Buzzard 1983

Title
Buzzard Survey 1983

Description and Summary of Results
The number of Buzzards *Buteo buteo* breeding in Britain and Ireland has fluctuated considerably over the last 200 years or so. They probably bred in most British and Irish counties until the beginning of the 19th century, but by 1900 had disappeared from Ireland, and were confined largely to upland and moorland areas of the western British mainland and to the lowland New Forest in Hampshire, due mainly to persecution by gamekeepers. Following the First World War, with a gradual reduction in the numbers of keepers, Buzzards were able to expand again and, by the 1954-1957 BTO surveys, had probably regained most of the former range in western Britain, had recolonized Northern Ireland and colonized the Outer Hebrides. Population levels declined again in the mid to late 1950s due to loss of rabbits *Oryctolagus cuniculus* through myxomatosis, but by 1963 had probably recovered again. In the 1968-1972 Breeding Atlas Buzzards were found in 38% of 10-km squares, but were still conspicuously absent from large areas of lowland regions.
The species has statutory protection in the United Kingdom, but continued persecution was thought still to be a limiting factor in some areas. The survey during the 1983 breeding season aimed to find out the current status.
The breeding range of the Buzzard in 1983 was found to be superficially similar to that of 1968-1972, after allowing for reduced observer coverage in Scotland in 1983. A more detailed comparison suggested that there was some expansion especially along the edges of the range, but largely through infilling rather than expansion towards eastern England. In all regions, Buzzards were recorded in a higher proportion of 10-km squares in 1983 in both main and edge ranges -- main range occupancy increased from 91 to 98%, edge range 44% to 73% -- but since an unquantified proportion of occupancy records were likely to relate to prospecting pre-breeders, with more such records in a five year survey, it is likely that these increases were even more significant than a simple comparison would suggest.
The highest densities of soaring birds were in NW and SW England and in Wales. Densities of soaring birds per tetrad were significantly lower in Scotland and along the edge range than in the main range, as was to be expected.
The population size was estimated to be 12000-15000 pairs.

Methods of Data Capture
The survey was in two parts: 1) a Breeding Survey to assess distribution and status; and 2) a Soaring Survey to estimate densities. For both parts observers were asked as a priority to provide data from a randomly selected sample of 10-km squares of the National Grid. This random sample was stratified to include 25% of 10-km squares in the main part of the Buzzard's breeding range and 50% of squares along the edges of the previously known range. This stratification aimed to concentrate effort along the edges of the range (where expansion might have occurred since the 1968-1972 Breeding Atlas) and to allow for

difficulties of achieving widespread survey coverage within a single breeding season. Observers were encouraged to supply data from all additional squares they could visit once the priority squares were covered. Information on breeding season distribution in 10-km squares not covered by specific fieldwork in 1983 was collected through a literature search (in autumn 1985) of county bird reports for 1983.
The Breeding Survey took place between 1 March and 31 August, when observers were asked to record possible, probable or confirmed breeding (as per standard "atlas" codes) in 10-km squares. Observers were also asked to note negative reports.
The Soaring Survey took place between 1 March and 18 April. Observers were asked to make up to three visits to a 10-km square, noting the number and location (on a printed grid) of Buzzards seen soaring or otherwise engaged in aerial activities in each tetrad visited. Observers were asked not to record in wet weather or very strong wind, since soaring would then be minimal. The date and duration of each visit was recorded, and negative returns entered for tetrads visited in which no aerial activity was seen.
In analysis of soaring records, the coverage for each 10-km square was calculated as the number of tetrads visited, and data from different visits were combined to give the best coverage of tetrads within a square. For a tetrad which was visited more than once, the number of Buzzards used for analysis was the maximum number seen on a single visit, though making allowance for birds seen to move between tetrads.

Purpose of Data Capture
To map the current breeding distribution of the Buzzard in Britain and Ireland; and to obtain estimates of Buzzard density in different parts of the breeding range.

Geographic Coverage
All of the UK. In practice the range of the Buzzard in 1983 was primarily in Scotland, Wales and the western half of England with a few in Northern Ireland.

Temporal Coverage
The 1983 breeding season with the Soaring Survey carried out from 1 March to 18 April although some of the latter was done in November and December 1983.

Other Interested parties
The survey was organised and run by the BTO within the larger contract to the BTO from the Nature Conservancy Council. The major part of the data extraction and collation was carried out by staff funded through a Manpower Services Commission contract.

Organiser(s)
Kenny Taylor (BTO staff at the time) and Geoff Horne (as a volunteer).

Current Staff Contact
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Publications
The main report of the survey is:
Taylor, K., Hudson, R. & Horne G. 1988. Buzzard breeding distribution and abundance in Britain and Northern Ireland in 1983. *Bird Study* 35: 109-118.
The survey was noticed in *BTO News* numbers 123, 124, 125, 127 and 158.

Available from NBN?
No.

Computer data -- location
BTO Windows network central area

Computer data -- outline contents
The breeding evidence recorded in each 10-km square and a summary of the numbers of soaring birds seen in 10-km squares.

Computer data -- description of contents
Breeding: Datafiles **breedbr** and **breedir** are Britain and Ireland data respectively containing 10-km square and level of breeding evidence found 0 -- presumed to be "seen"; 1 -- possible breeding; 2 -- probable breeding; 3 -- confirmed breeding (Sharrock Atlas definitions)
Soaring: Two directories (for the main and edge 'ranges') have similar files: xxxx.main (xxxx= regions of UK) contain rows with 10-km square and 5 variables: Variable 1 = % of tetrads which were covered with birds recorded; Variables 2 and 3 uncertain; Variable 4 = mean number of birds per tetrad covered; Variable 5 = % tetrads covered (of the 25 in the 10-km square).
mainsoar.sum is an output file producing mean, standard deviation etc for the variables in each of the files. However the values of 100.00 (in variable 1 and variable 5) are read in as 00.00 and so it is unclear what is the use of the means etc.

Information held in BTO Archives
4 Transfer Cases containing data cards, analyses etc. All data cards have been scanned.

Notes on Access and Use

Other information

Notes on Survey Design

The survey areas designated *main range* and *edge range* were defined by reference to the 1968-1972 Breeding Atlas. Each 50-km square of the National Grid (comprising 25 x 10-km squares) was assigned to the *main range* if it had confirmed breeding records in more than half of its 10-km land squares (ie squares containing some land). The *edge range* was then defined as: a) all 50-km squares which flanked the main range, and b) all other 50-km squares which had confirmed breeding records in 6 or more of their constituent 10-km land squares. The remaining 50-km squares in Scotland (excluding those for Orkney and Shetland) were also assigned to the edge range, along with the Irish 100-km squares letter-coded C, D and J.

Specific Issues for Analysis

The Buzzard is a long-lived species and immature birds will seek to establish territories and may visit more than one site before being successful. Hence, an unknown proportion of the 'probable' breeding records for 1983 may refer to such birds. The same will apply to the 1968-1972 Breeding Atlas results, though a five-year survey such as that one offered more opportunity for proving breeding. In analysis, it was deemed sensible to group 'possible' and 'probable' breeding records wherever practicable.