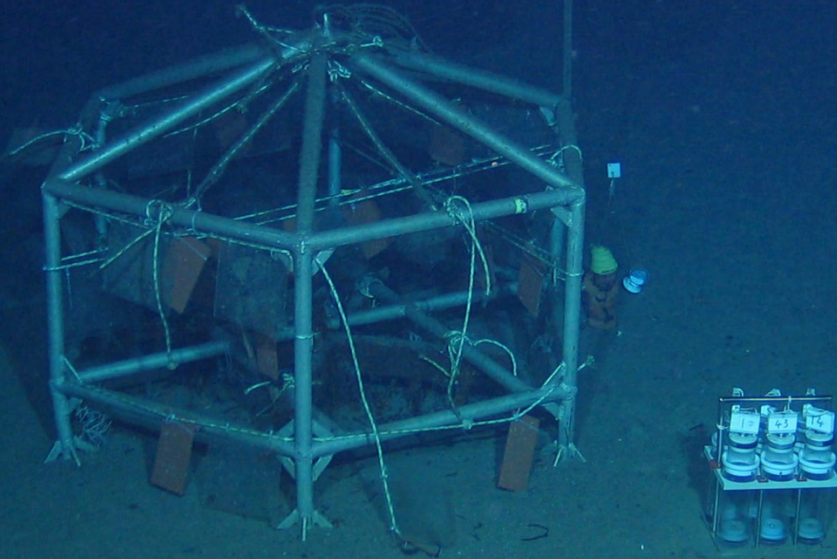


# RESULTS OF A LONG-TERM RECRUITMENT EXPERIMENT IN THE ARCTIC DEEP SEA IN THE LTER HAUSGARTEN (79° N, 4° E, 2500 M DEPTH)



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Melanie Bergmann, Thomas Soltwedel, Michael Klages

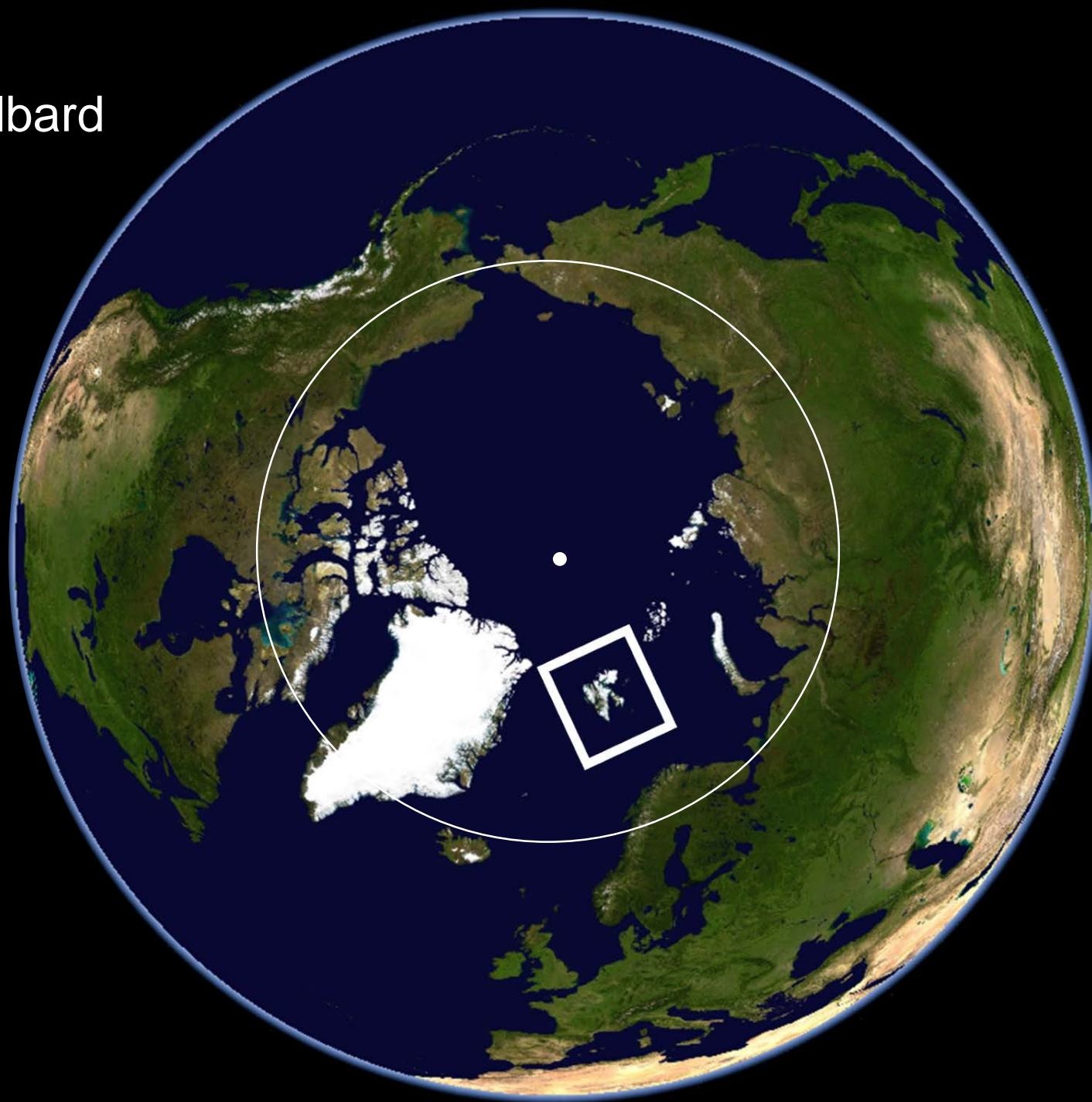
Deep-Sea Group, Alfred Wegener Institute

WHOI

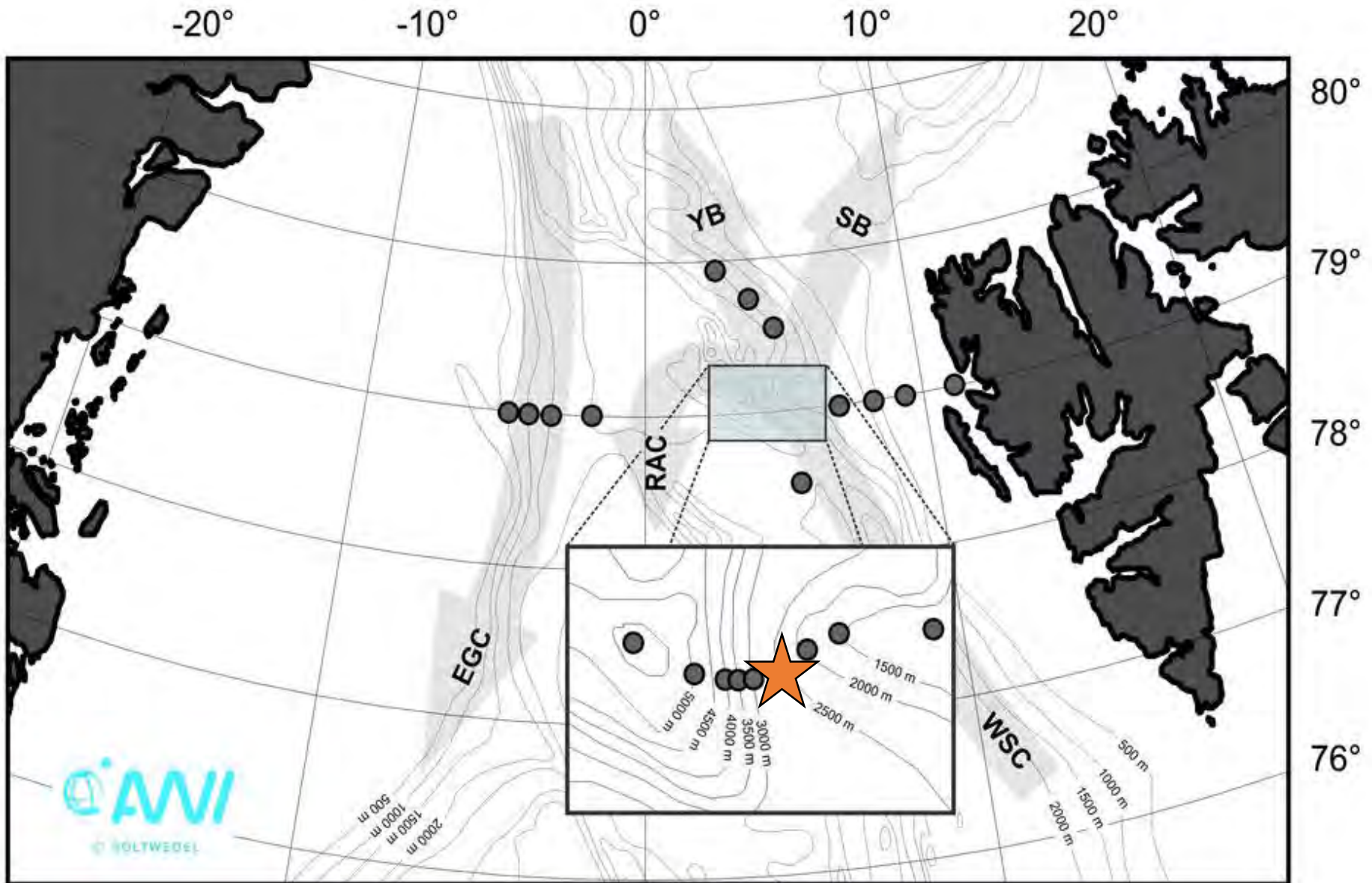


IFM-GEOMAR

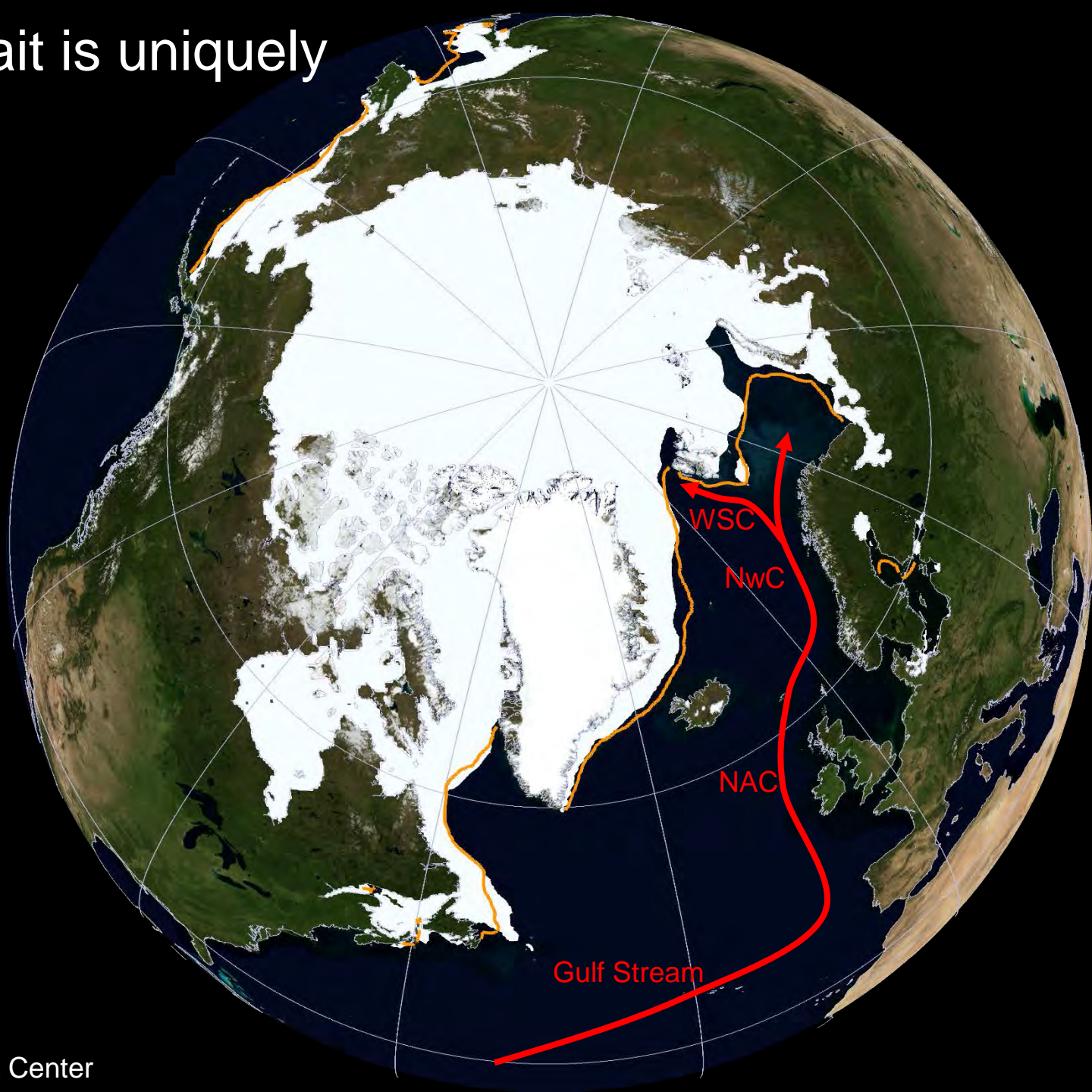
Svalbard



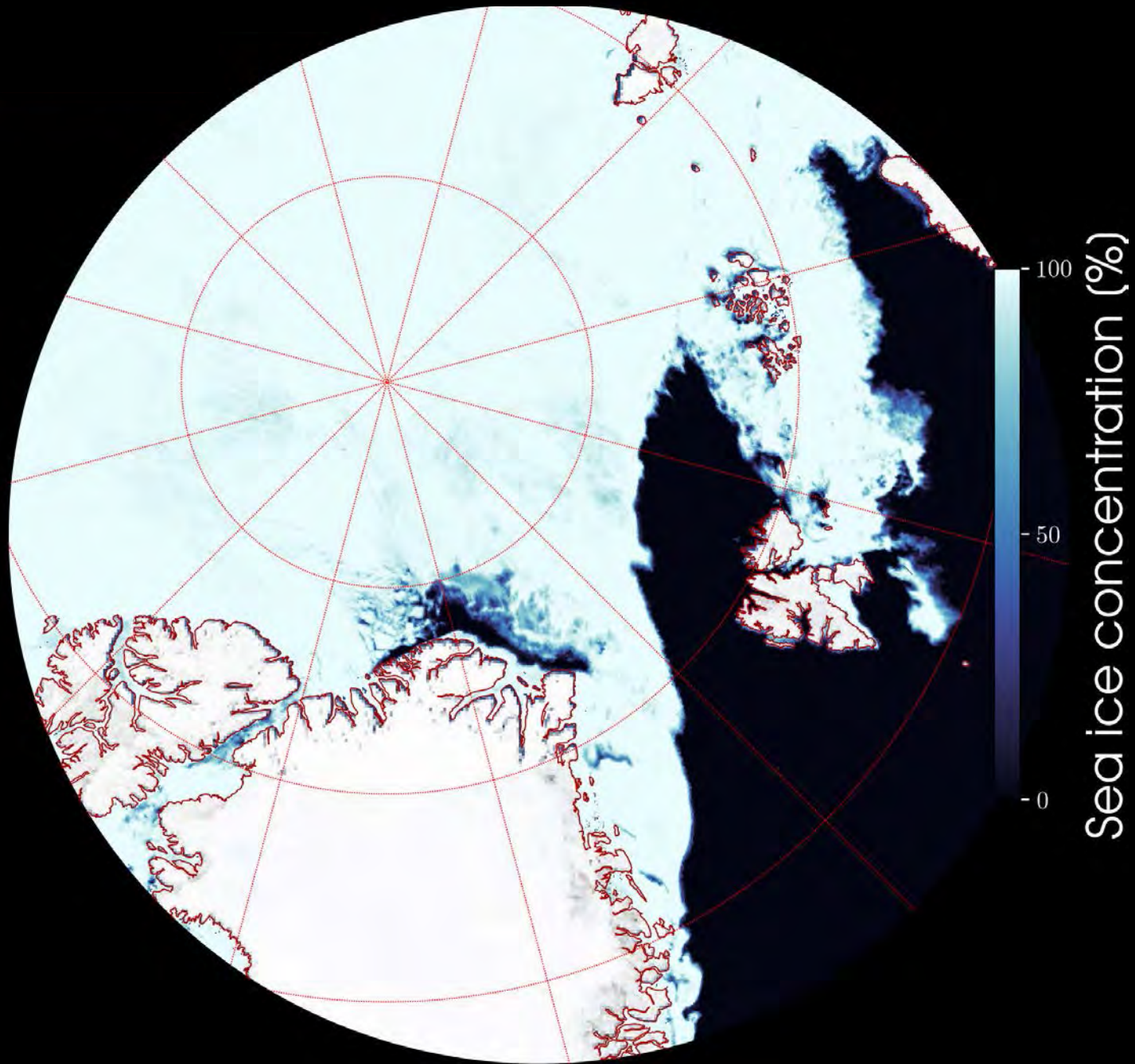
# HAUSGARTEN LTER



The Fram Strait is uniquely warm.



Svalbard is rapidly warming.



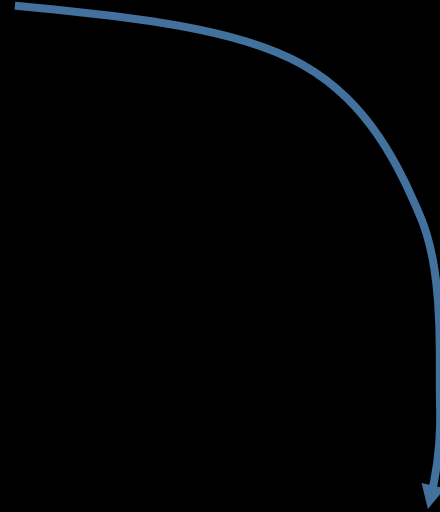
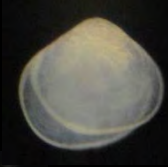
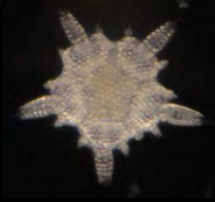
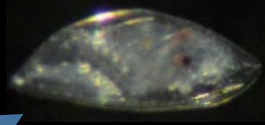








# Larval dispersal



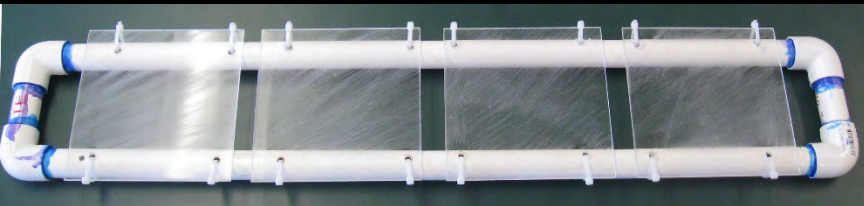
Settlement

Recruitment





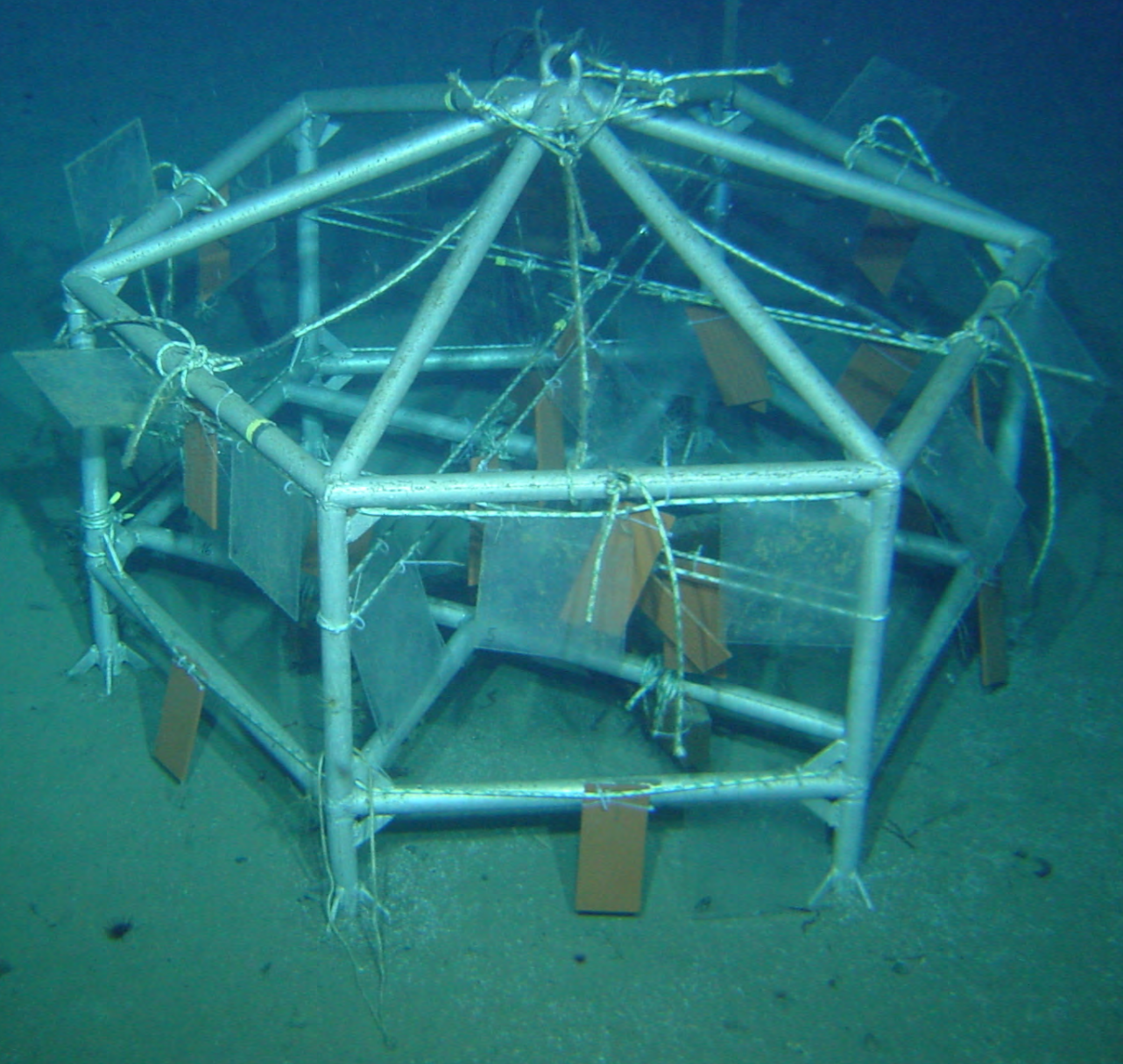
Recruitment



Experiment

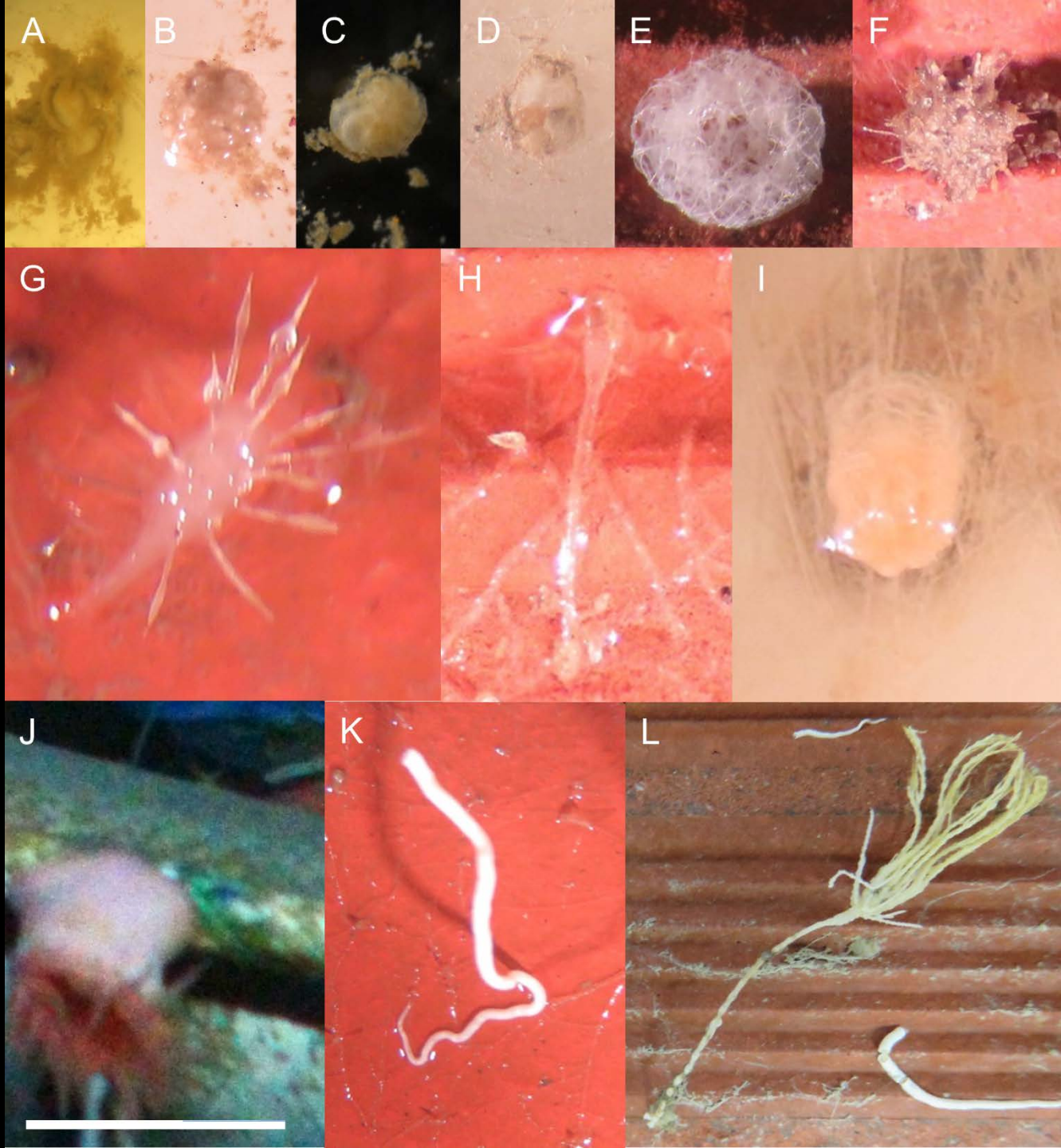


# Long-term recruitment experiment 1999 – 2017



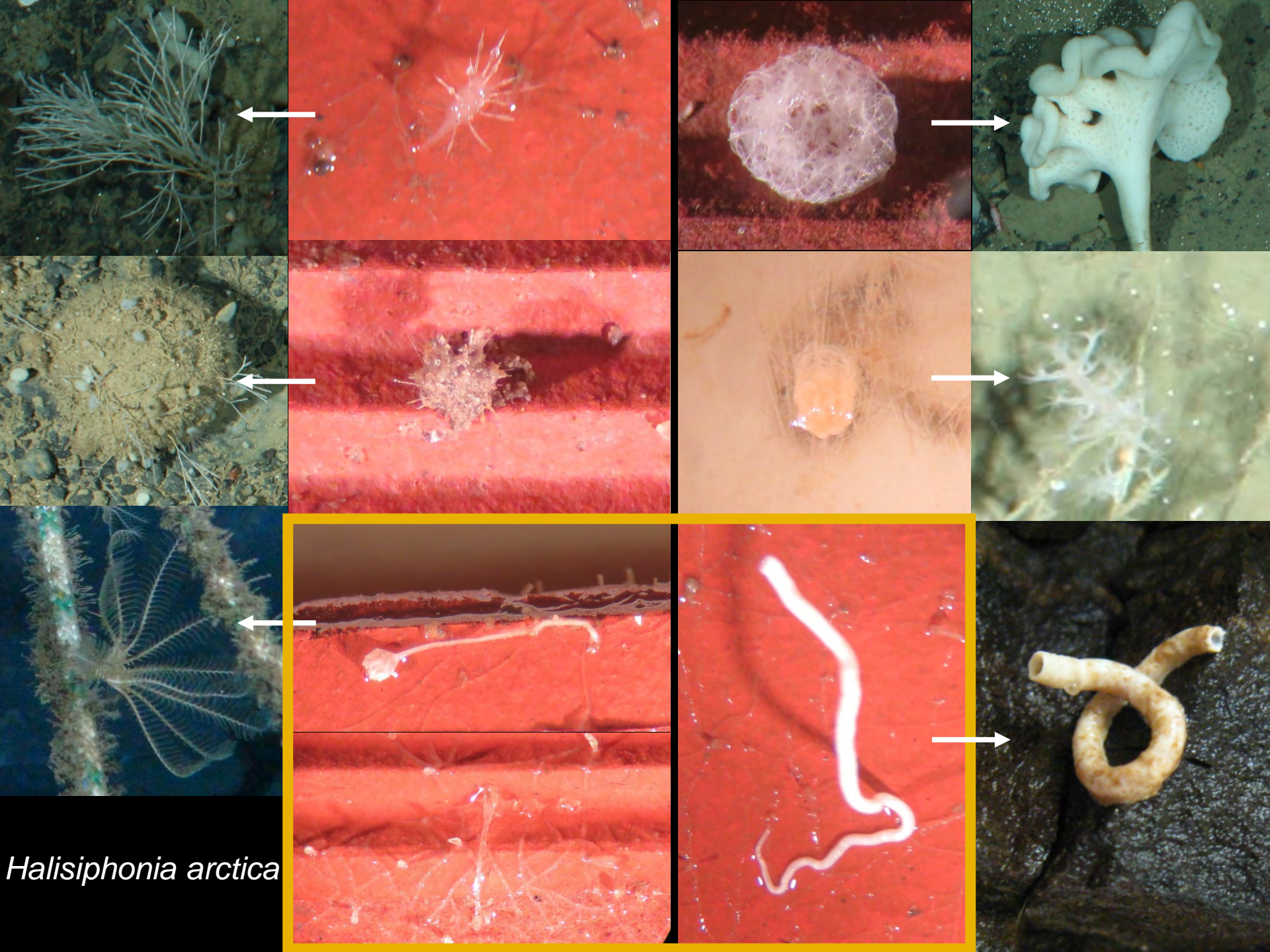








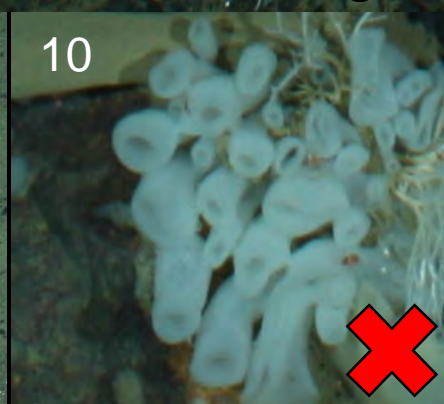
ROV KIEL6000 2017-08-31 16:56:37

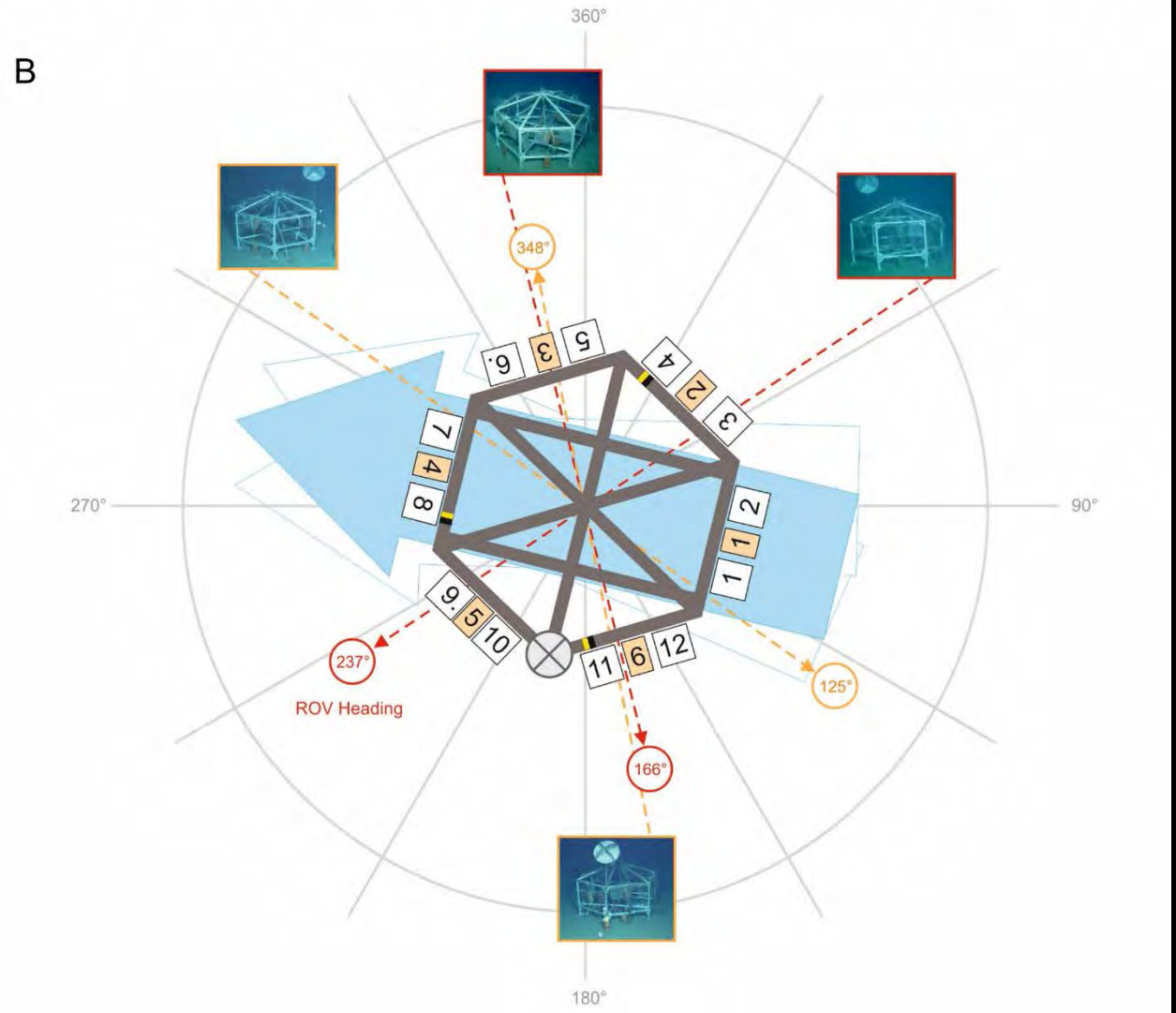
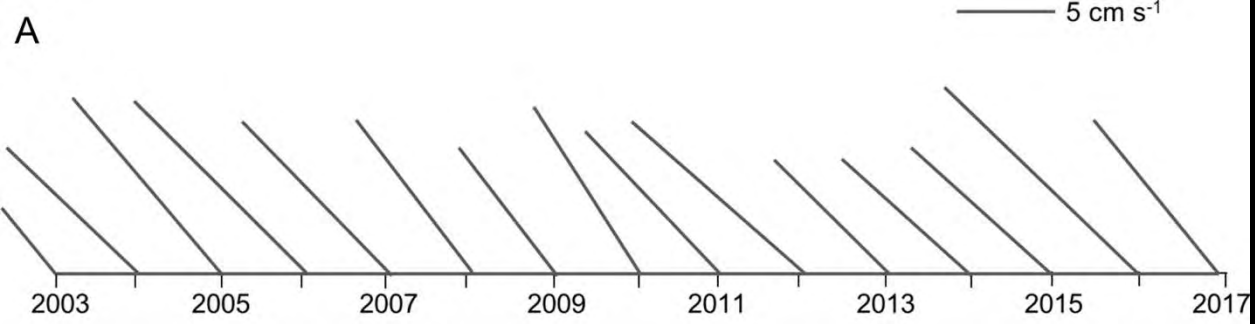


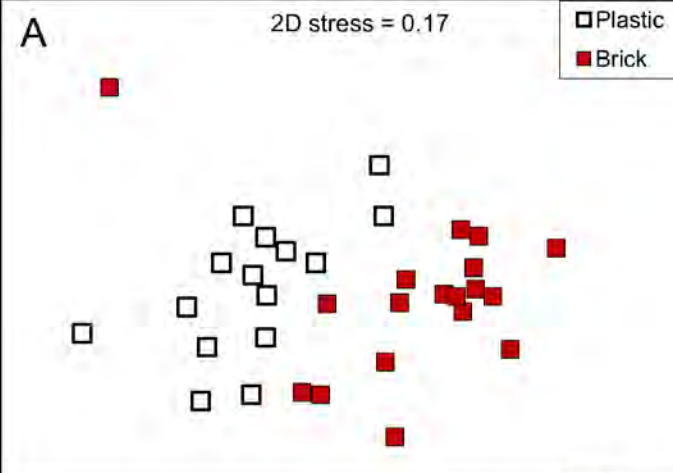
*Halisiphonia arctica*



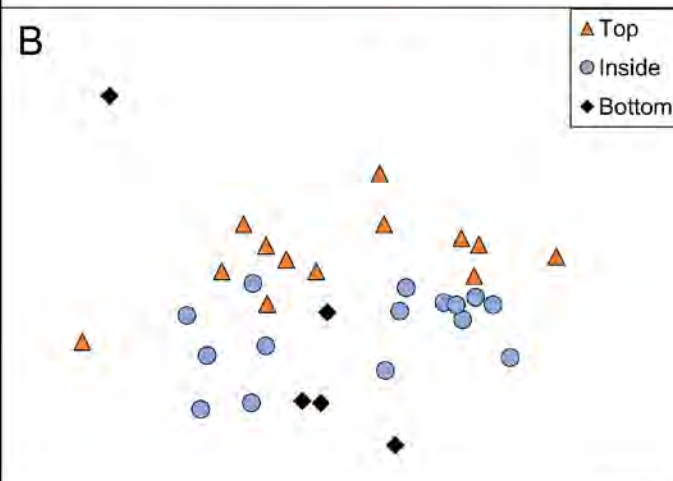
The most common adult species are not necessarily present as recruits.



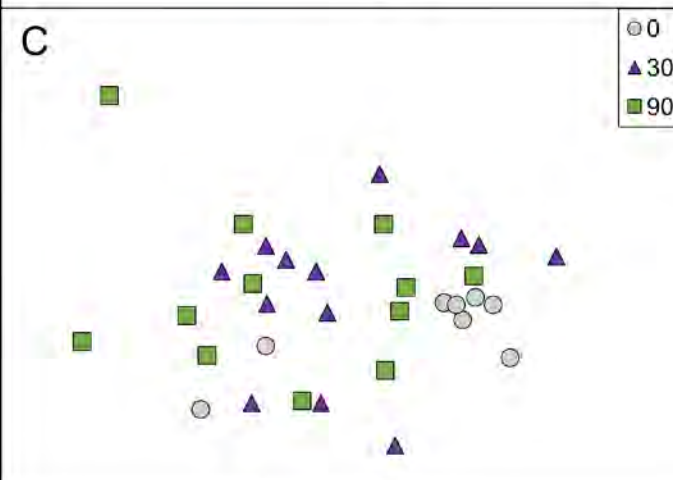




- Significant difference between panels of different materials (PERMANOVA,  $p=0.007$ )

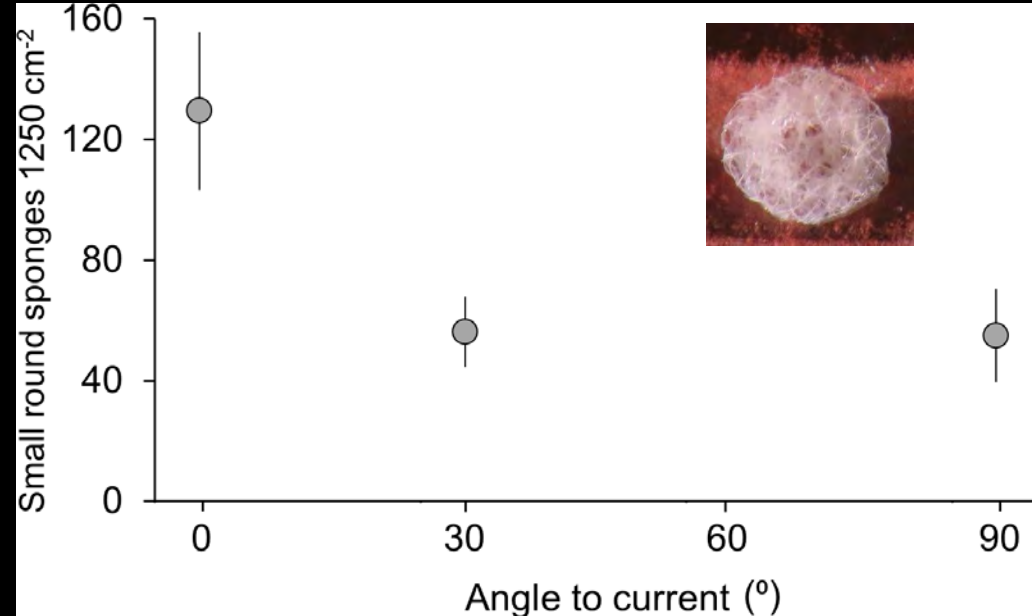
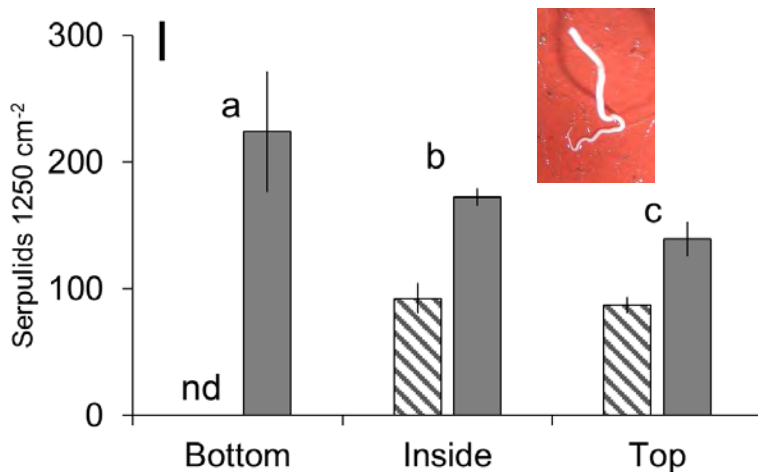
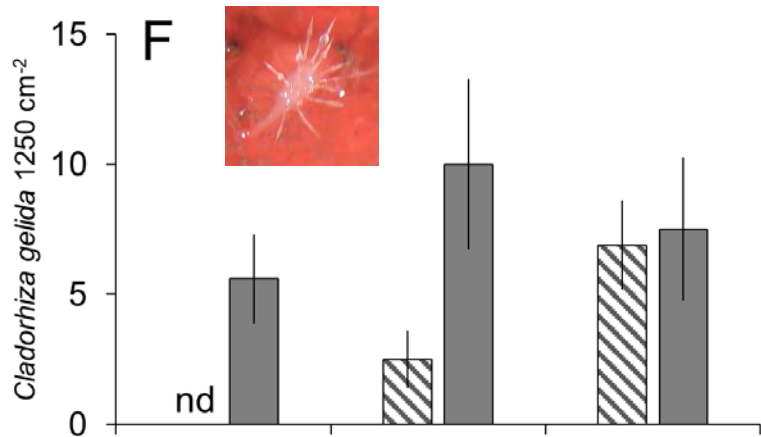
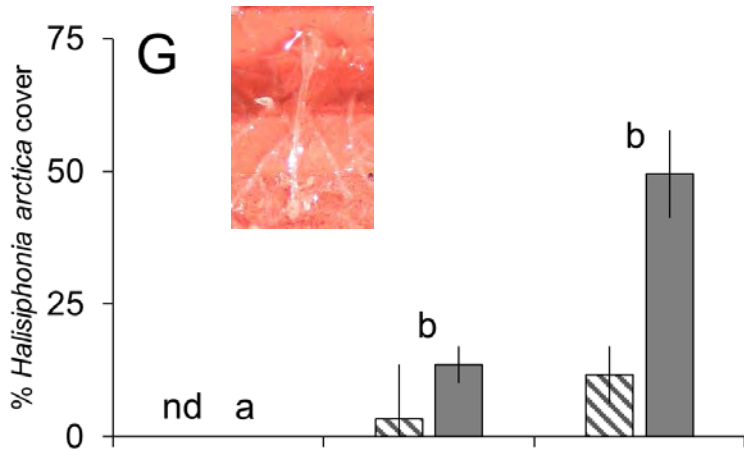


- Significant difference among panels at different altitudes (PERMANOVA,  $p=0.044$ )



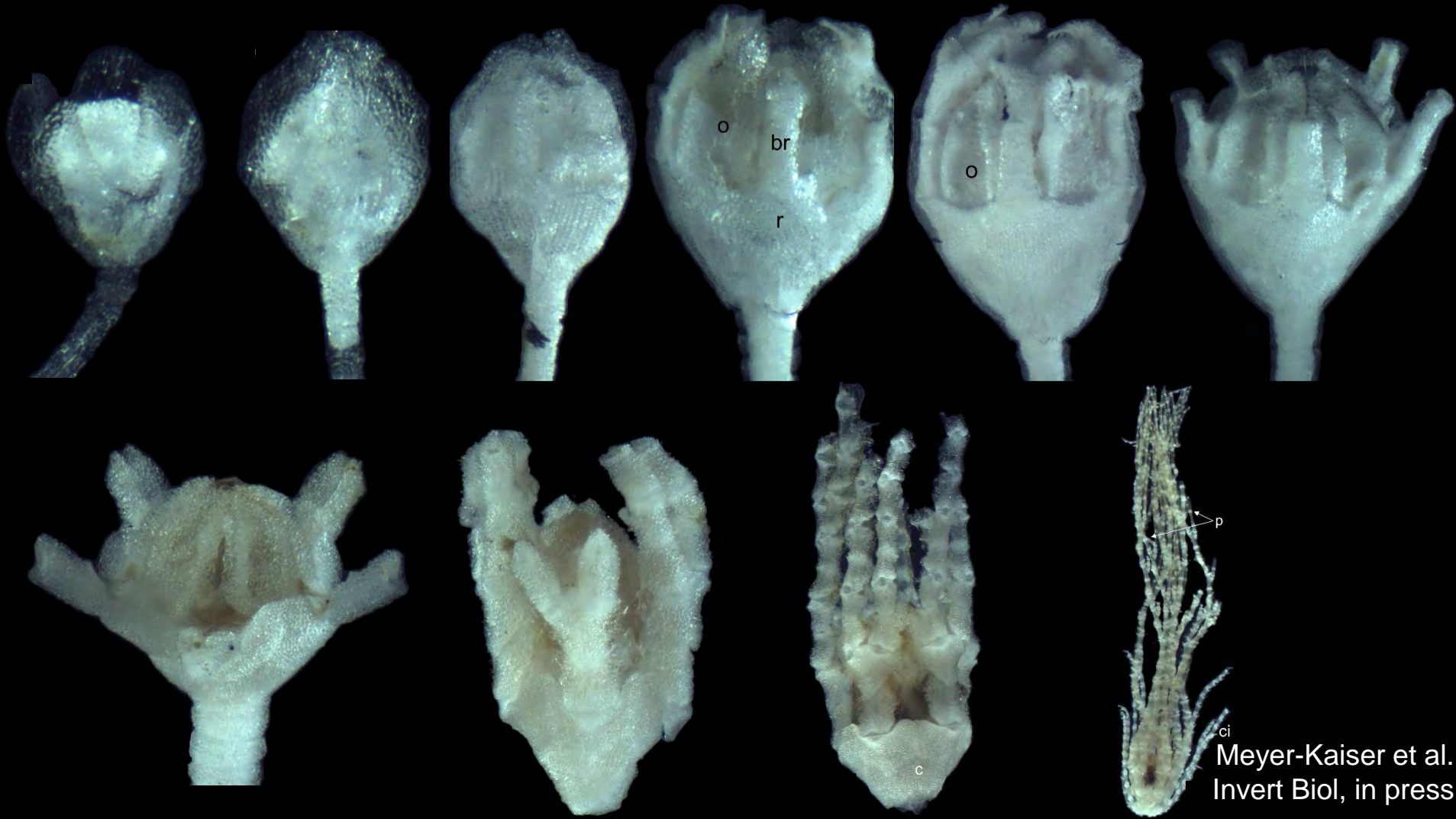
- No significant difference among panels at different orientations

# Species-specific recruitment patterns





# *Poliometra proluxa* metamorphosis

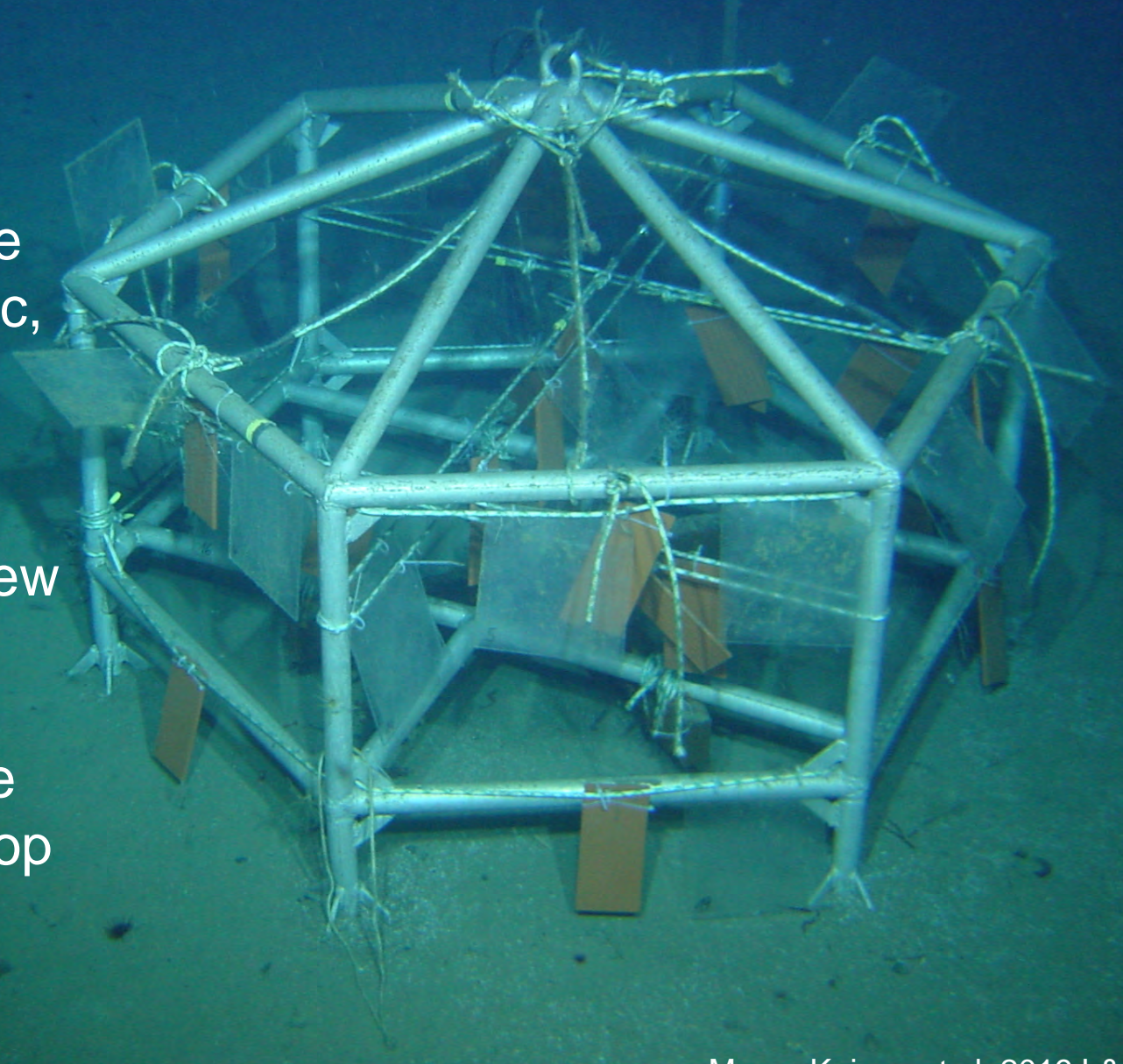


# Insights from the long-term experiment 1999 – 2017

Recruitment in the  
Arctic is stochastic,  
patchy

High number of  
individuals from few  
species

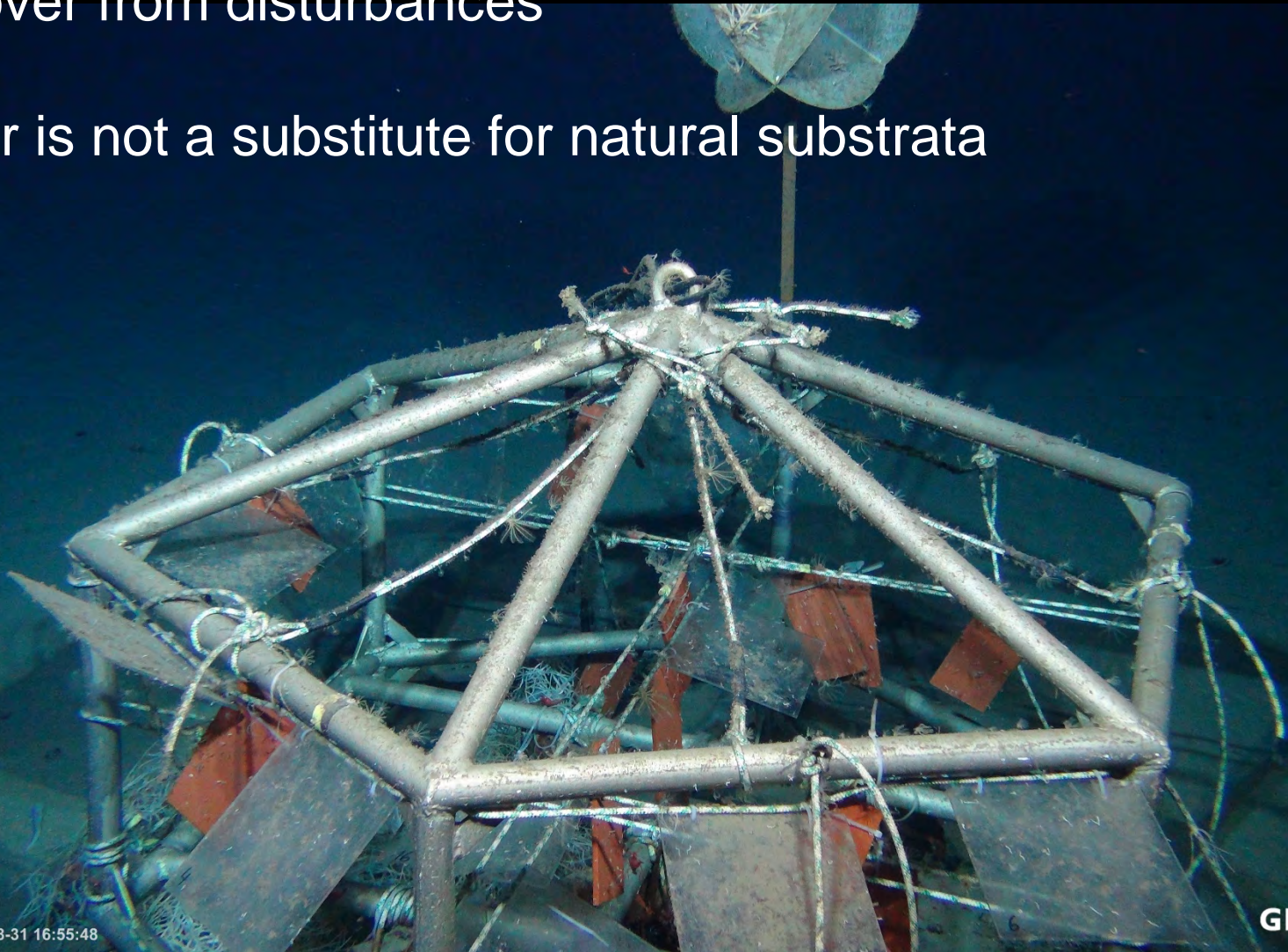
Communities take  
decades to develop



# Implications for anthropogenic activities

Arctic deep-sea communities will take decades to recover from disturbances

Litter is not a substitute for natural substrata





Thank you

I am happy to answer any questions

