House Sparrow Project: preliminary investigation

Summary

House sparrow (here after called sparrow) populations have declined significantly in England over the last 50 years. The reasons for this decline are still not fully understood, with multiple factors believed to be responsible, one of which being loss of suitable habitat. The Essex Wildlife Trust House Sparrow Project (HSP) focused on gardens and local spaces and aimed to assess the habitat characteristics that influence the presence of sparrows. The objective of this preliminary study was to collect some initial data and to assess the feasibly of conducting a similar investigation on a larger scale in the future.

The HSP ran during the months of March and April 2024, where a select group of volunteers from across Essex completed a total of 90 surveys. Once volunteers had completed a survey, they submitted the data through the Esri Survey123 app.

From the results, 24 participants conducted their survey within a garden space, while the remaining 4 completed them in other local areas, these included a car park, nature reserve, abandoned area, and a rural village. The 'non-gardens' yielded some great results with all volunteers observing sparrows, the maximum number count being 43, and with 3 volunteers reporting signs of breeding. These 4 samples are, however, too small to investigate further, so the remaining analysis is conducted on the 24 garden samples.

Main findings

20 volunteers observed house sparrows during at least one of their surveys, showing a wide distribution across Essex (Fig. 1). Encouragingly, 10 of these also observed signs of breeding. The 4 gardens that did not observe sparrows also provided crucial data, as this allowed for a comparison of gardens with and without sparrows.

23 participants had feeders in their gardens so the significance of this was unmeasurable, however, other bird species were regular in gardens. The total number of bird species observed between gardens that did / did not observe sparrows during a survey were compared to see if the absence of sparrows was explainable by a lack of bird species in general. On average, 7.6 other bird species were observed in gardens where sparrows were observed, compared with 6 in gardens where they were not (Fig. 2). There is, however, no significant difference between these numbers so even if gardens were attracting other bird species, they wouldn't necessarily attract sparrows. This means there are underlying reasons leading to the absence of sparrows in gardens.

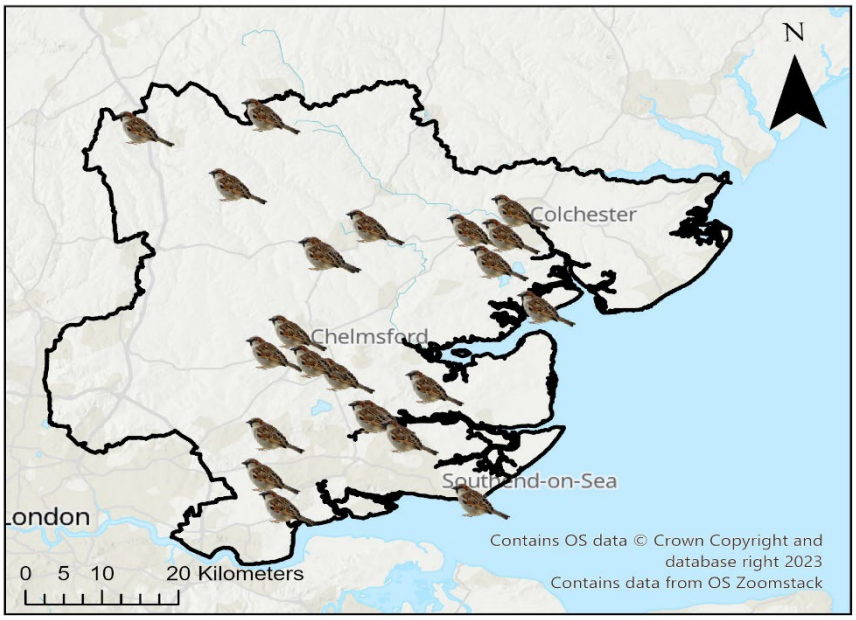

Figure 1 - Map showing the locations where house sparrows were observed during surveys in March & April 2024 within Essex.

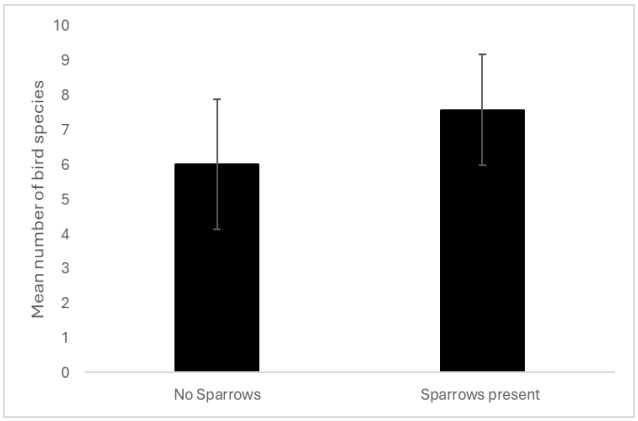

Figure 2 - Bar chart showing the mean number of other bird species observed in gardens when house sparrows were/were not present, displayed with 95% confidence intervals. There is no significant difference between the two variables.

Nest boxes were popular in volunteers' gardens, with 75% having at least one box. Excluding a garden with an impressive 45 boxes, the average boxes per garden was 2.6. Boxes were rarely reported to be used by sparrows, however, with only two reports across all surveys. Instead, sparrows were reported to be nesting in a diverse range of locations, shown in Figure 3. The importance of natural vegetation was highlighted here, as nearly half of believed nesting locations were in vegetation. To investigate this further, the correlation between available good habitat and peak house sparrow count was assessed. There was a weak positive correlation, with house sparrow numbers gradually increasing as available good habitat increased (Fig. 4).

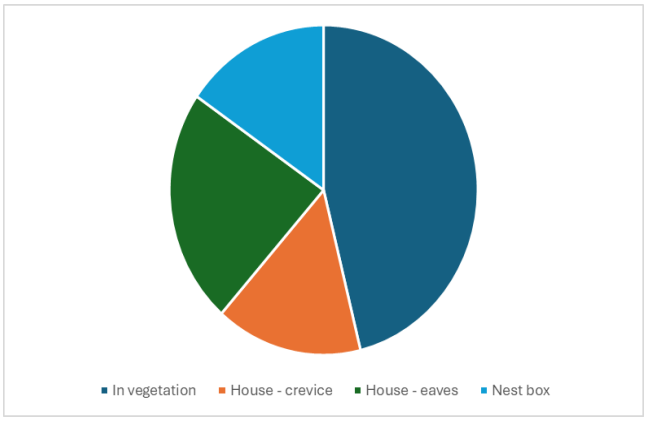

Figure 3 - Pie chart showing the different places house sparrows were believed to be nesting within gardens.

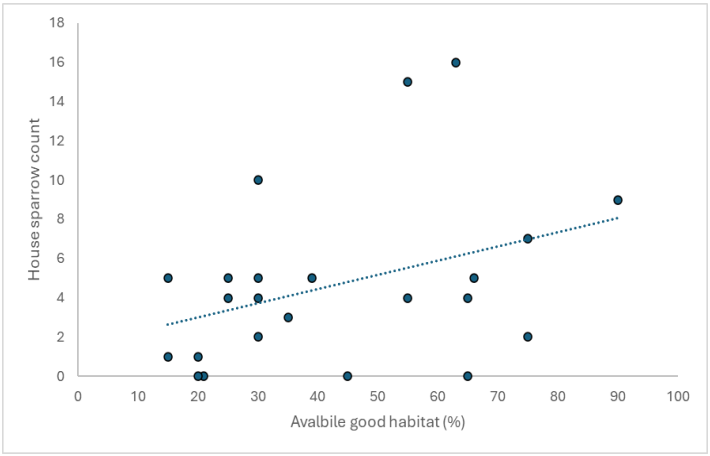

Figure 4 - Scatter graph showing the weak positive correlation between available good habitat (trees, hedges & shrubs, ponds, vegetable patches, and wild areas) and the maximum house sparrow count in gardens. However, this correlation is not significant.

Conclusion

It is difficult to draw significant conclusions from this study as the sample size is small, but this provides a good basis that can be built upon in future years. There is an obvious bias in the sample as volunteers are likely 'nature friendly' by the very nature of choosing to volunteer on such a project, and hence the gardens sampled may not be representative of all gardens in Essex.

What is highlighted however, is the importance of natural nesting sites and wilder habitat within private gardens for sparrows as vegetation was the most popular nesting site. We hope to expand on understanding areas without sparrows in future studies to further understand why they may favour certain areas over others.