



Dipartimento di Scienze della Terra
e Geologico-Ambientali



Workshop
on coastal pollution issues
*L'inquinamento delle coste:
dalle origini alle politiche di recupero*
Living on the edge

ABSTRACTS

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Effects of anthropogenic disturbance on the macrobenthic assemblages in the northern Adriatic coastal lagoons

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Temperate coastal lagoons are highly dynamic and unpredictable systems characterised by sharp daily and seasonal variations of the chemico-physical parameters. Therefore these habitat are selective towards tolerant species. Changes in patterns of distribution of benthic assemblages are related to the abiotic and biotic factors that act simultaneously and synergistically. Dystrophic crises and several sources of anthropic disturbances (i.e. chemical and thermal pollution, dredging, aquaculture, etc.) could reduce the species richness and alter the ecosystem processes. Severity and extent of the alterations of macrobenthic assemblage depend by both intensity of disturbance and environmental characteristic. Studies, carried out in the northern Adriatic lagoons, showed that summer dystrophic crises in a small and enclosed pond produce species richness reduction and dramatically affect annual secondary production. Dystrophic creases in a coastal lagoon system with high water renewal mainly affect sensitive species like amphipods and could promote the increases of abundance of opportunistic species like small polychaetes, but a certain degree of winter recover could be possible.

Since European Water Framework Directive requires that all surface waters, including transitional waters, achieve at least 'good ecological and chemical status' by 2015, some biotic indices based on macrobenthic assemblages were proposed to assess the environmental quality of the coastal lagoon. Most of them fail due to lack of reference condition and an adequate knowledge on the responses of the assemblages to the different source of disturbance. Current experimental researches, which were promoted by the Centre of Environmental Research (CIRSA) of the University of Bologna, aims to better understand the ecological processes in the transitional waters with the final goal to develop new approach to the environmental quality assessment.