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I International Conference on Research for Sustainable Development in Mountain Regions

Book of Abstracts

INSTITUTO POLITÉCNICO DE BRAGANÇA
Centro de Investigação de Montanha
Embrapa
United Nations Educational, Scientific and Cultural Organization · UNESCO Chair in Sustainable Mountain Development
University of the Highlands and Islands Oilthigh na Gàidhealtachd agus nan Eilean
EUROMONTANA
ADVID Cluster dos Vinhos da Região do Douro Douro Region Wine Cluster

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S03P05

How precipitation variation influences reservoir limnology? The case of Azibo Reservoir

Ana Maria Geraldes
CIMO, Escola Superior Agrária do Instituto Politécnico de Bragança, Campus de Santa Apolónia, 5300-253 Bragança, Portugal, Bragança, Portugal

Reservoirs are important for supporting economic growth and can provide numerous cultural and ecological services. Currently, water quality degradation and algal blooms are among the issues that threat reservoirs services. Climate change, due to the substantial changes expected in the annual precipitation cycle, can exacerbate these problems by increasing nutrient export from the surrounding lands. Therefore, this study intends to provide information on how precipitation variation may impact several limnological parameters, such as total phosphorus, water temperature, pH, conductivity, dissolved oxygen, water transparency, chlorophyll a and cyanobacteria abundance. Samples were collected monthly from October 2000 to September 2002 and from October 2007 to September 2009 at one single sampling station located at the deepest point of the Azibo Reservoir (latitude: 41º32'50''N; longitude 6º 53' 38''; altitude: 500 m). All data were obtained in the euphotic zone. The highest values of total phosphorous concentrations were reported together with the maximal values of precipitation. Conversely, conductivity water transparency decreased during the wet periods. Cyanobacteria presence was only detected when a dry summer was preceded by an extremely wet winter (chlorophyll a peaked during cyanobacteria presence). Obtaining longer data series enabling a simultaneous analysis of intra and inter-annual ecosystem changes will allow a better understanding of the complexity of interactions between climate and limnological parameters. This can in turn reveal the role played by climate change and other disturbance events on reservoir limnology.