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### **IMPACT OF LAND USE/LAND COVER CHANGE ON ECOSYSTEM SERVICES IN A MICRO-WATERSHED, PARAÍBA, BRAZIL**

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The land use and land cover (LU/LC) interferes with availability of ecosystem goods and services that are important for maintenance of life, socio-economic activities and human well-being. The objective of research was to analyze how change in LU/LC influenced availability of ecosystem services of tree-shrub cover in the micro-watershed Riacho das Piabas, Campina Grande metropolitan region, Paraíba, Brazil, between 1989, 2007 and 2014. We use remote sensing and geographic information system to obtain the area (hectare) of each LU/LC category. The estimated ecosystem service value (ESV) was computed by multiplying the area by ecosystem services coefficient (US\$ per year) available in literature. We applied sensitivity test to examine the uncertainties of value coefficients. Ecosystem services provided for tree-shrub cover decreased between 1989 (US\$ 9.738 million), 2007 (US\$ 3.435 million) and 2014 (US\$ 1.418 million) and the contribution of change from LU/LC to ecosystem services was negative (-74%) between 1989 and 2014. According to sensitivity test, our estimation of ESV are reasonable and robust. The ecosystem services functions of tree-shrub cover that most contributed to ESV in 1989 were climate regulation (US\$ 3.469 million), medicinal resources (US\$ 2,549 million) and recreation (US\$ 1,474 million), while in 2014 were nursery services (US\$ 0.375 million), climate regulation (US\$ 0.373 million) and medicinal resources (US\$ 0.273 million). We verified conversion of vegetation cover in human settlements that caused decrease in services provided by all studied ecosystem functions, except than aesthetic information function. Therefore, it is important that public managers prioritize the conservation of remaining green areas in the study area to guarantee ecosystem services essential for maintenance of life and human well-being.

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