Reviews, and response to reviews, of the essay on:

Air Temperature

Reviewer #1

		1. Air Temperature
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

		1. Air Temperature
Page No.	Line No.	Comment
2, 3, 5	45 & 50 & 70 & 113	Maybe it could be mentioned in the figure legends that anomalies are in °C as those signs are very small in the figures. The units for each figure have been added to the captions. The editors consider this to be adequate for readers of the Report Card.

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

Reviewer #3

		1. Air Temperature
Page No.	Line No.	Comment

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

Reviewer #4

		1. Air Temperature
Page No.	Line No.	Comment
1	35	"Positive (warm) anomalies occurred in all parts of the Arctic, an indication that the early 21st Century temperature increase is due to global warming rather than natural regional variability (Jeffries et al. 2013)" – It is very strong conclusion, because the Arctic occupies only few percents of the Earth surface and is under strong influence of surrounding continents. No response necessary.
3	70	It would be better to mention that temperature at Fig. 3 is for isobaric height 925 mb from NCEP reanalysis, i.e. mainly above boundary layer, not near surface. The following sentence has been added to make it clear that the maps show temperature just above the surface, and why this approach is chosen: "Temperature analyses are from slightly above the surface layer (at 925 mb level) that emphasizes large spatial patterns rather than local features." In most cases the 925 mb patterns are nearly identical to those at 1000 mb. Even if there were local strong inversions, which would influence the temperatures at the 1000 mb level, the Report Card is looking at sub-hemispheric scale relationships.

5	115	The same note as above The following sentence has been added to make it clear that the maps show temperature just above the surface, and why this approach is chosen: "Temperature analyses are from slightly above the surface layer (at 925 mb level) that emphasizes large spatial patterns rather than local features." In most cases the 925 mb patterns are nearly identical to those at 1000 mb. Even if there were local strong inversions, which would influence the temperatures at the 1000 mb level, the Report Card is looking at sub-hemispheric scale relationships.

General comments: In total this part of Card is the short and good description of the low atmosphere state above the Arctic and can be published taken into account remarks (above).

Reviewer #5

		1. Air Temperature
Page No.	Line No.	Comment
3	62-64	The text is a bit confusing: anomalously high temperatures were described as consistent with cooling and freezing of large ocean areas. Consider writing: "This is consistent with a large heat release from the very extensive area of open water …" The text has been modified and now mentions a large release of heat.

General comments: The air temperature fields at 925 hPa level are based on the NCEP-NCAR reanalysis. I wonder if they are so accurate that conclusions presented on anomalies of the order of 1-2 K are on a solid basis. I am particularly concerned about the accuracy over the Arctic Ocean. Do other reanalyses give results similar to those presented here? Note that after the NCEP-NCAR reanalysis, NCEP has produced two other reanalyses (NCEP-DOE and NCEP-CFSR) that are based on more advanced methodology than that used in the original NCEP-NCAR reanalysis. The large errors in reanalyses over the Arctic Ocean are demonstrated e.g. by Jakobson et al. (2012, GRL).
The authors generally agree with this comment on lack of data over the Arctic Ocean, but note that they normally comment on anomalies only if they a greater than ±2.0 and extend over large areas. Also they are looking at seasonal or greater averages rather than individual days. Note that the NCEP DOE fields at ESRL/PSD do not extend into 2013. The editors are satisfied with this response, and thank the reviewer for the comments.

The text addresses Alaska more than any other region. Is there a good reason for that?
It is the editors' opinion that there is a good balance among all regions of the Arctic. A small number of specific notable Alaska weather and environmental events are described because the information was available at the time of writing.

Reviewer #6

		1. Air Temperature
Page No.	Line No.	Comment

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