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Biogeosciences Discussions

Interactive comment on "Mechanisms of *Trichodesmium* bloom demise within the New Caledonia Lagoon during the VAHINE mesocosm experiment" *by* D. Spungin et al.

Anonymous Referee #2

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General comments: I have only few minor comments about this manuscript - overall the manuscript is carefully prepared and well written. The fate of cyanobacterial blooms is relatively little studied and the paper makes a nice contribution. The results and conclusions are providing new information into this topic, discussing not only mechanistically the drivers of the bloom crash but also discussing the fate of the N and C from the blooms. This paper will be a useful addition to the literature.

Specific comments R121 State how the carboys were cleaned for the experiments R134 nm, not nM R151 state the 15N2 gas lot number and whether you made any effort to test for its contamination by 15NH4 or 15NO3. Given the recent evidence that some 15N2 gases are contaminated, can your rate measurements be trusted? R155

was filtered R155 describe what time of the day 15N2 fixation incubations were initiated and ended, and what time of the day were samples collected form metatranscriptomics R168 (remove a), then 0.45 um polycarbonate filters.. R200 describe how total protein was determined R219 describe here what sequencing method was used R222 list the number of sequences for each sample after trimming – perhaps include a supplementary table. R239 describe what time of the day each of these time points were sampled. R251 purified second time with the Zymo kit? R255 state specifics for the N6 primer R375 What do you mean by T_DIP? R512 Trichodesmium R530 add comma after 'Fe'

Figures: Assure that the figures are higher resolution than they were for the review purposes

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