



The Conclusion of ‘Lateral Flow between Bald and Vegetation Patches Induces the Degradation of Alpine Meadow in Qinghai-Tibetan Plateau’ is Inaccurate

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Author’s contribution

The sole author designed, analysed, interpreted and prepared the manuscript.

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Letter to the Editor

Dear Editor

During reading the paper ‘Lateral flow between bald and vegetation patches induces the degradation of alpine meadow in Qinghai-Tibetan Plateau’, I found that they may put the result as the reason of degradation of alpine meadow, and the reasons are as follows:

In Fig. 1 of their paper, I found that their study site is supposed to be inhabited by plateau pika.

It is clear in the figure that there are several entrances of the plateau pika burrows. Their study site is within the distribution area of the plateau pika [1]. In the article, they only mentioned that the activities of plateau pikas and other factors created openings in the figure legend of Fig. 9 of their paper, and they did not mention any information about plateau pikas in the introduction. But the activity of plateau pika is an unavoidable part of this study.

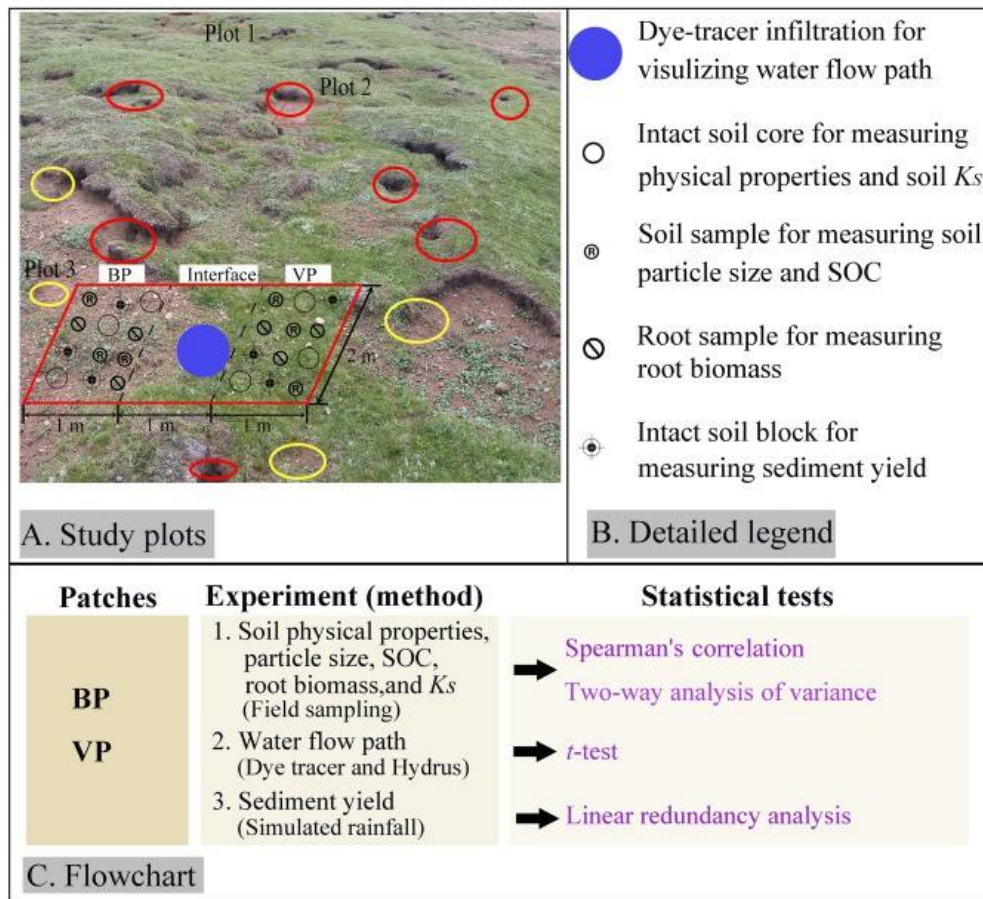


Fig. 1. The borrow entrances of plateau pika (Red ellipse) and trail of digging pits (Yellow ellipse) in their study site

Based on our many years of research on plateau pikas in alpine meadows, I believe that digging for food of plateau pikas is the primary reason for the creation and expansion of bald patches in alpine meadows. Digging for food behavior of plateau pika was ignored by the former researches, and was not published in any journal before, and now is available in a preprint paper of Researchgate [2]. The pika used its two forelegs together when digging on the ground, and pits of different size was left both on the primary grassland and former bare grounds [2]. Plateau pika digging can be found frequently in the cold season and early plant growth period. Digging was recorded for about 11.8% and 43% of the entire observation time in the early plant growth period and cold season, respectively [2]. A soft layer of soil with low water content on the alpine meadow surface was the precondition for digging in the cold season. Digging activities on previously disturbed bare patches or border between the disturbed bare patches and primary grassland was the reason of the reason of expansion of bald patches [2].

Bald patches by digging of plateau pika in alpine meadow were below the ground surface, and were different with piles of plateau pika burrowing [2]. The bare patch in plot 3 of Fig. 1 in their paper [3] was just on the bare patch caused by long time of plateau pika digging. Digging pits can be found in Fig. 1 [3] in the edge of the bare patches.

Besides, the pile follow in Fig. 8 of their paper was probably the flow in a borrow with two entrance of the plateau pika.

I don't know if the authors of the article noted the presence of alpine pikas in their study site. And if there were plateau pika, and why they only mentioned plateau pika once in the figure legend in this paper. In the highlights, they pointed out bald patches (BPs) are the precursors of alpine meadows degradation, but they did not mentioned evidences as to why the alpine meadow bare patches were created. Based on the research of plateau pika digging, a more definitive conclusion based on this data should

be that during the expansion of the bald patches, lateral flow between bald and vegetation patches accelerated the process, rather than the article's conclusion that Lateral flow between bald and vegetation patches induces the degradation of alpine meadow in Qinghai-Tibetan Plateau. Lateral flow between bald and vegetation patches is the result, not the cause, of degradation of alpine meadow. I don't doubt the validity of the data in this paper, and their data are instructive in understanding the processes and mechanisms of grassland degradation in alpine meadow ecosystem, but the lack of knowledge of the plateau pika digging for food made their conclusions inaccurate. I would recommend that the authors change the main conclusion and title of the paper, as well as other relevant parts in their paper.

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COMPETING INTERESTS

Author has declared that no competing interests exist.

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