

Interactive comment on “Sediment budget analysis of the Guayas River using a process-based model” by P. D. Barrera Crespo et al.

Anonymous Referee #3

Received and published: 4 January 2019

I really enjoyed reading this article because the work done is an excellent contribution for the understanding of the processes that govern sediment transport dynamics in the Guayas River in order to assess the trade-offs for urban risk management of coastal cities as Guayaquil.

After a careful review of the article, I consider that some considerations should be included for the scenario definition. In scenario 1, I would suggest to include a more realistic representation of the spatial distribution of tidal flats in the inner estuary previous to the construction of Daule-Peripa dam. The scenario 4 did not consider the increment on mean sea level (MSL) due to thermal expansion because of El Niño conditions. For

C1

the 1997-1998 event, Zambrano et al. (2000) reported a maximum increase of 42 cm on MSL at La Libertad, in Ecuador. Including this effect for the simulation of scenario 4 could provide interesting insights on the net effect of a strong El Niño event on the sediment transport dynamics in the Guayas River.

Interactive comment on Hydrol. Earth Syst. Sci. Discuss., <https://doi.org/10.5194/hess-2018-467>, 2018.

C2