

Subglacial discharges create fluctuating foraging “hot spots” for sea birds in tidewater glacier bays

Jacek Andrzej Urbanski 1, Lech Stempniewicz², Jan Marcin Węstawski³, Katarzyna Dragańska-Deja 3, Agnieszka Wochna¹, Michał Goc 2, Lech Iliszko 2

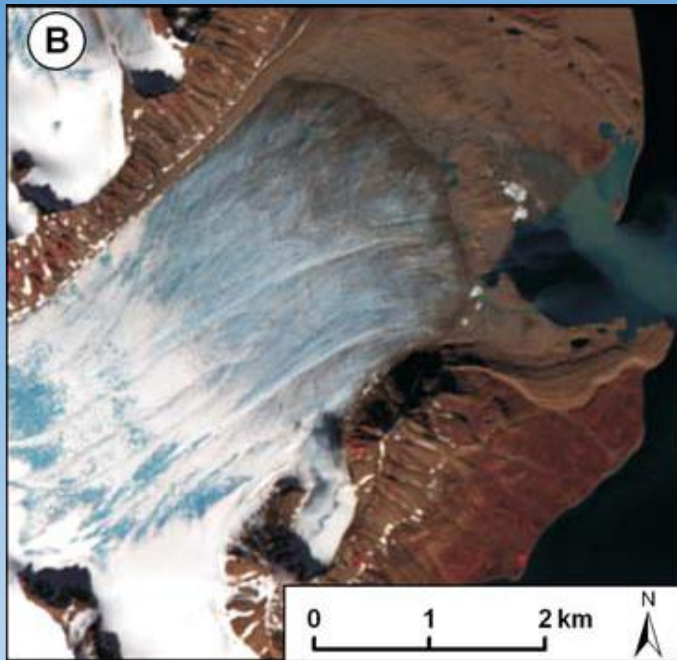
<http://www.iopan.gda.pl/projects/GLAERE/>

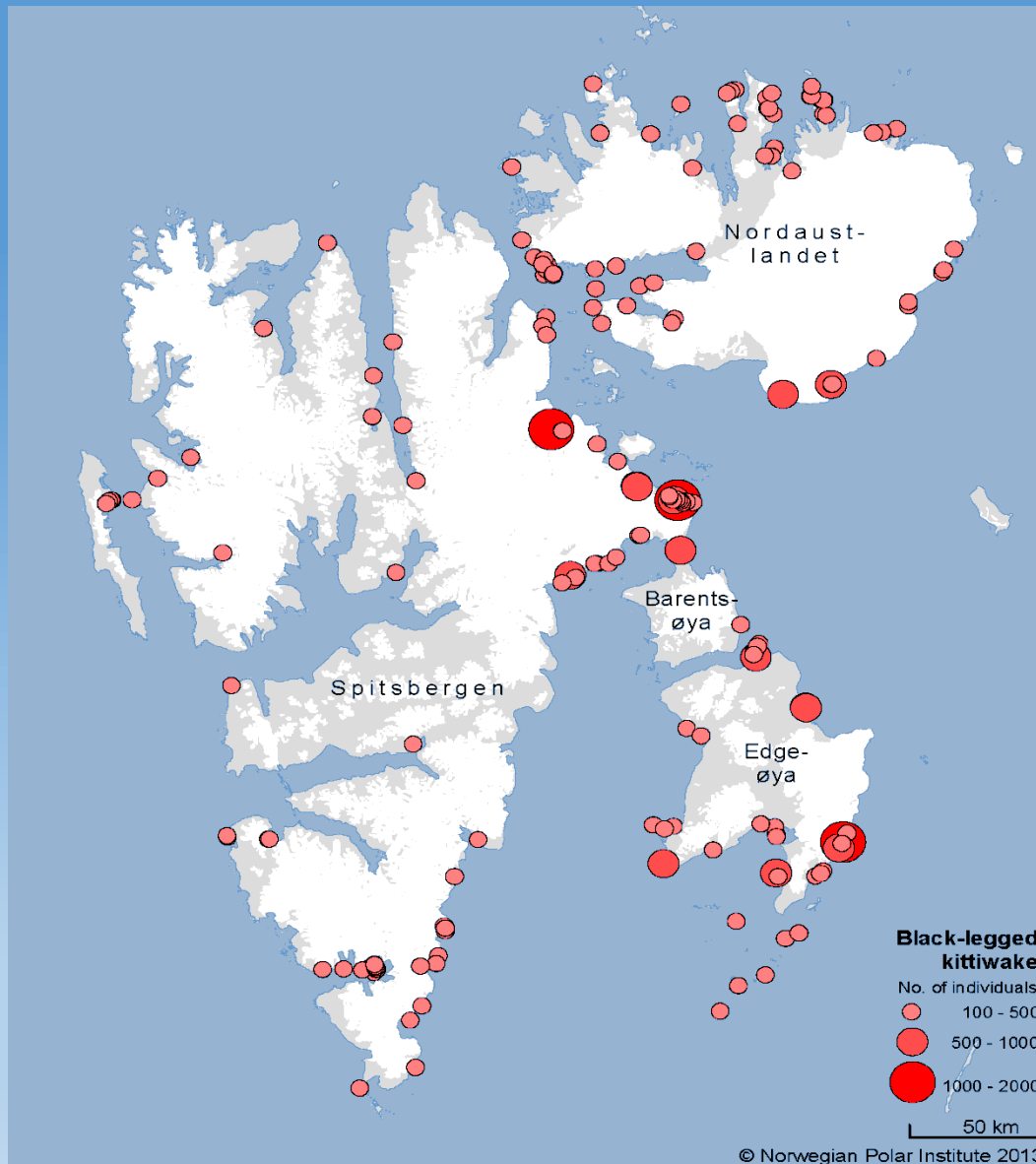


1 GIS Centre, University of Gdansk, , Poland. 2 Department of Vertebrate Ecology and Zoology, University of Gdansk, 3 Institute of Oceanology, Polish Academy of Sciences,

Length of tide water glaciers cliffs on Svalbard - 1028km
Annual calving loss 5 to 8 km³ of freshwater/ year
14 tidal glaciers recently terminated on land

Błaszczuk et al.. 2009

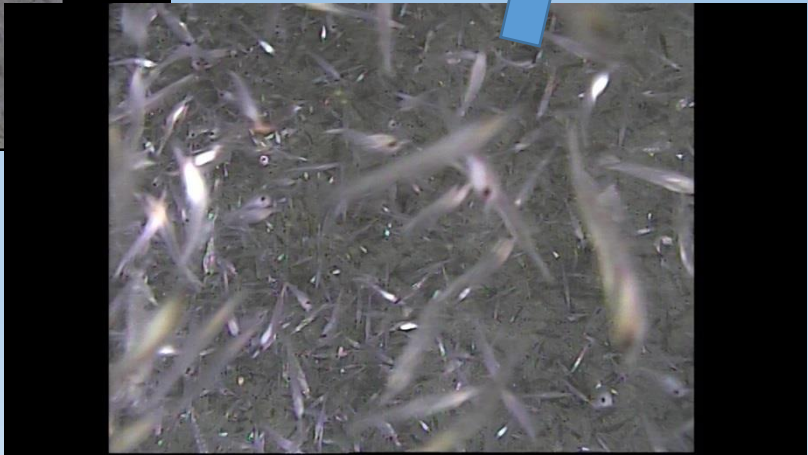
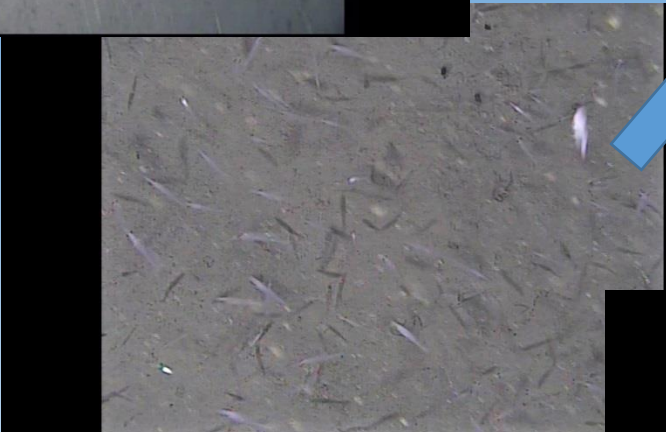
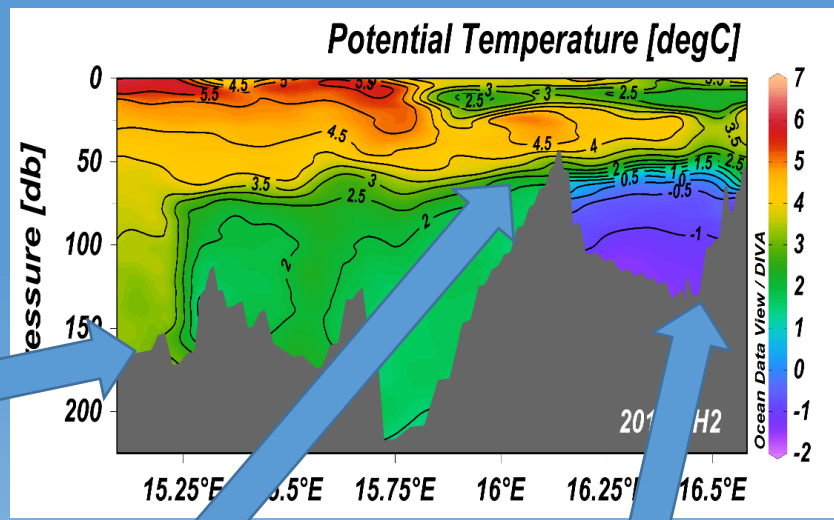




Kittiwakes
Strom & Steen 2013

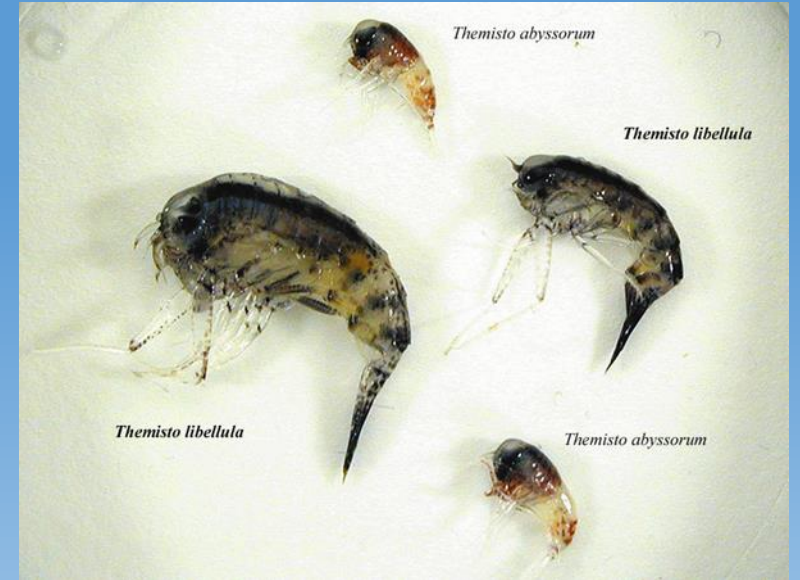
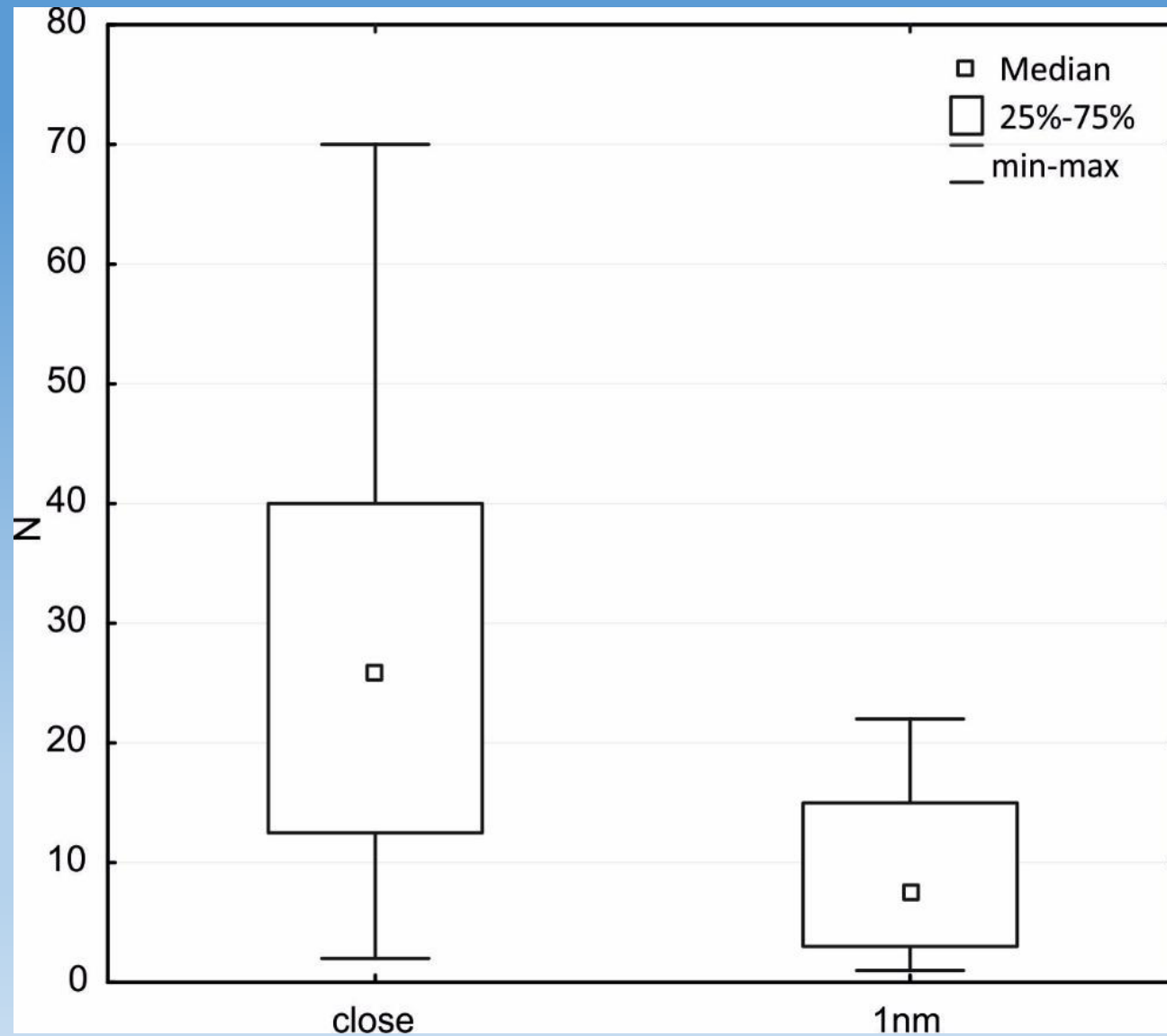
Automated craft for CTD and suspensions profiling in Hornsund – Jacek Urbański & team

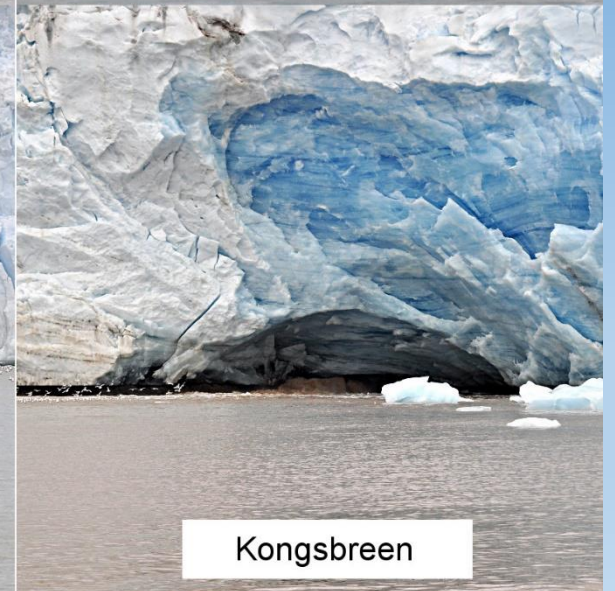
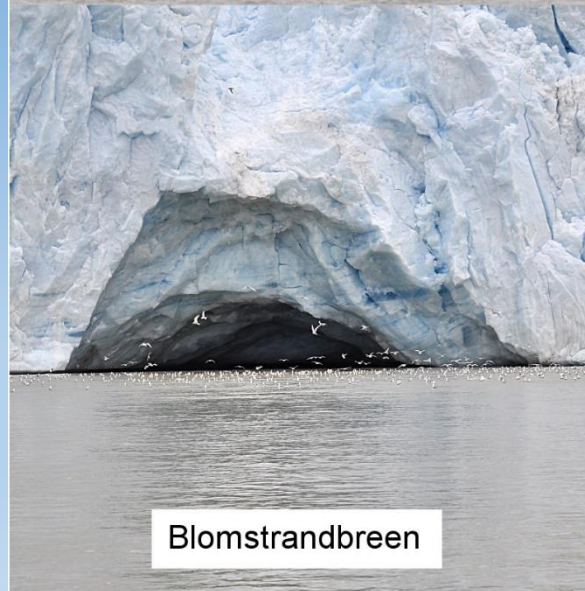
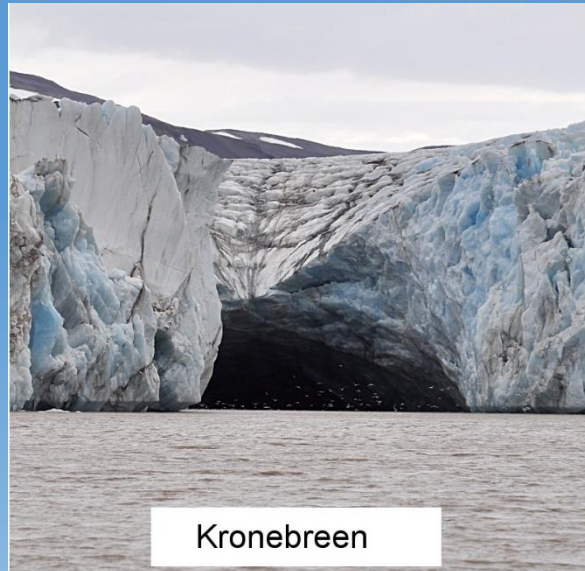
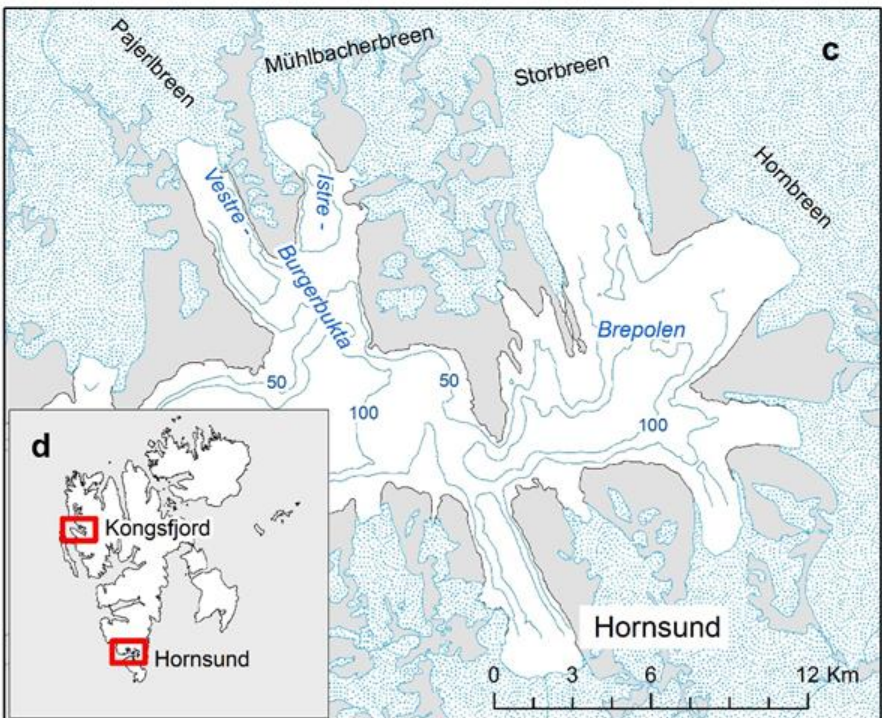
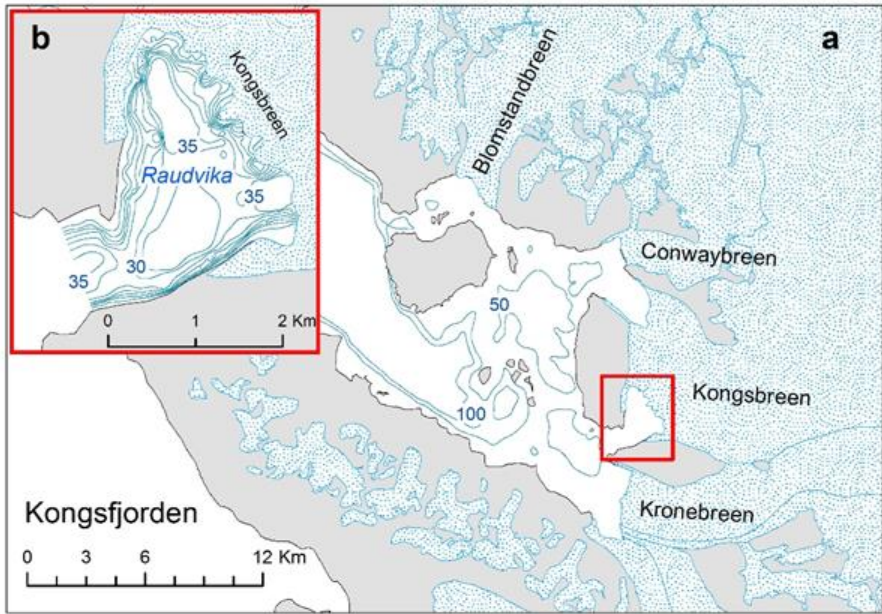




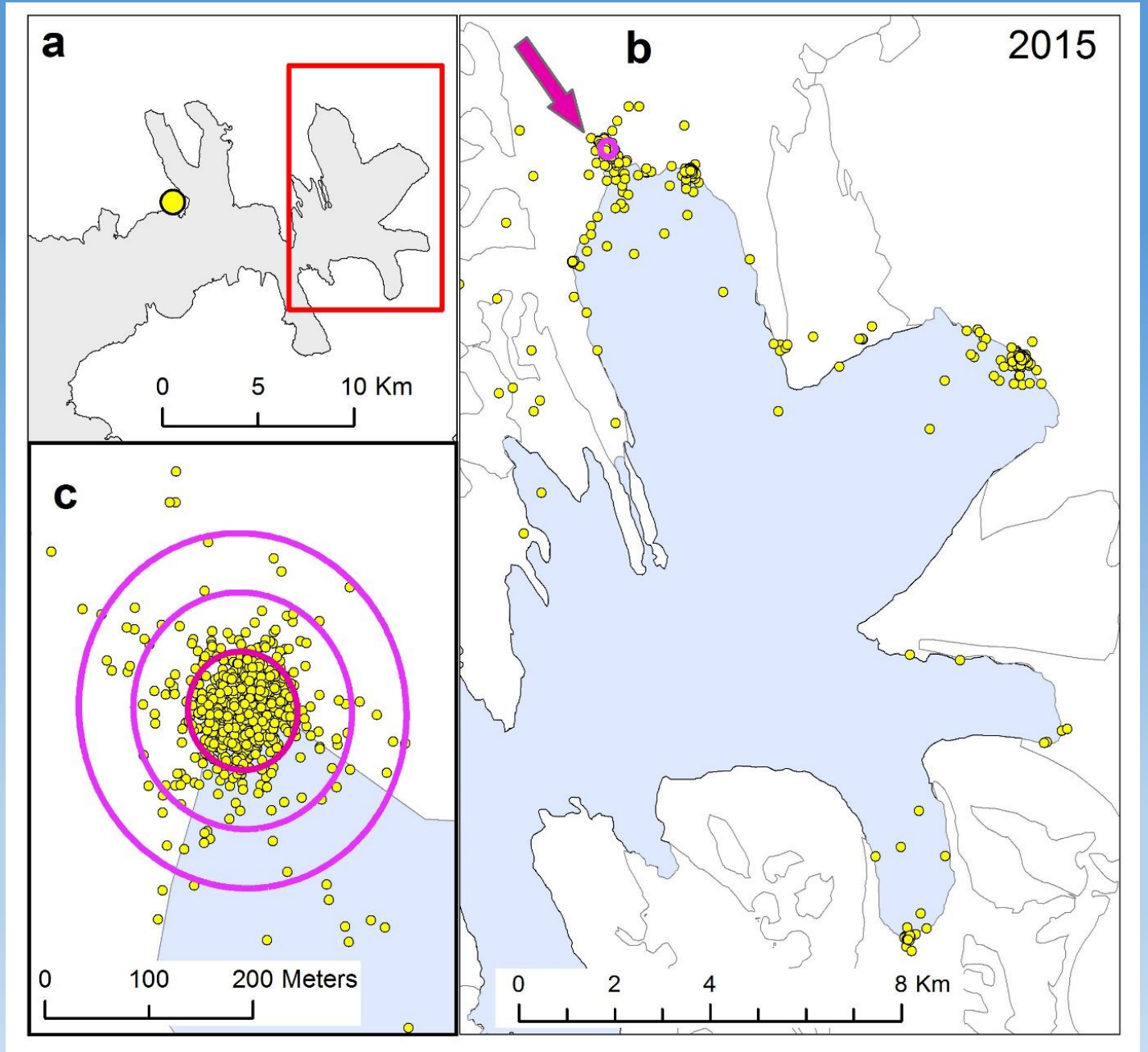
Hornsund, summer 2015, seabed photos

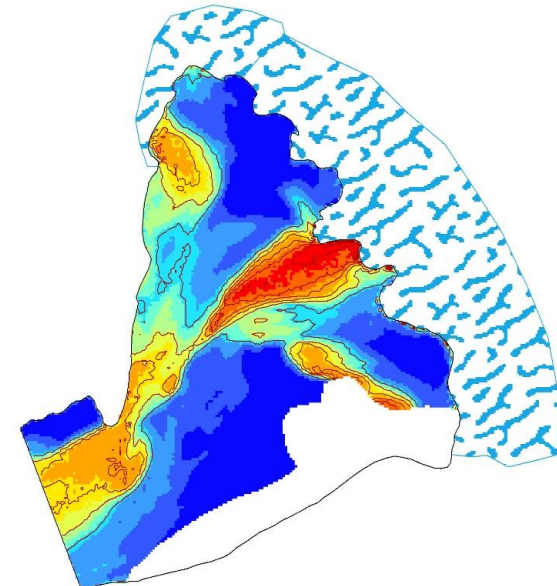
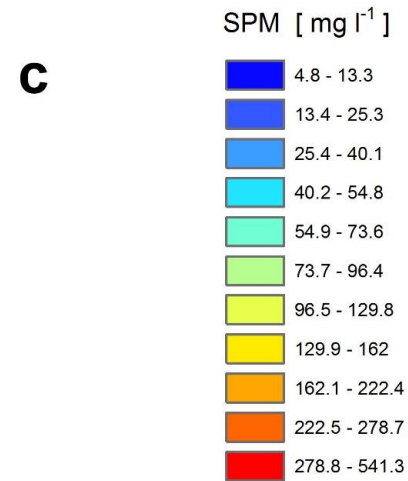
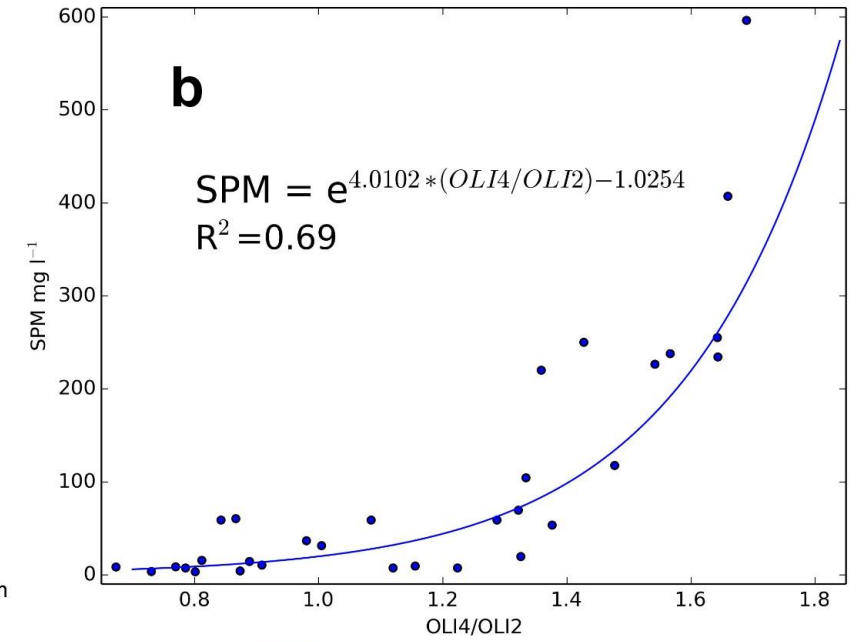
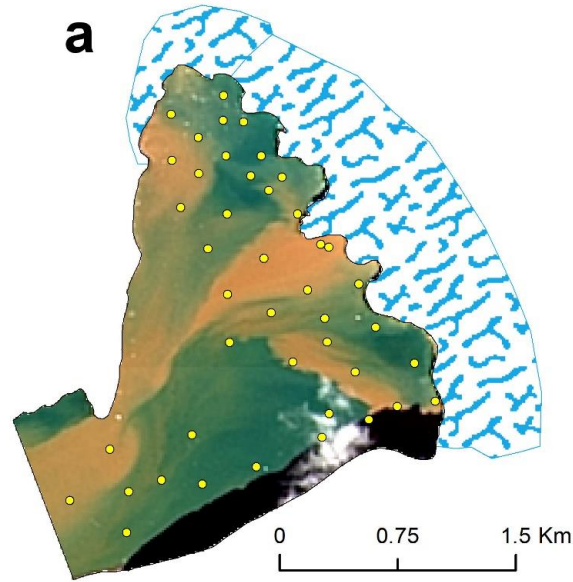
Macrozooplankton from neuston net – close to and far away from glacier

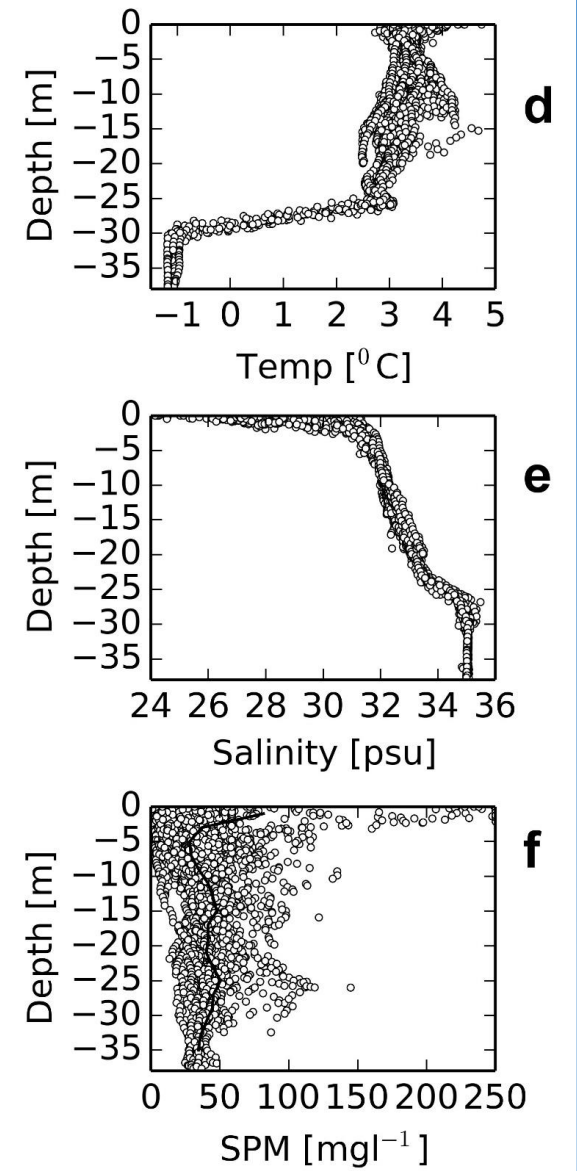
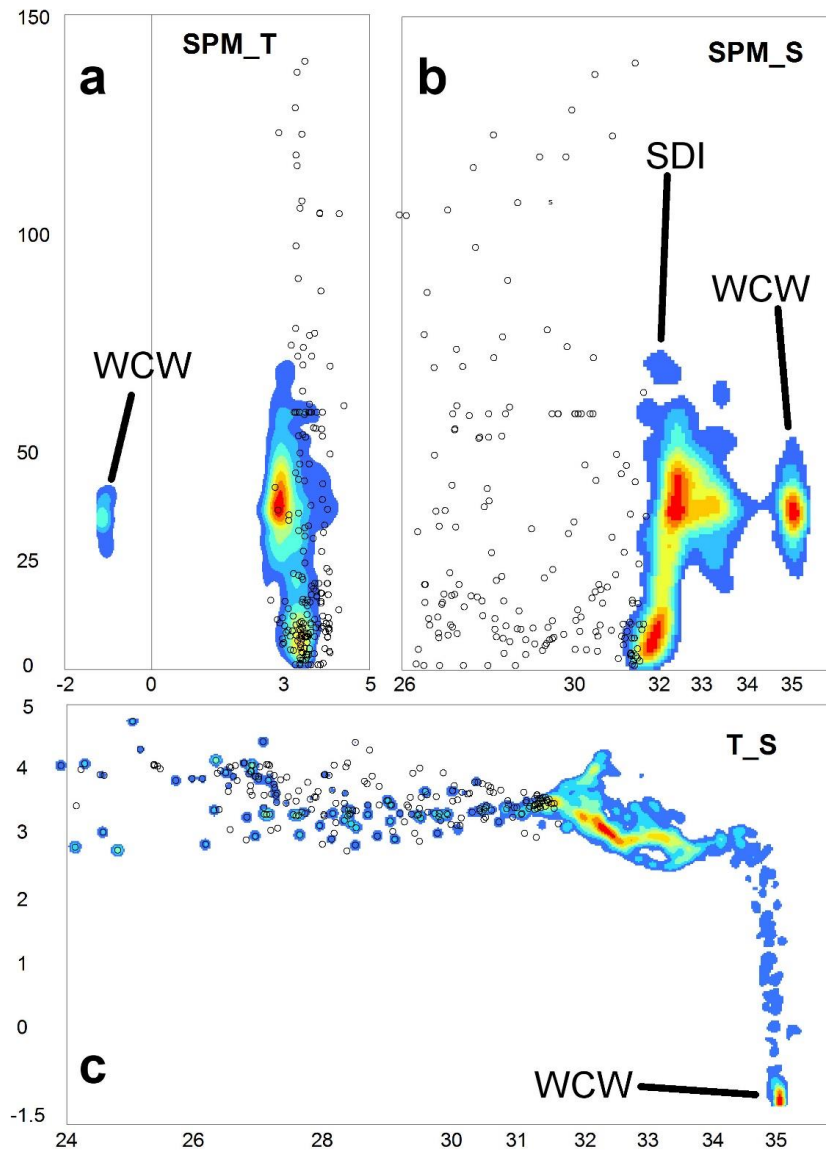


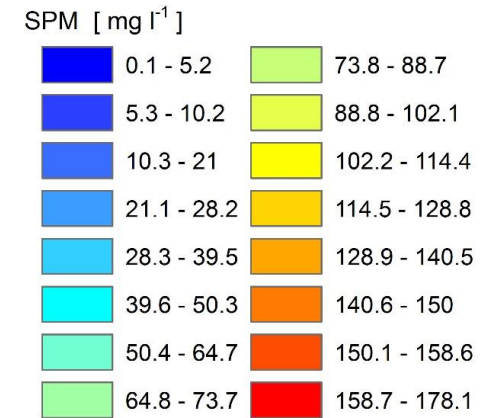
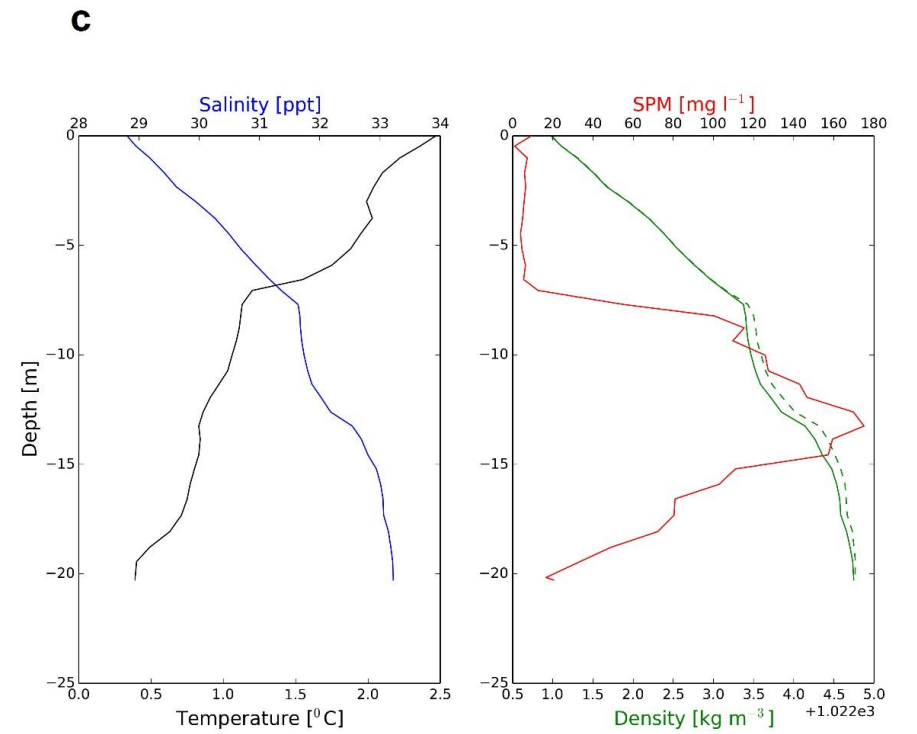
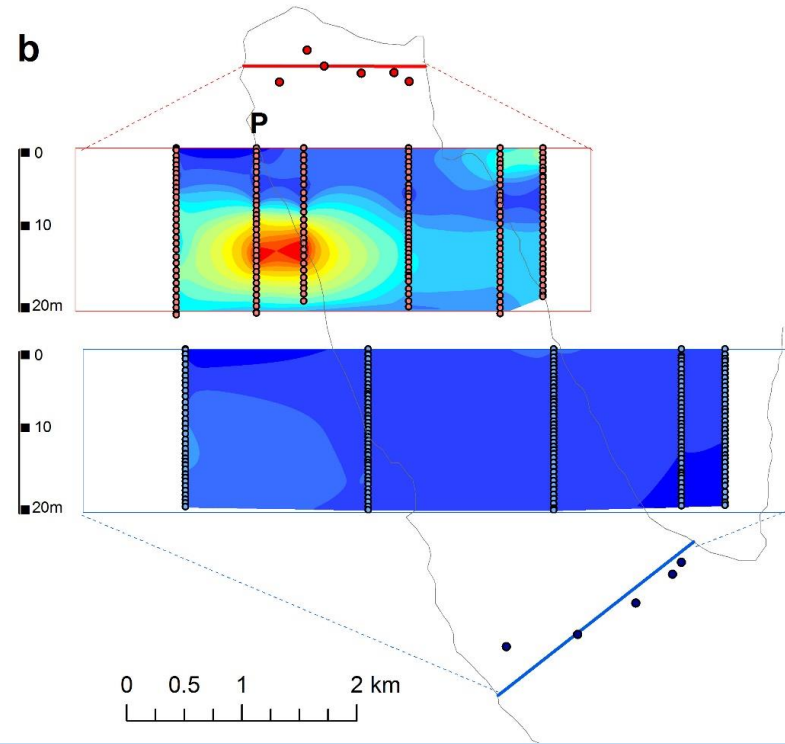
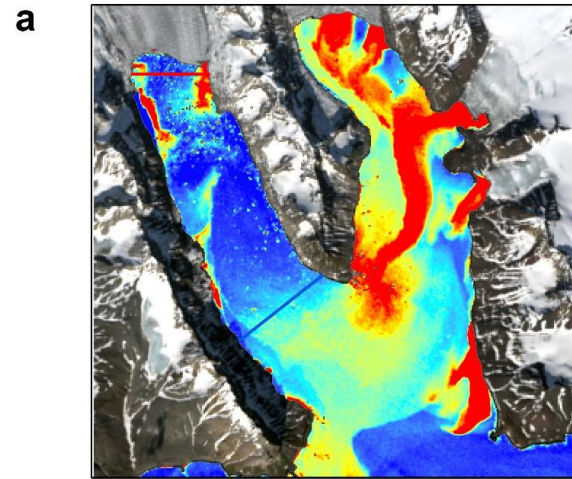


Twelve radiotagged kittiwakes show contact with the water (zero velocity) and indicate activity of feeding population – about 1000 birds









Three from the four observed scenarios provide food supply for surface feeding birds

