European Site Conservation Objectives: Supplementary advice on conserving and restoring site features

East Devon Heaths Special Protection Area (SPA)
Site code: UK9010121

Date of Publication: 8 January 2019

About this document

This document provides Natural England's supplementary advice for the European Site Conservation Objectives relating to East Devon Heaths SPA. This advice should therefore be read together with the SPA Conservation Objectives.

This site also overlaps with East Devon Pebblebed Heaths SAC (UK0012602). The SAC Conservation Objectives for this SAC are available here.

You should use the Conservation Objectives, this Supplementary Advice and any case-specific advice given by Natural England, when developing, proposing or assessing an activity, plan or project that may affect this site.

This Supplementary Advice to the Conservation Objectives presents attributes which are ecological characteristics of the designated species and habitats within a site. The listed attributes are considered to be those that best describe the site's ecological integrity and which, if safeguarded, will enable achievement of the Conservation Objectives. Each attribute has a target which is either quantified or qualitative depending on the available evidence. The target identifies as far as possible the desired state to be achieved for the attribute.

The tables provided below bring together the findings of the best available scientific evidence relating to the site's qualifying features, which may be updated or supplemented in further publications from Natural England and other sources. The local evidence used in preparing this supplementary advice has been cited. The references to the national evidence used are available on request. Where evidence and references have not been indicated, Natural England has applied ecological knowledge and expert judgement. You may decide to use other additional sources of information.

In many cases, the attribute targets shown in the tables indicate whether the current objective is to 'maintain' or 'restore' the attribute. This is based on the best available information, including that gathered during monitoring of the feature's current condition. As new information on feature condition becomes available, this will be added so that the advice remains up to date.

The targets given for each attribute do not represent thresholds to assess the significance of any given impact in Habitats Regulations Assessments. You will need to assess this on a case-by-case basis using the most current information available.

Some, but not all, of these attributes can also be used for regular monitoring of the actual condition of the designated features. The attributes selected for monitoring the features, and the standards used to assess their condition, are listed in separate monitoring documents, which will be available from Natural England.

These tables do not give advice about SSSI features or other legally protected species which may also be present within the European Site.

If you have any comments or queries about this Supplementary Advice document please contact your local Natural England adviser or email HDIRConservationObjectivesNE@naturalengland.org.uk

About this site

European Site information

Name of European Site	East Devon Heaths Special Protection Area (SPA)
Location	Devon
Site Map	The designated boundary of this site can be viewed here on the MAGIC website
Designation Date	June 1998
Qualifying Features	See section below
Designation Area	1119,9ha
Designation Changes	None
Feature Condition Status	Details of the feature condition assessments made at this site can be found using Natural England's Designated Sites System
Names of component Sites of Special Scientific Interest (SSSIs)	East Devon Pebblebed Heaths SSSI
Relationship with other European or International Site designations	The area of this SPA overlaps the East Devon Pebblebed Heaths SAC

Site background and geography

This SPA, better known as the Pebblebed Heaths, is located on a ridge running north from the Devon seaside resort of Exmouth and sits on the most south-westerly point of the East Devon Area of Outstanding Natural Beauty.

The SPA forms part of the Devon Redlands National Character Area (NCA) characterised by its new red sandstone and Triassic Budleigh Salterton Pebble Beds which has contributed to the formation of the heathland.

The area is predominantly Lowland Heath but is interspersed with areas of Coniferous woodland. It is a locally important area for recreational activities such as dog walking and cycling and is extensively used by the Royal Marines at Lympstone for training purposes.

The heaths are registered as common land. There are rights of public access on foot over all the common land (most of the Pebblebed Heaths). The site is also rich in archaeological features and is exemplified by the well-known Woodbury fort.

About the qualifying features of the SPA

The following section gives you additional, site-specific information about this SPA's qualifying features. These are the individual species of wild birds listed on Annex I of the European Wild Birds Directive, and/or the individual regularly-occurring migratory species, and/or the assemblages (groups of different species occurring together) of wild birds for which the SPA was classified for.

Qualifying individual species listed in Annex I of the Wild Birds Directive:

During the breeding season the SPA regularly supports:

- **Dartford warbler *Sylvia undata*; (Breeding)**

This site supports breeding Dartford Warblers and when the site was surveyed in 1994 by the RSPB the site supported 128 pairs which represented 6.8% of the British population. The population can be influenced by natural processes linked to weather during the breeding season and severe winter weather events. The Dartford Warbler suffered drastic population decreases in the cold winters of 2009/10 and 2010/11

The Dartford Warbler is found throughout the site as where favoured habitat Dry Heath is prominent. The Dartford Warbler favours dwarf shrub cover of over 75% of which the cover of heather 50% should be mature plants. Dartford warbler has a need for discrete areas of gorse *Ulex europaeus* as part of heathland structure which provides winter refuge during periods of severe cold and/or snow conditions.

- **European nightjar *Caprimulgus europaeus*; (Breeding)**

This site also supports breeding Nightjars. The site was surveyed by the BTO and RSPB and was found to have 83 'churring' males in 1992, representing 2.4% of the British population. A 2017 survey recorded 113 territories found throughout the SPA.

Nightjars are nocturnal birds and can be seen hawking for food at dusk and dawn. They can be found throughout the site with their nesting habitat comprising predominantly low heath or grassland with small patches of dry, bare ground, sometimes around a young tree – needs to be away from areas subject to disturbance (paths etc). They are ground-nesting and can be faithful to their nest-site areas from year to year. There is a need for very occasional mature trees or standing deadwood to act as perches during nightjar territorial display activity.

Site-specific seasonality of qualifying SPA features

The table below highlights in grey those months in which significant numbers of each mobile qualifying feature are most likely to be present at the SPA during a typical calendar year. This table is provided as a general guide only.

Unless otherwise indicated, the months shown below are primarily based on information relating to the general months of occurrence of the feature in the UK. Where site-based evidence is available and has been used to indicate below that significant numbers of the feature are typically present at this SPA outside of the general period, the site-specific references have been added to indicate this.

Applicants considering projects and plans scheduled in the periods highlighted in grey would benefit from early consultation with Natural England given the greater scope for there to be likely significant effects that require consideration of mitigation to minimise impacts to qualifying bird features during the principal periods of site usage by those features. The months which are *not* highlighted in grey are not ones in which the features are necessarily absent, rather that features may be present in less significant numbers in typical years. Furthermore, in any given year, features may occur in significant numbers in months in which typically they do not. Thus, applicants should not conclude that projects or plans scheduled in months not highlighted in grey cannot have a significant effect on the features. There may be a lower likelihood of significant effects in those months which nonetheless will also require prior consideration.

Any assessment of potential impacts on the features must be based on up-to-date count data and take account of population trends evident from these data and any other available information. Additional site-based surveys may be required.

Feature	Season	Period	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Site-specific references where available
Dartford Warbler*	Breeding	Summer													n/a
Nightjar	Breeding	Summer													n/a

* A large proportion of the Dartford warbler breeding population remain on the site year-round. The highlighted months in the table show the period of breeding activity, but significant numbers of Dartford warbler should be considered to be on site all through the year.

Guide to terms:
Breeding – present on a site during the normal breeding period for that species
Non-breeding - present on a site outside of the normal breeding period for that species (includes passage and winter periods).
Summer – the period generally from April to July inclusive
Passage - the periods during the autumn and spring when migratory birds are moving between breeding areas and wintering areas. These periods are not strictly defined but generally include the months of July – October inclusive (autumn passage) and March – April inclusive (spring passage).
Winter - the period generally from November to February inclusive.

Table 1: Supplementary Advice for Qualifying Features: A224. *Caprimulgus europaeus*; European nightjar (Breeding)

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
Breeding population	**Population abundance**	Maintain the size of the breeding Nightjar population at a level which is consistently above 83 churring males, whilst avoiding deterioration from its current level as indicated by the latest mean peak count or equivalent.	This will sustain the site's population and ensures it contributes to a viable local, national and bio-geographic population. Due to the mobility of birds and the dynamic nature of population change, the target-value given for the abundance of this feature is considered to be the minimum standard for conservation/restoration measures to achieve. This minimum-value may be revised where there is evidence to show that a population's size has significantly changed as a result of natural factors or management measures and has been stable at or above a new level over a considerable period. The values given here may also be updated in future to reflect any strategic objectives which may be set at a national level for this feature. Given the likely fluctuations in numbers over time, any impact-assessments should focus on the current abundance of the site's population, as derived from the latest known or estimated level established using the best available data. This advice accords with the obligation to avoid deterioration of the site or significant disturbance of the species for which the site is classified, and seeks to avoid plans or projects that may affect the site giving rise to the risk of deterioration. Similarly, where there is evidence to show that a feature has historically been more abundant than the stated minimum target and its current level, the ongoing capacity of the site to accommodate the feature at such higher levels in future should also be taken into account. Maintaining or restoring bird abundance depends on the suitability of the site. However, factors affecting suitability can also determine other demographic rates of birds using the site including survival (dependent on factors such as body condition which influences the ability to breed or make foraging and / or migration movements) and breeding productivity. Adverse anthropogenic impacts on either of these rates may precede changes in population abundance (e.g. by changing proportions of birds of different ages) but eventually may negatively affect abundance. These rates can be measured/estimated to inform judgements of likely impacts on abundance targets. Unless otherwise stated, the population size will be that measured using	EAST DEVON PEBBLEBED HEATHS CONSERVATION TRUST, RSPB AND DEVON WILDLIFE TRUST. 2017. Nightjar Surveys 2017 East Devon Pebblebed Heaths. Unpublished report. (Available from Natural England on request) NATURAL ENGLAND. 2013. Definitions of Favourable Condition. East Devon Pebblebed Heaths SSSI. Available from Natural England on request. 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.

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
			standard methods such as peak mean counts or breeding surveys. This value is also provided recognising there will be inherent variability as a result of natural fluctuations and margins of error during data collection. Whilst we will endeavour to keep these values as up to date as possible, local Natural England staff can advise on whether the figures stated are the best available. The details of the areas that hold Nightjar populations can be found in the 2017 Nightjar survey.	
Supporting habitat (both within and outside the SPA): function/ supporting process	**Connectivity with supporting habitats**	Maintain the safe passage of breeding Nightjar moving between their nesting and feeding areas	The ability of the feature to safely and successfully move between feeding and nesting areas using flight-lines and movement routes is critical to their breeding success and to adult fitness and survival. This target will apply within the site boundary and where birds regularly move to and from off-site habitat where this is relevant. The foraging range of nightjar is known to extend up to several kilometres from their nest sites.	.
Supporting habitat (both within and outside the SPA): function/ supporting process	**Conservation measures**	Maintain management or other measures (whether within and/or outside the site boundary as appropriate) necessary to maintain the structure, function and/or the supporting processes associated with breeding Nightjar and its supporting habitats.	Active and ongoing conservation management is often needed to protect, maintain or restore this feature at this site. Other measures may also be required, and in some cases, these measures may apply to areas outside of the designated site boundary in order to achieve this target. Further details about the necessary conservation measures for this site can be provided by Natural England. This information will typically be found within, where applicable, supporting documents such as Natura 2000 Site Improvement Plan, Site Management Strategies or Plans, the Views about Management Statement for the underpinning SSSI and/or management agreements. Management measures for desired conservation outcomes would include: Habitat management to maintain predominantly low heath or grassland with small patches (>2m square) of dry, bare ground Avoid mechanised bracken control wherever nightjars might be nesting, and Avoid all other mechanised management operations between May	Natural England. 2013. Definitions of Favourable Condition. East Devon Pebblebed Heaths SSSI. Available from Natural England on request NATURAL ENGLAND, 2014. Site Improvement Plan: East Devon Heaths (SIP070) http://publications.naturalengland.org.uk/publication/6234004760035328 PEBBLEBED HEATHS CONSERVATION TRUST. Management. See https://www.pebblebedheaths.org.uk/management/

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
			and September when they may destroy nests. Management of regular recreational access	
Supporting habitat (both within and outside the SPA): function/ supporting process	**Food availability within supporting habitat**	Maintain a high abundance and availability of key prey items (e.g. moths, beetles) at prey sizes preferred by Nightjar.	The availability of an abundant food supply is critically important for successful breeding, adult fitness and survival and the overall sustainability of the population. As a result, inappropriate management and direct or indirect impacts which may affect the distribution, abundance and availability of prey may adversely affect the population.	
Supporting habitat (both within and outside the SPA): structure	**Landscape**	Maintain the amount of open and unobstructed patches within nesting and foraging areas used by Nightjar, including areas of clear-fell, windfall, wide tracks, open forest and heath.	This feature is known to favour large areas of open terrain, largely free of obstructions, in and around its nesting, roosting and feeding areas. Often there is a need to maintain an unobstructed line of sight within nesting, feeding or roosting habitat to detect approaching predators, or to ensure visibility of displaying behaviour. An open landscape may also be required to facilitate movement of birds between the SPA and any off-site supporting habitat.	
Supporting habitat (outside of the SPA): extent and distribution	**Extent and distribution of supporting habitat**	Maintain the extent, distribution and availability of off-site habitat known to support the SPA's breeding Nightjar population during its breeding cycle (for feeding, foraging, roosting)	Conserving or restoring the extent of supporting habitats and their range will be key to maintaining the site's ability and capacity to support the SPA population. The information available on the extent and distribution of supporting habitat used by the feature may be approximate depending to the nature, age and accuracy of data collection. The extent and distribution of supporting habitat used by Nightjar will also vary over time in relation to habitat management, succession, and ad-hoc events such as heath fires. This target will apply to supporting feeding or roosting habitat outside of the SPA boundary where this is of critical importance in maintaining or restoring the SPA population ('functionally-linked land'). This has been included as Nightjars are known to forage several kilometres away from their nesting territory.	
Supporting habitat	**Minimising disturbance**	Reduce the frequency, duration and/or intensity of disturbance	The nature, scale, timing and duration of some human activities can result in the disturbance of birds at a level that may substantially affect	Natural England. 2013. Definitions of Favourable

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
(within the SPA): disturbance	**caused by human activity**	affecting nesting, roosting, foraging, feeding, moulting and/or loafing birds so that the breeding Nightjar population is not significantly disturbed	their behaviour, and consequently affect the long-term viability of the population. Such disturbing effects can for example result in changes to feeding or roosting behaviour, increases in energy expenditure due to increased flight, abandonment of nest sites and desertion of supporting habitat (both within or outside the designated site boundary where appropriate). This may undermine successful nesting, rearing, feeding and/or roosting, and/or may reduce the availability of suitable habitat as birds are displaced and their distribution within the site contracts. Disturbance associated with human activity may take a variety of forms including noise, light, sound, vibration, trampling, and the physical presence of people, animals and structures. This SPA is especially sensitive to human disturbance and ongoing monitoring should be included on areas around car parks where the vegetation composition may be affected by eutrophication from dog walking activity and trampling. Increased fragmentation of heathland blocks through creation of new tracks and paths would be likely to both reduce the available habitat for breeding birds and increase the risk of disturbance during the breeding season.	Condition. East Devon Pebblebed Heaths SSSI. Available from Natural England on request
Supporting habitat (within the SPA): extent and distribution	**Extent and distribution of supporting breeding habitat**	Maintain the extent, distribution and availability of suitable breeding habitat which supports the feature for all necessary stages of its breeding cycle (courtship, nesting, feeding): Dry heath 635 ha (estimates made 2012, based on 2005 NVC surveys)	Conserving or restoring the extent of supporting habitats and their range will be key to maintaining the site's ability and capacity to support the SPA population. The information available on the extent and distribution of supporting habitat used by the feature may be approximate depending to the nature, age and accuracy of data collection. This target will apply to any supporting feeding habitat critical to the SPA birds which is known to occur outside the site boundary. There is also circa 300ha of scrub and woodland within the SPA that also has the potential for Nightjar habitat away from the Dry Heath habitat.	EAST DEVON PEBBLEBED HEATHS CONSERVATION TRUST, RSPB AND DEVON WILDLIFE TRUST. 2017. Nightjar Surveys 2017 East Devon Pebblebed Heaths. Unpublished report. (Available from Natural England on request) Natural England. 2013. Definitions of Favourable Condition. East Devon Pebblebed Heaths SSSI. Available from Natural England on request

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
Supporting habitat (within the SPA): function/ supporting process	**Air quality**	Restore as necessary the concentrations and deposition of air pollutants to below the site-relevant Critical Load or Level values given for this feature of the site on the Air Pollution Information System (www.apis.ac.uk).	The structure and function of the habitats which support this SPA feature may be sensitive to changes in air quality. Exceeding critical values for air pollutants may result in changes to the chemical status of its habitat substrate, accelerating or damaging plant growth, altering vegetation structure and composition and thereby affecting the quality and availability of nesting, feeding or roosting habitats. Critical Loads and Levels are thresholds below which such harmful effects on sensitive UK habitats will not occur to a noteworthy level, according to current levels of scientific understanding. There are critical levels for ammonia (NH3), oxides of nitrogen (NOx) and sulphur dioxide (SO2), and critical loads for nutrient nitrogen deposition and acid deposition. It is recognised that achieving this target may be subject to the development, availability and effectiveness of abatement technology and measures to tackle diffuse air pollution, within realistic timescales. There are currently no critical loads or levels for other pollutants such as Halogens, Heavy Metals, POPs, VOCs or Dusts. These should be considered as appropriate on a case-by-case basis. Ground level ozone is regionally important as a toxic air pollutant but flux-based critical levels for the protection of semi-natural habitats are still under development. Air quality is listed as a priority issue in the Site Improvement plan (SIP). Nitrogen deposition currently exceed site relevant critical loads (November 2018).	More information about site-relevant Critical Loads and Levels for this SPA is available by using the 'search by site' tool on the Air Pollution Information System (www.apis.ac.uk). NATURAL ENGLAND. 2014. Site Improvement Plan. East Devon Heaths. Available from: http://publications.naturalengland.org.uk/publication/6234004760035328?category=5755515191689216
Supporting habitat (within the SPA): predation	**Predation**	Restrict the predation and disturbance of breeding Nightjar caused by native and non-native predators.	This will ensure that breeding productivity (number of chicks per pair) and survival are sustained at rates that maintain or restore the abundance of the feature. Impacts to breeding productivity can result directly from predation of eggs, chicks, juveniles and adults, and also from significant disturbance. The presence of predators can influence bird behaviours, such as abandonment of nest sites or reduction of effective feeding. Where evidence suggests predator management is required, measures can include their exclusion through fencing and scaring or by direct control. Any such measures must consider the legal protection of some predators, as well as the likely effects of such	

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
			control on other qualifying features.	
Supporting habitat (within the SPA): structure	**Nesting vegetation characteristics**	Maintain areas of heathland vegetation mostly of 20-60cm high with frequent bare patches (>2 m²), bare ground (10-20%) and <50% tree/scrub cover overall	The height, cover, variation and composition of vegetation are often important characteristics of habitats supporting this feature which enable successful nesting/rearing/concealment/roosting. Many bird species will have specific requirements that conservation measures will aim to maintain, for others such requirements will be less clear. Activities that may directly or indirectly affect the vegetation of supporting habitats and modify these characteristics may adversely affect the feature.	Natural England. 2013. Definitions of Favourable Condition. East Devon Pebblebed Heaths SSSI. Available from Natural England on request
Version Control Advice last updated: n/a				
Variations from national feature-framework of integrity-guidance: Water quality and quantity attribute has been deleted as the Nightjar is not dependant on surface water habitats.				

Table 2: Supplementary Advice for Qualifying Features: A302. *Sylvia undata*; Dartford warbler (Breeding)

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
Breeding population	**Population abundance**	Restore the size of the breeding Dartford Warbler population to a level which is consistently above 128 breeding pairs, whilst avoiding deterioration from its current level as indicated by the latest mean peak count or equivalent.	See the supporting/explanatory notes for this attribute above in Table 1	KERRY, L. & LAGDON, E. 2017. East Devon Pebblebed Heaths Species Monitoring Report 2017. Unpublished report (Available from Natural England on request) GIBBONS, D.W. & WOTTON, S. 1994.The Dartford Warbler in the United Kingdom in 1994. *British Birds* 89: 203-212, May 1986. NATURAL ENGLAND. 2013. Definitions of Favourable Condition. East Devon Pebblebed Heaths SSSI. Available from Natural England on request
Supporting habitat (both within and outside the SPA): disturbance	**Minimising disturbance caused by human activity**	Reduce the frequency, duration and/or intensity of disturbance affecting nesting, roosting, foraging, feeding, moulting and/or loafing birds so that the breeding Dartford Warbler population feature is not significantly disturbed	The nature, scale, timing and duration of some human activities can result in the disturbance of birds at a level that may substantially affect their behaviour, and consequently affect the long-term viability of the population. Such disturbing effects can for example result in changes to feeding or roosting behaviour, increases in energy expenditure due to increased flight, abandonment of nest sites and desertion of supporting habitat (both within or outside the designated site boundary where appropriate). This may undermine successful nesting, rearing, feeding and/or roosting, and/or may reduce the availability of suitable habitat as birds are displaced and their distribution within the site contracts. Disturbance associated with human activity may take a variety of forms including noise, light, sound, vibration, trampling, presence of people, animals and structures. This SPA is especially sensitive to human disturbance and	NATURAL ENGLAND. 2013. Definitions of Favourable Condition. East Devon Pebblebed Heaths SSSI. Available from Natural

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
			monitoring should be included on areas around car parks where the vegetation composition may be affected by eutrophication from dog walking activity and trampling. Increased fragmentation of heathland blocks through creation of new tracks and paths would be likely to both reduce the available habitat for breeding birds and increase the risk of disturbance during the breeding season.	
Supporting habitat (both within and outside the SPA): extent and distribution	**Extent and distribution of supporting breeding habitat**	Maintain the extent, distribution and availability of suitable breeding habitat which supports Dartford Warbler for all necessary stages of its breeding cycle (courtship, nesting, feeding): Dry heath 635 ha (estimates made 2012, based on 2005 NVC surveys)	Conserving or restoring the extent of supporting habitats and their range will be key to maintaining the site's ability and capacity to support the SPA population. The information available on the extent and distribution of supporting habitat used by the feature may be approximate depending to the nature, age and accuracy of data collection. This target will apply to any supporting feeding habitat critical to SPA birds which is known to occur outside the site boundary. Other Non-SPA areas are also surveyed as part of ongoing monitoring of the Dartford Warbler as there are several Dry Lowland Heath areas with supporting habitat.	KERRY, L. & LAGDON, E. 2017. East Devon Pebblebed Heaths Species Monitoring Report 2017. Unpublished report (Available from Natural England on request) NATURAL ENGLAND. 2013. Definitions of Favourable Condition. East Devon Pebblebed Heaths SSSI. Available from Natural
Supporting habitat (both within and outside the SPA): function/ supporting process	**Conservation measures**	Maintain management or other measures (whether within and/or outside the site boundary as appropriate) necessary to Maintain the structure, function and/or the supporting processes associated with breeding Dartford Warbler and its supporting habitats.	Active and ongoing conservation management is often needed to protect, maintain or restore this feature at this site. Other measures may also be required, and in some cases, these measures may apply to areas outside of the designated site boundary in order to achieve this target. Further details about the necessary conservation measures for this site can be provided by Natural England. This information will typically be found within, where applicable, supporting documents such as Natura 2000 Site Improvement Plan, Site Management Strategies or Plans, the Views about Management Statement for the underpinning SSSI and/or management agreements. Management measures for desired conservation outcomes would include: Ensuring levels of mature heather are maintained above 50% over the SPA and surrounding areas and that levels of Dwarf scrub cover (Heather, Bell Heather, Cross leaved Heather, Western Gorse and	Natural England. 2013. Definitions of Favourable Condition. East Devon Pebblebed Heaths SSSI. Available from Natural England on request NATURAL ENGLAND, 2014. Site Improvement Plan: East Devon Heaths (SIP070) http://publications.naturalengland.org.uk/publication/6234004760035328 PEBBLEBED HEATHS

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
			Bilberry) are maintained above 75%. Regular recreational disturbance can affect nesting Dartford Warbler, management needs to be targeted away from such areas. Provide discrete areas of European Gorse which provide winter refuge during periods of severe cold and/or snow conditions. They also use Western Gorse, however this provides a less favourable habitat.	CONSERVATION TRUST. Management. See https://www.pebblebedheaths.org.uk/managemen
Supporting habitat (both within and outside the SPA): function/ supporting process	**Food availability within supporting habitat**	Maintain a high abundance and availability of key prey items (e.g. beetles, spiders, caterpillars, bugs) at prey sizes preferred by Dartford Warbler.	The availability of an abundant food supply is critically important for successful breeding, adult fitness and survival and the overall sustainability of the population. As a result, inappropriate management and direct or indirect impacts which may affect the distribution, abundance and availability of prey may adversely affect the population.	
Supporting habitat (both within and outside the SPA): structure	**Landscape**	Maintain the amount of open and unobstructed terrain within the SPA and within 0.5 km of the site	This feature is known to favour large areas of open terrain, largely free of obstructions, in and around its nesting, roosting and feeding areas. Often there is a need to maintain an unobstructed line of sight within nesting, feeding or roosting habitat to detect approaching predators, or to ensure visibility of displaying behaviour. An open landscape may also be required to facilitate movement of birds between the SPA and any off-site supporting habitat.	.
Supporting habitat (within the SPA): function/ supporting process	**Air quality**	Restore as necessary the concentrations and deposition of air pollutants to below the site-relevant Critical Load or Level values given for this feature of the site on the Air Pollution Information System (www.apis.ac.uk).	See the supporting/explanatory notes for this attribute above in Table 1. Air quality is listed as a priority in the Site Improvement plan (SIP). Nitrogen deposition exceeds site relevant critical loads (November 2018).	More information about site-relevant Critical Loads and Levels for this SPA is available by using the 'search by site' tool on the Air Pollution Information System (www.apis.ac.uk). NATURAL ENGLAND. 2014. Site Improvement Plan. East Devon Heaths. Available

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
				from:http://publications.naturalengland.org.uk/publication/6234004760035328?category=5755515191689216
Supporting habitat (within the SPA): predation	**Predation**	Restrict the predation and disturbance of breeding Dartford Warbler caused by native and non-native predators.	This will ensure that breeding productivity (number of chicks per pair) and survival are sustained at rates that maintain or restore the abundance of the feature. Impacts to breeding productivity can result directly from predation of eggs, chicks, juveniles and adults and also from significant disturbance. The presence of predators can influence bird behaviours, such as abandonment of nest sites or reduction of effective feeding. Where evidence suggests predator management is required, measures can include their exclusion through fencing and scaring or by direct control. Any such measures must consider the legal protection of some predators, as well as the likely effects of such control on other qualifying features.	
Supporting habitat (within the SPA): structure	**Nesting vegetation characteristics**	Maintain areas of heathland vegetation with >50% heather, <25 trees/hectare and 5-25% gorse scrub of 0.5-3 m overall) throughout nesting areas.	The height, cover, variation and composition of vegetation are often important characteristics of habitats supporting this feature which enable successful nesting/rearing/concealment/roosting. Many bird species will have specific requirements that conservation measures will aim to maintain, for others such requirements will be less clear. Activities that may directly or indirectly affect the vegetation of supporting habitats and modify these characteristics may adversely affect the feature. Dartford Warblers are strongly associated with the presence of common gorse *Ulex europaeus* and/or Western gorse *Ulex gallii* which they use as song perches and refuge areas.	
Version Control Advice last updated: n/a				
Variations from national feature-framework of integrity-guidance: Water quality and quantity attribute has been deleted as the Dartford Warbler is not dependant on surface water habitats.				