

COASTAL EUTROPHICATION IN THE MEDITERRANEAN MARINE ENVIRONMENT: A SHORT REVIEW

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EXTENDED ABSTRACT

The environmental pressures applied on the coastal zone of Mediterranean Sea include urbanization of the coastal areas, tourism loads and discharges from agriculture, maritime traffic, industry, as well as the influence of aquaculture. The population of the coastal states has doubled since 1960 and it is now about 450 million. The number of tourists is estimated to about 160 million per year, the 24% being tourists from Mediterranean countries. Cultivated land continues to expand around the Mediterranean basin at the expense of forests and grazing land. Nitrogen and phosphorus fertilizers are used extensively especially by countries of the eastern Mediterranean Basin. Aquaculture activities have increased and fish production nowadays is about 250000 tones. Intensive fish farming results in the production of waste, which stimulates algal growth. Industrial as well as maritime activities contribute less to the problem of eutrophication.

Eutrophication in the Mediterranean appears to be limited along coastal areas. Enclosed bays and river estuaries receive nutrient loads from domestic and industrial wastewaters. The part of Mediterranean shows eutrophic trends along the costal zone of Spain, France, the Adriatic and some areas of Greece and Turkey. The open waters of Mediterranean appear to be oligotrophic or even ultra-oligotrophic. However, chlorophyll concentrations seem to be higher in the western part of Mediterranean. In addition to the high nutrient and phytoplankton concentrations, algal blooms have been recorded sometimes dominated by toxic microalgae. Although eutrophication phenomena have been more intense in the northern part of Mediterranean, special attention has to be paid in the southern part as population grows, agricultural and industrial activities develop and national legislation does not seem to be efficient in controlling nutrient enrichment of the marine environment.

Key words: Eutrophication; marine pollution; Mediterranean