

New Forest Dartford Warbler Survey Report 2018

Higher Level Stewardship Agreement

The Verderers of the New Forest

AG00300016

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SUMMARY

The Hampshire Ornithological Society surveyed all suitable breeding habitat for Dartford Warblers within the county over the period April-June 2018. As a major part of the county survey, a New Forest survey was carried out, organized by Rob Clements, involving more than fifty volunteer surveyors.

All one kilometre squares where Dartford Warblers had been recorded in previous surveys were surveyed.

Once the fieldwork had been completed, data were analysed to determine the number of individual territories present.

The analysis produced a breeding population estimate of 143 Dartford Warbler territories within the area surveyed in the New Forest in 2018. This represents a marked decrease compared with previous surveys in 1994 and 2006, undoubtedly due to the unusually cold weather experienced in February/March 2018.

The dataset compiled provides a robust baseline of the current breeding population of Dartford Warbler in the New Forest, and allows comparison with future surveys.

INTRODUCTION

The New Forest is one of the largest tracts of semi-natural vegetation in the country and consequently holds three international wildlife site designations. It is recognised as an internationally important site for its breeding and over-wintering bird species and is classified as a Special Protection Area (SPA) in accordance with the European Birds Directive. The New Forest qualifies and has been classified as an SPA under Article 4.1 of the Birds Directive for supporting internationally important populations of four breeding species.

Dartford Warbler (*Sylvia undata*)

Nightjar (*Caprimulgus europaeus*)

Woodlark (*Lullula arborea*)

Honey-buzzard (*Pernis apivorus*)

There are also significant breeding populations of Hobby (*Falco subbuteo*) and Wood Warbler (*Phylloscopus sibilatrix*) under Article 4.2.

The New Forest is also designated as Special Area of Conservation (SAC) for its habitats and non-avian species of European importance, in accordance with the European Habitats Directive.

The New Forest Site of Special Scientific Interest (SSSI) is the national wildlife designation recognising the national scientific and biodiversity value of the site. The New Forest is also listed as a Ramsar site, for its importance as a wetland, with flora and fauna of international importance.

DARTFORD WARBLERS IN THE NEW FOREST

National surveys of the UK breeding population of Dartford Warbler were undertaken in 1974, 1984, 1994 and 2006, with some variation in sampling methods and data recording over that period.

Nationally, numbers fell to an historic low after the severe winters of the early 1960's, but recovered over subsequent years, aided by largely milder winters, with a total population estimated at 3,142 territories after the 2006 survey. The species range has extended northwards from its former southern coastal distribution with Dartford Warblers now present as far north as North Wales, Staffordshire and Norfolk.

The New Forest was surveyed as part of the 2006 national survey, recording 453 territories. Evidence from limited survey-work in 2017 suggested that numbers were stable at around the same level.

In 2014 RPS was commissioned by the New Forest Higher Level Stewardship Scheme to undertake a breeding survey. That analysis produced a breeding population estimate of 268 Dartford Warbler territories within the area surveyed. These results suggested a significant decrease in the breeding population since the previous survey in 2006.

The unusually cold spells with lying snow for two periods in late winter 2018 are thought to have severely affected the population, both within the New Forest and elsewhere in the species range.

In Britain, Dartford Warblers largely occupy mature lowland heathland with mature gorse (*Ulex*.) They have always been badly affected by prolonged periods of cold weather in winter, with high mortality and consequent range contraction. The New Forest, with its mild winter climate and absence of prolonged snow cover has usually avoided the worst of such episodes, acting as a safe harbour from which Dartford Warblers can expand outwards again when future conditions improve.

METHODS

The areas of the New Forest containing potential Dartford Warbler habitat were identified using data from previous HOS New Forest surveys, and also HOS records for the species submitted by members in the period subsequent to the 2006 survey. In addition, study of relevant OS maps identified 15 more squares that had not been surveyed in previous years.

The design of the HOS survey were based on the national survey methodology (Wotton et al 2009)

A minimum of two visits, preferably three or four if Dartford Warblers were located.

The first two visits were due between May 1st-31st, with third and fourth visits (if required) in June. There was preferably a week or more between visits.

Visits carried out between dawn and mid-morning, in calm, dry weather.

All areas of the allocated square to be visited, so all suitable habitat located.

We avoided visits in April, when our experience showed that evidence of presence of Dartford Warblers was harder to establish. By starting our survey later, in May, we maximised observers' chances of locating the species since weather was usually more suitable and Dartford Warbler activity was more prominent than earlier in the season. We ceased survey-work at the end of June to avoid the possibility of recording dispersing Dartford Warblers in squares where they had not bred.

The locations of all Dartford Warblers were recorded on the map provided. Singing males, especially those singing simultaneously with neighbouring birds, were noted, and six figure map references provided. All other observations, of calling birds, birds carrying food and birds in flight were recorded. Where several pairs bred closely, in a loose colony, three or more visits allowed sufficient data to be recorded for all territorial pairs to be identified.

The definition of a territory followed that used in the national survey. A territory was defined as such if it contained:

A singing male

A pair exhibiting breeding behaviour (nest, mating, displaying etc)

Individuals present on more than one occasion and/or two individuals present.

On completion of the survey, individual territories were determined using the standard methods (in Wotton et al 2009, Bibby et al 2000.) Simultaneously singing males were marked as separate territories, and further singing males recorded at least 200m apart were regarded as indicating territorial occupation. In most cases, where three or four visits were made, the consolidated map clearly showed a pattern of discrete territories. In practice, since the population was so low after the cold weather, there were few squares with enough Dartford Warblers to present a problem in identifying discrete territories. A centre point for each territory was chosen, based on the distribution of registrations, for mapping purposes.



Dartford Warbler (photo by Martin Bennett)

RESULTS

The survey covered 155 priority 1km squares, chosen as most likely to hold Dartford Warblers, based on data from the 2006 Survey and HOS records for the period 2007-2017. Dartford Warblers were recorded in 76 squares (table 1.) A further 15 squares which were identified as open Forest, but where Dartford Warblers had not been recorded in recent years, were visited but no Dartford Warblers were located. All priority squares were visited at least twice, with three or four visits undertaken in those squares where two or more Dartford Warbler territories were present.

Number	1 km squares
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0	79
1	42
2	19
3	6
4	6
5	3
6	1

Number of Dartford Warbler territories located (143 territories in 77 squares)

The breeding population of Dartford Warbler in the New Forest area surveyed was 143. The survey recorded 135 territories on land within the New Forest perambulation, and a further 8 territories on land just outside these boundaries but within the New Forest National Park.

The location of all territories located during the 2018 survey is provided in Fig 1. Six-figure map references for each territory are provided in Appendix A.

EVALUATION AND DISCUSSION

Fearnley et al (2012) considered the breeding population within the current survey area in 2006 to be 420 territories/pairs (corrected figure). The total of 143 territories recorded in 2018 represents a 66 % decrease, with numbers at a low level not recorded since around 1980.

A 30 sq.kms study area in the southern New Forest was surveyed in 2017 as a preliminary to the main 2018 survey (R.Clements unpublished data). The results have added significance since the population in the study-area was at a high level prior to the major decrease consequent on the 2018 late winter cold spell.

2006	2017	2018
100	121	47

Number of Dartford Warbler territories located in 30 sq. kms southern New Forest study-area.

The 60 % decrease recorded between 2017 and 2018 is rather less than that recorded over the whole New Forest, perhaps indicating better habitat (longer heather) or higher survival rates due to the southerly location. The 21 % increase noted in 2017 compared with the 2006 survey suggests that the 2017 New Forest population may have been above 500 pairs, similar to that recorded by the 1994 survey.

The UK breeding population of Dartford Warbler was estimated at 3,142 territories in 2006. The New Forest population of 420 territories represented around 15% of the UK population. The six SPAs classified for Dartford Warbler (including the New Forest) held a stable population of 1,681 pairs in the 1990s to 1,654 pairs in 2006. In the 1990s, these SPAs held virtually all the UK population, but range expansion since meant that by 2006 they held only 52% the national total, an example of the changing conservation significance of protected areas with a species that may be expanding its range as a result of climate change. The recent cold weather may have reversed this trend, with the New Forest now holding a larger proportion of the UK population if more

northerly counties have shown a steeper decline. Data from the Rare Breeding birds Panel showing current numbers for the other parts of the range of the Dartford Warbler should be available in autumn 2019, when it will become clear what effect the 2018 winter has had on the species, and whether the New Forest has resumed its status as an important reservoir for Dartford Warblers in adverse conditions.

The relatively low density of breeding Dartford Warbler in the New Forest compared with other heathland SPAs in southern England has been noted (Fearnley et al 2012.) The density recorded on dry heathland (the main occupied habitat) in 2006, 0.030 per hectare, compares unfavourably with the Dorset Heaths SPA, 0.110 and the Thames Heaths SPA, 0.102. Preliminary data from The RSPB Heathland Survey in Dorset in 2018, covering 31 sites mainly in East Dorset, show a much smaller decline from 450 territories in 2017 to 369 in 2018 (S.Robson pers comm.) The reason for the higher resilience of the Dorset population may lie in the heathland management of the sites, with mature gorse and heather maintained in areas where grazing pressure is absent or reduced. In the area of the New Forest that was surveyed in 2017 and 2018, the contrasting fortunes of two adjacent 1 km squares is instructive. In one square, with predominantly mature gorse habitat the number of territories located fell from 14 in 2017 to 4 in 2018. In the neighbouring square, with largely mature heather habitat, the number of territories located fell from 9 in 2017 to 6 in 2018.

Personal observation by the survey organiser suggests that during cold weather spells (and perhaps at other times too) Dartford Warblers choose to roost in heather rather than gorse, perhaps on the basis that heather is usually less exposed to the wind, being nearer to the ground. However where heather has been heavily grazed the birds have fewer roosting options and have often had to use gorse instead. It is thought likely that cold-weather survival in gorse is lower in Dartford Warblers. This may explain why in some other locations (in north Hampshire and Dorset) survival levels were higher after the early 2018 cold spells - because they generally have a greater proportion of substantial clumps of heather.

Although subject to many conflicting demands for recreational access and grazing provision, it is suggested that the management practices in the New Forest do not provide as much suitable habitat for Dartford Warblers as other SPAs. Further research is obviously needed on the causes of reduced Dartford Warblers in the New Forest when compared with ungrazed SPAs.



Dartford Warbler (photo by Martin Bennett)

CONCLUSIONS

A full survey of breeding Dartford Warblers was successfully undertaken in 2018 on land within the New forest HLS Scheme and Crown Lands. All habitat potentially suitable for breeding Dartford Warblers was identified and visited at least twice during the period May 1st-June 30th 2018.

The analysis of the survey data identified a total of 143 Dartford Warbler territories within the area surveyed.

Comparisons with 2006 survey data and limited preliminary survey work in 2017 would indicate a marked decrease in the Dartford Warbler breeding population. The major factor in this decline was clearly the two episodes of unusually cold weather in late winter 2018.

Comparisons with 2014 can be made, but it is felt that these are relatively meaningless given the significant decline in 2018 caused by the heavy snowfall and inevitable mortalities. It is worth noting that the suggested decline to 268 pairs in 2014 did not match the personal observations of local fieldworkers who felt that numbers remained at a much higher level than suggested.

The dataset compiled provides a robust baseline of the current breeding population of Dartford Warbler in the New Forest and allows for comparison with future surveys.

In view of the low level of Dartford Warbler territories located in 2018, it is suggested that future surveys take place either after a) a further episode of severe winter weather with the potential to further reduce the population or b) a period of at least five years with mild winters, by which time the population will hopefully have built up to nearer the level recorded in 2006.

The survey of breeding Dartford Warblers in 2018 fulfils the commitment of the HLS board, under the agreement for the HLS scheme, to provide accurate and current population information for Dartford Warbler; one of the species for which the New Forest SPA is designated.

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APPENDIX A -

LOCATION OF DARTFORD WARBLER TERRITORIES 2018 SURVEY (CROWN LANDS)

SU164090
SU166090
SU176112
SU178084
SU178106
SU180106
SU180112
SU182148
SU183025
SU185163
SU186016
SU187154
SU187164
SU187168
SU188028
SU188149
SU189016
SU189038
SU189039
SU189136
SU190035
SU191051
SU191053
SU192007
SU192115
SU194135
SU195011
SU195065
SU195134
SU196036
SU196125
SU197013
SU197025
SU197136
SU197152
SU202002
SU202066

SU202190
SU204018
SU204176
SU205005
SU206144
SU208011
SU208108
SU211013
SU211108
SU212021
SU213019
SU214014
SU215065
SU216019
SU216065
SU216162
SU217013
SU217022
SU217172
SU218090
SU224021
SU225015
SU227021
SU234025
SU235105
SU236021
SU238024
SU238029
SU239025
SU239108
SU244102
SU248018
SU249016
SU249031
SU251026
SU255029
SU256002
SU259025
SU263028
SU264016
SU265023
SU268011

SU269015
SU277035
SU278001
SU282002
SU284002
SU288002
SU289001
SU299001
SU340007
SU343002
SU343059
SU343065
SU344011
SU345004
SU345006
SU345057
SU349008
SU349053
SU352047
SU352054
SU353057
SU357054
SU358049
SU358052
SU361058
SU362055
SU363069
SU364011
SU364056
SU365054
SU366064
SU367063
SU369063
SU373058
SU374055
SU375057
SU375066
SU376054
SU378058
SU379056
SU383060
SU393063

SU395058
SU417033
SZ286999
SZ291998
SZ294989
SZ294994
SZ295991
SZ296999
SZ297988
SZ348984
SZ349982
SZ349998
SZ362998
SZ368985

ADDITIONAL AREAS SURVEYED OUTSIDE THE CROWN LANDS

NATIONAL TRUST LAND

SU301171
SU301176
SU303175

BURTON COMMON

SZ191956
SZ192953
SZ192956
SZ194954
SZ194956

FIGURE 1. MAP OF NEW FOREST NATIONAL PARK SHOWING LOCATIONS OF DARTFORD WARBLER TERRITORIES IN 2018 SURVEY

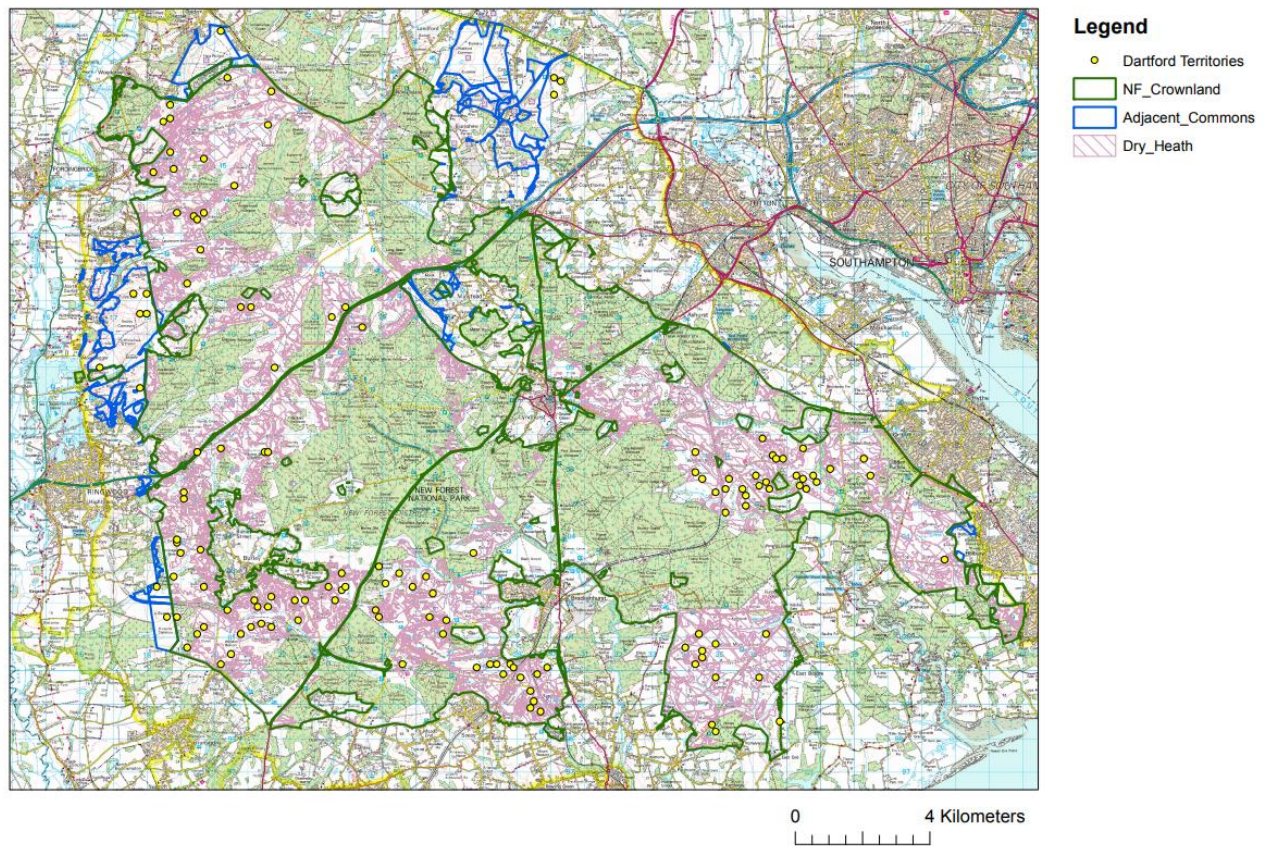


FIGURE 2. GREATER DETAIL SHOWING LOCATIONS OF DARTFORD WARBLER TERRITORIES IN 2018 SURVEY – NORTHERN NEW FOREST

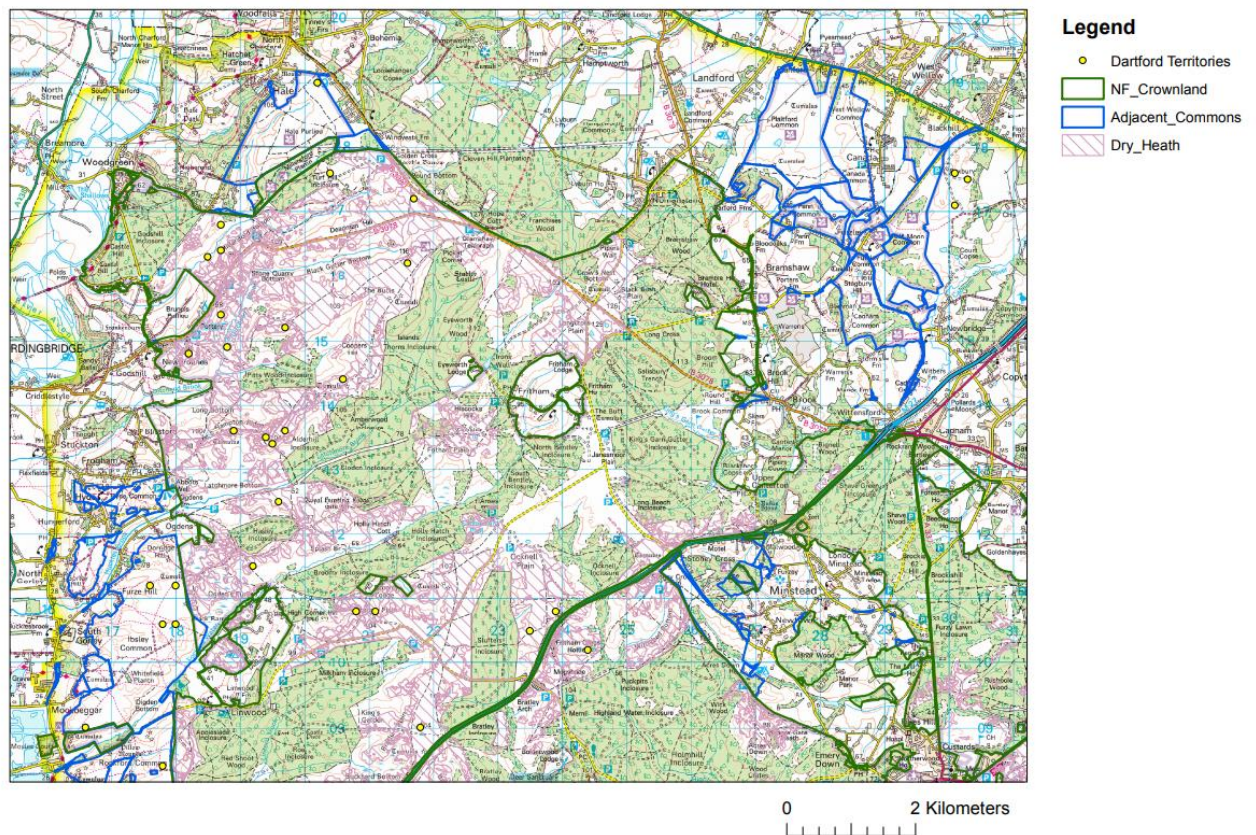


FIGURE 3. GREATER DETAIL SHOWING LOCATIONS OF DARTFORD WARBLER TERRITORIES IN 2018 SURVEY – SOUTH-WEST NEW FOREST



FIGURE 4. GREATER DETAIL SHOWING LOCATIONS OF DARTFORD WARBLER TERRITORIES IN 2018 SURVEY – SOUTH-EAST NEW FOREST

