



Variation of the anthropic vulnerability in Ribeirão das Pedras watershed in Campinas/SP - Brazil.

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The human actions has caused over the years profound changes in environmental quality in urban ecosystems suffering losses in the quality of air, soil, water and vegetation also the quality of life of the population that inhabit these areas. The study area is characterized by being a highly urbanized watershed, with about 43 % of its area covered by buildings, houses, and commercial and industrial establishments. Called the Ribeirão das Pedras Basin, located in Campinas / SP - Brazil and is bounded by coordinates 22°47'10" and 22°52'20" S, and 47° 07' 15" and 46° 02' 15" . Has an average temperature of 22.4 ° C and average annual rainfall of 1424.5 mm. It has an area of about 42 km². This is located two universities and a large mall. It also demands a strong agriculture, which occupies about 30 % of the area. It has also been part of two major forest reserves of the municipality, the Forest Santa Geneva and the Forest of Quilombo, both added to other small fragments overlying only about 6% of the total basin area. Avaliação to environmental quality, the analysis of the vulnerability of urban watershed becomes an important environmental management tool. The vulnerability can be defined by susceptibility to changes of environment in its initial state, a current tax status by human intervention, and is almost always associated with risk, and the intensity at which such projects in one place, person or structure. In this context, this study aimed to assess environmental vulnerability in an urban watershed coming under increasing human pressures, especially in recent years. For this analysis were prepared soil graphics, slope, elevation and land use and land cover for the years 2009 and 2014, generating with these, comparative anthropic vulnerability maps of the past five years. Crafting vulnerability maps is a sensitivity in order to enable appropriate management of biotic systems. With the results can be seen that the variation of anthropogenic vulnerability in the study area took place mainly by the real estate growth that the area has suffered in recent years, due to the large enhancement of the region, both for businesses and homes, as for industrial area. It was found that the distribution of anthropogenic vulnerability for 2009 was 19% too low, 33% low, 40 % moderate, high 8% and 0% too high. 2014 was obtained by dividing the current scenario is as follows: 10% very low, low 31%, moderate 50%, 9% and 0% high too high, meaning that there was an increase in high vulnerability points and moderate and still, a very significant decrease for low and very low vulnerability, revealing the strong environmental impact that the area has been suffering. Thus, we can conclude that the housing boom in large areas impacts the vulnerability of a watershed, which will certainly affect both the areas of forest / native fragments, and subsequently the quality of life of the surrounding population. In the specific case of Ribeirão das Pedras watershed, knowing the strong agricultural occupation of the area, it is known that the increased fragility still imply large losses for food production in the region.