

Upper Trophic Papers

Paper Leads:

JANET CLARKE
CATHERINE BERCHOK
KATHY KULETZ
MANOLO CASTELLOTE



Papers

Janet Clarke: ASAMM (aerial) data DBO 4,5,6,and 7

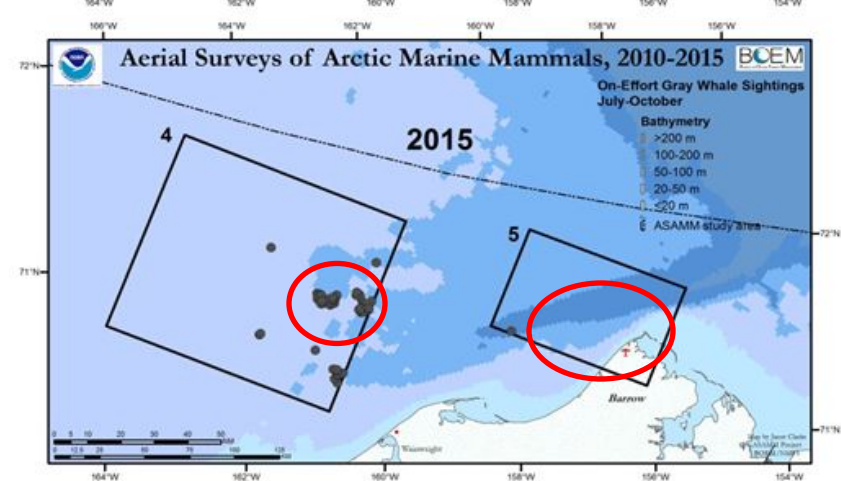
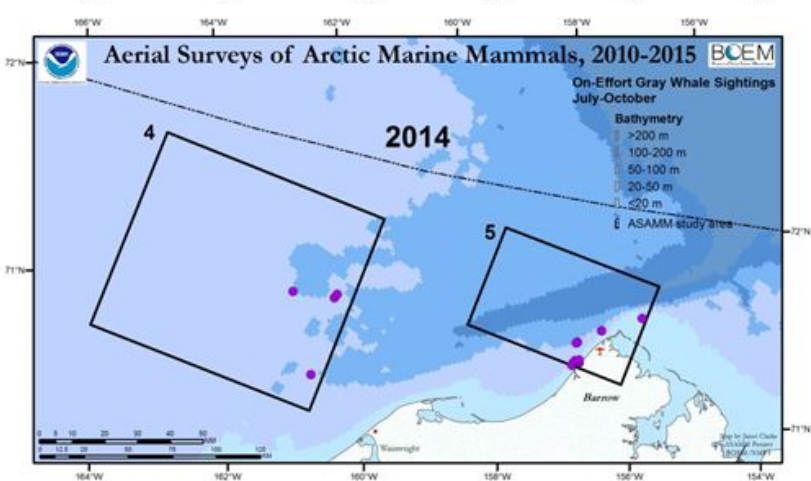
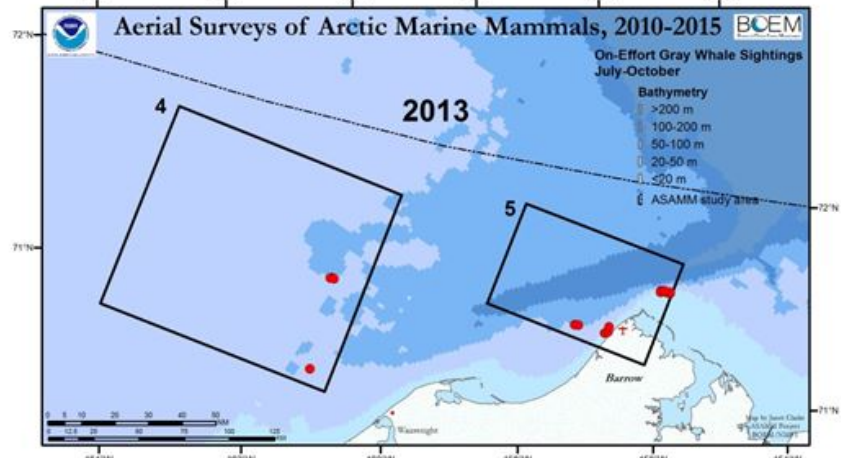
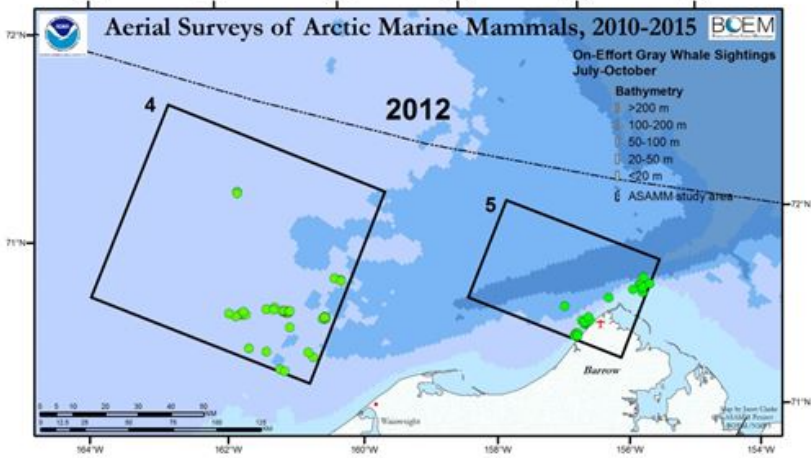
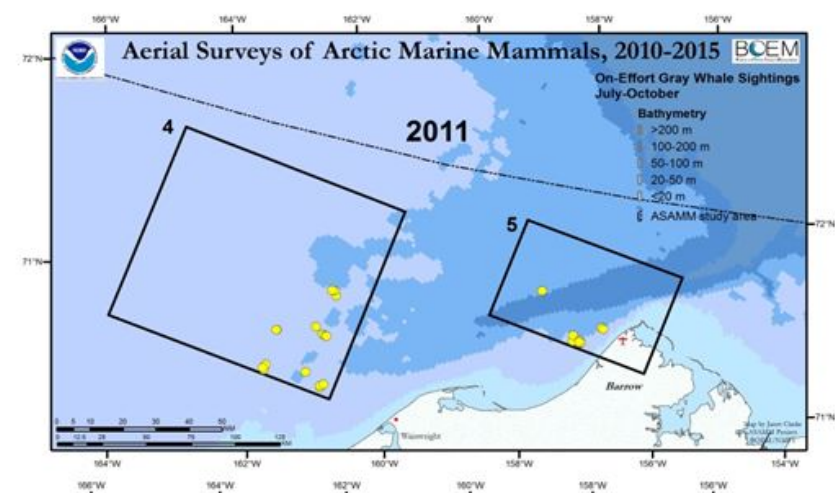
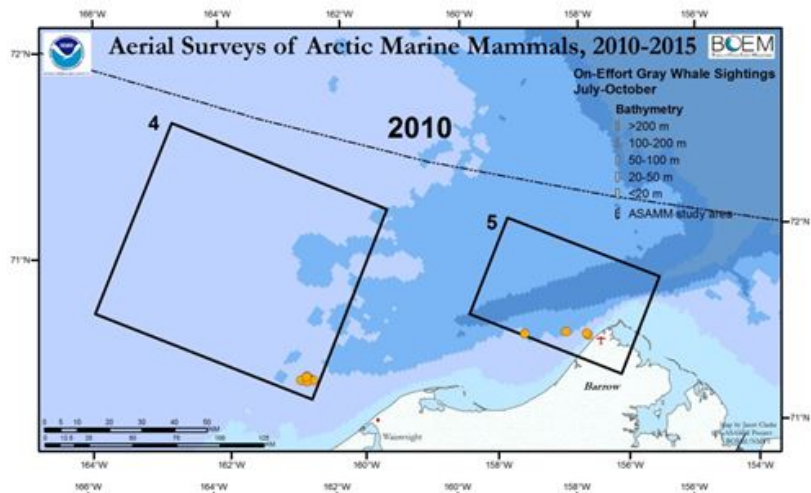
Catherine Berchok: Multi-disciplinary DBO 3

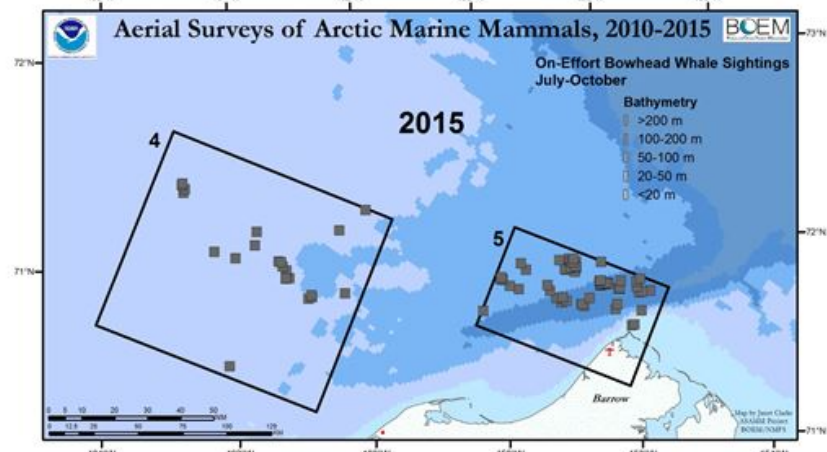
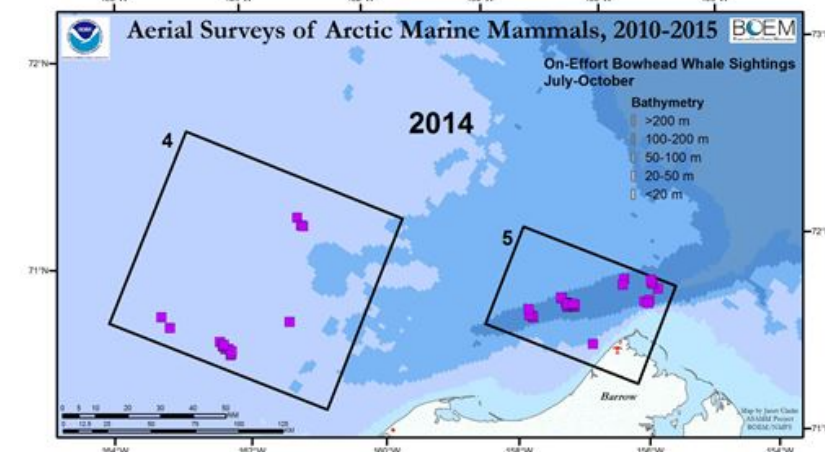
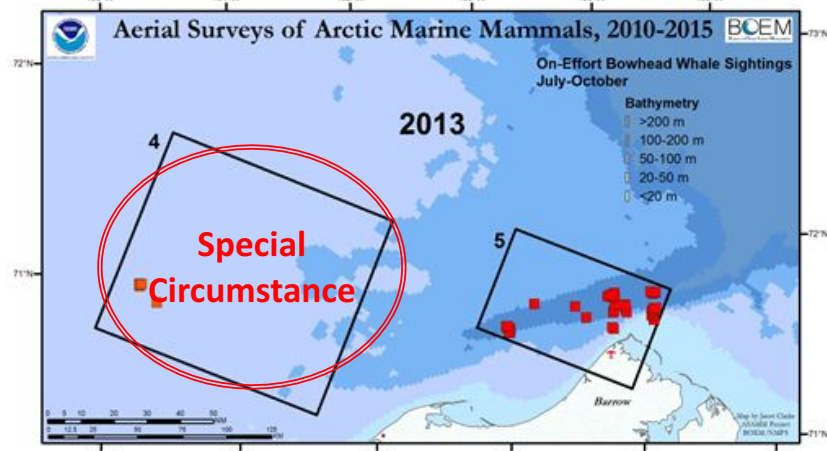
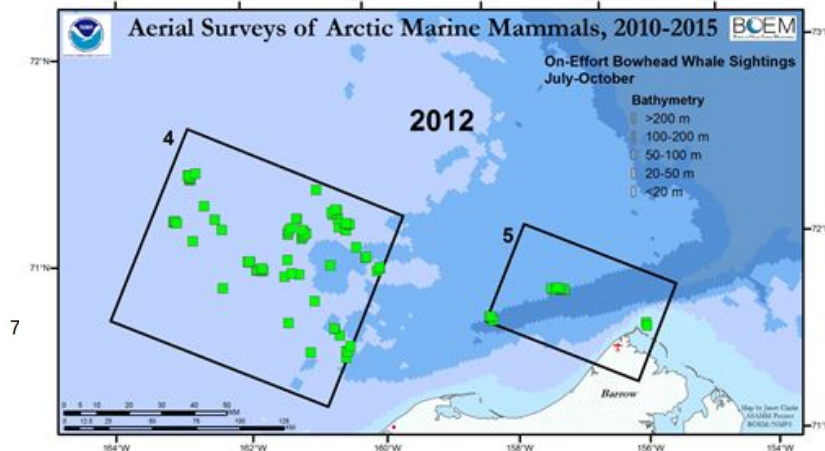
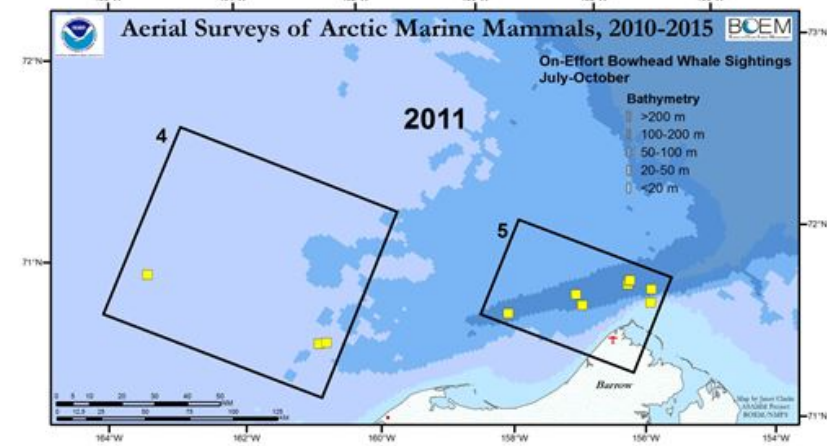
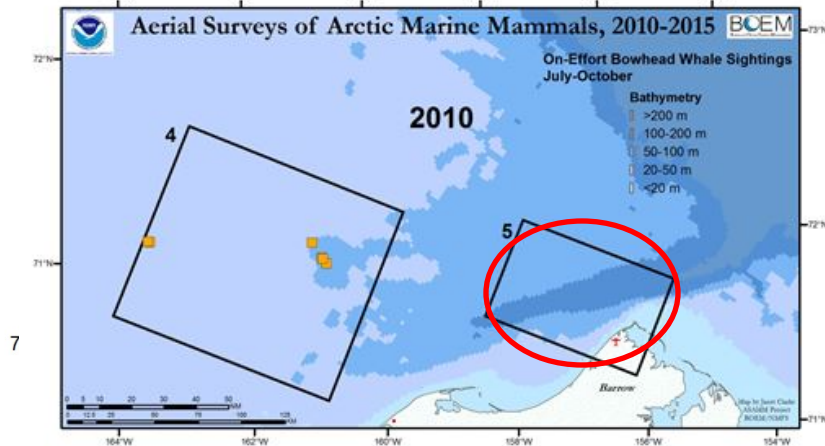
Kathy Kuletz: Birds – All DBO regions

Manolo Castellote: Aerial-Acoustics integration DBO 4 & 5

Aerial survey results from DBO 4,5,6,and 7

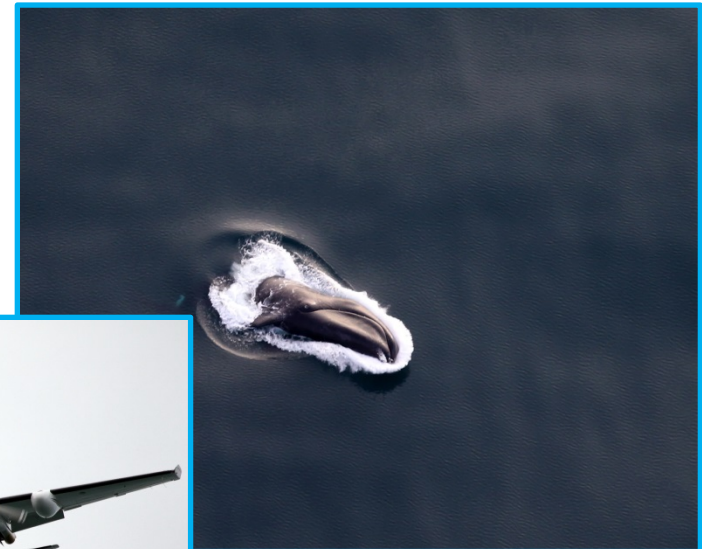
Janet Clarke (Leidos)





manuscript

- Analyze cetacean (bowhead whale, gray whale, and beluga) distribution and abundance per year, 2010-2015, per DBO areas 4, 5, 6, and 7 to search for anomalies between years.
 - ASAMM team has this covered!
- Use DBO datasets to correlate cetacean anomalies with differences in annual oceanographic variables, including currents, nutrients, primary productivity, zooplankton, benthic fauna, and fish.
 - Help!
 - Unfamiliar with DBO datasets.
 - We are marine mammal people, dammit!
 - What datasets are most appropriate to use?
 - Where do we start?
 - Who can we team with?

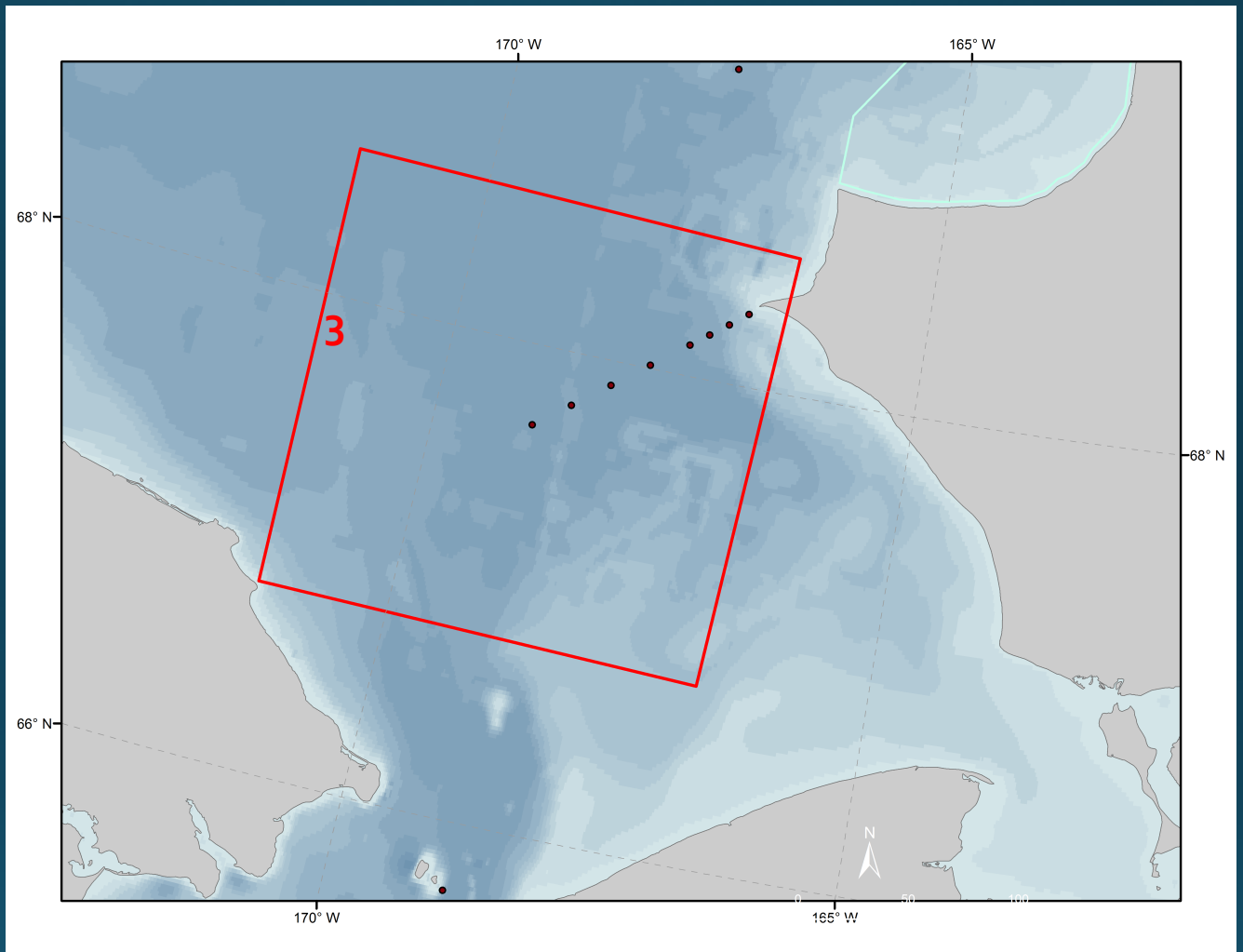


Multidisciplinary look at DBO 3

Catherine Berchok (NOAA)

DBO 3

Oceanographic/
zooplankton
sampling line

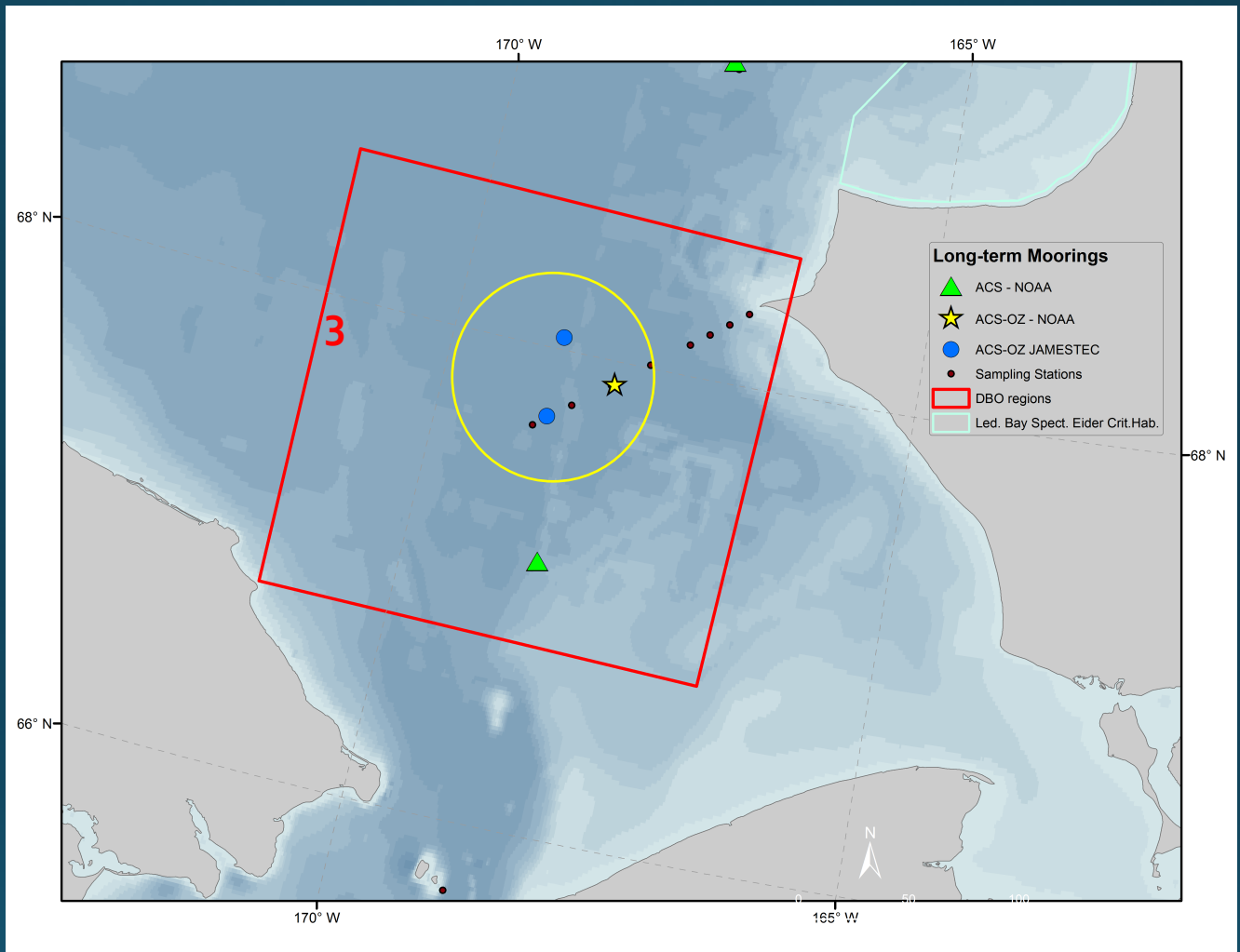


DBO 3

Oceanographic/
zooplankton
sampling Line

Long term
passive acoustic
recorders

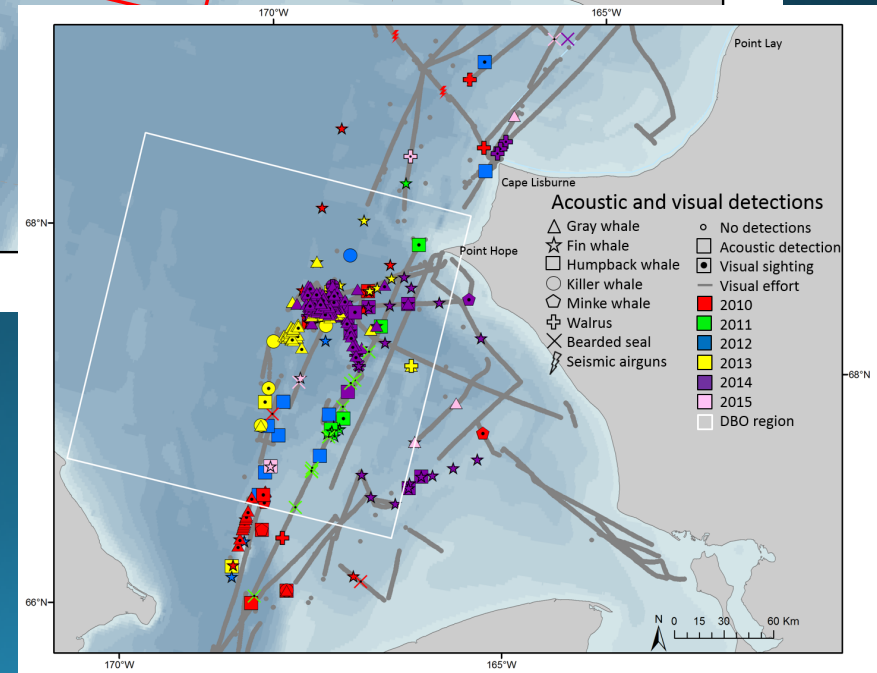
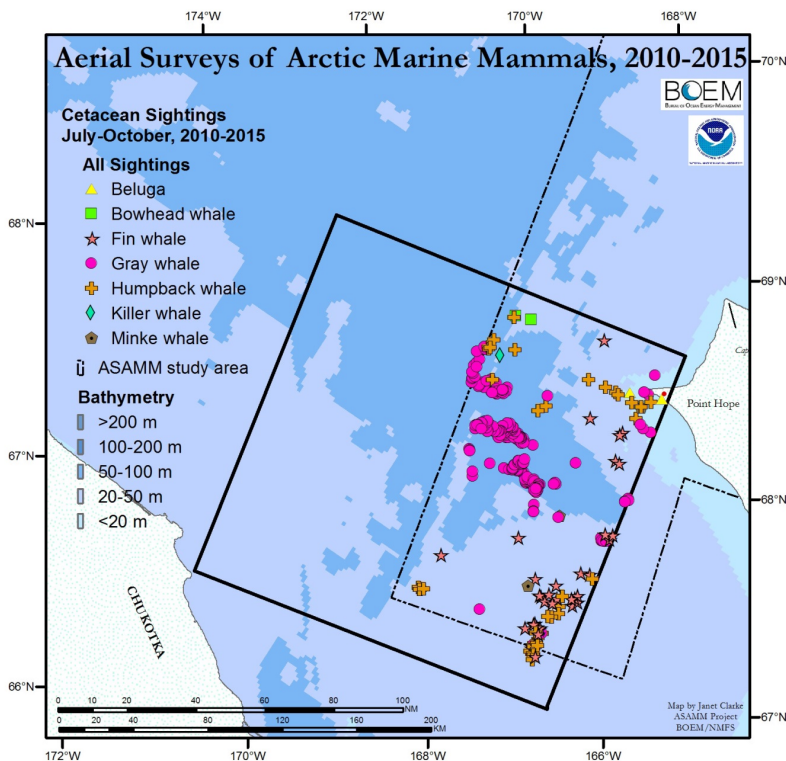
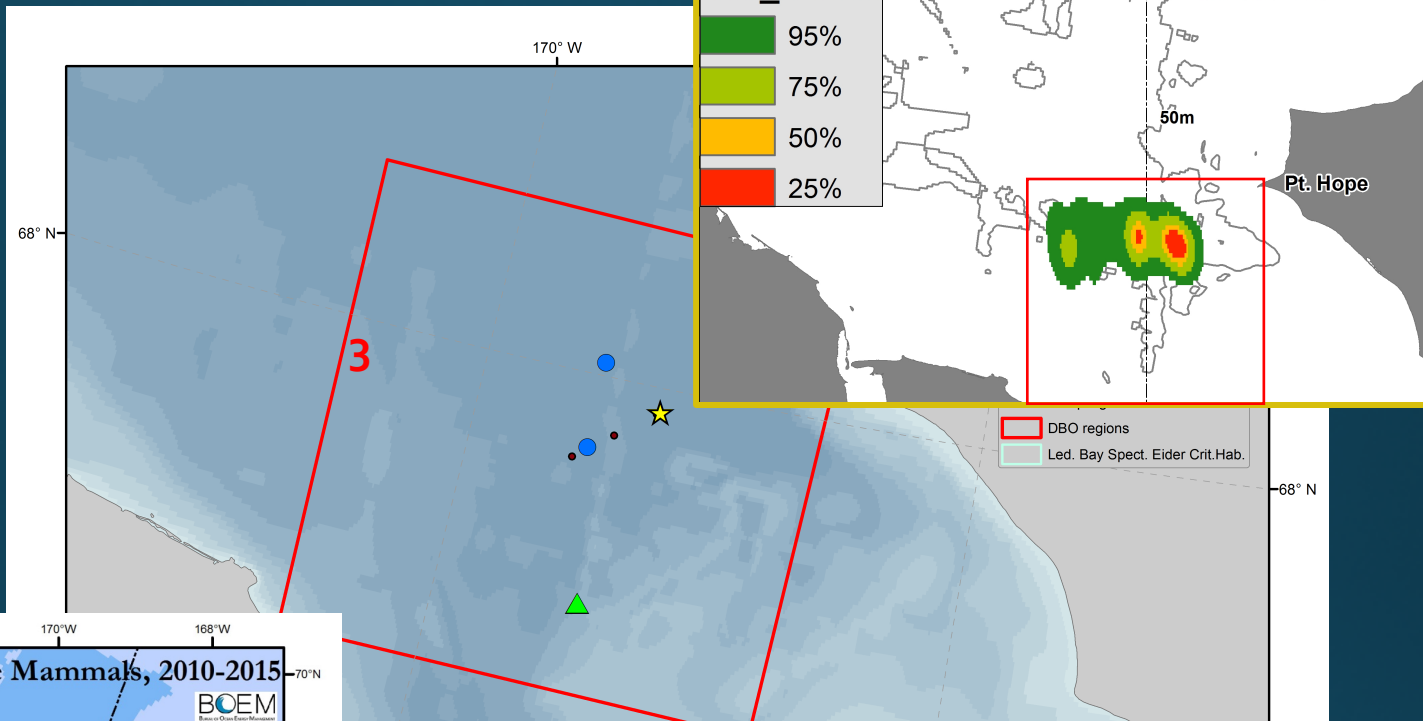
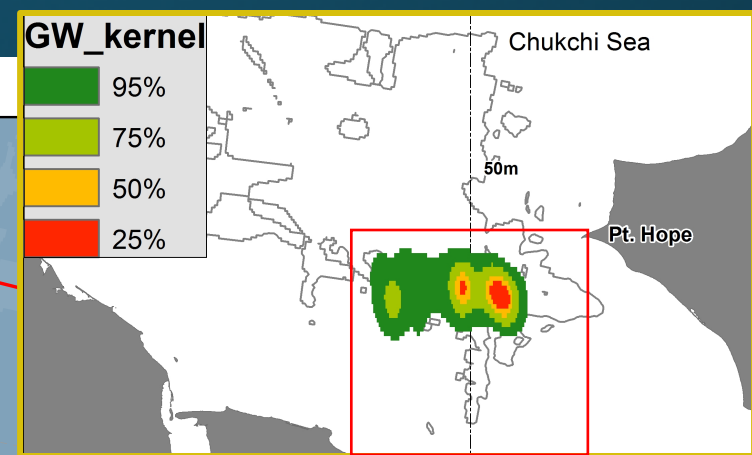
Long term
oceanographic
instruments



DBO 3

Marine mammal
survey sightings/
detections

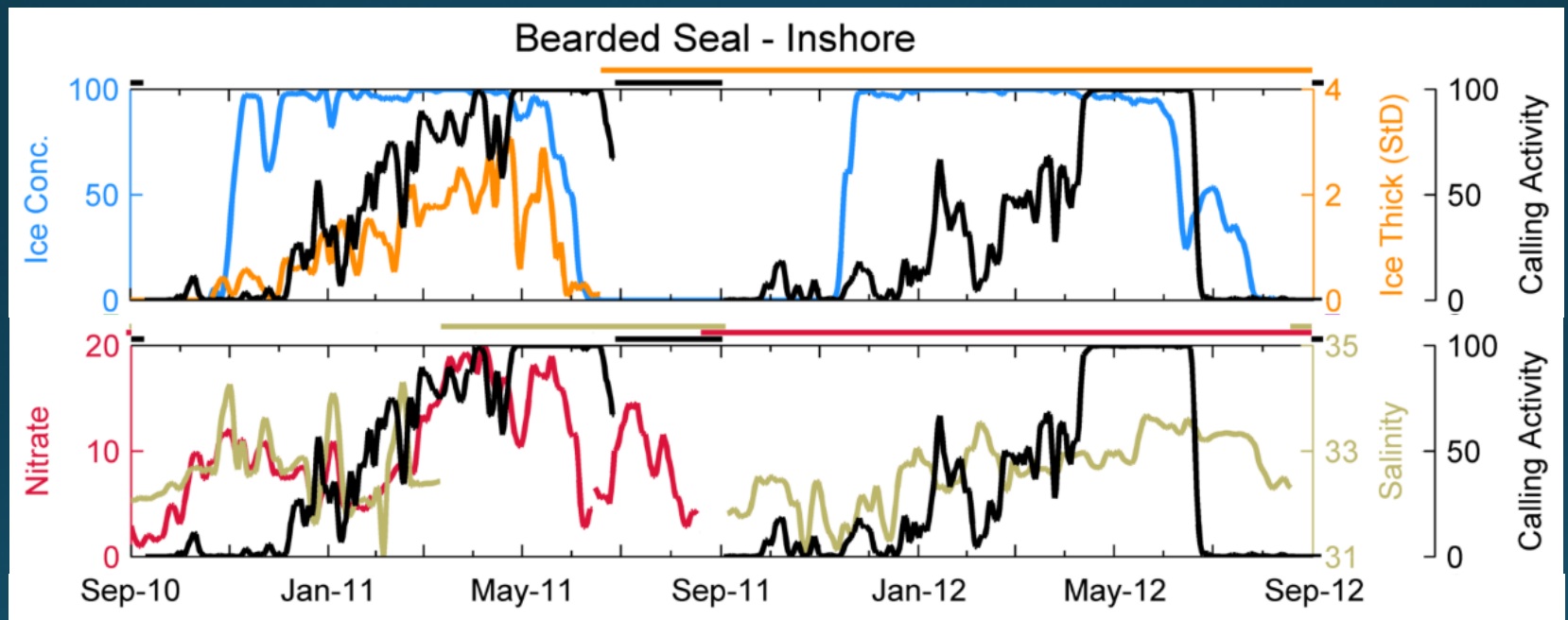
...and tagging
results



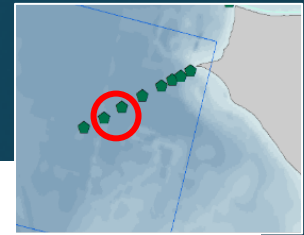
Long-term time series (moorings):

GAMs - factors affecting marine mammal presence

Quantitative, statistical analyses on positive/negative associations

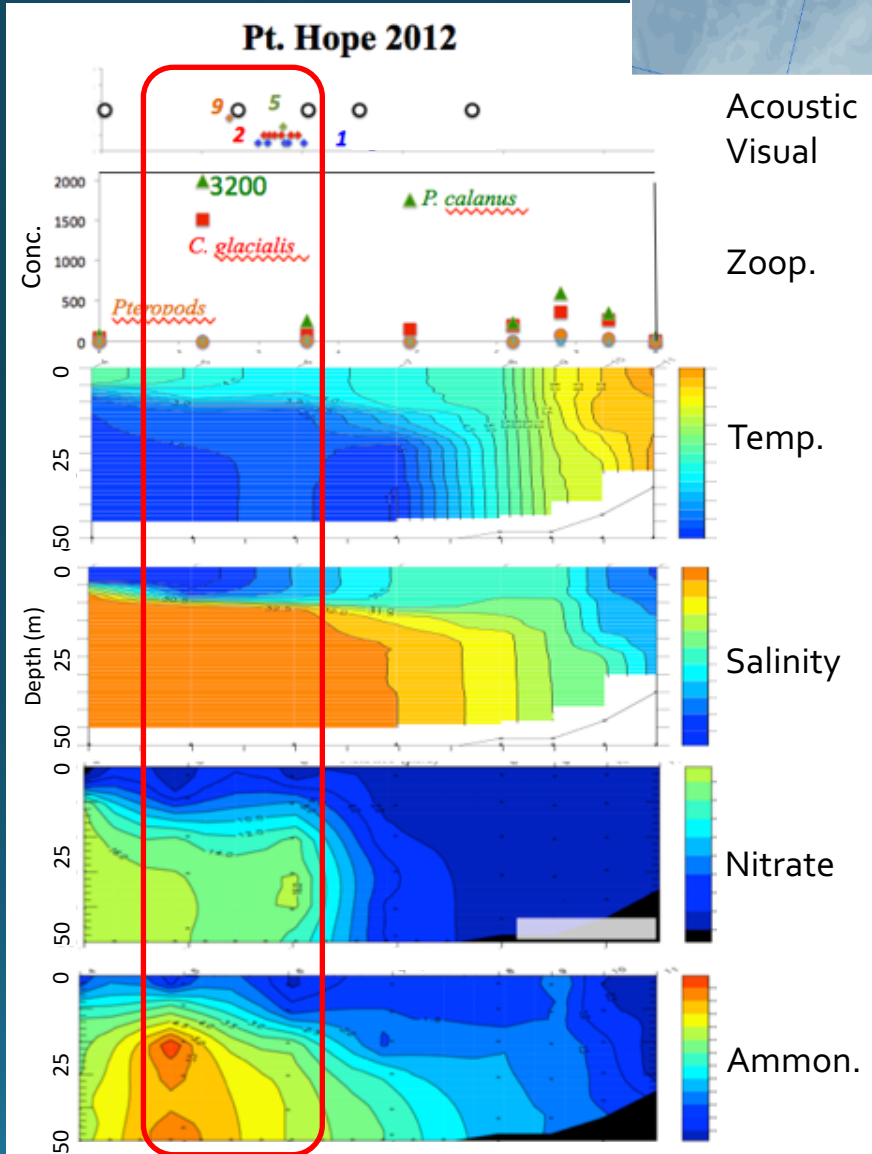


Short term sampling/surveys



Transect lines

- High zooplankton concentrations
- Ammonium/nitrate
- High benthic biomass



Birds in DBO regions

Kathy Kuletz (USFWS)

Adrian Gall (ABR, Inc)

UPDATE: To be submitted to MEPS within next month or two:

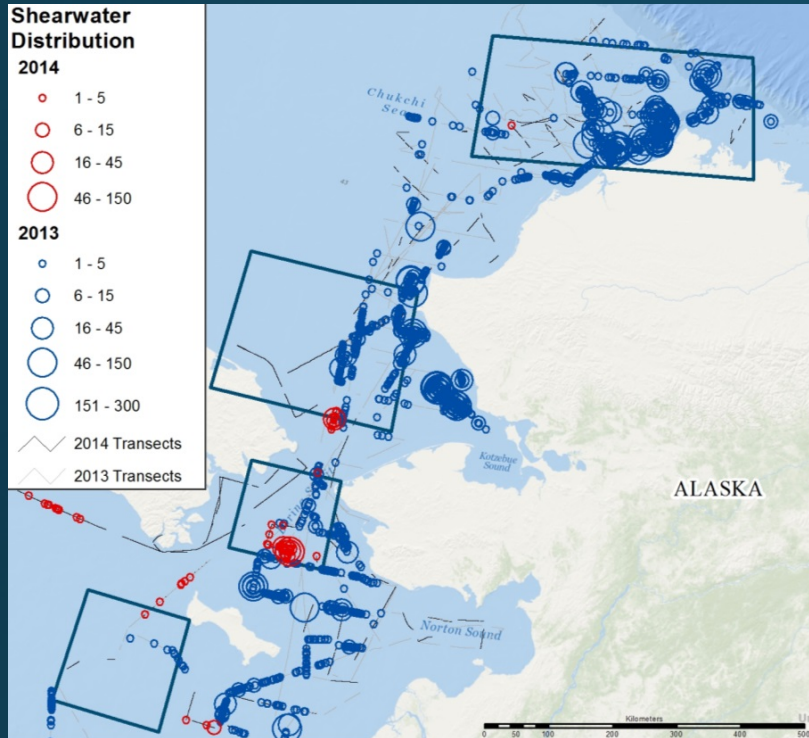
The influence of foraging strategy and prey preference on habitat associations of seabirds in the northeastern Chukchi Sea.

Adrian E. Gall, T. Morgan, R. Day, A. Blanchard, R. Hopcroft, T. Weingartner

Relationships between oceanography & the distribution & abundance of 8 focal taxa of seabirds in NE Chukchi Sea (DBO₄) during 2011–2012.

Ideas for additional papers (combining USFWS & ABR data):

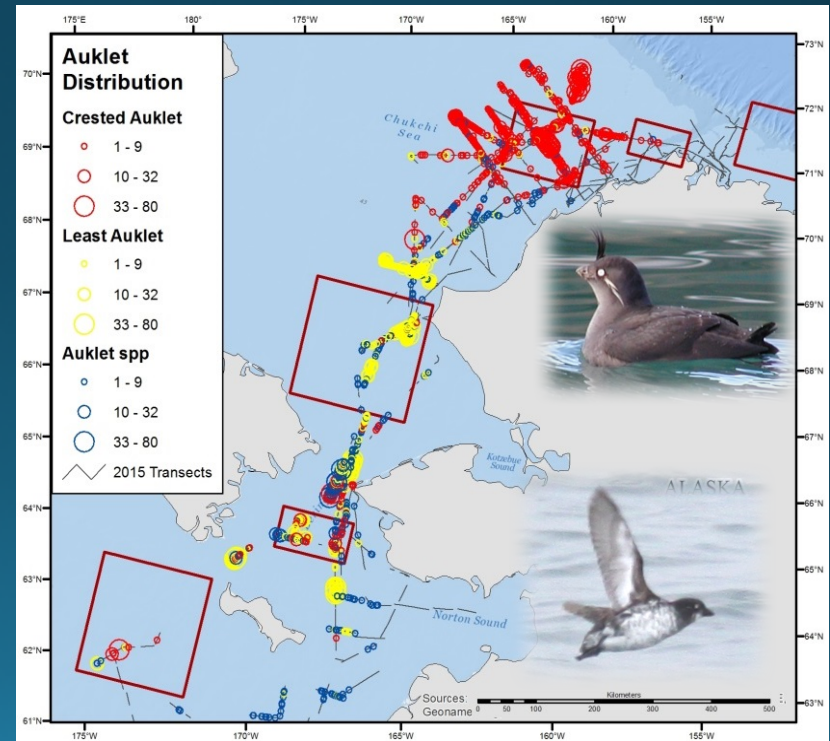
1. Influence of ACC on seabird distributions, nearshore to offshore in NE Chukchi Sea (mostly DBO 4, 5; could include DBO 3; ideally entire area)
2. Physical & biological influences on seabird distribution between DBO_{4,5}. How different wind/current regimes impact seabird distributions seasonally, inter-annually; 2010-2015, July-Sept
3. Latitudinal (DBOs 1-5) and Longitudinal (DBOs 6-8) distribution of seabirds with respect to physical/biological prevailing conditions (and what do DBO boxes 'capture' with respect to total observations?)



Example (Paper #2): Shearwaters were nearly absent, especially in DBOs 4&5 (combined here) in 2014 (red circles), where they are normally abundant (blue circles). What were conditions around Barrow Canyon during those years?



Example (Paper#3): Latitudinal segregation between Least & Crested Auklets in post-breeding distribution. (note that DBO boxes 'miss' the transitional zone between species)



Aerial-Acoustics Integration

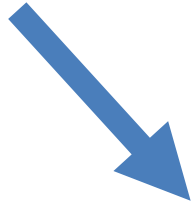
Manolo Castellote (NOAA)

Visual and passive acoustics marine mammal data integration



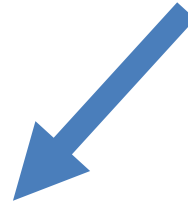
Visual sightings from aerial surveys

- Quantified sightings
- Broad spatial coverage
- Limited time frame

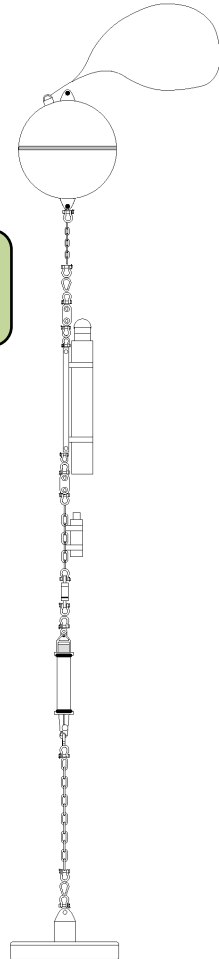


Acoustic detections from moorings

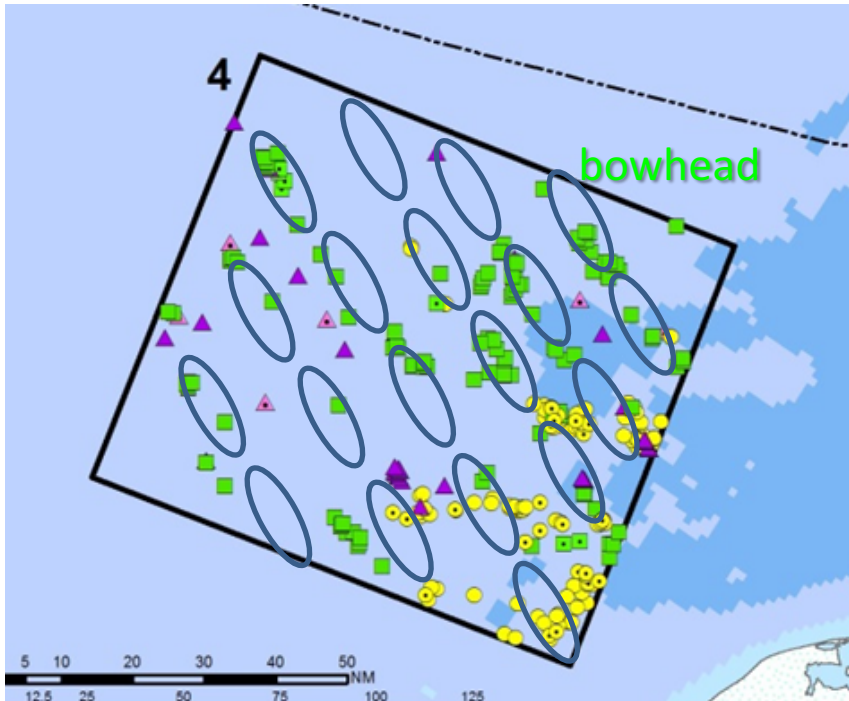
- Quantified vocalizations
- Limited spatial coverage
- Broad time frame



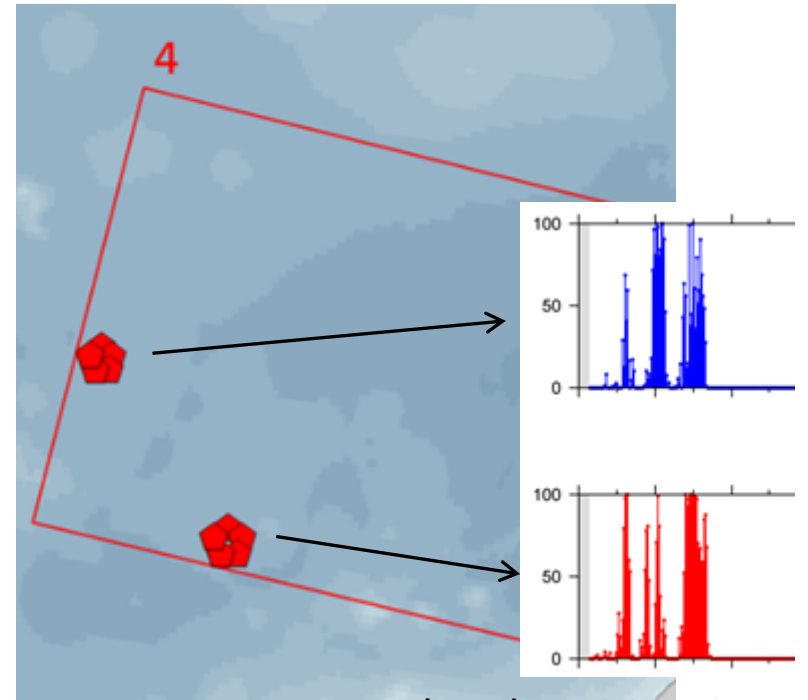
- Detections per time unit
- Broad spatial coverage
- Broad time frame



Sightings in DBO4 July-October



Passive acoustic moorings DBO4



Sightings in time units

Bowhead positive time units
July - October

Spatial density of positive time units by month or season