

HYDROGRAPHY OF THE SOUTHEASTERN SECTOR OF THE MEDITERRANEAN SEA IN THE POST HIGH DAM PERIOD

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A part of the cooperative marine technology program for the middle east is to study the biological productivity of the Southeastern Mediterranean in the Post-High (Aswan) period.

The construction of the Aswan High Dam has introduced various hydrographical and biological changes in the Eastern Mediterranean. The subsequent reduction of freshwater and nutrient input has caused in a short time span, drastic changes in the water properties and in the regional productivity. It is of great interest, therefore to repeat such investigations to follow up the evolution of the resources in the post High Dam phase. Five cruises were made in the area from El-Agemy to El-Arish during the period August 1981 to November 1982. The seasonal variations of the Hydrographic structure of the waters off the Egyptian coast were studied.

The location of the sampling stations during the various surveys are shown in fig. (1).

Water masses of southeastern Med. Sea:-

The water characteristic of the southeastern sector of the Med. Sea during the different seasons is shown in fig. (2).

During the winter season, the T-S diagram illustrates the homohaline condition in the upper hundred meter (salinity from 38.40‰ to about 39‰ and temperature from about 17°C to 19.75°C). Below 100 meter depth, the

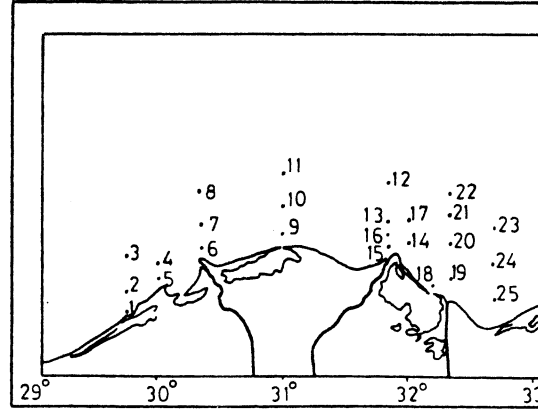
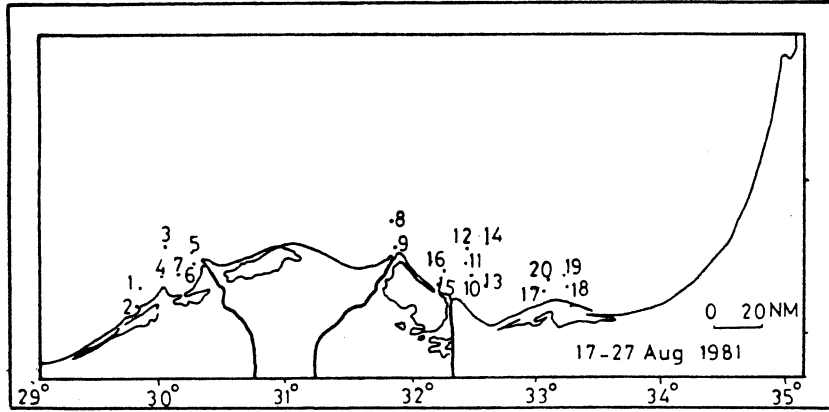
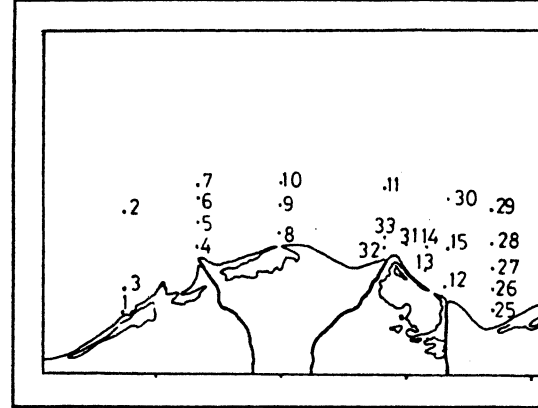
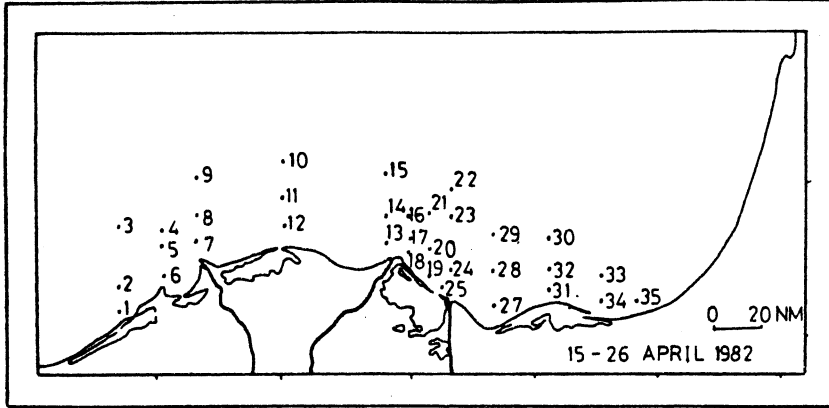
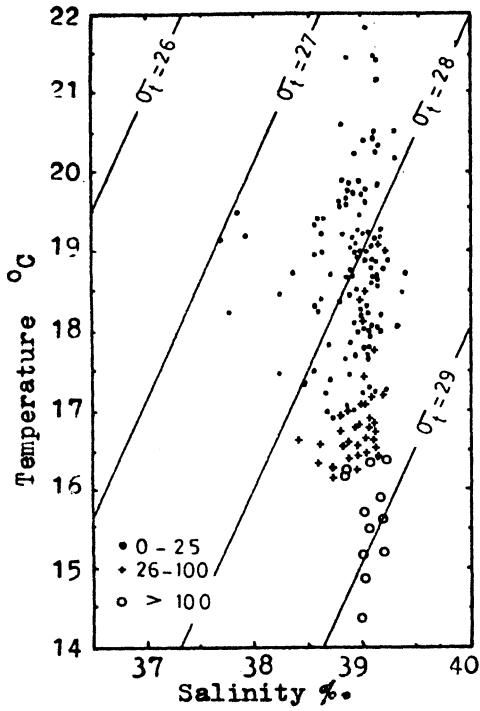
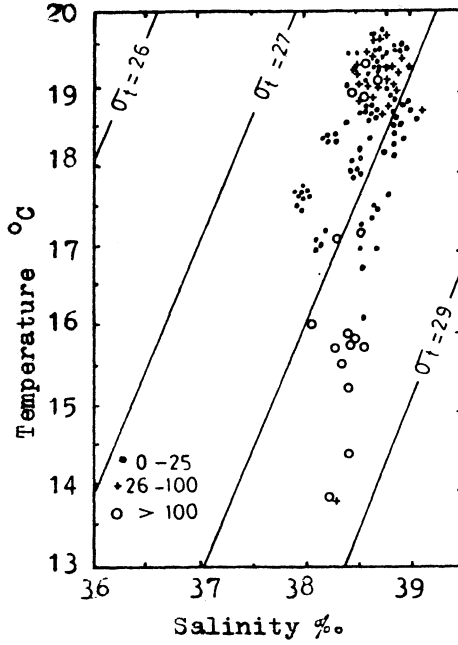


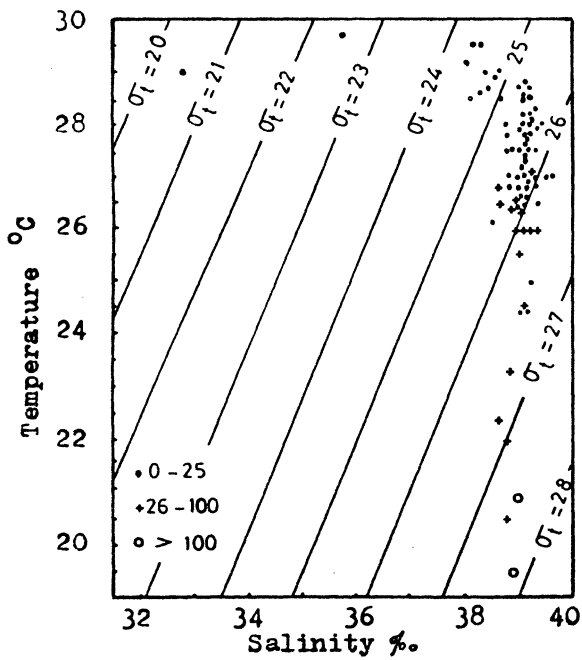
Fig. (1) The sampling stations .



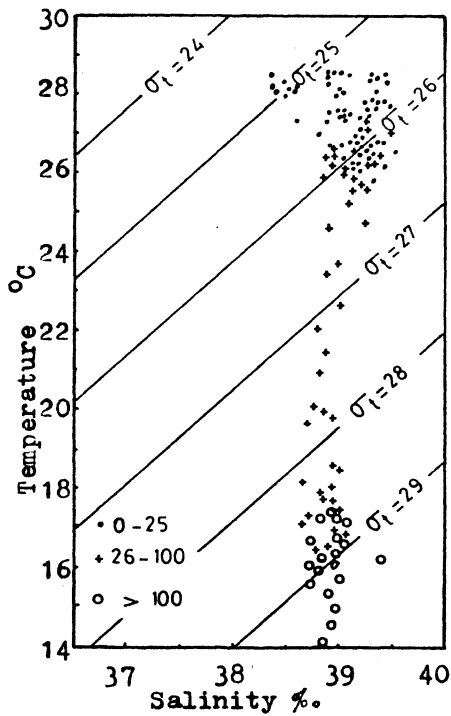
Spring season (April 82)



Winter season (Dec.81 Jan.82)



Summer season (Aug. 81)



Summer season (Aug. 82)

Fig. (2) Water masses .

salinity (38.10% to 38.60%) varied slightly while the temperature (13.85°C to 17.3°C) changed significantly in comparison with the salinity.

In the spring season, the T-S diagram showed that the temperature and the salinity varied significantly in the upper 25 meter. A layer of subsurface minimum salinity (less than 39%) and low temperature is observed between 50m to 100 m. Below 100m. the salinity increased slightly while the temperature decreased.

During the summer season the T-S diagram in August 81 is slightly different from that of August 1982. In the summer, the T-S diagram showed a surface layer of high salinity and temperature. A subsurface layer of minimum salinity is existed in the layer 25-100 m. Below 100 m. the some pattern of variation is existed similar to the spring season.

Summary and Conclusions

The chart of surface salinity in the southeastern sector of the Med. Sea during the predam flood season clearly shows the effect of the Nile to a few Kilometers away from the Egyptian coast (Sharaf El-Din 1977). From the recent hydrographic survey taken during the period August 1981 to November 1982 the surface salinity distribution off the Egyptian coast shows the typical character of Mediterranean water.

The variation of temperature and salinity of the water over the continental shelf area off the Egyptian coast from one season to another were clearly illustrated. The water characteristic at each season were shown on the T-S diagrams. Hydrographic surveys before and after closure of the Aswan High Dam indicate that while the general oceanographic conditions in the offshore region did not change notably, the hydrographic conditions over the continental shelf in front of the Nile Delta were seriously affected.

Sharaf El-Din, S.H. 1977. Effect of the Aswan High Dam on the Nile flood and on the estuarine and coastal circulation pattern along the Mediterranean Egyptian coast. *Limnol. Oceanogr.* 22, 194-207.