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Grazing for science - experiment on a species rich abandoned mountain pasture in the Oberammergauer alps and its impacts on biodiversity

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Over centuries mountain pasture has been a traditional way of agriculture in the alpine regions in Europe. This seasonal grazing led to species- and nutrient rich alpine grassland combined with human maintenance even below the tree line. Due to societal change and economic pressure within the last 50 years lots of those mountain pastures had been abandoned. So, the study area Brunnenkopfbalm in the Oberammergauer Alps, Germany (1400-1700mm NN). Since early summer 2018 the around five ha pasture has been restocked yearly with five to seven Murnau-Werdenfelser cattle, which is a small frame local breed. After an initial monitoring before the regrazing we measured the floristic biodiversity and biomass. To determine the impact of the cattle on those parameters, five fenced control plots were installed on the pasture next to five unfenced plots where the cattle could graze on. The measurements were repeated each experimental year until 2025.

This study showed, that grazing increased the floristic evenness and decreased the plant cover and biomass on site. However, the measured regrowth effect indicates that grazing causes an overall increase in over the year grown biomass. This leads to the conclusion, that floristic biodiversity on alpine pastures benefits directly from grazing and therefore should be used as a tool for preserving valuable alpine grassland.

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