



Grazing affects snow accumulation and subsequent spring soil water by removing vegetation in a temperate grassland



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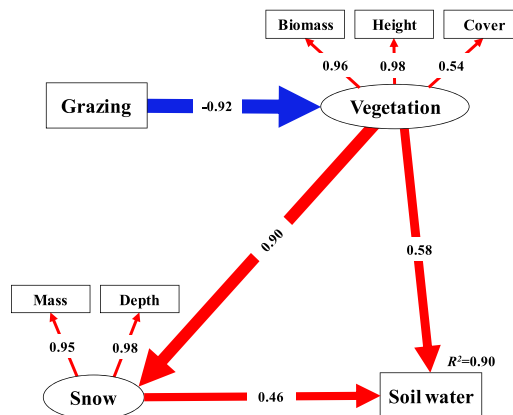
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HIGHLIGHTS

- By removing vegetation, overgrazing reduced snow accumulation.
- Snow accumulation first increased and then remained stable with increasing AGB.
- Grazing altered soil water mainly in the spring after the snow melted and the soil thawed.
- By decreasing vegetation and snow accumulation, grazing reduced spring soil water.

GRAPHICAL ABSTRACT

Structural equation model depicting the effects of grazing, vegetation (biomass, height and cover) and snow accumulation (mass and depth) on the soil water content (0–30 cm) in the spring (April 20). The width of the arrows is proportional to the path coefficient, with continuous blue (positive) and red (negative) lines indicating the signs of the relationships. The strength of the path coefficient is presented for each pathway. Nonsignificant pathways have been omitted for clarity. The proportion of variance explained (R^2) appears above the soil water in the model. $\chi^2 = 6.531$, $df = 9$, $p = 0.686$, $GFI = 0.916$, $RMSEA = 0.00$.



ARTICLE INFO

Article history:
Received 17 May 2019

ABSTRACT

By altering plant and soil properties and microclimate environments, grazing has a profound influence on the structure and function of grassland ecosystems. However, few studies have addressed the potential grazing

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