

The influence of the N.W Aegean Sea waters on the Physical characteristics of the Pagassitikos Gulf

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Abstract

Recent hydrological investigations in the Aegean and Ionian Sea reveal that the waters of the NW Aegean Sea, are strongly affected by the inflow through the Dardanelles of Black Sea - Marmara Sea waters (THEOCHARIS *et al.*, 1992). This is more evident in the NE Aegean Sea (surface salinity values: 33.5-34.4), but the Western North Aegean Sea is also influenced (Surface salinities: 33.5-37.7). Consequently, the lower surface salinities covering all over the Pagassitikos Gulf, lead to the conclusion that the source water of the Gulf must be the NW Aegean Sea waters and not the fresh water outflow from the surrounding area of the Bay of Volos (Fig.1). Figure 2, summarizes the three years (1986-1989) seasonal salinity surface (0-20m) layer variations as compared to the integrated mean salinity values of the entire water column. It demonstrates that salinity minima are achieved in late summer to early autumn. These salinity variations display similar trends with the equivalent salinity variations in the NW Aegean Sea, providing further evidence that the renewal of the Pagassitikos Gulf surface waters is mainly affected by the inflow into the Gulf of the NW Aegean Sea waters. Furthermore, the analysis of the current meter data reveals that the renewal of the water in the Gulf, in the near - bed layer, is made by the intrusion of the Aegean Sea water along the eastern coastline of the Gulf entrance, and outflow of the water along the western section. In the upper layer, the water circulation is in the opposite direction (BALOPOULOS *et al.*, 1987).

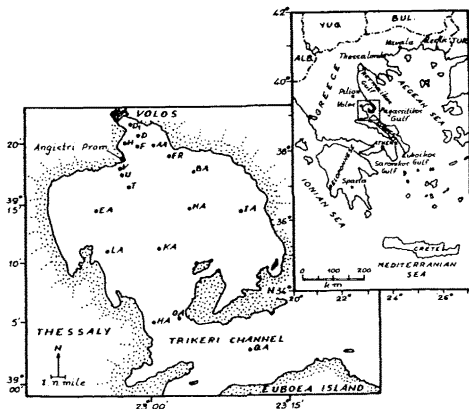


Fig.1: Sampling locations in the Gulf of Pagassitikos.

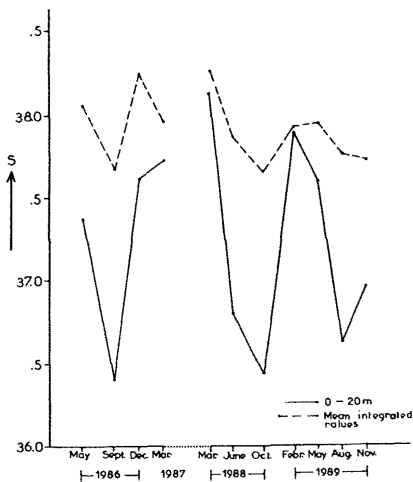


Fig. 2.- Salinity variations in station IA of the surface layer and corresponding integrated mean values (1986-1989)

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