

# Bowhead whales in Northeast Greenland

Rikke Guldborg Hansen

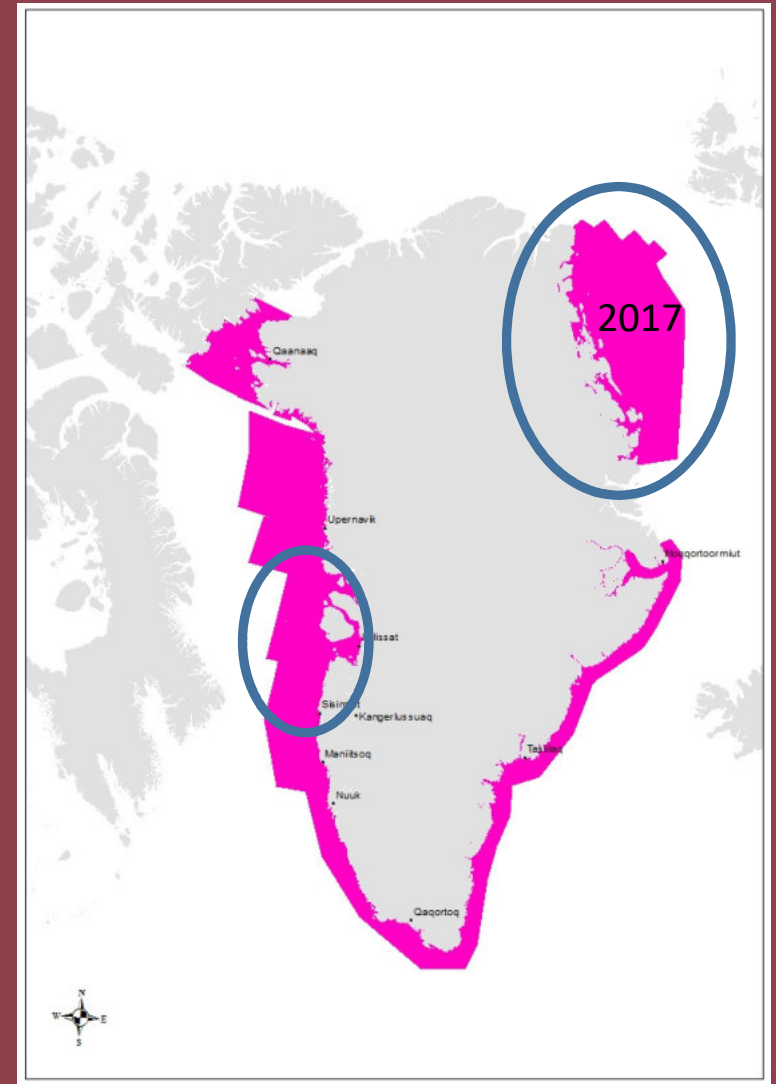


Greenland Institute of Natural Resources  
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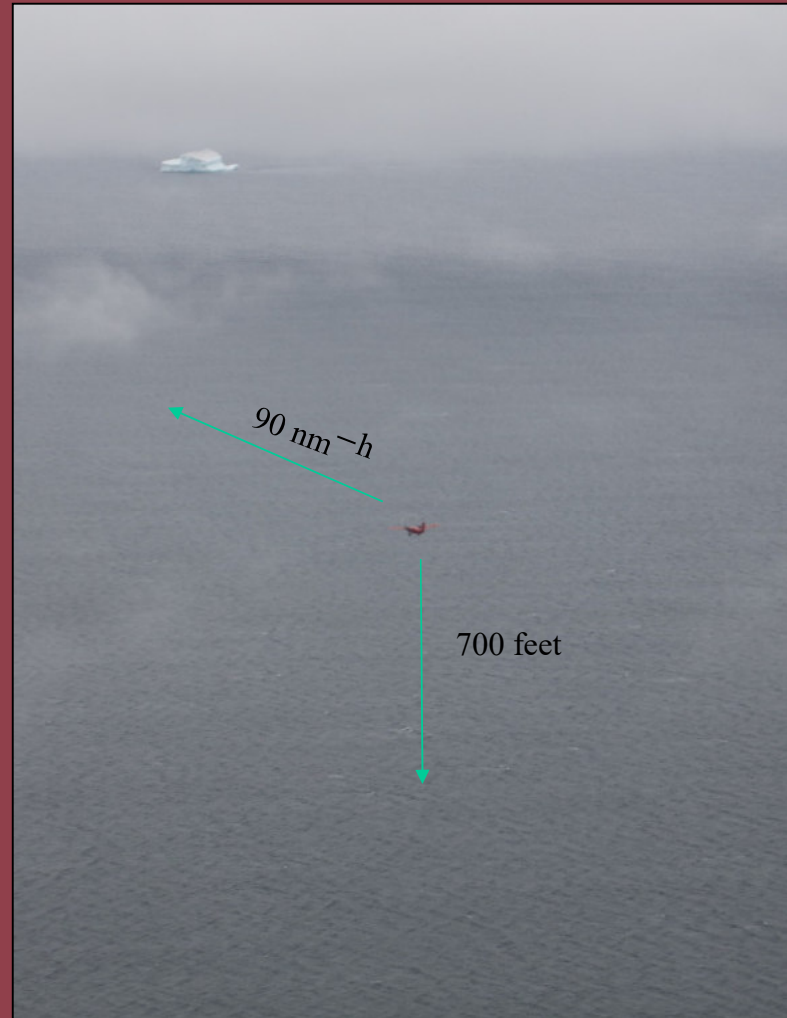
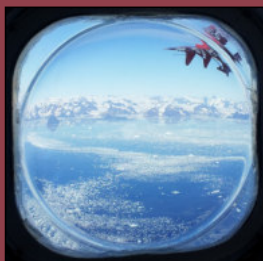


# Aerial surveys in Greenland >30 yrs

- Millions of km<sup>2</sup>
- Thousands of kilometers on effort
- Thousands of hours in the plane
- Countless hours
  - Planning
  - Analyzing
  - Presenting
  - Discussing
  - Scientific advice



# Aerial surveys in Greenland



## Winter survey

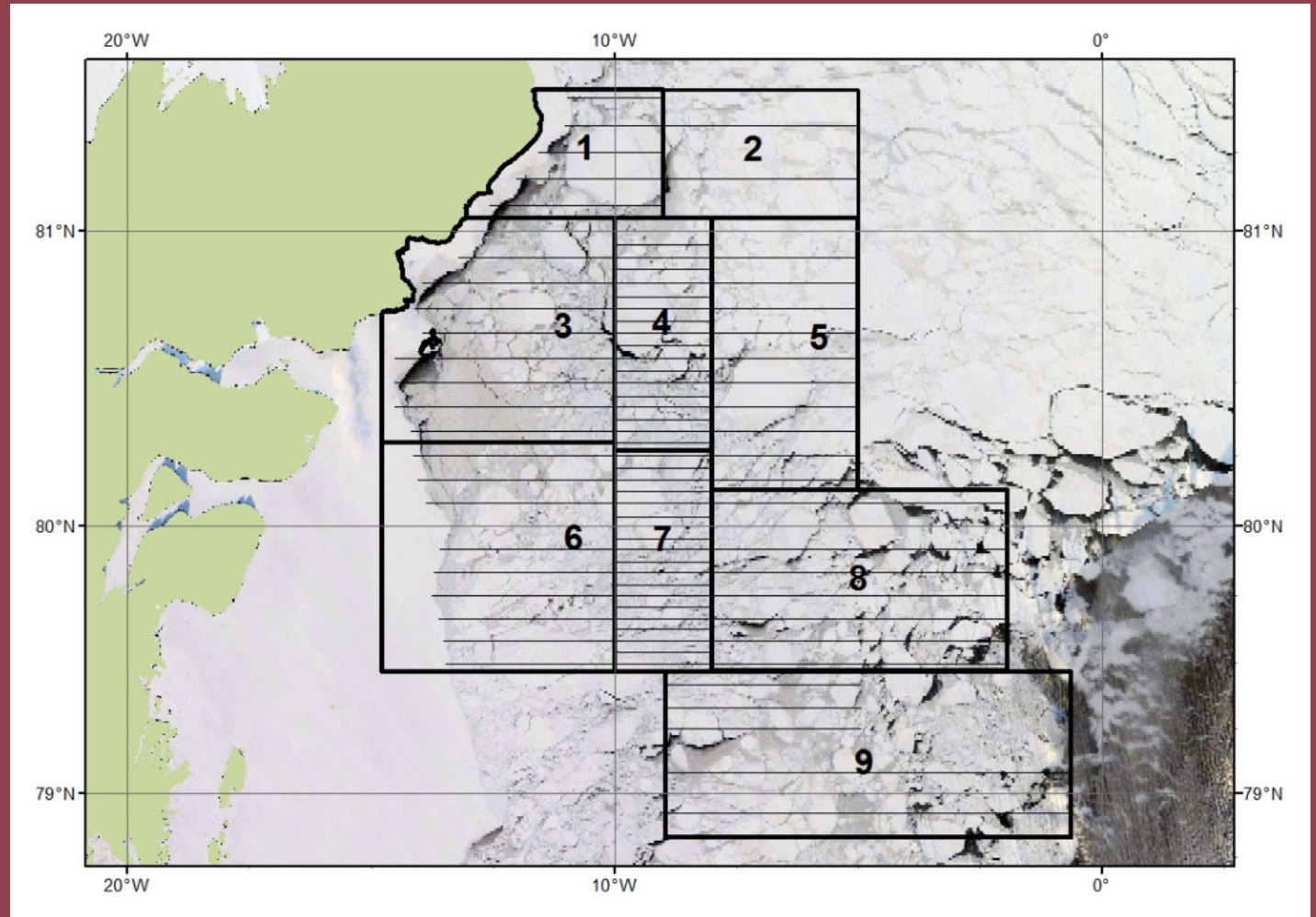
Northeast Water (NEW)

March 29 – April 6, 2017

56 transect lines

2622 km on effort

15,230 km<sup>2</sup>



## Winter survey

Northeast Water

March 29 – April 6, 2017

25 bowhead whale observations

Chapman estimate

Corrections

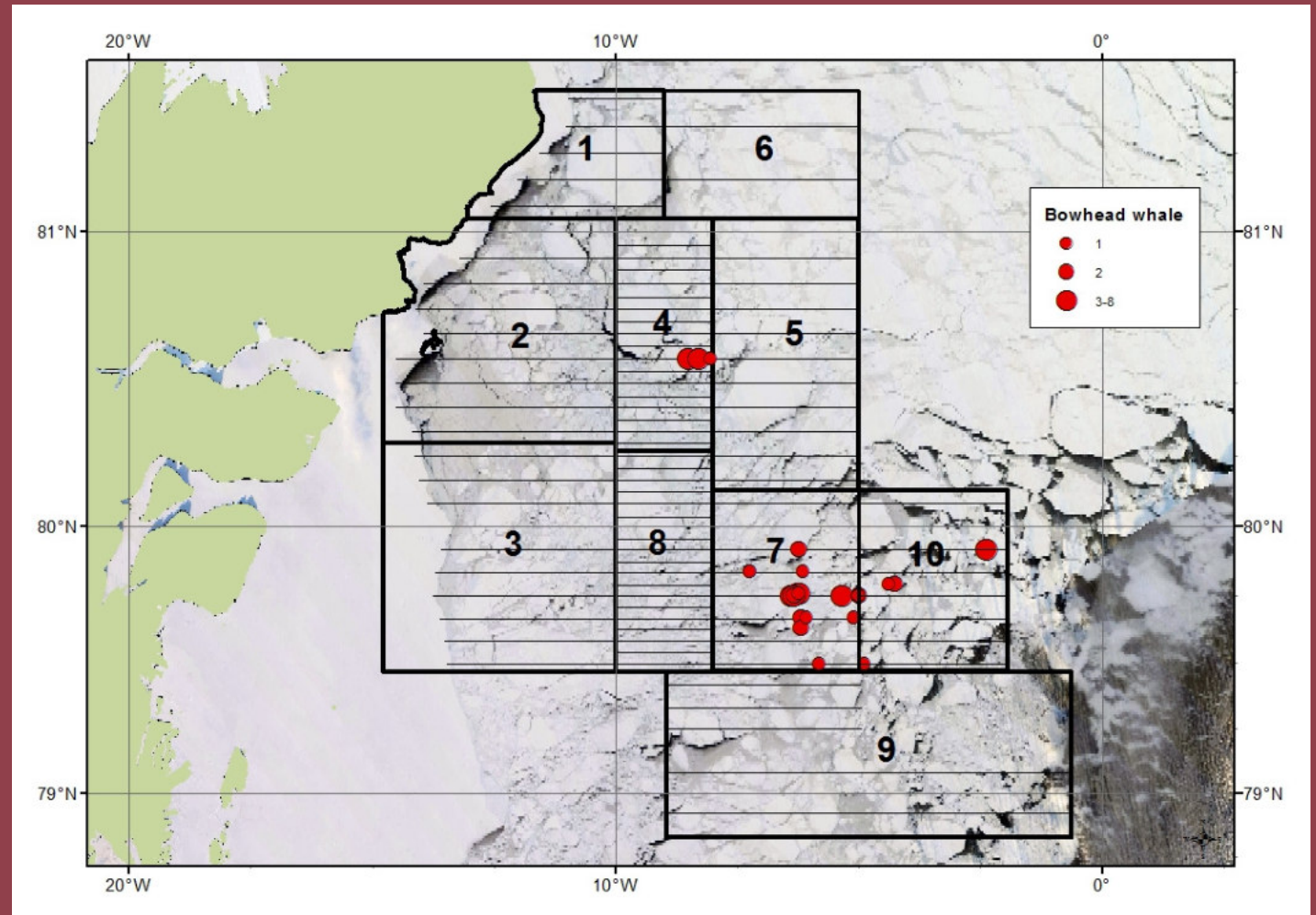
- Perception bias
- Availability bias\*
- Time-in-view\*

N= 103 whales

N\*= 264 (cv=0.51);

CI= 102-681

\*Dive data from satellite-tagged whales from Disko Bay



## Winter survey

Northeast Water

March 29 – April 6, 2017

25 bowhead whale observations

Chapman estimate

Corrections

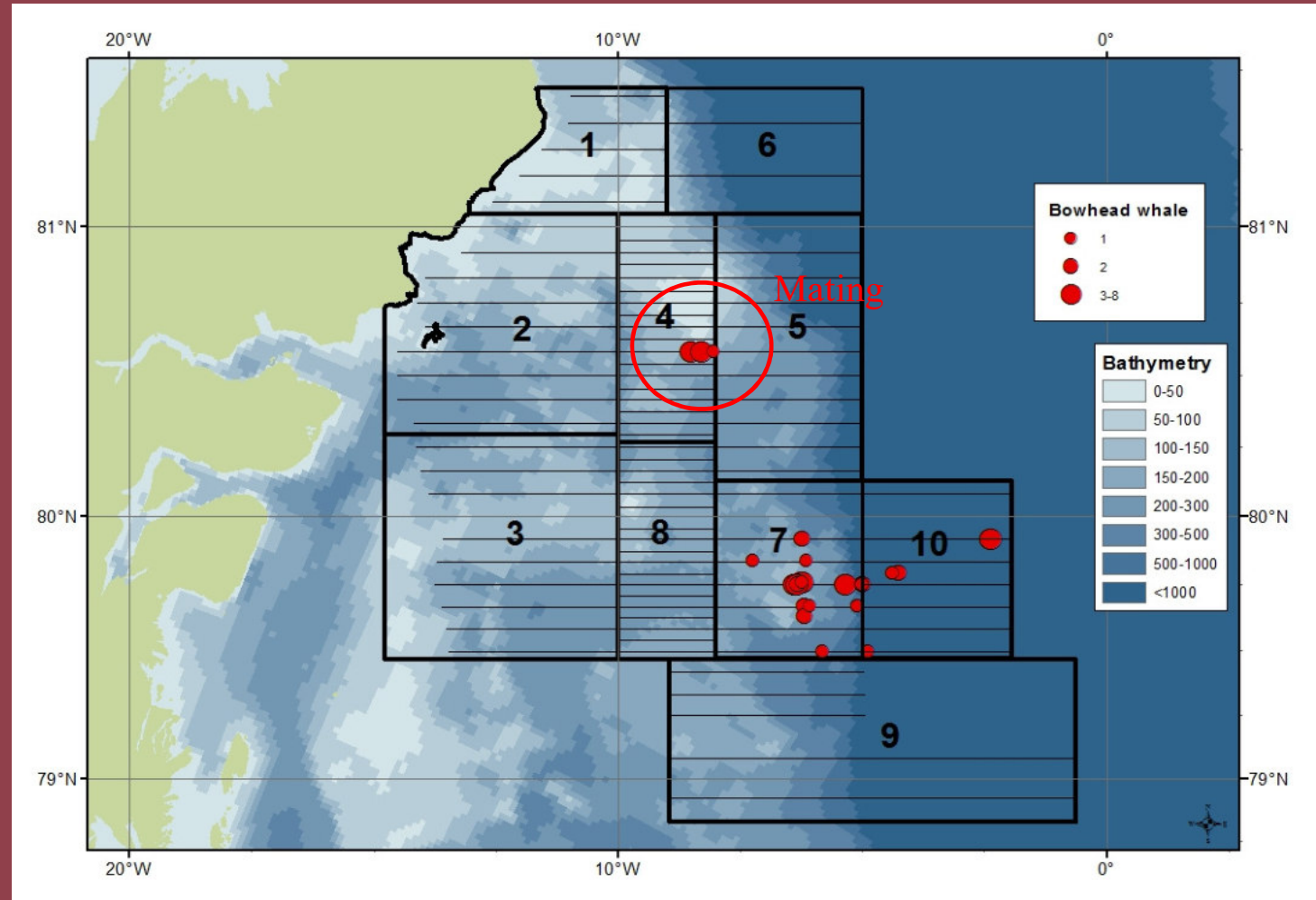
- Perception bias
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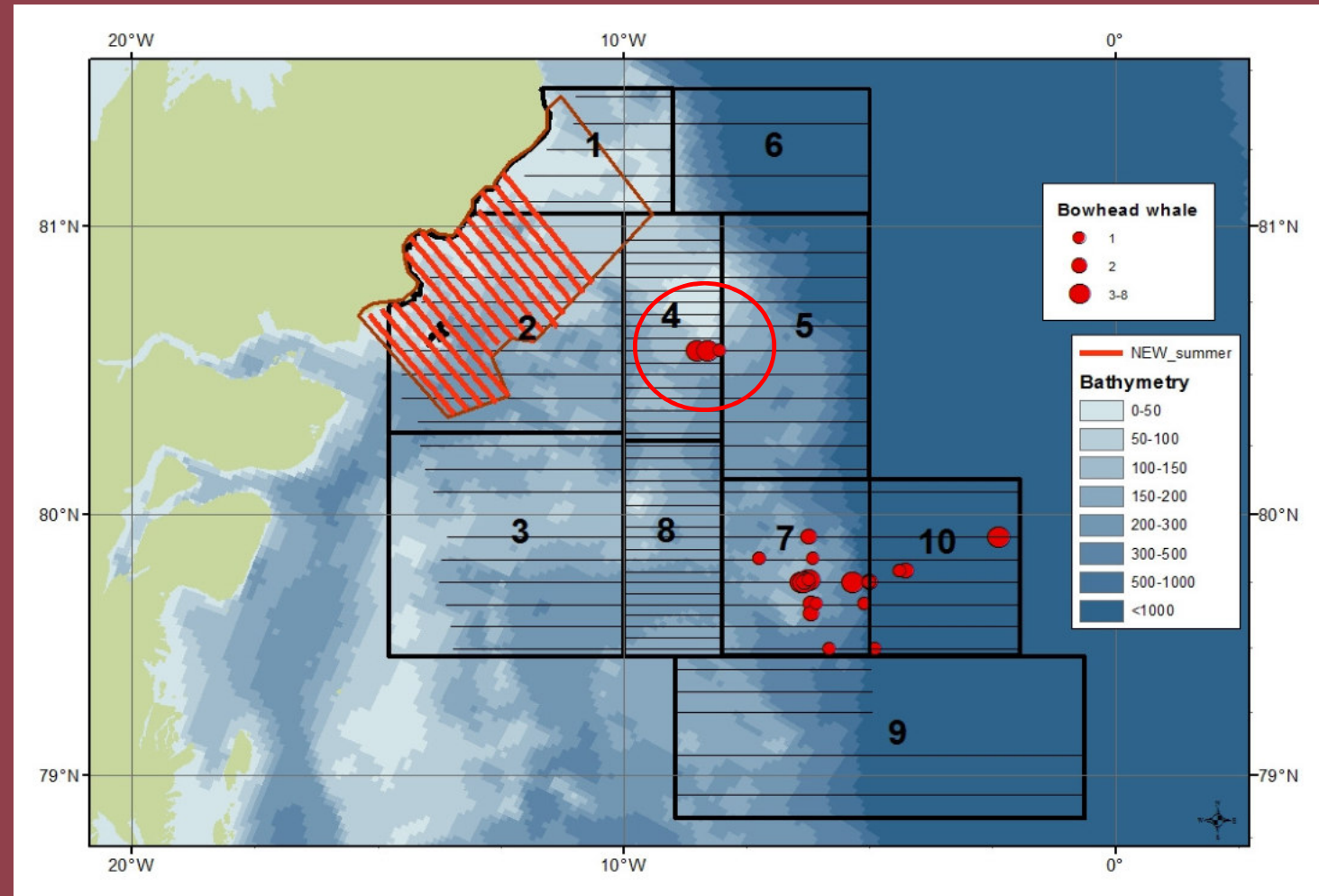
**Summer survey**  
Northeast Water  
August 24, 2017

8 bowhead whale observations  
Incl 3 calves  
15 transect lines  
756 km effort  
5225 km<sup>2</sup>

Chapman estimate in process

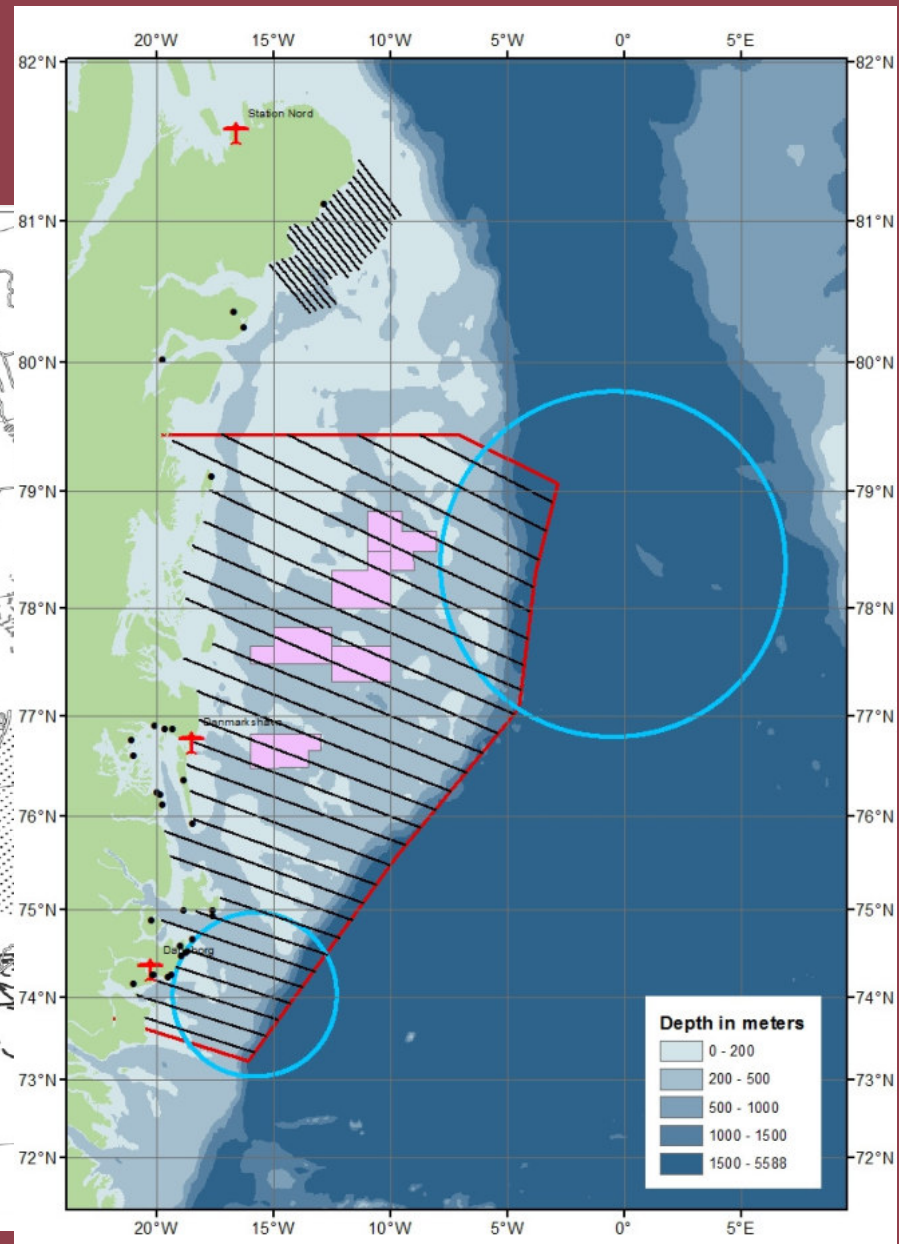
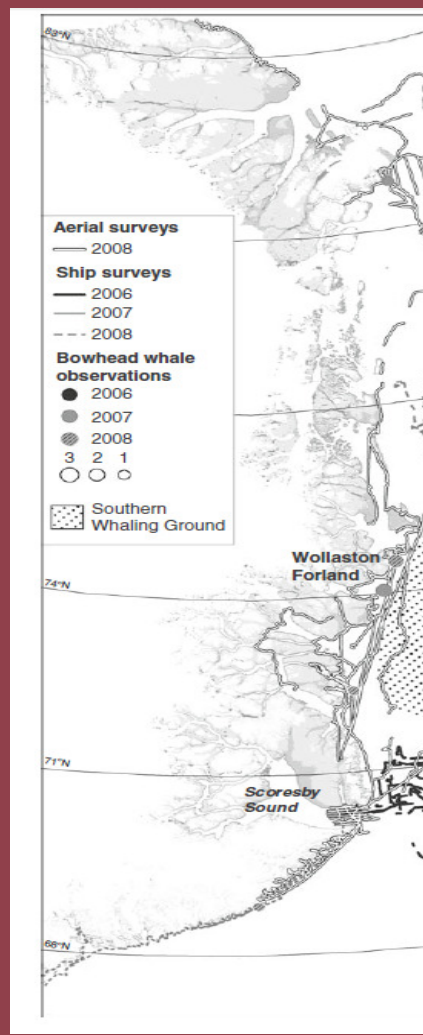
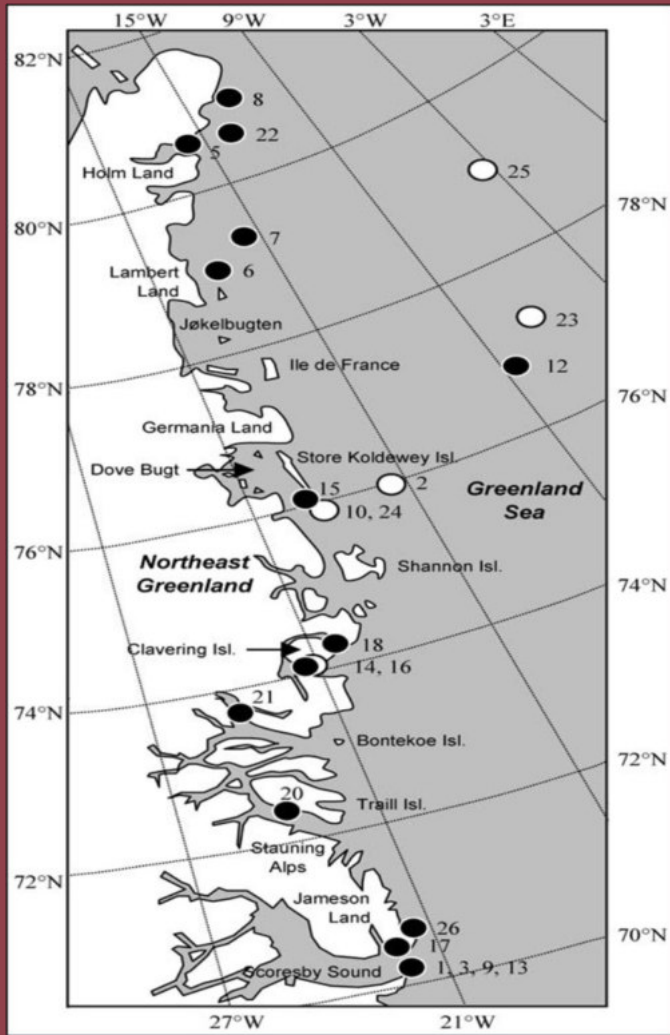
Aerial survey in the NEW from 2009  
Nc= 102\* whales (CI= 32-329)

\*Dive data from satellite-tagged  
whales from Disko Bay

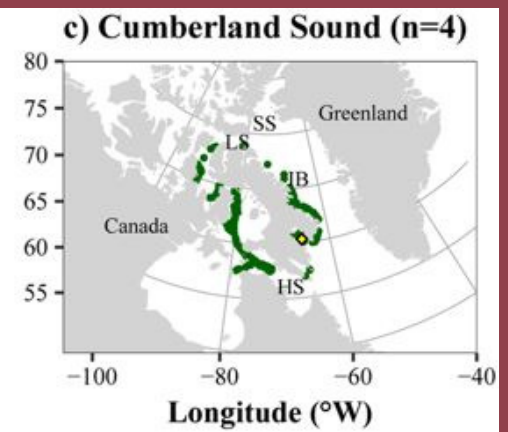
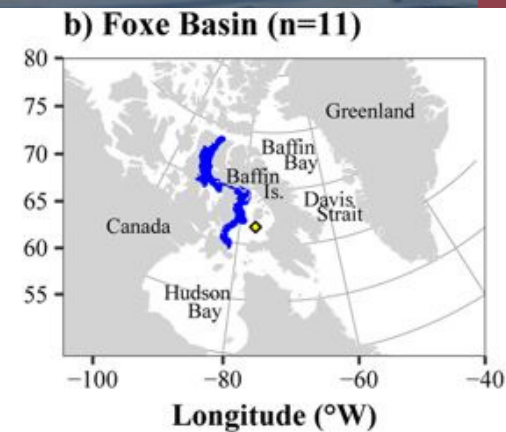
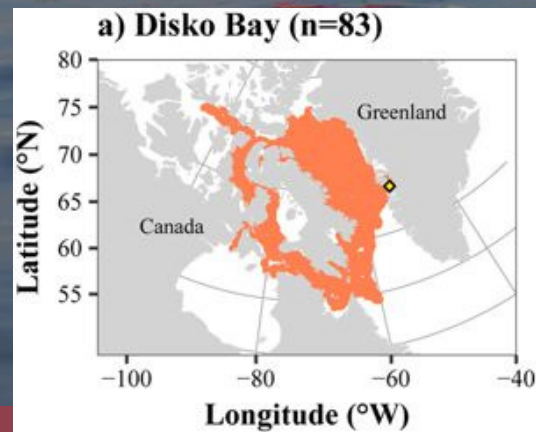




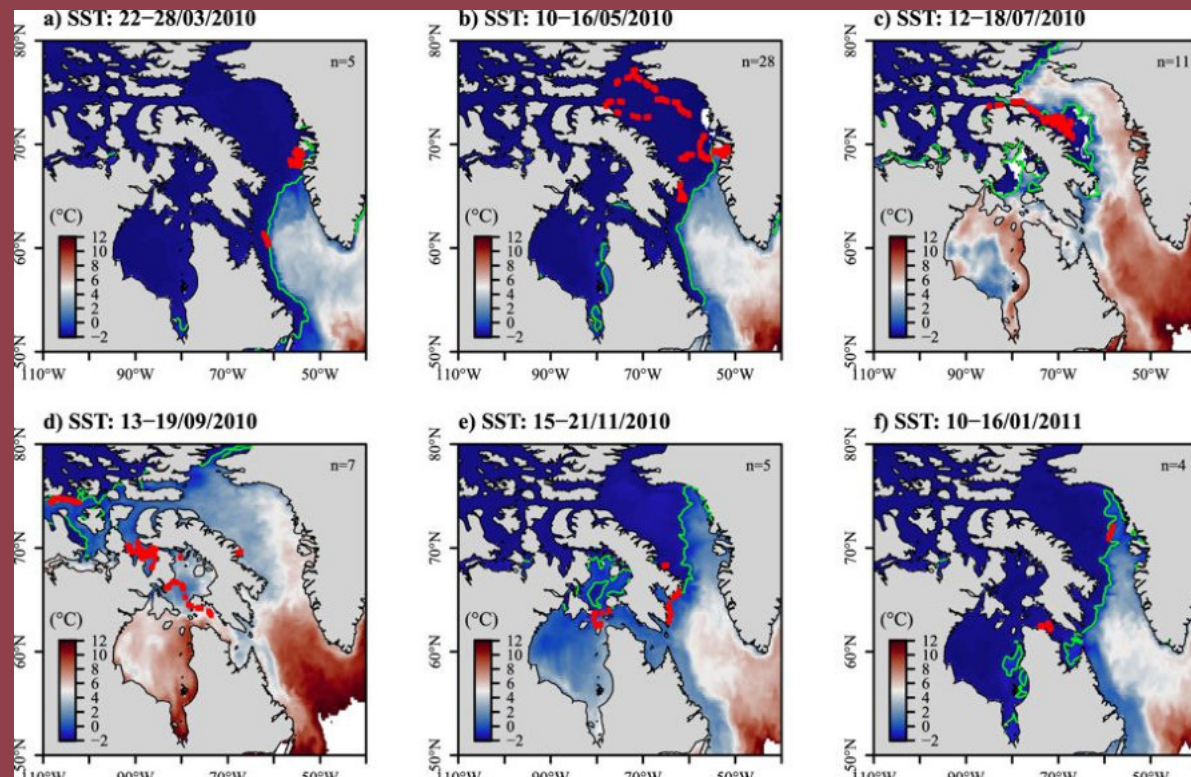
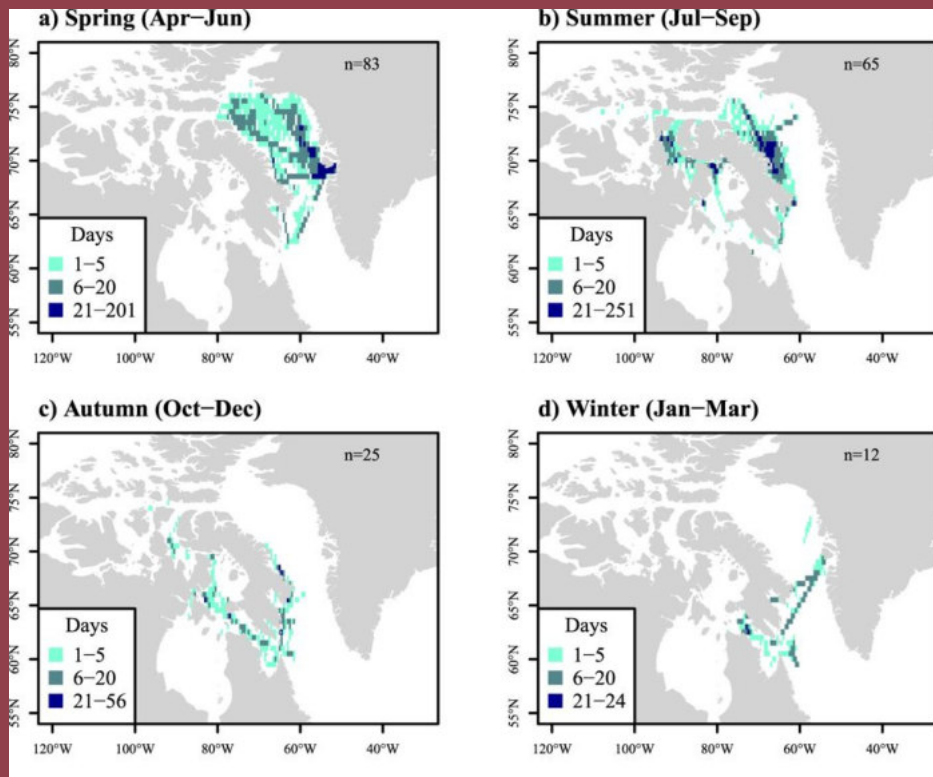
# Summer observations of bowhead whales (1940-2008)



# Satellite tagging of Baffin Bay population



# Seasonal variations in predictive variables



Best GAM model:  
 Across seasons  
 SST  $-0.5-2^{\circ}$

