

Little Owl research update January 2010

There is growing concern that the British little owl population is experiencing a moderate long-term decline, but the extent of this decline remains unknown. The distribution of the little owl appears to have become 'patchy'; with some areas supporting good numbers of individuals and others with reported widespread losses.

This species is mostly active at dawn and dusk and is therefore more difficult to survey than diurnal species. We need to increase the monitoring effort of this species if we are to attempt to understand why the little owl is declining in Britain.

The Hawk and Owl Trust-sponsored research into the decline of the little owl has come to the end of its second year. Postgraduate research student Emily Joachim has continued her research, once again drawing on the Imber Conservation Group Nestbox Project (Wiltshire, UK).

This research update reports on two major strands of Emily's work; post-fledging survival and dispersal and the feeding ecology of the little owl.

Post-fledging Survival and Dispersal

Emily believes that the decline in populations of British little owls could be linked with a reduction in the number of juveniles that survive their post-fledging. Leg-mount radio-tags were fitted to a further 11 juvenile little owls during 2009. Radio tracking was used to look at the time of fledging, post-fledging dispersal, juvenile survival and the causes of mortality in these juveniles. The owlets were tracked until they were recorded as dead, lost or the radio-tag battery had drained.

Out of these 11 juveniles, 9 were known to have survived their first 5 months, at which point the radio-tag batteries were exhausted. Emily lost 1 juvenile to a sparrowhawk and the other was mobbed to death by corvids. Emily is hopeful that some of the remaining juveniles will be able to survive the harsh winter and go onto breed in 2010.

Three of the nine surviving juveniles took their flight of independence within the battery life of the radio-tag. All three dispersed within 2.3 km of their natal site. Further results will feature in future little owl research updates.

Feeding Ecology of the Little Owl

The loss of suitable habitat and changes in land-use practices could be affecting the availability and accessibility of food prey items to the little owl. Low food availability can affect juvenile and adult survival rates, foraging behaviour and the breeding biology of the little owl.

Two Master of Science research students, Jess Neumann and Kimberly Page, examined the prey availability (pitfall trapping) and prey selection (pellet contents) of the little owl during 2008 and 2009. Preliminary results suggest that little owls are not foraging at random, as there was a significant difference between prey availability and prey selection. For example, the little owl shows a preference for larger carabid beetle species; however, at

one site where large carabid species were abundant in arable fields, they were not common in their pellets. This suggests that vegetation composition and sward height could be restricting the little owls' access to potentially valuable prey resources.

Passive Integrated Transponder (PIT) tag technology is also being used to examine the foraging ecology of the little owl. This study begun in 2008 and the PIT tag technology was trialled in 2009. A PIT tag is a glass-encased microchip with its own unique 10-character identification code. These tags have been fitted to individual little owl pairs and PIT tag readers have been installed at nestbox entrances. The unique identification code is transmitted to a data logger every time a tagged owl is within the range of a PIT tag scanner. We are using this technology to learn more about the parental investment of this species and little owl foraging ecology, for example peaks in feeding rates and how these vary throughout the year and in different habitats.

Following an idea Emily had in 2008, this technology will be combined with nestbox cameras to further our understanding of provisioning rates, ie how often the young are fed during the nesting period, juvenile and adult diet and little owl behaviour within the nesting cavity. Details of this project will feature in future reports.

Emily Joachim's research is supervised by Dr Graham Holloway at The University of Reading and her fieldwork is supervised by Major Nigel Lewis MBE. The PhD is funded by a Biotechnology and Biological Sciences Research Council (BBSRC) studentship and is sponsored by the Hawk and Owl Trust and the World Owl Trust. Natural Research Limited and Andy Rouse's & Paramo's joint 'Aspira Fund' have funded the PIT tag equipment.