AGU FALL MEETING
San Francisco | 14–18 December 2015

H43B-1481: Stream water quality in the context of payments for environmental services in Southeastern Brazil

ABSTRACT

Thursday, 17 December 2015
13:40 - 18:00
Moscone South - Poster Hall

Public policy of payment for environmental services (PES) was established in 2007 to face the challenge of recuperatingwater resources at one of the headwater areas of the Jaguari River Basin, which supplies an important reservoir for the metropolitan region of São Paulo, Brazil. Such effort consists of reforestation of riparian zones and spring lands at the hills of selected catchments, including the Ribeirão das Posses (RP) catchment. Since 2012 the University of São Paulo has developed research at RP to monitor the benefits of these practices on stream water quality, and identified a few parameters as good indicators to follow up the results of this PES program. The present study has the objective to show results of the monthly monitoring in2015,including 13 sampling stations at RP catchment distributed as follows: one in a spring forested area, three in spring areas of different ages of reforestation (3, 5 and 8 years), and nine at reaches of RP streamlocated in a way to contemplate the effects of the first order streams that comes from the studied spring areas entering RP. We established two additional stations at the Jaguari River, upstream and downstream of RP outlet. In situ measurements include temperature, pH, electric conductivity (EC) and dissolved oxygen (DO), and collect water samples to bring to the laboratory for analyses of dissolved organic and inorganic carbon (DOC and DIC), total nitrogen (TN) and alkalinity. Also, sediments (fine fraction: >0.45 µm; and coarse fraction: >63 µm) are collected for isotopic carbon analyses. Preliminary results show pH values ranging from 5.5 to 7.8, while DO ranges from 5.8 to 8.9 mg L^{-1}. As for EC, the mean at the spring forested station was 34.6 µS cm^{-1}, while at spring areas of 3, 6 and 8 years of reforestation they were 53.3, 73.8 and 34.8 µS cm^{-1}, respectively. We expected that by the end of this annual monitoring the benefits of reforestation will be affirmed.

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