

Interactive comment on “Timing of sea ice retreat can alter phytoplankton community structure in the western Arctic Ocean” by A. Fujiwara et al.

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Reviewer's Comment: P. 15167 L. 25 "However we suggest that the ecosystem can be more heterotrophic and reproductive along with increase of mixotrophic haptophytes in the western Arctic." I disagree with this hypothesis, because novel evidences showed that the prasinophytes (such as *Micromonas pusilla*), which are dominant in abundance in the Western Arctic Ocean (e.g. Lovejoy et al. 2007, Balzano et al. 2012), have also the ability to be mixotrophes. The statement that the ecosystem will become more heterotrophic seems thus difficult to prove.

Author's Response: Previous answer is "We agree this pointing. Since we were not able to determine phytoplankton types by species level, we should not suggest the point. We decided to remove the sentence.", but I would like to change the answer

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for the comment reflecting a suggestion by referee #2. Since haptophytes would not take place with prasinophytes but they probably appeared after earlier occurrence of prasinophytes, we would like to keep the sentence with modification as follows.

"However we suggest that the ecosystem can be more heterotrophic, reproductive and such season can be longer along with the appearance of mixotrophic haptophytes due to the reduction of sea ice and warming temperature in the future western Arctic. "

We believe statistically significant warmer temperature where the cluster 3 appeared (Fig. 6a) can be important for the reproductive ecosystem. Please consider accepting this answer.

Interactive comment on Biogeosciences Discuss., 10, 15153, 2013.