# Definition of Favourable Conservation Status for Dartford Warbler *Sylvia undata*

Defining Favourable Conservation Status Project

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NATURAL ENGLAND

# Contents

# About the DFCS project

Natural England's Defining Favourable Conservation Status (DFCS) project is defining the minimum threshold for thriving habitats and species in England.

We are doing this so we can say what good looks like, recommend actions to get them there and keep them that way.

Using Natural England's expert evidence and specialist knowledge, our DFCS definitions will set out our aspirations for these species and habitats in England.

We are publishing these tools so that you, our partners and decision-makers can do your bit for nature, better.

As we publish more of our work, the format of our definitions may evolve, however the content will remain largely the same.

This definition has been prepared using current data and evidence. It represents Natural England's view of FCS based on the best available information at the time of production.

All blocks of evidence within the definition should be given one of three confidence levels [High, Moderate, Low], based on the quality of the evidence, its applicability and the level of agreement.

Quality of evidence is defined as follows:

- Robust evidence is that which has been reported in peer-reviewed literature, or other reputable literature, from well-designed experiments, surveys or inventories that shows signs of being applicable generally.
- Medium evidence is that reported from well-designed experiments, surveys or inventories but from only one or a small number of sites, with uncertainty over its more general applicability, or is correlational or circumstantial evidence.
- Limited evidence includes 'expert opinion', based on knowledge of ecological factors that plausibly suggest an effect, but there is no circumstantial or direct evidence available.

Confidence levels are assigned as shown in the following matrix (after IPCC 2010):

| | | |
|---|---|---|
| High agreement<br>Limited evidence | High agreement<br>Medium evidence | High agreement<br>Robust evidence |
| Medium agreement<br>Limited evidence | Medium agreement<br>Medium evidence | Medium agreement<br>Robust evidence |
| Low agreement<br>Limited evidence | Low agreement<br>Medium evidence | Low agreement<br>Robust evidence |

# Introduction

This document sets out Natural England's view on the contribution England needs to make to achieve Favourable Conservation Status (FCS) for **Dartford Warbler *Sylvia undata***. It is the aim of the Habitats Directive to achieve and maintain FCS. The England contribution is defined in terms of the natural range and population of the species and the extent of habitat necessary for long-term maintenance of populations.

This section contains the summary statement of the England contribution. Sections 2 – 5 describe the evidence considered when defining FCS for each of the three parameters. Annex 1 sets out the UK and England position in the 3rd Habitats Directive report.

This document does not include any action planning, or describe actions, to achieve FCS where the species is not considered to be in FCS. These will be presented separately, for example within restoration strategies.

| **England contribution to FCS** |
| --- |
| Despite periodic setbacks due to severe winter weather the Dartford warbler has expanded its range in recent years in a likely response to the overall improving climatic conditions. It has moved northwards and now breeds at higher altitudes in the southern part of its range. Its range remains patchy due to its dependence on semi-natural heathland vegetation which has been lost from large parts of the landscape. FCS requires the maintenance of existing areas of appropriately-managed semi-natural heathland (including both lowland and upland stand types) to support a favourable population of 3,150 breeding pairs throughout the natural range. The favourable range comprises 77 10 km squares with evidence of breeding within the previous 5 years. |

# Definitions and ecosystem context

**Species definition**

**Dartford Warbler *Sylvia undata***
***Subspecies*: *Sylvia undata dartfordiensis***

**Threat status**

**Red list status:**

- **Global:** Near threatened. *Source: The IUCN Red List of Threatened Species. Version 2016-2* http://www.iucnredlist.org/details/22716984/0
- **European:** Near threatened. *Source: European Red List, The IUCN Red List of Threatened Species. Version 2016-2*
- **GB: Birds of Conservation Concern 4: Amber list** https://www.bto.org/sites/default/files/shared_documents/publications/birds-conservation-concern/birds-of-conservation-concern-4-leaflet.pdf

**Habitat for the species definition**

In Britain, this species is almost exclusively found on dry heathland with Heather *Calluna vulgaris* and Gorse *Ulex* spp. It occurs primarily on lowland heathland but in a likely response to climate change it has recently colonised upland sites on the fringes of heather moorland. Large areas of heathland typically hold higher densities of breeding birds than fragmented and isolated habitats. These populations are also less likely to be lost completely during periods of population decline due to severe winter weather. Territories containing Gorse *Ulex* spp. tend to be more productive most likely due to the greater abundance of invertebrate prey and increased shelter during the winter. The height, cover, variation and composition of vegetation are important characteristics of habitats supporting this species and influence breeding productivity as well as over-winter survival. Optimum habitat includes stands of metre tall heather and the presence of shrubs or young trees such as scots pine, birch and especially gorse, which is often used for nesting.
This species is known to favour large areas of open terrain, largely free of obstructions, in and around its nesting, roosting and feeding areas. It is less well adapted to exploit small patches of suitable habitat where it may be more vulnerable to predation or human disturbance.
Birds generally remain on the breeding grounds throughout the year, although there is a partial migration of adults, notably in October. Habitat connectivity is important in order to allow movement between habitat patches and recolonization of areas from which it has been lost during periods of population decline.

***Sources:*** *JNCC SPA Bird Species Accounts* http://jncc.defra.gov.uk/pdf/UKSPA/UKSPA-A6-101.pdf

*Terrestrial SPA species feature framework - Natural England Internal Document*

***Confidence:*** *Moderate*

**Ecosystem context**

The global breeding range of the Dartford Warbler is largely restricted to the western part of the Mediterranean region and almost the entire world population breeds in Europe, with more than 75% thought to breed in Spain and large numbers also occurring in southern and western France, southern Italy and Portugal. The species is polytypic with three sub-species described, all of which occur in Europe. *S. u. dartfordiensis* occurs in southern England, Wales, western France, north-west Spain and northern Portugal. England and Wales are at the northern limit of the species' world range with England supporting the great majority of the UK population. Here, the main concentrations occur in Devon, Dorset, Hampshire and Surrey, though it has recently colonised

heathland sites in East Anglia and parts of the Midlands. If the climate continues to ameliorate it is predicted that areas on and beyond the northern parts of the range may become more important and the population may decline in the southern parts of the range.

***Sources:*** *BWP Concise, Wotton and others (2009); JNCC SPA Bird Species Accounts http://jncc.defra.gov.uk/pdf/UKSPA/UKSPA-A6-101.pdf*

***Confidence:*** *Moderate*

# Natural range and distribution

**Metric**

The number of 10km squares with evidence of breeding within the previous 5 years.

**Historical range**

This species has shown a broadly increasing area of distribution during the last 100 years though it has been subject to periodic, sometimes dramatic, population setbacks and range contraction due to severe winter conditions. Wintering birds mainly utilise the same areas as for breeding though there is also limited dispersal outside the breeding season. In the 19th Century it was recorded as breeding from Cornwall to Shropshire, Suffolk and Kent. It declined from this range in response to harsh winters and habitat loss reaching a low point in the early 1960s when it was restricted to three south coast counties. Since then its distribution has recovered in line with a population recovery so that its current distribution approximates, and probably exceeds, its historic maximum.

***Sources:*** *10th UK Birds Directive Reporting 2012, species factsheet*
*http://cdr.eionet.europa.eu/Converters/run_conversion?file=gb/eu/art12/envuzl7g/UK_birds_reports-14328-12614.xml&conv=343&source=remote*
Brown & Grice (2005); Wotton and others (2009); Balmer and others (2013)

***Confidence:*** *Moderate*

**Current range**

The 2007 to 2011 Bird Atlas recorded confirmed breeding in a total of 77 10km squares during that period, mainly in southern England and the south-west peninsular but also in East Anglia and parts of the Midlands. Severe winters in 2008/9 and 2009/10 caused significant population reductions from which the population has now made at least a partial recovery.

***Sources:*** *Balmer and others 2013; Clark & Eyre 2012*

***Confidence:*** *Moderate*

**Range required for future maintenance of populations and diversity**

As a minimum the existing range should be maintained based on an assessment of confirmed breeding records and taking into account the potential for temporary population setbacks due to severe winters. Ideally, if climate change continues as predicted then the range should increase through the colonisation of further upland areas, especially in south-west England and lowland areas to the north of the current range.

***Sources:*** *Balmer and others 2013; Bradbury and others 2011*

***Confidence:*** *Moderate*

**Potential for restoration of the natural range**

As long as suitable habitat is present range expansion should be achievable as a result of climate change, through natural colonisation from areas that are currently occupied. This process could be enhanced by increasing the areas of suitable habitat (particularly where existing sites are currently very small), and by improving connectivity between sites. These measures would also increase the resilience of the species in the face of severe winter conditions allowing a more rapid recovery and recolonization after population declines.

***Sources:*** *Balmer and others 2013; Wotton and others 2009*

***Confidence:*** *Moderate*

**Favourable range**

The 77 10km squares with evidence of breeding within the previous 5 years should be maintained as the favourable range. Preferably, this figure should show a continued increase with the expected expansion in the range.
This species is vulnerable to severe winter weather and it is possible that this metric may not be achieved if the population is reduced by one or more cold winters. In this scenario it may be appropriate to assess the area of distribution over a longer period or consider the number of 10km squares containing sufficient patches of suitable habitat.
This species requires periodic dedicated breeding surveys (such as under SCARRABS) to high good quality information. More limited information may be obtained from local bird reports, site-specific surveys and Birdtrack.

**Comparison with situation in 1981**

The range has increased substantially since 1981, at which point it was recovering from a minima reached in the early 1960s, and we would expect this to continue in the coming years. A return to the 1981 range would be considered unfavourable unless this was due to a temporary population set-back as a result of severe winter weather.

***Sources:*** *Wotton and others 2009; Gibbons & Wotton 1996; Gibbons and others 1993*
***Confidence:*** *Moderate*

# Population

**Population metric**

The estimated number of territories based on breeding surveys.

**Historical populations**

In both short and long term trends the population of this species is broadly increasing although with significant short-term fluctuations due to population declines and subsequent recovery. This pattern largely reflects increasingly favourable climatic conditions, with the potential for short-term declines caused by severe winters.

***Sources:*** *10th UK Birds Directive Reporting 2012, species factsheet* http://cdr.eionet.europa.eu/Converters/run_conversion?file=gb/eu/art12/envuzl7g/UK_birds_reports-14328-12614.xml&conv=343&source=remote

*Wotton and others 2009; Gibbons & Wotton 1996; Brown & Grice 2005; Bradbury and others 2011*

***Confidence:*** *Moderate*

**Current population**

The last full national survey was in 2006 and produced an estimate of 3,142 pairs in England. The current population is probably close to this figure taking into account a significant population decline after the harsh winters of 2008/09 and 2009/10, followed by recovery in subsequent years.

***Sources:*** *Wotton and others 2009; Balmer and others 2013*

***Confidence:*** *Moderate*

**Population required for future maintenance of populations and diversity**

The last full national survey in 2006 produced a population estimate of 3,142 pairs in England. This figure should be taken as the minimum favourable population threshold. However, it is expected that the population will have increased further since then reflecting the expansion in area of distribution. Given continued climatic improvement for the species, a future favourable population in England could be expected to reach 4,000 to 5,000 pairs (assessed over a reasonable timeframe – perhaps over a 5 year period - to allow for periodic declines due to harsh winters) with population gains in England helping offset anticipated losses at the southern limit of its range in Iberia.. If a series of harsh winters causes the population to crash then an assessment of the extent and suitability of habitat may be a more appropriate measure of FCS. Given that this is a species where England can be expected to play an increased role in species conservation in the future, given the impacts of climate change, favourable population expectations should be subject to periodic review.

***Source:*** *Wotton and others 2009*

***Confidence:*** *Moderate*

**Potential for restoration of populations**

Population expansion should be achievable as a result of climate change, through natural colonisation from areas that are currently occupied and from population increases on sites that have only recently been colonised. Currently climate warming is allowing the species access to areas of upland habitat freeing it from its former dependence on lowland heath with a particular habitat structure. This process could be enhanced by increasing the areas of suitable habitat (particularly where existing sites are currently very small) and by improving connectivity between sites. These measures would also increase the resilience of the species in the face of severe winter conditions allowing a more rapid recovery in the population after periodic declines.

***Source:*** *Carter, Donato & Drewitt pers comm 2016*

***Confidence:*** *Moderate*

**Favourable population**

The last full national survey in 2006 produced a population estimate of 3,142 pairs in England. This is the favourable population baseline, However it should be subject to periodic review as continued climatic improvement may lead to an increase in numbers to some 4,000 to 5,000 pairs (assessed over a reasonable timeframe to allow for periodic declines due to harsh winters) and with England's role in the conservation of this species expected to becoming more pronounced as a result. If a series of harsh winters causes the population to crash then an assessment of the extent and suitability of habitat may be a more appropriate measure of FCS.

**Comparison with situation in 1981**

The population has increased substantially since 1981 and we would expect this to continue in the coming years. A return to 1981 population levels would be considered unfavourable unless this was a temporary set-back due to severe winter weather.

***Sources:*** *Wotton and others 2009; Gibbons & Wotton 1996; Gibbons and others 1993*

***Confidence:*** *Moderate*

# Habitat for the species

**Metric**

Hectare.

**Historical area**

From the late 19th Century until recently this species was concentrated in areas of lowland heathland in southern England, primarily in Devon, Dorset, Hampshire and Surrey. In recent years it has been necessary to re-assess the extent of suitable habitat because population recovery aided by climatic warming has seen the breeding range extend to encompass lowland heathland in East Anglia and the Midlands, as well as upland heathland in south-west England.

***Sources:*** *Wotton and others 2009; Balmer and others 2013*

***Confidence:*** *Moderate*

**Current area**

Suitable heathlands are those that contain stands of metre high heather with scattered blocks of gorse and young trees. This reflects a particular successional stage in heathland structure. Lowland heathland blocks are ideally more than fifteen hectares in extent and removed from disturbance. While the species was dependant on lowland heathland in southern England this represented a highly limited habitat range, however, a widening of its ecological niche associated with climatic warming and population recovery has seen this area of available habitat broaden to include other more upland heathland types over a wider geographic area. Current habitat area could be inferred by heathland (both lowland and upland) distribution south of a line from North Norfolk to Staffordshire taking into account patch size.

***Source:*** *Balmer and others 2013*

***Confidence:*** *Moderate*

**Area required for future maintenance of populations and diversity**

The main pressures and threats to this species are loss and fragmentation of suitable heathland habitat due to development and inappropriate management. A lack of habitat management can result in succession which reduces the area of suitable heathland, conversely early successional stands are also unsuitable. Disturbance from recreational activities may reduce the suitability of breeding habitat especially close to major urban centres. Territory size ranges from 2.4ha per pair in optimal habitat to 20ha per pair in more marginal locations, with most occupied heathland blocks being greater than 15ha in extent.

As a minimum the existing area of suitable habitat occupied by breeding birds in the last five years should be maintained. If climate change continues as predicted then this objective may need to be re-assessed to include additional habitat in upland areas within the south-west England as well as lowland areas to the north of the current range.

***Sources:*** *10th UK Birds Directive Reporting 2012, species factsheet*
*http://cdr.eionet.europa.eu/Converters/run_conversion?file=gb/eu/art12/envuzl7g/UK_birds_reports-14328-12614.xml&conv=343&source=remote*
Bibby and Tubbs 1975

***Confidence:*** *Moderate*

**Potential for habitat restoration**

Restoration of heathland to provide a suitable habitat structure for this species is feasible, however, population expansion should be also achievable as a result of climate change, allowing natural colonisation of existing habitats that are already available. The management of these sites

may need to take the requirements of this species into account and improving the connectivity of habitat patches would also be beneficial.

***Source**: Carter, Donato & Drewitt pers comm 2016*

***Confidence**: High*

**Favourable supporting habitat**

As a minimum the existing area of suitable habitat (including both lowland and upland stand types) within the current range should be maintained. If climate change continues as predicted then this objective will need to be extended to include additional habitat in upland areas within the south-west England as well as lowland areas to the north of the current range.

***Confidence**: Moderate*

# Annex 1: References


Bradbury R.B., Pearce-Higgins J.W., Wotton S., Conway G.J., and Grice P.V (2011) The influence of climate and topography in patterns of territory establishment in a range-expanding bird. *Ibis* 153 336-344

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Gibbons D.W., and Wotton S. (1996) The Dartford warbler in the United Kingdom in 1994. *British Birds* 89 203-212

Gibbons, D.W., Reid, J.B., & Chapman, R.A. (1993) *The New Atlas of Breeding Birds in Britain and Ireland: 1988-1991*. T. & A.D. Poyser, London.

# Annex 2: 3rd UK Habitats Directive Reporting

**UK context from the 3rd UK Habitats Directive report**

Current UK conservation status: no status defined within Birds Directive Article 12 reporting

- **Range: 14,300 km²** *Confidence: Complete survey or statistically robust estimate*
- **Population: Estimate of 3,142** pairs in England. *Confidence:* Estimate from full population survey with 95% confidence intervals of 2,827-3,491 pairs)
- **Habitat for species: N/A**
- **Overall: N/A**

*Source: 10th UK Birds Directive Reporting 2012, species factsheet*
*http://cdr.eionet.europa.eu/Converters/run_conversion?file=gb/eu/art12/envuzl7g/UK_birds_reports-14328-12614.xml&conv=343&source=remote*

Wotton and others. (2009)

Current UK Favourable Reference Values (FRV):

- **Range:** no UK FRVs set
- **Population:** no UK FRVs set

Proportion of UK species within England

**Approximately 98% of the UK population in England**

Proportion of UK species within protected sites

**N2K: 1,654/2,900 to 3,600 pairs = 46 to 57%** (Note: JNCC SPA Bird Species Accounts http://jncc.defra.gov.uk/pdf/UKSPA/UKSPA-A6-101.pdf states 100%)

*Source: 10th UK Birds Directive Reporting 2012, species factsheet*
*http://cdr.eionet.europa.eu/Converters/run_conversion?file=gb/eu/art12/envuzl7g/UK_birds_reports-14328-12614.xml&conv=343&source=remote*

**Protected areas outwith N2K:** Data not available

**European context from the 3rd Habitats Directive reports**

**Proportion of Atlantic biogeographic region within UK:** 1,600/2,026,000 = **0.08%**

*Source:* JNCC SPA Bird Species Accounts http://jncc.defra.gov.uk/pdf/UKSPA/UKSPA-A6-101.pdf

## Further information

Natural England evidence can be downloaded from our **Access to Evidence Catalogue**. For more information about Natural England and our work see **Gov.UK**. For any queries contact the Natural England Enquiry Service on 0300 060 3900 or e-mail **enquiries@naturalengland.org.uk** .




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**Cover image**
Dartford Warbler *Sylvia undata*
Paul Lacey, Natural England