ANALYSIS OF THE REDUCTION IN THE NUMBER OF PONDS ON CARBONATE TERRAINS IN THE KARST REGION OF LAGOA SANTA, MG.

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ABSTRACT: This study was conducted in an area located 35 km north of Belo Horizonte, of approximately 505 km², which encompasses the entire region called EPA Karst Lagoa Santa. The region is geologically characterized by the carbonate rocks present in the Bambuí Group, of neoproterozoic age. The study proposes to evaluate and make a survey of the lagoons existing in the studied area between the years 2003 to 2019, thus establishing a relationship between the data found with climate changes and/or anthropic activities. The methods used consist of evaluations of Google Earth Pro satellite images, maintaining a 1:1000 scale during the dry season of April and May. For the period from 2003 to 2007, it was not possible to ascertain approximately 15% of the total area, due to the quality of the images. It is worth mentioning that the data were compared with the total rainfall history of the Raul Soares station (1943049) in Lagoa Santa, provided by the National Water Resources Information System (SNIRH), whose average rainfall is 1,186.6 mm (1980-2019). With this information, it was observed that the number of lagoons in 2003 was 78 and remained the same until 2007, and the variation in rainfall was around 2% more than the historical value. From 2008 it was possible to observe the variation in the number of lagoons. In this specific year the loss was 16 lagoons and the total number remained in the following year, while the rainfall in this period was 16.3% above the average. The numbers were reduced until reaching 54 lagoons in 2011, with a rainfall decrease of approximately 11% in relation to the historic. In 2012, it was possible to observe the recovery of two lagoons in relation to the previous year, even when the rainfall registered 925.5mm, 28.2% below the average. In the following five years there were only reductions in the number of lagoons, being the most significant from 2013 to 2014, when it was possible to observe a loss of 12 lagoons. At the end of this period, 2017 totaled 29 lagoons, accompanied by a 38% rainfall reduction for this period in relation to the historical average. During the years 2018 to 2019, there was a resurgence of six lagoons, totaling 35, even registering a rainfall 21.8% below the average. In general, the results presented assume that the overexploitation of the aquifer system is the main responsible for the disappearances of the lagoons, combined with some years of drought that contribute to a lower volume of aquifer recharge and consequently maintenance of the lagoons.

KEYWORDS: LAGOONS; RAINFALL; EPA KARST LAGOA SANTA.