Submitted Abstract

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First Author First Name Last Name	 Ulrike (1,2) Tappeiner
Submitting Author First Name Last Name	 Ulrike Tappeiner
Correspondence	ulrike.tappeiner@uibk.ac.at
Co-Authors **>> E-Mails will be not listed**	Anderle, Matteo (1,2); Bottarin, Roberta (1); Guariento, Elia (1,2); Marsoner, Thomas (1); Paniccia, Chiara (1); Plunger, Julia (1); Rüdisser, Johannes (2); Scotti, Alberto (1); Seeber, Julia (1,2); Strobl, Julia (1); Hilpold, Andreas (1)
Organisations	1: Institute for Alpine Environment, Eurac Research, Bolzano, Italy 2: Department of Ecology, University of Innsbruck, Innsbruck, Austria
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Abstract

The need for long-term regional data on biodiversity population trends has grown rapidly in recent decades. This is particularly true for mountain regions, considered global hotspots for biodiversity. Local politicians, stakeholder organizations, and the public have a growing interest in sound and reliable data on biodiversity and ecosystem services. These data are needed to provide the scientific basis for political decisions, especially environmental policies and sustainable development.

In 2019, a permanent biodiversity monitoring program was initiated in South Tyrol, Italy, as an initiative of the local, provincial government, with experts from different fields responsible for data collection and scientific analysis, public involvement (e.g. Citizen Science), public and stakeholder information, and advice to policymakers.

Using consistent protocols, the Biodiversity Monitoring South Tyrol (BMS) aims to survey species groups sensitive to climatic and land-use changes across scales. The study sites are distributed evenly over the region. They include a representative selection of near-natural habitats, such as high-mountain grasslands, alpine brooks and forests, as well as habitats that have been strongly influenced by humans, such as meadows, vineyards, and residential areas. Since 2019, a total of 320 sites will be investigated for 5 years as part of the project's terrestrial monitoring. The surveyed taxa cover vascular plants, bryophytes, birds, bats, and insect groups, like grasshoppers and butterflies. For the aquatic part of the monitoring, a total of 120 individual areas of running water are being surveyed over a period of 4 years for water insect larvae. Hence, all 440 sites will be sampled in a 4- respectively 5-year frequency. In addition, data on abiotic factors, landscape structure, and site management are also being collected.

Another major focus of the initiative is the constant dialogue between the project experts and the local authorities. In addition, further research is regularly carried out within the framework of special projects. These typically relate to important questions on the impact of agricultural and forest management on biodiversity and ecosystem services as well as on current impacts of environmental changes such as extreme events or invasive species, including the analysis of mitigation or adaptation options or adaptive transformation pathways of the social-ecological system. Finally, communicating the results to the broad public is a crucial point of the BMS.

The presentation gives an overview of the project and reveals the findings of the project's first three years.