

Is there a longitudinal plankton abundance gradient in the Levantine? Lessons from Continuous Plankton Recorder preliminary results.

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Plankton spatial distribution can be an indicator of ecosystem health and primary production in an area. Nevertheless, plankton inherent patchiness makes it difficult to draw conclusions on plankton composition without the availability of high resolution data. Here we provide preliminary results of the progressive alteration of populations along a longitudinal transect crossing the Levantine Sea to connect the coast of Cyprus to Haifa. Samples were collected by the Continuous Plankton Recorder through consecutive samplings in winter 2016. Results show an increasing southward gradient for both phytoplankton and zooplankton abundance (250 and 300% respectively). Chaetognaths and copepods are the groups whose abundance increases mostly when moving southward, whereas protozoans, and specifically tintinids are more abundant closer to the coast of Cyprus. Similarly, phytoplankton abundance increases but without significant changes in the diatom to dinoflagellate ratio. Although plankton abundance generally follows this southward increasing gradient in the present study, there is a subtle increase in abundance close to the middle of the transect. Samples from this area, which covers 10% of the total transect, are also characterized with increased plankton abundance by 230% in comparison to samples at either end of section. This change in abundance is coupled with a decrease in temperature, indicating the possibility of this area to be influenced by a water mixing feature. These results provide important insights on the distribution of plankton across the Levantine basin and the potential uses of Continuous Plankton Recorder data in the region.

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