European Site Conservation Objectives: Supplementary Advice on Conserving and Restoring site features

Sidmouth to West Bay Special Area of Conservation (SAC)
Site code: UK0019864

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About this document

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

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

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

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

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

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

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

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

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

About this site

European Site information

Name of European Site	Sidmouth to West Bay Special Area of Conservation (SAC)
Location	Devon, Dorset
Site Map	The designated boundary of this site can be viewed here on the MAGIC website
Designation Date	1 April 2005
Qualifying Features	See section below
Designation Area	897.30 ha
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)	Axmouth to Lyme Regis SSSI Sidmouth to Beer Coast SSSI West Dorset Coast SSSI
Relationship with other European or International Site designations	None

Site background and geography

The Sidmouth to West Bay SAC stretches for some 33km along the coast of East Devon and West Dorset. The site lies within the East Devon Area of Outstanding Natural Beauty (AONB), the Dorset AONB, and the Jurassic Coast World Heritage Site. Geologically the underlying rocks are from the Triassic, Jurassic and Cretaceous Periods. This geology, the geomorphological process that act upon it and the fossils it yields are recognised as being of outstanding universal value under the UNESCO World Heritage Site designation.

The underlying geology is inherently unstable in much of the SAC and consequently there are large areas of unstable cliffs along the length of the coast, with past and present active land slipping and cliff falls frequent in many places. Land slipping tends to be associated mainly with prolonged periods of wet weather, though high tide storm surges as well as drought and freeze thaw conditions can also cause significant geomorphological activity.

The SAC is in many places subject to minimal management intervention and supports a stunning range of wildlife. Natural succession has created a varied range of habitats from open bare ground, calcareous, acidic and neutral grassland, springs, wet flushes, scrub and woodland. There is a diverse invertebrate fauna associated with these habitats and notable plants include the early gentian (*Gentianella. anglica*) and purple gromwell (*Lithospermum purpureocaeruleum*). The foreshore is mostly rock and shingle, providing suitable habitat for a number of specialist plants and animals including Sea kale and the Scaly cricket. The woodland, an example of the *Tilio-Aceron* is worthy of special mention. This predominantly ash – sycamore woodland occupies an area of undercliff between Axmouth and Lyme Regis. Much of the landslip occurred in a single, catastrophic event overnight prior to the Great Landslip of 24 December 1839 much of the area was under small scale agriculture and sheep grazing. It would have been a pastoral landscape with mainly open fields, grazing and hedgerows, but also with some small scale fruit

farming, vegetable growing, and some smaller areas of woodland, some of which may have been used for coppice. There were more buildings and occupation of the land before 1839, some ruins are still visible.

The woodland we see today would have grown up from natural regeneration in a classic ecological succession, with scrub initially developing. Some of this would have been on abandoned agricultural land after 1839, but it would also have developed on the fresh landslip debris from 1839, and there were also later landslips creating bare earth habitat for colonisation (another significant landslip was recorded in 1879, but there have been others and more recent movements).

The ancient woodland ground flora we see in the Undercliff (including Bluebell, Town Hall Clock, Sanicle, Yellow Archangel etc.) surprise some people because of course it is not ancient woodland in the true sense, the theory is that these species would have been in the hedgerows and hazel copses prior to mature woodland developing, then spread out from there. This woodland therefore represents a rare example of natural regeneration with a known origin date and very little intervention to the present day. This stretch of the SAC, known as the Axmouth to Lyme Regis Undercliffs, has been a National Nature Reserve (NNR) since 1955.

The South West Coast Path National Trail runs the entire length of the SAC, allowing public access along the coast, although much of the SAC and cliffs are largely inaccessible due to topography and dense unmanaged cliff scrub and woodland. Public access to the coast and beaches is high in some locations (principally Sidmouth, Branscombe, Lyme Regis and Charmouth), the attractions being fossil collecting, open air recreation, walking etc There are a number of locations where development, including car parks and beach huts, are close to the beach and SAC such as at Branscombe and Monouth Beach in Lyme Regis.

The SAC falls into both the Dorset and East Devon AONBs. Two National Character Areas cover this stretch of the coast, Blackdowns (147) and Marshwood and Powerstock Vales (139). A common characteristic of the coast in these two areas is that of a predominantly undisturbed, remote coast, punctuated by points where access is easy and visitor numbers high, albeit to quite small stretches.

This SAC is covered by the Durlston Head to Rame Head Shoreline Management Plan (SMP, Version 2, June 2011), a document which assesses coastal processes and change and makes recommendations for future action, broken down into small coastal ‘Policy Units’. This SAC is covered by Policy Units 6a10 (West Bay) through 6a34 (Sidmouth to Beer Head).

About the qualifying features of the SAC

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

Qualifying habitats:

- **H1210 Annual vegetation of drift lines**

This habitat type occurs on deposits of shingle lying at or above mean high-water spring tides. The types of deposits involved are generally at the lower end of the size range of shingle (2-200 mm diameter), with varying amounts of sand interspersed in the shingle matrix. These shingle deposits occur as fringing beaches that are subject to periodic displacement or overtopping by high tides and storms. The distinctive vegetation, which may form only sparse cover, is therefore ephemeral and composed of annual or short-lived perennial species.

In the UK this Annex I type is not always easy to classify using the NVC because it is highly variable between sites and from year to year at the same site. Level or gently-sloping, high-level mobile beaches, with limited human disturbance, support the best examples of this vegetation.

- **H9180 *Tilio-Acerion forests of slopes, screes and ravines** * Priority feature

This site includes an area of active landslipping between Axmouth and Lyme Regis. These landslips have created, and will continue to shape, the mosaic of ***Tilio-Acerion***, sycamore *Acer pseudoplatanus* woodland, mixed scrub, grassland and pioneer communities. This mosaic of habitats makes this site rich in invertebrates, especially bees and wasps, such as *Ectemnius ruficornis*, *Andrena simillima* and *Nomada fulvicornis*. The woodland has a hazel *Corylus avellana* understorey and a ground-flora dominated by ivy *Hedera helix* (with numerous ivy broomrape *Orobanche hederae*) and hart's-tongue *Phyllitis scolopendrium*, with abundant dog's mercury *Mercurialis perennis* and tutsan *Hypericum androsaemum*. The Red Data Book lichen *Parmelia quercina* occurs on ash *Fraxinus excelsior* trees.

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

Sidmouth to West Bay is separated from the other two cliff cSACs on this part of the south coast of England, Isle of Portland to Studland Cliffs and St Albans Head to Durlston Head, by Chesil and the Fleet, which does not have a cliffed coastline. Sidmouth to West Bay is an example of a highly unstable soft cliff coastline subject to mudslides and landslips. The principal rock types are soft mudstones, clays and silty limestones, with a small chalk outlier in the west. The central part comprises the extensive Axmouth to Lyme Regis landslip, where chalk overlies the unstable rocks mentioned, resulting in slips ranging from frequent minor events to occasional mass movement events when entire blocks of the chalk scarp move seawards. The eastern part has no chalk capping and is subject to frequent mudslides in the waterlogged soft limestones and clays. Vegetation is very varied and includes pioneer communities on recent slips, calcareous grassland and scrub on detached chalk blocks and extensive self-sown woodland dominated by ash *Fraxinus excelsior* or sycamore *Acer pseudoplatanus*.

Qualifying Species:

Not applicable

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 and, where necessary, restore the total extent of the cliff system which is capable of supporting H1230 sea cliff vegetation of at least 33km.	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** from areas which are suitable for the feature but do not, for a variety of reasons, currently support it. The baseline-value of extent given has been generated using data gathered from the listed site-based surveys. Area measurements, where 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 the 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 cliff system acts to provide the range and variation of vegetation types and mosaics including 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 engineered or dumped materials or invasion by native or non-native plant species. The 33Km linear extent of the Sidmouth to West Bay SAC equates to the length of the component SSSIs underpinning the SAC designation.	*NATURAL ENGLAND 2018. Length of SAC measured from Webmap on 12.10.2018*
Extent and distribution	**Spatial distribution of the feature within the site**	Maintain and 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.	Natural England (2015) Axmouth to Lyme Regis Undercliffs NNR Management Plan, National Trust (2019) National Trust Biological Survey Golden

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
			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. The extent and distribution of this feature is overwhelmingly currently dictated by the geomorphological processes acting upon the coast/cliffs. Maintaining coast where these processes are intact and functioning must be a priority while restoration of processes to areas where these have been disrupted should be pursued whenever possible.	cap Estate,
Extent and distribution	**Future extent of habitat within the site and ability to respond to seasonal changes**	Maintain and 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. The need to allow the feature's communities to adapt to the landward recession of the cliffs requires that they are not hindered by inappropriate development/land use. Suitable land use should be secured in areas where recession is likely, through for example, agri-environment schemes or planning gain. Similarly, management of sediment availability and movement along the entire SAC, and beyond where functionally connected (sediment cells etc), must consider the impact(s) upon the function of the cliffs' geomorphological processes.	South Devon and Dorset Coastal Advisory Group (SDADCAG), 2011 Shoreline Management Plan Review Durlston Head to Rame Head Shoreline Management Plan (SMP, Version 2, June 2011)

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
Structure and function (including its typical species)	**Geo-morphological naturalness**	Maintain and Restore 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 demonstrate 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. Existing and new structures may interrupt natural geomorphological processes both where the structure is located and potentially along the entire feature extent.	Nomination of the Dorset and East Devon Coast for inclusion in the World Heritage List, 2 (a) iii) The nominated Site represents an exceptional range of text-book exemplars of coastal geomorphological features, landforms and processes (P.16) Dorset County Council 2001 South Devon and Dorset Coastal Advisory Group (SDADCAG), 2011 Shoreline Management Plan Review Durlston Head to Rame Head Shoreline Management Plan (SMP, Version 2, June 2011) Site Improvement Plan: Sidmouth to West Bay SIP216 (10/10/2014)
Structure and function (including its typical species)	**Presence of mosaic of microhabitats**	Maintain and Restore 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 should be achieved allowing natural geomorphological processes which drive the creation of most of these microhabitats (such as large and small scale landslipping, cracking, mudsliding, vegetation collapse temporary pool creation, etc)	
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 CG1 - *Festuca ovina - Carlina vulgaris* lowland calcareous	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	Various Favourable Condition Tables for component SSSIs which may be available on request from Natural England. Natural England Designated sites View system, lists of Reportable Features.

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
		grassland CG2 - *Festuca ovina - Avenula pratensis* lowland calcareous grassland CG6 - Dry grassland/ scrub transitions (MG1-related, CG2d-related) CG7a,b,d,e - *Festuca ovina - Hieracium pilosella - Thymus preaecox* grassland W21 - *Crataegus monogyna - Hedra helix* scrub W8 - *Fraxinus excelsior - Acer campestre - Mercurialis perennis* woodland W22 - *Prunus spinosa - Rubus fruticosus* scrub H4 - *Ulex gallii - Agrostis curtisii* heath It is likely that the hard cliffs found at Beer Head and parts of the Axmouth to Lyme Regis Undercliffs NNR host certain MC (maritime [hard] cliff NVC communities. Data is however currently deficient for this.	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 geomorphological processes with exposure and soil characteristics and management where relevant. Areas of cliff that do not support these NVC communities should not be regarded as of a secondary level of importance. It is likely that lack of suitable management and/or past interventions (engineering, drainage, planting etc) have adversely affected the (semi) natural vegetation and restoration should be viewed as both possible and desirable. Natural community succession should allowed to evolve without human interference/intervention. Any areas where succession has been checked by a reversible intervention should be prioritised for remedial, restorative works.	
Structure and function (including its typical species)	**Vegetation: undesirable species**	Maintain or reduce 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: Holm oak *Quercus ilex* Pampas grass *Cortaderia selloana* Buddleia *Buddleja davidii*	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	Site Improvement Plan: Sidmouth to West Bay SIP216 (10/10/2014) Natural England 2015 Axmouth to Lyme Regis Undercliffs NNR Management Plan

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
		Cherry laurel *Prunus laurocerasus* Snowberry *Symphoricarpos* Japanese knotweed *Fallopia japonica* Cotoneaster *Cotoneaster sp*	organic waste on cliff tops or slopes within or beyond the site boundary which may contain plant seeds or propagules or enrich the site. In certain areas it is currently impossible to reduce the population of a specific invasive species due to the terrain in which it is located. In such cases the imperative is to contain the population, preventing spread to other areas.	
Structure and function (including its typical species)	**Key structural, influential and distinctive species**	Maintain and restore 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 CG1, CG2, CG6 (MG1-related, CG2d-related), CG7a,b,d,e, W21, W8 W22 & H4 NVC communities which are the main component of the H1230 feature within the SAC	Some plant or animal species (or related groups of such species) make a particularly important contribution to the necessary structure, function and/or quality of an Annex I habitat feature at a particular site. These species will include; • **Influential** species which are likely to have a key role affecting the structure and function of the habitat (such as bioturbators (mixers of soil/sediment), grazers, surface borers, predators or other species with a significant functional role linked to the habitat) • **Site-distinctive** species which are considered to be a particularly special and distinguishing component of an Annex I habitat on a particular SAC. There may be natural fluctuations in the frequency and cover of each of these species. The relative contribution made by them to the overall ecological integrity of a site may vary, and Natural England will provide bespoke advice on this as necessary. The list of species given here for this Annex I habitat feature at this SAC is not necessarily exhaustive. The list may evolve, and species may be added or deleted, as new information about this site becomes available.	
Structure and function (including its typical species)	**Regeneration potential**	Maintain and restore] semi-natural vegetation on the cliff-top (within and/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.	

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
			The creation of appropriate semi-natural habitat, without alien or exotic species, adjacent to the cliff zone can provide a buffer to the SAC feature.	
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, such as at Beer Head This stretch of coast is characterised by more mobile 'Soft' cliffs which 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. Modification of geomorphological processes on or adjacent to the cliff system may be detrimental to the continuation of natural processes.	Nomination of the Dorset and East Devon Coast for inclusion in the World Heritage List, 2 (a) iii) The nominated Site represents an exceptional range of text-book exemplars of coastal geomorphological features, landforms and processes (P.16) Dorset County Council 2001
Supporting processes (on which the feature relies)	**Hydrology/ drainage**	At a site, unit and/or catchment level (as necessary, Maintain or restore 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 the Sidmouth to West Bay SAC and sustaining the H1230. Vegetated sea cliffs of the Atlantic and Baltic coasts. Hydrology is a key driver in maintaining the dynamics of the cliff system. The complex sequences of geological strata creates seepages, perched water tables, runnels and ponds – all of which literally lubricate the movements of the softer cliff sequences. On harder cliffs, gradual erosion from moving water and the effects of freeze/thaw are significant mechanisms of cliff movement and fall. Additionally, the availability of water maintains various macro and micro habitats which support certain plant communities and importantly associated invertebrate communities.	

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
			Changes in parameters such as source, depth, duration, frequency, magnitude and timing of water supply can have significant implications for the assemblage of characteristic plants and animals present.	
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. Such die back can be a useful component in the cycle of succession in some locations, bringing about early successional niches where geomorphological processes are either hindered or slow (such as on hard cliff areas).	
Supporting processes (on which the feature relies)	**Water quality**	Where the feature is dependent on surface water and/or groundwater, maintain and restore water quality and quantity to a standard which provides the necessary conditions to support the feature	Elements of the Sidmouth to West Bay SAC features are dependent on wetland habitats, such as pools, runnels, seepages and small streams, supported by surface and/or ground water. Maintaining the quality and quantity of water supply will be critical, especially at certain times of year. Impacts upon the vegetated sea cliff feature will arise from localised inputs from small streams and/or surface water conditions (run off from fields, roads, leaking septic tanks etc). Main rivers do not play a role. Consideration must be given to any proposal's likely impact on very local water quality and quantity. Considerations should include, but not be limited to, nutrient status, chemicals pollution, silt/sediment content, biological oxygen demand (BOD), and impacts upon water availability. Rivers and streams, apart from any that actually discharge over the cliffs, are not relevant to this feature as there is no pathway between the river and the vegetated cliffs. 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	

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
			water quality standards for the SAC.	
Supporting processes (on which the feature relies)	**Air quality**	Concentrations and deposition of air pollutants should be maintained 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. Critical loads for this feature within the SAC are currently within acceptable limits however there are concerns about impacts of future increases in deposition levels on the feature. Any proposals within 10km of the Sidmouth to West Bay SAC should be assessed for their air quality impacts on the feature. Site specific critical loads and levels for features can be found here: http://www.apis.ac.uk/srcl/select-a-feature?site=UK0019864&SiteType=SAC&submit=Next Note that as the Vegetated sea cliffs of the Atlantic and Baltic Coasts (H1230) comprises a variety of vegetation communities, it would be necessary to assess emissions against each NVC (National Vegetation Classification) community (see above)	Air Pollution Information System (www.apis.ac.uk). Site Improvement Plan: Sidmouth to West Bay SIP216 (10/10/2014)

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
			listed for this feature separately. This can be done here: http://www.apis.ac.uk/search-pollutant-impacts.	
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 crucial 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 (through, for example, pinning, bolting, meshing, drainage etc) does not produce naturally-occurring conditions which is likely to lead to undesirable changes in characteristic sea cliff vegetation.	Nomination of the Dorset and East Devon Coast for inclusion in the World Heritage List, 2 (a) iii) The nominated Site represents an exceptional range of text-book exemplars of coastal geomorphological features, landforms and processes (P.16) Dorset County Council 2001
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' or 'restore' objectives. This is because this SAC is made up of two component sites. 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 advice on request.				

Table 2: Supplementary Advice for Qualifying Features: H1210 Annual vegetation of drift lines

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
Extent and distribution	**Extent of the feature within the site**	Maintain and restore the total extent of the H1210 feature to closely reflect the available suitable substrates/conditions along the SAC.	This habitat type occurs on deposits of shingle lying at or above mean high-water spring tides. The types of deposits involved are generally at the lower end of the size range of shingle (2-200 mm diameter), with varying amounts of sand interspersed in the shingle matrix. These shingle deposits occur as fringing beaches that are subject to periodic displacement or overtopping by high tides and storms. The distinctive vegetation, which may form only sparse cover, is therefore ephemeral and composed of annual or short-lived perennial species. The mobility of shingle foreshores is an overriding consideration, and colonising species are able to tolerate periodic disturbance by wave action. This may involve the erosion or deposition of the surface sediment that is consequently recolonised by characteristic annual vegetation. Species are also tolerant of saltwater inundation, as the beaches are often over-topped by the tide or subject to spray from waves breaking over the beach. Level or gently-sloping, high-level naturally mobile beaches, with limited human disturbance, support the best examples of this vegetation. Maximising the extent of suitable habitat for this community must focus on preventing interventions that adversely modify natural processes that create the habitat and activities which adversely impact the habitat and vegetation when it becomes established.	Joint Nature Conservation Committee. 2007. Second Report by the UK under Article 17 on the implementation of the Habitats Directive from January 2001 to December 2006. Peterborough: JNCC. Available from: www.jncc.gov.uk/article17
Extent and distribution	**Spatial distribution of the feature within the site**	Maintain and restore the distribution and continuity of suitable beach conditions such that this habitat has the greatest opportunity to colonise annually	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. The conditions for annual establishment of this feature need to be secured for the whole beach frontage of a site to enable it to reach favourable condition. The distribution may change if the beach is responding to coastal processes.	

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**	Maintain and restore the ability of this habitat to re-establish itself in response to coastal processes and re-colonise after natural events	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. The habitat must be able to re-establish on newly-deposited beach formations of suitable sediment.	
Structure and function (including its typical species)	**Vegetation community composition**	Maintain the component vegetation communities of the feature to the following characteristic National Vegetation Classification types • SD2 *Honkenya peploides – Cakile maritima* strandline community. • MC6 *Atriplex prostrata – Beta vulgaris* ssp. *maritima* sea-bird cliff community (on shingle beaches only).	In the UK this Annex I type is not always easy to classify using the NVC because it is highly variable between sites and from year to year at the same site. It should also be noted that drift line vegetation found on a sand substrate is NOT referable to H1210, but are assessed as H2110 embryonic shifting dune communities. There may be a poor match with NVC types SD2 or Sneddon and Randall classification with driftline vegetation. Some locations with greater stability may resemble the MC6 vegetation type, but these perennials may be short-lived as a result of storm events.	Joint Nature Conservation Committee. 2007. Second Report by the UK under Article 17 on the implementation of the Habitats Directive from January 2001 to December 2006. Peterborough: JNCC. Available from: www.jncc.gov.uk/article17
Structure and function (including its typical species)	**Vegetation structure: zonation and transitions**	Maintain or restore the natural patterns of zonation across the drift line and between this and vegetation of more stable shingle landward that reflect the coastal processes and substrate type typical of the site.	This habitat is only generally found in a narrow fringing strip at and above MHW, but individual sites will show different patterns depending on the morphology of the site, and it can occur with perennial vegetation such as *Crambe maritima*. Where there is a fringing beach with not stable shingle to landward, other transitions may be present and these need to be identified. Transitions on this SAC can be to hard cliff edge, transitional eroding mud flows and associated perennial and annual vegetation brought down from H1230 vegetated sea cliff, eroding soft cliff with flush type communities etc.	
Structure and function (including its typical species)	**Key structural, influential and distinctive species**	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 SD2 and MC6 NVC communities which are the main	See the explanatory notes for this attribute above in Table 1 For this habitat feature, the vegetation will re-colonise each year so stable stands are unlikely, and these are limited in species due to the requirement for plants to be adapted to this environment. Characteristic species include *Honkenya peploides; Cakile maritima; Atriplex prostrata; A. glabrisucula; Galium aparine; Matricaria maritima; Polygonum oxyspermum; Salsola kali*. Changes in the relative abundance of species can	

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
		component of the H1210 feature within the SAC	indicate changes in sediment size or processes.	
Structure and function (including its typical species)	**Vegetation: undesirable species**	Maintain or reduce 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; • Tamarisk	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 is limited data on invasive undesirable species of this habitat type. The planting of species such as Tamarisk in an attempt to stabilise foreshores is detrimental to this habitat type.	
Structure and function (including its typical species)	**Nutrient availability**	Maintain the input of nutrients from tidally-derived organic matter and ensure these are able to break down in situ	Tidal litter (natural, not man-made) is an essential element to provide both nutrients and shelter for the germination of seeds. The combination of inorganic and organic substrate is an important pre-curser to development of the habitat and its successful establishment of its component vegetation on an annual basis. Both elements will be regulated by coastal processes. Removal of organic litter through artificial means may be considered detrimental to this feature.	
Structure and function (including its typical species)	**Sediment size range and type**	Maintain or restore the availability and size range of those sediments typical of the feature at the site	Sediment size influences the establishment of vegetation and types of vegetation. Natural sorting of material by wave action maintains the optimum conditions. Some sites will have different sediment size ranges and material, but should generally be in the range of 2-200mm and the material must reflect the local geology and natural sources of sediment to the beach. Clearly any proposals including beach re-charge must take this into consideration and would ideally be avoid in the first place. Additionally, construction of structures which would interrupt natural sediment drift and starve sections of the coast of their supply of sediment should not be supported.	
Structure and function	**Niches for seedling**	Maintain and restore the availability of niches which	Disturbance of wave-deposited sediment reduces potential niches for seed germination, changes the arrangement of	

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
(including its typical species)	**establishment**	provide the potential for seedling establishment	wave-sorted sediment and can lead to burial of seeds to a greater depth which suppresses germination. Therefore, any beach replenishment in areas known to comprise the range of suitable substrate sizes (2-200mm) should either be avoided in the first place, or be of similarly suitable material and placed at an agreed optimum time of year.	
Supporting processes (on which the feature relies)	**Beach morphology and structure**	Maintain a natural profile, elevation and slope of the beach and foreshore within the site	This is important as the shape and form of the beach provides optimum conditions for the establishment and completion of the annual cycle of flowering, fruiting and seed dispersal of the feature's typical component species Features that would directly or indirectly modify this morphology should be avoided. Careful consideration should be given to maintaining morphology in the design of any necessary coastal structures. Additionally, any redundant structures that are having an adverse impact on morphology should be removed.	
Supporting processes (on which the feature relies)	**Functionality and sediment supply including connectivity with the wider coastal sediment system**	Maintain or restore adequate sediment supplies to and across the site from source (the beach, offshore deposits, eroding cliffs etc)	There is a need at this site to ensure the continuous supply of sediment (from features such as soft eroding cliffs, dunes, offshore sand banks) to conserve this qualifying Annex I habitat feature. These features may also be important to the operation of the supporting ecological processes on which the designated site and its features may rely. Sediment will be transported to the beach ridges by wave action and storms. Longshore drift will move sediment through a system and activities outside a site can have an impact on site integrity if inputs are reduced. Structures (groynes, piers, sea walls armour etc) and/or interventions (offshore aggregate winning for example) can all have a serious negative impact on the supply of sediment and the dependent geomorphological processes and structures. Proposals to carry out such activities within or in functionally linked sediment cells should be carefully considered and ideally avoided.	
Supporting processes	**Water quality**	Where the feature is dependent on surface water and/or	Poor water quality could adversely affect the structure and function of this habitat type.	

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
(on which the feature relies)		groundwater, maintain and where necessary restore water quality and quantity to a standard which provides the necessary conditions to support the feature	The habitat is not likely to suffer from landward water quality issues as any flow/seepage from the backing cliffs is likely to sink below beach level quickly (though high levels of pollution from agricultural activities or leaking septic tanks may have strong localised effects and should be avoided/investigated and remedied.	
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	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. Direct habitat management of this feature would typically take the form of preventing disturbance and the removal of non-organic tidal litter. Measures should be considered to manage the impact of visitor pressure on certain high footfall areas by protecting areas of suitable substrate from continuous disturbance, preventing the establishment of annual vegetation of drift lines. Additionally, any new proposals that could adversely increase footfall in areas where annual vegetation of drift lines is possible (due to sediment size) should be carefully considered and ideally avoided.	Site Improvement Plan: Sidmouth to West Bay SIP216 (10/10/2014)
Supporting processes (on which the feature relies)	Aeolian (wind-blow) processes	Maintain the operation of natural sedimentary processes within the site	Within this site, windblown material is not important in providing the continuity of the natural beach system as the habitat does not include windblown sand (this is referred to under a different 'embryonic dune' N2K feature category). Wind blow processes will though allow the movement of seed around the site.	Joint Nature Conservation Committee. 2007. Second Report by the UK under Article 17 on the implementation of the Habitats Directive from January 2001 to December 2006. Peterborough: JNCC. Available from: www.jncc.gov.uk/article17
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' or 'restore' objectives. This is because this SAC is made up of two component sites. 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 advice on request.				

Table 3: Supplementary Advice for Qualifying Features: H9180 *Tilio-Acerion forests of slopes, screes and ravines

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
Extent and distribution of the feature	**Extent of the feature within the site**	Maintain the total extent of the feature approximately 45-50% of SAC area.	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. The cliff/undercliff nature of this habitat means that small losses can occur relatively frequently, along with the possibility of larger sudden losses caused by catastrophic cliff falls/slides/mass movement. For this feature tree roots (particularly of veteran trees) can extend a considerable distance beyond the boundary of the site - they can be impacted by soil compaction (such as caused by vehicles or construction works); agricultural operations or other soil disturbance (like trenches); and agro chemicals or other chemicals which get into the soil. Any loss of woodland area - whether at the edge or in the middle of a site will reduce the core woodland area where woodland conditions are found - these support significant assemblages of species dependent on woodland conditions (e.g. lichens and bryophytes - being one example). Loss of any woodland area which fragments the site into different parts will clearly disturb the movement of species between the remaining parts of the woodland.	
Extent and distribution	**Spatial distribution of**	Maintain the distribution and configuration of the feature,	A contraction in the range, or geographic spread, of the feature (and its component vegetation and typical species, plus	*Pers Comms, Local Natural England Advisor*

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
of the feature	**the feature within the site**	including where applicable its component vegetation types, across the site	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. Current extent and distribution is entirely the result of natural processes - woodland is found where it can establish. Extent and distribution should not be diminished except through action of natural processes. Equally, new areas suitable for woodland establishment may appear as a result of active geomorphological events (land slips etc), these should be allowed to develop without interference.	
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: W8 *Fraxinus excelsior - Acer campestre - Mercurialis perennis* W9 *Fraxinus excelsior - Sorbus aucuparia - Mercurialis perennis* woodland	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. It should be noted that Sycamore (*Acer psuedoplatanus*) is an important structural component of these woodlands. While the NVC communities W8 and W9, including their sub-communities, do not feature Sycamore (this can and is often referred as an undesirable invasive species), the H9810 N2K	

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
			feature includes it as a key component. Ash dieback is recorded adjacent to and probably within the SAC. It is likely that significant areas of woodland will be affected, leading to a change in community composition. Proposals to replace dead trees with planted specimens must be avoided.	
Structure and function (including its typical species)	**Vegetation structure - canopy cover**	Maintain an appropriate tree canopy cover across the feature, which will typically be between 40-90% of the site.	Canopy cover is the overall proportion of vegetative cover consisting of any woody layer ranging from established regeneration to mature and veteran stages. Woodland canopy density and structure is important because it affects ecosystem function and in particular microclimate, litterfall, soil moisture, nutrient turnover and shading; this in turn influences the composition of plants and animals in lower vegetation layers and soil. Canopy cover in this SAC is not controlled by active management (except the removal of dangerous or invasive alien (holm Oak). Woodland structure is relatively natural. Canopy cover in this SAC is more exposed to dynamic change due to the natural processes at work here.	
Structure and function (including its typical species)	**Vegetation structure - open space**	Maintain areas of permanent/temporary open space within the woodland feature, typically to cover approximately 10 - 30% of area	Woodland structure includes variations in age, tree form, layering, the distribution and abundance of open space and dead wood. It plays a critical role in woodland ecosystem functioning. The targets set within this attribute should reflect the most appropriate structure for the woodland feature on a particular site, taking account of its known interest, history, past management and the landscape context. Having some open, sunlit and largely tree-less areas as part of the woodland community is often important to facilitate natural tree and shrub regeneration and also to provide supporting habitat for specialist woodland invertebrates, birds, vascular and lower plants. Approx 2% of the open space within the Axmouth to Lyme Regis undercliffs is managed calcareous grassland. Such open space can be permanent or temporary and may consist of managed grazed areas, linear rides and glades, or naturally-produced gaps caused by disturbance events such as windthrow/fire/tree falling over/snow damage.	

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
			Much of the open space on this site will be of natural origin from, for example, wind throw, land slip, root shear etc. This is unmanageable and as such targets cannot be set. Open areas may fall below 10% in periods of low activity/storm blow, but could significantly exceed 10% in the aftermath of a large mass movement event or storm.	
Structure and function (including its typical species)	**Vegetation structure - old growth**	Maintain the extent and continuity of undisturbed, mature/old growth stands	Good woodland structure includes variations in age, tree form, layering, the distribution and abundance of open space and dead wood. It plays a critical role in woodland ecosystem functioning. It is unlikely that there are any trees on the feature area that exceed 200 years old. The nature of the cliffs/undercliff work against large numbers of old growth trees. There are old trees in the 100+ to 150 years old around the site but these are likely to be a minority of any stands. No interventions are made within the woodland except for the purposes health and safety (for example adjacent to the SW Coast path national Trail). Past attempts to remove 'invasive' species (Holm Oak/Sycamore) were abandoned due to difficult terrain and operational challenges. However, in the face of Chalara impacts on canopy it may be necessary to address Holm Oak (even of old growth) before it expands to fill niches left by dead ash tree stands..	
Structure and function (including its typical species)	**Vegetation structure - dead wood**	Maintain the continuity and abundance of standing or fallen dead and decaying wood,	Woodland structure includes variations in age, tree form, layering, the distribution and abundance of open space and dead wood. It plays a critical role in woodland ecosystem functioning. Essentially, the dead wood resource within the feature is unharvested both due to NNR status and the inaccessible nature of much of the terrain.	
Structure and function (including its typical species)	**Vegetation structure - age class distribution**	Maintain at least 3 age classes (pole stage/ medium/ mature) spread across the average life expectancy of the commonest trees.	A distribution of size and age classes of the major site-native tree and shrub species that indicate the woodland will continue in perpetuity, and will provide a variety of the woodland habitats and niches expected for this type of woodland at the site in question. As previously stated, the structure and age class of stands is to	

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
			all intents and purposes natural on this feature. Suggestions for planting in the aftermath of any serious ash dieback should be resisted and natural processes allowed to take their course (apart from preventing the further spread of Holm Oak).	
Structure and function (including its typical species)	**Vegetation structure - shrub layer**	Maintain an understorey of shrubs cover 20 - 60% of the stand area (this will vary with light levels and site objectives)	Woodland structure includes variations in age, tree form, layering, the distribution and abundance of open space and dead wood. It plays a critical role in woodland ecosystem functioning. Natural. Shrub layer regen is sufficient and does not need intervention, except to remove/control invasive species (see below).	
Structure and function (including its typical species)	**Vegetation structure - woodland edge**	Maintain] a graduated woodland edge into adjacent semi-natural open habitats, other woodland/wood-pasture types or scrub.	Woodland edge is defined as being the transitional zone between the forest feature and adjacent but different habitat types - the best woodland edges will have a varied structure in terms of height and cover. Many typical forest species make regular use of the edge habitats for feeding due to higher herb layer productivity and larger invertebrate populations. Grasslands / arable fields managed with high doses of agro-chemicals could potentially not allow this gradation of woodland edge and could have other impacts on the integrity of the site (pollution/ nutrient enrichment etc). The distribution and extent of woodland edge is natural, not managed. Edge dynamics are driven by natural succession and geomorphological events.	
Structure and function (including its typical species)	**Adaptation and resilience**	Maintain the resilience of the feature by ensuring a diversity of site-native trees (at least 4 site native tree species) e.g. ash/ small-leaved lime/ aspen/ alder/ sycamore/ rowan/ bird cherry/ birch) is present across the site.	This recognises the increasing likelihood of natural habitat features needing 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. The overall vulnerability of this SAC to climate change has been assessed by Natural England (2015) as being low, taking into account the sensitivity, fragmentation, topography and management of its habitats. This means that this site is considered to be vulnerable overall but are a lower priority for further assessment and action. Individual species may be more or less vulnerable than their supporting habitat itself. In many cases, change will be inevitable so appropriate monitoring would be advisable.	*NATURAL ENGLAND, 2015. Climate Change Theme Plan and supporting National Biodiversity Climate Change Vulnerability assessments ('NBCCVAs') for SACs and SPAs in England [Available at http://publications.naturalengland.org.uk/publication/4954594591375360].*

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
			Chalara may significantly reduce the canopy cover of Ash, the dominant native tree species. The two species most likely to fill the resulting niches are sycamore and holm oak. To maintain the ecological function of this feature, holm oak will need to be closely monitored and managed where necessary. Sycamore on the other hand is well adapted to site conditions and offers highly suitable conditions for many species.	
Structure and function (including its typical species)	**Browsing and grazing by herbivores**	Maintain browsing at a (low) level that allows well developed understorey with no obvious browse line, & lush ground vegetation with some grazing sensitive species evident (bramble, ivy etc), and tree seedlings and sapling common in gaps.	Herbivores, especially deer, are an integral part of woodland ecosystems. They are important in influencing woodland regeneration, composition and structure and therefore in shaping woodland wildlife communities. In general, both light grazing and browsing is desirable to promote both a diverse woodland structure and continuous seedling establishment. Short periods with no grazing at all can allow fresh natural regeneration of trees, but a long-term absence of herbivores can result in excessively dense thickets of young trees which shade out ground flora and lower plant species. However, heavy grazing by deer or sheep prevents woodland regeneration, and can cause excessive trampling and/or poaching damage, canopy fragmentation, heavy browsing, barkstripping and a heavily grazed sward. The SAC has a low density of deer, and very good regeneration of tree/shrub layer.	
Structure and function (including its typical species)	**Regeneration potential**	Maintain the potential for sufficient natural regeneration of desirable trees and shrubs; typically tree seedlings of desirable species (measured by seedlings and <1.3m saplings - above grazing and browsing height) should be visible in sufficient numbers in gaps, at the wood edge and/or as regrowth as appropriate ;	The regeneration potential of the woodland feature must be maintained if the wood is to be sustained and survive, both in terms of quantity of regeneration and in terms of appropriate species. This will Include regeneration of the trees and shrubs from saplings or suckers, regrowth from coppice stools or pollards, and where appropriate planting. Browsing and grazing levels must permit regeneration at least in intervals of 5 years every 20. The density of regeneration considered sufficient is less in parkland sites than in high forest. Regeneration from pollarding of veteran trees should be included where this is happening. The level of browsing on the woodland feature is currently well within permissible limits. The deer population is relatively small	

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
			and does not appear to be having a measureable effect/impact on regeneration.	
Structure and function (including its typical species)	**Key structural, influential and distinctive species**	Maintain and/or restore the abundance of the species listed to enable each of them to be a viable component of the Annex I habitat feature: Ash *Fraxinus excelsior* Sycamore *Acer pseudoplatanus* Ivy *Hedera helix* Bramble *Rubus fruticosa* Holm oak *Quercus ilex* Hart's tongue *Asplenium scolopendrium* *Parmelia* sp.(Lichen)	Some plant or animal species (or related groups of such species) make a particularly important contribution to the necessary structure, function and/or quality of an Annex I habitat feature at a particular site. These species will include; • Structural species which form a key part of the Annex I habitat's structure or help to define that habitat on a particular SAC (see also the attribute for 'vegetation community composition'). • Influential species which are likely to have a key role affecting the structure and function of the habitat (such as bioturbators (mixers of soil/sediment), grazers, surface borers, predators or other species with a significant functional role linked to the habitat) • Site-distinctive species which are considered to be a particularly special and distinguishing component of an Annex I habitat on a particular SAC. There may be natural fluctuations in the frequency and cover of each of these species. The relative contribution made by them to the overall ecological integrity of a site may vary, and Natural England will provide bespoke advice on this as necessary. The list of species given here for this Annex I habitat feature at this SAC is not necessarily exhaustive. The list may evolve, and species may be added or deleted, as new information about this site becomes available. While Holm Oak is mentioned as an important structural element, it is, on the whole, an undesirable on which is tolerated due to the difficulty of eradicating it. If and when ash dieback has any significant impact on the feature's stands of ash, it will be necessary to ensure this species, at least, does not increase its extent.	
Structure and function (including its	**Invasive, non-native and/or introduced**	Ensure invasive and introduced non-native species are either rare or absent, but if present are	Invasive or introduced non-native species are a serious potential threat to the biodiversity of native and ancient woods, because they are able to exclude, damage or suppress the	

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
typical species)	**species**	causing minimal damage to the feature	growth of native tree, shrub and ground species (and their associated typical species), reduce structural diversity and prevent the natural regeneration of characteristic site-native species. Once established, the measures to control such species may also impact negatively on the features of interest (e.g. use of broad spectrum pesticides). Such species can in this feature include holm oak, rhododendron, snowberry, Japanese knotweed, giant hogweed, Himalayan balsam, cherry laurel, pampas grass and cotoneaster. Similarly, this would include pheasants, rabbits and non-native invertebrate 'pest' species such as the Asiatic Ash Wood Borer which may well make land fall in the UK along this coast. Holm oak is represented by a series of well-established stands which have been present for many decades and are beyond eradication. The pragmatic approach is currently to monitor and contain. This may have to change in the face of Ash dieback.	
Structure and function (including its typical species)	**Soils, substrate and nutrient cycling**	Maintain the properties of the underlying soil types, including structure, bulk density, total carbon, pH, soil nutrient status and fungal: bacterial ratio, to within typical values for the habitat.	Soil is the foundation of basic ecosystem function and a vital part of the natural environment. Its properties strongly influence the colonisation, growth and distribution of those plant species which together form vegetation types, and therefore provides a habitat used by a wide range of organisms. Soil biodiversity has a vital role to recycle organic matter. Changes to natural soil properties may therefore affect the ecological structure, function and processes associated with this Annex I feature. The soils of the cliffs supporting woodland are probably unlike average woodland soils in that they are affected by mass movement and land slips. Horizons and continuity will be disjointed with areas of more mature soils structure immediately adjacent to newly exposed bare subsoil of rock.	
Supporting processes (on which the	**Functional connectivity with wider**	Maintain and restore the overall extent, quality and function of any supporting features within	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	Site Improvement Plan: Sidmouth to West Bay SIP216 (10/10/2014)

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
feature relies)	**landscape**	the local landscape which provide a critical functional connection with the site	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. The SAC is largely surrounded and ecologically isolated by intensive arable agriculture, often right up to the break of slope. Any opportunities that arise to create either non-intervention or managed restoration of woodland or other semi-natural habitat should be taken. Additionally, any land use change which decreases connectivity or intensifies land use in adjacent land should, if possible, be resisted.	
Supporting processes (on which the feature relies)	**Air quality**	Concentrations and deposition of air pollutants should be maintained at or below Maintain 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	Air Pollution Information System (www.apis.ac.uk). Site Improvement Plan: Sidmouth to West Bay SIP216 (10/10/2014)

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
			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. Critical loads for this feature within the SAC are currently within acceptable limits however there are concerns about impacts of future increases in deposition levels on the feature. Any proposals within 10km of the Sidmouth to West Bay SAC should be assessed for their air quality impacts on the feature. Site specific critical loads and levels for features can be found here: http://www.apis.ac.uk/srcl/select-a-feature?site=UK0019864&SiteType=SAC&submit=Next Note that as the Tilio-Acerion forests of slopes, screes and ravines (H9180) comprises a variety of vegetation communities, it would be necessary to assess emissions against each NVC (National Vegetation Classification) community (see above) listed for this feature separately. This can be done here: http://www.apis.ac.uk/search-pollutant-impacts.	
Supporting processes (on which the feature relies)	**Hydrology**	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 the Sidmouth to West Bay SAC and sustaining the H1230. Vegetated sea cliffs of the Atlantic and Baltic coasts. Hydrology is a key driver in maintaining the dynamics of the cliff system. The complex sequences of geological strata creates seepages, perched water tables, runnels and ponds – all of which literally lubricate the movements of the softer cliff sequences. On harder cliffs, gradual erosion from moving water and the effects of freeze/thaw are significant mechanisms of cliff movement and fall. Additionally, the availability of water maintains various macro and micro habitats which support certain plant communities and importantly associated invertebrate communities.	

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
			Changes in parameters such as source, depth, duration, frequency, magnitude and timing of water supply can have significant implications for the assemblage of characteristic plants and animals present.	
Supporting processes (on which the feature relies)	**Illumination**	Ensure artificial light is maintained at a level which is unlikely to affect natural phenological cycles and processes to the detriment of the feature and its typical species at this site.	Woodland biodiversity has naturally evolved with natural patterns of light and darkness, so disturbance or modification of those patterns can influence numerous aspects of plant and animal behaviour. For example, light pollution (from direct glare, chronically increased illumination and/or temporary, unexpected fluctuations in lighting) can affect animal navigation, competitive interactions, predator-prey relations, and animal physiology. Flowering and development of trees and plants can also be modified by un-natural illumination which can disrupt natural seasonal responses. Much of the SAC is currently quite remote and as such receives very little to no artificial light. Proposals which would see an increase in the levels of artificial light falling on the SAC feature should be avoided and, at least, carefully considered.	
Version Control Advice last updated: N/A				
Variations from national feature-framework of integrity-guidance: N/A				