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A Study on the Distribution
of Primary Production in Saronicos Gulf

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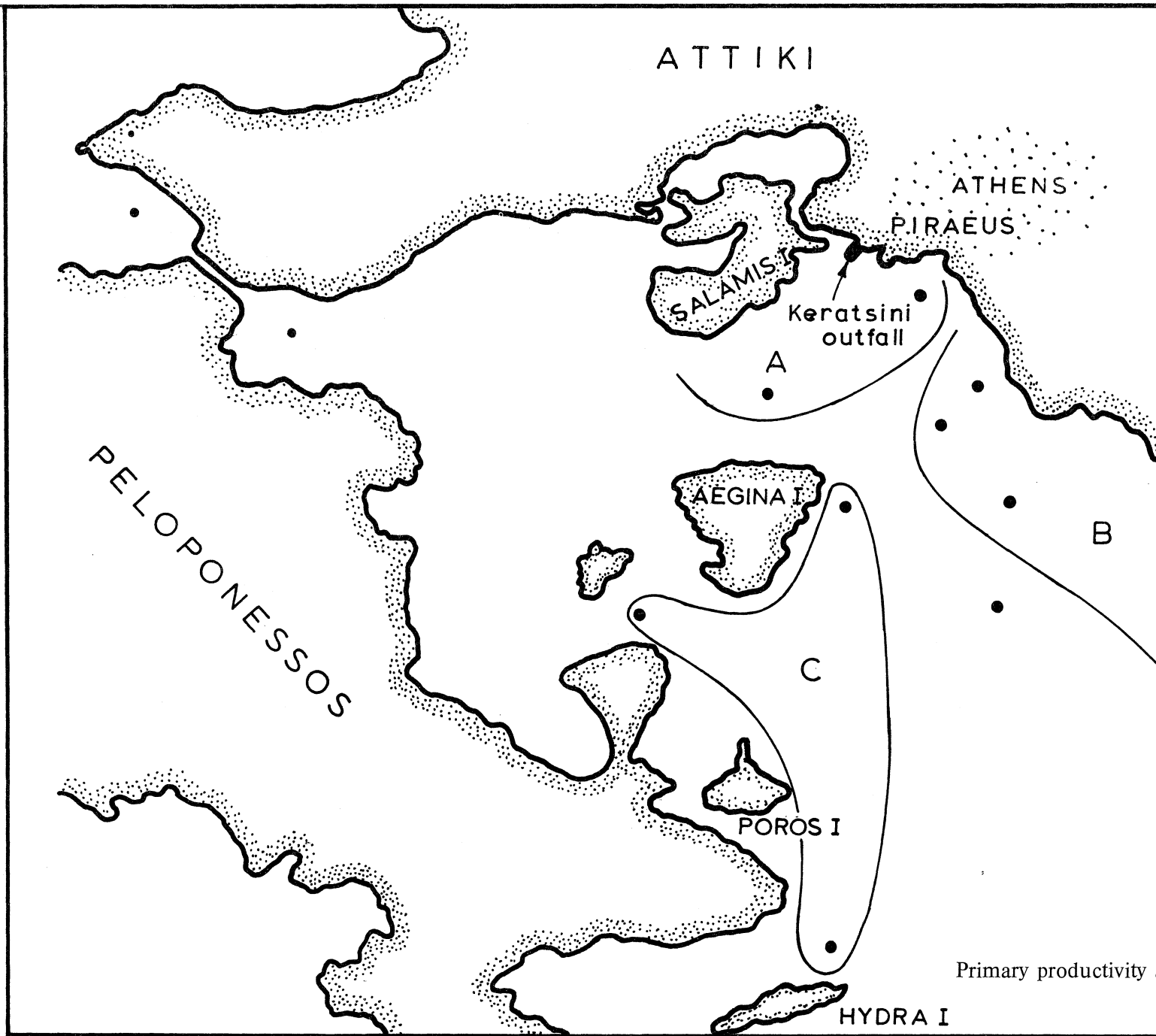
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This paper presents a study of the distribution of primary production in the Saronicos Gulf area and discusses the conditions which affect it.

Experiments on primary production and hydrobiological and light penetration measurements were carried out in the eastern basin of the Saronicos Gulf which is affected by untreated sewage disposal. Previous studies on the unpolluted Saronicos Gulf showed the Gulf in the unaffected part to be oligotrophic.

From the results obtained four zones were distinguished. High primary production rates over $30 \text{ mg C m}^{-2} \text{ hr}^{-1}$ surrounded the sewage outfall area A. An area B with production rates more than $10 \text{ mg C m}^{-2} \text{ hr}^{-1}$ was distinguished in the coastal waters across the north east coast of Attiki with small gradient from the upper to lower parts of this area. Lower production values, less than $10 \text{ mg C m}^{-2} \text{ hr}^{-1}$ were found in area C. The lowest values of production rates were found in the oceanic waters in the middle of the Gulf ($4 \text{ mg m}^{-2} \text{ hr}^{-1}$).

The transparency values follow the same pattern as productivity. The most turbid waters in area A have $k=0.053$, while area A as a whole has k over 0.040. The two areas B



and C have similar values of transparency i.e. 0.024-0.037. The most transparent waters with $k=0.019$ were found in a station in the middle of the Gulf, between the two areas mentioned above. This high transparency coincides with the lowest values of production. The compensation depth presents a quite similar pattern with transparency and productivity.

The above results indicate that the untreated sewage outfall affects the productivity and the transparency of the waters of the Gulf, indicating also that eutrophication takes place near the outfall.

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DISCUSSION

Question and comment:

1. This communication is very interesting as an example of sewage water influence on marine environment - did you have any corresponding results of some (nutrients or currents) additional information for this aquatorium? (M. BRANICA, Yugoslavia)
- No.