

Interactive comment on “Experimental tests of phytoplankton response to ornithological eutrophication in Arctic freshwaters” by Heather L. Mariash et al.

Anonymous Referee #1

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This study provides interesting new knowledge on the important role of goose droppings in affecting water quality in Arctic freshwaters. It shows that these droppings have a greater short term effect on water quality than a sedge plant. These results are not unsurprising. The paper is well written and clear. The experimental design is simple and straightforward. The parameters measured are basic water quality parameters, although chlorophyll a concentrations were not measured. The findings from using small containers should not be over-interpreted. These small containers have a high surface area to volume ratio which can become important in terms of biofilm growth on walls. So the effect in the first few days is the most ecological relevant. This limitation should be discussed. Nitrogen versus phosphorus limitation is only relevant

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if concentrations are low. Therefore N:P ratios should be with caution. Additionally, N fixing cyanobacteria are only promoted if N concentrations are low, not just because N:P ratios are low. The study did not measure primary production, that is a rate process. So the paper should be explicit that what was measured was accumulation of biovolume.

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