Submitted Abstract

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Abstract

The Sentinel Mountain Pasture program is a long-term program that addresses climate change impacts and adaptation of extensive livestock farming systems over the French Alps. A diversity of stakeholders from academic, technical and territorial organizations work jointly on monitoring changes, co-producing knowledge and developing tools to support adaptation of summer pasture systems. This talk will focus on the analysis of more than 10 years of data acquired over the Ecrins National Park and its nine pilot sites (the 'sentinel pastures'). We test the links between i) agroclimatic profiles of the pastures and annual characterisation of extreme weather events, ii) forage biomass available for livestock at the start of the pastoral season and ii) changes in management practises. Agroclimatic information consists in re-analysis data from the French national weather service Météo-France - CNRS covering the period 1960-2018 and specifically downscaled to mountain conditions. Data on pasture productivity and pastoral practises comes from field monitoring and describes on a yearly basis the aboveground biomass available, livestock numbers, duration of presence on the pasture and level of vegetation consumption at the end of the pastoral season. Our results highlight the interannual variability of conditions to which summer pasture social-ecological systems are exposed and the related need for flexibility of pastoral systems. We also discuss the variety of resilience and vulnerability factors identified over the sentinel pastures. From this analysis, we reflect both on our specific conclusions over the Ecrins National Park and on our working process and methodology. More generally, this initiative can be of interest to academics and practitioners concerned by the evolution of summer pastures and pastoral systems in the face of climate change as we share insights from a decadal and transdisciplinary experiment.