

Nat. Hazards Earth Syst. Sci. Discuss., author comment AC1
<https://doi.org/10.5194/nhess-2021-364-AC1>, 2022
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Reply on RC1

Laurie Jayne Kurilla and Giandomenico Fubelli

Author comment on "Impact of spatial data uncertainty in debris flow susceptibility analysis" by Laurie Jayne Kurilla and Giandomenico Fubelli, Nat. Hazards Earth Syst. Sci. Discuss., <https://doi.org/10.5194/nhess-2021-364-AC1>, 2022

We greatly appreciate the detailed suggestions provided by the reviewer, and their time spent in providing the feedback. We agree with and will implement recommended modifications for the final submission. We regret that we did not "catch" some of these issues before submission.

Regarding the discussion on MaxEnt background points constituting "absence" data, it is noted that "presence" is unknown at the MaxEnt background locations (Merow et al 2013). When using the default setting (as was done in this study), the MaxEnt software uniformly at random selects background locations which may include the "known" debris flow sites, as well. MaxEnt uses background data primarily to characterize environments in the study region rather than to act as "absence" data. (Phillips et al. 2009). Perhaps as further evidence, "A simple strategy to remove sample selection bias is to replace the uniform background data by a random sample of background data drawn from the sampling distribution" (Phillips and Dudek 2008).

We agree that logistic regression is another statistical method not requiring the input of "absence" data. Pointing out that MaxEnt is a "presence-only" model is just one of the justifications for utilizing this methodology. The discussion and methodologies of "presence-only" vs "presence-absence" will continue to be an important topic for this researcher and your insights are much appreciated.

Merow, M. et al A practical guide to MaxEnt for modeling species' distributions: what it does, and why inputs and settings matter 10.1111/j.1600-0587.2013.07872.x

Phillips, S. et al. 2009. Sample selection bias and presence-only distribution models: implications for background and pseudo-absence data. – Ecol. Appl. 19: 181–197.

Phillips, S. and Dudik, M. 2008. Modeling of species distributions with MaxEnt: new extensions and a comprehensive evaluation. – Ecography 31: 161.

Respectfully,

Laurie J. Kurilla