Case study: Long-horned bee at Gatwick Airport

In May 2014, a colony of Long-horned bees (*Eucera longicornis*) was discovered in meadows at Gatwick Airport. In light of this discovery, the airport's Biodiversity Action Plans were reviewed and updated to encourage the spread of this Nationally Scarce bee. Management prescriptions include hay-cutting grasslands to provide continuity of legume-rich foraging areas, and preventing encroachment of scrub in nesting areas. Monitoring is undertaken of the use of the site by the bee, and will be used to inform any future revision of management necessary.

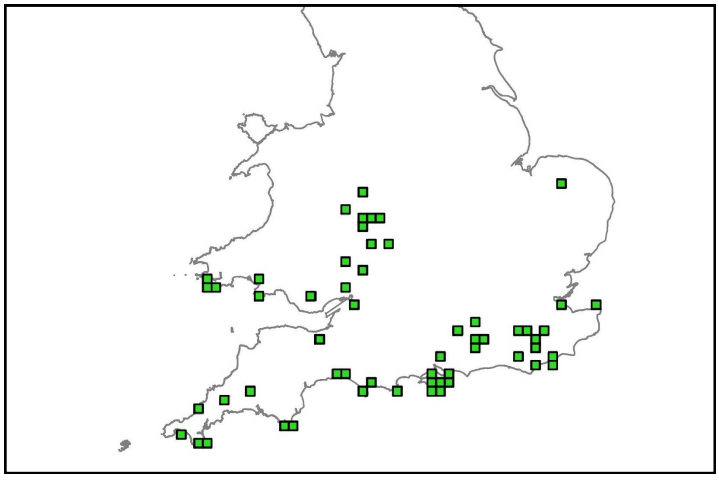
The Long-horned bee (*Eucera longicornis*) is one of the UK's largest solitary bees. The long antennae of the male make this a distinctive and charismatic species. The Long-horned bee requires large areas of unimproved, legume-rich habitat and has been badly impacted by losses of such habitat. Following dramatic declines over the last century it has been identified as a Species of Principal Importance.

Male Long-horned bee © Steven Falk

Background

Gatwick Airport comprises a mosaic of habitats including woodland, wetland, grassland and dense hedgerows. The areas outside of the airfield are subject to Biodiversity Action Plans, which outline a series of management objectives aiming to improve the quality of these habitats.

In May 2014, a colony of Long-horned bees was discovered in the meadows to the west of the airfield, which fall within the valley of the River Mole. These meadows are characterised by occasionally inundated grassland, including tussocky areas dominated by coarse grasses. Localised herb-rich areas contain species of value to the Long-horned bee including legumes such as Common bird's-foot trefoil (*Lotus*



Long-horned bee post-2000 distribution - this information was sourced through the NBN Gateway. Contains OS data © Crown Copyright 2016

Key features for the Long-horned bee

- Flowery grassland containing key legumes such as Meadow vetchling and Red clover
- Bare and sparsely vegetated areas for females to excavate nests
- Provision of a network of flower-rich habitats in close proximity to suitable nesting sites to create linkages that will enable this species to spread

corniculatus), Meadow vetchling (*Lathyrus pratensis*) and Red clover (*Trifolium pratense*).

The Long-horned bee is a much declined species, which has been badly impacted by the loss of flower-rich habitats during the 20th Century. Once widespread throughout southern England and Wales, it now survives at just a few dozen sites, mostly concentrated along the south coast, with very few inland colonies remaining.

Targeted surveys at Gatwick Airport established the presence of the Long-horned bee across an area of approximately 16 hectares. A nesting area within a clay bund was also confirmed, with further nesting opportunities available in mounds and banks. Female Long-horned bees dig burrows in bare or sparsely-vegetated ground, typically in a south-facing slope. Being a solitary bee, each female excavates her own nest, although they will nest in aggregations.

Pasture with Red clover and Common bird's-foot trefoil © Diana Cheng

Sparsely vegetated ground providing potential nesting habitat © Greg Hitchcock

Habitat management

- Management of the River Mole grasslands by hay-cutting in late summer, ensures pollen and nectar resources are available during the active period of the Long-horned bee (May to July).
- Removal of arisings following cutting helps maximise abundance of flowering legumes and promotes the development of a more diverse grassland sward.
- Rotational cutting of hedgerows and areas of scrub enhances their flower density; providing a valuable supplementary nectar source for Long-horned bees.
- Recognised Long-horned bee nesting areas are kept free from encroaching scrub and coarse grasses to ensure females have the warm, sparsely-vegetated areas they require to excavate their burrows.
- The management of the River Mole grasslands is providing a mosaic of habitats that should enable the Long-horned bee to spread further along the river valley corridor.
- Monitoring is undertaken using the Bumblebee Conservation Trust BeeWalk Survey, which involves a regular survey of an established transect between March and October. Data gathered will be used to inform future management at the site.