

**The concept and the estimate of the receiving capacity  
of the Northern Adriatic for contaminants**

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The problems of preservation and management of the marine environments require profound knowledge of the mechanisms governing the transport, chemical and biochemical modification, and deposition of a contaminant, or a multiple of these. Problems of identification of the most important contaminant and its potential danger of becoming a critical pollutant have been amply investigated in recent years (DEGOBBIS, 1989 ; DEGOBBIS and GILMARTIN, 1990). Historical data are particularly relevant to understand the influence of terrestrial run-off (FONDA UMANI *et al.*, 1989).

The Northern Adriatic is an extended coastal area of a semienclosed sea whose major problem are land-based sources of contaminants. The involved problems of understanding the mechanisms of transport are exemplified by the complex circulation patterns in space and time (CEROVECKI *et al.*, 1990). Along with studies done by other authors on the hydrodynamics and hydraulic transport phenomena, extensive studies have been undertaken in recent years on several small and medium size Adriatic river mouths, the Krka, Adige and Rasa (PRAVDIC and JURACIC, 1988; BOLDRIN *et al.*, 1989; JURACIC and PRAVDIC, 1991; SONDI *et al.*, 1992).

The results of such investigations show that the suspended particulate matter is a selective and important vehicle for the transport of contaminants from land to sea. Major efforts were expended in quantifying this influence and understanding the mechanisms of transport and deposition. It has been shown that some previously overlooked properties of both the suspended mineral particles, of the amount and nature of the organic coating, and of the nature of the contaminant can determine the extent of the influence. For the Krka River the results indicate that most contaminants are bound to particulates and deposited within the estuary. All indicators show that for the Adige River mouth the mechanism is, in general, twofold : for lead, nickel and chromium there is immobilization by adsorption and sedimentation within the estuary ; copper and cadmium are predominantly transported into the marine environment.

Results of such studies indicate that in assessing the assimilative capacity of the Northern Adriatic as a tool of rational environmental management, and in particular the decisions on the extent of prevention of pollution from land-based sources will require further studies at specific sites, and a thorough investigation of the interaction between dissolved matter and particulates, and between suspended matter and sediments.

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