Interactive comment on "The hidden ecological resource of andic soils in mountain ecosystems: evidences from Italy" *by* Fabio Terribile et al.

Fabio Terribile et al.

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Dear reviewer, we addressed systematically all your requests. In the attached pdf files (as supplement) you will find the answer for each comment. We report the reviewer comments followed by our answers (in bold). As figure files you will find i) amended version of the manuscript. ii) marked version of the manuscript (comprehensive of the corrections asked by the referee 1)

Thank you for your detailed work of revision that implemented the quality of the paper.

Kind regards Michela Iamarino

Please also note the supplement to this comment:

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https://www.solid-earth-discuss.net/se-2017-57/se-2017-57-AC2-supplement.pdf

Interactive comment on Solid Earth Discuss., https://doi.org/10.5194/se-2017-57, 2017.

1 **The hidden ecological resource of andic soils in mountain ecosystems:**
2 **evidence from Italy**

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11

12 **Abstract**
13 Andic soils have unique morphological, physical and chemical properties that induce
14 both considerable soil fertility and great vulnerability to land degradation. Moreover
15 they are the most striking mineral soils in terms of large organic C storage and long C
16 residence time. This is especially related to the presence of poorly crystalline clay
17 minerals and metal-humus complexes. Recognition of andic soils is then very important.
18 Here we attempt to show, through a combined analysis of 35 sampling points chosen in
19 accordance to specific physical and vegetation rules, that some andic soils have an
20 utmost ecological importance.

21 More specifically, in Italian non-volcanic mountain ecosystems (> 600 m) combining
22 low slope (< 21%) and highly active green biomass (high NDVI values) and in
23 agreement to recent findings, we found the widespread occurrence of andic soils having

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Fig. 1. amended version of the manuscript

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1 **The hidden ecological resource of andic soils in mountain ecosystems:**
2 **evidences from Italy**

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17 minerals and metal-humus complexes. Recognition of andic soils is then very important.
18 Here we attempt to show, through the a combined analysis of 35 sampling points
19 chosen, throughout the Italian non-volcanic mountain landscapes, in accordance to
20 specific physical and vegetation rules, that some andic soils rich in poorly crystalline
21 clay minerals have an utmost ecological importance.

22 More specifically, in Italian various non-volcanic mountain ecosystems (> 700 600 m)
23 combining and in low slope gradient locations (< 21%12°) and highly active green

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Fig. 2. author's changes in the manuscript