

## ***Interactive comment on “Comparison of event landslide inventories: the Pogliaschina catchment test case, Italy” by A. C. Mondini et al.***

### **Anonymous Referee #2**

Received and published: 7 April 2014

General Comments: This manuscript presents the basic idea of event-based landslide inventory preparation and the comparison of two inventories prepared through visual interpretation and semi-automatic classification. The topic apparently fits the interest of the journal and is suitable for publication in NHESSD. The manuscript is well organized and structured, with well written English. Before it can be accepted by NHESSD, clarification for some unclear descriptions regarding to the preparation of the two inventories, my major concern, is needed. Here I addressed specific comments and few technique corrections for this manuscript.

Specific Comments:

Does the paper address relevant scientific and/or technical questions within the scope

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of NHESS? Yes.

Does the paper present new data and/or novel concepts, ideas, tools, methods or results? Yes. Generally speaking, the authors didn't apply new approaches in their landslide mapping. They focus on standard ways of preparing an event-based landslide inventory and try to evaluate the efficiency of the SA approach by comparing it with PI. Novel indices introduced in the study seem to be very useful for evaluating the difference/similarity of the two.

Are these up to international standards? Yes.

Are the scientific methods and assumptions valid and outlined clearly? Mostly yes. The authors consider the effect of shadow area on SA classification, which is technically reasonable if we assume all SA users have capability to fix the shadow problem. However, in many cases, a SA inventory is very possibly obtained without considering shadow effect that SA classification may produce a landslide map with lower quality. In this case, I suggest the authors should also highlight the consequence when shadow is not taken into consideration.

Are the results sufficient to support the interpretations and the conclusions? Yes.

Does the author reach substantial conclusions? Yes.

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)? In the PI inventory, four classes are included. They are: (1) translational slides, (2) earthflows, (3) soil slips and (4) rotational slides. I expect the authors to demonstrate how to classify these four classes from the photo. And for SA inventory, the authors should explain how they separate “soil slips” and other types of landslide.

Does the title clearly and unambiguously reflect the contents of the paper? Yes.

Does the abstract provide a concise, complete and unambiguous summary of the work

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done and the results obtained? Yes.

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

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? In Eq. 1, the definition of “spatial landslide density” is not clear. In page 1099 line 13: please give full name of GIS (Geographic Information system).

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

Does the author give proper credit to previous and/or related work, and does he/she indicate clearly his/her own contribution? Some citation mismatches can be found in the manuscript. For example “ISPRA, 2013” is not found in references.

Are the number and quality of the references appropriate? Citation mismatches should be fixed.

Are the references accessible by fellow scientists? Yes.

Is the overall presentation well structured, clear and easy to understand by a wide and general audience? Yes. I still suggest the authors use more subtitles for section 6. For example, they can use subtitles to separate the difference/similarity examination of the two inventories: (1) the number, size and total area (descriptive statistics), (2) the spatial density and (3) the probability density of landslide areas. . . and maybe (4) NDVI, shadow effect and soil slip interpretation. . . .

Is the length of the paper adequate, too long or too short? The length of the paper is adequate.

Is there any part of the paper (title, abstract, main text, formulae, symbols, figures and

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their captions, tables, list of references, appendixes) that needs to be clarified, reduced, added, combined, or eliminated? Please go to technique corrections.

Is the technical language precise and understandable by fellow scientists? Yes.

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

Is the amount and quality of supplementary material (if any) appropriate? Not applicable.

Technique Corrections:

Page 1022, line 11: “. . .the shadowed part of the image (Fig. 5) by thresholding the frequency curve (Fig. 6) of the Normalized Difference Vegetation Index (NDVI). . .”- Not quite understand this “thresholding” process. Did the authors set a certain NDVI value to extract shadow areas?

Page 1103, line 28: 1.8%

Page 1103, line 11: please explain the “spatial landslide density”.

Page 1103, line 25:  $E=0.71$ , so please comment this number. The two inventories are significantly different?

Table 1: Please remove “(Fig. 3a)” and “(Fig. 3b)” in the caption.

Table 2: Please remove “(Stark and Hovius, 2001)”, “(Fig. 7)”, “(Fig. 3a)” and “(Fig. 3b)” in the caption.

Figure 1: the size of text is too small to read.

Figure 3: Why not use different color to separate “soil slips” and other landslides.

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Interactive comment on Nat. Hazards Earth Syst. Sci. Discuss., 2, 1093, 2014.

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