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

Isle of Wight Downs Special Area of Conservation (SAC)
Site Code: UK0016254

Photo Credit: Jessica Aldred, 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 Isle of Wight Downs SAC. This advice should therefore be read together with the SAC Conservation Objectives available here.

Where this site overlaps with other European Sites, you should also refer to the separate European Site Conservation Objectives and Supplementary Advice (where available) provided for those sites.

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	Isle of Wight Downs Special Area of Conservation (SAC)
Location	Isle of Wight
Site Map	The designated boundary of this site can be viewed here
Designation Date	1 April 2005
Qualifying Features	See section below
Designation Area	461.80ha
Designation Changes	Not applicable
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)	Compton Down SSSI, Headon Warren and West High Down SSSI, Mottistone Down SSSI, and Ventnor Down SSSI.
Relationship with other European or International Site designations	The western end of the SAC (Headon Warren & West High Down SSSI) is adjacent to the South Wight Maritime SAC. The Conservation Objectives for this site can be found here

Site background and geography

The Isle of Wight Downs SAC is located at either end of the east-west running chalk spine of The Isle of Wight. In the west, it notably takes in the high exposed white chalk cliffs and cliff top grassland of West High and Tennyson Downs and the iconic Needles headland, and Ventnor Downs with their spectacular coastal views to the east.

Chalk grassland is the dominant habitat typically supporting a very rich ecology and a number of rare species including often locally abundant Early Gentian (*Gentianella anglica*), one of only a small number of endemic plants to the British Isles. It is also noted as being exceptional for its diversity and abundances of butterflies.

Despite as much as two-thirds of the most wildlife rich chalk grassland on the Isle of Wight being lost since 1850 an extensive mosaic of largely 'unimproved' and readily accessible areas remain. A good proportion of this downland is also designated Site of Special Scientific Interest (SSSI) for similar high quality grassland and rare species and much land management effort is ongoing to restore derelict and recently wooded areas.

The high downland is perhaps the most visually dominant landscape feature on the Isle of Wight and so a significant element of Natural England's National Character Area (NCA) 127 – Isle of Wight. The SAC and its 4 component SSSIs fall entirely within and benefit from both Area of Outstanding Natural Beauty (AONB) and partial Heritage Coast status. Four of the underpinning SSSIs (Compton Down SSSI; Headon Warren and West High Down SSSI and Mottistone Down SSSI) are located to the west and these are separate to Ventnor Downs which is adjacent to residential and commercial properties approximately 15km to the east.

Its geological importance is also significant and is particularly recognised for its readily viewable nearly complete exposure of Cretaceous geology.

Within the chalk grassland small pockets of the rare habitat chalk heath have developed over flinty gravel deposits and these give way to more extensive heather dominated heathland (Greensand geology) over free-draining more acidic soils.

Scheduled Ancient Monuments (SMs) dating from Neolithic times include both ‘long’ and ‘round’ barrows and are a characteristic feature of the high downs, which along with more recent historical and cultural features like the monument to Alfred Lord Tennyson are very popular with visitors. Open access designation here and more widely, supported by good pedestrian connectivity ensures that these exceptional landscape features & vistas are enjoyed.

The underlying chalk aquifers are an important source of domestic drinking water for the Island population.

About the qualifying features of the SAC

The following section gives 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:

- **H1230. Vegetated sea cliffs of the Atlantic and Baltic coasts**

At the western end of the site along the chalk sea cliffs and also along short manmade sections of the Military Road there are strongly maritime influenced plant communities which include a number of rare 'southern rock crevice species' including locally abundant Wild cabbage *Brassica oleracea*, Rock samphire *Crithmum maritimum*, Yellow horned poppy *Glaucium flavum,* and the very rare Hoary stock *Matthiola incana* at probably its major native location.

Important assemblages of insects are present, and part of the site is the UK stronghold for the Glanville Fritillary *Melitaea cinxia* butterfly. Several species of breeding sea bird including Herring Gull, *Larus argentatus*, Cormorant *Phalacrocorax carbo*, Fulmar *Fulmarus glacialis*, Kittiwake *Rissa tridactyla*, Shag *Phalacrocorax aristotelis* (and small populations of Guillemot *Uria aalge*, and Razorbill *Alca torda)* are also annually recorded and Peregrine falcons *Falco peregrinus* recolonised the cliffs in the 1980's.

Cliff vegetation corresponds to the UK National Vegetation Classification (NVC) types:

- MC1 *Crithmum maritimum – Spergularia rupicola* Maritime rock crevice community
- MC4 *Brassica oleracea* Maritime Cliff-edge community
- MC5 *Armeria maritima – Cerastium diffusum ssp., diffusum maritima* therophyte community
- MC8 *Festuca rubra – Armeria maritima* Maritime cliff and slope
- MC9 *Festuca rubra – Holcus lanatus* maritime grassland
- MC10 *Festuca rubra – Plantago spp.,* maritime grassland
- MC11 *Festuca rubra – Daucus carota spp gummifer* Maritime cliff-edge community
- MC12 *Festuca rubra – Hyacinthoides non-scripta* maritime Bluebell community

Maritime cliff grassland habitat on both cliff faces and fringing cliff tops are maintained by a combination of grazing and natural factors, such as erosion, periodic cliff falls and exposure to salt-spray and wind. Together these maintain a characteristic open sward and bare ground mosaic. Changes in agricultural practices led to the abandonment of grazing and subsequently scrub encroachment has occurred in small areas.

The cliff top grassland and vegetated maritime cliffs and slopes are locally adjacent to land managed more intensively for agricultural and amenity purposes and here management should take account of the potential indirect impacts arising from the application of herbicides, pesticides and artificial fertilisers. Cliff-top vegetation can also be compromised where it is squeezed between a receding cliff face and a road or other anthropogenic features and so management of adjacent land should seek to limit this where possible.

- **H4030. European dry heaths**

The occurrence of a neutral to acid flora on the superficial drift deposits that cap parts of the ridge and over the adjacent Greensand strata is a notable and contrasting feature to the adjacent chalk grassland. Geological deposits typically comprising Clay-with-Flints Formations and Head (1) slope deposits (particularly in the east) support merging chalk heath communities of both calcicole (calcium loving) and calcifuge (calcium hating) grassland species, generally interspersed with Common gorse *Ulex europaeus* scrub. Acid grassland is dominated by Common bent *Agrostis capillaris*, Red fescue *Festuca rubra* and Yorkshire fog *Holcus lanatus grasses and* Tormentil *Potentilla erecta*, Sheep's sorrel *Rumex acetosella*, Heather *Calluna vulgaris* and Bell heather *Erica cinerea*.

In the east where the chalk is capped in places by 5m or more of acidic gravel and this supports extensive tracts of Common gorse heath and acid grassland dominated by Heather & Bell heather with

additional Purple moor-grass *Molinia caerulea*, Bristle bent *Agrostis curtisii* and very locally Bilberry *Vaccinium myrtillus*. Where the cap yields to chalk soils the vegetation grades into Hawthorn *Crataegus monogyna* scrub with some Whitebeam *Sorbus aria* and emergent Sycamore *Acer pseudoplatanus* and Ash *Fraxinus excelsior* woodland. Mature Holm oak *Quercus ilex* woodland, a non-native feature, is also locally abundant on the steep south escarpment slopes and on the most easterly slopes. Here also emergent woodland gives way to ancient Ash woodland with a rich epiphytic lichen flora over Hazel *Corylus avellana* coppice and a ground flora dominated by Ramsons *Allium ursinum*, Dogs mercury *Mercurialis perennis* and Bluebell *Hyacinthoides non-scripta*.

Two small breeding populations of Dartford warblers *Sylvia undata o*ccur in the Common Gorse stands. This heathland vegetation, acid & neutral grassland, scrub and woodland transitions present corresponds to the UK National Vegetation Classification (NVC) types:

- H2 *Calluna vulgaris – Ulex minor* Heathland

The following vegetation types are present and associated with the H2 heathland and are integral parts to the heathland mosaic, but are not SAC features:

- W23 *Ulex europaeus - Rubus fruticosus* scrub
- W24 *Rubus fruticosus - Holcus lanatus* underscrub
- W25 *Pteridium aquilinum - Rubus fruticosus* under-scrub
- MG5 *Cynosurus cristatus – Centaurea nigra* grassland
- U1 *Festuca ovina – Agrostis capillaris – Rumex acetosella* grassland

Note: Chalk heath does not have a representative NVC type

- **H6210. Semi-natural dry grasslands and scrubland facies: on calcareous substrates (*Festuco-Brometalia*); Dry grasslands and scrublands on chalk or limestone**

This SAC supports extensive examples of calcareous grassland principally along the north and south facing slopes and crest of the east-west chalk spine (anticline) of the Isle of Wight. Here, the chalk grassland flora including interesting examples under maritime influence varies considerably according to differences in aspect.

Grassland is typically dominated by Sheep's fescue *Festuca ovina*, Glaucous sedge *Carex flacca*, Salad burnet *Sanguisorba minor*, Wild thyme *Thymus praecox* and Horseshoe vetch *Hippocrepis comosa*. The steep south-facing scarp slopes typically support an extremely species-rich chalk flora with unusually high abundances of Horseshoe vetch, Kidney vetch *Anthyllis vulneraria* and Saw-wort *Serratula tinctoria*. A number of orchids are also common including Green-winged *Orchis morio*, early purple *O. mascula*, Bee *Ophrys apifera* and Pyramidal *Anacamptis pyramidalis.* There are also very large populations of the very rare Early gentian *Gentianella anglica and nationally scarce* Autumn Ladies-tresses *Spiranthes spiralis*.

The north facing slopes of the downs have a rather taller grassland structure containing abundant Cowslips *Primula veris* and very locally Frog orchids *Coeloglossum viride* on the thinner soils and generally on the chalk ridges on pockets of deeper soils on superficial drift stands of scattered Common gorse *U l e x Europaeus* and Bramble *Rubus fruticosus*.

This chalk grassland, neutral & acid grassland transitions (to heath & chalk heath) and scrub habitat corresponds well to UK National Vegetation Classification (NVC) types:

- CG1 *Festuca ovina – Carlina vulgaris* grassland
- CG2 *Festuca ovina – Avenula pratensis* grassland
- CG3 *Bromus erectus* grassland

The following vegetation types are present and associated with the CG NVC types and are integral parts to the chalk grassland mosaic, but are not SAC features:

- W23 *Ulex europaeus - Rubus fruticosus* scrub
- W24 *Rubus fruticosus - Holcus lanatus* underscrub

The shorter chalk grassland additionally supports some of the most valuable butterfly areas in Britain with several nationally scarce species occurring at notably high abundances.

From a geological perspective, this is a key stratigraphic site for the Isle of Wight Chalk formation, providing the reference section from the well exposed Glauconitic Marls of the Lower Chalk, through Middle Chalk to the Lower Upper Chalk. The chalk ridge terminates at The Needles chalk stacks and these eroded chalk foundations are of great geomorphological interest. It is also of great importance in understanding the geological evolution of the Isle of Wight and the wider Hampshire Basin.

A proportion of the designated site includes a modified sward as a result of a golf course, which extends along the crest of the Downs at their western end.

Qualifying Species:

- **S1654. *Gentianella anglica*; Early gentian**

Early Gentian is an endemic species restricted to lowland chalk and limestone (rarely sand) areas in southern England where it is confined to calcareous (chalk) grassland. These are typically unimproved (unfertilised and pesticide free) swards which are typically short grazed over warm south or west facing slopes.

It is an erect annual or biennial up to 20cm tall, producing several purple to white flowers that are about 2cm long, in spring and early summer. Germination is in the spring and will either flower, set seed and die in a single season, or will remain vegetative and over-winter as a rosette, flowering early in the following year.

Early Gentian is fully protected under Schedule 8 of the Wildlife & Countryside Act 1981. It is also listed on Annexes II(b) and IV(b) of the European Community Directive on the Conservation of Natural Habitats and of Wild Fauna & Flora 1992: The Habitats Directive, and is one of only 14 species listed on Flora I of the Bern Convention.

At most of its localities, early gentian is found within vegetation usually referable to the H6210 habitat of semi-natural dry grasslands and scrubland facies on calcareous substrates (Festuco-Brometalia).

Table 1: Supplementary Advice for Qualifying Features: H1230. Vegetated sea cliffs of the Atlantic and Baltic coasts

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
Extent and distribution	**Extent of hard or soft cliff capable of supporting sea cliff vegetation**	Maintain the total extent of the cliff system which is capable of supporting H1230 sea cliff vegetation.	There should be no measurable reduction (excluding any trivial loss) in the extent and area of this feature. 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 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 whole system acts to provide the range and variation of vegetation types and mosaics with bare ground. Extent may be measured in different ways but there are issues with measuring area of vertical cliffs. Reduction in extent can include smothering cliff slope, cliff foot or cliff top surfaces by artificial or dumped materials. This feature has not been properly mapped. It is however clear that extent is very difficult to measure or estimate, and is also subject to natural change beyond or control to manage. Indeed the type of vegetation that develops following a cliff fall is very much influenced by the nature of the final substrate and its topography. For example, falls that create a large quantity of thallus tend to (re)-develop as calcareous grassland. This vegetation shares many of the species and composition characteristics of MC8 *Festuca rubra – Armeria maritime* Maritime Cliff and Slope communities.	National Trust. (1998a) National Trust (1998b Natural England (2007a)

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
Extent and distribution	**Future extent of habitat within the site and ability to respond to seasonal changes**	Restore active processes such that the system can adjust to longer-term natural change, including landward recession, and that fluctuations in the extent of vegetated areas to bare rock occur over time and space within the site.	This recognises the need to allow for natural fluctuations in the extent and the distribution of this habitat feature, often during particular seasons and usually as a result of natural coastal processes. Maintenance is the correct approach although the opportunity to do so is likely beyond our practical intervention abilities	Natural England. 2015. Site Improvement Plan Isle of Wight Downs.
Extent and distribution	**Spatial distribution of the feature within the site**	Restore the distribution and continuity of the habitat and any associated transitions which reflects the natural functioning of the cliff system	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 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. Transitions include cliff top and cliff foot transitions to terrestrial or marine habitats. Seacliff habitat remains extensive and natural processes appear to be sufficiently infrequent to enable new colonisation by the most important floristic elements. Whilst maintenance is the correct approach, the opportunity to do so is likely beyond our practical intervention abilities	Natural England. 2015. Site Improvement Plan Isle of Wight Downs.

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
Structure and function (including its typical species)	**Geo-morphological naturalness**	Maintain the geomorphological naturalness of the sea cliff system (from cliff top to foreshore connection with the intertidal zone)	The physical landforms associated with this habitat feature, and the processes that shape them, will be a primary influence on sea-cliff habitat. A key criteria for selecting SACs for this habitat feature was that they had no or minimal artificial modification and so demonstrates good geomorphological naturalness. Having a well-developed sea-cliff structure, shaped by natural geomorphological processes, will ensure the full range of natural variation can occur. Processes (and naturally occurring communities) are presently not significantly or adversely influenced by manmade structures, however further cliff stabilisation work along the Military Road at Compton has the potential to impact this attribute.	
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 H1230 habitat; • Constant and preferential plant species of MC1, MC4, MC8, MC11 NVC vegetation types at this SAC • *Brassica oleracea* • Glanville Fritillary *Melitaea cinxia*	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.	National Trust. (1998a) Natural England (2007a) Natural England (2008)

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
			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. The maintenance of species components of the assigned NVC communities is critical. A number of rare species could be included like Hoary Stock *Matthiola incarna*, Shaggy Mouse-eared Hawkweed *Pilosella peleteriana*, Ox-tongue Broomrape *Orobanche picridis*, White Horehound *Marrubium vulgare* & Scarce Bulbous Meadow-grass *Poa bulbosa* Rare chalk grassland Lichen community dominated by *Fulgensia fulgens* & *Squamarina cartlaginea* often growing on *Trichostomum crispulum* For *Brassica oleracea*, at least a minimum viable population size should be present with no loss in population extent >10%. There should be no decline in population size category. The vegetated sea-cliffs of the South Wight are a stronghold for the Glanville Fritillary within the UK. The slumping and the landslips of the vegetated sea cliffs provides a continual supply of suitable condition for the growth of new young plants of Ribwort Plantain *Plantago lanceolate* on which the female lays her eggs, and which is the primary food plant for developing larva. Other colonies are also found on the nearby chalk downland at Mottistone and Compton Downs.	
Structure and function (including its typical species)	**Presence of mosaic of microhabitats**	Maintain the diversity and range of microhabitats and bare areas resulting from active coastal processes/landslips	Each site will have a different configuration of geology and hydrology and maritime exposure, which will also change over time and space. The key aim is to maintain the full, naturally expected range of these in as natural a state as possible. This is being maintained naturally. Whilst all sea cliffs are being maintained through natural sea processes, the Military Road adjacent to the cliff at Grid Ref: SZ3685 is potentially artificially influencing natural processes. Sea cliff vegetation communities are present along sections of	National Trust. (1998a)

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
			embankment adjacent to the Military Road on the southern flank of Compton Down. This artificially created feature is unmanaged and is experiencing natural succession.	
Structure and function (including its typical species)	**Regeneration potential**	Maintain semi-natural vegetation on the cliff-top (either within or beyond the site boundary as appropriate), and its connectivity with the lower cliff slopes.	This is important to ensure that there is a continuous supply of seed-rich semi-natural vegetation material from the clifftops to feed the sea-cliff system below. As the top of the cliff slumps and recedes as a result of natural processes, the vegetation dropping onto the lower slopes should provide suitable material for their re-colonisation with native plant species from adjacent semi-natural habitats above Cliff top grazing under existing cattle grazing regime appears to significantly reduce the presence of maritime cliff communities on the cliff tops as evident from recent removal of fencing above Freshwater Bay. It is important that the vegetation state at top of cliff is correct to enable recolonization of the cliff faces following erosion events.	This attribute will be periodically monitored as part of Natural England's SSSI Condition Assessments
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 which includes a range of types including maritime annual (therophyte) vegetation, soft-cliff flushes, grassland, scrub, rock crevice and cliff ledge vegetation including 'perched saltmarsh' and 'seabird cliff communities' • MC1 *Crithmum maritimum – Spergularia rupicola* Maritime rock crevice community • MC4 *Brassica oleracea*	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). The presence, composition, location and extent of maritime scrub, heath and/or grassland, plus mosaics of the three, on cliff slopes or cliff tops will be determined by the interaction of natural geomorphologcial processes with exposure and soil characteristics and management where relevant. These communities are present (within the physical constraints	National Trust (1998a) Natural England (2007a) This attribute will be periodically monitored as part of Natural England's SSSI Condition Assessments

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
		Maritime Cliff-edge Community • MC8 *Festuca rubra – Armeria maritime* Maritime Cliff and Slope • MC11 *Festuca rubra - Daucus carota spp gummifer* Maritime cliff-edge community	that topography and geology allow) MC5 *Armeria maritima – Cerastium diffusum ssp., diffusum* maritime therophyte community, is also likely present. Cliff top is also very likely to support elements of the succession from MC8 – MC12 where grazing pressure is lower MC9 *Festuca rubra – Holcus lanatus* maritime grassland MC10 *Festuca rubra – Plantago spp*., maritime grassland MC12 *Festuca rubra – Hyacinthoides non-scripta* maritime Bluebell community	
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. There are a range of non-native plants affecting coastal cliffs, and due to difficulties of access, these often pose problems with management. The key objective is to prevent any introductions or planting. This includes the dumping of spoil or organic waste on cliff tops or slopes within or beyond the site boundary which may contain plant seeds or propagules or enrich the site. No noted abundances of undesirable species evident, however extent and adverse impact of Cotoneaster needs verifying.	This attribute will be periodically monitored as part of Natural England's SSSI Condition Assessments
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	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.	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)
		(www.apis.ac.uk).	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. 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.	Natural England. 2015. Site Improvement Plan Isle of Wight Downs.
Supporting processes (on which the feature relies)	**Cliff morphology, slope and elevation**	Maintain the natural processes that determine cliff morphology, slope and elevation	These physical components greatly influence the structure of this habitat type. Allowing natural dynamic processes to operate is important to providing optimal conditions which will allow the long-term conservation of this habitat feature. Interruption of these processes, through partial stabilisation or slowing of cliff erosion and recession rates, with artificial management of cliff slope vegetation, does not produce naturally-occurring conditions which could lead to undesirable changes in characteristic sea cliff vegetation. These features are beyond our management control for the natural sea cliffs, however the slope of the road cutting is modifiable.	
Supporting processes (on which the feature relies)	**Hydrology/ drainage**	At a site, unit and/or catchment level as necessary, maintain natural hydrological processes 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	

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
			required to fully inform conservation measures and/or the likelihood of impacts.	
Supporting processes (on which the feature relies)	**Maritime exposure including salt spray effects**	Maintain an appropriate degree of exposure to maritime effects, such as salt spray, both from regular inputs and storm events	Excessive exposure to salt spray can cause episodic die-back of sea cliff vegetation in some circumstances, although this may not be applicable to all sites.	
Supporting processes (on which the feature relies)	**Physical features supporting vegetation: crevices, ledges, isolated stacks etc.**	Maintain the associated physical components of the vegetated cliff feature (crevices, ledges, isolated stacks) with changes to them determined by natural processes only	Cliff structure and geomorphological processes are major influences on sea-cliff vegetation. 'Hard' cliffs with vertical or very steep faces are characteristic of hard igneous, metamorphic and sedimentary rocks and also of chalk, which, although a soft rock, nevertheless forms vertical cliffs. More mobile 'Soft' cliffs have a sloping or slumped profile, often with a distinct 'undercliff'; these occur on a range of soft rocks, or on hard rocks interspersed with softer deposits and may be subject to mudslides or landslips. These processes all create smaller structural elements such as ledges, crevices and stacks which create complexes of pioneer and more mature vegetation which are typical of this habitat feature.	
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.	
Version Control Advice last updated: N/A				
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 and restore the total extent of the heathland & Chalk Heath feature.to baseline level, whilst avoiding deterioration from current extent.	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. Opportunities to increase the extent of heathland features where scrub, woodland and grassland succession can be reversed should be considered where appropriate.	This attribute will be periodically monitored as part of Natural England's SSSI Condition Assessments English Nature (2001) VENTNOR DOWNS, IOW. Unpublished Report. (Available from Natural England on request) National Trust (1998a) National Trust (1998c) National Trust (2010) Natural England (2007a) Natural England (2007b) Natural England (2008) Natural England. 2014. Isle of Wight Downs SAC Citation.
Extent and distribution of the feature	**Spatial distribution of the feature within the site**	Maintain and restore the distribution and configuration of the feature, including where applicable its component vegetation types and transitional 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 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	Natural England. 2014. Isle of Wight Downs SAC Citation.

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
			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. The dry heath habitat should be maintained at least to the extent cited above, with suitable vegetation conditions to maintain the population of dwarf gorse (Ulex minor), to avoid habitat fragmentation. This is also true for the chalk heath. This rare habitat has features intermediate between chalk grassland and *Calluna – Ulex* heath, which is an unusual biological feature in the UK.	
Structure and function (including its typical species)	**Vegetation community composition**	Ensure the component vegetation communities of the H4030 feature are referable to and characterised by the following National Vegetation Classification types: • H2 *Calluna vulgaris – Ulex minor* • Chalk heath communities (does not have a representative NVC type but considered intermediate between H2 and CG2.)	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). Heath and chalk heath vegetation is present and confined to the superficial drift deposits that cap the chalk ridge (and Greensand strata). Typically comprising Clay-with-Flints Formations and Head (1) slope deposits and supports a mosaic of acid grass, heath and scrub vegetation. This is typically characterised by an interesting mixed community of calcicole and calcifuge grassland plants interspersed with Common	This attribute will be periodically monitored as part of Natural England's SSSI Condition Assessments

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
			gorse *Ulex europaeus* scrub. The grassland is often found to be dominated by Common bent *Agrostis capillaris*, Red fescue *Festuca rubra* and Yorkshire fog *Holcus lanatus*. Calcifuge species here locally include Tormentil *Potentilla erecta*, Sheep's sorrel *Rumex acetosella*, Heather *Calluna vulgaris* and Bell heather *Erica cinerea*. Very locally, Purple moor-grass *Molinia caerulea*, Bristle bent *Agrostis curtisii* and locally Bilberry *Vaccinium myrtillus* become frequent. Where the cap yields to chalk the vegetation grades to Hawthorn *Crataegus monogyna* scrub with some Whitebeam *Sorbus aria* and emergent Sycamore *Acer pseudoplatanus* and Ash *Fraxinus excelsior* woodland.	
Structure and function (including its typical species)	**Vegetation community transitions**	Maintain the following pattern of natural vegetation zonations or transitions within the dry heath feature: • Ideally no more than 10% cover of the area of the feature should consist of firm, sunlit, horizontal, sloping or vertical, exposed bare ground	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. On the eastern slopes of Ventnor Downs the emergent woodland in turn gives way to ancient ash woodland with a rich epiphytic lichen flora over Hazel *Corylus avellana* coppice and a ground flora dominated by Ramsons *Allium ursinum*, Dogs mercury *Mercurialis perennis* and Bluebells *Hyacinthoides non-scripta.* Maintain the cover of bare ground as this provides important invertebrate habitat, and reseeding areas for heathland regeneration.	This attribute will be periodically monitored as part of Natural England's SSSI Condition Assessments
Structure and function	**Vegetation structure:**	Maintain an overall cover of dwarf shrub species which is	Variations in the structure of the heathland vegetation (vegetation height, amount of canopy closure, and patch	This attribute will be periodically monitored as part of Natural

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
(including its typical species)	**cover of dwarf shrubs**	typically between 25-90%, with at least two species of dwarf shrubs present and at least frequent.	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). Dwarf-shrubs species include: *Calluna vulgaris, E. cinerea, E. tetralix, Genista anglica, Ulex gallii, U. minor, Vaccinium myrtillus, V. vitis-idaea* (and hybrids). Ventnor Down SSSI: in places Heather comprises the dominant cover over SSSI unit 24 Mottistone Down SSSI: the 'small patches of Heather and Bell heather' noted in the 1982 survey were not re-found in 1998. It is possible but unlikely that they still remain. Compton Down SSSI: the chalk heath comprises tiny shoots of heather growing amongst calcareous grassland plants over quite wide areas – from previous survey	England's SSSI Condition Assessments National Trust (1998b) National Trust (1998c). Natural England (2007c) Natural England. 2018. Designated Sites View: Isle of Wight Downs SAC - UK0016254.
Structure and function (including its typical species)	**Vegetation composition: bracken cover**	Restore to a cover of dense bracken which is low, typically at <10%	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. Ventnor Downs (48.9703) for unit 24: Bracken covers approximately 40% but in this case is only detrimental over 20%, and therefore it can be maintained at this percentage.	This attribute will be periodically monitored as part of Natural England's SSSI Condition Assessments

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
Structure and function (including its typical species)	**Vegetation structure: cover of gorse**	Restore 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. In addition, too much gorse can affect the soil characteristics, which can contribute to an increase in negative indicator species. Gorse species support a rich invertebrate and vertebrate fauna. However, the can affect the soil characteristics. Within this SAC, gorse supports two small breeding populations of Dartford Warbler (*Sylvia undata*). Levels of gorse on Compton Down and Mottistone Down currently exceed desired levels. Where there are areas of gorse that could be restored to heathland over and above the requirements for Dartford warblers, efforts should be directed to restoration to heather heathland. All sites for continuing restoration to more diverse heather heathland sward from often uniform stands of European gorse. Restoration should be considered within constraints that sub-optimal soil types provide.	This attribute will be periodically monitored as part of Natural England's SSSI Condition Assessments National Trust (1998a) National Trust (2010)
Structure and function (including its typical species)	**Vegetation structure: tree cover**	Restore the open character of the feature, with a typically scattered and low cover of trees and scrub (<15% cover). Locally up to 25% scrub cover can be accepted if indicated in	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	This attribute will be periodically monitored as part of Natural England's SSSI Condition Assessments National Trust (1998a)

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
		conservation objectives or management plan but should be maintained at existing levels if below this level.	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. Negative tree and scrub species include: *Betula spp., Prunus spinosa, Pinus spp., Rubus spp., Sarothamnus scoparius, Quercus spp*.	National Trust, (1998b) National Trust (1998c) National Trust (2010)
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 (PB/M) heathers; <30% cover of degenerate (DG) heathers and less than <10% cover of dead (Dd) heathers. The variation in targets means that both a young stand of e.g. 40-60-0-0 (PB/M-Dg-Dd) and a mature stand of e.g. 10-65-20-5 (P-B/M-Dg-Dd) would meet the conservation objectives, though structurally and visually they will be very different. Annual variation and succession should be accounted for within the targets. Scrub coverage above limit set should be restored to heathland. Sub-optimal soils will limit this regeneration.	National Trust. (2010)
Structure and function (including its typical species)	**Vegetation: undesirable species**	Maintain and restore 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	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	This attribute will be periodically monitored as part of Natural England's SSSI Condition Assessments Natural England (2007a)

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
		spread. :	even dominants. Many of the species listed here will naturally spread and dominate without ongoing management and, if left unchecked, will lead to a decline in the population of positive indicator species and also priority species for each of these habitats (e.g. dwarf gorse and early gentian). Undesirable species include: **Dry Heath:** Rhododendron *Rhododendron ponticum*, Japanese Knotweed *Fallopia japonica*, Bracken *Pteridium aquilinum*, Ragwort *Senecio jacobea*, Nettle *Urtica dioica*, Creeping Thistle *Cirsium arvense*, 'coarse grasses', Birch *Betula spp*., Blackthorn *Prunus spinosa*, *Rubu*s spp., *Sarothamnus scoparius*, Oak sp *Quercus spp*. **Chalk Heath:** *Pteridium aquilinum, Chamerion angustifolium, Cirsium arvense, C. palustre, C. vulgare,* Broadleaved Plantain *Plantago major, Senecio jacobaea. Urtica dioic*a, Yorkshire Fog *Holcus lanatus,* Cock's-foot *Dactylis glomerata,* Bramble *Rubus fruticosus Rhododendron* spp	Natural England (2008)
Structure and function (including its typical species)	**Key structural, influential and/or distinctive species**	Maintain OR Restore the abundance of the typical species listed below to enable each of them to be a viable component of the Annex 1 habitat. Maintain the abundance of the species listed to enable each of them to be a viable component of the Annex I habitat feature • Constant and preferential plant species of H2 *Calluna – Ulex* heath, and chalk heath communities (intermediate between H2 *Calluna – Ulex heath and CG2 Festuca ovina – Avenula pratensis*	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; • **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	This attribute will be periodically monitored as part of Natural England's SSSI Condition Assessments

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
		grassland • Early Gentian *Gentianella anglica* • Autumn Ladies'-tresses *Spiranthes spiralis* • Dartford Warbler *Sylvia undata*	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.	
Structure and function (including its typical species)	**Functional connectivity with wider landscape**	Maintain and restore 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. At several locations there is an opportunity to restore and extend the dry heath and chalk heath habitats. The surrounding calcareous grassland is an especially important habitat for Lepidoptera species (Chalk hill blue, Brown Argus, Adonis Blue, Small Heath) and so should be managed to maintain the mosaic and connectivity between these two habitats.	National Trust (1998b)
Structure and function	**Adaptation and resilience**	Maintain the feature's ability, and that of its supporting processes,	This recognises the increasing likelihood of natural habitat features to absorb or adapt to wider environmental changes.	Natural England, 2015. Climate Change Theme Plan and

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
(including its typical species)		to adapt or evolve to wider environmental change, either within or external to the site.	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 precipitation and temperature for example, which are likely to affect the extent, distribution, composition and functioning of a feature within a site. The vulnerability and response of features to such changes will vary. 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 particular SAC to climate change has been assessed by Natural England as being low, taking into account the sensitivity, fragmentation, topography and management of its habitats. This means that some adaptation action for specific issues may be required, such as reducing habitat fragmentation, creating more habitat to buffer the site or expand the habitat into more varied landscapes and addressing particular management and condition issues. Individual species may be more or less vulnerable than their habitat itself. In many cases, change will be inevitable so appropriate monitoring would be required. Ongoing action to expand area of dry heath and chalk heath will build resilience to environmental change.	supporting NBCCV Assessments for SACs and SPAs
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.	

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
			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 and where appropriate restore 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 these features 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. Conservation measures on this site may include: • Maintain low nutrient levels to maintain high numbers of species through the management activities of grazing, burning, mowing 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. At all locations habitat condition attributable to management is generally favourable, however, some heath is being restored and common gorse scrub stands are being entered into a more effective rotational management regime The intensity and timing of grazing management and rotational scrub management will be responsive to availability of forage, alternative forage and its likely impact (grazing and cutting) on natural regeneration and sward structure.	Natural England. 2015.

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
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. 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. For this feature, impacts of poor air quality include: transition from heather to grass dominance, decline in lichens, changes in plant biochemistry, increased sensitivity to abiotic stress. Medium sensitivity for all SSSIs in IoW Downs SAC, but current exposure is low.	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). Natural England. 2015. Site Improvement Plan Isle of Wight Downs.

Version Control
Advice last updated: N/A

Variations from national feature-framework of integrity-guidance:
Hydrology / Water Quality: These attributes have been removed as they are no applicable to this feature.

The targets for some attributes listed above include both 'maintain' and 'restore' objectives. This is because the Isle of Wight Downs SAC is a complex of geographically-separate component sites which are currently in different states of condition. Overall, both objectives will be applicable to the SAC but these will differ between each

Attributes	Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
component site depending on its particular circumstances. Natural England will able to provide further specific advice on request			

Table 3: Supplementary Advice for Qualifying Features: H6210. Semi-natural dry grasslands and scrubland facies: on calcareous substrates (*Festuco-Brometalia*); Dry grasslands and scrublands on chalk or limestone

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 and restore the total extent of the feature approximately 518 hectares.	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. Approximate figures are based on reported combined extent of National Vegetation Classification (NVC) types: CG1, CG2, CG3 as follows: *1 Compton Down with 170ha *2 Mottistone Down with 16ha *3 Headon Warren & West High Down with 104ha *4 Ventnor Downs with 28ha Maintenance will focus on existing calcareous grassland habitats; restore will focus on existing and recently scrub dominated areas where the reversion to calcareous grassland is considered feasible.	This attribute will be periodically monitored as part of Natural England's SSSI Condition Assessments National Trust (1998a) National Trust (2010) Natural England (2007a) Natural England (2007b) Natural England (2007c) Natural England (2008)

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
Extent and distribution of the feature	**Spatial distribution of the feature within the site**	Maintain and restore 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 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. The key chalk grassland sward types are generally extensive across south facing slopes. They typically support both substantial and sustainable populations of the key notable species, in particularly rare plants Minor contractions in chalk grassland range have been recognised in recent years and local restorations are ongoing to reduce cover of established and recently expanded scrub. Here, predominately Common Gorse dominated scrub expansion is being, or is proposed for eradication and will be restored to chalk grassland. Greater connectivity is being realised through ongoing restoration from scrub to chalk grassland, both within designated sites and adjacent undesignated areas.	This attribute will be periodically monitored as part of Natural England's SSSI Condition Assessments Natural England. 2015. Site Improvement Plan Isle of Wight Downs.
Structure and function (including its	**Vegetation community composition**	Ensure the component vegetation communities of the feature are referable to and	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	This attribute will be periodically monitored as part of Natural England's SSSI Condition

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
typical species)		characterised by the following National Vegetation Classification types • CG1 *Festuca ovina – Carlina vulgaris* grassland • CG2 *Festuca ovina – Avenula pratensis* grassland • CG3 *Bromus erectus* grassland	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).	Assessments National Trust (1998a) National Trust (2010) Natural England (2007a) Natural England (2007b) Natural England (2007c) Natural England (2008)
Structure and function (including its typical species)	**Vegetation: proportion of herbs (including Carex spp)**	Maintain OR Restore the proportion of herbaceous species within the range 40%-90%	A high cover of characteristic herbs, including sedges (Carex species) is typical of the structure of this habitat type. Here, standard measures & generic targets will be used	This attribute will be periodically monitored as part of Natural England's SSSI Condition Assessments National Trust (1998a) National Trust (2010)
Structure and function (including its typical species)	**Key structural, influential and/or distinctive species**	Maintain or restore the abundance of the typical species listed below to enable each of them to be a viable component of the H6210 feature • Constant and preferential plant species of the CG1 *Festuca ovina - Carlina vulgaris* grassland, CG2 *Festuca ovina - Avenula pratensis* grassland and CG3 *Bromus erectus* grassland • Locally rare plant species	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)	This attribute will be periodically monitored as part of Natural England's SSSI Condition Assessments Natural England (2007a) Natural England (2007b) Natural England (2007c) Natural England (2008)

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
		including: Dwarf Sedge *Carex humilis*, Early Gentian *Gentianella anglica*, Autumn Ladies'-tresses *Spiranthes spiralis*, Bastard-toadflax *Thesium humifusum*, Oxtongue Broomrape *Orobanche picridis* • Important Lepidoptera assemblage including Chalkhill Blue *Lysandra coridon*, Small Blue *Cupido minimus*, Adonis Blue *Lysandra bellargus*, Brown Argus *Aricia agestis* , Glanville Fritillary *Melitaea cinxia,* Dark Green Fritillary *Argynnis aglaja,* Grayling *Hipparchia Semele*, Dingy Skipper *Erynnis tages,* Grizzled Skipper *Pyrgus malvae* • Small population of breeding Dartford Warbler	• 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.	
Structure and function (including its typical species)	**Vegetation: undesirable species**	Maintain and restore the frequency/cover of the following undesirable species to no more than occasional or <5% (both as individual species and combined, and prevent changes in surface condition, soils, nutrient levels or hydrology which may encourage their spread.	There will be a range of undesirable or uncharacteristic species which, if allowed to colonise and spread, are likely to have an adverse effect on the feature's structure and function, including its more desirable typical species. These may include invasive non-natives such as Cotoneaster spp, or coarse and aggressive native species which may uncharacteristically dominate the composition of the feature. Undesirable species include: Wild Cotoneaster Cotoneaster spp, Creeping Thistle *Cirsium arvense*, Spear Thistle *Cirsium vulgare,* Curled Dock *Rumex crispus*, Broad-leaved Dock *Rumex obtusifolius*, Common Ragwort *Senecio jacobaea*, and Nettle *Urtica dioica*	This attribute will be periodically monitored as part of Natural England's SSSI Condition Assessments

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
			Holm Oak extends over 10 ha of former chalk grassland and heathland habitat. This comprises largely mature closed canopy stands and has been a feature of Ventnor Down for several decades. Intensive management to reduce the extent of Holm Oak has been undertaken in recent years. However, this is a difficult operation and further removal and restoration is sought. The present extend of Holm Oak covers approx. 13% of Ventnor Downs.	
Structure and function (including its typical species)	**Vegetation community transitions**	Maintain OR Restore the pattern of natural vegetation zonations/transitions between cited NVC communities and particularly between: • Chalk grassland / heath / acid grassland ("Chalk heath vegetation") • Chalk grassland / maritime cliff communities • Chalk grassland / mesotrophic grassland communities Temporary successional transitions created though the rotational management of high value scrub should also be maintained	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 attribute will be periodically monitored as part of Natural England's SSSI Condition Assessments
Structure and function (including its typical species)	**Soils, substrate and nutrient cycling**	Maintain OR Restore the properties of the underlying soil types, including structure, bulk density, total carbon, pH, soil nutrient status and fungal: bacterial ratio, to within typical	Soil is the foundation of basic ecosystem function and 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.	

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
		values for the habitat.	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.	
Structure and function (including its typical species)	**Supporting off-site habitat**	Maintain and restore the extent, quality and spatial configuration of land or habitat surrounding or adjacent to the site which is known to support the feature.	Include only where applicable. The structure and function of the qualifying habitat, including its typical species, may rely upon the continued presence of areas which surround and are outside of the designated site boundary. Changes in surrounding land-use may adversely (directly/indirectly) affect the functioning of the feature and its component species. This supporting habitat may be critical to the typical species of the feature to support their feeding, breeding, roosting, population dynamics ('metapopulations'), pollination or to prevent/reduce/absorb damaging impacts from adjacent land uses e.g. pesticide drift, nutrient enrichment. Continued restoration of supporting habitat at Harborough Down, Luccombe Farm, & Brighstone Down is ongoing.	
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. Maintain and restore non SAC feature scrub communities: W21 *Crataegus monogyna - Hedera helix* scrub W22 *Prunus spinosa - Rubus fruticosus* scrub W23 *Ulex europaeus - Rubus fruticosus* scrub	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.	

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
		W24 *Rubus fruticosus - Holcus lanatus* underscrub W25 *Pteridium aquilinum - Rubus fruticosus* under-scrub	The SSSI sites are isolated, thereby making connectivity an important component. For example, for the maintenance of Dartford Warbler populations we need contiguous W23 habitat to ensure their winter survival. On the same chalk ridge there is intervening SSSI and non SSSI habitat that support in particular butterfly assemblages. All scrub communities as important transitional and rotationally managed habitats, but particularly W23. The scrub communities fit with breeding Dartford warbler, and Glanville Fritillary and are a strong associate for Chalk heath where the boundaries between alkaline and acid swards are unclear. For Early Gentian, the distribution of scrub which homes rabbit populations is critical to the grazing suitability of the sward. W23, W24, W25 are the more important communities in these cases.	
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 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 particular SAC to climate change has been assessed by Natural England as being low, taking into account the sensitivity, fragmentation, topography and management of its habitats.	Natural England, 2015. Climate Change Theme Plan and supporting NBCCV Assessments for SACs and SPAs

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
			This means that some adaptation action for specific issues may be required, such as reducing habitat fragmentation, creating more habitat to buffer the site or expand the habitat into more varied landscapes and addressing particular management and condition issues. Individual species may be more or less vulnerable than their habitat itself. In many cases, change will be inevitable so appropriate monitoring would be required Ongoing action to expand area of calcareous grassland is building resilience to environmental change as warmer and drier climate conditions modify the CG2 and CG3 communities and help enable better migration of species impacted by climate change	
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. 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	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). Natural England. 2015. Site Improvement Plan Isle of Wight Downs.

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
			timescales.	
Supporting processes (on which the feature relies)	**Conservation measures**	Maintain and restore 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. Maintain extensive tracts of suitable grazed chalk grassland Restore scrub invaded areas through grazing and cutting management	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 should focus on the maintenance of existing extensive tracks of suitable grazed chalk grassland and restoration from scrub invaded areas through cutting and grazing management. Parts of the SAC are locally experiencing high levels of pedestrian visits that damage the chalk grassland habitat. Surveying to confirm extent and severity are required in advance of any restoration and preventative actions.	Natural England. 2015. Site Improvement Plan Isle of Wight Downs.
Version Control Advice last updated: N/A				
Variations from national feature-framework of integrity-guidance: The targets for some attributes listed above include both 'maintain' and 'restore' objectives. This is because the Isle of Wight Downs SAC is a series of geographically-separate component sites which are currently in different states of condition. Overall, both objectives will be applicable to the SAC but these will differ between each component site depending on its particular circumstances. Natural England will able to provide further specific advice on request				

Table 4: Supplementary Advice for Qualifying Features: S1654. *Gentianella anglica*; Early gentian

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
Population (of the feature)	**Population abundance**	Maintain the abundance of the population at a level which is viable to support the minimum population size, whilst avoiding deterioration from its current level as indicated by the latest mean peak count or equivalent. No loss in population extent > 10%	Populations may fluctuate considerably from year to year, depending on habitat condition, weather, etc. Flowering performance may also vary between years, affecting the plant's visibility. In addition, some populations may be too large/extensive, or too widely dispersed, to be easily counted. In such cases, broken log scale estimates of each sub-population or sub-site may be sufficient. In any case, this will ensure there is a viable population of the feature which is being maintained at or increased to a level that contributes as appropriate to its Favourable Conservation Status across its natural range in the UK. Due to the dynamic nature of population change, the target-value given for the population size or presence of this feature is considered to be the minimum standard for conservation/ restoration measures to achieve. This minimum value may be revised where there is evidence to show that a population's size or presence has significantly changed as a result of natural factors or management measures and has been stable at or above a new level over a considerable period (generally at least 10 years). The values given here may also be updated in future to reflect any strategic objectives which may be set at a national level for this feature. Given the likely fluctuations in numbers over time, any impact-assessments should focus on the current size of the site's population, as derived from the latest known or estimated level established using the best available data. This advice accords with the obligation to avoid deterioration of the site or significant disturbance of the species for which the site is designated, and seeks to avoid plans or projects that may affect the site giving rise to the risk of deterioration. Similarly, where there is evidence to show that a feature has historically been more abundant than the stated minimum target and its current level, the ongoing capacity of the site to accommodate the feature at such higher levels in future should also be taken into account in any assessment.	Natural England (2007c) Natural England (2008) Wilson, P.J. (2008)

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
			Unless otherwise stated, the population size or presence will be that measured using standard methods, such as peak mean counts. This value is also provided recognising there will be inherent variability as a result of natural fluctuations and margins of error during data collection. Whilst we will endeavour to keep these values as up to date as possible, local Natural England staff can advise that the figures stated are the best available. A National Trust survey on *Gentianella anglica* conducted in 2008, shows population sizes across the SAC of: • Ventnor Downs – 23 plants • Mottistone Downs - >1,000,000 plants • Brighstone Pit (Compton Down) – 124 plants • Tennyson Down (part of West High Down) c10,000 plants	
Population (of the feature)	**Population structure: presence of *Gentianella amarella*, *Gentianella x davidii* and 'intermediates'**	Maintain as appropriate, the presence of both *G. anglica* and *G. amarella*, and the putative hybrid between the two (*G. x davidii*)	Intermixed populations have been recorded from Ventnor Downs, with the hybrid recorded especially from sites near edge of range of *G. anglica* but this was in 1925. Phenological differences (flowering time) usually helpful in distinguishing between *G. anglica* and autumn gentian *G. amarella*. Note: there is still some uncertainty about the extent to which these two species hybridise, or indeed whether the two species are actually one.	
Supporting habitat: extent and distribution	**Distribution of supporting habitat**	Maintain the distribution and continuity of the feature and its supporting habitat, including where applicable its component vegetation types and associated transitional vegetation types, across the site	A contraction in the range, or geographic spread, of the feature (and its component vegetation) across the site will reduce its overall area, the local diversity and variations in its structure and composition and may undermine its resilience to adapt to future environmental changes. Contraction may also reduce and break up the continuity of a habitat within a site and how well the species feature is able to occupy and use habitat within the site. Such fragmentation may have a greater amount of open edge habitat which will differ in the amount of light, temperature, wind, and even noise that it receives compared to its interior. These conditions may not be suitable for this feature	National Trust (1998a)

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
			and this may affect its viability. It is important to maintain known populations in short CG2 and to a lesser extent CG1 grassland types	
Supporting habitat: extent and distribution	**Extent of supporting habitat**	Maintain the total extent of the habitat which support the feature at approximately 518ha	In order to contribute towards the objective of achieving an overall favourable conservation status of the feature at a UK level, it is important to maintain or if appropriate restore the extent of supporting habitats and their range within this SAC. The information available on the extent and distribution of supporting habitat used by the feature may be approximate depending on the nature, age and accuracy of data collection, and may be subject to periodic review in light of improvements in data. This figure is the full estimated extent of chalk grassland of CG1, CG2 & CG3 vegetation types. It should be noted that Early Gentian typically only occurs on shorter sward areas and appears to have very specific edaphic requirements that are unclear and so is never likely to occupy much of the grassland	This attribute will be periodically monitored as part of Natural England's SSSI Condition Assessments
Supporting habitat: structure/ function	**Habitat structure and bare ground: regeneration/ colonisation niches**	Maintain patches of bare ground and an open-textured sward to provide creating suitable regeneration/colonisation niches. Bare ground should be in range c 5-10%, but may be higher in some vegetation communities especially CG1.	Patches of suitable vegetation occur in mosaics with less suitable areas, and generally associated with steeper slopes, more southerly aspects, thinner soils, heavier grazing or trampling. All available evidence points to need for there being plenty of bare ground in a short/tightly grazed open-textured sward. Many sites best described as 'sparsely vegetated'). Some evidence suggests that *G. anglica* tends to occur in microsites recovering after disturbance (whereas autumn gentian *G. amarella* may also occur as a pioneer in recently disturbed sites).	This attribute will be periodically monitored as part of Natural England's SSSI Condition Assessments
Supporting habitat: structure/ function	**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, within typical values for the supporting habitat	Soil supports basic ecosystem function and is a vital part of the natural environment. Its properties strongly influence the colonisation, growth and distribution of those plant species which together form vegetation types, and therefore provides a habitat used by a wide range of organisms. Soil biodiversity has a vital role to recycle organic matter. Changes to natural soil properties may therefore affect the ecological structure,	

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
			function and processes associated with the supporting habitat of this Annex II feature.	
Supporting habitat: structure/ function	**Substrate**	Maintain a substrate of skeletal drought-prone relatively infertile soils overlying the calcareous bedrock	See above for floristic indicators that may indicate changes in soil nutrient status (increase in fertility).	
Supporting habitat: structure/ function	**Vegetation composition: negative indicators**	Maintain the frequency/cover of the following undesirable species at or to acceptable levels and are not encouraged by changes in surface condition, soils, nutrient levels or changes to hydrology	This feature can be adversely affected by changes to the grass: herb ratio (increased grassiness), often in tandem with sward becoming 'thicker' (less bare ground) or more rank. Cover of tall grasses, e.g. *Bromopsis erecta, Avenula pubescens, Arrhenatherum elatius, Dactylis glomerata*, should typically not exceed about 10% (except the first which may locally occur at higher cover in stands of CG3a). Other species likely to be favoured by increased soil fertility/agricultural improvement, e.g. *Lolium perenne, Holcus lanatus, Cynosurus cristatus, Trisetum flavescens, Trifolium repens*, should be rare or absent. Equally, 'agricultural weeds' such as *Cirsium arvense, Cirsium vulgare, Galium aparine, Plantago major, Rumex obtusifolius, Senecio jacobaea and Urtica dioica*, are likely to be indicators of bad management and loss/degradation of suitable habitat, so should be rare or absent.	This attribute will be periodically monitored as part of Natural England's SSSI Condition Assessments
Supporting habitat: structure/ function	**Vegetation height**	Maintain a sward typically in the range of 2 – 5cm. Early Gentian can also occur in slightly taller swards so a sward height of 5 – 20cm may be acceptable as long as there is plenty of bare ground and an absence of "grassy" dominants.	Swards usually require moderate to heavy grazing and/or trampling to keep them sufficiently short and open; but on some coastal sites, drought and exposure may be sufficient on their own to maintain suitable sward conditions. Grazing may be by rabbits, sheep or cattle. Generally, rabbits and/or sheep preferred to cattle (see, e.g. Telfer 1994), although Wilson (2000) suggests for sites in Wilts that summer (April-October) cattle grazing at 1.5 animals/ha, plus less intensive grazing in the winter, is suitable for many sites, with sheep used in late summer to remove any excess grass growth. Sward height may vary from year to year, depending not only on stocking rates and timing but also on the weather. The precise timing will vary both between and within the sites	This attribute will be periodically monitored as part of Natural England's SSSI Condition Assessments

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
			of the SAC, according to local conditions and requirements. *Gentianella anglica* is a small, poorly competitive, short-lived species, and so it is particularly important to keep the sward short to deter the development of tall tussocky swards that would out-compete it. Therefore, grazing should generally aim to keep a relatively open sward without causing excessive poaching. Light trampling can be beneficial by breaking down leaf litter and providing bare patches for seed germination	
Supporting habitat: structure/ function	**Vegetation structure and composition**	Maintain and where opportunities exist restore the area of suitable supporting habitat which is short (2-5 cm), tightly-grazed, calcicolous grassland with typically 5-10% bare ground which floristically corresponds to NVC communities: CG1 & CG2 In the CG1 type bare ground may be between 10-30%.	Vegetation composition of this feature can be variable, depending on aspect, management regime and underlying geology/soils, but the frequent presence of the following species tend to be positive indicators of suitable Early Gentian habitat in its usual CG2 NVC community: *Poterium sanguisorba, Cirsium acaule, Thymus praecox, Polygala vulgaris, Carex flacca, Hippocrepis comosa, Blackstonia perfoliata, Linum catharticum, Leontodon hispidus, Pilosella officinarum, Ranunculus bulbosus*. Grasses such *as Avenula pratensis, A. pubescens*, and *Festuca ovina* and *Festuca rubra* may be frequent as an open grassy 'overstorey', but never abundant or dominant. Early gentain may often occur with autumn gentian *Gentianella amarella*, but the two species usually occupy different microsites and seasonal timings, although there may be considerable overlap on some sites.	This attribute will be periodically monitored as part of Natural England's SSSI Condition Assessments
Supporting processes (on which the feature and/or its supporting habitat relies)	**Adaptation and resilience**	Maintain the feature's ability, and that of its supporting habitat, to adapt or evolve to wider environmental change, either within or external to the site	This recognises the increasing likelihood of supporting habitat features to absorb or adapt to wider environmental changes. Resilience may be described as the ability of an ecological system to cope with, and adapt to environmental stress and change whilst retaining the same basic structure and ways of functioning. Such environmental changes may include changes in sea levels, precipitation and temperature for example, which are likely to affect the extent, distribution, composition and functioning of a feature within a site. The vulnerability and response of features to such changes will vary. Using best available information, any necessary or likely adaptation or adjustment by the feature and its management in	

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
			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 particular SAC to climate change has been assessed by Natural England as being low, taking into account the sensitivity, fragmentation, topography and management of its habitats. This means that some adaptation action for specific issues may be required, such as reducing habitat fragmentation, creating more habitat to buffer the site or expand the habitat into more varied landscapes and addressing particular management and condition issues. Individual species may be more or less vulnerable than their habitat itself. In many cases, change will be inevitable so appropriate monitoring would be required	
Supporting processes (on which the feature and/or its supporting habitat relies)	**Air quality**	Restore as necessary 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).	The supporting habitat of this feature is considered sensitive to changes in air quality. Exceedance of these critical values for air pollutants may modify the chemical status of its substrate, accelerating or damaging plant growth, altering its vegetation structure and composition (including food-plants) and reducing supporting habitat quality and population viability of this feature. 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. 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	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). Natural England. 2015. Site Improvement Plan Isle of Wight Downs.

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
			technology and measures to tackle diffuse air pollution, within realistic timescales. For this feature, impacts of poor air quality and in particular Nitrogen deposition: include an increase in tall grasses, grass productivity more generally and consequent decline in floristic diversity increased mineralization and surface acidification is also likely.	
Supporting processes (on which the feature and/or its supporting habitat 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 and/or its supporting habitats.	Active and ongoing conservation management principally by grazing is needed to protect & maintain disparate populations of Early Gentian 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.	National Trust (1998a) National Trust (1998b) National Trust (1998c)
Supporting processes (on which the feature and/or its supporting habitat relies)	**Grazing pressure**	Maintain a grazing regime to keep the sward short (preferably 2-5cm).	Swards usually require moderate to heavy grazing and/or trampling to keep them sufficiently short and open; but on some coastal sites, drought and exposure may be sufficient on their own to maintain suitable sward conditions. Grazing may be by (any combination of) rabbits, sheep or cattle. Generally, rabbits and/or sheep preferred to cattle (see, e.g. Telfer 1994), although Wilson (2000) suggests for sites in Wilts that summer (April-October) cattle grazing at 1.5 animals/ha, plus less intensive grazing in the winter, is suitable for many sites, with sheep used in late summer to remove any excess grass growth. The precise timing will vary both between and within the sites of the SAC, according to local conditions and requirements. *Gentianella anglica* is a small, poorly competitive, short-lived species, and so it is particularly important to keep the sward short to deter the development of tall tussocky swards that would out-compete it. Therefore, grazing should generally aim	This attribute will be periodically monitored as part of Natural England's SSSI Condition Assessments Telfer, S. 1994) Wilson, P.J. 2000 Wilson, P.J. 2008

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
			to keep a relatively open sward without causing excessive poaching. Light trampling can be beneficial by breaking down leaf litter and providing bare patches for seed germination.	
Version Control Advice last updated: N/A				
Variations from national feature-framework of integrity-guidance: **Water Quantity / Quality:** This attribute has been removed as is not applicable to this feature.				

References

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National Trust (1998c). Biological Evaluation: West Wight, Afton, Compton & Brook Downs. Isle of Wight 1998 Survey (incorporating most of the 1982 survey) (Available from Natural England on request)

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Natural England (2007a) Definition of Favourable Condition – Headon Warren & West High Down SSSI (Consultation Draft) (Available from Natural England on request)

Natural England (2007b) Definition of Favourable Condition – Mottistone Down SSSI (Consultation Draft) (Available from Natural England on request)

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