

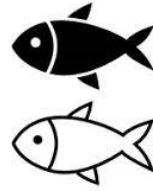
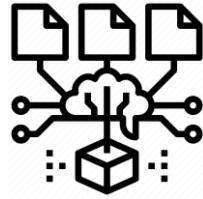
Climate driven response of the Iceland-East Greenland-Jan Mayen capelin distribution

**Warsha Singh¹, Kristinn Gudnason¹, Marcel Montanyes², Martin
Lindegren²**

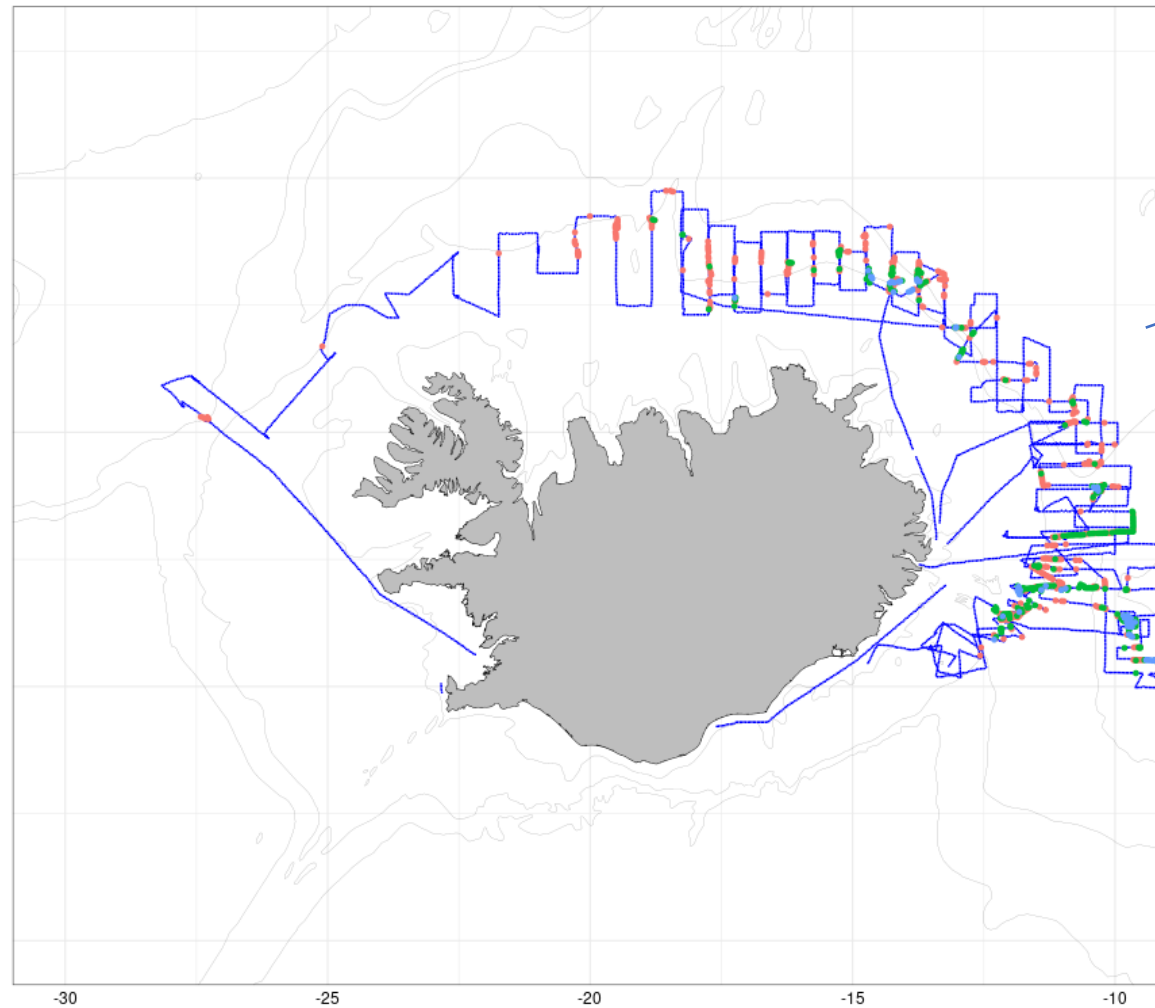
¹ Marine and Freshwater Research Institute

² Technical university of Denmark (DTU Aqua)

Were the shifts related to the changing environment?



2004



Absence

Presence

2000-2019

Shift shown using survey acoustic data

**Autumn
(Sep-Nov)**

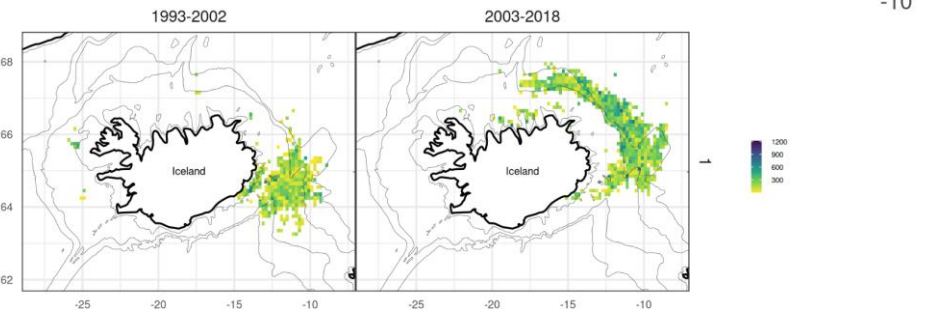
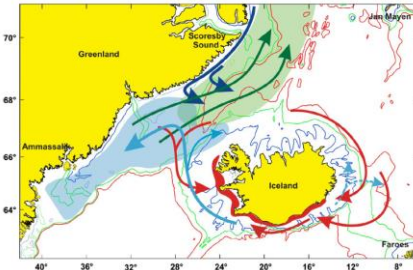
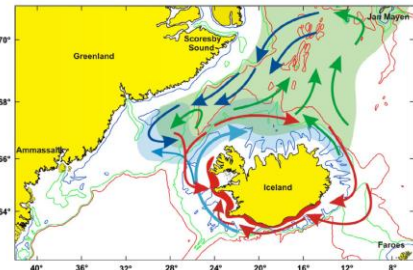
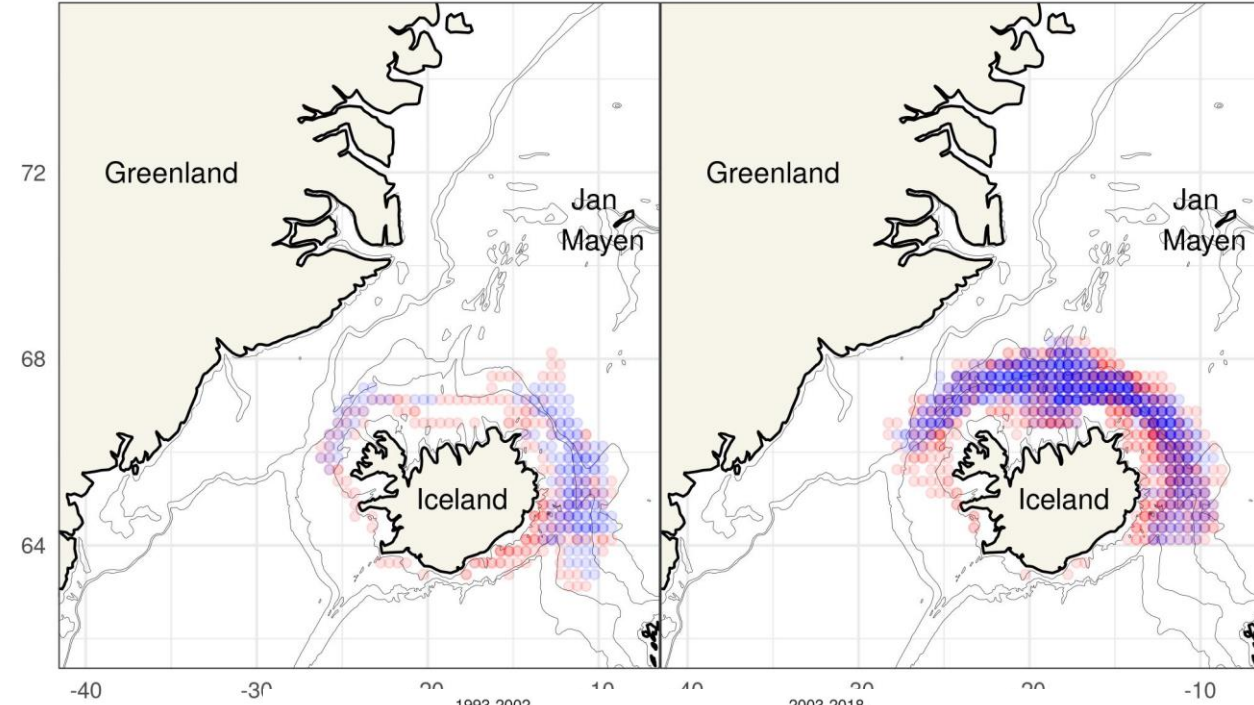
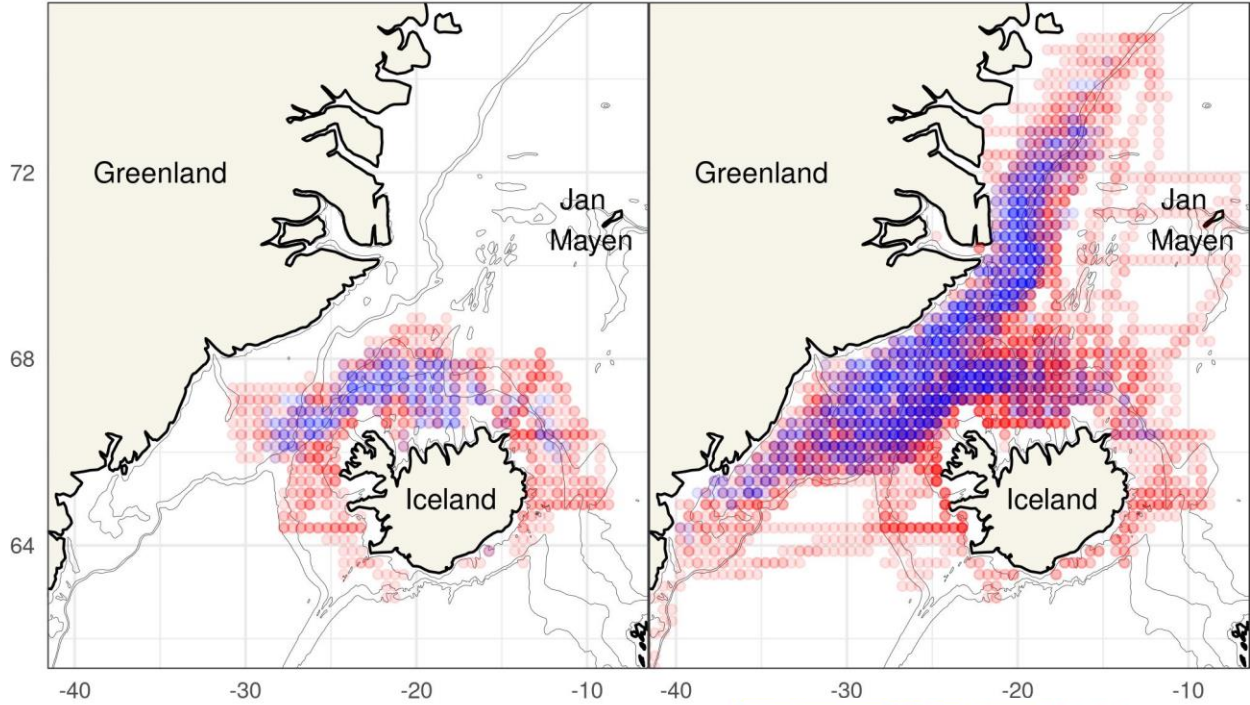
**Winter
(Jan)**

2000-2002

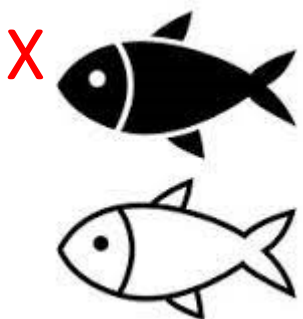
2003-2019

2000-2002

2003-2019



Capelin & Environment data



Presence absence

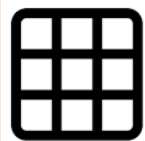


Global Ocean Model
Output
(Copernicus/ CMEMS)



Sea surface temperature
Sea surface salinity
Current speed
Net primary productivity

Bathymetry (NOAA)

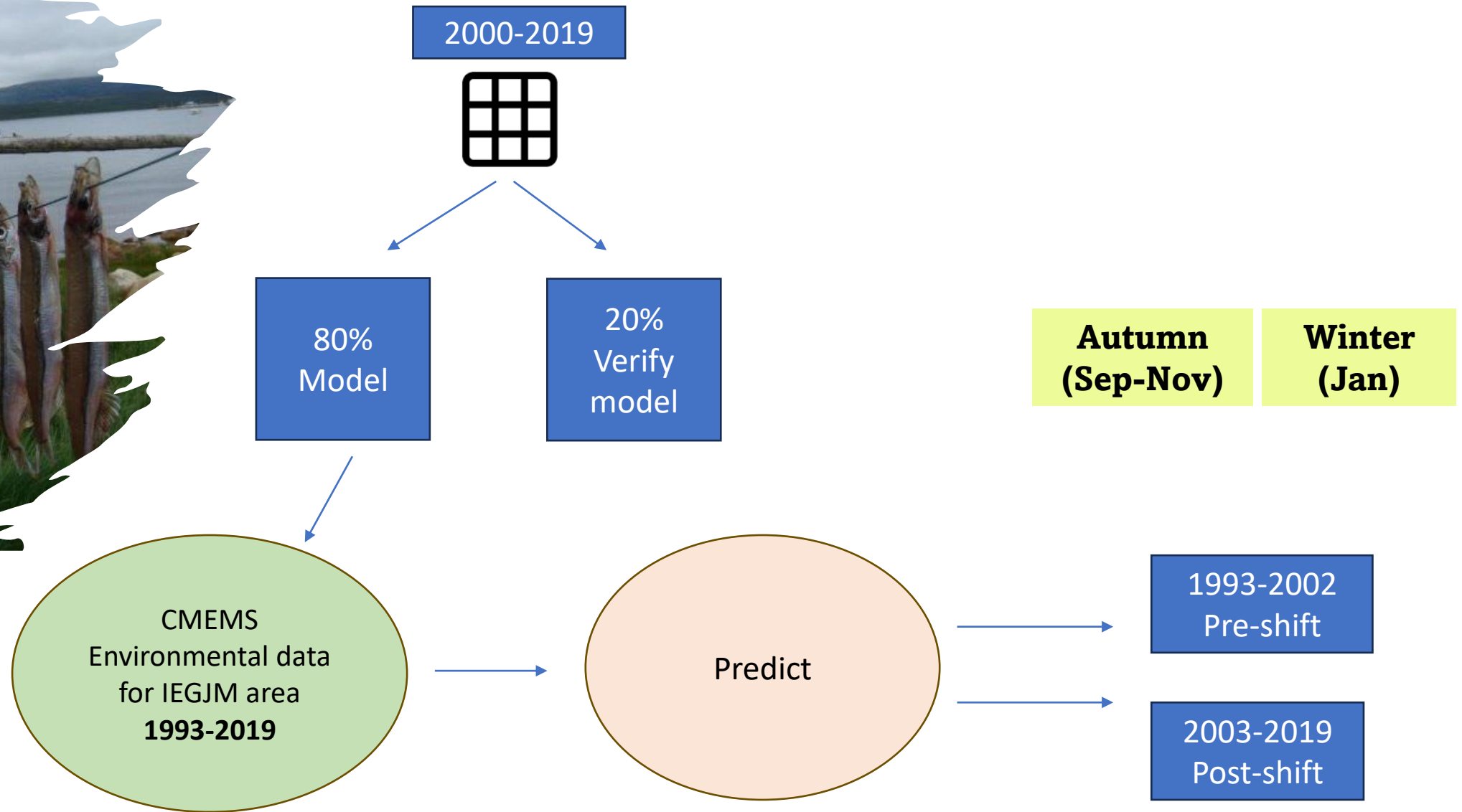


Gridded average merged
with capelin presence
absence
(0.25 x 0.5° lat and lon)



Species
distribution
model

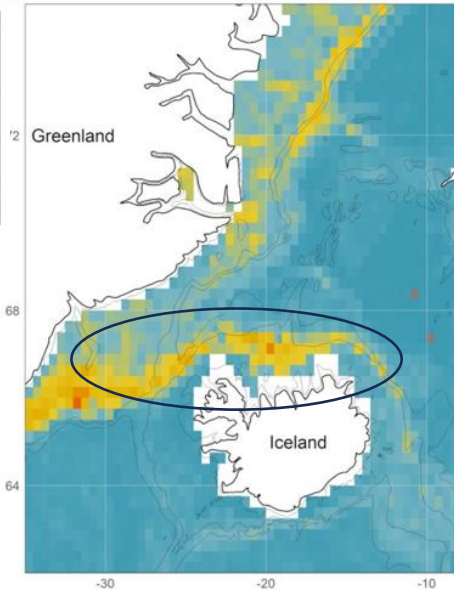
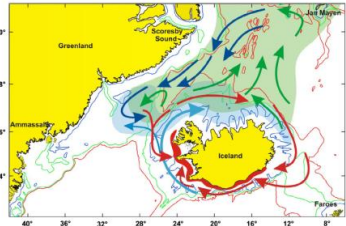
Modelling process



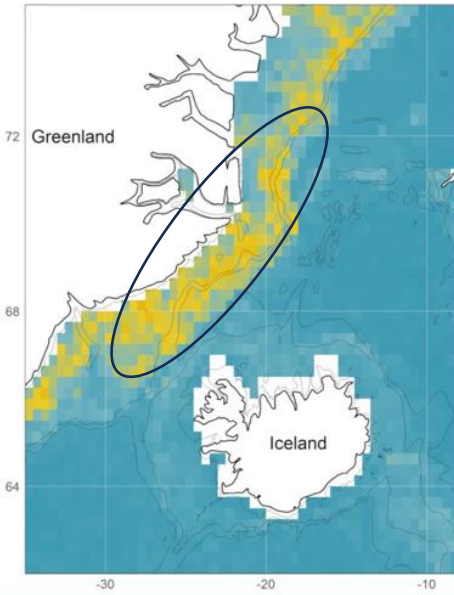
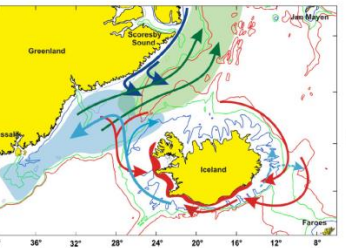
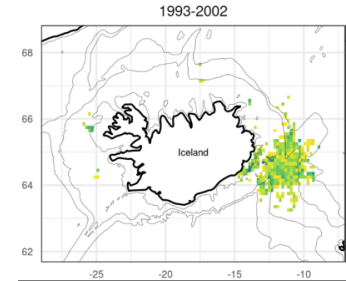
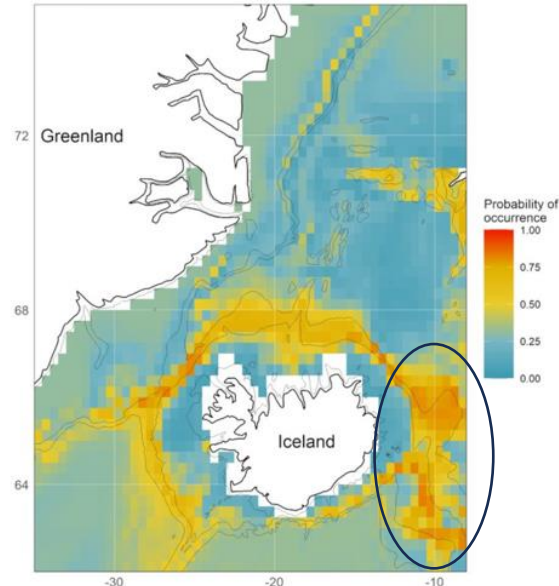
Predicted distribution

Autumn (Sep-Nov)

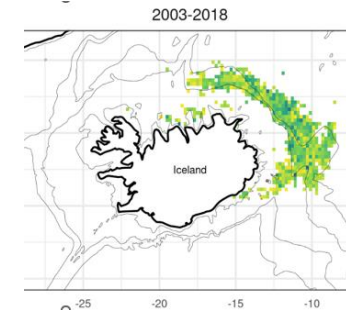
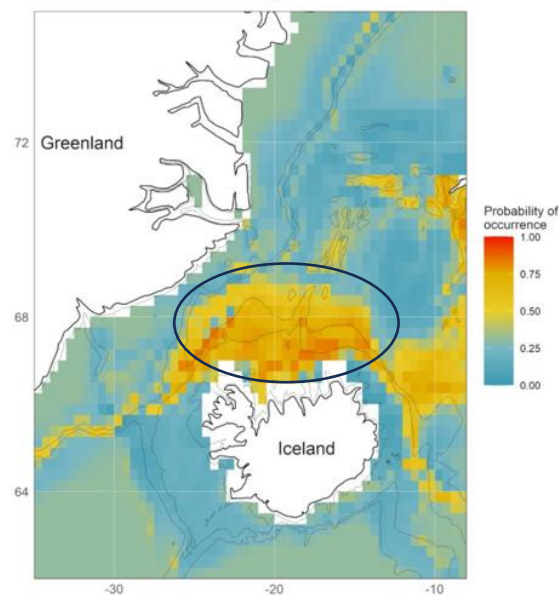
Winter (Jan)



1993-2002



2003-2019



- A combination of these variables explains the distribution and observed changes
- Distribution of the schools could therefore 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.
- Model abundance

Thank you