

## ***Interactive comment on “Forest harvesting is associated with increased landslide activity during an extreme rainstorm on Vancouver Island, Canada” by J. N. Goetz et al.***

### **Anonymous Referee #2**

Received and published: 31 December 2014

Does the paper address relevant scientific and/or technical questions within the scope of NHESS? 1

Does the paper present new data and/or novel concepts, ideas, tools, methods or results? 2

Are these up to international standards? 2

Are the scientific methods and assumptions valid and outlined clearly? 2

Are the results sufficient to support the interpretations and the conclusions? 3

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Does the author reach substantial conclusions? 3

Is the description of the data used, the methods used, the experiments and calculations made, and the results obtained sufficiently complete and accurate to allow their reproduction by fellow scientists (traceability of results)? 2

Does the title clearly and unambiguously reflect the contents of the paper? 3

Does the abstract provide a concise, complete and unambiguous summary of the work done and the results obtained? 2

Are the title and the abstract pertinent, and easy to understand to a wide and diversified audience? 2

Are mathematical formulae, symbols, abbreviations and units correctly defined and used? If the formulae, symbols or abbreviations are numerous, are there tables or appendixes listing them? 2

Is the size, quality and readability of each figure adequate to the type and quantity of data presented? 2

Does the author give proper credit to previous and/or related work, and does he/she indicate clearly his/her own contribution? 1

Are the number and quality of the references appropriate? 1

Are the references accessible by fellow scientists? 1

Is the overall presentation well structured, clear and easy to understand by a wide and general audience? 1

Is the length of the paper adequate, too long or too short? 2

Is there any part of the paper (title, abstract, main text, formulae, symbols, figures and their captions, tables, list of references, appendixes) that needs to be clarified, reduced, added, combined, or eliminated? 2

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Is the technical language precise and understandable by fellow scientists? 2

Is the English language of good quality, fluent, simple and easy to read and understand by a wide and diversified audience? 1

Is the amount and quality of supplementary material (if any) appropriate? /

Dear authors, I found your manuscript "Forest harvesting is associated with increased landslide activity during an extreme rainstorm on Vancouver Island, Canada" interesting, well written and organized. However some flaws are present in the methods and in the assumption. One of the big issue is the equation forest structure=time since harvesting that needs to be clarified. I think, and I am quite sure, that some openings or some low density forest are related to other causes than forest utilizations. Natural disturbances (windthrow, insects, disease, wildfires...) or site limitation (rocky site, superficial water table,...) can create forest structure similar to post-harvesting one. I agree with you that forest canopy cover is very important in preventing landslide, is a sort of lamination factor, at least up to a certain threshold (when it is saturated, same water in, same out). The key point is the forest structure and cover, after in the discussion you can talk about the processes that lead to that structure (i.e. disturbances, both natural and anthropogenic – harvesting-). Among forest operation, the machinery used in the logging activity could have an influence on landslide initiation (this information is available on the cutblock dataset?). In the confusion matrix you considered also the masked points, it is better not to use these data since you are testing your classification. Furthermore you should use more than 100 points (at least 50 points per class), and eventually other indices (i.e. Kappa Index, in your case 0.65 masked included...). Since all your analyses are based on derived data (real ground truth validation is missing) you have to provide some overall accuracy information (errors propagation). Double -check the references, some are missing in the text, some in the list. Check carefully data in the tables (e.g. table 4. Landslide density in "All" is wrong). Further remarks are on the attached pdf.

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All the best.

Please also note the supplement to this comment:

<http://www.nat-hazards-earth-syst-sci-discuss.net/2/C2875/2014/nhessd-2-C2875-2014-supplement.pdf>

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