

## ***Interactive comment on “Communicating Disaster Risk? An Evaluation of the Availability and Quality of Flood Maps” by Daniel Henstra et al.***

**Daniel Henstra et al.**

dhenstra@uwaterloo.ca

Received and published: 23 October 2018

We are pleased to respond to the helpful and constructive comments of Referee 1 (Nones), which were posted on the NHESS Discussion page on October 17, 2018. The Referee's comments and our responses are presented below.

1. The literature review is very good, especially as Canada is concerned, and I have only a few hints to improve it. Firstly, additional insights on the use of flood hazard maps in the US and in Europe are discussed, as an example, by Luke et al. (2018), Albano et al. (2017) and Nones (2017), pointing out a generalized lack of consistency and the urgency in moving towards a new approach in communicating flood risk. Moreover, as for improving the discussion about the impact of floods on critical infrastructures and

C1

how to communicate risks not easily catchable by citizens, I would like to suggest the recent work made by Serre and Heinzlef (2018) on urban environments.

RESPONSE: We are grateful to Referee 1 for pointing out these additional sources, which appear highly relevant to our study and will enrich its resource base. We will integrate these papers into the revised manuscript submitted at the end of the Discussion stage.

2. As for the methods, I clearly understand why the authors focussed on only 369 FDRP communities, but I am wondering if studying 1/3 of all the communities could lead to some biases. I do not see any discussion on this assumption along the manuscript, therefore I recommend adding some comments. In this context, there is a project to extend the analysis to the whole of Canada? Could be a huge work, but definitely worth of meaning for addressing the challenge of risk communication.

RESPONSE: Our original ambition for this study was to systematically assess the availability and quality of flood maps across all 957 Canadian communities labelled as “designated (flood risk) areas” under the Flood Damage Reduction program. However, upon discovering the labour required to locate and code the maps, we decided instead to code a sample. Using a 95% confidence interval and 4% margin of error, we drew a random sample of 369 communities. Among this sample, the percentage of maps from each individual province roughly approximated the percentage of maps per province in the total dataset. As such, we are confident that the results generated from coding this sample of maps are generalizable to all 957 FDRP-designated communities. We agree with Referee 1 that a Canada-wide analysis would provide a more fulsome picture. Although it is not feasible for this study, we hope to extend the analysis in future. We will clarify these points in the revised manuscript.

3. I can imagine that the searching for the maps, their comparison and their evaluation lasted several months. You said that the search was “concluded on July, 25 2018” [page 8, line 15], but you are not saying when it started. In other words, could be the

C2

time an important factor in such studies? Are you sure that “inaccessible” maps at the beginning of the search were still inaccessible in July? Probably yes, but a discussion in this sense can be helpful.

RESPONSE: We agree with Referee 1 that it is useful to provide more clarity on the methods here. Once the random sample of maps was drawn, we searched until we were confident that we had collected all accessible maps, and this process lasted for 6.5 weeks (June 18 to July 25). We were unable to find maps in 41 municipalities (15%) in the sample set. We are confident that these communities did not produce and publish maps within the 6.5-week period (and were therefore miscoded as “inaccessible”), because to our knowledge none of the four provinces in which these communities are located (Saskatchewan, Nova Scotia, Ontario and Manitoba) had active mapping efforts underway at the time. We will add this explanation to the revised manuscript before resubmission.

4. Under a general point of view, the results reported here are very interesting and in line with other studies, showing how challenging the topic is. I encourage the authors to further develop the research, given that has the potential to become fundamental in addressing the topic of risk flood communication.

RESPONSE: We appreciate Referee 1’s encouraging comments on the utility of this study, and we hope to extend this analysis in future research.

5. A few additional minor comments and technical corrections:

(a) Table 1 and Table 2 can be combined, showing the percentage of each FDPR communities analysed in each territory.

RESPONSE: We agree with Referee 1 that Tables 1 and 2 could be combined so that the reader can compare the number and percentage of maps per province in the total set vs. the number and percentage of maps per province in the sample set. We will make this change in the revised manuscript before resubmission.

C3

(b) Table 3: change the caption to something like “map assessment criteria and sources”.

RESPONSE: We will adjust the title of Table 3 to acknowledge that it also contains the sources of the various evaluation criteria. We will make this change in the revised manuscript before resubmission.

(c) As for Figure 3, stay with the percentage of municipalities instead of the number, to be consistent with Figure 1.

RESPONSE: We agree with Referee 1 that Figure 3 should be changed to reflect the percentage of municipalities (rather than the number of municipalities) that meet the various evaluation criteria, in order to be consistent with Figure 1. We will make this change in the revised manuscript before resubmission.

---

Interactive comment on Nat. Hazards Earth Syst. Sci. Discuss., <https://doi.org/10.5194/nhess-2018-264>, 2018.

C4