

## ***Interactive comment on “The reliability of grazing rate estimates from dilution experiments: Have we over-estimated rates of organic carbon consumption?” by J. R. Dolan and K. McKeon***

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Dilution experiments are used to estimate grazing rates. We found that in such experiments, for at least one common type of grazer- ciliates, mortality could be quite high. From this we concluded that dilution experiments may commonly overestimate grazing rates. To investigate this possibility, we attempted an examination of published grazing rates using ciliate concentration as a check for 'order of magnitude' correctness. Using this method we found that about 40 % of the reported 'non-zero' grazing rates were suspiciously high given the reported ciliate concentration. These grazing rates we identified as high were mostly from low chlorophyll, that is oligotrophic, sites.

George McManus took exception to our using 'calculated ciliate clearance rate' as a means to identify reasonable vs. unreasonable grazing rates derived from dilution experiments. His point was that in oligotrophic systems ciliate clearance rates may be

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high and that indeed different types of ciliates may be dominant. McManus also suggested that in oligotrophic systems the grazer community may be different from productive coastal systems in attributes such as the importance of mixotrophic nanoflagellates.

McManus raised valid points. Our analysis of grazing rates is an admittedly crude attempt to identify over-estimates. However, to our knowledge there is no evidence that ciliates or other grazers such as heterotrophic nanoflagellates from oligotrophic systems differ greatly in their numerical or functional responses from those found in coastal systems. Indeed the little data published leads to the conclusion that clearance rates are similar.

The other possibility that McManus raised is the existence of grazers at present unknown. This is indeed an interesting possibility. Just as we can be criticized as being too narrowly focused on ciliates as the microzooplankton, perhaps consideration of copepods as the metazoan zooplankton has led to an under-estimation of the importance of ephemeral forms such as salps and appendicularians.

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