

# ***Interactive comment on “A new approach to mapping landslide hazards: a probabilistic integration of empirical and process-based models in the North Cascades of Washington, U.S.A.” by Ronda Strauch et al.***

## **Anonymous Referee #1**

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This represents a clearly articulated study comparing two different methods for obtaining susceptibility maps for the region. The results are informative and represent a step forward in characterizing landslide hazards, but there are a few items that would strengthen the paper and should be addressed prior to publication. The authors should discuss why an independent training and testing dataset was not used for this approach. This is typical practice and it would be more robust if there was a separate validation dataset. The authors should also provide a brief discussion on the accuracy and comprehensiveness of landslide inventories with respect to represen-

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tative landslides over this region as well as relevance of the methodologies for other regions. From the maps in 8e and f it is clear that accurately characterizing the entire landslide using the current methodologies is challenging. Can the authors comment a bit more on how this may be improved with differentiating source area from possibly considering a runout model to develop probabilistic estimates of runout? Finally, it would be helpful to have a bit more discussion on the applicability of these methods to other regions, including the size of the region over which this methodology could be applied and other considerations. Specific comments are included as highlights in the attached document.

Please also note the supplement to this comment:

<https://www.nat-hazards-earth-syst-sci-discuss.net/nhess-2019-104/nhess-2019-104-RC1-supplement.pdf>

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