

This manuscript describes the sea ice conditions in the Canadian Arctic Archipelago (CAA) and in particular the more recent extreme low years of 2011 and 2012. Overall, I find this manuscript to be well-written and I believe would be of interest to the readers of The Cryosphere. The datasets used were very comprehensive and a thoughtful analysis was applied. I have relatively minor suggestions that I hope would be helpful to the authors in completing their story.

David Bailey:

1. This is nit-picking a bit, but I don't like the use of the words exceeded and eclipsed when talking about levels in the abstract and text. Perhaps instead, the authors could say, instead: "Remarkably low mean September sea ice area, a record break-ing level that was nearly exceeded in 2012" and "These exceptionally low values eclipsed" To me when one uses the terms "values eclipsed" and "level exceeded" this implies higher instead of lower numbers. I just felt that it should be made clear that these were lower.

Howell et al.

Changed.

"Remarkably low mean September sea ice area in the Canadian Arctic Archipelago (CAA) was observed in 2011 ($146 \times 10^3 \text{ km}^2$), a record breaking level that was nearly exceeded in 2012 ($150 \times 10^3 \text{ km}^2$). These values were lower than previous September records set in 1998 ($200 \times 10^3 \text{ km}^2$) and 2007 ($220 \times 10^3 \text{ km}^2$) and are ~60% lower than the 1981-2010 mean September climatology."

David Bailey:

2. I found figure 1 to be too crowded with the three panels. I would recommend combining Fig 1c and Figure 7 into a new Figure 2. One could even imagine a correlation between these two curves as this is part of the story.

Howell et al.

Done. See below

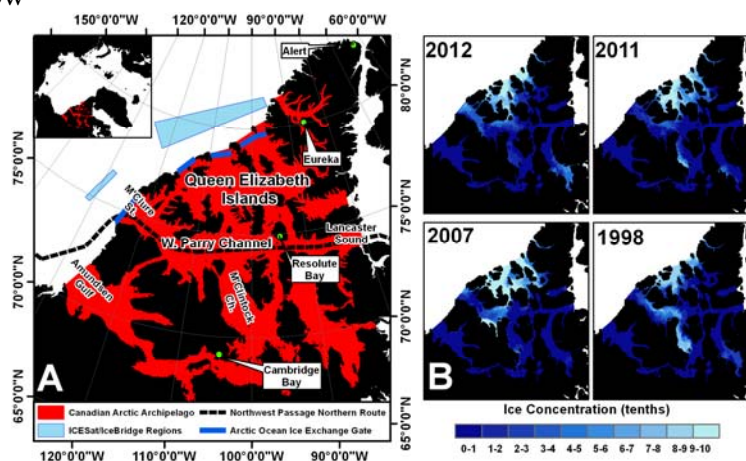


Figure 1. The geographical location of the Canadian Arctic Archipelago (CAA) (A) and spatial distribution of CAA mean September total ice concentration (tenths) for the four extreme light years (B).

David Bailey:

3. The authors might also consider including the ice age time series from Maslanik et al. 2011 or Rigor et al. 2004. While there is a discussion of MYI versus FYI within the Archipelago it would be interesting to see a time series of this from the Arctic Ocean near the inflows into the CAA.

Howell et al.

Maslanik et al. 2011 already includes the ice age time series north of the CAA. We have added a comment in the text noting that the ice extent of this ice has decreased since 2007.

David Bailey:

4. The authors reference Holland et al. 2006, but this is not in the list of references

Howell et al.

Holland et al. 2006 is now added to the list of references