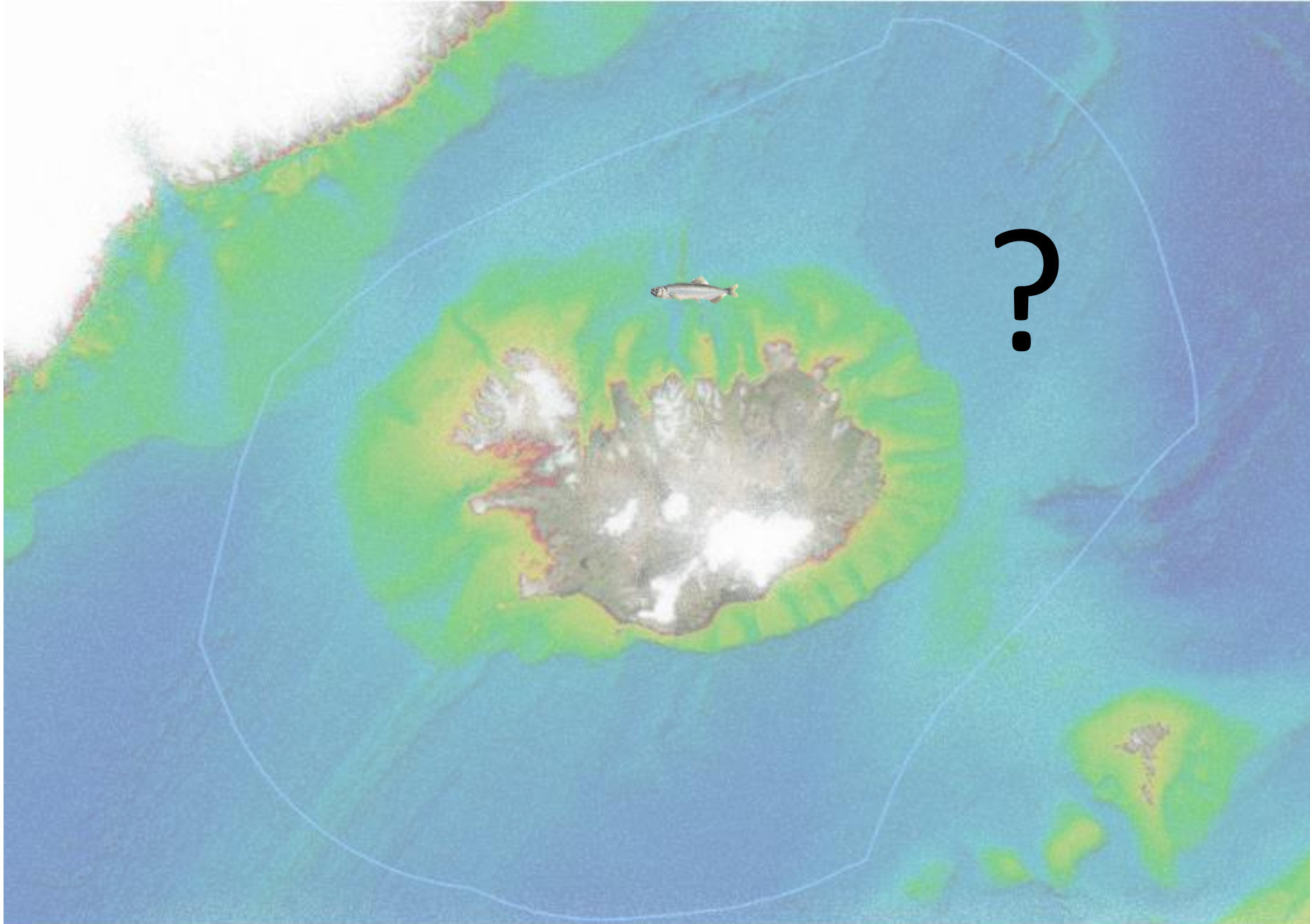
Pipar\TBWA



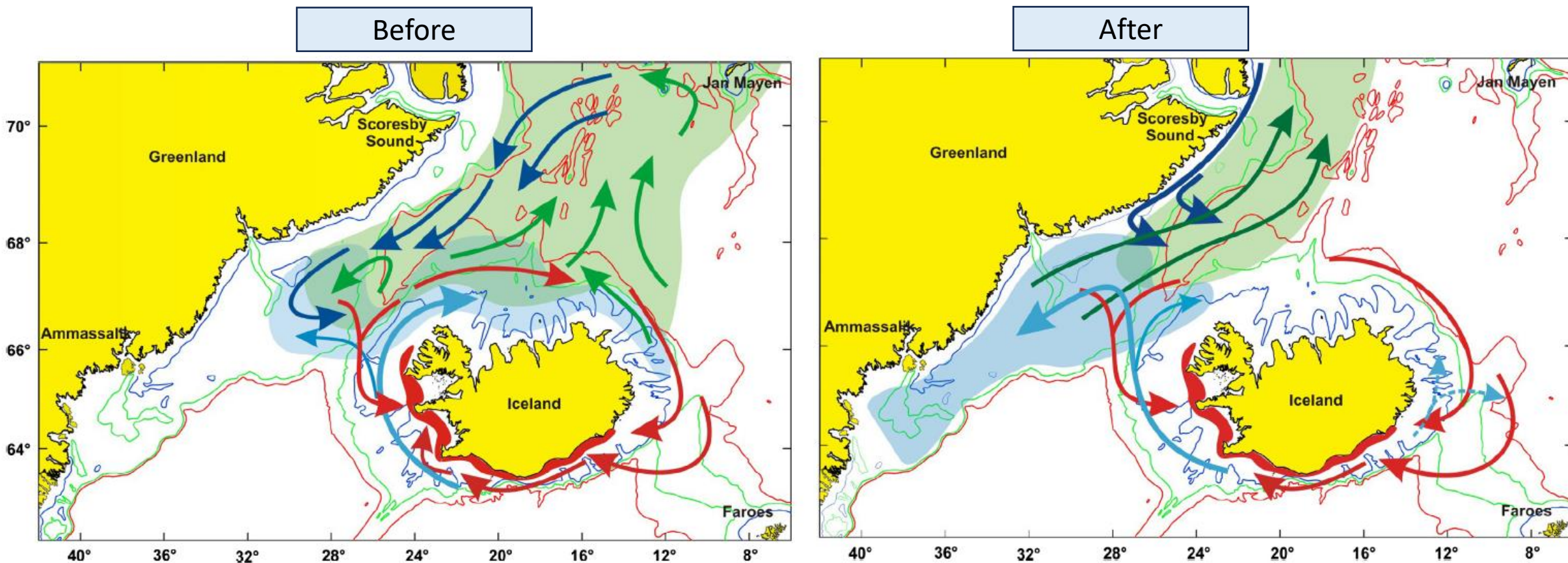
SJÁVARÚTVEGS
RÁÐSTEFNAN

2024

Changes in capelin distribution



Shift in capelin distribution during Autumn



Larval drift

Feeding migration

Late feeding/return migration

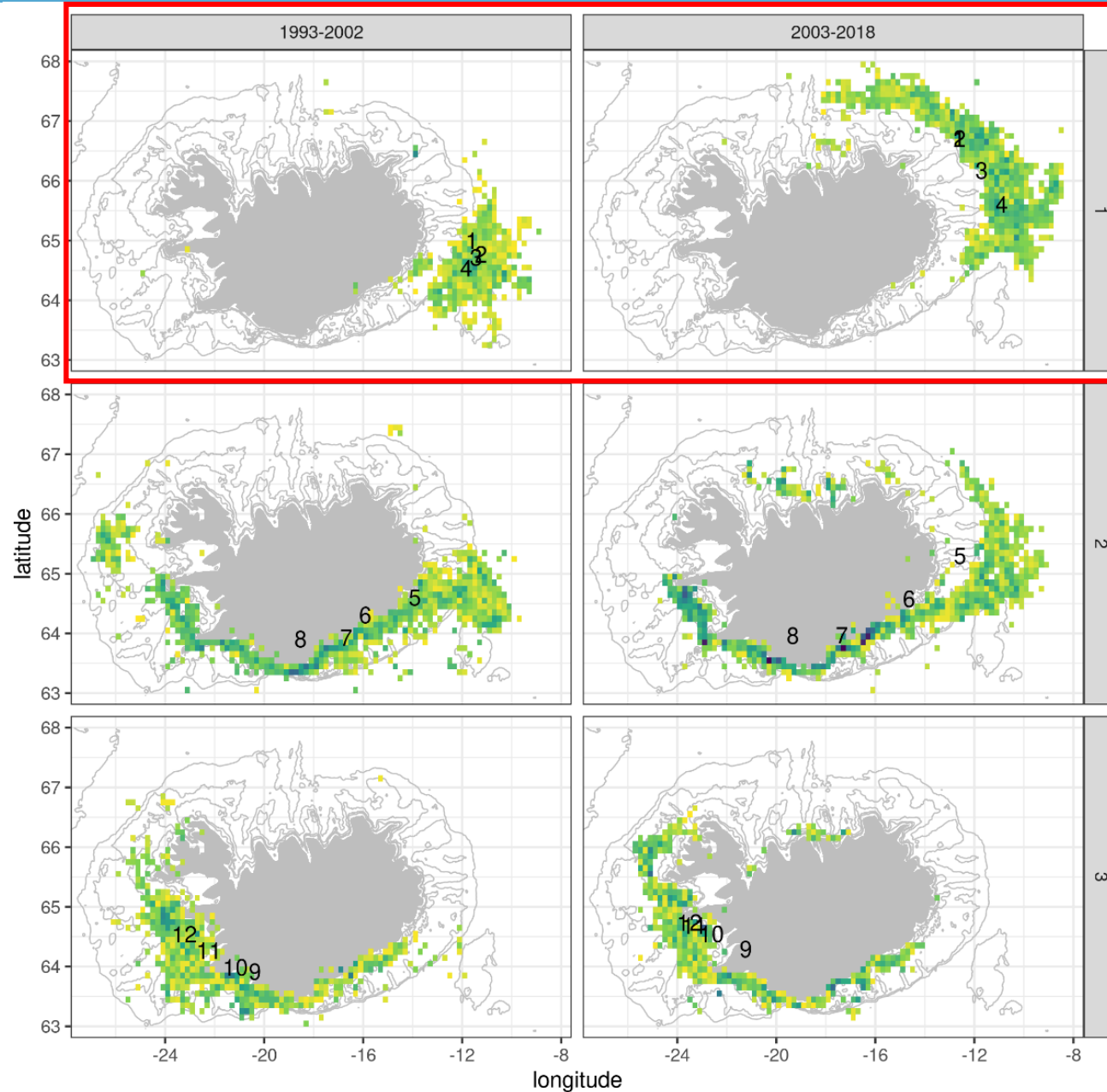
Spawning migration

Nursery areas

Feeding habitat

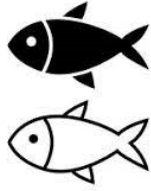
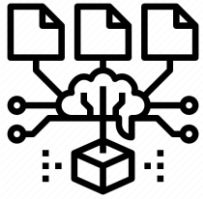
Spawning habitat

Changes in fishing distribution (winter)



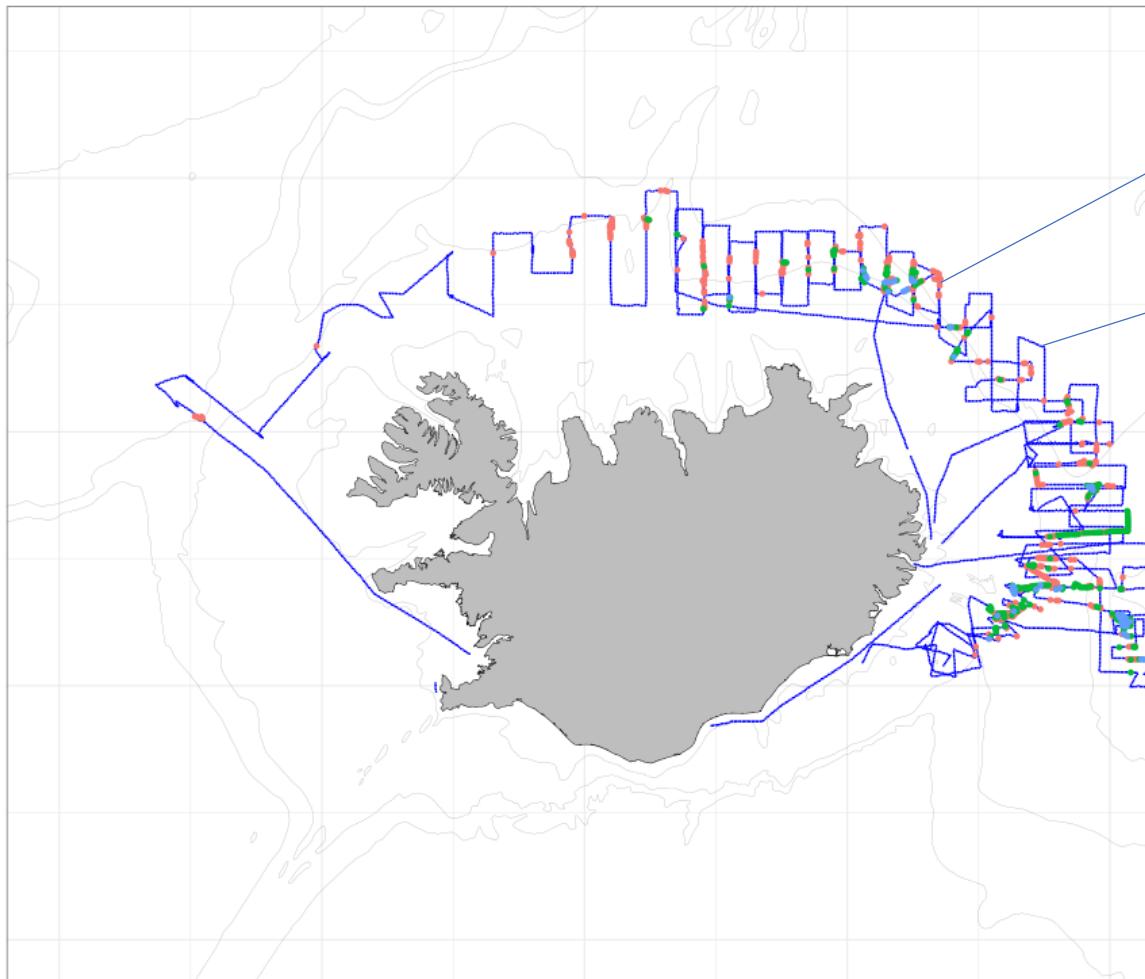
In January they arrive later to the spawning ground

Were the shifts related to the changing environment?



Global Ocean Model
Output
(Copernicus/ CMEMS)

2004



Presence

Absence

nasc
• 100-1000
• 1000-10000
• 10000-100000

2000-2019

Shift in capelin distribution – evident from survey data

Autumn (Sep-Nov)

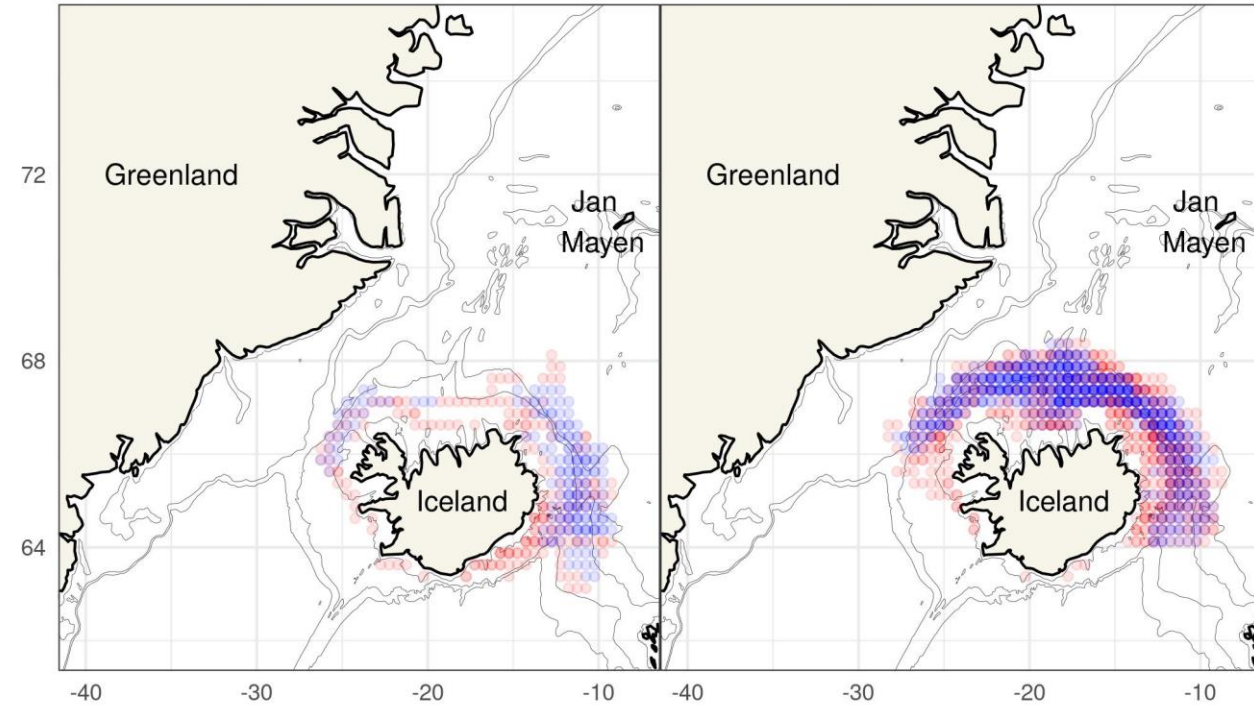
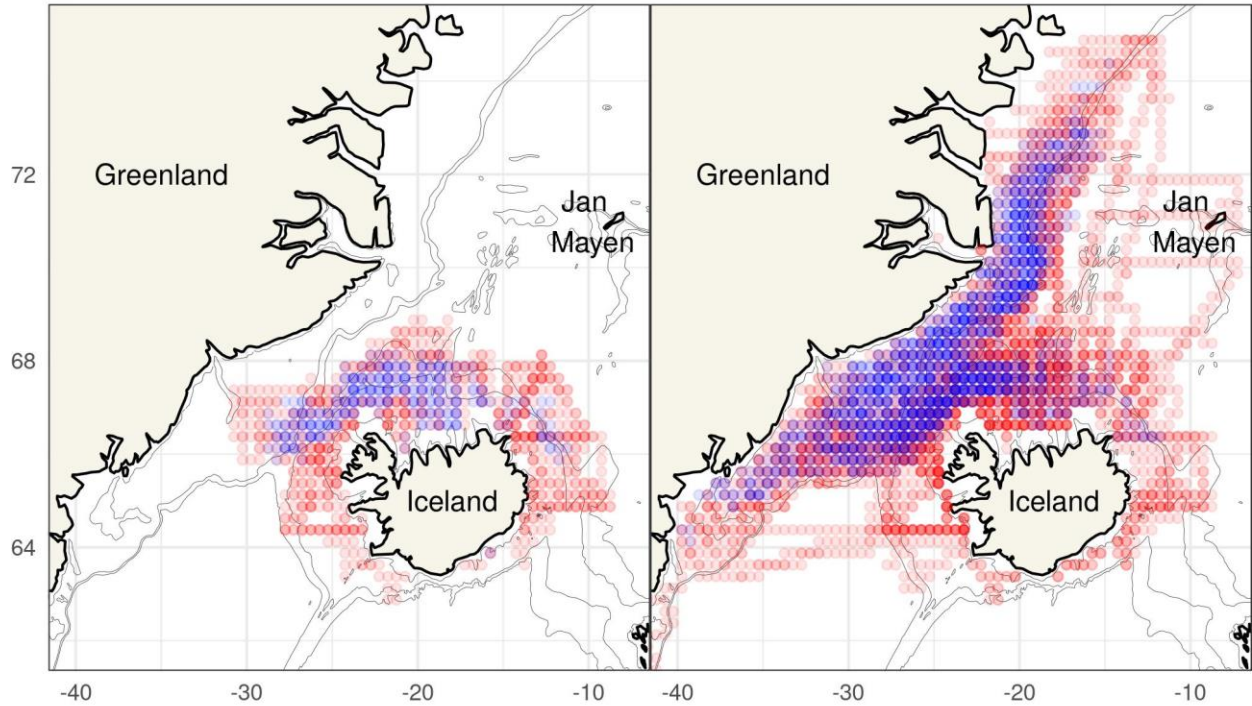
Winter (Jan)

2000-2002

2003-2019

2000-2002

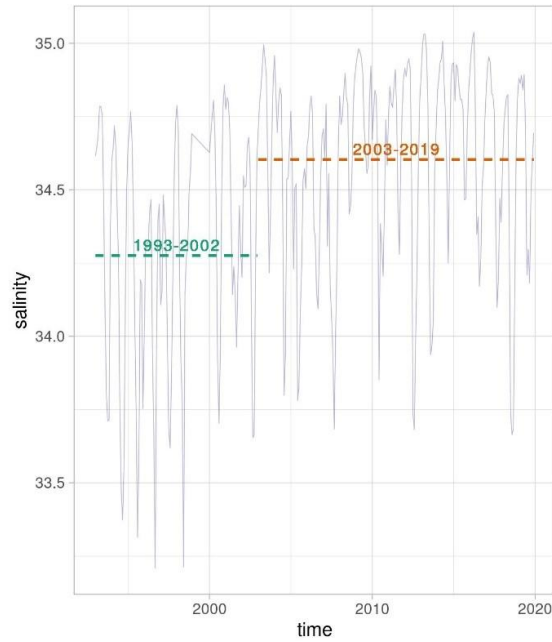
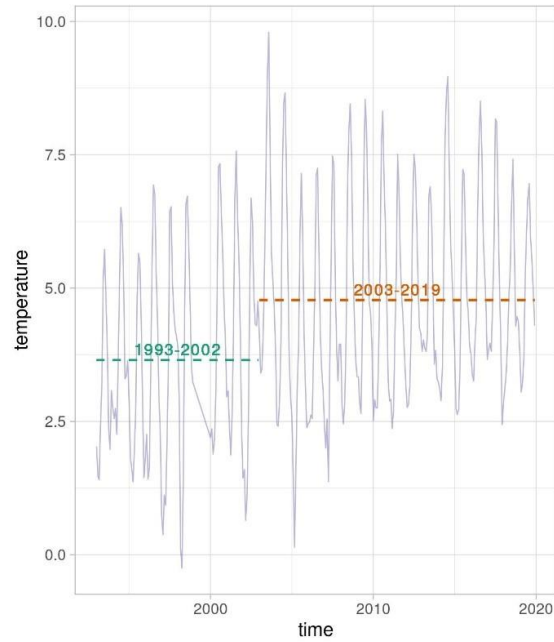
2003-2019



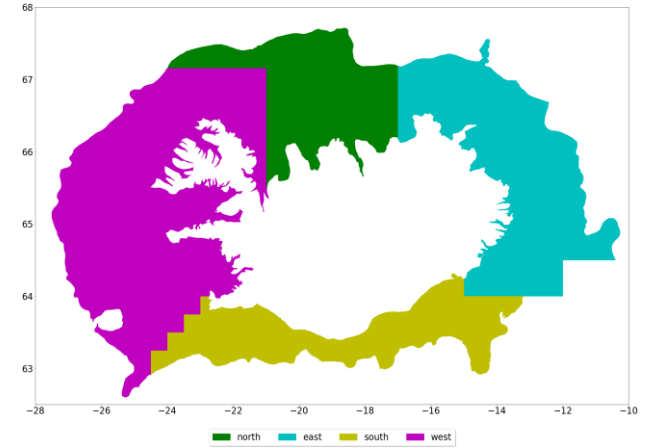
Sea surface temperature & salinity trends

Autumn

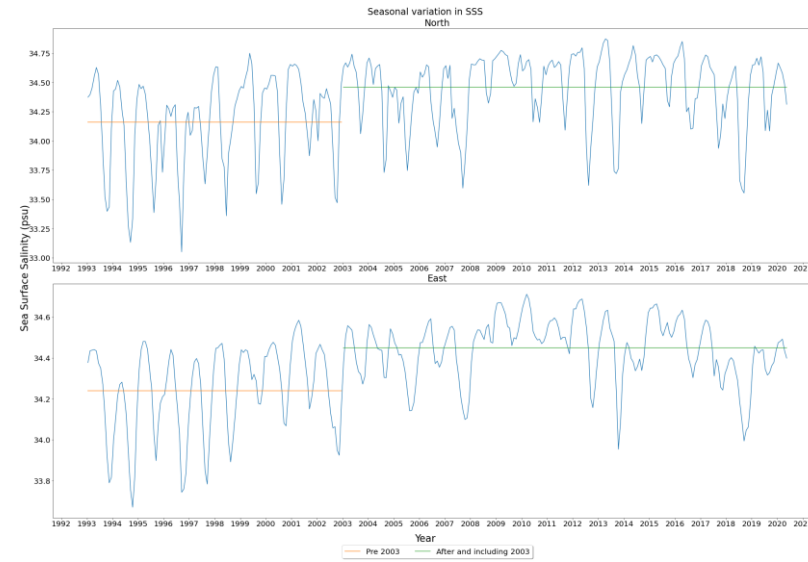
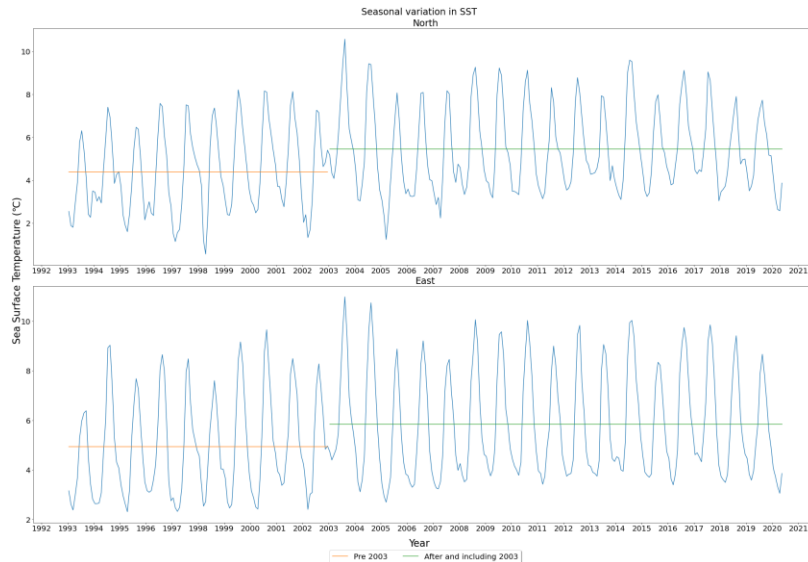
1.12 °C ↑



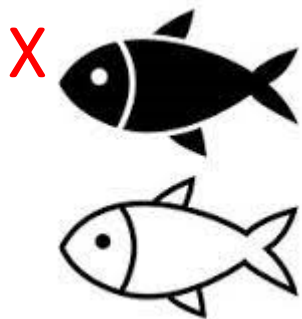
0.32 psu ↑



Winter



Capelin & Environment data



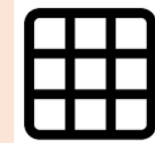
Presence absence

Global Ocean Model
Output
(Copernicus/ CMEMS)



Sea surface temperature
Sea surface salinity
Current speed
Net primary productivity

Bathymetry (NOAA)



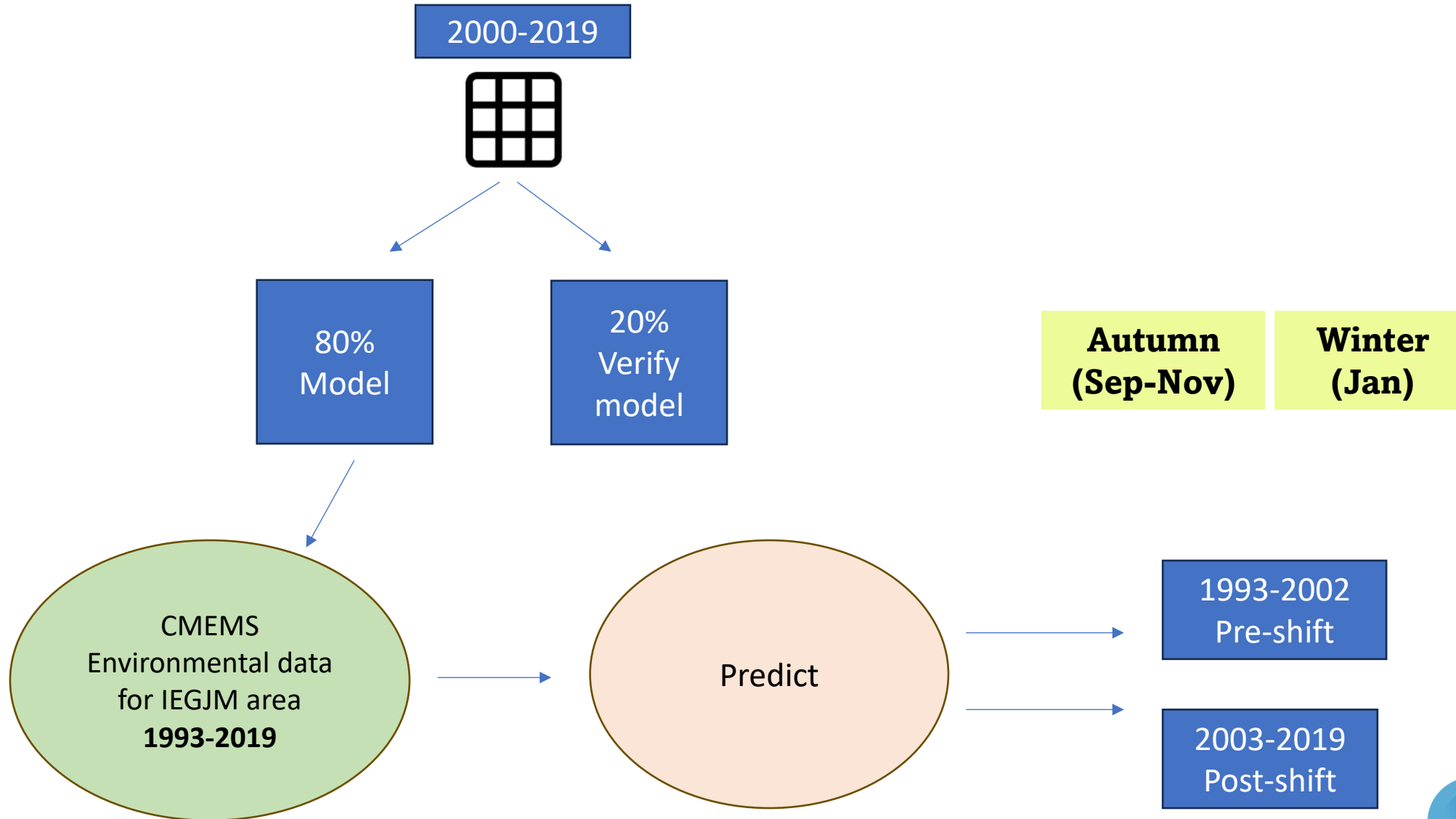
Gridded average merged
with capelin presence
absence
(0.25 x 0.5° lat and lon)



Species
distribution
model



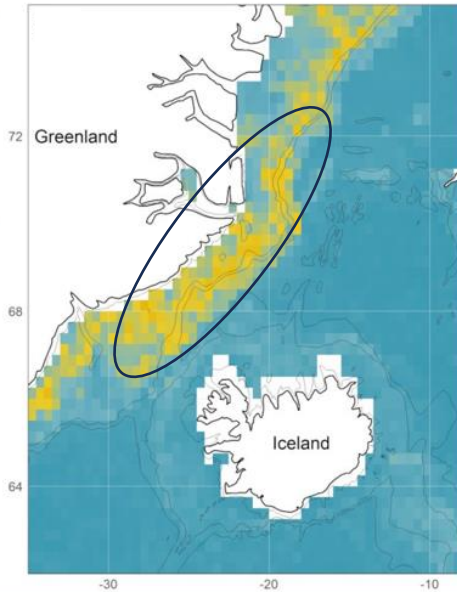
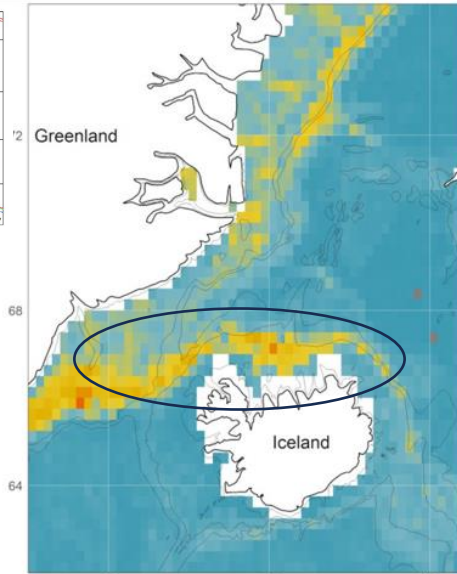
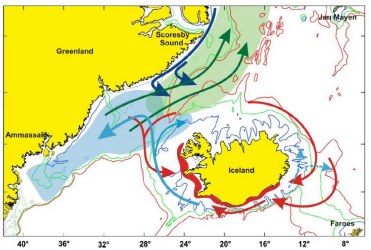
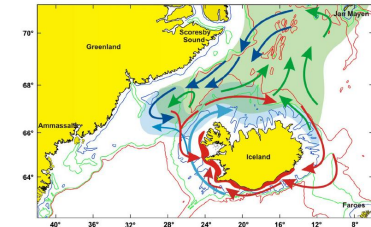
Modelling process



Were the shifts related to the changing environment?

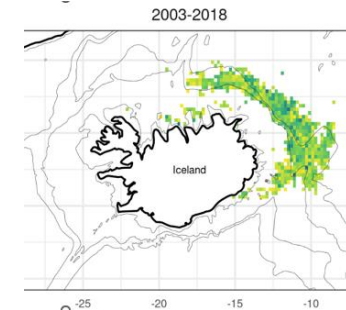
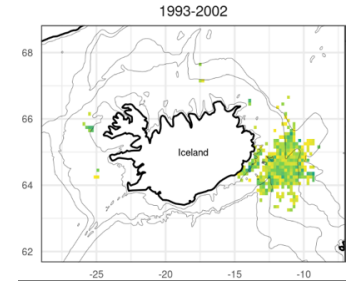
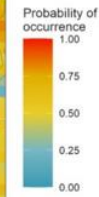
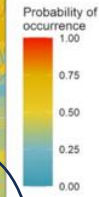
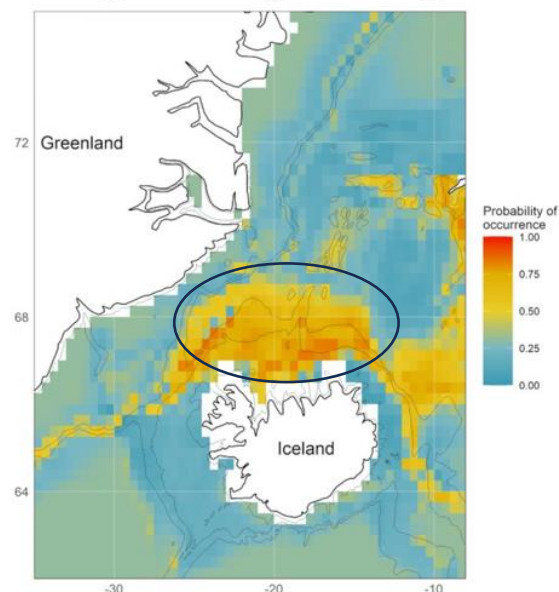
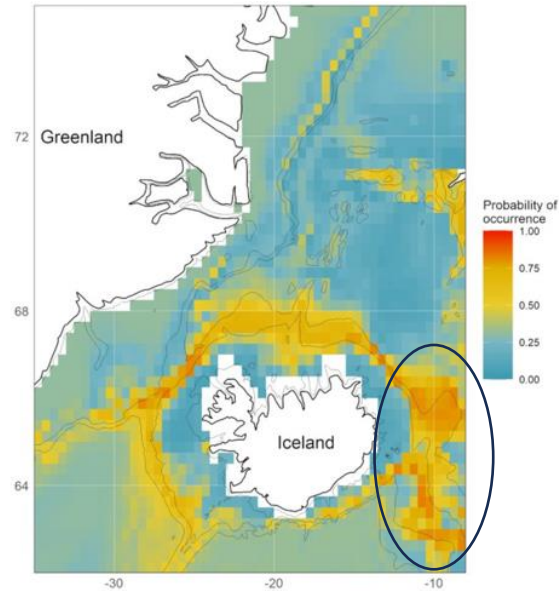
Autumn (Sep-Nov)

Winter (Jan)



1993-2002

2003-2019





Conclusion

- A combination of these variables explains the distribution and observed changes
- Distribution of the schools could be sensitive to fluctuations in temperature that has been evident in the recent years.
- High-resolution global ocean models to project capelin presence and absence into the future based on the various climate projection scenarios.
- Focused on distribution but could do similar analysis with abundance.