

Application of models to estimate erosion, sediment production and future scenarios in two Brazilian tropical watersheds

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Abstract The main objective of this study was to evaluate the application of two different tools; the USLE (Universal Soil Loss Equation) to estimate soil erosion and the SWAT (Soil Water Assessment Tool) to estimate sediment production in two tropical ungauged basins, subjected to different land uses, located within the state of São Paulo, Brazil. The Guabirobas watershed (51 km²) is used for agricultural production and the Jataí watershed (80 km²) includes the Ecological Station of Jataí (36%), which is a preservation area. The models were effective in identifying areas most susceptible to erosion and sediment production and in simulating different environmental scenarios. The results of USLE epitomized the values expected for the regions whereas the SWAT model was found to overestimate stream flow when compared with monitoring data observed in one of the basins.

Key words erosion; hydrologic processes; hydrographical basin; USLE; SWAT; scenarios