



## **European Site Conservation Objectives: supplementary advice on conserving and restoring site features**

**North Pennine Moors Special Protection Area (SPA)  
Site code: UK9006272**



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## **About this document**

This document provides Natural England's supplementary advice for the European Site Conservation Objectives relating to North Pennine Moors SPA. This advice should therefore be read together with the SPA Conservation Objectives available [here](#).

This SPA overlaps with the North Pennine Moors SAC (Conservation Objectives available [here](#)) and with Moor House-Upper Teesdale 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 the 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](mailto:HDIRConservationObjectivesNE@naturalengland.org.uk)**

## About this site

### European Site information

<b>Name of European Site</b>	North Pennine Moors Special Protection Area (SPA)
<b>Location</b>	Cumbria, Durham, North Yorkshire and Northumberland.
<b>Site Map</b>	The designated boundary of this site can be viewed <a href="#">here</a> on the MAGIC website
<b>Designation Date</b>	09/02/2001
<b>Qualifying Features</b>	See section below
<b>Designation Area</b>	147,246.41ha
<b>Designation Changes</b>	The North Pennine Moors includes and replaces Moor House SPA, a site that was formerly subject to classification.
<b>Feature Condition Status</b>	Details of the feature condition assessments made at this site can be found using Natural England's <a href="#">Designated Sites System</a>
<b>Names of component Sites of Special Scientific Interest (SSSIs)</b>	Allendale Moors SSSI Appleby Fells SSSI Arkengarthdale, Gunnerside and Reeth Moors SSSI Bollilhope, Pikestone, Eggleston and Woodland Fells SSSI Bowes Moor SSSI Cotherstone Moor SSSI East Nidderdale Moors (Flamstone Pin - High Ruckles) SSSI Geltsdale and Glendue Fells SSSI Hexhamshire Moors SSSI Lovely Seat - Stainton Moor SSSI Lune Forest SSSI Mallerstang and Swaledale Head SSSI Moor House and Cross Fell SSSI Muggleswick, Stanhope and Edmundbyers Commons and Blanchland Moor SSSI Upper Teesdale SSSI West Nidderdale, Barden and Blubberhouses Moors SSSI Whitfield Moor, Plenmeller and Ashholme Commons SSSI
<b>Relationship with other European or International Site designations</b>	The North Pennine Moors SPA overlaps <a href="#">North Pennine Moors SAC</a> and <a href="#">Moor House-Upper Teesdale SAC</a>  It is adjacent to <a href="#">North Pennine Dales Meadows SAC</a> , <a href="#">Helbeck and Swindale Woods SAC</a> and <a href="#">Ox Close SAC</a>

## **Site background and geography**

The North Pennine Moor SPA includes parts of the Pennine moorland massif between the Tyne Gap (Hexham) and the Ribble - Aire corridor (Skipton). It encompasses extensive tracts of semi-natural moorland habitats, including upland heath and blanket bog.

Situated within the [North Pennines National Character Area](#) (NCA), the SPA comprises some of the highest and most exposed moorlands in England. It is remote and has few settlements. Livestock grazing and driven grouse shooting are the dominant land use practices.

Peaty soils cover extensive areas of the higher ground and it is subject to high rainfall, low temperatures and strong winds in both winter and summer.

[Moor House-Upper Teesdale NNR](#) lies in the heart of the SPA.

## 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 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 species listed in Annex I of the Wild Birds Directive:**

During the breeding season the SPA regularly supports:

- **Golden plover *Pluvialis apricaria***

At the time of SPA classification, the site was estimated to support 1,400 pairs representing at least 6.2% of the breeding population of Great Britain. This population estimate was based on habitat and breeding densities alone.

The 2005-2007 North Pennine Moors SPA survey (Shepherd, 2007) recorded 4,171 pairs of golden plover which represented 18.5% of the breeding population of Great Britain.

Golden plovers breed on heather moorland, blanket bog, acidic grassland and montane summits, where they prefer to nest on high, flat or gently sloping plateaux, away from the moorland edge. Adjacent pastures with abundant earthworms and crane-fly larvae are important for feeding adults, and chicks may be moved up to 2km or more to feed in marshy areas rich in invertebrate food. Flat or gently sloping ground (not exceeding 10°) is much preferred, where there are some raised places suitable as lookouts, and some blending of open patches with very sparse low vegetation with other areas providing partial cover (though still not tall enough to block a distant view).

Golden plover typically nest in a shallow scrape on the ground often hidden by moorland vegetation. Eggs are typically laid between April-mid-May and one brood is raised per year.

- **Hen harrier *Circus cyaneus***

At the time of the SPA classification, a DETR/JNCC Raptor Working Group survey in 1998 estimated that the site supported 11 pairs representing at least 2.2% of the breeding population in Great Britain. Surveys in 2006 recorded 2 hen harrier territories across the SPA.

The hen harrier has a strong association with heather-dominated habitat in England and nests are almost always sited so that the surrounding heather bushes provide cover and protection. Preferred breeding habitat is therefore upland moorland with a high percentage of heather cover, but birds may colonise young plantations if there is suitable ground. The species avoids acid grasslands, extensive mires and continuous high ground.

A clutch of 4-6 eggs is laid usually in May, and incubated mainly by the female for about 30 days. The chicks spend 30-40 days in the nest and are dependent on food brought in by the adult birds until they have learnt to hunt for themselves.

- **Merlin *Falco columbarius***

At the time of the SPA classification, surveys in 1993 and 1994 estimated that the site supported 136 pairs representing at least 10.5% of the breeding population in Great Britain. Surveys in 2006 recorded 65 merlin territories across the SPA.

Merlin breed on heather moorland, particularly in large blocks of old or long heather. They may also nest in trees.

- **Peregrine *Falco peregrinus***

At the time of its classification, the SPA supported 15 breeding pairs, representing at least 1.3% of the breeding population in Great Britain. Surveys in 2006 recorded 4 peregrine territories across the SPA.

Peregrine nest sites tend to be on inaccessible cliffs and rock faces or other habitats to which they have adapted locally such as steep banks.

## 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
Golden plover	Breeding	Summer													n/a
Hen harrier	Breeding	Summer													n/a
Merlin	Breeding	Summer													n/a
Peregrine	Breeding	Summer													n/a

### 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: A082. *Circus cyaneus*; Hen harrier (Breeding)**

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
<b>Supporting habitat (both within and outside the SPA): function/supporting process</b>	<b>Conservation measures</b>	Restore the management or other measures (whether within and/or outside the site boundary as appropriate) necessary to restore the structure, function and/or the supporting processes associated with breeding Hen Harrier and its supporting habitats.	<p>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.</p> <p>Work is ongoing to address a range management issues (where they exist). The North Pennines Group Site Improvement Plan includes a range of measures to restore the structure and function of supporting habitats such as restoring peat-forming conditions, reducing grazing pressure where it is causing damage and the cessation of rotational burning on blanket bog.</p>	NATURAL ENGLAND. 2014. Site Improvement Plan: North Pennines Group. Available from: <a href="http://publications.naturalengland.org.uk/publication/6534899699810304?category=6280398447312896">http://publications.naturalengland.org.uk/publication/6534899699810304?category=6280398447312896</a>
<b>Supporting habitat (within the SPA): predation</b>	<b>Predation</b>	Restrict the predation of and disturbance to breeding Hen Harriers caused by native and non-native predators.	<p>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 on breeding productivity can result directly from predation of eggs, chicks, juveniles and adults, and also from significant disturbance.</p> <p>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, habitat improvements (e.g. re-wetting) 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.</p>	.
<b>Breeding population</b>	<b>Population abundance</b>	Restore the size of the breeding Hen Harrier population within the SPA to a level which is consistently above 11 pairs, whilst avoiding deterioration from its current level as	This will sustain the site's population and help ensure that 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.	<b>Please note that requests for sensitive information, such as hen harrier locations, will be declined.</b>



Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
		indicated by the latest mean peak count or equivalent.	<p>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.</p> <p>Given possible 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 (see estimated potential population above)</p> <p>A JNCC study in 2011 (Fielding et al., 2011) estimated that the potential breeding population of breeding hen harrier in England (based on habitat suitability etc.) was 323-340 pairs, suggesting that this SPA could support more.</p> <p>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.</p> <p>There is compelling evidence that illegal persecution continues to limit hen harrier recovery in England (Natural England, 2008).</p>	<p>DURHAM UPLAND BIRD STUDY GROUP. 2018. Upland SSSIs in County Durham – Assessment of Current Status of Bird Assemblages. Report to Natural England. Unpublished report. (Available from Natural England on request).</p> <p>FIELDING, A., HAWORTH, P., WHITFIELD, P., MCLEOD, D. &amp; RILEY, H. 2011. A Conservation Framework for Hen Harriers in the United Kingdom. JNCC Report No.441. Available from: <a href="http://jncc.defra.gov.uk/pdf/jncc441.pdf">http://jncc.defra.gov.uk/pdf/jncc441.pdf</a></p> <p>HOLT, C., MASON, N &amp; KIRBY, J. 2018. Data review for North Pennine Moors SPA and constituent SSSIs. Report to Natural England. Unpublished report. (Available from Natural England on request).</p> <p>NATURAL ENGLAND. 2008. <i>A future for the Hen Harrier in England?</i> Available from: <a href="http://publications.naturale.nland.org.uk%2Ffile%2F">http://publications.naturale.nland.org.uk%2Ffile%2F</a></p>

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
				<a href="#">81030</a> SHEPHERD, K. 2007. North Pennine Moors SPA: Breeding Bird Survey 2005-2007. Report to Natural England. Unpublished report. (Available from Natural England on request).
<b>Supporting habitat (within the SPA): extent and distribution</b>	<b>Extent and distribution of supporting breeding habitat</b>	Maintain the extent, distribution and availability of suitable breeding habitat which supports breeding Hen Harrier for all necessary stages of its breeding cycle (courtship, nesting, feeding): <ul style="list-style-type: none"> <li>• Maintain 61,094.00ha of blanket bog</li> <li>• Maintain 618.09ha of wet heath</li> <li>• Maintain 46,502.82ha of dry heath</li> </ul>	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 of acid and neutral grasslands used as feeding and roosting grounds is not known, both within and without the site.	NATURAL ENGLAND. 2002. NVC Survey. Unpublished data. (Available from Natural England on request.) Habitat information for the Cumbria part of the SPA:  ENGLISH NATURE. 1999. NVC Survey of Appleby Fells and Moorhouse and Cross Fell. Unpublished data. (Available from Natural England on request.)  RSPB. 1999. Upland Vegetation Condition Assessment, Unpublished data, (Available from Natural England on request.)  RSPB. 1995. NVC Survey. Unpublished data, (Available from Natural England on

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
				request.)  ENGLISH NATURE. 2004. North Pennines Survey. Unpublished data. (Available from Natural England on request.)
<b>Supporting habitat (within the SPA): structure</b>	<b>Vegetation characteristics</b>	Restore an optimal mix of vegetation to provide sufficient cover for nesting Hen Harrier	<p>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.</p> <p>Activities that may directly or indirectly affect the vegetation of supporting habitats and modify these characteristics may adversely affect the feature.</p> <p>The North Pennines Group SIP includes a range of measures to restore optimum vegetation structure.</p>	NATURAL ENGLAND. 2014. Site Improvement Plan: North Pennines Group. Available from: <a href="http://publications.naturalengland.org.uk/publication/6534899699810304?category=6280398447312896">http://publications.naturalengland.org.uk/publication/6534899699810304?category=6280398447312896</a>
<b>Supporting habitat (both within and outside the SPA): minimising disturbance</b>	<b>Minimising disturbance caused by human activity</b>	Reduce the frequency, duration and/or intensity of disturbance affecting nesting, roosting, foraging, feeding, moulting and/or loafing birds so that the breeding Hen harrier population is not significantly disturbed	<p>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.</p> <p>The North Pennines Group SIP includes recommendations to reduce disturbance from vehicles (during the breeding season).</p>	NATURAL ENGLAND. 2014. Site Improvement Plan: North Pennines Group. Available from: <a href="http://publications.naturalengland.org.uk/publication/6534899699810304?category=6280398447312896">http://publications.naturalengland.org.uk/publication/6534899699810304?category=6280398447312896</a>

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
<b>Supporting habitat (within the SPA): structure</b>	<b>Landscape</b>	Maintain a high proportion of open and unobstructed terrain, with short vegetation, within areas used for nesting and hunting and restore a high proportion of medium to long vegetation (>50cm) within nesting areas.	<p>Hen Harriers are birds of open landscapes, usually avoiding closed-canopy woodland, conurbations and high mountain tops. They are 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.</p> <p>Blocks of longer vegetation (e.g. mature heather) are also an important component of hen harrier habitat for successful nesting and the rearing and concealment of chicks.</p>	
<b>Supporting habitat (both within and outside the SPA): function/ supporting process</b>	<b>Connectivity with supporting habitats</b>	Restore the safe passage of Hen harriers moving between nesting, feeding and/or roosting areas	<p>The ability of the feature to safely and successfully move to and from nesting, feeding and roosting areas is critical to their breeding success and to the adult fitness and survival.</p> <p>This target will apply within the site boundary and where birds regularly move to and from off-site habitat where this is relevant. The home range of hen harriers can extend several kilometres from their nesting territory. Breeding Hen Harriers hunt mostly within 1-2 kilometres from the nest.</p>	
<b>Supporting habitat (both within and outside the SPA): function /supporting process</b>	<b>Food availability within supporting habitat</b>	Maintain the distribution, abundance and availability of key prey items at preferred prey sizes (pipits to gamebirds; voles to young rabbit size).	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.	
<b>Supporting habitat (both within and outside the SPA): function/ supporting process</b>	<b>Air quality</b>	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 ( <a href="http://www.apis.ac.uk">www.apis.ac.uk</a> ).	<p>The structure and function of the habitats which support this SPA features 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.</p> <p>Critical Loads and Levels are thresholds below which such harmful effects on sensitive UK habitats will not occur to a noteworthy level,</p>	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 ( <a href="http://www.apis.ac.uk">www.apis.ac.uk</a> ).

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
			<p>according to current levels of scientific understanding. There are critical levels for ammonia (NH<sub>3</sub>), oxides of nitrogen (NO<sub>x</sub>) and sulphur dioxide (SO<sub>2</sub>), 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.</p> <p>Current nitrogen deposition rates exceed the critical load for habitats which support this feature (online data accessed September 2018).</p> <p>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.</p>	
<p><b>Version Control</b> Advice last updated: n/a</p> <p><b>Variations from national feature-framework of integrity-guidance:</b> "Water quality/quantity" has been deleted as is unlikely to be relevant for this feature.</p>				

**Table 2: Supplementary Advice for Qualifying Features: A098. *Falco columbarius*; Merlin (Breeding)**

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
<b>Supporting habitat (both within and outside the SPA): function/supporting process</b>	<b>Conservation measures</b>	Restore management or other measures necessary to restore the structure, function and/or the supporting processes associated with breeding Merlin and its supporting habitats.	<p>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.</p> <p>Work is ongoing to address a range management issues (where they exist). The North Pennines Group Site Improvement Plan (SIP) includes a range of measures to restore the structure and function of supporting habitats such as restoring peat forming conditions, reducing grazing pressure where it is causing damage and the cessation of rotational burning on blanket bog.</p>	NATURAL ENGLAND. 2014. Site Improvement Plan: North Pennines Group. Available from: <a href="http://publications.naturalengland.org.uk/publication/6534899699810304?category=6280398447312896">http://publications.naturalengland.org.uk/publication/6534899699810304?category=6280398447312896</a>
<b>Supporting habitat (within the SPA): predation</b>	<b>Predation</b>	Restrict the predation of and disturbance to breeding Merlin 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, habitat improvements (e.g. re-wetting for ground nesting pairs) 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.	
<b>Supporting habitat (within the SPA): function/supporting</b>	<b>Air quality</b>	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	See the notes for this attribute in Table 1 above.	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

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
process		Pollution Information System ( <a href="http://www.apis.ac.uk">www.apis.ac.uk</a> ).		Information System ( <a href="http://www.apis.ac.uk">www.apis.ac.uk</a> ).
<b>Breeding population</b>	<b>Population abundance within the SPA</b>	Restore the size of the breeding Merlin population to a level which is consistently above 136 pairs, whilst avoiding deterioration from its current level as indicated by the latest mean peak count or equivalent.	See the notes for this attribute above in Table 1	<p><b>Please note that requests for sensitive information, such as merlin locations, will be declined.</b></p> <p>DURHAM UPLAND BIRD STUDY GROUP. 2018. Upland SSSIs in County Durham – Assessment of Current Status of Bird Assemblages. Report to Natural England. Unpublished report. (Available from Natural England on request).</p> <p>NATURAL ENGLAND FIELD UNIT. 2017. Bird assemblage monitoring – Appleby Fells and Moorhouse and Cross Fell SSSI.</p> <p>HOLT, C., MASON, N &amp; KIRBY, J. 2018. Data review for North Pennine Moors SPA and constituent SSSIs. Report to Natural England. Unpublished report. (Available from Natural England on request).</p> <p>SHEPHERD, K. 2007. North Pennine Moors</p>

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
				SPA: Breeding Bird Survey 2005-2007. Report to Natural England. Unpublished report. (Available from Natural England on request).
<b>Supporting habitat (within the SPA): extent and distribution</b>	<b>Extent and distribution of supporting breeding habitat</b>	<p>Maintain the extent, distribution and availability of suitable breeding habitat which supports breeding Merlin for all necessary stages of its breeding cycle (courtship, nesting, feeding):</p> <ul style="list-style-type: none"> <li>• Maintain 61,094.00ha of blanket bog</li> <li>• Maintain 618.09ha of wet heath</li> <li>• Maintain 46,502.82ha of dry heath</li> </ul>	<p>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.</p> <p>The extent of acid and neutral grasslands used as feeding and roosting grounds is not known, both within and without the site.</p>	<p>Habitat information for the Northumberland and Durham part of the SPA:</p> <p>ENGLISH NATURE. 2002. N2K NVC Survey. Unpublished data. (Available from Natural England on request.)</p> <p>Habitat information for the Cumbria part of the SPA:</p> <p>ENGLISH NATURE. 1999. 1999 NVC Survey of Appleby Fells and Moorhouse and Cross Fell. Unpublished data. (Available from Natural England on request.)</p> <p>RSPB. 1999. Upland Vegetation Condition Assessment, Unpublished data, (Available from Natural England on request.)</p> <p>RSPB. 1995. NVC Survey. Unpublished data, (Available from</p>



Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
				<p>Natural England on request.)</p> <p>Habitat information for the North Yorkshire part of the SPA:</p> <p>ENGLISH NATURE. 2004. North Pennines Survey. Unpublished data. (Available from Natural England on request.)</p>
<b>Supporting habitat (within the SPA): structure</b>	<b>Vegetation characteristics</b>	Restore a high proportion of medium to tall (>50 cm) ground vegetation within nesting habitat within the SPA.	<p>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. For this species, large, uninterrupted blocks of medium to tall vegetation (e.g. late mature heather) are important for nesting habitat.</p> <p>Activities that may directly or indirectly affect the vegetation of supporting habitats and modify these characteristics may adversely affect the feature.</p> <p>The North Pennines Group SIP includes a range of measures to restore optimum vegetation structure.</p>	<p>NATURAL ENGLAND. 2014. Site Improvement Plan: North Pennines Group. Available from: <a href="http://publications.naturalengland.org.uk/publication/6534899699810304?category=6280398447312896">http://publications.naturalengland.org.uk/publication/6534899699810304?category=6280398447312896</a></p>
<b>Supporting habitat (both within and outside the SPA): disturbance</b>	<b>Minimising disturbance caused by human activity</b>	Reduce the frequency, duration and/or intensity of disturbance affecting nesting, roosting, foraging, feeding, moulting and/or loafing birds so that the breeding Merlin population is not significantly disturbed	<p>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.</p> <p>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</p>	<p>NATURAL ENGLAND. 2014. Site Improvement Plan: North Pennines Group. Available from: <a href="http://publications.naturalengland.org.uk/publication/6534899699810304?category=6280398447312896">http://publications.naturalengland.org.uk/publication/6534899699810304?category=6280398447312896</a></p>

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
			<p>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.</p> <p>The North Pennines Group SIP includes recommendations to reduce disturbance from vehicles (during the breeding season).</p>	
<b>Supporting habitat (both within and outside the SPA): structure</b>	<b>Landscape</b>	Maintain a high proportion of open and unobstructed terrain within and around nesting and feeding areas used by breeding Merlin.	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.	
<b>Supporting habitat (both within and outside the SPA): function/ supporting process</b>	<b>Food availability within supporting habitat</b>	Maintain the overall availability of small birds and day flying moths within supporting habitat used by Merlin during its breeding season.	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.	
<b>Version Control</b>				
Advice last updated: n/a				
<b>Variations from national feature-framework of integrity-guidance:</b>				
"Water quality/quantity" has been deleted as is unlikely to be relevant for this feature.				

**Table 3: Supplementary Advice for Qualifying Features A103. *Falco peregrinus*; Peregrine falcon (Breeding)**

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
<b>Supporting habitat (both within and outside the SPA): function/supporting process</b>	<b>Conservation measures</b>	Restore management or other measures necessary to restore the structure, function and/or the supporting processes associated with breeding Peregrine and its supporting habitats.	<p>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.</p> <p>Work is ongoing to address a range management issues (where they exist). The North Pennines Group Site Improvement Plan (SIP) includes a range of measures to restore the structure and function of supporting habitats such as restoring peat forming conditions, reducing grazing pressure where it is causing damage and the cessation of rotational burning on blanket bog.</p>	NATURAL ENGLAND. 2014. Site Improvement Plan: North Pennines Group. Available from: <a href="http://publications.naturalengland.org.uk/publication/6534899699810304?category=6280398447312896">http://publications.naturalengland.org.uk/publication/6534899699810304?category=6280398447312896</a>
<b>Supporting habitat (within the SPA): predation</b>	<b>Predation</b>	Restrict the predation of and disturbance to breeding Peregrines 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.	
<b>Breeding population</b>	<b>Population abundance within the SPA</b>	Restore the size of the breeding Peregrine population to a level which is consistently above 15 pairs, whilst avoiding deterioration from its current level as indicated by the latest mean peak count or equivalent.	<p>See the notes for this attribute above in Table 1.</p> <p>The North Pennines Group SIP includes measures to work with police and partners to investigate and address causes of low breeding success.</p>	<p><b>Please note that requests for sensitive information, such as peregrine falcon locations, will be declined.</b></p> <p>DURHAM UPLAND BIRD STUDY GROUP. 2018.</p>

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
				<p>Upland SSSIs in County Durham – Assessment of Current Status of Bird Assemblages. Report to Natural England. Unpublished report. (Available from Natural England on request).</p> <p>HOLT, C., MASON, N &amp; KIRBY, J. 2018. Data review for North Pennine Moors SPA and constituent SSSIs. Report to Natural England. Unpublished report. (Available from Natural England on request).</p> <p>NATURAL ENGLAND FIELD UNIT. 2017. Bird assemblage monitoring – Appleby Fells and Moorhouse and Cross Fell SSSI.</p> <p>SHEPHERD, K. 2007. North Pennine Moors SPA: Breeding Bird Survey 2005-2007.</p>

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
				Report to Natural England. Unpublished report. (Available from Natural England on request).
<b>Supporting habitat (within the SPA): extent and distribution</b>	<b>Extent and distribution of supporting breeding habitat</b>	<p>Maintain the extent, distribution and availability of suitable breeding habitat which supports Peregrine for all necessary stages of its breeding cycle (courtship, nesting, feeding):</p> <ul style="list-style-type: none"> <li>• Extent of cliffs and crags with low disturbance,</li> <li>• Maintain 61,094.00ha of blanket bog</li> <li>• Maintain 618.09ha of wet heath</li> <li>• Maintain 46,502.82ha of dry heath</li> </ul>	<p>Cliffs and crags are the most important supporting habitat as they are used for nesting. Surrounding habitats are used more for feeding.</p> <p>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.</p> <p>The extent of acid and neutral grasslands used as feeding and roosting grounds is not known, both within and without the site.</p>	<p>Habitat information for the Northumberland and Durham part of the SPA:</p> <p>ENGLISH NATURE. 2002. N2K NVC Survey. Unpublished data. (Available from Natural England on request.)</p> <p>Habitat information for the Cumbria part of the SPA:</p> <p>ENGLISH NATURE. 1999. 1999 NVC Survey of Appleby Fells. Unpublished data. (Available from Natural England on request.)</p> <p>RSPB. 1999. Upland Vegetation Condition Assessment, Unpublished data, (Available from Natural England on request.)</p>

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
				<p>RSPB. 1995. NVC Survey. Unpublished data, (Available from Natural England on request.)</p> <p>Habitat information for the North Yorkshire part of the SPA:</p> <p>ENGLISH NATURE. 2004. North Pennines Survey. Unpublished data. (Available from Natural England on request.)</p>
<b>Supporting habitat (within the SPA): disturbance</b>	<b>Minimising disturbance caused by human activity</b>	Reduce the frequency, duration and/or intensity of disturbance affecting nesting, roosting, foraging, feeding, moulting and/or loafing birds that the breeding Peregrine population is not significantly disturbed	<p>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.</p> <p>The North Pennines Group SIP includes recommendations to reduce disturbance (during the breeding season). Recreational activities such as rock climbing can cause particular disturbance to peregrines.</p>	<p>NATURAL ENGLAND. 2014. Site Improvement Plan: North Pennines Group. Available from: <a href="http://publications.naturalengland.org.uk/publication/6534899699810304?category=6280398447312896">http://publications.naturalengland.org.uk/publication/6534899699810304?category=6280398447312896</a></p>
<b>Supporting habitat (both within</b>	<b>Landscape</b>	Maintain the amount of open and unobstructed terrain within close proximity to inaccessible cliffs,	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,	

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
<b>and outside the SPA): structure</b>		crags or tall structures	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.	
<b>Supporting habitat (both within and outside the SPA): function/ supporting process</b>	<b>Food availability within supporting habitat</b>	Restore overall availability of small and medium sized birds within feeding habitat used by breeding Peregrines.	<p>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.</p> <p>The peregrine feeds primarily on birds, which it catches in flight. Feral pigeons are favourite prey wherever they are freely available, though a wide range of birds are taken, ranging in size from goldcrest to woodpigeon. This generalist diet allows peregrines to exist wherever there are good mixed bird populations. They sometimes take small mammals, and there are records of occasional amphibians, lizards and large insects being taken.</p>	
<b>Supporting habitat (within the SPA): function/ supporting process</b>	<b>Air quality</b>	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 ( <a href="http://www.apis.ac.uk">www.apis.ac.uk</a> ).	See notes for this attribute above in Table 1.	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 ( <a href="http://www.apis.ac.uk">www.apis.ac.uk</a> ).
<b>Version Control</b> Advice last updated: n/a				
<b>Variations from national feature-framework of integrity-guidance:</b> "Water quality/quantity" has been deleted as is unlikely to be relevant for this feature.				

**Table 4: Supplementary Advice for Qualifying Features: A140. *Pluvialis apricaria*; European golden plover (Breeding)**

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
<b>Supporting habitat (both within and outside the SPA): function/ supporting process</b>	<b>Conservation measures</b>	Restore management or other measures necessary to restore the structure, function and/or the supporting processes associated with breeding Golden Plover and its supporting habitats.	<p>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.</p> <p>Work is ongoing to address a range management issues (where they exist). The North Pennines Group Site Improvement Plan (SIP) includes a range of measures to restore the structure and function of supporting habitats such as restoring peat forming conditions, reducing grazing pressure where it is causing damage and the cessation of rotational burning on blanket bog.</p>	NATURAL ENGLAND. 2014. Site Improvement Plan: North Pennines Group. Available from: <a href="http://publications.naturalengland.org.uk/publication/6534899699810304?category=6280398447312896">http://publications.naturalengland.org.uk/publication/6534899699810304?category=6280398447312896</a>
<b>Supporting habitat (within the SPA): predation</b>	<b>Predation</b>	Restrict the predation of and disturbance to breeding Golden Plover caused by native and non-native predators.	<p>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.</p> <p>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, habitat improvement (e.g. re-wetting) 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.</p>	
<b>Supporting habitat (within the SPA): function/ supporting</b>	<b>Air quality</b>	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	See the notes for this attribute above.	More information about site-relevant Critical Loads and Levels for this SPA is available by using the 'search by site' tool on the Air



Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
<b>process</b>		Pollution Information System ( <a href="http://www.apis.ac.uk">www.apis.ac.uk</a> ).		Pollution Information System ( <a href="http://www.apis.ac.uk">www.apis.ac.uk</a> ).
<b>Breeding population</b>	<b>Population abundance within the SPA</b>	Maintain the size of the breeding Golden Plover population at a level which is consistently above 4,171 pairs, whilst avoiding deterioration from its current level as indicated by the latest mean peak count or equivalent.	See the notes for this attribute above. This figure from the 2005-2007 represents a snapshot of the population within a very limited timeframe. Golden plovers have been monitored very poorly in the past, particularly up until the mid-1990s, so there is little information about long term trends. Further monitoring and research may help to determine a sustainable population target.	DURHAM UPLAND BIRD STUDY GROUP. 2018. Upland SSSIs in County Durham – Assessment of Current Status of Bird Assemblages. Report to Natural England. Unpublished report. (Available from Natural England on request).  HOLT, C., MASON, N & KIRBY, J. 2018. Data review for North Pennine Moors SPA and constituent SSSIs. Report to Natural England. Unpublished report. (Available from Natural England on request).  SHEPHERD, K. 2007. North Pennine Moors SPA: Breeding Bird Survey 2005-2007. Report to Natural England. Unpublished report. (Available from Natural England on request).
<b>Supporting habitat (within the SPA): extent</b>	<b>Extent and distribution of supporting breeding</b>	Maintain the extent, distribution and availability of suitable breeding habitat which supports breeding Golden Plover for all	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	Habitat information for the Northumberland and Durham part of the SPA:

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
<b>and distribution</b>	<b>habitat</b>	<p>necessary stages of its breeding cycle (courtship, nesting, feeding):</p> <ul style="list-style-type: none"> <li>• Maintain 61,094.00ha of blanket bog</li> <li>• Maintain 618.09ha of wet heath</li> <li>• Maintain 46,502.82ha of dry heath</li> <li>• Maintain 369.00ha of montane heath</li> </ul>	<p>to the nature, age and accuracy of data collection.</p> <p>The extent of acid and neutral grasslands used as feeding and roosting grounds is not known, both within and without the site.</p>	<p>ENGLISH NATURE. 2002. N2K NVC Survey. Unpublished data. (Available from Natural England on request.) Habitat information for the Cumbria part of the SPA:</p> <p>ENGLISH NATURE. 1999. 1999 NVC Survey of Appleby Fells and Moorhouse and Cross Fell. Unpublished data. (Available from Natural England on request.)</p> <p>RSPB. 1999. Upland Vegetation Condition Assessment, Unpublished data, (Available from Natural England on request.)</p> <p>RSPB. 1995. NVC Survey. Unpublished data, (Available from Natural England on request.)</p> <p>Habitat information for the North Yorkshire part of the SPA:</p> <p>ENGLISH NATURE. 2004. North Pennines Survey. Unpublished data. (Available from</p>

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
				Natural England on request)
<b>Supporting habitat (both within and outside the SPA): function/supporting process</b>	<b>Hydrology</b>	Restore the area of damp or waterlogged habitat used for feeding by breeding Golden Plover	<p>Changes in source, depth, duration, frequency, magnitude and timing of water supply or flow can have important implications for this feature. Such changes may affect the quality and suitability of habitats used by birds for nesting, drinking, preening, rearing, feeding or roosting. Unless these have already been undertaken, further site-specific investigations may be required to fully inform conservation measures for this feature and/or the likelihood of impacts on this attribute.</p> <p>The North Pennines Group SIP includes measures to continue with grip blocking and peatland restoration.</p>	Information on whether grip blocking or peatland restoration has been funded by agri-environment within a particular section of the SPA is available from Natural England on request.
<b>Supporting habitat (within the SPA): structure</b>	<b>Vegetation characteristics</b>	Restore a mosaic [1:3] ratio of short (<5 cm) to taller (10-15 cm) vegetation within nesting areas.	<p>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.</p> <p>Activities that may directly or indirectly affect the vegetation of supporting habitats and modify these characteristics may adversely affect the feature.</p> <p>The North Pennines Group SIP includes measures to restore optimum vegetation structure.</p>	
<b>Supporting habitat (within the SPA): minimising disturbance</b>	<b>Minimising disturbance caused by human activity</b>	Reduce the frequency, duration and/or intensity of disturbance affecting nesting, roosting, foraging, feeding, moulting and/or loafing birds so that the breeding Golden Plover population is not significantly disturbed	<p>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, and the presence of people, animals and structures.</p> <p>Golden Plover are known to be sensitive to human disturbance at</p>	YALDEN, P.E & YALDEN, D.W. 1990. Recreational Disturbances of Breeding Golden Plovers. <i>Biological Conservation</i> Vol 51 Issue 4.

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
			distances of about 200m. The North Pennines Group SIP includes recommendations to reduce disturbance from vehicles and recreational activity (during the breeding season).	
<b>Supporting habitat (both within and outside the SPA): structure</b>	<b>Landscape</b>	Maintain the amount of suitable damp grassland feeding habitat within 4 km of moorland nesting areas.	<p>This feature is known to favour large areas of open terrain, largely free of obstructions, in and around its nesting, roosting and feeding areas.</p> <p>Marginal or low-intensity grassland and marshy areas rich in invertebrate food, adjacent to or nearby moorland nesting habitat, are important feeding grounds in the summer.</p> <p>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.</p>	
<b>Supporting habitat (both within and outside the SPA): structure</b>	<b>Landscape</b>	Maintain open and unobstructed terrain within and around nesting, roosting and feeding sites used by breeding Golden Plover.	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.	
<b>Supporting habitat (both within and outside the SPA): function /supporting process</b>	<b>Food availability within supporting habitat</b>	Maintain the availability of key prey items (e.g. earthworm, leatherjackets, beetles, crane-fly larvae) at prey sizes preferred by Golden Plover.	<p>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. For example, use of insecticides within feeding habitat can be detrimental to the abundance of prey.</p> <p>The diet of Golden Plover consists of invertebrates (mainly beetles, crane-fly larvae and earthworms), and so marginal or low-intensity grassland and marshy areas rich in invertebrate food, adjacent to or nearby moorland nesting habitat, are important feeding grounds in the summer.</p>	
<b>Version Control</b>				
Advice last updated: n/a				

Attributes	Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
<p><b>Variations from national feature-framework of integrity-guidance:</b>            Water quality/quantity” has been deleted as is unlikely to be relevant for this feature.</p>			

