

ECOLOGICAL BASIS FOR THE APPLICATION OF ECOTECHNOLOGIES TO WATERSHED/RESERVOIR AND MANAGEMENT

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ABSTRACT

Reservoirs play an important ecological, economic, and social role, interfering qualitatively and quantitatively with the hydrographical network and with several mechanisms in the major river basins of the world and in all continents. In Brazil, as in many other countries, reservoir construction has been used as a basis for regional development, being a catalytic agent for several multipurpose actions in the watershed. The protection, recovery and optimization of multiple uses of these artificial ecosystems, can only be achieved if a sound ecological basis is constructed, with long term observations, experimental studies, and theoretical approaches, in which seasonal changes, the ageing process of the reservoir under anthropogenic actions, and the interactions of the reservoirs with the watershed, are followed up. The application of principles of theoretical ecology will be extremely useful in the implementation of ecotechnological methods for reservoir recovery and management. This approach has been extensively developed at the Lobo-Broa reservoir watershed, as well as other reservoirs of the Tietê River Basin in the State of São Paulo. In this paper, the authors discuss the need for a theoretical basis for the application of ecotechnologies on reservoirs. An overview of the reservoir problem in Brazil is given as an introduction to a discussion on conservation and management of these artificial ecosystems.