

Interactive comment on “Plankton in the open Mediterranean Sea: a review” by I. Siokou-Frangou et al.

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Comments on Siokou-Frangou et al., manuscript. This is an excellent and much needed review of the recent data of Mediterranean Plankton. It sets as background the unusual circulation and chemical oceanography of the system which drives the unusual patterns of productivity found within the system. While it is indeed true that the MS has an N:P > 16:1 and thus the primary productivity in the system is limited by the amount of P present, the actual cause of the oligotrophy in the system is the unusual anti-estuarine circulation which results in the very low total nutrient concentrations despite the fact that it is an almost completely enclosed basin and there is significant both nature and especially anthropogenic input of nutrients from the surrounding coastal regions particularly to the north. On p1193 the authors describe the Cyprus eddy and

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Shikmona Gyre as though they are different features whereas they are actually two names for the same feature. I am intrigued by the data presented in Figure 4 showing the nutrient distribution at 125 m across the MS. It would be helpful if the authors made clear where the data came from and what analytical quality control had been carried out upon it. The text says the depth is 100m while the figure says 125m. There seems to be a particular high value of nitrate in winter in the area of the S.Adriatic that is the source of Levantine Deep Water. Since this is also the time when such deep water is formed and over large parts of the EMS, all the phosphate is consumed during the bloom, leaving a nitrate residual, this implies there would be a significant amount of pre-formed nitrate but not phosphate in the LDW. I am also intrigued by the higher nitrate observed to the east of Crete and wonder what might be the reason for this anomaly. The text notes that the Nile no longer flows as it once did, which is undoubtedly true and that therefore it is much lower source of nutrients which is not necessarily true. The flood which used to jet nutrients including silica into the EMS ceased in 1965. However sewage from Cairo and from the delta now flows into coastal lagoons and these are connected to the offshore. As far as I know there is no data available to know how much of the nutrients from this source reach the coastal shelf and hence the offshore. On p11210 the text suggests that microplankton ‘can escape capture by swimming.’ I seriously doubt if this is a significant effect.

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