



Hydrological and environmental aspects of waters of the Bou Ismaïl bay between the continental influence and the open sea waters

M. Boulahdid, A. Brinis, A. Brahmia, B. Boudjellal and N. Eddalia

Institut des Sciences de la Mer et de l'Aménagement du Littoral, Algiers, Algeria
(m_boulahdid@ismal.net / Fax: +213 21-917791 / phone: +213 21-918908)

The waters of Bou Ismaïl bay (Algeria) are influenced on one hand by the continental and urban contributions and on the other hand by the Algerian current in the open sea with its physico-chemical and dynamic characteristics. This influence was the subject of a study carried out at the beginning of summer 1996 by using hydrological parameters and nutrients. The obtained results allow to subdividing the bay in two more or less distinct areas.

The first one is formed by the western part of the bay where depth can exceed 100 m. The physical and chemical characteristics of waters of this area are similar to those of mixed waters of the Algerian current in the open sea. However, the Redfield ratio of nitrates to phosphates calculated in this zone ($N/P \approx 16$) is lower than the one estimated previously for the open sea waters. This ratio is equivalent to the one estimated by several authors in surface waters of the global ocean. This result can be explained by a coastal upwelling noted in this zone and its mixing with the bay waters.

The second area is constituted by the eastern part of the bay where depths are weak and do not exceed 50 m. The physical and chemical characteristics of waters are enough particular and evoke an internal and/or external enrichment of nutrients. These last ones give a Redfield ratio of nitrogen to phosphorus very weak ($N/P \approx 2$). Except pollution, the explanation of the imbalance of this ratio remains enough delicate in this part very limited of the Mediterranean Sea.