

## **On the detection of thermohygrometric differences of *Juniperus turbinata* habitat between north and south faces in the island of El Hierro (Canary Islands)**

Montserrat Salva-Catarineu (1), Ferran Salvador-Franch (1), Joan A. Lopez-Bustins (1), Pedro A. Padrón-Pradrón (2), and Amparo Cortés-Lucas (1)

(1) Universitat de Barcelona, (2) Cabildo de El Hierro

The current extent of *Juniperus turbinata* in the island of El Hierro is very small due to heavy exploitation for centuries. The recovery of its natural habitat has such a high environmental and scenic interest since this is a protected species in Europe. The study of the environmental factors that help or limit its recovery is indispensable. Our research project (JUNITUR) studied the populations of juniper woodlands in El Hierro from different environments. These environments are mainly determined by their altitude and exposure to north-easterly trade winds. The main objective of this study was to compare the thermohygrometric conditions of three juniper woodlands: La Dehesa (north-west face at 528 m a.s.l.), El Julan (south face at 996 m a.s.l.) and Sabinosa (north face at 258 m a.s.l.). They are located at different altitude and orientation in El Hierro and present different recovery rates. We used air sensor data loggers fixed to tree branches for recording hourly temperature and humidity data in the three study areas. We analysed daily data of three annual cycles (from September 2012 to August 2015). Similar thermohygrometric annual cycles among the three study areas were observed. We detected the largest differences in winter temperature and summer humidity between the north (to windward) (Sabinosa and La Dehesa) and south (to leeward) (El Julan) faces of the island. The juniper woodland with a highest recovery rate (El Julan) showed the most extreme temperature conditions in both winter and summer seasons. The results of this project might contribute to the knowledge of the juniper bioclimatology in El Hierro, where there is the biggest population of *Juniperus turbinata* throughout the Canary Islands.