

Randin, Christophe^{1,2}; Urbach, Davnah^{3,*}; Cristofari, H el ene¹; Otero, Iago¹; Guisan, Antoine¹; Reynard, Emmanuel¹ davnah.payne@ips.unibe.ch

¹Universit e de Lausanne, Centre Interdisciplinaire de Recherche sur la Montagne, Suisse

²Jardin Flore-Alpe - Centre alpin de phytog eographie, Suisse

³Global Mountain Biodiversity Assessment, Suisse

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BlueMount - An integrated observatory of mountain environments for research and public policy

With 29,000 km² of mountainous terrain, i.e. more than 70% of its territory, Switzerland is a mountainous country par excellence. In addition to numerous glaciers, the Swiss Alps and Jura contain a number of habitats of national importance and a very large number of species, which are found mainly or exclusively in these habitats. Various laws and public policy instruments, including the Swiss Biodiversity Strategy (SBS), already serve to promote the conservation of these resource-rich alpine environments. However, our mountains are under increasing pressure and are undergoing rapid and profound change. Rapid climate change, demographic changes, the development of tourism activities and infrastructure, and the energy transition are all factors that contribute to putting mountain populations, biodiversity, resources and many sectors of the mountain economy at risk. In view of these changes, the proper governance of mountain regions and the sustainable management of their natural resources require sustainability policies for mountain environments that are cross-sectoral, based on relevant scientific information, that take into account the speed at which these environments are changing, and that ensure their sustainable development and management. There is therefore an urgent need to develop tools to understand, monitor and anticipate the trajectory of mountain social, economic and ecological systems and to inform public policies and administrations of the challenges and options for adaptation and mitigation. These tools are based on quantitative and qualitative data measured and collected over the long term in mountain regions.

The BlueMount Mountain Observatory responds to this need with (1) a centralized access to long-term observations available for the mountains of the cantons of Vaud and Valais and to current knowledge on the causes and consequences of ongoing changes, (2) indicators of changes necessary for a sustainable management of natural resources in these regions and developed in response to the needs of public administrations, and (3) a think tank - laboratory of ideas, knowledge co-creation, and exchange between practitioners, managers, public administrations, and scientific experts. With these three pillars, this observatory serves to facilitate a participatory and multi-stakeholder governance of mountain regions. It is based on a conceptual model of mountain socio-environmental systems co-developed for dialogue, consultation, and negotiation with local stakeholders. The ODILE project for the Optimisation of Irrigation in the Entremont region serves to illustrate the use of indicators in the cross-sectoral management of water resources in a context of climate change. species of carabid beetles were found on the monitoring plots