



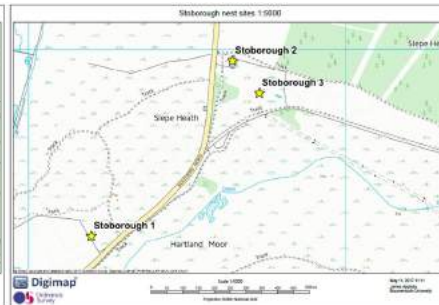
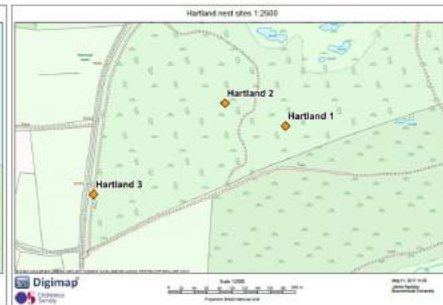
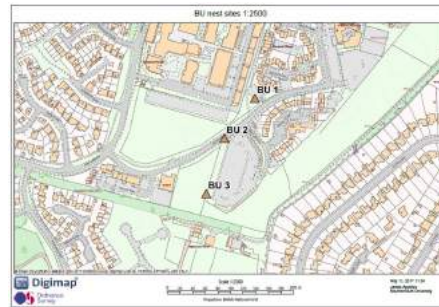
Title: **Bee Zoopla**
 Authors: James Appleby
 Elizabeth Franklin



Location: The maps on the right show where 12 nest boxes were placed (another 3 were placed in the gardens of University staff). In most areas these were in close proximity, though not in the case of Stoborough. The locations mostly relied on the ability to



secure the boxes to stable structures such as fence posts, as well as having them face south-east, i.e. facing the sun and at least a metre above the ground to keep them clear of flooding and most animals. Hartland, Stoborough and Godlingston were all areas of heathland, chosen for its accessibility and proximity to other work that was occurring at the time.



Introduction: The importance of bees as pollinators is well-established. What is perhaps less well known is that social bumblebees and honeybees make up less than 10% of the UK's 267 bee species. The other 90%, referred to as solitary bees, range in size from a few millimetres to a few centimetres. Unlike their social cousins they do not form colonies, rather they make individual nests in cavities in the ground, walls, dead wood or trees.

Aim: to test the effectiveness of an observation nest box with a plastic side which, when uncovered, would allow the contents of the nest box to be surveyed.

Design: A prototype was built out of MDF (right). This had a small porch to protect the burrows from rain. The finished nest boxes differed with round holes of different diameters (3mm, 8mm and 12mm) to accommodate different species, and an identical set of holes on the other side with no plastic sheet to act as a control. It was built out of pine, rather than MDF, which is toxic to bees.



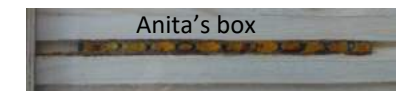
Findings:



Hymenoptera observed in bee nests:
 Top left – *Lasioglossum* sp. – Hartland
 Top right – *Ancistrocerus* sp. – BU 2
 Bottom left – *Megachile versicolor* – BU 3
 Only the later species took up permanent residence in the boxes

Bees and wasps were spotted in some of the boxes although earwigs were more common. However, only three boxes had bees nesting in them:

Leafcutter bees (*Megachile*) made nests in the bottom two burrows (12mm) of the plastic side of box 1 at Stoborough, and the blind side of box 2 at Hartland.



A Mason bee (*Osmia*) made its nest in the third burrow (8mm) from the top on the plastic side of the garden nest box kept by Anita Diaz.

While this sample is too small to run effective statistical analysis on, it has been shown that, at least in two cases, the bees were happy to make their nest on the side with plastic.

Improvements:

Positioning – put the nests in areas with large amounts of wildflowers, as cavity nesting bees are more common in these areas than heaths.

Reduce moisture in nests – dampness might have been a leading cause of earwig dominance. A gasket may be used in future to seal the nest box.

Nest smell – bees tend to nest in old wood, so the boxes might have smelt too clean for them. By leaving them out for a year and letting earwigs live in them the nests might start to smell more natural.

Burrow diameter – the 3mm burrows were unused by bees so are unnecessary.

Plan for the future:

Nests like these could be used for outreach in schools and nature reserves, for both education about solitary bees themselves and surveying the bees in an area. It would allow scientific data to be collected by volunteers, without too much disturbance to the bees.



Scan for more info

