

Nightjar 1992

Title

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Description and Summary of Results

The Nightjar *Caprimulgus europaeus* is a red-listed species that is protected under Annex 1 of the EC Birds Directive. (And in the 21st Century the species became the subject of a national Biodiversity Action Plan (BAP).)

Numbers and range declined in Britain over the greater part of the 20th Century and the 1992 survey was designed to determine its current numbers and range and how these had changed since the earlier survey of 1981. The 1992 survey was the third national survey, following 1957-58 and 1981 and there was a subsequent one in 2004. In 1992 the species was known to breed mainly in southern England, but there were always some scattered populations as far north as central Scotland.

A total of 2256 'sites' with suitable habitat were visited during the survey. The only areas not fully covered were Dumfries & Galloway and Mid Glamorgan, and the overall total of birds includes those from a few sites in southern England which were covered in 1991 as part of a pilot survey but were not revisited during 1992. In addition some sites were visited only once or twice. Both these led to an underestimation of numbers at these sites, points taken into consideration when estimating the total national population.

Overall, Nightjars were recorded in 1194 of the 2256 sites covered and these in turn were in 268 10-km squares. This compared with records in 241 squares in 1981 and 562 in during the 1968-1972 Breeding Atlas. Numbers of occupied 10-km squares in Wales, southwest and northern England all increased compared to 1981, numbers in East Anglia and Scotland remained the same, and those in the Midlands and southeast England decreased.

A total of 3093 males were noted at the 1194 sites where birds were recorded and, allowing for areas not or poorly covered the total number of pairs was estimated to have increased to 3400, representing an increase of more than 50% since 1981. Traditional areas along the south coast remained the Nightjar's stronghold.

Methods of Data Capture

The survey was carried out largely by volunteers. However, full-time paid survey teams conducted a sample survey in the New Forest in 1991 and operated in Dorset, mid-Wales and Dumfries & Galloway in 1992. Fieldworkers were asked to visit all sites known to have been occupied recently, all formerly occupied sites where suitable habitat might remain and potential new sites. Sites ranged from small woodland clearings (clearly defined by surrounding mature trees), to vast expanses of open heath. Where very large tracts of suitable habitat existed on heaths or in clear-felled plantations they were often broken down into more manageable-sized blocks, thus creating several 'sites' for the purposes of recording. A direct comparison between the number of sites occupied in 1981 and 1992 should therefore be treated with some caution.

(48 sites in southern England were surveyed in a pilot survey in 1991 but not revisited in 1992 because of lack of available resources; so the 1991 totals have been used.) Observers were asked to make at least two visits to each site, and where possible to make at least one of these during June, the peak time for calling. Singing males favour calm, dry nights and "churr" most frequently just after dusk or about an hour before dawn. Observers were asked to restrict visits to these times and conditions. The number of males seen or heard "churring" on each occasion was recorded on a standard card, and observers were asked to mark on a 1:10000 map the position of each bird located on each visit. Playback of tapes to elicit "churring" was not permitted except in remote upland sites, where birds were expected to occur at very low densities. In addition to bird records, observers were asked to record basic habitat information within a 50-m radius of points where birds were heard. Ten broad habitat categories were included. Where birds were occupying forestry plantations observers recorded the height of the trees in one of four bands: <1m, 1-2m, 2-4m and >4m. Three additional categories were also listed to provide information on whether birds were "churring" from, or near to, mature standard trees, rides or edges. Unlike the 1981 survey, recorders were not specifically requested to note either the altitude or the size of the site, due to difficulties previously experienced in delineating and determining the size of some larger sites.

Purpose of Data Capture

The stated aim of the survey was to assess the population size and range of the Nightjar and to gather information on its use of different habitat types.

Geographic Coverage

The stated aim for this (and the other) surveys was to survey the entire UK population of the species. However the actual coverage did not reach this ideal. A total of 2256 sites in Britain with suitable habitat were visited in 1992. The only areas not fully covered were Dumfries & Galloway and Mid Glamorgan.

Temporal Coverage

Visits were made in May and June 1992, although 48 sites in southern England were only surveyed in a pilot survey in 1991. Observers were asked to make at least two visits to each site, and where possible to make at least one of these during June.

Other Interested parties

The survey was run by BTO in partnership with the Royal Society for the Protection of Birds (RSPB). The main funding was from RSPB.

Organiser(s)

Tony Morris, an RSPB staff member, but on behalf of BTO. Rob Fuller acted as the BTO staff member responsible.

Current Staff Contact

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Publications

The full report on the survey is:

Morris, A., Burges, D., Fuller, R.J., Evans, A.D. & Smith, K.W. 1994. The status and distribution of Nightjars *Caprimulgus europaeus* in Britain in 1992. *Bird Study* 41: 181-191. It was noticed in *BTO News* numbers 174, 178, 185 and 198.

Available from NBN?

Yes -- as part of the dataset containing data from 1981, 1992 and 2004 surveys.

The location recorded in the dataset on NBN consists of the grid reference of the central point of territories as analysed following the 2004 survey.

(Note that the dataset contains only 3082 birds for the 1992 survey, the other 11 not having sufficient location information to be mapped.)

Computer data -- location

BTO Windows network central area.

Computer data -- outline contents

The number of male birds recorded at each site and in each habitat type and various summary tables.

Computer data -- description of contents

All relevant information is in one Excel spreadsheet with 5 sheets:

Regional Totals: Numbers of 10-km squares surveyed in each region and whether or not they contained Nightjars

Coverage by 10km: The number of 10-km squares with 0 1 2 3 24 36 38 and 39 birds recorded

Malesby10km: The number of males recorded in each 10-km square

County summary

Maindata: Columns are: Region; Site Number (within region); Site name; County; Country (mostly blank but some are Wales, England); 2 4 or 6 figure grid reference; 7 columns related to mapping these; the largest number of males recorded on any one visit; ??; Number of visits; Date of Visit A; Time of Visit A (dusk or dawn); number of males; 3 cols ditto for Visits B C D; number of males in various habitat categories.

Information held in BTO Archives

3 Transfer Cases contain all the data cards and associated correspondence. All have been scanned.

Notes on Access and Use

Other information needed

Notes on Survey Design

A list of all potential sites, based on the 1981 survey data, was drawn up in consultation with BTO regional representatives, county bird clubs and local staff of the Forest Authority and Forest Enterprise. Some of these were no longer suitable and these were omitted. Newly occupied sites were added and potential sites (forest clear-fells or plantations less than 21 years old) were identified. All were potentially suitable for surveying. Remote upland conifer plantations posed particular difficulties. In Scotland the only area known to hold significant numbers of Nightjars was Dumfries & Galloway, where 31 forest compartments in the 12 10-km squares known to have been occupied in the period just prior to the survey were randomly chosen. Compartments were chosen by selecting 6-figure grid references at random. Those points which fell in forest compartments containing potentially suitable habitat (ie stands less than 21 years old) were selected for survey. These compartments were divided into 2 age classes (1-10 years and 11-20 years) and the density of Nightjars in each age class calculated for new plantations and restocks separately. Finally, the total area of each age class of restock and new plantation was determined from stock maps of the forest and multiplied by the appropriate density to arrive at a population estimate. Confidence intervals were boot-strapped.

Specific Issues for Analysis

162 sites were visited four or more times. Data from these have been used to assess the effectiveness of multiple visits, assuming that all birds were located after four visits. Later visits were found to be not much more effective in terms of locating birds than earlier visits. However, on a single visit only between 61 and 72% of males were located. This indicated that two visits were desirable, but that making more than three visits was unproductive. Some sites were only visited once and half the sites were visited twice. The number of males will have been underestimated at these sites by approximately 35% and 12%, respectively, leading to a national underestimate of c. 10%. The estimated British population of approximately 3400 took into consideration the additional estimated totals for Dumfries & Galloway and Mid Glamorgan, and the number of males missed at sites visited fewer than four times. In comparison, the 1981 estimated maximum population was 2100 "churring" males.

A comparison of the number of males located on dusk and dawn visits was made for those sites with Nightjars which were visited at both times. Each dawn visit was paired with the nearest dusk visit. This resulted in a sample of 112 sites with paired visits; the dawn visit preceded the dusk visit at 53 of these sites. No differences in the number of males located on dusk and dawn visits were found.