

Current MSc-Project within the Paleoecology section

Pine dynamics on the Iberian Peninsula

Palaeoecological records have shown that *Pinus sylvestris* (Scots pine) forests were more widely distributed in some mountainous regions of the Iberian Peninsula until the Holocene. The fossil record also shows that Scots pine declined during the last millennia in several Iberian regions while in other areas well-developed pine forests have dominated until present. Although it has been hypothesized that human-induced disturbances caused this demise, empirical evidence to test this is still lacking.

We will core new sites and produce multi-proxy palaeoecological records from lakes and mires in two areas of the Iberian Peninsula where currently available palaeoecological data show contrasting trajectories for *P. sylvestris* during the last millennia: the Cantabrian Range (native populations almost extinct) and the central Iberian Range (widespread natural pine forests). We will assess the relationship between vegetation dynamics and the most relevant long-term ecological drivers (climate, fire, grazing, human activities), focusing on the changing incidence of disturbance regimes through time.

To reach our goals, we will produce robust chronologies for the studied sequences based on radiocarbon dating of terrestrial plant macrofossils and detailed records of pollen, plant macrofossils, microscopic charcoal, dung fungal spores and macroscopic charcoal. Additionally, we will use dynamic vegetation modelling to definitively disentangle the role of climate vs. human activities in explaining the different trajectories followed by Scots pine forests in Iberia.

Methods: pollen, macrofossil and charcoal analysis, numerical techniques

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Pine forests in the Central Iberian range