Volcanic landscapes are perceived as volcanoes only if the landforms are visible. However, due to a wet climate, good soils and a moderate altitude, the natural vegetation is a mixt deciduous forest that hide the volcanic shapes, and the warming of climate increases the forest dynamic. One way to make these typical landscapes visible is to maintain or develop the traditional grazing system. The aim of this field trip is to better understand why the chaîne des puys – Limagne Fault has just been inscribed on the UNESCO World Heritage list, to see the partnership with local farmers for making the landscape open and discover original fundamental research concerning climate change and its consequences on grass growth.

European Landscapes for Quality of Life?

Field Trip Managing Volcanic Landscapes of High Quality by Grazing in a Changing World

Field Trip # 2+5

Yves Michelin

7:45

Departure from Clermont (Ecole Nationale Supérieure d'Architecture)

9:00-9:20 Puy-de-Dôme train station

The touristic train "panoramique des Dômes" has been inaugurated in 2012. It takes the place of a touristic road that was dangerous and too busy. This equipment, well integrated in the landscape, offers amazing views and contributes to elcome more visitors with less impact on the environment.

9:20-10:00 Top of the Puy de Dôme : climate observatory

On the top of the puy de Dome volcano, the research centre for the study of the atmosphere presents original tools for analysing climate changes (i.e. a cloud vacuum). In particular, it is a unique situation where, according to meteorological conditions, it can sample different kinds of tropospheric atmospheric fluxes coming from either clean north Atlantic marine air from the west, polluted industrial environment from the north-east, or sand loaded air from the south, while still preserved from the local area pollution. In this context, the Puy de Dôme station provides extremely valuable monitoring information on the global air composition of the atmosphere. This climate observatory, build in 1876, has been labelled Global Atmosphere Watch in 2015. We will visit the observatory with a climate researcher and see how this equipment is used for better understanding the climate change.

10:00-12:00 Foot walk around the top of the puy de Dôme

The top of the Puy de Dôme is the best place to understand why the Chaîne des Puys – Limagne fault, represents one of the major places in the world for discovering and understanding the continental rifting process, a major phenomenon of Earth history [an integral part of the plate tectonics] that combines uplift, down throw and sedimentation, and associated volcanism. The concentration and distribution of these pure and fresh landforms within a single area provide an overview of the whole rifting process and clarify the intrinsic links between the features as well as their chronology. A geologist, involved in the defence of the site will comment the landscapes. On the top of the puy de Dôme, we also meet some farmers that manage a common flock of more than 2000 ewes that maintain the landscape open. It will permit to understand how it is possible to cultivate the geological natural aspect of the landforms by grazing and see how it is possible to conciliate environment preservation, breeding and touristic activities.

12:00-13:10 Lunch 13:10-14:30 Train + bus toward Sancy mountain

14:30-16:00 Laqueuille research unit

The Sancy Mountain is another volcano, more complex and older than the chaîne des puys, where the national Agronomic Research centre studies the diversity of grasslands and how it is possible to enrich biodiversity and feed cattle. It is part of the French national long term observatory (SOERE-ACBB, ICOS) on permanent grasslands. The site is designed to follow the effects of agricultural management and climate on processes and functioning of grasslands as well as GHG balance (CO2, CH4, N20, C sequestration). The visit will be driven by a researcher who has in charge the management of this original site

16:00-19:00 Trip to Mende

Geographer and Agronomist, Prof. at VetAgro Sup, Mixt Research Unit Territoires

Benjamin Van Wick de Vriest

Volcanologist, Prof. at Clermont Auvergne University, Magma & volcanos Laboratory



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Guide in charge of the trip: +33 (0)6 72 58 74 19

