

**Investigating the role of socioeconomic status  
in determining urban habitat quality for the  
house sparrow, *Passer domesticus***

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## ABSTRACT

Urban areas are increasingly recognised as an important resource for wildlife, as studies have shown that gardens, parks and brownfield sites can contain high insect and plant diversity. Urban centres can also provide resources for species of conservation concern, and it is therefore important to monitor urban habitat quality and ensure the maintenance of urban biodiversity. However urban habitats are often difficult to monitor effectively due to access and sight restrictions in built up areas. This thesis investigates urban habitat quality in relation to an urban specialist species, the House Sparrow *Passer domesticus*. After considering the importance of urban habitats for biodiversity in general, I review the current status and distribution of the house sparrow in urban areas, with particular reference to the possibility that human socioeconomic status has influenced the decline of the species in some urban areas. I then consider which features of urban houses and gardens may provide a potential explanation for inter-city variation in habitat quality for urban birds. I present evidence that the age of houses; the prevalence of roof repairs; and the presence of extensive paved areas such as driveways are linked to areas with low levels of socioeconomic deprivation. I then use nationwide data to establish that house sparrows in English cities are more likely to occur in areas that are relatively deprived. Furthermore, analysis of land use data confirms that house sparrow occurrence decreases with increasing levels of building and paving, and increases with the area of green space available. However, house sparrow occurrence also appears to decrease with increasing garden area, a surprising finding given that gardens are important foraging habitats for urban birds. By radio tracking house sparrows in urban Bristol, I show that gardens are heavily utilised by house sparrows, but that those with a high proportion of paving are avoided. It appears that changes to areas with low levels of socioeconomic deprivation, notably an increase in paved areas, may have contributed to the urban decline of house sparrows in less deprived parts of English urban areas. These findings are discussed in relation to future urban planning requirements, and the need to mitigate for the detrimental effects of urban development on species of conservation concern. The contribution of large, nationwide datasets to the monitoring of urban habitats, and the implications of these findings for other urban species, including humans, are also highlighted.

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Data from a number of sources was used during this PhD. As well as the BTO GardenBirdWatch, National Statistics data on deprivation and land use was used from [www.statistics.gov.uk](http://www.statistics.gov.uk). Ordnance survey maps were obtained from DIGIMAP (<http://edina.ac.uk/digimap>).

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