Ocean acidification variability in Atlantic and Arctic influenced Norwegian waters

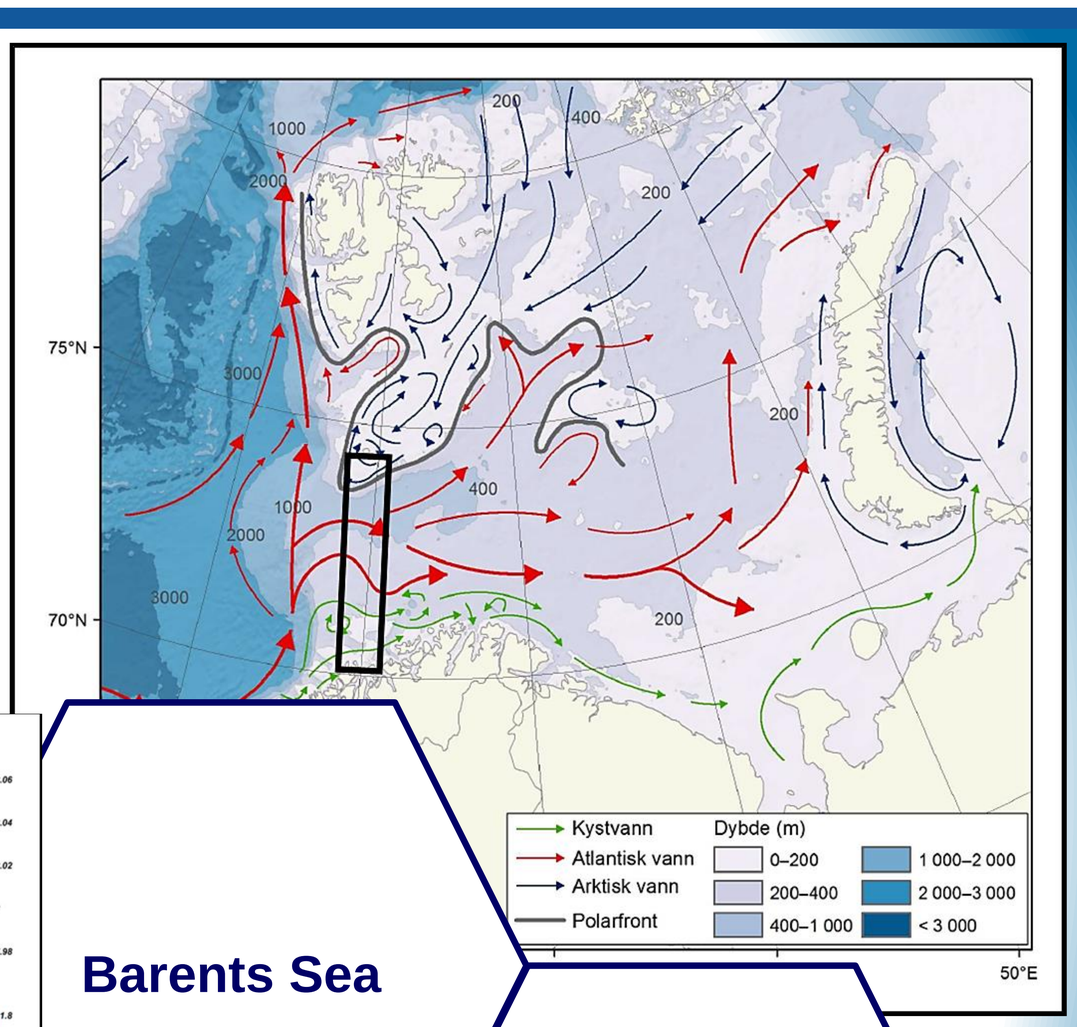
Elizabeth Jones[1], Melissa Chierici[1,2], Helene Hodal Lødemel[1], Claire Mourgues[1]

[1]Institute of Marine Research, Tromsø
[2]The University Centre in Svalbard, Longyearbyen

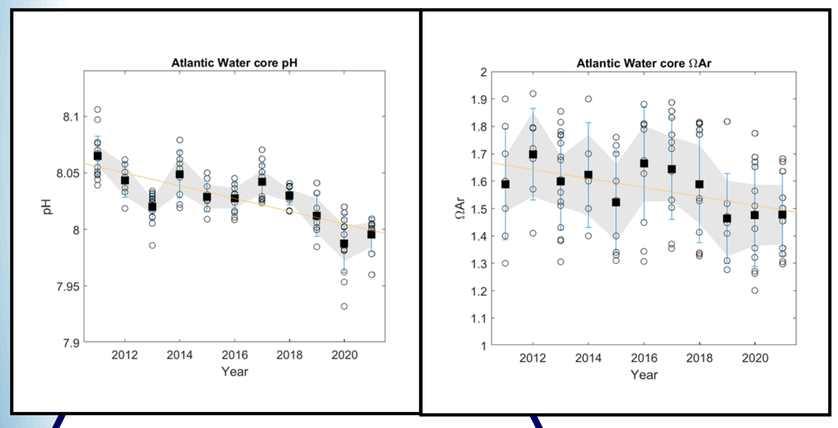
elizabeth.jones@hi.no

Decade of ocean acidification monitoring

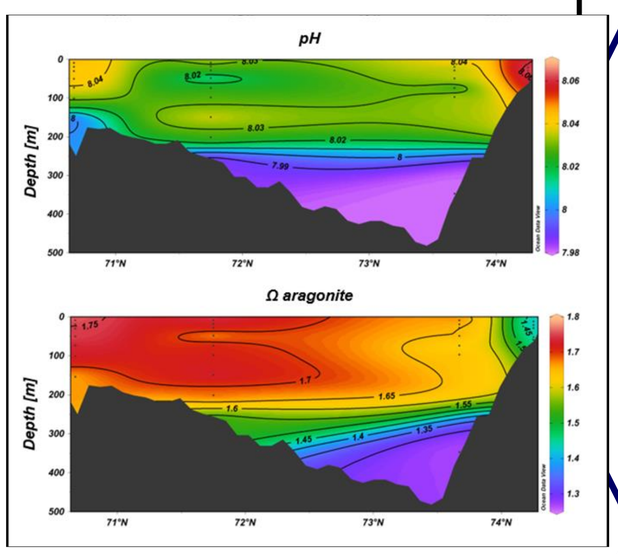
Long-term observations of pH and carbonate saturation (Ω) identify drivers of ocean acidification in Atlantic- and Arctic waters



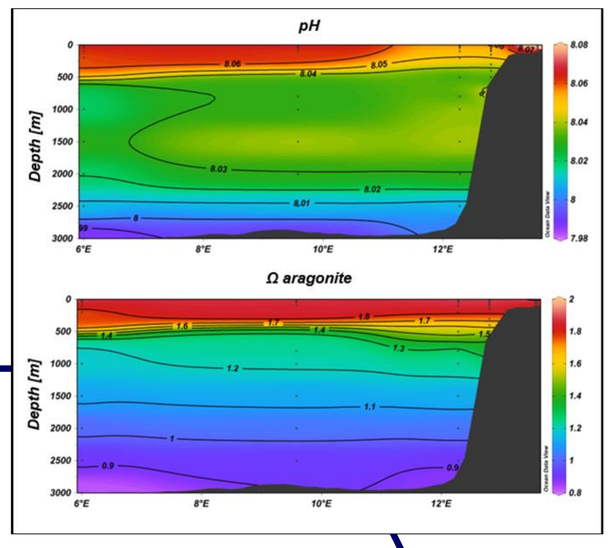
Barents Sea



Trends of annual means 2011-2021 in Atlantic Water
pH –0.006 yr $^{-1}$
Ω –0.02 yr $^{-1}$

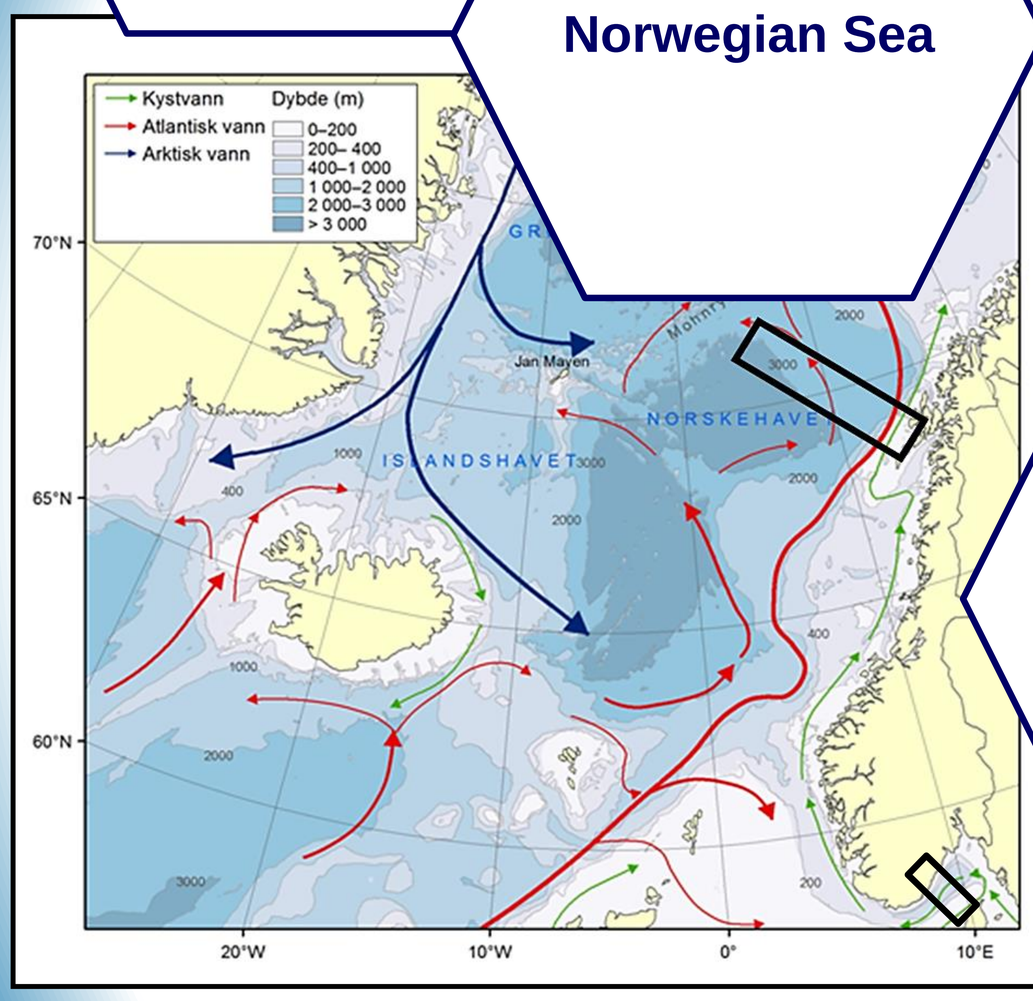


Variability from Atlantic and Arctic waters. Organic matter remineralisation and freshwater input decreases pH and Ω in Arctic water

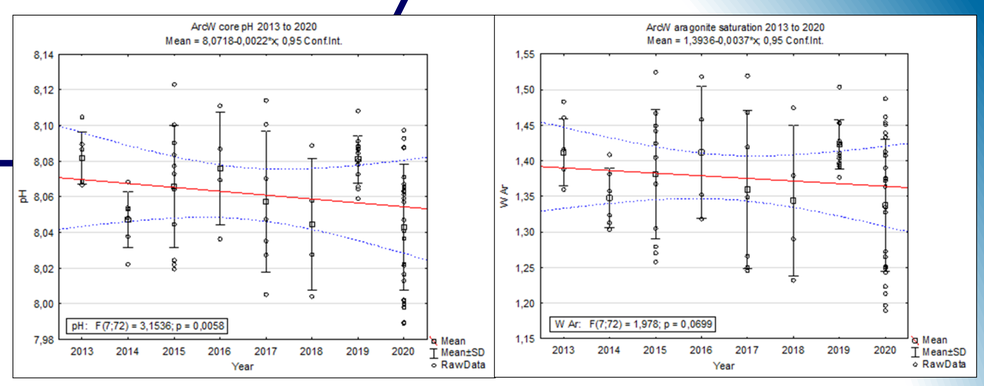


Variability driven by mixing of water masses. Anthropogenic CO_2 and organic matter remineralisation (releases CO_2) decreases pH and Ω in Atlantic Water

Norwegian Sea

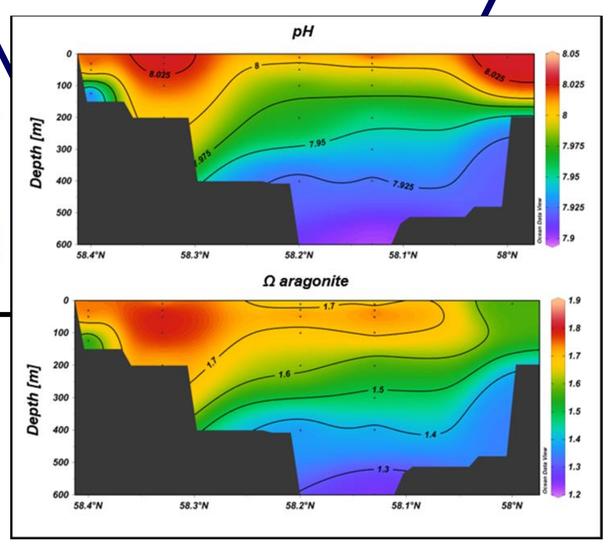


Trends of annual means 2013-2020 in Arctic water
pH –0.002 yr $^{-1}$
Ω –0.004 yr $^{-1}$

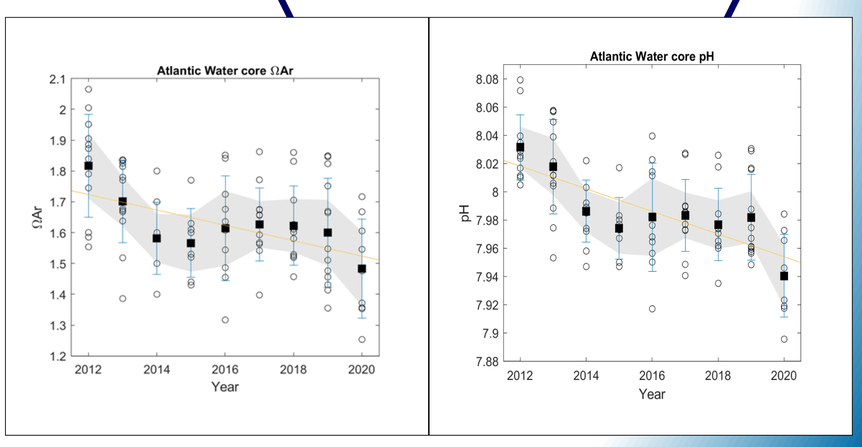


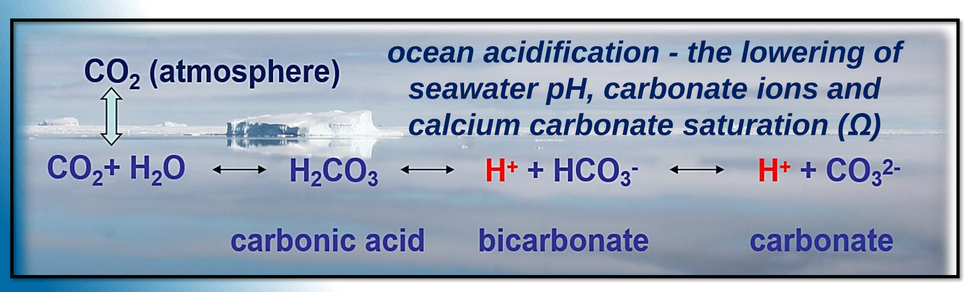
Variability driven by mixing of water masses. Anthropogenic CO_2 and organic matter remineralisation (releases CO_2) decreases pH and Ω in Atlantic Water

North Sea (Skagerrak)



Trends of annual means 2012-2020 in Atlantic Water
pH –0.008 yr $^{-1}$
Ω –0.03 yr $^{-1}$





This work is part of *Monitoring ocean acidification in Norwegian Seas* funded by the Norwegian Environment Agency.