



# Long-Term Research in Mountain Areas

**Workshop**

**September 29 - October 03, 2017**

**University Centre Obergurgl, Austria**

**Book of Abstracts**

**Editors:**

**Nikolaus Schallhart, Brigitta Erschbamer, Daniel Béguin & Patrice Prunier**

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Cover: Monitoring site near Obergurgl, Mount Hangerer in the back, Tyrol, Austria, Photo: Roland Mayer

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# Abstracts

## Posters



# Long term monitoring of orchid population dynamics in xerothermic grasslands after reintroduction of sheep grazing management

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Xerothermic grasslands are among the most species-rich habitats in the Alpine region as well as in Europe as a whole. In the south-western Alpine foothills where steppic continental elements are found together with sub-Mediterranean and Mediterranean species, these grasslands are of particular interest. These habitats are currently threatened by the progressive encroachment of trees and shrubs as a result of the abandonment of traditional low-intensity agricultural management. Semi-natural dry grasslands, therefore, constitute a major conservation target and are included as a priority habitat in the Habitats Directive 92/43/CEE (code 6210\*).

This work focuses on the monitoring activity being performed as part of the European Xero-grazing LIFE project (LIFE12 NAT/IT/000818), which began in 2013 and is being carried out in the Susa Valley, in the province of Turin (Piedmont, Italy). The purpose of the project is the restoration and long-term conservation of the semi-natural dry grasslands on calcareous substrates located in the SCI IT1110030 "Oasi xerothermiche della Valle di Susa - Orrido di Chianocco e Foresto", an area which is important for its large variety of orchids and Mediterranean species, which are rare in the Alpine region. The habitat restoration is being implemented with a combination of two management strategies - shrub-clearing and sheep grazing. The aim of the monitoring activity is to determine the effects of these measures, in particular on orchids, which are a target species of conservation interest.

Each vital rate at the basis of plant population dynamics - i.e. growth, reproduction, recruitment and death rates – may be diversely affected by management strategies. In order to correctly assess changes in orchid population growth rate, it is essential to investigate the different stages of their life cycle and the effects of management strategies on their transition from one phase to another. Studies that investigate effects across the whole life cycle are particularly challenging, especially when focused on orchids. This group of plants is known to have a complex life history, characterized by a long under-ground recruitment phase before emergence. Periodic phases of vegetative underground dormancy also make it difficult to distinguish dormancy from mortality in data analysis.