
Preface

When the UNESCO research programme on Man and the Biosphere was launched in 1971, aquatic ecosystems immediately became the subject of a special project due to the important changes that can be produced in them by human activities. In the beginning, attention was focused on the consequences of intensification of agriculture : erosion and sedimentation, groundwater pollution, eutrophication, and other adverse events.

After 15 years, the first phase of the project was concluded with a final meeting devoted to the use of scientific information in understanding the impact of land use on aquatic ecosystems. It highlighted the major role of interfaces (ecotones) between terrestrial and aquatic ecosystems in the regulation of biogeochemical cycles and in the structuring of landscape mosaics. Viewing aquatic systems as a collection of resource patches separated by ecotones allows to determine the relative importance of upstream - downstream linkages, lateral linkages and vertical linkages to be examined, and provides a conceptual framework for the understanding of factors regulating the exchange of energy and materials between identifiable resource patches.

Therefore, it was recommended by this meeting that UNESCO's future work on ecosystems should emphasize the in-depth study of ecotones, their management and

restoration. Thus the Ecotone project was established under the double responsibility of the International Hydrological Programme and the Man and Biosphere Programme with a general objective to determine the management options for the conservation and restoration of the land/inland water ecotones through increased understanding of ecological processes. A global network of cooperative research sites has been developed to study such ecotones like riparian forests, wetlands, areas surrounding lakes, alluvial plains, flood plains, as well as two specific fields of major interest : fish populations and land/inland-water ecotones, and interrelationships between surface water and groundwater.

At the end of a first phase of the Ecotone project, time arrived to synthesize the results of activities. The present volume is born from the efforts made by the surface water / groundwater ecotones network and materialized by an International Conference. We should like to express our thanks here to the leaders of the network as well as to the University of LYON I, France, and to the Professor Janine GIBERT for the organization of the International Conference during which all the participants in the network have had the opportunity to present and compare the results of their studies and to propose future prospects.

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