

Submitted Abstract

ID IMC22-FSAbstr- 211

First Author First Name Last Name	Evelin (1) Iseli
Submitting Author First Name Last Name	Evelin Iseli
Correspondence	evelin.iseli@usys.ethz.ch
Co-Authors >> E-Mails will be not listed	Phinney, Nathan Harris (2); Gwate, Onalenna (3); Alexander, Jake (1)
Organisations	1: ETH Zürich, Switzerland 2: University of Bergen, Norway 3: University of the Free State, South Africa
Country	Switzerland
Region	Western Europe
Title	Disentangling Drivers Of Range Shifts In Native Mountain Plants.
Keywords	Range Expansion, Dispersal, Native Plants, Mountains, Climate Change
Type	List Of Focus Session
Focus Session ID	45

Abstract

Plant species around the world are shifting their geographical distributions along elevational and latitudinal gradients in response to climate change. The resulting reassembly of plant communities has the potential to modify the effects of climate change on biodiversity and ecosystem functioning. However, range shifts generally lag behind predictions made based on the current pace of climate warming, suggesting limiting factors other than just climate. Possible factors affecting species' ability to successfully disperse and establish in a new environment include (i) their intrinsic dispersal ability, (ii) novel biotic interactions, and (iii) novel abiotic conditions. To determine the contributions of these drivers to dispersal and establishment success of native range expanding plants, we established a large in-situ warming and environmental manipulation experiment in South Africa, Norway, China and Switzerland in 2021. We simulate the introduction of native range-expanding species into high elevation plant communities by transplanting seedlings and seeds above the species' current range edge, using various experimental treatments to test the effects of both biotic interactions and artificial warming. Population growth and establishment success will be estimated by collecting demographic data across two growing seasons. Here, I will present early results of the first year of the experiment, focusing on dispersal limitation of range expanding species.