

The **European Alps** are home to almost **4500 taxa** of vascular plants, of which **800 are exclusively Alpine**. The ecosystems supported by these mountains are under threat, due to land use changes and climate warming: many plant species require **urgent conservation action**. In this context, The Millennium Seed Bank, RBG Kew (UK), has convened and co-ordinates five plant science institutions across the alpine region to carry out the project.

The **main objective** is to set up a network of seed conservation and research to safeguard endangered plants. The key outcome is the **conservation of over 500 species from the European Alps**, contributing to the aim of safeguarding seeds from 25% of the world flora by 2020 of the Millennium Seed Bank Partnership.



Fieldwork & curation activities

Collection of seed material from 500 plant species will be carried out over **three collecting seasons** from subalpine, alpine and nival altitudinal belts, giving **priority to endemic and threatened species**. After the first seed collection fieldwork session (summer 2016), **216 species** have been **already collected** by the partners of the project.

Seed collections are **stored in local seed banks** in each of the four countries (Austria, France, Italy and Switzerland) **and backed up at the Millennium Seed Bank (UK)**.

Germination tests are performed **to assess seed viability** following the internationally agreed standards for seed handling (ENSCONET).



Research

The project includes training **several MSc and 3 PhD students**, whose research projects **will investigate** the evolutionary patterns and processes resulting from **global warming**, identify **niche adaptation** and gather new data on the **conservation status of endemic species**. The research will use a combination of field and lab experiments.

PhD projects:



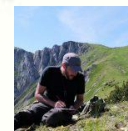
Francesco Porro: “Comparative seed germination and longevity studies of alpine plants in the context of climate change”

Supervisor: Andrea Mondoni (University of Pavia)



Vera Margreiter: “Germination, establishment and phenotypic plasticity of alpine species”

Supervisors: Brigitta Erschbamer (University of Innsbruck), Andrea Mondoni (University of Pavia)



Patrick Schwager: “Niche adaption and endangerment of endemic east alpine vascular plant species”

Supervisor: Christian Berg (University of Graz)

Publications:

Müller, J.V., Berg, C., Détraz-Méroz, J. *et al* (2017). The Alpine Seed Conservation and Research Network – a new initiative to conserve valuable plant species in the European Alps. J. Mt. Sci. 14: 806-810, doi:10.1007/s11629-016-4313-8.



The project...

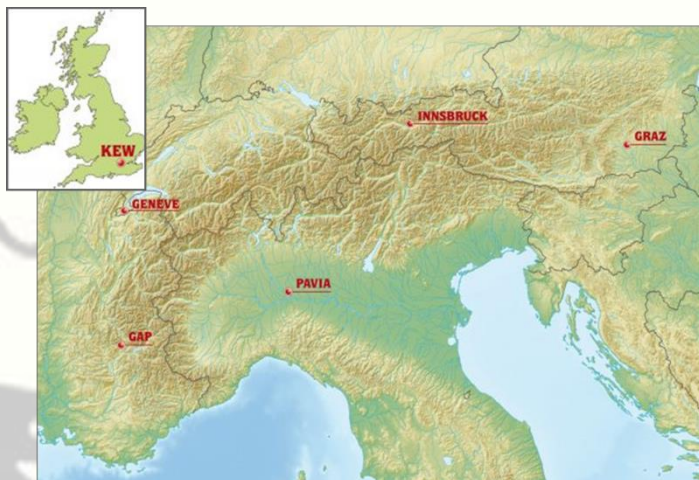
The Alpine Plant Conservation & Research Programme aims to ensure the survival of endangered plants and habitats in the European Alps.

The Alpine Seed Conservation and Research Network is part of the wider Millennium Seed Bank Partnership, initiated and run by the Royal Botanic Gardens, Kew (United Kingdom). The network brings together partners from five plant science institutions housed at leading universities and botanic gardens across the Alps to deliver an integrated programme of conservation and research for alpine flora. The project started in December 2015 and its first phase will run until November 2018.

The key outcomes of the project include the protection of over 500 species from the European Alps, the professionalization of seed specialists in the region, increased collaboration between plant science and conservation organisations across the region and public awareness of the value and vulnerability of the local flora.

<http://www.alpineconservation.eu/>

Partnership



Network Partners:



Royal Botanic Gardens, Kew, London, United Kingdom
("Project Co-ordinator")



Karl-Franzens Universität Graz,
Botanischer Garten, Graz, Austria



Universität Innsbruck, Botanik
Institut, Innsbruck, Austria



Conservatoire et Jardin Botaniques,
Chambésy (GE), Switzerland



Conservatoire Botanique National
Alpin, Gap, France



Università degli Studi di Pavia,
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Alpine Plant Conservation and Research Programme

project developed with
funding from



DAVID AND CLAUDIA HARDING
FOUNDATION

Main aims:

- *Ex situ* conservation of the European most endangered and characteristic alpine species
- Research and dissemination on these species to aid conservation and restoration activities
- Development of a conservation network to foster long-term co-operation