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Interactive comment on “Water quality, isoscapes and stoichioscapes of seagrasses indicate general P limitation and unique N cycling in shallow water benthos of Bermuda” by J. W. Fourqurean et al.

Anonymous Referee #2

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This paper presents an extensive data set of water column properties and elemental and isotopic content of seagrass tissues. The data is used to, indicate the environmental setting and trace biogeochemical processes, occurring in the near-shore waters of Bermuda. The well constrained location of the study and breadth of data collected allows for a coherent interpretation of the data. The search for relationships between water quality and seagrass composition demonstrates the complexity of this task and it is interesting to note that there are still processes unaccounted for, as indicated by the highly negative stable nitrogen isotopic composition of the seagrass. Overall the paper presents extensive observations that provide a clearer understanding of nutrient cycling in the seagrass meadows of Bermuda and present some intriguing and

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novel results that may lead to new insights on N cycling in this and maybe other similar locations.

The paper follows on from a detailed study where seagrass distribution and abundance was delineated (Manuel et al 2013). The plots of water depth, presence and absence of specific seagrass presented in Manuel et al (2013) assisted in understanding the context of the present study. The data, arguments and assumptions used are generally well presented in the text, but would benefit from moving some of the Tables and figures to a supplementary data set, although I still feel that there is a need for a clearer representation of the data in the figures. More specifically, I found it impossible to identify the location of the 17 permanent station points given the current colours for land and stations. Is it possible to test the likely accuracy of the isopleths of water column properties away from shore as most stations appear to be very close to shore and the relationships between water quality and seagrass composition depend to some extent on these predictions? Can the assumption was made that there were no long term trends in the water column data (environmental setting) be tested for trends between 2006 and 2012?

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