

Development of a methodology for the calculation of the risk of eutrophication in a reservoir in the state of Ceará, Brazil

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Abstract. This research has as main subject the development of a methodology to calculate the risk of eutrophication in a reservoir, based on Fuzzy Theory and the mechanisms used for the determination of the Modified Trophic State Index. To do so, it was used data from a Reservoir, in the State of Ceará, Brazil, especially in the years 2001 through 2006. These data were gotten through the Company of Water Resources Management – COGERH. To calculate the risk it was used membership functions of the Modified Trophic State Index, transformed according to the rules of Fuzzy Numbers. The results have shown that the use of the Fuzzy Set Theory could be important tools in order to calculate the risk of eutrophication for reservoirs and bring some help in the water resource management concerning with water quality problems.

Keywords: Eutrophication. Modified Trophic State Index. Fuzzy Risk.

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