

Long distance love for beetles

In urbanised regions, many species suffer because their populations become fragmented. The greater stag beetle *Lucanus cervus*, for example, depends on a set of interacting nest-sites. To maintain population viability, individuals must be able to move easily between sites, and females must also disperse to establish new colonies in a suitable habitat. Unfortunately, according to new research, achieving the second of these imperatives might be difficult for this flagship species of temperate woodlands.

Markus Rink and Ulrich Sinsch of the University of Koblenz-Landau fitted tiny radio-transmitters to the backs of beetles as they emerged from their nests, and monitored their movements over three reproductive seasons. They found that males frequently took to the air, covering distances of more than 2km in search of mates, but females usually flew just once.

The scientists believe that males can maintain the necessary gene-flow between

Male stag beetles (*left*) will travel to find a mate, while females (*right*) are more likely to stay closer to home.



BACKGROUND

» At up to 7.5cm long, the greater stag beetle is Britain's largest terrestrial beetle. Females lack 'antlers', and can be confused with the unrelated lesser stag beetle *Dorcus parallipedus*.

» Greater stag beetles spend two to seven years as larvae feeding in rotting wood. They play a valuable role in woodland ecosystems.

» They live for just a few weeks as adults, devoting themselves

to reproduction and dispersal.

» Once widespread across western Europe, the greater stag beetle is now rare. It occurs in south-east England and is increasingly dependent on parks and gardens.

established nest-sites by seeking out distant mates, but fear that the creation of new colonies is hampered by the females' limited migratory capabilities. "A female's low ability

to disperse from her nest emphasises the need for stepping-stone habitats – such as piles of decaying wood – to keep populations connected," says Sinsch. *Dan Eatherley*