

Interactive comment on “Sediment loss and its causes in Puerto Rico watersheds” by Y. Yuan et al.

Y. Yuan et al.

yuan.yongping@epa.gov

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GENERAL COMMENTS:

The manuscript contains the analysis of the influence of landscape characteristics on sediment loss. It shows an application in Puerto Rico and falls within the scope of SOIL. It is an interesting piece of work worthy of publication after moderate revision. My main concern is with the clear identification of the main results of the manuscript and the ANOVA test. All of the Tables and Figures but the last one appear along the Methodology section before Results and discussion section. Therefore the authors should make a clear distinction of the data they use to characterize the study site, and those that constitute computations specially carried out to support the conclusions of

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the study. In this way, at least Table 8 and Figure 2 to 4 should be referred to in section 3 and not before. Regarding the ANOVA test, it is a bit confusing as the description of the characteristics and measured values in just the 11 resulting stations after de ANOVA test appears from Table 2 onwards. For example, results in section 3.2 are just analyzed in the 11 stations before their selection with the ANOVA analysis that comes after in section 3.3. Therefore, I think it should be the first result of section 3. Figures 2 and 3 would be easier to visually interpret and the confusion between the different numbers of watersheds/stations in each Table would disappear.

RESPONSE FROM AUTHORS: Dear Referee, thank you for the time you devoted to reviewing this manuscript and for your helpful comments. We carefully considered your comments and will take them into account for further revisions. Following your advices, we decided to just include those 11 stations for this study. We struggled very much during writing to present the analysis we performed in a clear way. Because we studied those 20 independent watersheds, we just thought to present them all. Actually, analysis on those 11 stations would provide clear identification of the main results of the manuscript. In this way, the paper would be more concise. ANOVA test was only used to select those 11 stations for further PLS analysis and it is not important regarding to the results and conclusion of the paper. Thus, it is deleted to reduce confusion.

Specific comments: -Page 480: Please check the following sentence: “These secondary forests regenerated from abandoned pastures and coffee plantations, and currently are a mix of native and non-native naturalized species”. -Page 480:

RESPONSE FROM AUTHORS: we removed this sentence, actually we removed this entire section suggested by referee 2.

The following statement could be removed as it is later repeated in section 2 where it suits better: “In this study, shade coffee plantations are classified as shrub because of their low canopy.” –

RESPONSE FROM AUTHORS: we agree and removed this sentence.

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Page 481: the whole paragraph starting in line 25 should be either deleted or moved out of the Methodology section.

RESPONSE FROM AUTHORS: we agree and removed this sentence.

-Page 482: What is the time step of recorded stream flow and SS? Also, how were the "Annual SS concentrations and load time series" of Figs. 2 and 3 computed? Are they annual means of recorded data? Please, add some clarification in this respect.

RESPONSE FROM AUTHORS: the time step for recorded stream flow is every 15 minutes; grab and automatic samplers were used for sediment measurement. Using the station number listed in table 1, those detailed data can be retrieved from USGS website. For this study, we used the Annual (water year) statistics provided by USGS and we added the information in the paper (section 2.2).

-Page 486, line 5: I think that there is a mistake with station 9 and the authors really mean station 13. -Table 5 is unnecessary and could be deleted. -Please, check caption.

RESPONSE FROM AUTHORS: we mean station 8, now 3 in this paragraph. We double checked and made sure it is the correct information.

in Figure 1. -Please change captions

RESPONSE FROM AUTHORS: the caption is changed to: "Puerto Rico Island with NOAA weather stations (green triangles) and selected USGS monitoring stations (Blue boundary) for this study".

in Figs 2 and 3 adding something like: "Mean annual suspended sediment concentration/load per monitoring station"

RESPONSE FROM AUTHORS: we agree and changes were made.

Interactive comment on SOIL Discuss., 2, 477, 2015.