Conservation objectives and definitions of favourable condition for designated features of interest

These Conservation Objectives relate to all designated features on the SSSI, whether designated as SSSI, SPA, SAC or Ramsar features.

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Name of Site of Special Scientific Interest (SSSI)	
BIRKLANDS AND BILHAUGH SSSI	
Names of designated international sites	
Special Area of Conservation (SAC)	Birklands and Bilhaugh SAC
Special Protection Area (SPA)	N/A
Ramsar	N/A
Relationship between site designations	
The Birklands and Bilhaugh SAC is composed of SSSI Units 5, 6, 7, 8 and 10 only.	

Version control information		
Status of this Version (Draft, Consultation Draft, Final)	Consultation Draft	
Prepared by	Steve Clifton	
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Quality assurance information		
Checked by	**Name** **Steve Clifton**	**Date** **25 March 2008**
	Signature	

Conservation Objectives and definitions of Favourable Condition: notes for users

Conservation Objectives

SSSIs are notified because of specific biological or geological features. Conservation Objectives define the desired state for each site in terms of the features for which they have been designated. When these features are being managed in a way which maintains their nature conservation value, then they are said to be in 'favourable condition'. It is a Government target that 95% of the total area of SSSIs should be in favourable condition by 2010.

Definitions of Favourable Condition

The Conservation Objectives are accompanied by one or more habitat extent and quality definitions for the special interest features at this site. These are subject to periodic reassessment and may be updated to reflect new information or knowledge; they will be used by Natural England and other relevant authorities to determine if a site is in favourable condition. The standards for favourable condition have been developed and are applied throughout the UK.

Use under the Habitats Regulations

The Conservation Objectives and definitions of favourable condition for features on the SSSI may inform the scope and nature of any 'appropriate assessment' under the Habitats Regulations. An appropriate assessment will also require consideration of issues specific to the individual plan or project. The habitat quality definitions do not by themselves provide a comprehensive basis on which to assess plans and projects as required under Regulations 20-21, 24, 48-50 and 54 - 85. The scope and content of an appropriate assessment will depend upon the location, size and significance of the proposed project. Natural England will advise on a case by case basis.

Following an appropriate assessment, competent authorities are required to ascertain the effect on the integrity of the site. The integrity of the site is defined in paragraph 20 of ODPM Circular 06/2005 (DEFRA Circular 01/2005) as the coherence of its ecological structure and function, across its whole area, that enables it to sustain the habitat, complex of habitats and/or the levels of populations of the species for which it was classified. The determination of favourable condition is separate from the judgement of effect upon integrity. For example, there may be a time-lag between a plan or project being initiated and a consequent adverse effect upon integrity becoming manifest in the condition assessment. In such cases, a plan or project may have an adverse effect upon integrity even though the site remains in favourable condition.

The formal Conservation Objectives for European Sites under the Habitats Regulations are in accordance with paragraph 17 of ODPM Circular 06/2005 (DEFRA Circular 01/2005), the reasons for which the European Site was classified or designated. The entry on the Register of European Sites gives the reasons for which a European Site was classified or designated.

Explanatory text for Tables 2 and 3

Tables 2, 2a and 3 set out the measures of condition which we will use to provide evidence to support our assessment of whether features are in favourable condition. They are derived from a set of generic guidance on favourable condition prepared by Natural England specialists, and have been tailored by local staff to reflect the particular characteristics and site-specific circumstances of individual sites. Quality Assurance has ensured that such site-specific tailoring remains within a nationally consistent set of standards. The tables include an audit trail to provide a summary of the reasoning behind any site-specific targets etc. In some cases the requirements of features or designations may conflict; the detailed basis for any reconciliation of conflicts on this site may be recorded elsewhere.

Conservation Objectives

The Conservation Objectives for this site are, subject to natural change, to maintain the following habitats and geological features in favourable condition (*), with particular reference to any dependent component special interest features (habitats, vegetation types, species, species assemblages etc.) for which the land is designated (SSSI, SAC, SPA, Ramsar) as individually listed in Table 1.

Habitat Types represented (Biodiversity Action Plan categories)

- LOWLAND PARKLAND AND WOOD PASTURE
- BROADLEAVED, MIXED AND YEW WOODLAND
- DWARF SHRUB HEATH

Geological features (Geological Site Types)

(*) or restored to favourable condition if features are judged to be unfavourable.

Standards for favourable condition are defined with particular reference to the specific designated features listed in Table 1, and are based on a selected set of attributes for features which most economically define favourable condition as set out in Table 2, Table 2a and Table 3

Table 1: Individual Designated Special Interest Features

BAP Broad Habitat type / Geological Site Type	Specific designated features	Explanatory description of the feature for clarification	SSSI designated interest features	cSAC designated interest features	SPA bird populations dependency on specific habitats			Ramsar criteria applicable to specific habitats			
					Annex 1 species	Migratory species	Waterfowl assemblage	1a Wetland characteristics	2a Hosting rare species &c	3a 20000 waterfowl	3c 1% of population
Lowland parkland and wood pasture	Wood decay invertebrate assemblage (A21) Specific Assemblage Types: A211 heartwood decay A212 bark & sapwood decay A213 fungal fruiting bodies	Groups of invertebrates associated with decaying-wood and mature timber	*								
	W16a *Quercus – Betula – Deschampsia flexuosa* woodland	Dry broadleaved woodland with a wood-pasture structure characterised by oak, birch and wavy hair-grass	*	*							
Broadleaved, Mixed and Yew Woodland	Wood decay invertebrate assemblage (A21) Specific Assemblage Types: A211 heartwood decay A212 bark & sapwood decay A213 fungal fruiting bodies	Groups of invertebrates associated with decaying-wood and mature timber	*								

	W10 *Quercus robur* – *Pteridium aquilinum-Rubus fruticosus* woodland	Dry broadleaved woodland characterised by pedunculate oak, bracken and bramble.	*	*							
Dwarf shrub heath	H9 *Calluna vulgaris* – *Deschampsia flexuosa* heath	Heather – wavy hair-grass dominated dry lowland heath	*								
	Grass-heath invertebrate assemblage (types F11 unshaded early successional mosaic & F22 scrub-heath, F21 grassland & scrub matrix)	Groups of invertebrates associated with structurally diverse heathland	*								

NB. 1). Features where asterisks are in brackets (*) indicate habitats which are not notified for specific habitat interest (under the relevant designation) but because they support notified species. 2) The requirements of species (including SPA bird species) are reflected in the Conservation Objectives for habitat features on which they depend. In some specific situations, direct population measures for species may also be used to provide supporting information to confirm habitat quality measures.

Table 2 Habitat Features - Extent Objectives

Conservation Objective for habitat extent	To maintain the invertebrate assemblage in favourable condition, which is defined in part in relation to a balance of habitat extent (extent attribute). Favourable condition is defined at this site in terms of the following site-specific standards:
Extent - Dynamic balance	On this site favourable condition requires the maintenance of the extent of each designated habitat type. Maintenance implies restoration if evidence from condition assessment suggests a reduction in extent.

Habitat Feature (BAP Broad Habitat level, or more detailed level if applicable)	**Estimated extent (ha) and date of data source/estimate**	**Site Specific Target range and Measures**	**Comments**
LOWLAND PARKLAND AND WOOD PASTURE (W16a)	270.07 ha	No reduction in area and any consequent fragmentation without prior consent. Measure using field survey and/or aerial photography, in relation to baseline 2000 aerial photos.	Recoverable reduction = unfavourable; non-recoverable reduction = partially destroyed.
BROADLEAVED, MIXED AND YEW WOODLAND (W10)	68.47 ha	At least current area of woodland stands maintained, although their structure may alter. Measure using field survey and/or aerial photography, in relation to baseline 2000 aerial photos.	Stand loss due to natural processes e.g. in minimum intervention stands may be acceptable. The change of woodland to a structure more akin to wood pasture should not necessarily be discouraged, although these woodland habitats should remain on site, as they contribute to the habitat mosaic.

Habitat Feature (BAP Broad Habitat level, or more detailed level if applicable)	Estimated extent (ha) and date of data source/estimate	Site Specific Target range and Measures	Comments
Dwarf shrub heath (H9)	167.2 hectares	No unconsented loss of the total area of dry heathland (including grass-heath) communities.	Lowland heathlands are habitats created mostly through human management by grazing, cutting and burning. If they are left to natural processes, then they lose their open character and disappear under thick scrub or secondary forest. However some fluctuations and variations from year to year are normal and acceptable. Aerial photographs may provide good means of measuring these changes in extent or position of the boundaries.

Audit Trail
Rationale for habitat extent attribute (Include methods of estimation (measures) and the approximate degree of change which these are capable of detecting).
Habitat areas taken from ENSIS database.
Rationale for site-specific targets (including any variations from generic guidance)
Wood pasture targets relate to SSSI Units 4, 5, 6, 7 and 10. Canopy Woodland targets relate to SSSI Units, 3, 8, and 9.
Other Notes

Table 2a Species population objectives

Conservation Objective for species populations	To maintain the designated species in favourable condition, which is defined in part in relation to their population attributes. Favourable condition is defined at this site in terms of the following site-specific standards:
Population balance	On this site favourable condition requires the maintenance of the population of each designated species or assemblage. Maintenance implies restoration if evidence from condition assessment suggests a reduction in size of population or assemblage.

Species Feature (species or assemblage)	List supporting BAP Broad Habitats	Population Attribute (eg presence/absence, population size or assemblage score)	Site Specific Target range and Measures (specify geographical range over which target applies ie site, BAP broad habitat or more specific)	Comments
Wood decay invertebrate assemblage Broad Assemblage Type: A21 wood decay	LOWLAND PARKLAND AND WOOD PASTURE	Direct Monitoring of assemblage score based on presence / absence of specified proportion of species typical of habitat listed in ISIS	Monitor the wood decay invertebrate assemblage once in every 6 year monitoring cycle Assemblages of equivalent values should be present on each monitoring occasion. Using defined invertebrate sampling protocols, thresholds to be met are: A21 Wood decay – SQI Score: 190 A211 Heartwood decay – Weighted species score: 7 A212 Bark & sapwood decay: Weighted species score: 20 A213 Fungal fruiting bodies: Weighted species score: 8	This attribute is to be assessed through specialist survey. Previous surveys have been undertaken in 1977-80 (Crocker) ,1984 (Johnson), 1998 (Lott) and 2004 (Entotax). Full details in SSSI science file.
Wood decay invertebrate assemblage Broad Assemblage Type: A21 wood decay	BROADLEAVED, MIXED AND YEW WOODLAND	Direct Monitoring of assemblage score based on presence / absence of specified proportion of species typical of habitat listed in ISIS	Monitor the wood decay assemblage once in every 6 year monitoring cycle Assemblages of equivalent values should be present on each monitoring occasion. Using defined invertebrate sampling protocols, thresholds to be met:	This attribute is to be assessed through specialist survey. Previous surveys have been undertaken in1977-80 (Crocker) ,1984 (Johnson), 1998 (Lott) and 2004 (Entotax).

			A21 Wood decay – SQI Score: 190 A211 Heartwood decay – Weighted species score: 7 A212 Bark & sapwood decay: Weighted species score: 20 A213 Fungal fruiting bodies: Weighted species score: 8	Full details in SSSI science file.
Grass-heath invertebrate assemblages Broad Assemblage Types: F11 unshaded early successional mosaic F22 scrub-heath F21 grassland & scrub matrix	DWARF SHRUB HEATH	Direct Monitoring of assemblage score based on presence / absence of specified proportion of species typical of habitat listed in ISIS	Monitor the grass-heath assemblage once in every 6 year monitoring cycle Assemblages of equivalent values should be present on each monitoring occasion. Using defined invertebrate sampling protocols, thresholds to be met: F11 – score = 180 F21 – score = 160 F22 – score = 160 (provisional threshold)	This attribute is to be assessed through specialist survey. Full details of previous surveys in SSSI science file

Audit Trail
Rationale for species population attributes (Include methods of estimation (measures), and the approximate degree of change which these are capable of detecting).
Rationale for site-specific targets (including any variations from generic guidance)
Other Notes

Table 3a: Site-Specific definitions of Favourable Condition

CONSERVATION OBJECTIVE FOR THIS HABITAT / GEOLOGICAL SITE-TYPE	To maintain the **lowland wood pasture and parkland** habitat at this site in favourable condition, with particular reference to relevant specific designated interest features. Favourable condition is defined at this site in terms of the following site-specific standards:
Site-specific details of any geographical variation or limitations (where the favourable condition standards apply)	
These condition standards apply to the following SSSI Units; Wood pasture & Parkland targets apply to SSSI Units 4, 5, 6, 7 (Sherwood Forest NNR) and 10 (Buckgates). Canopy Woodland targets relate to SSSI Units, 3 (Seymour grove) , 8, and 9 (swinecote road woodland and mine belt woods).	
Site-specific standards defining favourable condition	

Criteria feature	Attribute term in guidance	Measure	Generic Target	Comments	Use for CA?
W16a *Quercus – Betula – Deschampsia flexuosa* woodland/	Area	Extent of stands	There is no decrease in the area of ancient semi-natural wood-pasture No loss of the semi-natural wood-pasture mosaic	Different woodland types will differ in their expected cover in different layers e.g. in beech or oak woods the shrub layer is often sparse. This should be reflected in the tailoring of these targets to particular sites. In coppiced stands a lower canopy cover (of standards) can be accepted, as will also be the case in parkland. More detailed targets for deadwood may be appropriate where this is an important element of the woodland (see section 5.9). Note however that assessment of dead wood targets may be difficult to carry out and caution should be exercised in judging condition for this element. Assess by field survey using structured walk and/or transects.	Yes

Criteria feature	Attribute term in guidance	Measure	Generic Target	Comments	Use for CA?
	Structure and Natural processes	Age/size-class variation within and between stands	At least three age classes present and spread across the average life expectancy of the commonest trees There should be at least as many saplings/young (<20cm dbh) trees as there are veteran trees, preferably more and 25% as many middle-aged trees (<60cm dbh) as there are veterans.	A proportion of gaps at any one time may develop into permanent open space; equally some current permanent open space/glades may in time regenerate to closed canopy. Regeneration may often occur on the edges of woods rather than in gaps within it. The density of regeneration considered sufficient is clearly less in parkland sites than in high forest; in coppice most of the regeneration will be as stump regrowth. The minimum level of regeneration to be acceptable from a nature conservation viewpoint is likely to be much less than that needed where wood production is also an objective. Assess by field survey using structured walk and/or transects.	Yes
		Old or Veteran trees	No reduction in the number of veteran trees other than through natural processes All standing veteran trees (>120cms dbh) are retained indefinitely and number ideally between 5-10 per hectare [Current distribution of veteran trees given in ENRR 361]. All living standing veterans have free crowns and are clear of competitive woody growth within at least a 5-10 metre radius of their canopy Mature native oak trees (>80cms dbh) average at least 5 trees per hectare	In sites where there might be uncertainty as to what counts as site-native or as acceptable naturalised species this must be made clear (e.g. the position of sycamore). Where cover in any one layer is less than 100% then the 95% target applies to the area actually covered by that layer. Factors leading to the death or replacement of woodland species could include pollution or new diseases. Damage to species by non-native species that does not lead to their death is not necessarily unacceptable. Excessive browsing/grazing, even by native ungulates, may be undesirable if it causes shifts in the composition/ structure of the stand. Assess by field survey using structured walk and/or transects	Yes

Criteria feature	Attribute term in guidance	Measure	Generic Target	Comments	Use for CA?
		Open space	Associated areas of permanent open (i.e.<25% tree cover) semi-natural habitat (eg acid grass-heath) covers between 10-30% of the wood-pasture mosaic	This attribute is intended to cover any site-specific aspects of this habitat feature (forming part of the reason for notification) which are not covered adequately by the previous attributes, or by separate guidance (e.g. notified species features). For notable species it is not intended to set a target for detailed species monitoring, rather to provide a rapid indication of presence/ absence and/or approximate extent, allowing for natural fluctuations in population size. Distinctive elements and patches should be marked on maps for ease of checking in the field where possible. Assess by field survey using structured walk and/or transects, or as appropriate to feature	Yes
		Decaying wood	Fallen decaying wood is visibly abundant from any one place (presence of one or more large fallen trunks/major boughs >50 cms in diameter, smaller pieces of timber numerous)		Yes
	Regeneration	Establishment of young stems in gaps or stand edges	At least 5 native oak saplings or young trees (>1.5 m high) visible from any one place OR 10% of the number of veteran trees occur as young trees (>3m high) measured every 10 years Any planting material is composed of locally native stock Saplings of native trees and shrubs such as rowan, hawthorn and birch occasional		Yes

Criteria feature	Attribute term in guidance	Measure	Generic Target	Comments	Use for CA?
	Composition	Semi-natural cover	Less than 1% of wood-pasture, canopy and shrub layer occupied by non-native species. Canopy cover (>25% tree cover) is present across no less than 70-80% of the unit area	Beech and sweet chestnut are considered here as introductions, but retention of existing mature and veteran specimens of this species is acceptable	Yes
		Death through external or unnatural factors	Less than 5% of native oak trees > 80cms dbh show severe stress or death attributable to disease, subsurface activities or pollution		Yes
	Local distinctiveness		Less than 5% of semi-natural wood-pasture mosaic area is heavily poached (by grazing animals) or heavily trampled (by recreational pressure) Less than 5% of semi-natural wood-pasture mosaic is heavily modified, improved or composed of vegetation characteristic of high disturbance levels At least 80% of woodland vegetation referable to appropriate NVC type (mainly W10, W16a) At least 95% of permanent open space within wood-pasture mosaic referable to an appropriate NVC vegetation type (mainly H9, U2, U4)		Yes
	Associated species	Invertebrates	No evidence from periodic expert surveys (at least once every 6 years) of a loss of key saproxylic species or a significant decline in their habitat quality (as assessed by more frequent simple visual surveys).		Yes
		Fungi	Fruiting bodies of oak polypore recorded at least once every 3 years	Oak polypore is listed on Schedule 8 of the 1981 WCA for special protection and is a UKBAP priority species	No

Audit Trail
Rationale for limiting standards to specified parts of the site
Rationale for site-specific targets (including any variations from generic guidance)
Rationale for selection of measures of condition (features and attributes for use in condition assessment) **(**The selected vegetation attributes are those considered to most economically define favourable condition at this site for the broad habitat type and any dependent designated species).
Other Notes

Table 3b: Site-Specific Definitions of Favourable Condition

CONSERVATION OBJECTIVE FOR THIS HABITAT / GEOLOGICAL SITE-TYPE	To maintain the **Wood decay Invertebrate Assemblage** at **Birklands and Bilhaugh SSSI** in favourable condition, with particular reference to relevant specific designated interest features. Favourable condition is defined at this site in terms of the following site-specific standards:
Site-specific details of any geographical variation or limitations (where the favourable condition standards apply)	
Site-specific standards defining favourable condition	

Criteria feature	Attribute	Measure	Site-specific Targets	Comments	Use for CA?
Wood decay invertebrate assemblage (Wood pasture & parkland)	Vegetation heterogeneity: diverse surface topography of vegetation types	Record Structural Recording Surveys (SRS) of 6m radius at sample stops to determine number of structural surfaces and representation of preferred surfaces within the assessed unit. Preferred surfaces are: • Short sward grasslands • Longer coarser grasses/forbs & tussocks • Scrub and young trees • Veteran Trees that have "grown downward" by death of higher canopy • Tall veterans and mature, but not veteran trees Bracken and bare ground should also be recorded as surfaces.	• 4 or more surfaces present in at least 20% of SRSs • Longer coarser grasses/forbs & tussocks present in 10% of SRSs • Scrub and young trees (<20cm dbh) present in 10% of SRSs • Short sward grasslands present in 5% of SRSs	*Preferred* Surfaces are ecologically important planes of ground and vegetation within a habitat which should be retained to maintain faunal assemblages in favourable condition *Preferred features* are micro-habitat features which should always be targetted during an assessment. These should be recorded and mapped. *Preferred features* are: diverse age structure of trees with all age cohorts well represented, large veteran tree populations, dead wood – fallen, on living trees and standing dead trees, nectar sources in grassland swards and flowering shrubs, presence of ivy where it does not threaten veteran trees, unimproved swards with abundant forbs, including less welcome species such as thistles and ragwort, grazing by deer, transition into canopy woodland.	Yes

Surface Number	Description	Typical example species	Pref Surf
Surface 1	bare ground	none - or very sparse with occasional ruderals, lichens, & bryophytes	

Criteria feature	Attribute	Measure	Site-specific Targets	Comments				Use for CA?
				surface 2	short swards grassland	various grasses &grazed grassland forbs such as *Bellis, Achillea etc*	Yes	
				surface 3	longer coarser grasses/forbs & tussocks	*Holcus, Dactylis & Deschampsia,* with umbellifers *(Heracleum, Angelica)* & composites *(Cirsium & Senecio* species, *Achillea etc)* Nettle patches	Yes	
				surface 4	bracken	*Pteridium aquilinum*		
				surface 5	scrub(and young trees)	*Crataegus spp, Prunus spinosa, , Rubus spp Betula spp, Salix spp, Corylus.*	Yes	
				surface 6	veteran trees that have 'grown downward' by death of higher canopy	main tree species of wood-pasture/ parkland	Yes	
				surface 7	tall veterans and mature, but not veteran trees	main tree species of wood-pasture/ parkland:-	Yes	
Wood decay invertebrate assemblage (Wood pasture & parkland)	Tree age structure	Record the proportion of young, mature and veteran/ancient trees	There should be at least as many saplings/young (<20cm dbh) trees as there are veteran trees, preferably more and 25% as many middle-aged trees (<60cm dbh) as there are veterans.	Assessed against visual estimate for as much of the feature as is visible whilst standing at each sample location. If targets are not met, but young trees are being recruited or planted, then the site should be described as Unfavourable Recovering.				Yes
Wood decay invertebrate assemblage (Wood pasture & parkland)	Dead Wood	Record the amount of veteran trees, amount of fallen dead wood over 20cm dbh and number of trees with attached deadwood over 20cm dbh	There should be no more than a 5% decline between monitoring occasions.in the: • number of veteran trees	Assessed against visual estimate for as much of the feature as is visible whilst standing at each sample location. If no of veterans target is not met, but young trees are being recruited or planted, then the site should be described as Unfavourable Recovering.				Yes

Criteria feature	Attribute	Measure	Site-specific Targets	Comments	Use for CA?
			• quantity of fallen dead wood >20cm dbh • no of trees with attached deadwood >20cm dbh	Baseline is the survey and subsequent dead wood assessment by Watkins 1996. Baseline old tree population see Clifton (2000) in Science File. 2005 estimate = 40m³ (Treeworks 2005).	
Wood decay invertebrate assemblage (Canopy Woodland)	Cover: Seed Heads	Record percentage occupation of seed heads and broken stems able to over-winter (ideally recorded in winter)	Unit surface with >15% with seed heads over winter	Over-wintering seed heads and erect and fallen hollow stems of herbaceous plants are often important for overwintering eggs and pupae	No
Wood decay invertebrate assemblage (Wood pasture & parkland)	Cover: Dead organic matter	Record % cover of sward with litter layer	5-10% litter cover present in unit	Dead organic matter is not particularly important for wood decay invertebrates and so failure of this attribute should not put the unit into unfavourable condition, Recording it may be of use in the future.	No
Wood decay invertebrate assemblage (Wood pasture & parkland)	Nectar Sources: floweriness	Record percentage occupation of sward able to flower in the season	At least 10% of the sward able to flower A good supply of nectar sources to be present on site to provide nectar between early spring and late summer. , comprising willow and hawthorn and ground flora such as ragwort, thistle, bedstraws, yarrow, and late flowering ivy.	Open structured flowers are most important eg umbellifers, daisies, hawthorn and bramble. “Weed” species such as ragwort & thistles also provide an important nectar source at times of the year when many other plants are not in flower. It is acceptable for control of ragwort. However, it is important to be aware that yarrow is also an important nectar source, and indiscriminate management could also control this species. Timing of ragwort control is critical to whether the control is effective, it must be done before the flower sets seed and starts the whole cycle again.	No

Criteria feature	Attribute	Measure	Site-specific Targets	Comments	Use for CA?
Wood decay invertebrate assemblage (Canopy Woodland)	Vegetation heterogeneity: diverse surface topography of vegetation types	Record Structural Recording Surveys (SRS) of 6m radius at sample stops to determine number of structural surfaces and representation of preferred surfaces within the assessed unit. Preferred surfaces are: • Short layer (bluebells, ramsons, ranunculus spp) • Medium layer (rubus spp) • Young trees/scrub/understorey • Canopy trees Bare forest soils, muds or thin water films should also be recorded as other surfaces.	• 2 or more surfaces present in at least 20% of SRSs • Single surface present in no more than 10% of SRSs		Yes
Wood decay invertebrate assemblage (Canopy Woodland)	Tree age structure	Record the proportion of young, mature and veteran/ancient trees	There should be at least as many saplings/young (<20cm dbh) trees as there are veteran trees, preferably more and 25% as many middle-aged trees (<60cm dbh) as there are veterans.	If targets are not met, but young trees are being recruited or planted, then the site should be described as Unfavourable Recovering.	Yes
Wood decay invertebrate assemblage (Canopy Woodland)	Dead Wood	Record the amount of veteran trees, amount of fallen dead wood over 20cm dbh and number of trees with attached deadwood over 20cm dbh	There should be no more than a 5% decline between monitoring occasions.in the: • number of veteran trees • quantity of fallen	Assessed against visual aestimate for as much of the feature as is visible whilst standing at each sample location. If no of veterans target is not met, but young trees are being recruited or planted, then the site should be described as Unfavourable Recovering. Baseline is the survey and subsequent dead wood	Yes

Criteria feature	Attribute	Measure	Site-specific Targets	Comments	Use for CA?
			dead wood >20cm dbh • no of trees with attached deadwood >20cm dbh	assessment by Watkins 1996. Baseline old tree population see Clifton (2000) in Science File.	
Wood decay invertebrate assemblage (Canopy Woodland)	Cover: Dead organic matter	Record % cover of sward with litter layer	5-10% litter cover present in unit	Dead organic matter is not particularly important for wood decay invertebrates and so failure of this attribute should not put the unit into unfavourable condition, Recording it may be of use in the future.	No
Wood decay invertebrate assemblage (Canopy Woodland)	Cover: Seed Heads	Record percentage occupation of seed heads and broken stems able to over-winter (ideally recorded in winter)	Unit surface with >15% with seed heads over winter	Over-wintering seed heads and erect and fallen hollow stems of herbaceous plants are often important for overwintering eggs and pupae	No
Wood decay invertebrate assemblage (Canopy Woodland)	Nectar Sources: floweriness	Record percentage occupation of sward able to flower throughout the year.	At least 10% of the sward able to flower A good supply of nectar sources to be present on site to provide nectar between early spring and late summer. , comprising willow, bramble and hawthorn and ground flora such as ragwort, thistle, bedstraws, yarrow, and late flowering ivy.	Open structured flowers are important to the widest variety of saproxylic invertebrates eg umbellifers, daisies, and hawthorn and bramble blossom. “Weed” species such as ragwort and thistles also provide an important nectar source at times of the year when many other plants are not in flower. It is acceptable for control of ragwort. However, it is important to be aware that yarrow is also an important nectar source, and indiscriminate management could also control this species. Timing of ragwort control is critical to whether the control is effective, it must be done before the flower sets seed and starts the whole cycle again.	No

Audit Trail
Rationale for limiting standards to specified parts of the site
Rationale for site-specific targets (including any variations from generic guidance)
Rationale for selection of measures of condition (features and attributes for use in condition assessment) **(**The selected vegetation attributes are those considered to most economically define favourable condition at this site for the broad habitat type and any dependent designated species).
Other Notes

Table 3c: Site-Specific Definitions of Favourable Condition

CONSERVATION OBJECTIVE FOR THIS HABITAT / GEOLOGICAL SITE-TYPE	To maintain the **grass-heath Invertebrate Assemblage** at **Birklands and Bilhaugh SSSI** in favourable condition, with particular reference to relevant specific designated interest features. Favourable condition is defined at this site in terms of the following site-specific standards:
Site-specific details of any geographical variation or limitations (where the favourable condition standards apply)	
These standards apply to SSSI Units 1, 2 and 5.	
Site-specific standards defining favourable condition	

Criteria feature	Attribute	Measure	Site-specific Targets	Comments	Use for CA?
Grass-heath invertebrate assemblages Broad Assemblage Types: F11 unshaded early successional mosaic F22 scrub-heath F21 grassland & scrub matrix	Vegetation heterogeneity: diverse surface topography of vegetation types	Record Structural Recording Surveys (SRS) of 6m radius at 10 sample stops to determine number of structural surfaces and representation of preferred surfaces within the assessed unit. Preferred surfaces are: • Early successional (bare ground with and without lichen/bryophyte cover) • Short sward grass-heathland • Longer sward grass-heathland • Mature grass-heathland • Young scrub and trees • Mature scrub and trees • Wet mire	• 4 or more surfaces present in at least 20% of SRSs • single surface present in no more than 50% of SRS • Scrub and young trees (<2.5m high) present in 10% of SRSs • bare ground and lichen/bryophyte swards present in 20% of SRSs • Mature grass-heathland present in at least 10% of	*Preferred* Surfaces are ecologically important planes of ground and vegetation within a habitat which should be retained to maintain faunal assemblages in favourable condition *Preferred features* are micro-habitat features within each Surface which should always be targeted during an assessment. These should be recorded and mapped where practicable. These include early successional (bare and sparsely-vegetated) surfaces which are ideally firm but friable, sunlit, horizontal, sloping or vertical (eg sand pits, tracks, eroded paths, small 'micro' cliffs, rabbit scrapes & burrows, exposed wet sandy margins, permanently bare soil with high toxicity or droughtiness), wetland surfaces (eg permanent and ephemeral pools and ponds, bare wet sand, seepage areas, springlines, sphagnum pools), scrub margins and scattered small trees, mature trees along heathland margins and ungrazed flowery areas along verges and pathway margins	Yes

<table>
<tr><th>Criteria feature</th><th>Attribute</th><th>Measure</th><th>Site-specific Targets</th><th>Comments</th><th>Use for CA?</th></tr>
<tr><td></td><td></td><td></td><td>SRS</td><td>
<table>
<tr><th>Surface Number</th><th>Description</th><th>Typical example species</th><th>Preferred Surface?</th></tr>
<tr><td>Surface 1</td><td>bare ground</td><td>none - or very sparse with occasional ruderals, lichens, & bryophytes</td><td>Yes</td></tr>
<tr><td>surface 2</td><td>Lichen/bryophyte cover with intervening bare ground</td><td>Lichens/bryophytes</td><td>Yes</td></tr>
<tr><td>surface 3</td><td>Short grass – heather sward</td><td>Festuca ovina, Rumex acetosella, seedlings and pioreer Calluna vulgaris</td><td>Yes</td></tr>
<tr><td>surface 4</td><td>Long grass – heather sward</td><td>Festuca rubra, Nardus stricta, Decshampsia flexuosa, Molinia caerulea, Building phase calluna.</td><td>Yes</td></tr>
<tr><td>surface 5</td><td>Mature long grass-heather sward</td><td>Mature Calluna vulgaris, Deschampsia flexuosa, Molinia</td><td>Yes</td></tr>
<tr><td>surface 6</td><td>Young scrub</td><td>Betula, Quercus, Populus tremula, Ulex, Cysticus Rubus spp , Salix spp,</td><td>Yes</td></tr>
<tr><td>surface 7</td><td>Mature scrub and trees</td><td>Betula, Quercus, Salix. Ulex, Cysticus</td><td>Yes</td></tr>
<tr><td>Surface 8</td><td>Wet mire</td><td>Molinina, Sphagnum, Erica tetralix</td><td>Yes</td></tr>
</table>
</td><td></td></tr>
<tr><td>Grass-heath invertebrate assemblages

Broad Assemblage Types:</td><td>Vegetation heterogeneity: scrub</td><td>Record % cover within each Unit</td><td>Between 5-15% cover of young tree & scrub on open heath

Tree and scrub spp include: Betula spp., Prunus spinosa, Pinus spp., Rubus spp., Cytisuss scoparius,</td><td>Excluded are well-established stands and clumps of wood-pasture or woodland which are to be retained. These have been mapped for future reference (see SSSI Monitoring file)</td><td>Yes</td></tr>
</table>

Criteria feature	Attribute	Measure	Site-specific Targets	Comments	Use for CA?
F11 unshaded early successional mosaic F22 scrub-heath F21 grassland & scrub matrix			*Quercus spp., Sambucus nigra, Ulex spp*		
Grass-heath invertebrate assemblages Broad Assemblage Types: F11 unshaded early successional mosaic F22 scrub-heath F21 grassland & scrub matrix	Early successional surfaces: horizontal bare ground	Record % cover of bare ground	Surface cover between 1-10% of each Unit, with at least 50% of surface composed in sunlit, firm but friable state and no more than 1% heavily disturbed or churned bare sand		Yes
Grass-heath invertebrate assemblages Broad Assemblage Types: F11 unshaded early successiona	Early successional surfaces: sloping or vertical bar e ground	Record % cover of bare ground	Surface cover between 1-10% of each unit, with at least 50% of this surface sunlit with S or SE aspect		Yes

Criteria feature	Attribute	Measure	Site-specific Targets	Comments	Use for CA?
l mosaic F22 scrub-heath F21 grassland & scrub matrix					
Grass-heath invertebrate assemblages Broad Assemblage Types: F11 unshaded early successiona l mosaic F22 scrub-heath F21 grassland & scrub matrix	Cover: Seed Heads	Record percentage occupation of seed heads and broken stems able to over-winter (ideally recorded in winter)	Unit surface with >15% with seed heads over winter	Over-wintering seed heads and erect and fallen hollow stems of herbaceous plants are often important for overwintering eggs and pupae	No
Grass-heath invertebrate assemblages Broad Assemblage Types: F11 unshaded early successiona l mosaic F22 scrub-heath F21 grassland &	Cover: Dead organic matter	Record % cover of sward with litter layer	5-10% litter cover present in unit	Dead organic matter is not particularly important for wood decay invertebrates and so failure of this attribute should not put the unit into unfavourable condition, Recording it may be of use in the future.	No

Criteria feature	Attribute	Measure	Site-specific Targets	Comments	Use for CA?
scrub matrix					
Grass-heath invertebrate assemblages Broad Assemblage Types: F11 unshaded early successional mosaic F22 scrub-heath F21 grassland & scrub matrix	Nectar Sources: floweriness	Record percentage occupation of sward able to flower in the season	At least 30% of the sward able to flower	Open structured flowers are most important eg umbellifers, daisies, hawthorn and bramble. "Weed" species such as ragwort & thistles also provide an important nectar source at times of the year when many other plants are not in flower. It is acceptable for control of ragwort. However, it is important to be aware that yarrow is also an important nectar source, and indiscriminate management could also control this species. Timing of ragwort control is critical to whether the control is effective, it must be done before the flower sets seed and starts the whole cycle again.	No

Table 3d: Site-Specific definitions of Favourable Condition

CONSERVATION OBJECTIVE FOR THIS HABITAT	To maintain the **dwarf shrub heath** habitat at this site in favourable condition, with particular reference to relevant specific designated interest features. Favourable condition is defined at this site in terms of the following site-specific standards:

Site-specific details of any geographical variation or limitations (where the favourable condition standards apply)

Lowland dry heathland is a feature of the following SSSI Units;

1 – Budby South Forest NNR
2 – Budby South Forest NNR
11 – Budby roadside verge

Site-specific standards defining favourable condition

Criteria feature	Attribute term in guidance	Measure	Generic Target	Comments	Use for CA?
Lowland dry heathland H9 *Calluna vulgaris* – *Deschampsia flexuosa* heath	Bare ground (%)	Visual assessment of cover, using structured walk or transects	Between 1 –15% cover of bare ground should consist of firm, sunlit, horizontal, sloping or vertical, exposed bare ground, with no more than 1% heavily disturbed (see text above)	Bare ground should form a patchwork with vegetation and be present mainly in south-facing slopes. Exclude rock, stone or litter. Exposed root plates of fallen trees, sparsely-vegetated tracks or sandy paths can also be a source or bare ground for nesting invertebrates and should be included in the assessment	Yes
Lowland dry heathland H9 *Calluna vulgaris* – *Deschampsia flexuosa* heath	Indicators of local distinctiveness: e.g. transitions, pools or notable species	Visual assessment of presence Species records	Maintain the following existing features, • Increasing or stable population of notable plants (cross-leaved heather, hard fen, star sedge) • Flower-rich edge habitat maintained alongside tracks and margins • No loss in the extent or quality of associated features of note (mire, sphagnum pools and ponds, large bare ground areas, aspen stand)	This attribute is intended to cover any site-specific aspects of this habitat feature (forming part of the reason for notification) which are not covered adequately by the other attributes, or by separate guidance e.g. for notified species features. For notable species (vascular plants) it is not intended to set a target for detailed species monitoring, rather to provide a rapid indication of presence/ absence and/or approximate extent, allowing for natural fluctuations in population size	No

Criteria feature	Attribute term in guidance	Measure	Generic Target	Comments	Use for CA?
			• Petty whin *Genista anglica* and mature hawthorns present in unit 11. • Breeding bird assemblage maintained to include key species: nightjar, stonechat, woodlark; linnet & tree pipit	See SSSI Monitoring file for further detail on location and distribution of these features.	
Lowland dry heathland H9 *Calluna vulgaris – Deschampsia flexuosa* heath	Negative indicators: signs of disturbance	Visual assessment of cover, using structured walk or transects	<1% of habitat heavily eroded.	Record presence of signs of overgrazing or intensive fires in the activities list on the field form.	Yes
Lowland dry heathland H9 *Calluna vulgaris – Deschampsia flexuosa* heath	Negative indicators: Species	Visual assessment of cover, using structured walk or transects	<1% cover of exotic species within each Unit such as *Rhododendron ponticum, Gaultheria shallon, Fallopia japonica*.	Exotic species should be eradicated if possible.	Yes
Lowland dry heathland H9 *Calluna vulgaris – Deschampsia flexuosa* heath	Negative indicators: Species	Visual assessment of cover, using structured walk or transects	Acrocarpous mosses <occasional within each Unit	Species in this list may be beneficial for a range of invertebrates and only become indicators of negative quality if they are over the established limit.	Yes
Lowland dry heathland H9 *Calluna vulgaris – Deschampsia flexuosa* heath	Negative indicators: Species	Visual assessment of cover, using structured walk or transects	<10% bracken (dense canopy)	Species in this list may be beneficial for a range of invertebrates and only become indicators of negative quality if they are over the established limit.	Yes

Criteria feature	Attribute term in guidance	Measure	Generic Target	Comments	Use for CA?
Lowland dry heathland H9 *Calluna vulgaris – Deschampsia flexuosa* heath	Negative indicators: Species	Visual assessment of cover, using structured walk or transects	< 1 % of 'negative indicators', such as ragwort, nettle, thistles, and other herbaceous spp such as *Cirsium arvense, Digitalis purpurea, Epilobium spp. (*excluding*. E. palustre), Chamerion angustifolium, Juncus effusus, J. squarrosus,, Senecio spp., Rumex obtusifolius, Urtica dioica,* 'coarse grasses'.	Species in this list may be beneficial for a range of invertebrates and only become indicators of negative quality if they are over the established limit.	Yes
Lowland dry heathland H9 *Calluna vulgaris – Deschampsia flexuosa* heath	Negative indicators: Species	Visual assessment of cover, using structured walk or transects	< 15% of encroaching tree & scrub cover on open heath Tree and scrub spp include: *Betula spp., Prunus spinosa, Pinus spp., Rubus spp., Cytisuss scoparius, Quercus spp., Sambucus nigra*	Excluded are well-established stands and clumps of wood-pasture or woodland. These have been mapped for future reference (see SSSI Monitoring file) It is particularly important to check the boundaries and edges when they are defined by trees, scrub or bracken, to avoid encroachment into the heathland.	Yes
Lowland dry heathland H9 *Calluna vulgaris – Deschampsia flexuosa* heath	Vegetation composition: desirable forbs	Record presence, using structured walk or transects	At least 2 species from the list below at least occasional throughout the sward within each Unit Desirable forbs include: *Galium saxatile, Genista anglica, Hypochaeris radicata, Lotus corniculatus, Plantago lanceolata, , Polygala serpyllifolia, Potentilla erecta, Rumex acetosella, Serratula tinctoria, Thymus praecox, Viola riviniana*	In naturally species-poor sites, the presence of just one forb species may be enough to meet the target. For species-rich sites a higher target may be appropriate (see text).	Yes
Lowland dry heathland H9 *Calluna vulgaris – Deschampsia flexuosa* heath	Vegetation composition: dwarf shrubs	Visual assessment of cover, using structured walk or transects	At least 1 species of dwarf shrub (from *calluna vulgaris, Erica cinerea, Erica tetralix, vaccinium myrtillus*) present and at least	In naturally species-poor sites the presence of just one dwarf-shrub species may be enough to meet the target. For species-rich sites a higher target may be appropriate (see text).	Yes

Criteria feature	Attribute term in guidance	Measure	Generic Target	Comments	Use for CA?
Lowland dry heathland H9 *Calluna vulgaris – Deschampsia flexuosa* heath	Vegetation composition: graminoids	Record presence, using structured walk or transects	At least 1 species from the list below at least frequent with *Deschampsia flexuosa* and/or *Nardus stricta* should be no more than abundant or >50% in cover , but in up to 15% of the feature these species can be dominant and cover up to 75% is acceptable. *Agrostis spp., Carex spp., Danthonia decumbens, Deschampsia flexuosa, Festuca spp., Molinia caerulea, Nardus stricta, Trichophorum cespitosum.*	In naturally species-poor sites, the presence of just one graminoid species may be enough to meet the target. For species-rich sites a higher target may be appropriate (see text). Long-sward stands of dry heath are noted for its spider interest which relies on structurally diverse, grass-heath swards. Cover of graminoids can therefore be higher in up to 15% of the heathland feature	Yes
Lowland dry heathland H9 *Calluna vulgaris – Deschampsia flexuosa* heath	Vegetation structure: % cover of dwarf shrubs	Visual assessment of cover, using structured walk or transects and aerial photographs, maps.	Dwarf shrub cover at least 25% of the feature. Dwarf-shrubs include: *Calluna vulgaris, Erica. cinerea, E. tetralix, Genista anglica, Ulex gallii, U. minor, Vaccinium myrtillus.*	Annual variation and succession should be accounted for within the targets.	Yes
Lowland dry heathland	Vegetation structure: % cover of gorse *Ulex* spp.	Visual assessment of cover, using structured walk or transects and aerial photographs, maps.	Total *Ulex* spp. cover <25% of each Unit.	Gorse species support a rich invertebrate and vertebrate fauna. However, they can affect the soil characteristics. See also 'negative indicators'.	Yes
Lowland dry heathland H9 *Calluna vulgaris – Deschampsia flexuosa* heath	Vegetation structure: growth phase composition of ericaceous cover	Visual assessment of cover, using structured walk or transects	Structure of ericaceous cover; Pioneer phase (including pseudo-pioneer): 10-40%; Building/mature phase: 20-80%; Degenerate phase: <30%; Dead: <10%, of total ericaceous cover.	Both a young stand of e.g. 40-60-0-0 (P-B/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 they will be very different. Annual variation and succession should be accounted for within the targets. This attribute should be assessed only where it is possible to differentiate the growth phases.	Yes

Audit Trail
Rationale for limiting standards to specified parts of the site
Rationale for site-specific targets (including any variations from generic guidance)
A higher percentage of bare ground is acceptable here as the site is important for certain bird species e.g. woodlarks, nightjars. Up to 15% of the heathland feature should comprise long-sward grass-heathland as the site are noted for their grass-heath invertebrate fauna (specifically mentioned on the SSSI citation) which relies on structurally diverse, long-sward grass-heaths. Cover of graminoids can therefore be higher in these areas.
Rationale for selection of measures of condition (features and attributes for use in condition assessment) **(**The selected vegetation attributes are those considered to most economically define favourable condition at this site for the broad habitat type and any dependent designated species).
Other Notes