

Wider Countryside Butterfly Survey latest results and futures uses



Centre for
Ecology & Hydrology
NATURAL ENVIRONMENT RESEARCH COUNCIL



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UK Butterflies

- **Habitat specialists**
(30 species)



- **Wider countryside**
(26 species)

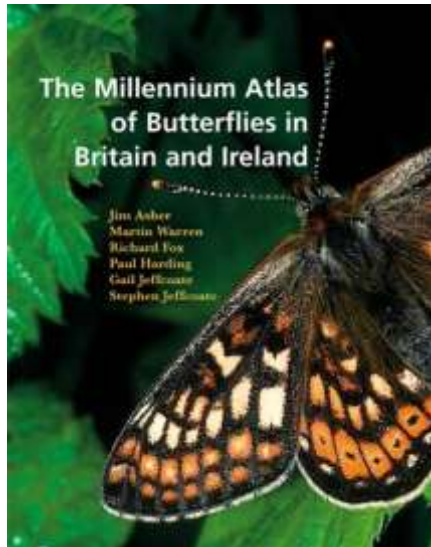


- **Regular migrants**
(3 species)



Conservation focussed on Habitat Specialists

93% species declined in range

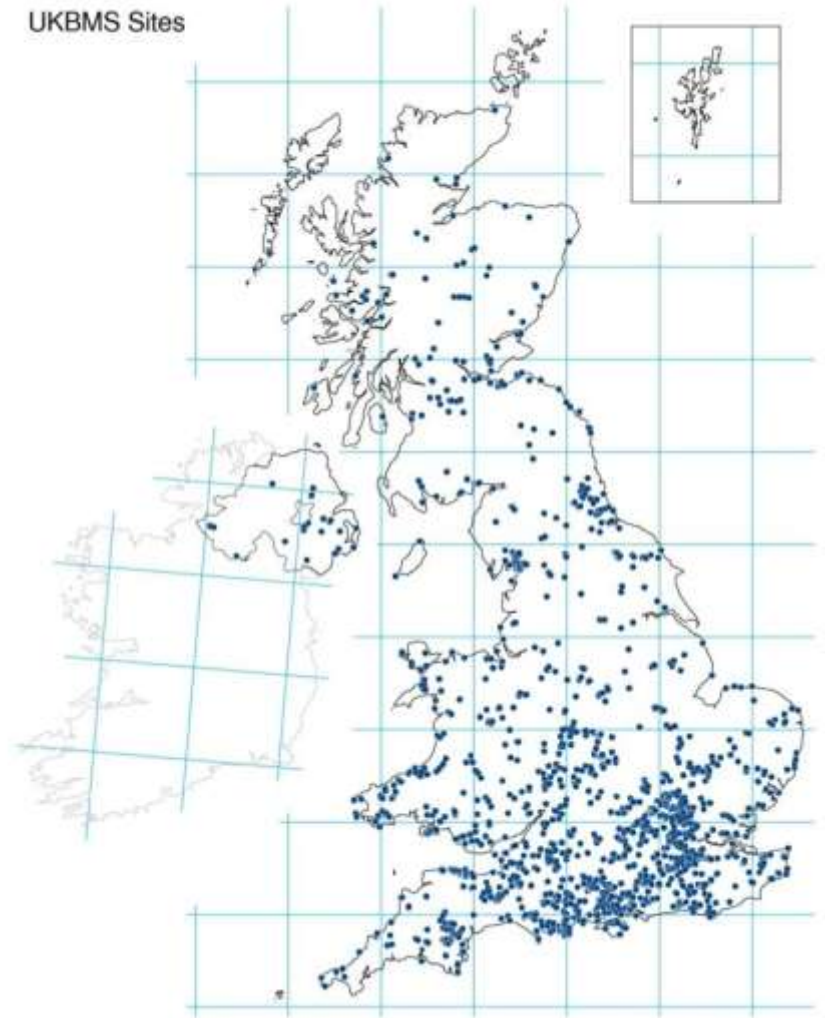


Monitoring targeted at Habitat Specialists

BMS launched in 1976

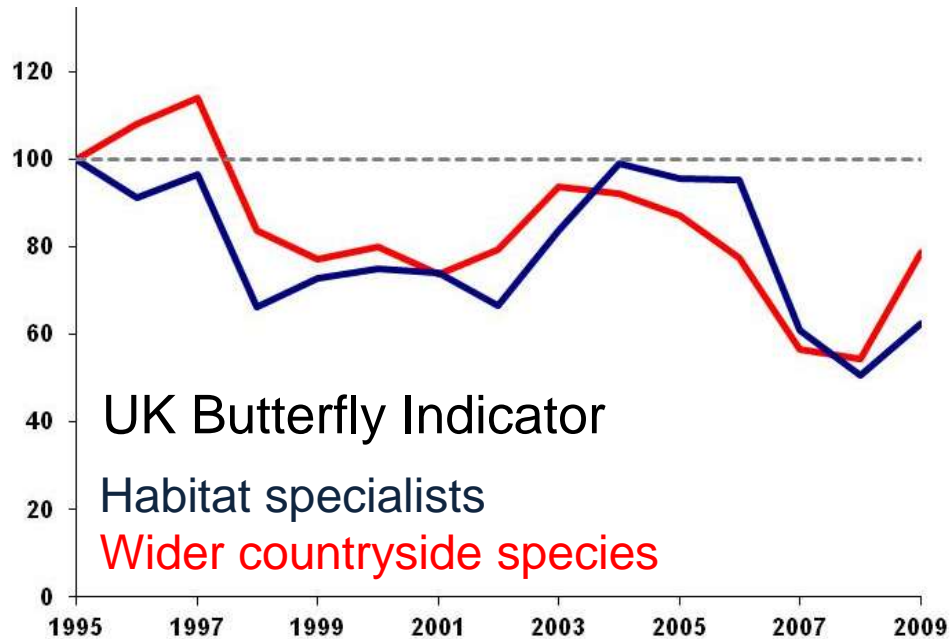


1089 sites in 2011



Need for a change in emphasis

(1) Common species in decline



Recent change in emphasis

(2) Need for landscape-scale measures



Wider Countryside Butterfly Survey (WCBS)



Robust



Efficient



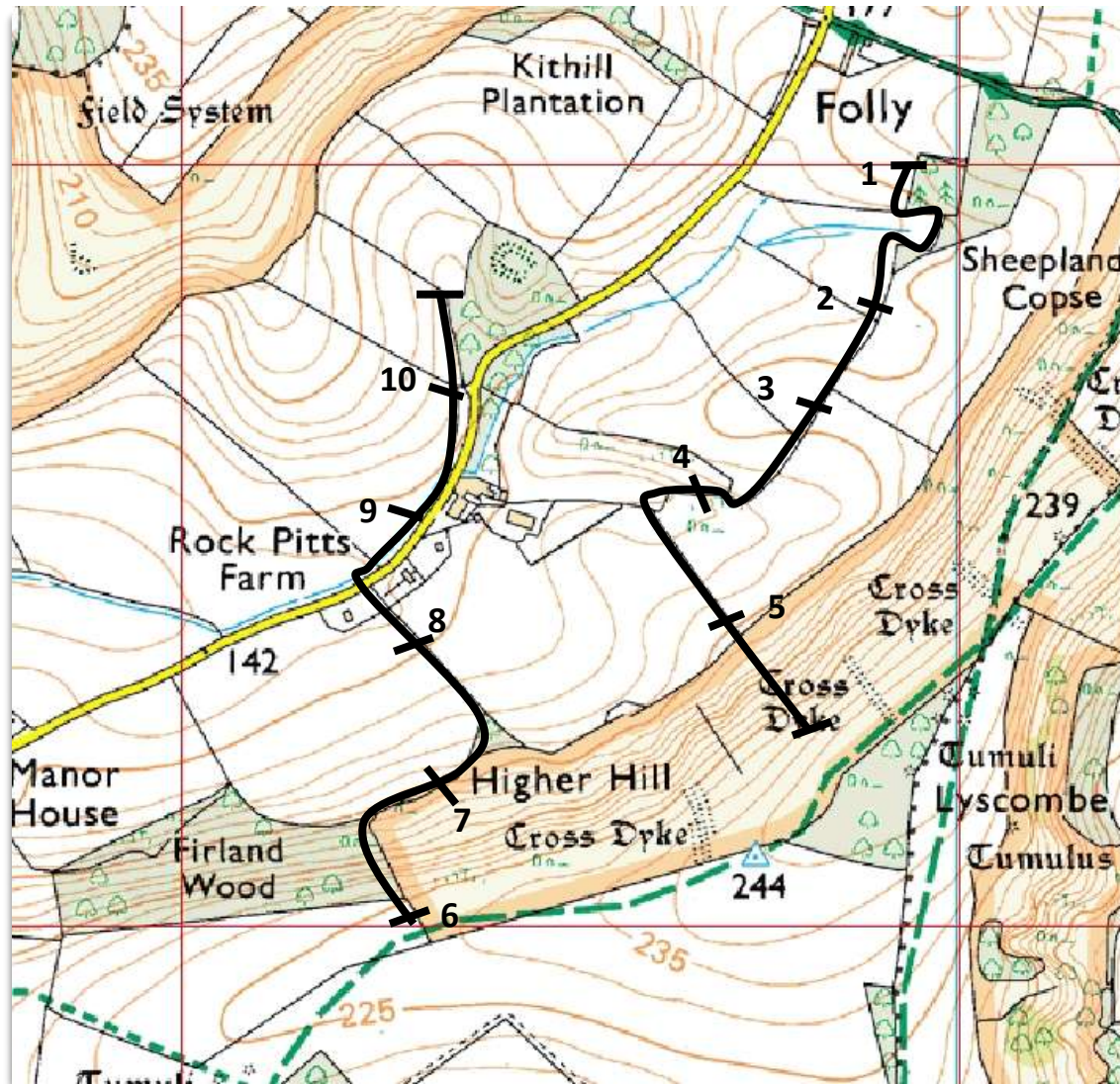
Appealing

2005-8 research & field testing

Worked with BTO



Survey design



Scheme launched 2009

2009

- BC – 403
- BTO – 363



2010

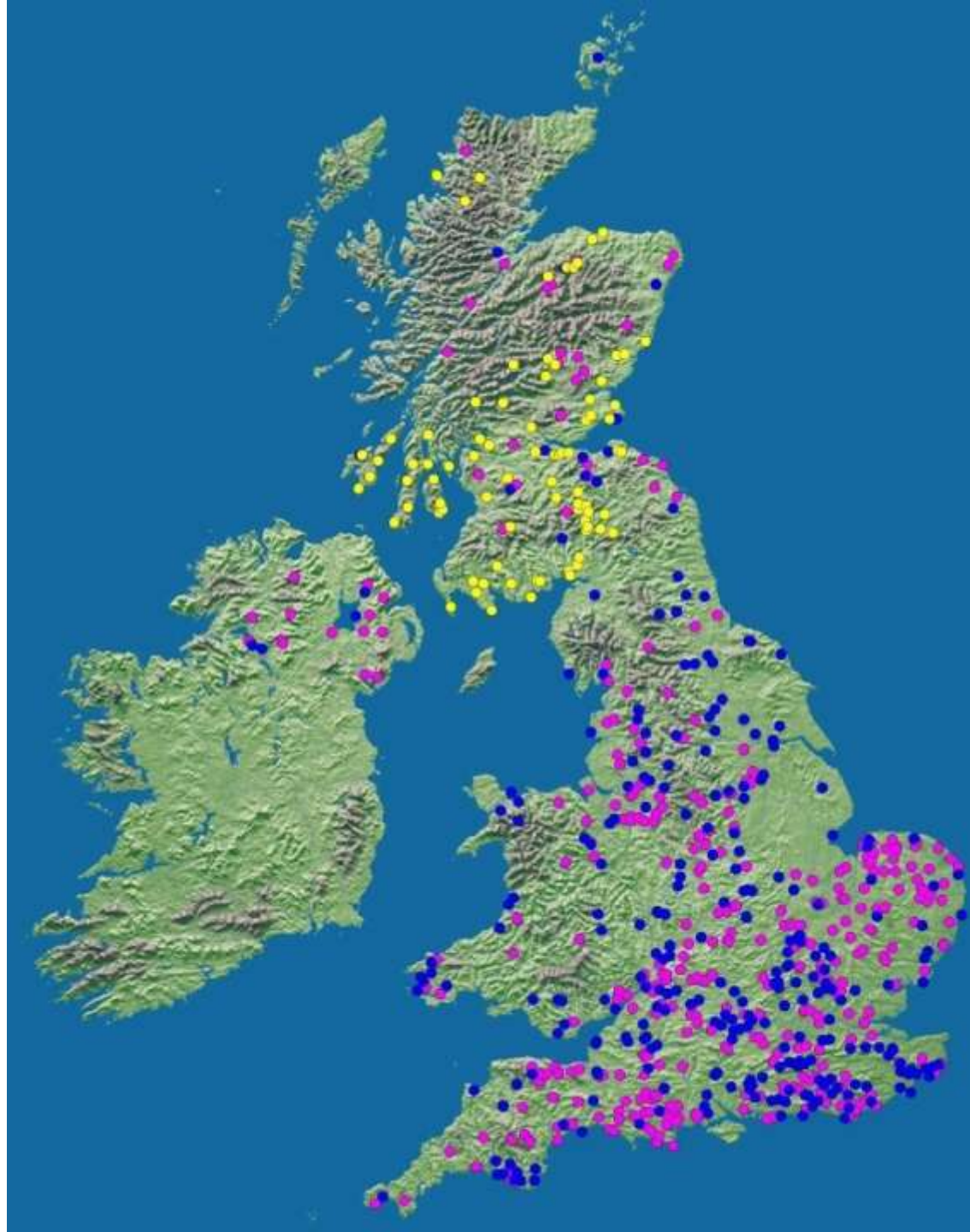
- BC – 359
- BTO – 332



Coverage 2011

- BC – 362
- BTO – 276
- Contractors – 85

723 in total



Species sampled

- Good coverage 23 of 26 target species



- V. good coverage 17 of 26 target species



- Poor coverage 29 of 30 Habitats Specialists



Re-evaluating commonness & rarity

e.g. Scotch Argus *Erebia aethiops*



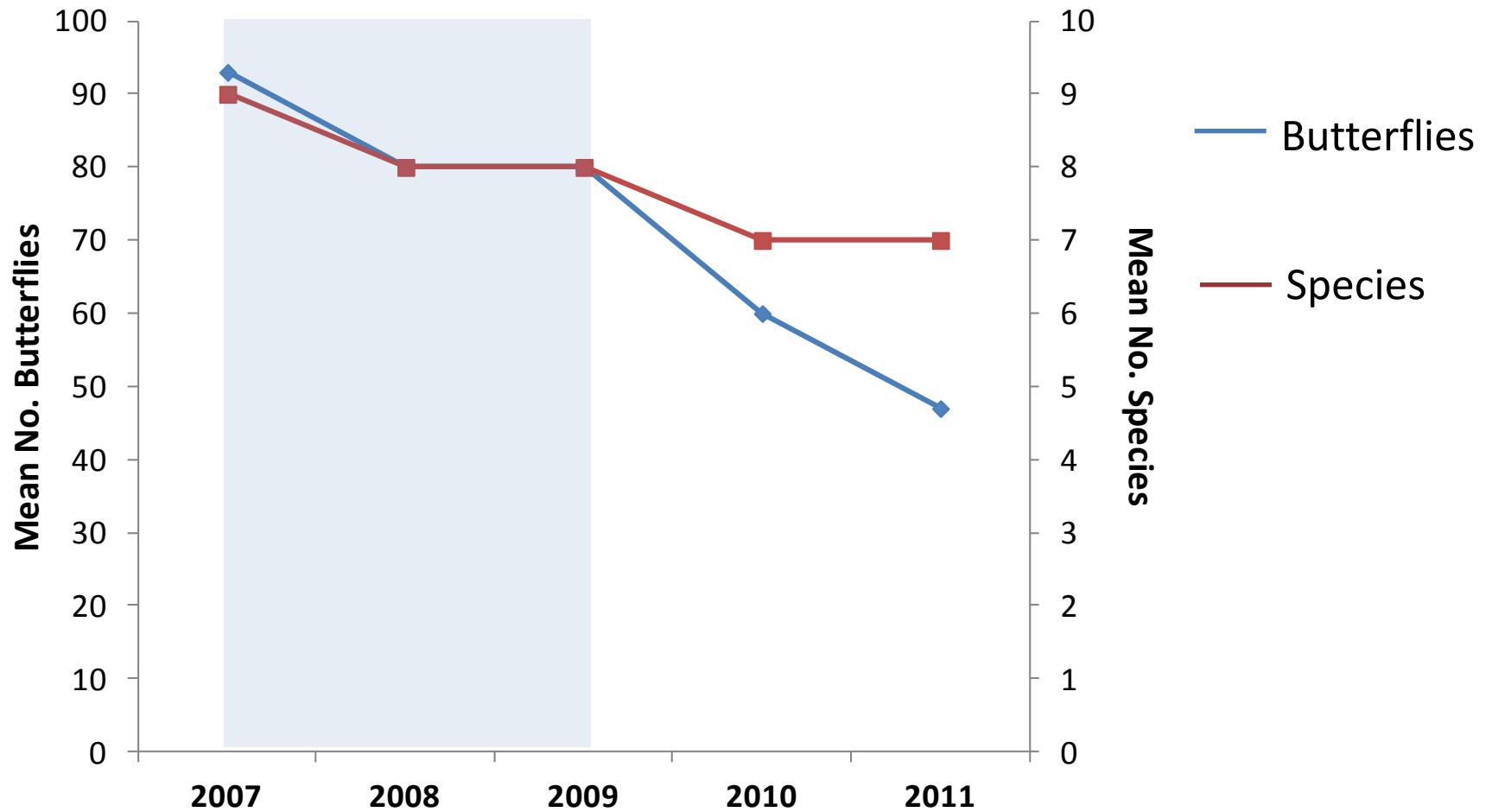
‘Common butterflies’ not that common!

43 surveys no butterflies seen!

Very best square in the UK



Temporal trends



Transects versus WCBS

2010-11

Similar results



Different results



Future analytical developments

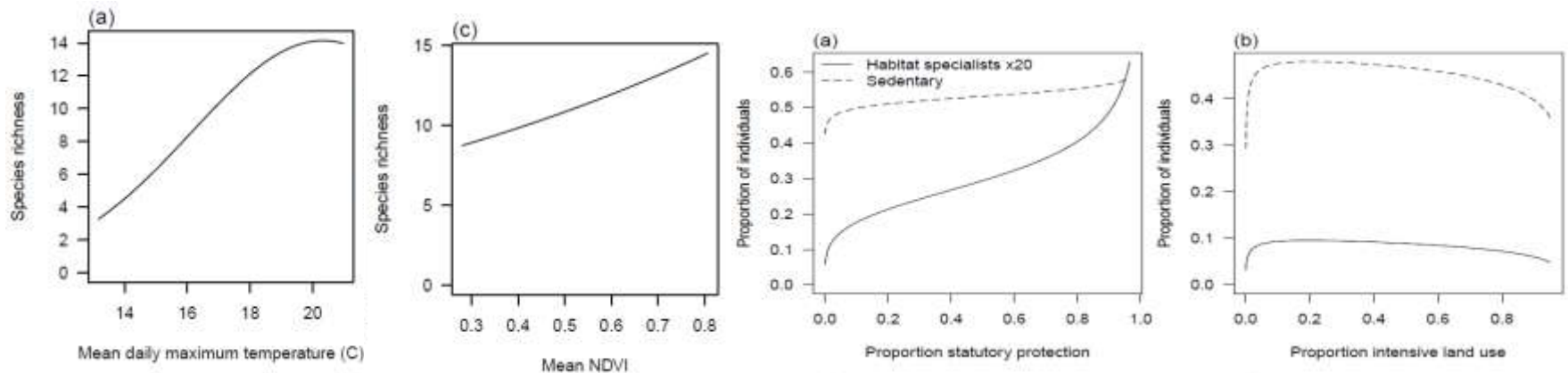
Compare trends on Transects v WCBS squares



Model species trends using both Transects & WCBS data

Current research uses

Factors affecting species richness (Chapman *et al* in press)



Patterns in bird & butterfly species-richness
(Eglington *et al.* in prep)

Future research uses

Assess & refine land management policy

Supplementary sampling -as per birds (Chamberlain *et al.* 2006)



Figure 1. ASS (red) and BBS (green) squares surveyed in 2005.

Table 2. The mean (\pm SD) abundance of individual species in BBS and ASS survey squares in 2005. Abundance is based on the maximum count taken on each square over two visits. Sample sizes were $n = 1,474$ BBS squares, 975 ASS squares. Only species that are either in the Farmland Bird Indicator (in bold), or that have a higher than 0.50 occurrence rate on BBS squares (Table 4) are shown. Species are given in order of abundance on BBS squares. Z values test the difference between means. * $P < 0.05$, ** $P < 0.01$, otherwise not significant.

Species	BBS	ASS	Z
Woodpigeon	36.108 \pm 31.925	30.253 \pm 20.828	2.754**
Rook	16.794 \pm 28.717	13.042 \pm 28.322	1.092
Blackbird	15.144 \pm 9.722	11.813 \pm 7.086	9.816**
Starling	15.021 \pm 26.643	10.770 \pm 27.089	3.801**
Chaffinch	14.902 \pm 8.303	13.677 \pm 6.937	3.914**
Curlew Crow	12.931 \pm 14.894	9.104 \pm 9.404	7.810**
Blue Tit	10.599 \pm 8.225	7.957 \pm 5.844	9.308**
Wren	10.259 \pm 7.190	10.565 \pm 6.786	1.068
Brown Sparrow	10.052 \pm 13.208	8.679 \pm 13.065	2.387*
Jackdaw	9.981 \pm 13.866	9.884 \pm 13.905	0.132
Robin	7.886 \pm 5.823	8.129 \pm 3.086	0.944
Shelduck	7.166 \pm 8.727	7.429 \pm 8.128	0.849
Greenfinch	7.091 \pm 7.553	6.096 \pm 6.335	3.525**
Great Tit	6.477 \pm 5.362	5.333 \pm 4.162	5.927**
Pheasant	6.080 \pm 6.628	5.225 \pm 5.449	3.303**
Duncock	4.829 \pm 3.987	4.342 \pm 3.302	3.293**
Magpie	4.137 \pm 4.482	3.806 \pm 3.137	8.662**
Mallard	4.072 \pm 7.982	2.419 \pm 4.520	6.544**
Yellowhammer	3.790 \pm 5.409	3.930 \pm 4.641	0.687
Liver	3.752 \pm 6.499	4.687 \pm 7.647	3.148**
Goldfinch	3.594 \pm 4.555	3.826 \pm 4.165	1.208
Long Thrush	3.498 \pm 3.402	2.727 \pm 2.652	6.280**
Collared Dove	3.368 \pm 5.088	1.992 \pm 3.074	8.254**
Whitethroat	2.915 \pm 3.365	2.870 \pm 3.016	0.349
Blackcap	2.799 \pm 3.998	2.535 \pm 2.824	2.049*
Chaffinch	2.460 \pm 3.013	2.371 \pm 2.918	0.755
Lapwing	2.425 \pm 9.236	1.901 \pm 6.883	1.599
Stock Dove	1.520 \pm 2.902	2.203 \pm 3.601	4.561**
Field Wagtail	1.281 \pm 1.697	1.324 \pm 1.632	0.783
Great Spotted Woodpecker	1.120 \pm 1.618	0.810 \pm 1.209	5.644**
Kestrel	0.509 \pm 0.836	0.470 \pm 0.826	1.130
Tree Sparrow	0.399 \pm 1.906	0.640 \pm 2.174	2.828**
Grey Partridge	0.368 \pm 1.290	0.286 \pm 0.915	1.848
Corn Bunting	0.352 \pm 1.854	0.350 \pm 1.492	0.006
Yellow Wagtail	0.288 \pm 1.276	0.368 \pm 1.226	1.563
Turtle Dove	0.197 \pm 0.736	0.170 \pm 0.628	0.927

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United Kingdom
Butterfly Monitoring Scheme



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Scottish Natural Heritage
All of nature for all of Scotland

