Enhancing the provision of ecosystem services by cattle grazing on a ski station

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Ecological intensification of farming systems implies the combination of technically efficient production and the provision of positive impacts on the environment. Livestock can be used as a tool for landscape management, sometimes even addressing the needs of other economic activities using the same territory. This is the case of ski stations located on alpine pastures used by livestock in the grazing season. A study was conducted in a Pyrenean ski resort (Northern Spain), with the objective of analysing current use of pastures by cattle, providing management recommendations if needed, and determining the willingness of farmers to adopt them. The 297-ha ski station was grazed by a communal herd of 314 cows during the summer and autumn. The patterns of space use were studied throughout the grazing season and entered into a Geographic Information System, including spatial information about pastoral value, altitude, slope, exposure and distance to tracks, infrastructures, water and salt areas. Cattle grazed on 64% of the resort, preference for the different sites and vegetation types depending on pasture quality or physical aspects. Cows preferred areas of higher pastoral value, lower slope and altitude, and closer to salt areas and infrastructures than the rejected ones. Some vegetation communities were preferred while others were little grazed or avoided, with stocking rates varying through the grazing period. Recommendations were made for a more adequate livestock distribution, suggesting modifications of temporal and spatial management or provision of infrastructures (fences, salt points) to ensure a proper use of each pasture type, avoiding non-grazed stubble that would compromise the stability of the snowpack in the winter. Farmers considered that the ski station was beneficial for the economy of their valley and that reciprocally it profited from livestock grazing. Thus, they were prone to implement the suggested management correction measures in order to strengthen the synergies between both activities.