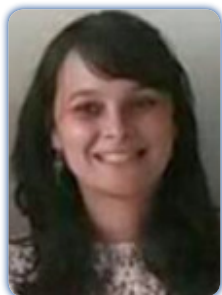


1st Global

GEOTECHNICAL AND WATER RESOURCE ENGINEERING SUMMIT

September 18-19, 2017 Hong Kong



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Inclusion of hydrological indicators in the evaluation of forest restoration

Due to the complexity of the biological interactions with the abiotic factors of the environment, the current focus of the environmental recovery is almost exclusive in the biological component, not knowing at what point during the vegetation development, the restoration contributes to the water maintenance. In what moment and how it will interfere in the water balance of a hydrographic micro basin? This work aims to characterize the behavior of hydrological parameters in forest areas at different stages of restoration by conducting the natural regeneration in order to insert them as a tool to evaluate the restoration. For this, a micro basin was selected, where three plots were demarcated for each treatment with different ages of succession (Treatment 1: 4 years, Treatment 2: 10 years) and a fragment without human interference (Treatment 3: 43 years). The research characterized and evaluated the conditions of natural regeneration through vegetation structure indicators and in each plot, an open precipitation, effective precipitation, throughfall, stemflow and interception was characterized. The vegetation diversity and structure indicated an increasing trend in both number and richness among treatments. The species and families present in each treatment are acting in the process of natural succession. Regarding the hydrological parameters, there were significant differences between the three areas studied. It can be noticed that the interception and stemflow have increasing behavior as the natural regeneration progresses, while the throughfall and the effective precipitation decrease. With the advancement of the natural succession there was an increase in the vegetal parameters and improvement of the soil parameters. On the other hand, the hydrological parameters showed specific behavior for each treatment, indicating that they are able to respond to the state of maintenance and development of the vegetation.

Biography

Kelly Cristina Tonello has a graduate degree in Forest Engineering, Master's degree in Forestry Science from the Federal University of Viçosa (UFV) and PhD from the State University of Campinas (UNICAMP). She is a Lecturer at the Federal University of São Carlos/Sorocaba-SP Campus and Collaborating Researcher at the Faculty of Agricultural Engineering (FEAGRI) at UNICAMP. She focuses in hydrology lines, forest ecosystems, water conservation, river basin management, recovery of degraded areas, forest ecophysiology and payments for environmental services. She is also a Coordinator of the research group on hydrology in forest ecosystems (Hidrolef).

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