



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

**Quants Special Area of Conservation (SAC)
Site Code: UK0030242**



Unimproved neutral grassland backing onto broadleaved woodland (credit Natural England, Justin Gillett)

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About this document

This document provides Natural England's supplementary advice about the European Site Conservation Objectives relating to Quants SAC.

This advice should therefore be read together with the SAC Conservation Objectives 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	Quants Special Area of Conservation (SAC)
Location	Somerset
Site Map	The designated boundary of this site can be viewed here on the MAGIC website
Designation Date	1 April 2005
Qualifying Features	See section below
Designation Area	20.29 ha
Designation Changes	N/A
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)	Quants SSSI
Relationship with other European or International Site designations	N/A

Site background and geography

The Quants SAC occupies the steep north westerly facing slopes of a spur of the Blackdown Hills around 8 miles south-west of Taunton and lies within the Blackdowns National Character Area ([NCA Profile 147](#)). Situated close to the point at which the Greensand Springline meets the Keuper Marl, the site has a complex hydrology with some of the slopes being heavily flushed

Unimproved neutral grassland at this site contains the butterfly food plant devil's-bit scabious *Succisa pratensis* along with many other species including cowslip *Primula veris* and common bird's-foot-trefoil *Lotus corniculatus* in a species- rich sward. The grassland is surrounded by woodland making this a very sheltered site which supports a medium-sized population of Marsh Fritillary butterflies *Euphydryas aurinia*.

About the qualifying features of the SAC

The following section gives you additional, site-specific information about this SAC's qualifying features. These are the natural habitats and/or species for which this SAC has been designated.

Qualifying habitats:

Not Applicable

Qualifying Species:

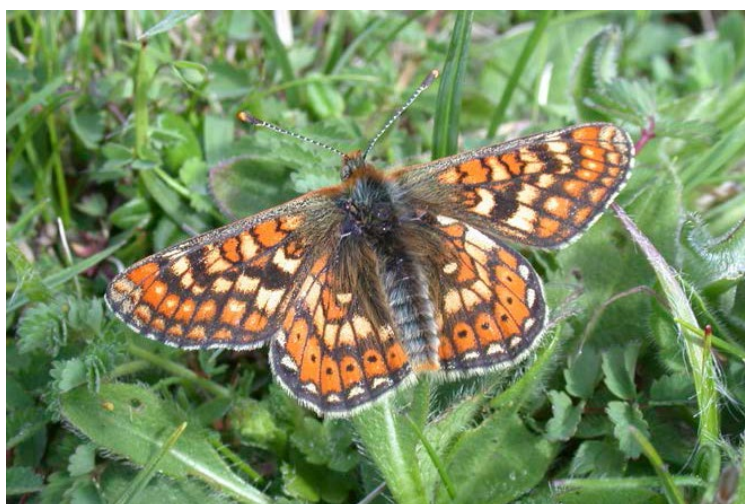
Annex II species that are a primary reason for selection of this site

- **S1065 Marsh fritillary butterfly** *Euphydryas (Eurodryas, Hypodryas) aurinia*

The marsh fritillary butterfly *Euphydryas aurinia* is typically found in a range of habitats in which its larval food plant, devil's-bit scabious *Succisa pratensis*, occurs. Marsh fritillaries are essentially grassland butterflies in the UK, and although populations may occur occasionally on wet heath, bog margins and woodland clearings, most colonies are found in damp acidic or dry calcareous grasslands. Management in both wet and dry situations is predominantly by low-intensity cattle or pony grazing.

The butterfly flies in late May and June. The female lays batches of eggs on the underside of large Devil's-bit Scabious plants. From August until late September the brown, spiny caterpillars feed together on Scabious leaves inside a silken web. During the winter they hibernate together in a small web, hidden in grass tussocks. The caterpillars emerge in February or early March and separate; sometimes wandering several metres to find fresh Scabious leaves. By late April the caterpillars pupate and emerge as adult butterflies 2 to 3 weeks later.

Populations of marsh fritillary vary greatly in size from year to year, and, at least in part, this is related to cycles of attack from parasitic wasps. Adults tend to be sedentary and remain in a series of linked meta-populations, forming numerous temporary sub-populations, which frequently die out and re-colonise. Where unable to do this, populations do not seem to be able to persist in habitat fragments. It is therefore essential to conserve a cluster of sites in close proximity.



Marsh fritillary (Natural England/Allan Drewitt)

This damp and sheltered site supports a medium-sized but strong marsh fritillary *Euphydryas aurinia* population in a neutral grassland/fen mosaic. It is strategically placed close to other smaller sub-populations, with which it forms a metapopulation, and may exchange individuals with the large population at Southey Moor (outside the SAC series).

Many designated sites are on private land: the listing of a site in these pages does not imply any right of public access.

Table 1: Supplementary Advice for Qualifying Features: S1065. *Euphydryas (Eurodryas, Hypodryas) aurinia*; Marsh fritillary butterfly

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
Population (of the feature)	Population abundance	Restore the abundance of the population to a level which is above the baseline population-size known or estimated at or soon after the time of SAC whilst avoiding deterioration from its current level as indicated by the latest mean peak count or equivalent.	<p>This will ensure there is a viable population of the feature which is being maintained at or increased to a level that contributes as appropriate to its Favourable Conservation Status across its natural range in the UK. Due to the dynamic nature of population change, the target-value given for the population size or presence of this feature is considered to be the minimum standard for conservation/restoration measures to achieve.</p> <p>This minimum-value may be revised where there is evidence to show that a population's size or presence 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 (generally at least 10 years). 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.</p> <p>Given the likely fluctuations in numbers over time, any impact-assessments should focus on the current size 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 designated, 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 in any assessment.</p> <p>Unless otherwise stated, the population size or presence will be that measured using 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 that the figures stated are the best available. For this feature counting the conspicuous larval webs is a good measure of</p>	This attribute will be periodically monitored as part of Natural England's SSSI Condition Assessments

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
			<p>population density; as well as the more standardised transect counts of adults.</p> <p>The Marsh Fritillary was once widespread across Britain and Ireland but has declined dramatically. A review of the butterfly's status in England found that 66% of populations known to occur in 1990 had become extinct by 2000 due to changes in grazing management and fragmentation of habitat.</p> <p>In 2011 the Marsh Fritillary became extinct at this site. The nearest known extant population lies approximately 6km due south at a location called Middleton Barton.</p> <p>Recent investigations (2018) have been carried out by a partnership of organisations including Butterfly Conservation, Blackdown Hills AONB and Natural England. This work has looked at the quality of habitat between the extant population and Quants. This data is currently being analysed and from this an assessment of the viability of natural recolonization can be made.</p>	
Population (of the feature)	Supporting meta-populations	Restore the connectivity of the marsh fritillary SAC population to its associated meta-populations (either within the SAC or outside of the site boundary)	<p>Marsh fritillaries survive in 'meta-populations' formed by a number of subpopulations (linked by occasional migration) which may frequently die out and re-establish. Marsh fritillary colonies will move between sites or to different habitat patches within sites in response to changing ecological conditions.</p> <p>These meta-populations are reliant on the conservation of a cluster of suitable sites in close proximity to enable this (re)colonisation.</p> <p>Adult butterflies tend to be sedentary but some individuals will disperse and have been known to move up to 15-20km away; and remain in a series of linked meta-populations, forming numerous temporary sub-populations, which frequently die out and re-colonise. Where unable to do this, populations do not seem to be able to persist in habitat fragments. It is therefore essential to conserve a cluster of sites in close proximity.</p> <p>The connectivity of the wider local landscape to the SAC may therefore be important as this may help to ensure the survival of the</p>	

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
			<p>overall population even if sub-populations are temporarily affected.</p> <p>It is strategically placed close to other smaller sub-populations, with which it forms a metapopulation, and may exchange individuals with the large population at Southey Moor (outside the SAC series).</p>	
Supporting habitat: extent and distribution	Distribution of supporting habitat	Restore as necessary the distribution and continuity of the feature and its supporting habitat, including where applicable its component vegetation types and associated transitional vegetation types, across the site	<p>A contraction in the range, or geographic spread, of the feature (and its component vegetation) across the site will reduce its overall area, the local diversity and variations in its structure and composition, and may undermine its resilience to adapt to future environmental changes.</p> <p>Contraction may also reduce and break up the continuity of a habitat within a site and how well the species feature is able to occupy and use habitat within the site.</p> <p>Such fragmentation may have a greater amount of open edge habitat which will differ in the amount of light, temperature, wind, and even noise that it receives compared to its interior. These conditions may not be suitable for this feature and this may affect its viability.</p>	<p>This attribute will be periodically monitored as part of Natural England's SSSI Condition Assessments</p> <p>Natural England 2014, Site Improvement Plan: The Quants (SIP181)</p>
Supporting habitat: extent and distribution	Extent of supporting habitat	Restore as necessary the total extent of the habitat(s) which support the feature to approximately 1.5ha	<p>In order to contribute towards the objective of achieving an overall favourable conservation status of the feature at a UK level, it is important to maintain or if appropriate restore the extent of supporting habitats and their range within this SAC.</p> <p>The information available on the extent and distribution of supporting habitat used by the feature may be approximate depending on the nature, age and accuracy of data collection, and may be subject to periodic review in light of improvements in data.</p> <p>The core area of the SAC contains supporting habitat totalling approximately 1.5ha. A further 4 ha of supporting habitat occurs within SAC boundary but outside of any known populations of the butterfly; these are areas of grassland that were formerly covered in conifer woodland that are in the process of restoration to an MG5 type NVC type.</p>	<p>This attribute will be periodically monitored as part of Natural England's SSSI Condition Assessments</p> <p>2017 Aerial Photos</p> <p>Natural England 2014, Site Improvement Plan: The Quants (SIP181)</p>
Supporting habitat: structure	Ground moisture	Grazing regime should allow for a sufficiently long sward during the summer months to avoid	Sward height should be long enough during spring/ summer months that the larval food plant does not become desiccated (especially important on calcareous grassland sites).	This attribute will be periodically monitored as part of Natural England's

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
function		dessication of the <i>Succisia</i> plants on which the larvae feed.		SSSI Condition Assessments
Supporting habitat: structure/function	Soils, substrate and nutrient cycling	Restore the properties of the underlying soil types, including structure, bulk density, total carbon, pH, soil nutrient status and fungal: bacterial ratio, within typical values for the supporting habitat	<p>Soil supports basic ecosystem function and is a vital part of the natural environment. Its properties strongly influence the colonisation, growth and distribution of those plant species which together form vegetation types, and therefore provides a habitat used by a wide range of organisms.</p> <p>Soil biodiversity has a vital role to recycle organic matter. Changes to natural soil properties may therefore affect the ecological structure, function and processes associated with the supporting habitat of this Annex II feature.</p> <p>Part of the SAC has had conifer plantation removed and this is reverting well to unimproved grassland habitat; however, the soil properties in these areas will still be in a process of transition.</p>	This attribute will be periodically monitored as part of Natural England's SSSI Condition Assessments
Supporting habitat: structure/function	Vegetation composition - presence of foodplants	Maintain an abundance of devil-bit scabious <i>Succisa pratensis</i> within supporting habitat	As the feature's larval food plant, <i>Succisa</i> should be common enough in the sward that there will always be a good and continuous number of suitable plants for egg-laying; this is particularly important on calcareous grassland sites, which are more prone to drought.	This attribute will be periodically monitored as part of Natural England's SSSI Condition Assessments
Supporting habitat: structure/function	Vegetation structure - sward height (neutral grassland)	Maintain appropriate sward conditions, with a typical sward height of 5-10 cm on average (during summer months)	The sward height should be long enough to ensure the <i>Succisa</i> is usable by the larvae.	This attribute will be periodically monitored as part of Natural England's SSSI Condition Assessments
Supporting processes (on which the feature and/or its supporting habitat relies)	Adaptation and resilience	Restore the feature's ability, and that of its supporting habitat, to adapt or evolve to wider environmental change, either within or external to the site	<p>This recognises the increasing likelihood of supporting habitat features to absorb or adapt to wider environmental changes. Resilience may be described as the ability of an ecological system to cope with, and adapt to environmental stress and change whilst retaining the same basic structure and ways of functioning.</p> <p>Such environmental changes may include changes in sea levels, precipitation and temperature for example, which are likely to affect the extent, distribution, composition and functioning of a feature within a site. The vulnerability and response of features to such changes will vary.</p> <p>Using best available information, any necessary or likely adaptation</p>	NATURAL ENGLAND, 2015. Climate Change Theme Plan and supporting National Biodiversity Climate Change Vulnerability assessments ('NBCCVAs') for SACs and SPAs in England [Available at http://publications.naturalengland.org.uk/publication/4954594591375360].

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
			<p>or adjustment by the feature and its management in response to actual or expected climatic change should be allowed for, as far as practicable, in order to ensure the feature's long-term viability.</p> <p>The overall vulnerability of this SAC to climate change has been assessed by Natural England (2015) as being moderate, taking into account the sensitivity, fragmentation, topography and management of its supporting habitats. This means that this site is considered to be vulnerable overall but moderately so.</p> <p>This means that some adaptation action for specific issues may be required, such as reducing habitat fragmentation, creating more habitat to buffer the site or expand the habitat into more varied landscapes and addressing particular management and condition issues. Individual species may be more or less vulnerable than their habitat itself. In many cases, change will be inevitable so appropriate monitoring would be advisable.</p>	
Supporting processes (on which the feature and/or its supporting habitat relies)	Air quality	Restore as necessary the concentrations and deposition of air pollutants to at or 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).	<p>The supporting habitat of this feature is considered sensitive to changes in air quality. Exceedance of these critical values for air pollutants may modify the chemical status of its substrate, accelerating or damaging plant growth, altering its vegetation structure and composition (including food-plants) and reducing supporting habitat quality and population viability of this feature.</p> <p>Critical Loads and Levels are recognised thresholds below which such harmful effects on sensitive UK habitats will not occur to a significant 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. 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.</p> <p>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.</p>	<p>More information about site-relevant Critical Loads and Levels for this SAC is available by using the 'search by site' tool on the Air Pollution Information System (www.apis.ac.uk).</p> <p>Natural England 2014, Site Improvement Plan: The Quants (SIP181)</p>

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
			<p>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.</p> <p>There is insufficient knowledge to make a judgment of the impacts on this species. Critical load for the unimproved grassland habitat are being exceeded but at present it is hard to link the impact of this on any deterioration of habitat quality for Marsh Fritillary</p> <p>A condition survey of the Quants SSSI (which underpins the SAC) did not detect any increase in graminoids, decline of typical species or a decrease in total species richness which might be expected if critical loads were exceeded.</p>	
Supporting processes (on which the feature and/or its supporting habitat relies)	Conservation measures	Restore as necessary the management measures (either within and/or outside the site boundary as appropriate) which are necessary to restore the structure, functions and supporting processes associated with the feature and/or its supporting habitats.	<p>Active and ongoing conservation management is needed to protect, maintain or restore this feature at this site. Further details about the necessary conservation measures for this site can be provided by contacting Natural England.</p> <p>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.</p> <p>Marsh fritillaries survive in 'meta-populations' formed by a number of subpopulations (linked by occasional migration) which may frequently die out and re-establish. Marsh fritillary colonies will move between sites or to different habitat patches within sites in response to changing ecological conditions therefore it is important that conservation measures are focussed outside the site boundary as well as inside.</p>	<p>This attribute will be periodically monitored as part of Natural England's SSSI Condition Assessments</p> <p>Natural England 2014, Site Improvement Plan: The Quants (SIP181)</p>
Supporting processes (on which the feature and/or its supporting habitat relies)	Grazing pressure	<p>Maintain a cattle or pony-dominated grazing regime.</p> <p>Stock may be removed May-September, but light continuous cattle grazing is more beneficial</p>	<p>Cattle grazing is preferable as it produces a less uniform sward; also sheep tend to selectively graze the <i>Succisa</i>, which is likely to be detrimental to marsh fritillary populations. If sheep are used it should be at a very low stocking ration (especially on calcareous sites, where care should be taken that sites aren't overgrazed, resulting in a short sward and increased risk of dessication of <i>Succisa</i> plants (if</p>	<p>This attribute will be periodically monitored as part of Natural England's SSSI Condition Assessments</p>

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
		than short-term heavy grazing, as long as the correct sward structure is maintained and sites do not become overgrazed.	they aren't actually eaten!). Sheep should not graze during the summer months - cattle/ pony grazing during summer may be OK if at a low stocking density.	
Supporting processes (on which the feature and/or its supporting habitat relies)	Water quantity/ quality	Where the feature or its supporting habitat is dependent on surface water and/or groundwater, maintain water quality and quantity to a standard which provides the necessary conditions to support the feature	<p>For many SAC features which are dependent on wetland habitats supported by surface and/or ground water, maintaining the quality and quantity of water supply will be critical, especially at certain times of year. Poor water quality and inadequate quantities of water can adversely affect the structure and function of this habitat type.</p> <p>Typically, meeting the surface water and groundwater environmental standards set out by the Water Framework Directive (WFD 2000/60/EC) will also be sufficient to support the achievement of SAC Conservation Objectives but in some cases more stringent standards may be needed to reflect the ecological needs of the species feature. Further site-specific investigations may be required to establish appropriate water quality standards for the SAC.</p> <p>High levels of ground moisture are required during the summer months to avoid dessication of the <i>Succisa</i> plants on which the larvae feed.</p>	This attribute will be periodically monitored as part of Natural England's SSSI Condition Assessments
Version Control				
Advice last updated: N/A				
Variations from national feature-framework of integrity-guidance: N/A				

References

NATURAL ENGLAND, 2014, Site Improvement Plan: The Quants (SIP181)

NATURAL ENGLAND, 2015. Climate Change Theme Plan and supporting National Biodiversity Climate Change Vulnerability assessments ('NBCCVAs') for SACs and SPAs in England [Available at <http://publications.naturalengland.org.uk/publication/4954594591375360>].