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The ecology and native status of pine (*Pinus sylvestris* L.) in Ireland.

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Research to determine the native status of *Pinus sylvestris* in Ireland has so far produced ambiguous results. *P. sylvestris* is included in the Native Woodland Scheme, which is administered by the Forest Service and provides grant aid to landowners to plant native trees of local provenance, so it is being widely planted in semi-natural habitats in Ireland. However, the ecological value of these plantations has not been determined. Definitive information on the native status and ecology of the species is therefore urgently required.

This interdisciplinary PhD project combines palaeoecological and contemporary ecological techniques. The aims of the project are to review existing palaeoecological data and augment it with new data, in order to test the hypothesis that native *P. sylvestris* still exists in Ireland, and also to describe the ecology and biodiversity of contemporary *P. sylvestris* communities in Ireland.

Palynological evidence indicates that *P. sylvestris* recolonised Ireland c. 9500 BP, flourished in upland and western areas and on peatland fringes, and then began to decline c. 4000 BP. The most recent specimen, a preserved stump from Clonsast Bog in County Offaly, was dated to 1,620±130 BP. *P. sylvestris* is generally thought to have become extinct in Ireland at this point. Inconsistencies exist, however, between the palaeoecological and literary evidence, which suggests that *P. sylvestris* survived until later medieval times. New research questions the methods by which local presence of *P. sylvestris* is determined. This provokes the question: Did *P. sylvestris* become totally extinct in Ireland or survive in isolated refugia? It survived in Scotland, where it still dominates considerable areas of the Highlands. *P. sylvestris* was reintroduced to Ireland from Scotland c.1700 AD and has been widely planted.

P. sylvestris is known to be an opportunistic species with broad climatic and edaphic tolerances. However, neither the autecology of the species nor the biodiversity of *P. sylvestris* stands have been systematically studied in the Irish context.

Putative native, naturalised and planted stands of *P. sylvestris* have been selected. The continuity, dynamics, fire history and chronology of putative native stands will be investigated through fine spatial resolution pollen, stomatal and charcoal analyses and radiocarbon dating. The stand structure, regeneration, vegetation and soil characteristics of all sites will be examined. Irish and Scottish data will be compared.

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