

New homes for old friends: landmark results

Minimally invasive carving techniques developed by climbing arborist **Will Robertson** in collaboration with ecologist **Goedele Verbeylen** enable the precise and efficient creation of habitat for endangered mammals in dead or living wood. Here's an update on the latest results from this ongoing project.*

A mother hazel dormouse (*Muscardinus avellanarius*) moved her family of four into one of the carved nest holes we have created in Belgium.

Hazel dormice, Britain's most endangered mammal, nest both in tree holes and in woven nests in shrubs. The mother appears to have moved her family into the carved nest hole in response to deteriorating weather in late summer 2025. This is the first time an endangered species outside Australia has been recorded rearing young in habitat created through veteranisation.

Garden dormice (*Eliomys quercinus*), which are native to mainland Europe and also endangered, moved into carved nest holes with nesting material in summer 2025 and spring 2026, having investigated the holes extensively in the months beforehand.

The entrances to the carved nest holes are designed to be too narrow for red squirrels (*Sciurus vulgaris*), but squirrels have shown a very strong interest and were able to enter after the openings had

been enlarged by woodpeckers (great spotted, *Dendrocopos major*, and green, *Picus viridis*). While dormice hibernated over the winter, woodpeckers worked to enlarge entrances to the carved nest holes to roost in them. In spring, great tits (*Parus major*), blue tits (*Cyanistes caeruleus*) and robins (*Erithacus rubecula*) began building nests in the carved holes too.

Strong competition between dormice, birds and squirrels for carved nest holes emphasises the lack of sufficient natural habitat in many European forests.

Pygmy shrews (*Sorex minutus*) were also filmed at several holes, not yet resting in them but hunting for invertebrates in and around them at up to 5 m above the ground.

Mustelids including weasels (*Mustela nivalis*) and stone martens (*Martes foina*) are



Hazel dormice at carved nest holes in Belgium. (Ivo Vanseuningnen)



Creating precision-carved nest holes. (Will Robertson)



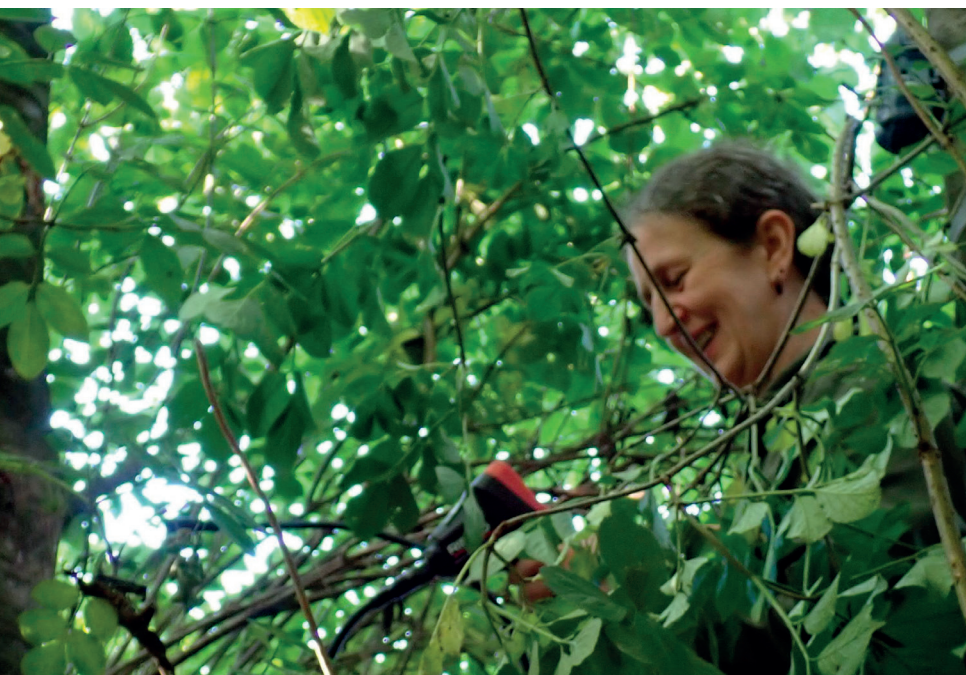
significant predators of dormice. They were frequently observed visiting nest boxes but not at carved nest holes. It appears that the height and the low visibility of the carved nest holes' narrow entrances may make them less attractive to predators. A domestic cat, attracted by blue tits to one of the nest holes, climbed 3 m to the entrance but was unable to gain access.

Work is also underway on planning a field study of chainsaw carving and rotary boring techniques to create nest holes for the endangered European flying squirrel (*Pteromys volans*) in Finland. The species' numbers are known to be declining.

Techniques

The minimally invasive chainsaw carving techniques are technically and

* Will Robertson described the project and the habitat-creation techniques in ARB Magazine 206, autumn 2024.



Top left: Goedele Verbeylen inspecting a carved nest hole with an endoscope. (Will Robertson). Right: Will Robertson working on a carved nest hole.
Bottom left: Flying squirrel in Finland. (Benjamin Pöntinen). Right: A garden dormouse (*Elomys quercinus*) caught on camera. (Jos Reekmans and Joachim Volont)

athletically demanding to carry out but offer exceptional speed and precision. Rotary boring techniques are slower but can be used by people who don't have chainsaw experience. Both techniques were successful in reaching exactly the dimensions required by endangered species and in minimising damage to trees. Even tree species with a strong tendency for epicormic growth showed no adventitious growth or other side-effects at 19 months follow-up. Winter storms felled other trees at study sites but none of the carved trees failed.

We are currently working with Pieter Blondé to set up an expanded field study in Belgium in an area of forest that Pieter has dedicated 20 years to protecting.

The limitations of commercial wildlife cameras have continued to be a significant problem. However, work with Simon Vogl on a new camera system is overcoming this.

Other studies

A field study set up in Büsserach in Switzerland with Thomas Briner and Irene Weinberger found hazel dormouse and pygmy shrew DNA in nest holes. This provides the first independent confirmation that the Belgian results can be replicated in diverse ecosystems.

Our results are of wider international importance too. Endangered squirrel species and subspecies in North America prefer tree holes to branches for nesting.

Bats at Bat Rehabilitation Ireland and at Stiftung Wildstation Landshut continued to show a strong preference for chainsaw-carved roosts over bat boxes.

In separate studies not connected to Will and Goedele's work, a maternity colony of Bechstein's bats (*Myotis bechsteinii*) used traditionally carved roosts created by Jim Mullholland and Sean Shereston in the UK, and

Matt Stephens in Australia found successful outcomes with carved nest holes for larger Australian arboreal species at 5- and 7-year follow-ups.

Will Robertson is a climbing arborist in practice and research. As a proudly gay/bi guy, he's committed to making our industry inclusive and welcoming. w.robertson@cairnwater.com

Goedele Verbeylen is one of Western Europe's foremost researchers in the conservation and ecology of the endangered garden dormouse and hazel dormouse.

References

Robertson W. (2024). New homes for old friends: precision-carved homes for bats, dormice and squirrels. *ARB Magazine* 206: 60-66.

Robertson W. (2025). New homes for old friends: an update. *ARB Magazine* 208: 72.

Both articles can be accessed via your Arboricultural Association online account or at www.researchgate.net.