BC.P33. Water retention in Azorean native vegetation: the role of bryophytes

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Bryophytes are an important part of plant biodiversity in the Azores. They are thought to play essential roles in soil stabilization, nutrient recycling, carbon fixing and water flow regulation. Nevertheless, these roles and physiological features of bryophytes are not totally understood nor quantified.
In this study, we aim to quantify the internal water holding capacity of some of the most common bryophytes (liverworts and mosses) occuring in native vegetation stands at three different elevations in Terceira island, Azores. The questions are: how much water do bryophytes retain? Do all species retain the same amount of water? Does this amount vary with elevation? Does it vary seasonally?
For nine months, 14 species of bryophytes (six liverworts and eight mosses) were collected in three native vegetation areas: Farol da Serreta (40 m), Lagoinha (600 m) and Serra de Santa Bárbara (1000 m). Field, saturated and dry weights were obtained in the lab and used to calculate relative and absolute water content (RWC and AWC respectively).
All sampled species were found to be hydrated, especially specimens sampled during winter. Species collected from mid and high altitudes showed higher hydration state (RWC) than species collected at the lowest altitude, of which *Bazzania azorica* and *Thuidium tamariscinum* were the liverwort and the moss, respectively, with higher values. Data clearly showed that water is retained in the native vegetation during all year round and by all species, but the amount differs between species. The maximum value was obtained by moss *Sphagnum subnitens*, which can store a maximum of 30 g of water per 1 g of their dry weight.
Bryophytes are a distinctive feature of Azorean native vegetation, especially in cloud forests. With this study, the role of several species on water retention is quantified. *Sphagnum subnitens* showed to be highly efficient at storing water in the ecosystem, its protection is thus essential. This type of data is essential in order to better understand the role of bryophyte species in the water cycle within the Azorean forests especially in the context of a changing environment.

BC.P34. Transplanting the leafy liverwort *Herbertus hutchinsiae* as a conservation measure

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Translocating plants for conservation purposes can be a promising tool to enhance existing populations, restore lost populations, or create new ones, but has rarely been done for bryophytes, especially liverworts. Here, the leafy liverwort *Herbertus hutchinsiae*, a representative species of oceanic-montane liverwort-rich heath, was translocated to unoccupied habitat within its current range, to establish whether its restricted distribution is due to habitat- or dispersal limitation. At the same time, feasibility of establishing new populations was assessed, both within and outside the current distribution range, the latter to test the suitability of the species for assisted colonisation. Furthermore, transplants were grown at degraded sites where the species had declined. Transplants grew at all sites, exhibiting best growth within range, indicating that the species could be dispersal limited. Assisted colonisation is an option for this species to overcome dispersal limitation and to track future climate space. Restocking of populations at degraded sites is only recommended if the pressure causing the degradation has been removed. These findings provide an evidence base for practical conservation management.