

**Reviews, and response to reviews, of the essay on:
Sea Ice**

Reviewer #1

6. Sea Ice		
Page No.	Line No.	Comment

General comments: **No specific comments.** The editors note that no general comments were provided. Nor did the reviewer provide any specific comments in the table.

Reviewer #2

6. Sea Ice		
Page No.	Line No.	Comment
31	850	Would it be possible to make the legend bigger as the figure is using the whole page anyhow? The legend has been enlarged. Good idea. Thanks.

General comments: [The editors note that no general comments were provided.](#)

Reviewer #3

6. Sea Ice		
Page No.	Line No.	Comment
		This was well written, brief and included the necessary information about 2013 compared with other year. The authors might like to consider the number of figures – there are enough of them, even they are all nice. The editors agree that there are enough figures to illustrate what is happening to Arctic sea ice, the “poster child” for the changing Arctic environmental system. It is important to fully illustrate the sea ice essay, and the editors see no need to reduce the number of figures, if that is what the reviewer implies.

General comments: [The editors note that no general comments were provided.](#)

Reviewer #4

6. Sea Ice		
Page No.	Line No.	Comment

General comments: Excellent part of Card. It could be only one note: it would be fine to inform what is accuracy of free board estimations from satellite data. [The following two sentences have been added in response to the reviewer’s question: “Preliminary analysis indicates that the Cryosat-2 freeboard estimates are comparable to *in situ* field measurements, with a level of uncertainty that is comparable to other airborne and satellite-based observations. A more detailed error analysis of the freeboard estimates is currently in progress.”](#) The editors are satisfied with the response and consider it provides adequate information. The editors note that no comments were provided in the table.

Reviewer #5

6. Sea Ice		
Page No.	Line No.	Comment
27	775	I guess “average is” should be replaced by “medians are”. The reviewer is incorrect and no change has been made, except the caption has been re-organized to avoid any confusion between averages and medians.
27	782-783	Is the magnitude of the trend really larger for 1979-2013 than for 1979-2012? The text has been modified to clarify that the 1979-2013 trend is in fact slightly lower than that of 1979-2012.
29-30	826-828	Was the lack of transport of multi-year ice into the Beaufort Sea really the main reason for the record-large first-year-ice coverage? If yes, it is not easy to understand. If multi-year ice were transported to the Beaufort Sea, it would be exported out of other regions. Could the main reason simply be the low ice extent in September 2012, which allowed first-year ice to form over large areas? The text has been modified to explain that the negligible multiyear ice occurrence in the Beaufort Sea at the end of winter appears to have been due to a combination of the previous year’s record sea ice retreat and a lack of subsequent transport of multiyear ice into the Beaufort Sea during winter 2012-2013.

General comments: Clear structure and good selection of figures. Figure 21 is impressive.

Reviewer #6

6. Sea Ice		
Page No.	Line No.	Comment
26	745	Do you mean in “relative” or “absolute” numbers – or both. Please specify. Neither the editors nor authors understand the question. The authors are saying that 78% of the ice cover in March 2013 was first-year ice (and the remainder was multiyear ice, i.e., ice that had survived at least one summer). After consultation, the editors and authors consider these to be absolute values.
28	789	Include “(not shown)” after ...”30-year average values” “(not shown)” has been added to the text.
30	Line 837-838	Indicate how confident you are on these numbers. How sensitive are the numbers to the “estimates” snow cover... In other words how well is the snow cover (and its density) estimated? The following two sentences have been added in response to the reviewer’s question: “Preliminary analysis indicates that the Cryosat-2 freeboard estimates are comparable to <i>in situ</i> field measurements, with a level of uncertainty that is comparable to other airborne and satellite-based observations. A more detailed error analysis of the freeboard estimates is currently in progress.” The editors are satisfied with the response and consider it provides adequate information.

General comments: The editors note that no general comments were provided.