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

Strensall Common Special Area of Conservation (SAC)
Site Code: UK0030284

Photo credit: Natural England

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About this document

This document provides Natural England's supplementary advice about the European Site Conservation Objectives relating to Strensall Common SAC. This advice should therefore be read together with the SAC Conservation Objectives available here.

This advice replaces a draft version dated 25 January 2019 following the receipt of comments from the site's stakeholders.

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	Strensall Common Special Area of Conservation (SAC)
Location	York, North Yorkshire
Site Map	The designated boundary of this site can be viewed here on the MAGIC website
Designation Date	01 April 2005
Qualifying Features	See section below
Designation Area	569.63 ha
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)	Strensall Common SSSI
Relationship with other European or International Site designations	None

Site background and geography

Situated approximately six miles north of York in the Vale of York National Character Area (NCA Profile 28), Strensall Common, is one of only two extensive areas of open heathlands remaining in the Vale of York, the other being Skipwith Common SAC to the south of York.

In addition to its botanical importance, the site supports a significant breeding bird community with woodlark, stonechat, curlew being regular breeding species and nightjar also being recorded as present. The site supports good reptile populations (common lizard, and adder) and is renowned for its invertebrate interest. It is the only known site in England for the dark bordered beauty moth *Epione vespertaria,* a day flying moth, associated with creeping willow *Salix repens* found within the wet heath.

The Common is situated in the centre of a largely flat area of land bounded to the east by the York moraine and in the west by the slightly lower flood plain of the River Foss. It lies between 20 – 25m OD. The geology of the site is represented by surface deposits of aeolian sands of post glacial age which overlie a complex succession of sands and clays to a depth of 16-19 cm. At the base of the geological succession is a bed of boulder clay deposited by an ice sheet which advanced southwards down the Vale of York. The soils are podsolic in nature with two types of soil horizon associated with the dry and wet heath. In the lower lying wet heath areas there is an average 1-2.5 cm depth of peaty material below which there is an unstratified layer of brown earth. In the higher areas of dry heath the soils show a podsol formation with a 1-2.5 cm layer of peaty material, a 7–10 cm leached sandy layer and a 2.5-55cm hard pan layer, below which is leached sands.

From a cultural perspective it is likely that historically the site would have been the common land of Strensall Village with associated rights of grazing, peat cutting and fuel gathering. However in 1884 the Strensall Common Act converted the whole site into a place for military training and all common rights were extinguished. The site is still used as a military training ground and much of the site is now referred to as referred to as Strensall Military Training Area. Some areas are however open to the public at all times and the whole site is open to public for "*exercise and recreation*" when not being used for military purposes.

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:

The site is divided into two large shallow depressions by a narrow strip where freely-draining sandy ridges cross from north-west to south-east. There are dry sandy ridges elsewhere. The common has four large, shallow ponds and many smaller ponds. As a result of this topography the site supports is a complex mosaic of wet heaths and dry heath vegetation communities.

- **H4030 European dry heaths**

European dry heaths typically occur on freely-draining, acidic to circumneutral soils with a generally low nutrient content. Ericaceous dwarf-shrubs dominate the vegetation. On Strensall this type of vegetation is characterised by the H9a *Calluna vulgaris* (heather) *-Deschampsia flexuosa* (wavy hair grass) *Hypnum cupressiforme* (Hypnum moss) sub community with the H9e *Calluna vulgaris* (heather) - *Deschampsia flexuosa* (wavy hair grass) *Molinia caerulea* (purple moor-grass) sub-community where ground conditions are slightly wetter. U4e dry acidic grassland is also present in small patches and in a larger stand in the west of the common. These grassland communities form a mosaic with more typical heathland vegetation communities.

Petty whin *Genista angelica* is found within the H9 *Calluna vulgaris – Deschampsia flexuosa* community albeit a low frequencies and there are historic records of bird's-foot *Ornithopus perpusillus (*the most recent records being from the 1990s).

- **H4010 Northern Atlantic wet heaths with *Erica tetralix***

Wet heath usually occurs on acidic, nutrient-poor substrates, such as shallow peats or sandy soils with impeded drainage. The vegetation is typically dominated by mixtures of cross-leaved heath *Erica tetralix*, heather *Calluna vulgaris*, grasses, sedges and *Sphagnum* bog-mosses. At Strensall Common wet heath is well represented by extensive areas of M16 *Erica tetralix – Sphagnum compactum* wet heath. Although not normally considered a component community of the Northern Atlantic wet heaths with *Erica tetralix*; Wet heathland with cross-leaved heath Annex 1 feature, the M25a (*Molinia caerulea-Potentilla erecta* mire, *Erica tetralix* sub-community vegetation community forms an intimate mosaic with the M16a. In some areas it has a high frequency of dwarf shrub species and shows close affinities to true wet heath.

The wet heath is noted for a number of locally uncommon plants including marsh gentian *Gentiana pneumonanthe,* and Cranberry *Vaccinium oxycoccus.* There are also historical records for bog rosemary *Andromeda polifolia*

Qualifying Species:

None

Table 1: Supplementary Advice for Qualifying Features: H4010. Northern Atlantic wet heaths with Erica tetralix; Wet heathland with cross-leaved heath

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
Extent and distribution of the feature	**Extent of the feature within the site**	Maintain the total extent of the feature. M16 *Erica tetralix – Sphagnum compactum* wet heath **96.5 ha** (M25a *Molinia caerulea-Potentilla erecta* mire, *Erica tetralix* sub-community.) **85.64 ha**	There should be no measurable reduction (excluding any trivial loss) in the extent and area of this feature, and in some cases, the full extent of the feature may need to be restored. The baseline-value of extent given has been generated using data gathered from the listed site-based surveys. Area measurements given may be approximate depending on the methods, age and accuracy of data collection, and as a result this value may be updated in future to reflect more accurate information. The extent of an Annex I habitat feature covers the sum extent of all of the component vegetation communities present and may include transitions and mosaics with other closely-associated habitat features. Where a feature is susceptible to natural dynamic processes, there may be acceptable variations in its extent through natural fluctuations. Where a reduction in the extent of a feature is considered necessary to meet the Conservation Objective for another Annex I feature, Natural England will advise on this on a case-by-case basis. Although not normally considered a component community of the Northern Atlantic wet heaths with *Erica tetralix*; Wet heathland with cross-leaved heath Annex 1 feature, the M25a vegetation community forms an intimate mosaic with the M16a *Erica tetralix-Sphagnum compactum* wet heath, typical sub-community on the Common. In some areas it has a high frequency of dwarf shrub species and shows close affinities with the M16a NVC community, although it is often found in slightly wetter areas (Wilson 2009). It is likely that the relative abundance of these two communities will fluctuate and the abundance of this community should be considered when considering extent of wet heath communities. The 2009 NVC survey is used for extent estimates.	Weston, A. & Littler, J. (1993) National Vegetation Survey of Skipwith Common SSSI/Strensall Common SSSI, and Worlds End White Carr. English Nature Commissioned report. Wilson, P. (2009) Strensall Common National Vegetation Classification Survey. (September 2009). Wold Ecology commissioned report to Natural England
Extent and distribution of the feature	**Spatial distribution of the feature**	Maintain the distribution and configuration of the feature, including where applicable its	A contraction in the range, or geographic spread, of the feature (and its component vegetation and typical species, plus transitional communities) across the site will reduce its overall	Maclean, C.R. (1983) Strensall Common Habitat Map 1983 in Strensall Common SSSI archive

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
	within the site	component vegetation types, across the site	area, the local diversity and variations in its structure and composition, and may undermine its resilience to adapt to future environmental changes. This may also reduce and break up the continuity of a habitat within a site and how well its typical species are able to move around the site to occupy and use habitat. Such fragmentation can impact on their viability and the wider ecological composition of the Annex I habitat. Smaller fragments of habitat can typically support smaller and more isolated populations which are more vulnerable to extinction. These fragments also 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 some of the typical and more specialist species associated with the Annex I habitat feature. Distribution of the Northern Atlantic wet heaths with *Erica tetralix*; (Wet heathland with cross-leaved heath) corresponds to the distribution of the M16 *Erica tetralix – Sphagnum compactum* wet heath and to some extent the M25a *Molinia caerulea-Potentilla erecta* mire, *Erica tetralix* NVC sub-community. Maps indicating distribution of this community across the site can be found in Maclean (1983), Weston and Littler (1993) and Wilson (2009), the latter being the most accurate assessment of community distribution.	legal file (SE66 RY2 L). Available form Natural England on request Weston, A. & Littler, J. (1993) National Vegetation Survey of Skipwith Common SSSI/Strensall Common SSSI, and Worlds End White Carr. English Nature Commissioned report. Wilson, P. (2009) Strensall Common National Vegetation Classification Survey. (September 2009). Wold Ecology commissioned report to Natural England
Structure and function (including its typical species)	**Vegetation community transitions**	Maintain any areas of transition between this and communities which form other heathland-associated habitats, such as dry and humid heaths, mires, acid grasslands, scrub and woodland.	Transitions/zonations between adjacent but different vegetation communities are usually related to naturally-occurring changes in soil, aspect or slope. Such 'ecotones' retain characteristics of each bordering community and can add value in often containing species not found in the adjacent communities. Retaining such transitions can provide further diversity to the habitat feature, and support additional flora and fauna. This is an important attribute as many characteristic heathland species utilise the transitions between vegetation types or use different vegetation types during different stages of their life cycle.	Maclean, C.R. (1983) Strensall Common Habitat Map 1983 in Strensall Common SSSI archive legal file (SE66 RY2 L). Available form Natural England on request Weston, A. & Littler, J. (1993) National Vegetation Survey of Skipwith Common SSSI/Strensall Common SSSI, and Worlds End White Carr. English Nature

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
			Strensall Common is a mosaic of wet and dry heathland vegetation communities, with areas of acid grassland and mire communities and woodland. Distribution of various habitats can be ascertained from Maclean (1993), Weston & Littler (1993) and Wilson (2009), the latter being the most accurate assessment of habitat distribution. Although scrub and woodland are important features of the Common these should not expand at the expense of open heathland, mire and grassland communities. The 1993 survey suggested that woodland and scrub covered c.150ha of the SSSI. The 2009 NVC survey recorded c.130 ha of woodland and scrub. The 2009 survey was undertaken shortly after extensive scrub clearance undertaken under the auspices of the "Restoring the Heaths of the Vale of York" HLF project and should be regarded as the maximum area of the site to be covered by scrub and woodland,	Commissioned report. 2009: Wilson, P. Strensall Common National Vegetation Classification Survey. (September 2009). Wold Ecology commissioned report to Natural England
Structure and function (including its typical species)	**Vegetation community composition**	Ensure the component vegetation communities of the feature are referable to and characterised by the following National Vegetation Classification types: M16a *Erica tetralix-Sphagnum compactum* wet heath, typical sub-community as mosaics with grassland types (M25a *Molinia caerulea-Potentilla erecta* mire, *Erica tetralix* sub-community.)	This habitat feature will comprise a number of associated semi-natural vegetation types and their transitional zones, reflecting the geographical location of the site, altitude, aspect, soil conditions (especially base-status and drainage) and vegetation management. In the UK these have been categorised by the National Vegetation Classification (NVC). Maintaining or restoring these characteristic and distinctive vegetation types, and the range of types as appropriate, will be important to sustaining the overall habitat feature. This will also help to conserve their typical plant species (i.e. the constant and preferential species of a community), and therefore that of the SAC feature, at appropriate levels (recognising natural fluctuations). Although not normally considered a component community of the Northern Atlantic wet heaths with Erica tetralix; Wet heathland with cross-leaved heath Annex 1 feature, this community forms an intimate mosaic with the M16a *Erica tetralix-Sphagnum compactum* wet heath, typical sub-	Weston, A. & Littler, J. (1993) National Vegetation Survey of Skipwith Common SSSI/Strensall Common SSSI, and Worlds End White Carr. English Nature Commissioned report. Wilson, P. (2009) Strensall Common National Vegetation Classification Survey. (September 2009). Wold Ecology commissioned report to Natural England

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
			community on the Common. In some areas it has a high frequency of dwarf shrub species and shows close affinities with the M16a NVC community, although it is often found in slightly wetter areas (Wilson 2009). It is likely that the relative abundance of these two communities will fluctuate and the abundance of this community should be considered when considering composition of wet heath communities.	
Structure and function (including its typical species)	**Vegetation structure: cover of dwarf shrubs**	Maintain an overall cover of dwarf shrub species which is typically between 25-90%	Variations in the structure of the heathland vegetation (vegetation height, amount of canopy closure, and patch structure) is needed to maintain high niche diversity and hence high species richness of characteristic heathland plants and animals. Many species also utilise the transitions between vegetation types or use different vegetation types during different stages of their life cycle. The structural character of the heathland feature is strongly influenced by the growing habits of its dominant species which in most cases will be ericoids (i.e. plants that look like heathers, including members of the *Ericaceae* and *Empetraceae* families). The ericaceous species heather or ling *Calluna vulgaris*, bell heather *Erica cinerea*, cross-leaved heath *Erica tetralix*, are the commonest and most characteristic dwarf-shrubs with *Erica tetralix* and *Calluna* being the most abundant. 2011 Integrated Site Assessments (ISA) assessment recorded cover of dwarf shrub heaths within thresholds.	This attribute will be periodically monitored as part of Natural England's SSSI Condition Assessments 2011 Integrated Site Assessment (ISA) Natural England (Available from Natural England on request)
Structure and function (including its typical species)	**Vegetation structure: heather age structure**	Restore a diverse age structure amongst the ericaceous shrubs typically found on the site	Each phase of growth associated with the characteristic heathers which dominate this feature also represents different microclimatic conditions and microhabitats which may provide shelter or food to other organisms. Therefore, it is important to maintain a mosaic of heather in different phases of growth. Typically this age structure will consist of between 10-40% cover of (pseudo) pioneer heathers; 20-80% cover of building/mature heathers; <30% cover of degenerate heathers and less than <10% cover of dead heathers. The 2011 Integrated Site Assessments (ISAs) undertaken by Natural England identified that units 4, 5 8 had low densities of mature heather and therefore were not meeting age structure requirements, although it should be recognised that this largely	This attribute will be periodically monitored as part of Natural England's SSSI Condition Assessments 2011 Integrated Site Assessment (ISA) Natural England (Available from Natural England on request)

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
			related to dry heath communities. Location of SSSI units can be found here	
Structure and function (including its typical species)	**Vegetation structure: cover of gorse**	Cover of common gorse is low typically at <10%	Gorse as a component of heathland is a very valuable wildlife habitat, and often a marker of relict heath and common. Both dense and spiny, it provides good, protected cover for many wildlife species: birds, mammals and reptiles; breeding habitat for rare or declining bird species, and excellent winter roosting. The flowers, borne at a time of year when other sources of pollen or nectar are in short supply, are particularly good for insects and other invertebrate pollinators. However gorse may cause problems if unchecked by dominating an area, eliminating other typical heathland species. Mature stands en masse may also be serious fire hazards. Gorse may need to be managed on rotation to ensure that it does not expand at the expense of the wet heath communities. Any gorse clearance need to be carefully planned to ensure that areas of gorse valuable for associated bird and invertebrate communities are retained.	
Structure and function (including its typical species)	**Vegetation structure: tree cover**	Maintain the open character of the feature, with a typically scattered and low cover of trees and scrub (<20% cover)	Scrub (mainly trees or tree saplings above 1 m in height) and isolated trees are usually very important in providing warmth, shelter, cover, food plants, perches, territorial markers and sources of prey for typical heathland invertebrates and vertebrates. But overall cover of scrub and trees across this habitat feature should be maintained or restored to a fairly sparse level, with a structurally complex edge and with characteristic heathland vegetation as ground cover. If scrub is locally important for any associated species with their own specific conservation objectives, then a higher level of cover will be acceptable. The area of scrub/tree cover should be stable or not increasing as a whole. Although scrub and woodland are important features of the Common these should not expand at the expense of open heathland, mire and grassland communities. The 1993 survey suggested that woodland and scrub covered c.150ha of the SSSI. The 2009 NVC survey reported c.130 ha. The 2009 survey was undertaken shortly after extensive scrub	

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
			clearance undertaken under the auspices of the "Restoring the Heaths of the Vale of York" HLF project and should be regarded as the maximum area of the site to be covered by scrub and woodland, Regular site assessments are required to ensure scrub encroachment does not occur at the expense of wet heath communities. Grazing alone is unlikely to keep scrub in check and periodic scrub clearance is likely to be required to retain open heath. Historically this is likely to have occurred as a result of firewood collection by commoners and villagers and to a certain extent military use in the twentieth century, however in the absence of these past uses proactive conservation management is likely to be required	
Structure and function (including its typical species)	**Vegetation composition: bracken cover**	Maintain a cover of dense bracken which is low, typically at <5%	The spread of bracken *Pteridium aquilinum* is a problem on many lowland heathlands. The unpalatable nature and density of bracken as a tall-herb fern, and its decomposing litter, can smother and shade out smaller and more characteristic heathland vegetation. Usually active management of bracken is required to reduce or contain its cover across this habitat feature. But this fern has also some nature conservation value, for example on sites where fritillary butterflies occur and utilise bracken litter habitat. Bracken stands (NVC U20 *Pteridium aquilinum-Galium saxatile* Bracken-heath bedstraw) community, species-poor sub-community were mapped by Wilson in 2009 which reported c.17ha of bracken dominated vegetation. This figure is however likely to be a slight under estimate as this survey did not assign NVC communities to small areas of the site, some of which are known to support bracken. There should be no expansion from these existing areas of bracken. Areas of Bracken can be identified from aerial photographs.	Weston, A. & Littler, J. (1993) National Vegetation Survey of Skipwith Common SSSI/Strensall Common SSSI, and Worlds End White Carr. English Nature Commissioned report. Wilson, P. (2009) Strensall Common National Vegetation Classification Survey. (September 2009). Wold Ecology commissioned report to Natural England

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
Structure and function (including its typical species)	**Key structural, influential and/or distinctive species**	Maintain the abundance of the typical species listed below to enable each of them to be a viable component of the Annex 1 habitat: • Constant and preferential plant species of the M16a *Erica tetralix-Sphagnum compactum* wet heath and M25a *Molinia caerulea-Potentilla erecta mire, Erica tetralix* sub-community NVC vegetation types at this SAC • Plant species of particular note include marsh gentian *Gentiana pneumonanthe* and pillwort *Pilularia globulifera* • Dark bordered beauty moth *Epione vesperaria* • Pond mud snail *Omphiscola glabra)*	Some plant or animal species (or related groups of such species) make a particularly important contribution to the necessary structure, function and/or quality of an Annex I habitat feature at a particular site. These species will include; • **Structural** species which form a key part of the Annex I habitat's structure or help to define that habitat on a particular SAC (see also the attribute for 'vegetation community composition'). • **Influential** species which are likely to have a key role affecting the structure and function of the habitat (such as bioturbators (mixers of soil/sediment), grazers, surface borers, predators or other species with a significant functional role linked to the habitat) • **Site-distinctive** species which are considered to be a particularly special and distinguishing component of an Annex I habitat on a particular SAC. There may be natural fluctuations in the frequency and cover of each of these species. The relative contribution made by them to the overall ecological integrity of a site may vary, and Natural England will provide bespoke advice on this as necessary. The list of species given here for this Annex I habitat feature at this SAC is not necessarily exhaustive. The list may evolve, and species may be added or deleted, as new information about this site becomes available. Marsh gentian is scattered throughout the site in well-grazed, open, wet M16a heathland. Although not strictly a wet heath species being more closely associated with ephemeral ponds within the heathland vegetation, pillwort (*Pilularia globulifera*) is a key species Detailed information on its distribution is provided in Wright (2017). Translocations within the site were also been undertaken in 2017/18.	Weston, A. & Littler, J. (1993) National Vegetation Survey of Skipwith Common SSSI/Strensall Common SSSI, and Worlds End White Carr. English Nature Commissioned report. Wilson, P. (2009) Strensall Common National Vegetation Classification Survey. (September 2009). Wold Ecology commissioned report to Natural England Natural England (2011) Integrated Site Assessment (ISA) Natural England (Available from Natural England on request) Natural England (2008) Natural England files) Historic review of Bog Rosemary (*Andromeda polifolia*) and Pillwort (*Pilularia globulifera*) on Strensall Common SSSI Wright. B. (2017) Pillwort Survey Unpublished report prepared for: Strensall Training Area Conservation Group)

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
			Strensall Common is the only English site for dark bordered beauty moth *Epione vesperaria*. The food plant of this species is creeping willow *Salix repens* which is associated with the wet heath vegetation. Like pillwort, although not strictly a wet heath species, the pond mud snail, and is also found in the temporary pools/ponds and ditches within the wet heath. It is a rare a declining wetland mollusc, classified as vulnerable by IUCN. Narrow leaved buckler fern *Dryopteris carthusiana* is referred to on both SAC and SSSI citations however this is most likely to be associated with areas of damp woodland on the site and not within the heathland communities.	
Structure and function (including its typical species)	**Vegetation: undesirable species**	Maintain the frequency/cover of the following undesirable species to within acceptable levels and prevent changes in surface condition, soils, nutrient levels or hydrology which may encourage their spread.	Undesirable non-woody and woody vascular plants species may require active management to avert an unwanted succession to a different and less desirable state. Often they may be indicative of a negative trend relating to another aspect of a site's structure and function. These species will vary depending on the nature of the particular feature, and in some cases these species may be natural/acceptable components or even dominants. Undesirable species include: *Rhododendron ponticum, Cirsium arvense, Digitalis purpurea, Epilobium spp. (excl. E. palustre), Chamerion angustifolium, Impatiens glandulifera, Juncus effusus, J. squarrosus, Ranunculus repens, Senecio jacobaea, Rumex obtusifolius, Urtica spp., Betula spp., , Pinus spp., Rubus spp., Acrocarpous* mosses <occasional> At present scrub encroachment particularly Birch *Betula pendula* and Pine *Pinus spp*. are the main woody species requiring control to keep site in favourable condition. Himalayan Balsam *Impatiens glandulifera* is a significant non woody species of concern and management is undertaken to ensure that this invasive does not spread. Although not currently at levels of concern other species requiring monitoring	

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
			are common ragwort *Senecio jacobea* and creeping thistle *Cirsium arvense*.	
Structure and function (including its typical species)	**Functional connectivity with wider landscape**	Maintain the overall extent, quality and function of any supporting features within the local landscape which provide a critical functional connection with the site	This recognises the potential need at this site to maintain or restore the connectivity of the site to its wider landscape in order to meet the conservation objectives. These connections may take the form of landscape features, such as habitat patches, hedges, watercourses and verges, outside of the designated site boundary which are either important for the migration, dispersal and genetic exchange of those typical species closely associated with qualifying Annex I habitat features of the site. These features may also be important to the operation of the supporting ecological processes on which the designated site and its features may rely. In most cases increasing actual and functional landscape-scale connectivity would be beneficial. Where there is a lack of detailed knowledge of the connectivity requirements of the qualifying feature, Natural England will advise as to whether these are applicable on a case by case basis. Any plans relating to drainage of the site through existing or new drains are likely to require detailed appropriate assessment as defined by the Habitat Regulations to ensure that adverse impacts do not occur. Significant areas additional habitat of SSSI quality are found to the east of the current site boundary at Worlds End plantation and surrounds. This provides important supporting habitat to the current SAC features and also assists in grazing management.	
Structure and function (including its typical species)	**Adaptation and resilience**	Maintain the feature's ability, and that of its supporting processes, to adapt or evolve to wider environmental change, either within or external to the site	This recognises the increasing likelihood of natural 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. Such environmental changes may include changes in sea levels, precipitation and temperature for	Natural England, 2015. Climate Change Theme Plan and supporting National Biodiversity Climate Change Vulnerability assessments ('NBCCVAs') for SACs and SPAs in England [Available at

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
			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. Using best available information, any necessary or likely adaptation 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. The overall vulnerability of this SAC/ to climate change has been assessed by Natural England (2015) as being high/, taking into account the sensitivity, fragmentation, topography and management of its habitats. This means that this site is considered to be the most vulnerable sites overall and are likely to require the most adaptation action, most urgently. A site based assessment should be carried out as a priority. This means that action to address specific issues is likely, 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.	http://publications.naturalengland.org.uk/publication/4954594591375360].
Supporting processes (on which the feature relies)	**Conservation measures**	Maintain the management measures (either within and/or outside the site boundary as appropriate) which are necessary to maintain and restore the structure, functions and supporting processes associated with the feature	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. 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. Grazing management is currently undertaken by a tenant farmer, the site being grazed by a combination of cattle and sheep. Any activity that threatened the viability of this management could pose a risk to heathland habitat and so could undermine the conservation objectives of the site. Visitor	Natural England (2014) Improvement Programme for England's Natura 2000 Sites (IPENS): Site Improvement Plan Strensall Common. Liley, D. & Lake, S. (2019) Visitor Surveys and impacts of recreation at Strensall Common SAC (Footprint Ecology – Report to York City Council)

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
			surveys commissioned by York City Council in 2018 (Liley & Lake 2019) identified potential impacts of existing and increased visitor pressure on the site and threats posed to grazing management. Scrub management is undertaken by both the tenant farmer and by contractors working on behalf of Defence Estates. Scrub management is likely to be an ongoing requirement in addition to grazing management. This is highlighted in the Site Improvement Plan for Strensall Common (2014)	
Supporting processes (on which the feature relies)	**Soils, substrate and nutrient cycling**	Maintain the properties of the underlying soil types, including structure, bulk density, total carbon, pH, soil nutrient status and fungal: bacterial ratio, to within typical values for the habitat.	Soil is the foundation of basic ecosystem function and 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. 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 this Annex I feature. This Annex 1 habitat has essentially raw soils with little humus and low nutrient status.	
Supporting processes (on which the feature 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).	This habitat type 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 and causing the loss of sensitive typical species associated with it. 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.	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).

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
			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. 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.	
Supporting processes (on which the feature relies)	**Water quality**	Where the feature 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.	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. 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. Further site-specific investigations may be required to establish appropriate water quality standards for the SAC.	
Supporting processes (on which the feature relies)	**Hydrology**	At a site, unit and/or catchment level (as necessary, [Maintain OR Restore] the natural hydrological regime to provide the conditions necessary to sustain the feature within the site	Defining and maintaining the appropriate hydrological regime is a key step in moving towards achieving the conservation objectives for this site and sustaining this feature. Changes in source, depth, duration, frequency, magnitude and timing of water supply can have significant implications for the assemblage of characteristic plants and animals present. This target is generic and further site-specific investigations may be required to fully inform conservation measures and/or the likelihood of impacts. Any plans relating to drainage of the site through existing or new drains will require detailed assessment to ensure that adverse impacts do not occur. An initial hydrological survey works undertaken in 2008 (Enviros Consulting Ltd) however addition hydrological work is likely to be required prior to any significant proposals relating to drainage.	Enviros Consulting Limited (2008) Strensall Hydrology Survey. Report to Landmarc Support Services on behalf of Defence Training Estate r

Attributes	Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
Version Control Advice last updated: **15 March 2019:** Following feedback from stakeholders, Pond mud snail *Omphiscola glabra* added to **Key structural, influential and/or distinctive species** attribute.			
Variations from national feature-framework of integrity-guidance: N/A			

Table 2: Supplementary Advice for Qualifying Features: H4030. European dry heaths

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
Extent and distribution of the feature	**Extent of the feature within the site**	Maintain the total extent of the feature. H9a *Calluna vulgaris* (heather) - *Deschampsia flexuosa* (wavy hair grass) *Hypnum cupressiforme* (Hypnum moss) sub community **15 ha** H9e *Calluna vulgaris* (heather) - *Deschampsia flexuosa* (wavy hair grass) *Molinia caerulea* (purple moor-grass) sub-community **101.78 ha** H9e *Calluna vulgaris* (heather) - *Deschampsia flexuosa* (wavy hair grass) *Molinia caerulea* (purple moor-grass) sub-community/ M25a *Molinia caerulea-Potentilla erecta* mire, *Erica tetralix* sub-community. **0.76ha** H9d *Calluna vulgaris* (heather) - *Deschampsia flexuosa* (wavy hair grass) *Galium saxatile* (heath bedstraw) sub-community. **0.34 ha**	There should be no measurable reduction (excluding any trivial loss) in the extent and area of this feature, and in some cases, the full extent of the feature may need to be restored. The baseline-value of extent given has been generated using data gathered from the listed site-based surveys. Area measurements given may be approximate depending on the methods, age and accuracy of data collection, and as a result this value may be updated in future to reflect more accurate information. The extent of an Annex I habitat feature covers the sum extent of all of the component vegetation communities present and may include transitions and mosaics with other closely-associated habitat features. Where a feature is susceptible to natural dynamic processes, there may be acceptable variations in its extent through natural fluctuations. Where a reduction in the extent of a feature is considered necessary to meet the Conservation Objective for another Annex I feature, Natural England will advise on this on a case-by-case basis. The 2009 NVC survey is used for extent estimates. These are likely to be a slight under estimates as this survey did not assign NVC communities to a number of small areas on the site.	Weston, A. & Littler, J. (1993) National Vegetation Survey of Skipwith Common SSSI/Strensall Common SSSI, and Worlds End White Carr. English Nature Commissioned report. Wilson, P. (2009) Strensall Common National Vegetation Classification Survey. (September 2009). Wold Ecology commissioned report to Natural England
Extent and distribution of the feature	**Spatial distribution of the feature within the site**	Maintain the distribution and configuration of the feature, including where applicable its component vegetation types, across the site	A contraction in the range, or geographic spread, of the feature (and its component vegetation and typical species, plus transitional communities) 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. This may also reduce and break	Maclean, C.R. (1983) Strensall Common Habitat Map 1983 in Strensall Common SSSI archive legal file (SE66 RY2 L). Available form Natural England on request

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
			up the continuity of a habitat within a site and how well its typical species are able to move around the site to occupy and use habitat. Such fragmentation can impact on their viability and the wider ecological composition of the Annex I habitat. Smaller fragments of habitat can typically support smaller and more isolated populations which are more vulnerable to extinction. These fragments also 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 some of the typical and more specialist species associated with the Annex I habitat feature. Distribution of the dry heath communities corresponds to the distribution of the H9 *Calluna vulgaris* (heather) *-Deschampsia flexuosa* (wavy hair grass) NVC community. Maps indicating distribution of this community across the site can be found in Maclean (1983), Weston and Littler (1993) and Wilson (2009), the latter being the most accurate assessment of community distribution.	Weston, A. & Littler, J. (1993) National Vegetation Survey of Skipwith Common SSSI/Strensall Common SSSI, and Worlds End White Carr. English Nature Commissioned report. Wilson, P. (2009) Strensall Common National Vegetation Classification Survey. (September 2009). Wold Ecology commissioned report to Natural England
Structure and function (including its typical species)	**Vegetation community composition**	Ensure the component vegetation communities of the feature are referable to and characterised by the following National Vegetation Classification types H9a *Calluna vulgaris* (heather) - *Deschampsia flexuosa* (wavy hair grass) *Hypnum cupressiforme* (Hypnum moss) sub community H9e *Calluna vulgaris* (heather) - *Deschampsia flexuosa* (wavy hair grass) *Molinia caerulea*	This habitat feature will comprise a number of associated semi-natural vegetation types and their transitional zones, reflecting the geographical location of the site, altitude, aspect, soil conditions (especially base-status and drainage) and vegetation management. In the UK these have been categorised by the National Vegetation Classification (NVC). Maintaining or restoring these characteristic and distinctive vegetation types, and the range of types as appropriate, will be important to sustaining the overall habitat feature. This will also help to conserve their typical plant species (i.e. the constant and preferential species of a community), and therefore that of the SAC feature, at appropriate levels (recognising natural fluctuations).	Weston, A. & Littler, J. (1993) National Vegetation Survey of Skipwith Common SSSI/Strensall Common SSSI, and Worlds End White Carr. English Nature Commissioned report. Wilson, P. (2009) Strensall Common National Vegetation Classification Survey. (September 2009). Wold Ecology commissioned report to Natural England

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
		(purple moor-grass) sub-community. H9e *Calluna vulgaris* (heather) - *Deschampsia flexuosa* (wavy hair grass) *Molinia caerulea* (purple moor-grass) sub-community/ M25a *Molinia caerulea-Potentilla erecta* mire, *Erica tetralix* sub-community. H9d *Calluna vulgaris* (heather) - *Deschampsia flexuosa* (wavy hair grass) *Galium saxatile* (heath bedstraw) sub-community.		
Structure and function (including its typical species)	**Vegetation community transitions**	Maintain any areas of transition between this and communities which form other heathland-associated habitats, such as dry and humid heaths, mires, acid grasslands, scrub and woodland.	Transitions/zonations between adjacent but different vegetation communities are usually related to naturally-occurring changes in soil, aspect or slope. Such 'ecotones' retain characteristics of each bordering community and can add value in often containing species not found in the adjacent communities. Retaining such transitions can provide further diversity to the habitat feature, and support additional flora and fauna. This is an important attribute as many characteristic heathland species utilise the transitions between vegetation types or use different vegetation types during different stages of their life cycle. Maps indicating distribution of dry heath communities across the site can be found in Maclean (1983), Weston and Littler (1993) and Wilson (2009), the latter being the most accurate assessment of habitat distribution. Wilson (2009) states that the dry heath communities are; "*confined to low ridges of freely-draining material in the north of the site in a coarse-grained mosaic with M16a and M25a in wetter, low-lying areas. It is a species-poor community. Calluna vulgaris is dominant forming a dense, low, shrubby cover with a limited range of other species. Hypnum cupressiforme is the only constant associate, Molinia caerulea is frequent and Festuca ovina, Hypnum jutlandicum, Deschampsia flexuosa, Erica tetralix, Leucobryum glaucum and Pleurozium schreberi*	Maclean, C.R. (1983) Strensall Common Habitat Map 1983 in Strensall Common SSSI archive legal file (SE66 RY2 L). Available form Natural England on request Weston, A. & Littler, J. (1993) National Vegetation Survey of Skipwith Common SSSI/Strensall Common SSSI, and Worlds End White Carr. English Nature Commissioned report. 2009: Wilson, P. Strensall Common National Vegetation Classification Survey. (September 2009). Wold Ecology commissioned report to Natural England

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
			are occasional. Several stands here differ from the published description (Rodwell, 1991) in the presence of Erica tetralix and Molinia caerulea. Molinia caerulea is present here at a low abundance as scattered tufts, and this heathland is physiognomically very different to stands on more water-retentive soils mapped as H9e. It is important to maintain the separation between these dry heaths and the moister-soiled H9e as they represent a distinct habitat that is rare on this otherwise topgraphically uniform site."	
Structure and function (including its typical species)	**Vegetation structure: cover of dwarf shrubs**	Maintain an overall cover of dwarf shrub species which is typically between 25-90%	Variations in the structure of the heathland vegetation (vegetation height, amount of canopy closure, and patch structure) is needed to maintain high niche diversity and hence high species richness of characteristic heathland plants and animals. Many species also utilise the transitions between vegetation types or use different vegetation types during different stages of their life cycle. The structural character of the heathland feature is strongly influenced by the growing habits of its dominant species which in most cases will be ericoids (i.e. plants that look like heathers, including members of the Ericaceae and Empetraceae families). The ericaceous species heather or ling Calluna vulgaris, bell heather Erica cinerea, cross-leaved heath Erica tetralix, are the commonest and most characteristic dwarf-shrubs. Calluna is the most abundant. 2011 Integrated Site assessment (ISA) recorded cover of dwarf shrubs within thresholds.	Natural England (2011) Integrated Site Assessment (ISA) (Available from Natural England on request)
Structure and function (including its typical species)	**Vegetation composition: bracken cover**	Maintain a cover of dense bracken which is low, typically at <5%	The spread of bracken *Pteridium aquilinum* is a problem on many lowland heathlands. The unpalatable nature and density of bracken as a tall-herb fern, and its decomposing litter, can smother and shade out smaller and more characteristic heathland vegetation. Usually active management of bracken is required to reduce or contain its cover across this habitat feature. But this fern has also some nature conservation value, for example on sites where fritillary butterflies occur and utilise bracken litter habitat. Bracken stands (NVC U20 *Pteridium aquilinum-Galium saxatile* Bracken-heath bedstraw) community, species-poor sub-	Wilson, P. (2009) Strensall Common National Vegetation Classification Survey. (September 2009). Wold Ecology commissioned report to Natural England

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
			community were mapped by Wilson in 2009 which reported c.17ha of bracken dominated vegetation. This figure is however likely to be a slight under estimate as this survey did not assign NVC communities to small areas of the site, some of which are known to support bracken. There should be no expansion from these existing areas of bracken. Areas of Bracken can be identified from aerial photographs.	
Structure and function (including its typical species)	**Vegetation structure: cover of gorse**	Maintain cover of common gorse *Ulex europaeus* at <25%	Gorse as a component of heathland is a very valuable wildlife habitat, and often a marker of relict heath and common. Both dense and spiny, it provides good, protected cover for many wildlife species: birds, mammals and reptiles; breeding habitat for rare or declining bird species, and excellent winter roosting. The flowers, borne at a time of year when other sources of pollen or nectar are in short supply, are particularly good for insects and other invertebrate pollinators. However gorse may cause problems if unchecked by dominating an area, eliminating other typical heathland species. Mature stands en masse may also be serious fire hazards. Gorse (*Ulex europaeus*) may need to be managed on rotation to ensure that it does not expand at the expense of the wet heath communities. Any gorse clearance need to be carefully planned to ensure that areas of gorse valuable for associated bird and invertebrate communities are retained. Western gorse *Ulex gallii* is absent from Strensall Common.	
Structure and function (including its typical species)	**Vegetation structure: tree cover**	Maintain the open character of the feature, with a typically scattered and low cover of trees and scrub (<20% cover)	Scrub (mainly trees or tree saplings above 1 m in height) and isolated trees are usually very important in providing warmth, shelter, cover, foodplants, perches, territorial markers and sources of prey for typical heathland invertebrates and vertebrates. But overall cover of scrub and trees across this habitat feature should be maintained or restored to a fairly sparse level, with a structurally complex edge and with characteristic heathland vegetation as ground cover. If scrub is locally important for any associated species with their own specific conservation objectives, then a higher level of cover will be acceptable. The area of scrub/tree cover should be stable or not increasing as a whole	

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
			Although scrub and woodland are important features of the Common these should not expand at the expense of open heathland, mire and grassland communities. The 1993 survey suggested that woodland and scrub covered c. 150ha. The 2009 NVC survey reports c.130ha. The 2009 survey was undertaken shortly after extensive scrub clearance undertaken under the auspices of the "Restoring the Heaths of the Vale of York" HLF project and should be regarded as the maximum area of the site to be covered by scrub and woodland, Regular site assessments require to be undertaken to ensure scrub encroachment does not occur at the expense of wet heath communities. Grazing alone is unlikely to keep scrub in check and periodic scrub clearance is likely to be required to retain open heath. Historically this is likely to have occurred as a result of firewood collection by commoners and villagers and more recent through military activity, however in the absence of this past use conservation management is likely to be required.	
Structure and function (including its typical species)	**Vegetation structure: heather age structure**	Restore a diverse age structure amongst the ericacerous shrubs typically found on the site	Each phase of growth associated with the characteristic heathers which dominate this feature also represents different microclimatic conditions and microhabitats which may provide shelter or food to other organisms. Therefore, it is important to maintain a mosaic of heather in different phases of growth. Typically this age structure will consist of between 10-40% cover of (pseudo) pioneer heathers; 20-80% cover of building/mature heathers; <30% cover of degenerate heathers and less than <10% cover of dead heathers. The 2011 Integrated Site Assessments (ISAs) undertaken by Natural England identified that units 4, 5 and 8 had low densities of mature heather and therefore were not meeting age structure requirements for favourable condition. Location of SSSI units can be found here	Natural England (2011) Integrated Site Assessment (ISA) (Available from Natural England on request)
Structure and function (including its typical	**Vegetation: undesirable species**	Maintain the frequency/cover of the following undesirable species to within acceptable levels and prevent changes in surface	Undesirable non-woody and woody vascular plants species may require active management to avert an unwanted succession to a different and less desirable state. Often they may be indicative of a negative trend relating to another aspect	

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
species)		condition, soils, nutrient levels or hydrology which may encourage their spread. Negative' indicator species present or potentially present on site;	of a site's structure and function. These species will vary depending on the nature of the particular feature, and in some cases these species may be natural/acceptable components or even dominants. Undesirable species include: *Rhododendron ponticum, Cirsium arvense, Digitalis purpurea, Epilobium spp. (excl. E. palustre), Chamerion angustifolium, Impatiens glandulifera, Juncus effusus, J. squarrosus, Ranunculus repens, Senecio jacobaea, Rumex obtusifolius, , Urtica spp., Betula spp., , Pinus spp., Rubus spp., Acrocarpous* mosses <occasional. At present scrub encroachment particularly Birch *Betula pendula* and Pine *Pinus* spp. are the main woody species requiring control to keep site in favourable condition. Himalayan Balsam *Impatiens glandulifera* is a significant non woody species of concern and management is undertaken to ensure that this invasive does not spread, Although not currently at levels of concern other species requiring monitoring are common ragwort *Senecio jacobea* and creeping thistle *Cirsium arvense*.	
Structure and function (including its typical species)	**Key structural, influential and/or distinctive species**	Maintain the abundance of the typical species listed below to enable each of them to be a viable component of the Annex 1 habitat • Constant and preferential plant species of the H9a and H9e heathland NVC vegetation types at this SAC	Some plant or animal species (or related groups of such species) make a particularly important contribution to the necessary structure, function and/or quality of an Annex I habitat feature at a particular site. These species will include; • **Structural** species which form a key part of the Annex I habitat's structure or help to define that habitat on a particular SAC (see also the attribute for 'vegetation community composition'). • **Influential** species which are likely to have a key role affecting the structure and function of the habitat (such as bioturbators (mixers of soil/sediment), grazers, surface borers, predators or other species with a significant functional role linked to the habitat) • **Site-distinctive** species which are considered to be a	

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
			particularly special and distinguishing component of an Annex I habitat on a particular SAC. There may be natural fluctuations in the frequency and cover of each of these species. The relative contribution made by them to the overall ecological integrity of a site may vary, and Natural England will provide bespoke advice on this as necessary. The list of species given here for this Annex I habitat feature at this SAC is not necessarily exhaustive. The list may evolve, and species may be added or deleted, as new information about this site becomes available. Species of particular note include the very local Petty whin *Genista anglica*. There historic records from the 1990s of bird's-foot *Ornithopus perpusillus* and although referenced on the SAC citation it is not considered to have viable population within the SAC.	
Structure and function (including its typical species)	**Functional connectivity with wider landscape**	Maintain the overall extent, quality and function of any supporting features within the local landscape which provide a critical functional connection with the site	This recognises the potential need at this site to maintain or restore the connectivity of the site to its wider landscape in order to meet the conservation objectives. These connections may take the form of landscape features, such as habitat patches, hedges, watercourses and verges, outside of the designated site boundary which are either important for the migration, dispersal and genetic exchange of those typical species closely associated with qualifying Annex I habitat features of the site. These features may also be important to the operation of the supporting ecological processes on which the designated site and its features may rely. In most cases increasing actual and functional landscape-scale connectivity would be beneficial. Where there is a lack of detailed knowledge of the connectivity requirements of the qualifying feature, Natural England will advise as to whether these are applicable on a case by case basis. Any plans relating to drainage of the site through existing or new drains will require detailed assessment to ensure that adverse impacts do not occur. Significant areas additional habitat of SSSI quality are found to	

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
			the east of the current site boundary at Worlds End plantation and surrounds. This provides important supporting habitat to the current SAC features and also assists in grazing management.	
Structure and function (including its typical species)	**Adaptation and resilience**	Maintain the feature's ability, and that of its supporting processes, to adapt or evolve to wider environmental change, either within or external to the site	See the explanatory notes for this attribute above in Table 1	
Structure and function (including its typical species)	**Soils, substrate and nutrient cycling**	Maintain the properties of the underlying soil types, including structure, bulk density, total carbon, pH, soil nutrient status and fungal: bacterial ratio, to within typical values for the habitat.	Soil is the foundation of basic ecosystem function and 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. 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 this Annex I feature.	
Supporting processes (on which the feature relies)	**Conservation measures**	Maintain the management measures (either within and/or outside the site boundary as appropriate) which are necessary to maintain the structure, functions and supporting processes associated with the feature	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. 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 that may be appropriate for this feature include maintaining low nutrient levels to maintain high numbers of species through the management activities of grazing, burning, mowing, sod-cutting and scrub/tree cutting. Management of succession is a critical aspect of management for this habitat, by a combination of active processes and grazing/cutting. A range of invertebrates and plants require bare ground/peat where it is not too frequently disturbed by vehicles or feet. Grazing management is currently undertaken by a tenant farmer under an agri-environment scheme, the site being	Natural England (2014) Improvement Programme for England's Natura 2000 Sites (IPENS): Site Improvement Plan Strensall Common. Liley, D. & Lake, S. (2019) Visitor Surveys and impacts of recreation at Strensall Common SAC (Footprint Ecology – Report to York City Council)

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
			grazed by a combination of cattle and sheep at a level sympathetic to maintain favourable condition. Any activity that threatened the viability of this management could pose a risk to heathland habitat and so could undermine the conservation objectives of the site. Visitor surveys commissioned by York City Council in 2018 (Liley & Lake 2019) have identified potential impacts of existing and increased visitor pressure on the site and threats posed to grazing management. Scrub management is undertaken by both the tenant framer and by contractors working on behalf of Defence Estates. Scrub management is likely to be an ongoing requirement in addition to grazing management. This is highlighted in the Site Improvement Plan for Strensall Common (2014)	
Supporting processes (on which the feature 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).	See the explanatory notes for this attribute above in Table 1	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).
Supporting processes (on which the feature relies)	**Water quality**	Where the feature 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	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. 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. Further site-specific investigations may be required to establish appropriate water quality standards for the SAC.	
Supporting processes (on which the	**Hydrology**	At a site, unit and/or catchment level (as necessary, maintain the natural hydrological processes to	Defining and maintaining the appropriate hydrological regime is a key step in moving towards achieving the conservation objectives for this site and sustaining this feature. Changes in	Enviros Consulting Limited (2008) Strensall Hydrology Survey. Report to Landmarc Support

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
feature relies)		provide the conditions necessary to sustain the feature within the site	source, depth, duration, frequency, magnitude and timing of water supply can have significant implications for the assemblage of characteristic plants and animals present. This target is generic and further site-specific investigations may be required to fully inform conservation measures and/or the likelihood of impacts. Any plans relating to drainage of the site through existing or new drains will require detailed assessment to ensure that adverse impacts do not occur. An initial hydrological survey works undertaken in 2008 (Enviros Consulting Ltd) however addition hydrological work is likely to be required prior to any significant proposals relating to drainage.	Services on behalf of Defence Training Estate
Version Control Advice last updated: N/A				
Variations from national feature-framework of integrity-guidance: N/A				

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