# THE EFFECT OF GRAZING AND HIKING ON THE ELEVATIONAL RANGE SHIFT FOR ALPINE PLANT SPECIES

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## ABSTRACT

Range shifts towards higher elevations have been observed for alpine vegetation in mountainous areas all over the world during the recent decades. A correlation in time between the observed range shift and climatic changes has led to an expectation of climate as the driving factor, while other factors and their interactions with climate have received less attention. Two factors that might affect species distribution, both directly and in interaction with climate are grazing by large herbivores and disturbance by hikers. Intensity of these factors has changed dramatically over the same time period as the observed species range shifts in the mountains. In this paper we investigate the effect of large herbivore grazing and hiking on upward plant species range shift and dynamics in the summit flora species composition, through a resurvey study in three areas along the south-north axis of the Scandes. All mountains have had a turnover in the species composition in the upper elevation range. Grazing buffered the upwards sift of species in the area, whereas hiking was not found to affect the upward range shift. Grazers have effects on range shifts through a variety of mechanisms which are undistinguishable in this form of resurvey and should be the focused of experimental work in the future.

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