

## **Appendix 2 – Natural England citations for SSSIs in Chilterns Beechwoods**



# Appendix 2 – Natural England citations for SSSIs in Chilterns Beechwoods

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## *Conservation Objectives and Condition Assessments*

### Conservation objectives of SSSIs

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 English Nature 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. English Nature 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 para C10 of PPG9 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 para. C10 of PPG 9, 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 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 EN (English Nature) 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.

The SSSIs within the Chilterns Beechwoods SAC have a series of conservation objectives, as detailed below. The SSSIs are as follows:

- Ashridge Commons and Woods
  - Aston Rowant Woods
  - Bisham Woods
  - Bradenham Woods, Park Wood and The Coppice SSSI
  - Ellesborough and Kimble Warrens
  - Tring Woods
  - Windsor Hill
  - Naphill Common
  - Hollowhill and Pullingswood Woods
- 
- ***Ashridge Commons and Woods SSSI***

### ***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, cSAC<sup>1</sup>, SPA, Ramsar) as individually listed in Table 1.

#### **Habitat Types represented (Biodiversity Action Plan categories)**

Broadleaved mixed and yew woodland

#### **Geological features (Geological Site Types)**

Not applicable to this site

(\*) 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 and Table 3.

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<sup>1</sup> cSAC : Candidate Special Area of Conservation

**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
<b>Broadleaved mixed and yew woodland</b>	W12 <i>Fagus sylvatica –Mercurialis perennis</i>	Beech and dogs mercury woodland	*	*						
	W14 <i>Fagus sylvatica – Rubus fruticosus</i>	Beech and bramble woodland	*	*						

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**

<b>Conservation Objective for habitat extent</b>	To maintain the designated habitats 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:
<b>Extent - Dynamic balance</b>	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.

<b>Habitat Feature (BAP Broad Habitat level, or more detailed level if applicable)</b>	<b>Estimated extent (ha) and date of data source/estimate</b>	<b>Site Specific Target range and Measures</b>	<b>Comments</b>
Beech and dogs mercury woodland		Aim for 90% NVC type, no loss of extent	
Beech and bramble woodland		Aim for 90% NVC type, no loss of extent	

<b>Audit Trail</b>
<b>Rationale for habitat extent attribute (Include methods of estimation (measures) and the approximate degree of change which these are capable of detecting).</b>
<b>Rationale for site-specific targets (including any variations from generic guidance)</b>
<b>Other Notes</b>
<b>NO CRITERIA SHEET</b>

**Table 3 Site-Specific definitions of Favourable Condition**

<b>CONSERVATION OBJECTIVE FOR THIS HABITAT / GEOLOGICAL SITE-TYPE</b>	To maintain the <b>broadleaved semi natural woodland</b> 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:
<b>Site-specific details of any geographical variation or limitations (where the favourable condition standards apply)</b>	
<b>Site-specific standards defining favourable condition</b>	

**TABLE COPIED FROM THE cSAC OBJECTIVE**

Operational feature	Criterion feature	Attributes	Measures	Targets	Comments
Semi-natural woodland	Asperulo-Fagetum beechwoods (W12, W14)	1. Area	Extent/location of stands	<p>* No loss of ancient semi-natural stands</p> <p>At least current area of recent semi-natural stands maintained, although their location may alter.</p> <p><b>Need to find out whether the &gt;50year-old plantations constitute semi-natural beech woodland.</b></p> <p>*No reduction in area of ancient woodland</p>	<p>* Stand loss due to natural processes may be acceptable.</p> <p>* Stand destruction may occur if understorey and ground flora are irretrievably damaged, even if canopy remains intact.</p> <p>* Loss = 0.5 ha or 0.5% of the stand area, whichever is smaller – repeated smaller losses are unacceptable.</p> <p>* 20% canopy cover is conventionally taken as the lower limit for an area to be considered as woodland.</p> <p>* Beech may not be abundant throughout the stand, particularly in regeneration patches; this does not count as stand loss.</p> <p>· Glade creation and thinning to assist natural regeneration and maintain the traditional habitat mosaic does not compromise this target</p> <p><b>Need to map areas of beech woodland.</b></p>
Semi-natural	Asperulo-	2. Natural	Age/size class	* At least current level of	* Any changes leading to exceedance of these limits due

Operational feature	Criterion feature	Attributes	Measures	Targets	Comments
woodland	Fagetum beechwoods (W12, W14)	processes and structural development	variation within and between stands; presence of open space and old trees; dead wood lying on the ground; standing dead trees	<p>structural diversity maintained.</p> <ul style="list-style-type: none"> <li>* Understorey (2-5m) present over 10- 80% of total stand area.</li> <li>* Ground flora present over at least 10% of area or current extent in mature stands, whichever is greater.</li> <li>* Canopy cover present over 30-90 % of stand area.</li> <li>* Age class structure appropriate to site, its history and management.</li> <li>* A minimum of 3 fallen lying trees &gt;20 cm diameter per ha and 10 trees per ha allowed to die standing.</li> <li>*no loss of veteran trees except through natural events</li> </ul>	<p>to natural processes are likely to be acceptable.</p> <ul style="list-style-type: none"> <li>* The understorey may range from virtually non-existent to impenetrable holly or yew. If understorey is very dense it may be affecting the ground flora.</li> <li>*The site is predominantly beech high forest with natural regen. in storm damaged areas.</li> <li>*The location of open, scrub and high canopy within the mosaic will change over time with woodland dynamics</li> </ul> <p>*Assess this attribute between mid April and early June.</p>
Semi-natural woodland	Asperulo-Fagetum beechwoods (W12, W14)	3.Regeneration potential	Successful establishment of young stems in gaps or on the edge of a stand.	<ul style="list-style-type: none"> <li>* Signs of seedlings growing through to saplings to young trees at sufficient density to maintain canopy density over a 10 yr period (or equivalent regrowth from coppice).</li> <li>* No more than 20% of re-stocked areas regenerated by planting.</li> </ul>	<ul style="list-style-type: none"> <li>* 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.</li> <li>* Regeneration may often occur on the edge of woods rather than in gaps within it.</li> <li>* See JNCC Guidance note on likely desirable levels of regeneration.</li> <li>* The minimum level of regeneration to be acceptable from a nature conservation viewpoint is likely to be much</li> </ul>



Operational feature	Criterion feature	Attributes	Measures	Targets	Comments
				<ul style="list-style-type: none"> <li>* All planting material of locally native stock</li> <li>* No planting in sites where it has not occurred in the last 15 years.</li> </ul>	<p>less than that needed where wood production is also an objective.</p> <ul style="list-style-type: none"> <li>* Assess this attribute in spring/summer.</li> </ul>
Semi-natural woodland	Asperulo-Fagetum beechwoods (W12, W14)	4. Composition	<p>Cover of native versus non-native species (all layers)</p> <p>Death, destruction or replacement of native woodland species through effects of non-native fauna or external unnatural factors</p>	<ul style="list-style-type: none"> <li>* At least 90% cover in any one layer of site-native or acceptable naturalised spp.</li> <li>* Beech present in mature canopy at at least 30% cover for feature on site as a whole.</li> <li>* Death, destruction or replacement of native woodland species through effects of introduced fauna or other external unnatural factors not more than 10% by number or area in a five year period.</li> <li>*No evidence of rapid dieback of native species in last 5 years</li> </ul>	<ul style="list-style-type: none"> <li>* Sycamore is a widespread component in parts of the Chilterns Beechwoods at present but should not be permitted to take a dominant role in the canopy and should be excluded from units where it is currently absent or rare. there should be no expansion of the area where sycamore is favoured over beech.</li> <li>*Parts of wood planted with larch, pine, Nothofagus, etc, mostly underplanted with beech.</li> <li>* Where cover in any one layer is less than 100% then the 90% target applies to the area actually covered by that layer.</li> <li>*some units may have more than 10% non native species but the proportion of non native across the whole site should not exceed 10%. It is anticipated that this will decrease over time as woodland management selectively favours native species.</li> <li>* Factors leading to the death or replacement of woodland species could include pollution, including eutrophication from adjacent farmland, new diseases.</li> <li>* Damage to trees by squirrels that does not lead to their death or replacement by non-woodland species is not necessarily unacceptable in nature conservation terms.</li> <li>* Excessive browsing/grazing by even native ungulates may be considered an unnatural external factor where it leads to undesirable shifts in the composition/structure of the stand, although this may be picked up by attributes 2</li> </ul>

Operational feature	Criterion feature	Attributes	Measures	Targets	Comments
					or 5 anyway.
Semi-natural woodland	Asperulo-Fagetum beechwoods (W12, W14)	5. Species, habitats, structures characteristic of the site.	Ground flora type  Distinctive and desirable elements.  Patches of associated habitats and transitions	* 85% of ground flora cover referable to relevant NVC community (W12, W14)  Veteran beeches should be maintained throughout the site outside area of beech woodland habitat.  * Patches and transitions maintained in extent and location.	* Changes leading to these targets not being met may be acceptable where this is due to natural processes.  * Distinctive elements and patches should be marked on maps for ease of checking in the field wherever possible.  *Maintain small chalk grassland banks on woodland boundary as open grassland  *Maintain ancient boundary features.

- *Aston Rowant Woods SSSI*

### ***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 mixed broadleaf woodland

#### **Geological features (Geological Site Types)**

[n/a]

(\*) 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 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	SAC 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 2000 waterfowl	3c 1% of population
Lowland mixed broadleaf woodland	W12, W14 Beech woodland	Beech/oak/ash woodland									

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**

<b>Conservation Objective for habitat extent</b>	To maintain the designated habitats 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:
<b>Extent - Dynamic balance</b>	On this site favourable condition requires the maintenance of the extent of the designated habitat type. Maintenance implies restoration if evidence from condition assessment suggests a reduction in extent.

<b>Habitat Feature (BAP Broad Habitat level, or more detailed level if applicable)</b>	<b>Estimated extent (ha) and date of data source/estimate</b>	<b>Site Specific Target range and Measures</b>	<b>Comments</b>
<b>Lowland mixed broadleaf woodland</b>	209	At least 90% of site area occupied by woodland of types W12 and W14.	

<b>Audit Trail</b>
<b>Rationale for habitat extent attribute</b> <b>(Include methods of estimation (measures) and the approximate degree of change which these are capable of detecting).</b>
The site includes small areas of relict chalk grassland which is gradually diminishing in extent as scrub and woodland takes over.
<b>Rationale for site-specific targets (including any variations from generic guidance)</b>
<b>Other Notes</b>

**Table 3 Site-Specific definitions of Favourable Condition**

<b>CONSERVATION OBJECTIVE FOR THIS HABITAT / GEOLOGICAL SITE-TYPE</b>		To maintain the <b>broadleaved mixed woodland habitat</b> 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:				
<b>Site-specific details of any geographical variation or limitations (where the favourable condition standards apply)</b>						
The attributes below apply to the <b>whole site</b> .						
<b>Site-specific standards defining favourable condition</b>						
<b>Criteria feature</b>	<b>Standard Attribute Name</b>	<b>Attribute term in guidance</b>	<b>Measure</b>	<b>Generic Target</b>	<b>Comments</b>	<b>Use for Condition Assessment (CA)?</b>
Beech woodland (W12, W14 )	1. Habitat Extent	Area	Extent/location of stands	<p>No loss of ancient semi-natural stands (Refer to Barneveld 1997)</p> <p>At least current area of recent semi-natural stands maintained, although their location may alter.</p> <p>At least the area of ancient woodland retained</p>	<p>Temporary stand loss due to natural processes would be acceptable. Stand destruction may occur if the understorey and ground flora are irretrievably damaged even if the canopy remains intact.</p> <p>Loss = 0.5 ha or 0.5% of the stand area, whichever is the smaller. 20% canopy cover is conventionally taken as the lower limit for an area to be considered as woodland. Beech may not be abundant throughout the stand, particularly in regeneration patches, but this does not count as stand loss.</p> <p>Note that not all the area likely to be ancient woodland on site is mapped as such in the Ancient Woodland Inventory.</p>	yes

Criteria feature	Standard Attribute Name	Attribute term in guidance	Measure	Generic Target	Comments	Use for CA?
Beech woodland (W12, W14)	Natural processes and structural development		Age/size class variation within and between stands; presence of open space and old trees; dead wood lying on the ground; standing dead trees	<p>At least the current level of structural diversity maintained but where possible should be increased.</p> <p>Understorey (2-5m) present over 10-80% of total stand area.</p> <p>Ground flora present over at least 10% of area or current extent in mature stands, whichever is greater.</p> <p>Canopy cover present over 30-90 % of stand area.</p> <p>A minimum of 3 fallen lying trees per ha and 10 standing dead trees per ha.</p>	<p>Any changes leading to these limits being exceeded due to natural processes are likely to be acceptable. Structural variation in parts of the wood dominated by beech plantation is currently low.</p> <p>The understorey is close to the lower limit of 10% in some units. A poorly developed shrub layer is a feature of some W12 woodlands especially in mature stands.</p> <p>There is not a great deal of standing dead wood as is typical of beech woods but there is a fair amount of dead wood in the canopy and as fallen trees.</p>	yes

Criteria feature	Standard Attribute Name	Attribute term in guidance	Measure	Generic Target	Comments	Use for CA?
Beech woodland (W12, W14)	3. Composition:	Composition	<p>Cover of native versus non-native species (all layers)</p> <p>Death, destruction or replacement of native woodland species through effects of non-native fauna or external unnatural factors</p>	<p>At least the current level of site-native species maintained.</p> <p>At least 90% of cover in any one layer of site-native or acceptable naturalised species.</p> <p>Beech present in mature canopy at at least 30% cover for the feature on the site as a whole.</p> <p>Death, destruction or replacement of native woodland species through effects of introduced fauna or other external unnatural factors not more than 10% by number or area in a five year period.</p>	<p>Sycamore is locally abundant if not dominant but does not appear to be having detrimental impacts on flora. Nevertheless any significant increase in distribution is undesirable and should be controlled.</p> <p>There are no indications of any external factors currently affecting beech or the ground flora.</p> <p>Damage to trees by squirrels that does not lead to their death or replacement by non woodland species is not necessarily unacceptable in nature conservation terms.</p> <p>Excessive browsing/grazing by deer does not currently appear to be at a level which is causing damage to ground flora or regeneration.</p>	yes
Beech woodland (W12, W14)	Positive quality indicators: Characteristic species	Species, habitats, structures characteristic of the site.	<p>Ground flora type</p> <p>Distinctive and desirable elements</p>	<p>80% of ground flora cover referable to W12 and W14</p> <p>Patches and transitions maintained in extent and where appropriate location.</p>	<p>Targets not being met are acceptable where due to natural processes.</p> <p>The ground flora is very sparse in many parts of the site.</p> <p>The presence of and transition to grassland is a feature of interest and conservation value but it is accepted that this will change and diminish</p>	yes



Criteria feature	Standard Attribute Name	Attribute term in guidance	Measure	Generic Target	Comments	Use for CA?
					over time due to natural succession.	
Beech woodland (W12, W14)	Natural processes/regeneration	Regeneration potential	Successful establishment of young stems in gaps or on the edge of a stand	Signs of seedlings growing through to saplings to young trees at sufficient density to maintain canopy density over a 10 yr period.  No regeneration by planting.	The minimum level of regeneration acceptable from a nature conservation viewpoint is likely to be much less than that needed where wood production is also an objective.  Natural regeneration is variable throughout the wood, being quite poor in some areas and very successful in others, including areas damaged by 1987 storms.	yes

#### 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

Although game management is currently no problem, it has been an issue in the past both in terms of the effect of feeding, strawing etc and also the removal of some scrub layer components. The site lacks structure, particularly an over mature component to the canopy and has a sparse shrub layer in many parts.

The Nationally Scarce plants *Hordelymus europaeus* and *Epipactis leptochila* are listed erroneously on the criteria sheet; the presence of these species is not sufficient grounds for SSSI selection.

- ***Bisham Woods SSSI***

### ***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)**

Broadleaved mixed and yew woodland

#### **Geological features (Geological Site Types)**

Not applicable

(\*) 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 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	SAC 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 2000 waterfowl	3c 1% of population
Broadleaved mixed and yew woodland	W12 <i>Fagus sylvatica – Mercurialis perennis</i> woodland & W14 <i>Fagus sylvatica – Rubus fruticosus</i> woodland	Beech and dog's mercury woodland and beech/bramble woodland	*	*							
Broadleaved mixed and yew woodland	<i>Lucanus cervus</i>	Stag beetle		*							

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**

<b>Conservation Objective for habitat extent</b>	To maintain the designated habitats 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:
<b>Extent - Dynamic balance</b>	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.

<b>Habitat Feature (BAP Broad Habitat level, or more detailed level if applicable)</b>	<b>Estimated extent and date of data source/estimate</b>	<b>Site Specific Target range and Measures</b>	<b>Comments</b>
Beech/ash woodland	83 ha (total site area)	No loss of woodland extent. At least 90% of the site should support woodland of types W12 and W14.	

<b>Audit Trail</b>
<b>Rationale for habitat extent attribute (Include methods of estimation (measures) and the approximate degree of change which these are capable of detecting).</b>
<b>Rationale for site-specific targets (including any variations from generic guidance)</b>
The area figures for W12 and W14 have been combined to give the figure for total extent as the two communities form a complex mosaic and it would be difficult to detect a change in the relative proportion of the two types.
<b>Other Notes</b>

**Table 2a Species population objectives**

<b>Conservation Objective for species populations</b>	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:
<b>Population balance</b>	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.

<b>Species Feature (species or assemblage)</b>	<b>List supporting BAP Broad Habitats</b>	<b>Population Attribute (e.g. presence/absence, population size or assemblage score)</b>	<b>Site Specific Target range and Measures (specify geographical range over which target applies ie site, BAP broad habitat or more specific)</b>	<b>Comments</b>
Stag Beetle <i>Lucanus cervus</i>	Lowland broadleaved woodland	Presence/absence	Species present  Identification of the species	If species not seen within a five year period specialist advice should be sought

<b>Audit Trail</b>
<b>Rationale for species population attributes</b> <i>(Include methods of estimation (measures) and the approximate degree of change which these are capable of detecting).</i>
<b>Evidence of presence in the form of dead specimens or carapaces may be considered confirmation of presence.</b>
<b>Rationale for site-specific targets (including any variations from generic guidance)</b>
<b>Other Notes</b>

**Table 3 Site-Specific definitions of Favourable Condition**

<b>CONSERVATION OBJECTIVE FOR THIS HABITAT</b>		To maintain the <b>broadleaved semi -natural woodland</b> 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:			
<b>Site-specific details of any geographical variation or limitations (where the favourable condition standards apply)</b>					
The attributes below apply to the whole site.					
<b>Site-specific standards defining favourable condition</b>					
Criteria feature	Attribute	Measure	Site-specific Targets	Comments	Use for CA?
W12 and W14 broadleaved woodland	Area	Field survey and/or aerial photography, in relation to baseline map.	No loss of ancient semi-natural stands. At least current area of recent semi-natural stands maintained, although their location may alter.	Stand loss due to natural processes e.g. in minimum intervention stands may be acceptable. Stand destruction may occur if the understorey and ground flora are irretrievably damaged even if the canopy remains intact. As a guideline, loss can be defined as at least 0.5 ha or 0.5% of the stand area, whichever is the smaller. 20% canopy cover is conventionally taken as the lower limit for an area to be considered as woodland.	Yes
W12 and W14 broadleaved woodland	Structure and Natural processes	Assess by field survey using structured walk and/or transects.	Understorey (2-5m) present over at least 20% of total stand area. Canopy cover present over 30-90 % of stand area. At least three age classes spread across the average life expectancy of the commonest trees, ie beech, ash, oak. Some areas of relatively undisturbed mature/old growth stands or a scatter of large trees allowed to grow to over-maturity/death on site (e.g. a minimum of 10% of the woodland or 5-10 trees per ha).A minimum of 3 fallen lying trees or large stumps >80 cm diameter per ha.	The wood is predominantly beech high forest but with extensive areas of ash re-growth in storm damaged patches.  Stag beetle is dependent upon the presence of large diameter, permanently moist, rotting timber, in the form of fallen logs or large tree stumps. As a rough guide, to be suitable as larval habitat, timber should have a diameter greater than 80cm.  To be valuable as larval habitat for stag beetle standing trees should have decay cavities low down in the trunk. Decaying tree roots <i>in situ</i> are also important for this species.	Yes

Criteria feature	Attribute	Measure	Site-specific Targets	Comments	Use for CA?
			At least 3 large diameter trees allowed to die standing per ha.		
			Majority of lying timber and rotting logs left undisturbed, ie not moved, climbed upon, burnt or collected for firewood.	Given the long life cycle of stag beetle, it is vulnerable to disturbance and removal of timber. There should be no indications of regular or large scale removal of rotting timber.	
W12 and W14 broadleaved woodland	Composition	Assess by field survey using structured walk and/or transects.	At least 95% of cover in any one layer of site-native or acceptable naturalised species.  Death, destruction or replacement of native woodland species through effects of introduced fauna or other external unnatural factors not more than 10% by number or area in a five year period.	Sycamore is abundant in parts of the wood where it appears to be taking the place of ash. It is not yet clear whether it is having damaging impacts on the ground flora. Until it is ascertained whether it is having damaging effects, sycamore should be considered an acceptable component of the woodland up to 10% canopy cover. Turkey oak and horse chestnut are present, including large mature specimens; these should be eradicated over time. Box, laurel, buddleja and rhododendron are also present; these should be eradicated if possible. Factors leading to the death or replacement of woodland species could include pollution or new diseases. Damage by non-native species that does not lead to tree 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.	Yes
W12 and W14 broadleaved woodland	Quality indicators	Assess by field survey using structured walk and/or transects, or as appropriate to feature.	80% of ground flora cover referable to NVC types W12 and W14  Populations of notable plants at least maintained, esp. <i>Hordeleymus europaeus</i> .	A small area along the base of the slope supports alder woodland (NVC type W6).  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.	Yes

Criteria feature	Attribute	Measure	Site-specific Targets	Comments	Use for CA?
W12 and W14 broadleaved woodland	Regeneration potential	Assess by field survey using structured walk and/or transects.	Signs of seedlings growing through to saplings to young trees at sufficient density to maintain canopy density over a 10 yr period. No more than 10% of area regenerated by planting. All planting material of locally native stock.	A proportion of gaps at any one time may develop into permanent open space; equally some current 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.	Yes
Stag beetle <i>Lucanus cervus</i>	Population size of species	Number of individuals.	Confirmation of the continuing presence of the species on the site within a 5 year period.	No meaningful method has yet been found to assess population size for stag beetle. Do not attempt anything other than presence/absence recording unless a meaningful and cost-effective method is developed. The site should not necessarily be considered to be in unfavourable condition if confirmation is not possible, as long as suitable larval habitat is present.	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).

#### **General notes regarding stag beetle**

This beetle develops in decaying timber, largely in the roots and stumps of dead deciduous trees, but also in other types of damp decaying wood in contact with soil such as fallen logs, roots of smaller bushy species, bases of fence posts, old timber piles etc. It may be dependent upon a mosaic of habitats in an area for different requirements at larval and adult stages. The main requirement during the larval stage is the availability of large diameter decaying timber, usually in contact with the soil which is not subject to disturbance or fluctuating conditions. Suitable timber is usually in warm places but not subject to high temperatures in full sunlight. **Currently, the only attributes that are well understood are related to the abundance and condition of decaying timber.**

#### *Other Notes*

Note that stag beetle was not known to be present at time of SSSI designation and is not a SSSI selection criterion. However, it has been regularly recorded in recent years and the species was added as a qualifying interest feature for this component part of the Chilterns Beechwoods SAC.





- ***Bradenham Woods, Park Wood and The Coppice SSSI***

### ***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)**

Beech woodland  
Lowland calcareous grassland

#### **Geological features (Geological Site Types)**

Not applicable

(\*) 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 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	SAC 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
<b>Beech woodland</b>	Beech woodland of NVC types W12 & W14	Semi-natural beech woodland on chalk and clay	*							
<b>Lowland calcareous grassland</b>	Chalk grassland NVC type CG3	Chalk grassland	*							

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**

<b>Conservation Objective for habitat extent</b>	To maintain the designated habitats 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:
<b>Extent - Dynamic balance</b>	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.

<b>Habitat Feature (BAP Broad Habitat level, or more detailed level if applicable)</b>	<b>Estimated extent (ha) and date of data source/estimate</b>	<b>Site Specific Target range and Measures</b>	<b>Comments</b>
Beech woodland	120ha	No loss of extent of woodland; at least 90% of woodland referable to W12 & W14	Parts of the woods are occupied by conifer plantations which are gradually being felled and restored to wood pasture or woodland.
Chalk grassland	4.0 based upon 2000 aerial photo measured using MapInfo.	No loss of extent of species-rich grassland	There are 3 main areas of open grassland; one is best described as a large glade, another is on clay at the base of the slope so is not typical chalk grassland.

<b>Audit Trail</b>
<b>Rationale for habitat extent attribute (Include methods of estimation (measures) and the approximate degree of change which these are capable of detecting).</b>
<b>Rationale for site-specific targets (including any variations from generic guidance)</b>
<b>Other Notes</b>
The current balance between the two main habitats should be maintained at roughly the current level. There should be no expansion of the area of grassland at the expense of W12 or W14 woodland.

**Table 3 Site-Specific definitions of Favourable Condition**

<b>CONSERVATION OBJECTIVE FOR THIS HABITAT / GEOLOGICAL SITE-TYPE</b>	To maintain the <b>beech woodland and calcareous grassland</b> habitats 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:
<b>Site-specific details of any geographical variation or limitations (where the favourable condition standards apply)</b>	
The attributes below apply to the whole site.	
<b>Site-specific standards defining favourable condition</b>	

Criteria feature	Attribute	Attribute term in guidance	Measure	Target	Comments	Use for CA?
Asperulo-Fagetum beechwoods (W12, W14)	Area		Field survey and/or aerial photography, in relation to baseline map.	<p>No loss of ancient semi-natural stands</p> <p>At least current area of recent semi-natural stands maintained, although their location may alter.</p> <p>No reduction in area of ancient woodland</p>	<p>Stand loss due to natural processes may be acceptable.</p> <p>Stand destruction may occur if understorey and ground flora are irretrievably damaged, even if canopy remains intact.</p> <p>Loss = 0.5 ha or 0.5% of the stand area, whichever is smaller.</p> <p>20% canopy cover is conventionally taken as the lower limit for an area to be considered as woodland.</p> <p>Beech may not be abundant throughout the stand, particularly in regeneration patches; this does not count as stand loss.</p> <p>Area/location of stands was mapped</p>	yes

Criteria feature	Attribute	Attribute term in guidance	Measure	Target	Comments	Use for CA?
					by Jane Barneveld in 1997.	
Asperulo-Fagetum beechwoods (W12, W14)	Natural processes and structural development		Assess by field survey using structured walk and/or transects.	<p>Understorey (2-5m) present over at least 10% of total stand area.</p> <p>Canopy cover present over 30-90 % of stand area.</p> <p>At least 30% cover of beech present in mature canopy on site as a whole.</p> <p>At least three age classes spread across the average life expectancy of the commonest trees, ie beech, ash.</p> <p>Some areas of relatively undisturbed mature/old growth stands or a scatter of large trees allowed to grow to over-maturity/death on site.</p>	<p>Changes leading to exceedance of these limits due to natural processes are likely to be acceptable.</p> <p>The understorey may range from virtually non-existent to impenetrable holly or yew. If understorey is very dense it may be affecting the ground flora but it is not clear whether this should be considered damaging.</p> <p>The site is predominantly beech high forest with natural regeneration in storm damaged areas.</p> <p>No very ancient trees currently present on site though beech are largely in a mature to senescing phase.</p>	yes
Asperulo-Fagetum beechwoods (W12, W14)	Composition		Assess by field survey using structured walk and/or transects.	<p>At least 95% of cover in any one layer of site-native or acceptable naturalised species.</p> <p>Death, destruction or replacement of native woodland species through effects of introduced fauna or other external unnatural factors not more than 10% by number or area in a five year period.</p>	<p>Sycamore is a widespread component in parts of the Chilterns Beechwoods at present but should not be permitted to take a dominant role in the canopy and should be excluded from areas where it is currently absent or rare.</p> <p>Parts of wood planted with larch, pine, Nothofagus, etc, mostly underplanted with beech.</p> <p>Damage to species by non-native species that does not lead to their death is not necessarily unacceptable.</p> <p>Damage to trees by squirrels that does not lead to their death or replacement</p>	yes

Criteria feature	Attribute	Attribute term in guidance	Measure	Target	Comments	Use for CA?
					by non-woodland species is not necessarily unacceptable in nature conservation terms. Excessive browsing/grazing, even by native ungulates, may be undesirable if it causes shifts in the composition/structure of the stand.	
Asperulo-Fagetum beechwoods (W12, W14)	Quality indicators		Assess by field survey using structured walk and/or transects, or as appropriate to feature	At least 80% of ground flora cover referable to NVC types W12 and W14. Distinctive elements maintained.	Changes leading to these targets not being met may be acceptable where this is due to natural processes. Ancient boundary features retained.	yes
Asperulo-Fagetum beechwoods (W12, W14)	Regeneration potential		Assess by field survey using structured walk and/or transects.	Signs of seedlings growing through to saplings to young trees at sufficient density to maintain canopy density over a 10 yr period No tree regeneration by planting.	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 edge of woods rather than in gaps within it.	yes
CG3 grassland	Habitat Extent	Extent	Total area (ha), mapped in relation to baseline.	No reduction in area and any consequent fragmentation without prior consent	Recoverable reduction = unfavourable; non-recoverable reduction = partially destroyed. Excludes bare ground associated with rabbit warrens (see below).	yes
CG3 grassland	Structure: Bare ground/mud/p eat/rock	Sward structure: bare ground	Extent of bare ground (not rock) distributed through the sward, noticeable without disturbing the	No more than 10%.	Outside target indicates management problems eg over-grazing.	yes

Criteria feature	Attribute	Attribute term in guidance	Measure	Target	Comments	Use for CA?
			vegetation, in May-July.			
CG3 grassland	Structure: Bare ground/mud/p eat/rock	Sward structure: localised bare ground	Extent of bare ground around rabbit warrens.	No more than 0.05 ha ie approx 20x20 metres	Outside target indicates rabbit grazing and disturbance levels are too high.	yes
CG3 grassland	Structure: Litter	Sward structure: litter	Cover of litter where in a more or less continuous layer, distributed either in patches or in one larger area.	Total extent no more than 25% of the sward	Outside target indicates biomass removal is insufficient eg under-grazed.	yes
CG3 grassland	Structure: Vegetation height	Sward structure: average height	Sward height in May-July.	2-15 cm	Outside target indicates insufficient grazing or over-grazing.	yes
CG3 grassland	Composition: Grass/herb ratio	Sward composition: grass/herb ratio	Proportion of herbs, in May -July.	40-90%	Low proportion outside target indicates eutrophication, usually from fertilisers, or insufficient removal of biomass, leading to dominance by grasses.	yes
CG3 grassland	Positive quality indicators: Characteristic species	Sward composition: positive indicator species	Frequency of positive indicator species in May-July: <i>Bromopsis erecta</i> , <i>Arrhenatherum elatius</i> , <i>Origanum vulgare</i> , <i>Galium verum</i> , <i>Helianthemum nummularium</i> , <i>Anthyllis vulneraria</i> ,	<i>Bromopsis erecta</i> frequent plus at least two species/taxa frequent and four occasional throughout the sward		yes



Criteria feature	Attribute	Attribute term in guidance	Measure	Target	Comments	Use for CA?
			<i>Gentianella</i> spp <i>Scabiosa columbaria</i> , <i>Sanguisorba minor</i> , <i>Primula veris</i> , <i>Cirsium</i> <i>acaulon</i> , <i>Lotus</i> <i>corniculatus</i> , <i>Leontodon hispidus</i> , <i>Linum catharticum</i> , <i>Pilosella officinarum</i> , <i>Plantago media</i> , <i>Polygala</i> spp, <i>Thymus</i> spp,			
CG3 grassland	Negative quality indicators: Ruderals/coarse grasses	Sward composition: negative indicator species	Frequency and cover of negative indicator species in May-July: thistles (except dwarf thistle), nettles, docks and ragwort	No species/taxa more than occasional throughout the sward or singly or together more than 5% cover	Invasive species chosen to indicate problems of eutrophication and disturbance from various sources when outside target eg poaching, stock feeding.	yes
CG3 grassland	Negative quality indicators: Ruderals/coarse grasses	Sward composition:negative indicator species	Cover of <i>Brachypodium pinnatum</i> , in May-July.	No more than 10% cover	Outside target indicates insufficient removal of biomass eg under-grazing.	yes
CG3 grassland	Negative quality indicators: Trees/scrub	Sward composition: negative indicator species	Cover of all tree and scrub species considered together.	< 5% scrub cover.	Invasive species outside target shows that habitat is not being managed sufficiently eg under-grazed.	yes

#### Audit Trail

**Rationale for limiting standards to specified parts of the site**

<b>Rationale for site-specific targets (including any variations from generic guidance)</b>
<b>Rationale for selection of measures of condition (features and attributes for use in condition assessment)</b>
(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).
<b>Other Notes</b>

- *Ellesborough and Kimble Warrens SSSI*

### ***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, cSAC, SPA, Ramsar) as individually listed in Table 1.

#### **Habitat Types represented (Biodiversity Action Plan categories)**

Lowland calcareous grassland  
Beech/ash woodland  
Box dominated scrub

(\*) 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 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
<b>Calcareous grassland</b>	Calcareous grassland of NVC types CG2a and CG3a	Herb rich unimproved grassland on chalk substrate, supporting characteristic Chilterns plants									
<b>Broadleaved woodland</b>	Beech/ash woodland	Beech and ash woodland									
<b>Mixed scrub</b>	Box dominated scrub										

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**

<b>Conservation Objective for habitat extent</b>	To maintain the designated habitats 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:
<b>Extent - Dynamic balance</b>	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.

<b>Habitat Feature (BAP Broad Habitat level, or more detailed level if applicable)</b>	<b>Estimated extent (ha) and date of data source/estimate</b>	<b>Site Specific Target range and Measures</b>	<b>Comments</b>
Lowland calcareous grassland	17 ha (estimated)	There should be no loss of grassland to woodland or encroachment of scrub.	Parts of the grassland have suffered encroachment by scrub and this is gradually being reversed.
Beech – ash woodland		There should be no loss of woodland except where this will result in the restoration of species-rich grassland or box scrub of greater conservation value.	Some of the woodland is of relatively recent origin and clearance to extend areas of grassland or to improve the quality of areas of box scrub is acceptable.
Box scrub	5 ha (estimated)	There should be no loss of box dominated scrub.	Box is dominant on steep slopes where it suppresses the growth of other tree species. This is a very rare feature in the UK. This box dominated community should be retained and if practical extended.

<b>Audit Trail</b>
<b>Rationale for habitat extent attribute</b> <i>(Include methods of estimation (measures), and the approximate degree of change which these are capable of detecting).</i>
<b>Rationale for site-specific targets (including any variations from generic guidance)</b>
There should be no further loss of calcareous grassland to scrub or woodland, including box-dominated scrub.
<b>Other Notes</b>

**Table 3 Site-Specific definitions of Favourable Condition**

<b>CONSERVATION OBJECTIVE FOR THIS HABITAT / GEOLOGICAL SITE-TYPE</b>	To maintain the calcareous grassland, broadleaved woodland and box scrub 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:					
<b>Site-specific details of any geographical variation or limitations (where the favourable condition standards apply)</b>						
<b>Site-specific standards defining favourable condition</b>						
Criteria feature	Standard Attribute Name	Attribute term in guidance	Measure	Generic Target	Comments	Use for CA?
Semi-natural woodland	Asperulo-Fagetum beechwoods (W12, including areas of pure box, W14)	1. Area	Extent/location of stands	<ul style="list-style-type: none"> <li>* No loss of mature stands</li> <li>* At least current area of recent semi-natural stands maintained, although their location may alter.</li> <li>* No reduction in area of mature woodland</li> </ul>	<ul style="list-style-type: none"> <li>* Stand loss due to natural processes or where it is being undertaken intentionally to create or extend habitat of greater conservation value may be acceptable.</li> <li>* Stand destruction may occur if understorey and ground flora are irretrievably damaged, even if canopy remains intact.</li> <li>* Loss = 0.5 ha or 0.5% of the stand area, whichever is smaller.</li> <li>* 20% canopy cover is conventionally taken as the lower limit for an area to be considered as woodland.</li> <li>* Beech may not be abundant throughout stand, particularly in regeneration patches; this does not count as stand loss.</li> <li>* Area/location of stands was mapped in 1997 by Jane Barneveld.</li> </ul>	
Semi-natural woodland	Asperulo-Fagetum beechwoods	2. Natural processes and structural	Age/size class variation within and between stands;	* At least the current level of structural diversity	<ul style="list-style-type: none"> <li>* Any changes leading to exceedance of these limits due to natural processes are likely to be acceptable.</li> <li>* The understorey ranges from virtually non-existent to</li> </ul>	

Criteria feature	Standard Attribute Name	Attribute term in guidance	Measure	Generic Target	Comments	Use for CA?
	(W12, including areas of pure box, W14)	development	presence of open space and old trees; dead wood lying on the ground; standing dead trees	<p>maintained.</p> <ul style="list-style-type: none"> <li>* Understorey (2-5m) present over 10-80% of total stand area.</li> <li>* Ground flora present over at least 10% of area or current extent in mature stands, whichever is greater.</li> <li>* Canopy cover present over 30-90% of stand area.</li> <li>* Age class structure appropriate to the site, its history and management.</li> <li>* A minimum of 3 fallen lying trees &gt;20 cm diameter per ha and 10 trees per ha allowed to die standing.</li> </ul>	<p>impenetrable box.</p> <ul style="list-style-type: none"> <li>*There is virtually no ground flora in box dominated areas.</li> <li>*The wood is predominantly even-aged high forest. Parts have been heavily influenced by planting of beech, other areas are of relatively recent origin as a result of successional development. The objective is to have predominantly high forest with mixed age structure, ie c.80% mature stands, 10% &gt;150yrs, 10% open stands &lt;30 yrs.</li> </ul> <p>* Assess this attribute between mid April and early June.</p>	
		3.Regeneration potential	Successful establishment of young stems in gaps or on the edge of a	* Signs of seedlings growing through to saplings to young trees at sufficient	* 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.	

Criteria feature	Standard Attribute Name	Attribute term in guidance	Measure	Generic Target	Comments	Use for CA?
			stand.	density to maintain canopy density over a 10 yr period (or equivalent regrowth from coppice). * No re-stocking by planting.	* 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. * Areas of pure box do not appear to require management for maintenance of favourable condition, although small scale coppicing may be beneficial for <i>Metzgeria fruticulosa</i> in suitably humid locations.	
		4. Composition	Cover of native versus non-native species (all layers)  Death, destruction or replacement of native woodland species through effects of non-native fauna or external unnatural factors	* At least 90% cover in any one layer of site-native or acceptable naturalised spp. * Beech present in mature canopy at least 30% cover for feature on site as a whole. * Death, destruction or replacement of native woodland species through effects of introduced fauna or other external unnatural factors not more than 10% by number or area in a five year period.	* Sycamore is common in places and there are also a number of planted and naturalised tree species such as walnut. Sycamore should be controlled where it is adversely affecting the ground flora and/or assuming a dominant role in the canopy. * In several places box forms virtually 100% of stand area. * Where cover in any one layer is less than 100% then the 90% target applies to the area actually covered by that layer. * Factors leading to the death or replacement of woodland species could include pollution, eutrophication from adjacent farmland, new diseases. * Damage to trees by squirrels that does not lead to their death or replacement by non-woodland species is not necessarily unacceptable in nature conservation terms. * Excessive browsing/grazing by even	



Criteria feature	Standard Attribute Name	Attribute term in guidance	Measure	Generic Target	Comments	Use for CA?
					native ungulates may be considered an unnatural external factor where it leads to undesirable shifts in the composition/structure of the stand, although this may be picked up by attributes 2 or 5 anyway.	
		5. Species, habitats, structures characteristic of the site.	Ground flora type Distinctive and desirable elements Patches of associated habitats and transitions	* 80% of ground flora cover referable to W12.  *Some areas of transitional box scrub through to grassland should be maintained as this is an important dynamic feature.  *At least current extent of box dominated scrub maintained, although location may change. * At least some areas of box scrub should be maintained in suitable condition to support <i>Metzgeria fruticulosa</i> .  *At least current	* Changes leading to these targets not being met may be acceptable where this is due to natural processes.	

Criteria feature	Standard Attribute Name	Attribute term in guidance	Measure	Generic Target	Comments	Use for CA?
				extent of box understorey maintained.  * At least current extent of open glades maintained, and where possible, extended.		
Unimproved calcareous grassland CG2, CG3		*Extent	Total area (27ha). Area mapped in 1994 by G. Steven	No reduction in area and any consequent fragmentation without prior consent	Recoverable reduction = unfavourable; non-recoverable reduction = partially destroyed. Excludes bare ground associated with rabbit warrens (see below).	
CG2, CG3, Calcicolous grassland	2. Structure: Bare ground/rock	Sward structure: bare ground	Extent of bare ground (not rock) distributed through the sward, noticeable without disturbing the vegetation, in May-July.	No more than 10%.	Outside target indicates management problems eg over-grazing.	
CG2, CG3, Calcicolous grassland	2. Structure: Bare ground/mud/rock	Sward structure: localised bare ground	Extent of localised bare ground around rabbit warrens.	No more than 0.05 ha ie approx 20x20 metres	Outside target indicates rabbit grazing and disturbance levels are too high.	
CG2, CG3, Calcicolous grassland	2. Structure: Litter	Sward structure: litter	Cover of litter where in a more or less continuous layer, distributed either in patches or in one larger area.	Total extent no more than 20% of the sward	Outside target indicates biomass removal is insufficient eg under-grazed.	

Criteria feature	Standard Attribute Name	Attribute term in guidance	Measure	Generic Target	Comments	Use for CA?
CG2, CG3, Calcicolous grassland	2. Structure: Vegetation height	Sward structure: average height	Sward height in May-July.	Sward 2-10 cm where CG2, 5-15 cm where CG3	Outside target indicates insufficient grazing or over-grazing.	
CG2, CG3, Calcicolous grassland	3. Composition: Grass/herb ratio	*Sward composition: grass/herb ratio	Proportion of herbs, in May -July.	40-90% herbs	Low proportion outside target may indicate eutrophication, usually from fertilisers, or insufficient removal of biomass, leading to dominance by grasses.	
Unimproved calcareous grassland CG2, CG3		*Sward composition: positive indicator species	Frequency of positive indicator species in May- July. <i>Anthyllis vulneraria</i> , <i>Asperula cynanchica</i> , <i>Campanula glomerata</i> , <i>Cirsium acaule</i> , <i>Filipendula vulgaris</i> , <i>Gentianella spp.</i> , <i>Helianthemum nummularium</i> , <i>Hippocrepis comosa</i> , <i>Leontodon hispidus</i> , <i>Lencantheum vulgare</i> , <i>Linum catharticum</i> , <i>Lotus corniculatus</i> , <i>Hieracium pilosella</i> , <i>Plantago media</i> , <i>Polygala spp.</i> , <i>Primula veris</i> , <i>Sanguisorba minor</i> , <i>Scabiosa columbaria</i> , <i>Succisa pratensis</i> , <i>Thymus spp.</i>	At least four species/taxa <b>frequent</b> plus at least three species/taxa <b>occasional</b> throughout the sward.	It should be noted that not all of the grassland is species-rich; parts have been impoverished through past agricultural treatment or the effects of scrub encroachment but are gradually increasing in representation of characteristic species.	

Criteria feature	Standard Attribute Name	Attribute term in guidance	Measure	Generic Target	Comments	Use for CA?
CG2, CG3, Calcicolous grassland	5. Negative quality indicators: Ruderals/coarse grasses	*Sward composition: negative indicators	Frequency and % cover of negative indicators, in May-July: thistles (excluding dwarf thistle), nettles, docks and ragwort.	No species/taxa more than occasional throughout the sward or singly or together more than 5% cover	Invasive species may indicate problems of eutrophication and disturbance from various sources when outside target eg poaching, stock feeding.	
CG2, CG3, Calcicolous grassland	5. Negative quality indicators: coarse grasses	*Sward composition: negative indicators	% cover of Brachypodium pinnatum, and false brome in May-July.	No more than 10% cover	Outside target indicates insufficient removal of biomass eg under-grazing.	
CG2, CG3, Calcicolous grassland	5. Negative quality indicators: Trees/scrub	*Sward composition: negative indicators	Frequency and % cover of all tree and scrub species, considered together. The grassland is vulnerable to encroachment by bramble, hawthorn and box at this site.	No more than 10% cover in the open grassland areas.	Invasive species outside target shows that habitat is not being managed sufficiently eg under-grazed. The box scrub/grass interface is an important element of this site; management should aim to maintain a dynamic edge habitat which provides structural variation with humid, dappled shade conditions required by epiphytes.	

#### Audit Trail

Rationale for limiting standards to specified parts of the site

Rationale for site-specific targets (including any variations from generic guidance)

The box scrub is a particularly important feature of this site. It is important that this habitat is maintained in a suitable condition to support the rare associated lower plant communities. Some progress has been made in reversing the loss of species-rich grassland to scrub and woodland; this should be continued where there is a realistic prospect of rapid recovery of grassland. The presence of sycamore and walnut can be tolerated and some trees can be allowed to mature, though it should be maintained at a low level through preferential removal during thinning operations.

**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**

- *Tring Woodlands SSSI*

### **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.

### ***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)**

Broadleaved, Mixed and Yew Woodland - Lowland

#### **Geological features (Geological Site Types)**

Not Applicable

(\*) 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 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	SAC 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
<b>Broadleaved, Mixed and Yew Woodland – Lowland</b>	W12 <i>Fagus sylvatica - Mercurialis perennis</i> Woodland	Broadleaved woodland dominated by beech with dog's mercury.	*	*							
	W14 – <i>Fagus sylvatica- Rubus fruticosus</i> woodland	Broadleaved woodland dominated by beech with bramble.	*	*							

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**

<b>Conservation Objective for habitat extent</b>	To maintain the designated habitats 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:
<b>Extent - Dynamic balance</b>	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.

<b>Habitat Feature (BAP Broad Habitat level, or more detailed level if applicable)</b>	<b>Estimated extent (ha) and date of data source/estimate</b>	<b>Site Specific Target range and Measures</b>	<b>Comments</b>
W12 <i>Fagus sylvatica</i> - <i>Mercurialis perennis</i> Woodland  W14 – <i>Fagus sylvatica</i> - <i>Rubus fruticosus</i>	58.8 ha, entire site extent at notification, 1985	No loss of ancient semi-natural stands.  At least current area of recent semi-natural stands maintained.  No loss of ancient woodland. No loss of veteran trees.	Stand loss due to natural processes e.g. in minimum intervention stands may be acceptable.  Stand destruction may occur if the understorey and ground flora are irretrievably damaged even if the canopy remains intact.  Loss = 0.5 ha or 0.5% of the stand area, whichever is the smaller.

<b>Audit Trail</b>
<b>Rationale for habitat extent attribute</b> <i>(Include methods of estimation (measures), and the approximate degree of change which these are capable of detecting).</i>
<b>Rationale for site-specific targets (including any variations from generic guidance)</b>
Within generic guidance

### Other Notes

This site is one of the best examples in Hertfordshire of ancient semi-natural beech *Fagus sylvatica* woodland, a habitat which is in decline nationally. The wood lies at the eastern end of the Chilterns on the steep north-west facing Middle Chalk escarpment, and extends onto the plateau area capped by clay-with-flints. There is a rich flora present, indicating that the woodland has been long established.

Associated with the beech high forest are areas of standard ash *Fraxinus excelsior* and pendunculate oak *Quercus robur*. Holly *Ilex aquifolium* and yew *Taxus baccata* comprise the sparse shrub layer on the upper slopes. Lower down there is more variety with dogwood *Cornus sanguinea*, field maple *Acer campestre*, wayfaring tree *Viburnum lantana* and coppiced hazel *Corylus avellana*. A small mixed plantation of larch *Larix deciduas* and species native to the site is situated on the plateau and retains important elements of the established plant community.

The diverse flora is dominated by woodruff *Galium odoratum*, wood anemone *Anemone nemorosa*, dog's mercury *Mercurialis perennis* and brambles *Rubus fruticosus* with frequent sanicle *Sanicula europaea* and wood spurge *Euphorbia amygdaloides*. Notable amongst twenty species of grass present are wood melick *Melica uniflora* and two local species, wood barley *Hordeelymus europaeus* and lesser hairy brome *Bromus enekenii*. In the central part of the wood floral diversity is enhanced by the presence of more restricted species such as yellow birds nest *Monotropa hypopitys*, common wintergreen *Pyrola minor* and narrow-lipped helleborine *Epipactis leptochila* at one of its few county localities. Two other typical beech wood orchids present are fly orchid *Ophrys insectifera* and white helleborine *Cephalanthera damasonium*.

A good range of woodland bird species have been recorded including breeding tawny owl *Strix aluco* and great spotted woodpecker *Dendrocopus major*.

The site was previously known as Grove and Stubbing Woods SSSI, and consist of 3 wood areas Stubbings Wood (Northern section), Grove Wood (south east corner) and Dog Wood (west and south west corner) (see Map 1)

The site is within the Chilterns Area of Outstanding Natural Beauty.

**Table 3 Site-Specific definitions of Favourable Condition**

<b>CONSERVATION OBJECTIVE FOR THIS HABITAT / GEOLOGICAL SITE-TYPE</b>	To maintain the <b>Lowland Broadleaved, Mixed and Yew Woodland</b> 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:				
<b>Site-specific details of any geographical variation or limitations (where the favourable condition standards apply)</b>					
<b>Site-specific standards defining favourable condition</b>					
Criteria feature	Attribute	Measure	Site-specific Targets	Comments	Use for CA?
W12 <i>Fagus sylvatica</i> - <i>Mercurialis perennis</i> Woodland	Structure and Natural processes	Assess by field survey using structured walk and/or transects.	Understorey (2-5m) present over at least 20% of total stand area. Shrub layer should account for 5-50% cover in places	The wood supports both high forest and coppiced stands. Shrub layer is sparse in some areas, which is typical of beech or oak woods. In coppiced stands a lower canopy cover (of standards) can be accepted.	Yes
W14 – <i>Fagus sylvatica</i> - <i>Rubus fruticosus</i> woodland			Canopy cover present should account for 70-80% cover.  At least three age classes spread across the average life expectancy of the commonest trees.  A scatter of large trees allowed to grow to over-maturity/death on site (e.g. 2-8 mature or standing dead trees /ha)	The wood was severely impacted by storms in the late 1980's and 1990's.  Northern area is dominated by ash (10-20cm dbh) with yew dominated understorey (10% cover) and beech and the occasional horse chestnut (5-10% cover).	

Criteria feature	Attribute	Measure	Site-specific Targets	Comments	Use for CA?
			There should be between 10-20% permanent and temporary open space (wide rides, paths, glades, open space) to ensure suitable conditions for additional floral habitat associated with calcareous soils ( see Quality indicators)		
W12 <i>Fagus sylvatica</i> - <i>Mercurialis perennis</i> Woodland  W14 – <i>Fagus sylvatica</i> - <i>Rubus fruticosus</i>	Composition	Assess by field survey using structured walk and/or transects.	At least 95% of cover in any one layer of site-native or acceptable naturalised species. Minimum of 30% cover Beech in mature canopy.  <5% cover represented by non-native tree species (notably horse chestnut, sycamore and larch) to minimise competition with native species and allow ash, beech and other broad leaved natives to spread across the site  No evidence of rapid die-back (>10% of tree/shrub layer) in any 5 year period.	Where cover in any one layer is less than 100% then the 95% target applies to the area actually covered by that layer. Composition should favour Beech (predominantly) and Ash (with other species associated with ancient chalk woodland)  Areas affected by the 87/90 storms have been rapidly colonised by fast growing ash at the expense of Beech, particularly in the northern section.  Yew, holly spindle are present in the understorey. These species should be favoured over non-natives such as laurel i.e. Portugal Laurel <i>Prunus lusitanica</i> , Cherry Laurel <i>P. laurocerasus</i> ( <b>excluding native species Spurge Laurel <i>Daphne laureola</i></b> ).  Western side of the wood has the highest percentage of Beech.  Beech on the lower slope of Stubbings wood has suffered disease.	Yes

Criteria feature	Attribute	Measure	Site-specific Targets	Comments	Use for CA?
				<p>Removal of non-native species (notably horse chestnut, sycamore and larch) to favour beech &amp; ash is a priority.</p> <p>Within Grove Wood, larch and sycamore are present. Within Dog Wood sycamore needs to be controlled</p> <p>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. Success of young beech is impeded by squirrel damage and browsing by deer (muntjac and Roe deer). Deer damage is also associated with the loss of rare helleborines.</p> <p>There is a potential issue with climate change. Very dry summers (2003) are poorly tolerated by beech, and if such conditions become more common beech regeneration may be impaired. (Species list 2003 is attached for reference.)</p> <p>Glades and rides are important for a variety of species notably sanicle, bluebell, wood</p>	

Criteria feature	Attribute	Measure	Site-specific Targets	Comments	Use for CA?
				<p>anemone, wood sorrel, bugle, yellow archangel, dogs mercury (and <i>Cephalanthera</i>, wood melick and wood millet (refer to quality indicators)</p> <p>Ideally the wood edges should be wide and graded to enhance species diversity.</p>	
<p>W12 <i>Fagus sylvatica</i> - <i>Mercurialis perennis</i> Woodland</p> <p>W14 – <i>Fagus sylvatica</i>- <i>Rubus fruticosus</i></p>	Quality indicators	Assess by field survey using structured walk and/or transects, or as appropriate to feature.	<p>Minimum of 80% of ground flora cover referable to W12 and W14 (plateau). Occurrence of notable species identified in maps from 2003 survey. Several species (see comments) are dependent on the mature beech component of the wood and their occurrence can be used as a quality indicator.</p>	<p>A number of scarce plants and interesting flora of the woods are associated with open space (rides, ride edge, glades) within the wood (See Map 3 – Notable Species)</p> <p>Narrow-lipped Heleborine <i>Epipactis leptochila</i> was last recorded in 1980. If the mature beech component of the wood is increased, it is possible that this species may reoccur, since orchid seed have long dormancy.</p> <p>Fly Orchid <i>Ophrys insectifera</i> was last recorded in 1978.</p>	Yes

Criteria feature	Attribute	Measure	Site-specific Targets	Comments	Use for CA?
				<p>Common Spotted Orchid <i>Dactylorhiza fuchsii</i> has established small ephemeral populations at the wood margins, spreading from neighbouring calcareous grassland. The wider grassy rides provide suitable conditions for potential future colonising of this species. Similarly, Common Twayblade <i>Listera ovata</i> last recorded in 1979 may recolonise by natural dispersal.</p> <p>White Helleborine <i>Cephalanthera damasonium</i> was recorded in 2003.</p> <p>Yellow Bird's-nest <i>Monotropa hypopitys</i> has not been recorded since Dony in 1976.</p> <p>Wood barley <i>Hordelymus europaeus</i> and Lesser Hairy Brome <i>Bromus benekini</i> were still found to be well distributed in 2003, mostly along path and ride margins</p>	Yes
				<p>A colony of Common Wintergreen <i>Pyrola minor</i> was recorded in 1989 but as with several notable species described, they require a mature beech component within the woodland, much of which appears to have been devastated by the 1987/90 storms and is now smothered by <i>Fraxinus</i> growth.</p> <p>Maps produced by LandMAS, HMWT in 2003 identify the areas where these species have been</p>	

Criteria feature	Attribute	Measure	Site-specific Targets	Comments	Use for CA?
				<p>previously recorded. Monitoring should seek to target these areas in order to provide a rapid indication of presence/ absence and/or approximate extent.</p> <p>No evidence of <i>Monotropa</i>, <i>Epipactus leptochila</i>, Common Wintergreen and fly orchid in 2002</p>	
<p>W12 <i>Fagus sylvatica</i> - <i>Mercurialis perennis</i> Woodland</p> <p>W14 – <i>Fagus sylvatica</i>- <i>Rubus fruticosus</i></p>	Regeneration potential	Assess by field survey using structured walk and/or transects.	Signs of seedlings growing through to saplings to young trees at sufficient density to maintain canopy density over a 10 yr period (or equivalent re-growth from coppice stumps).	<p>The wood supports areas of non-intervention, high forest and rotational coppice.</p> <p>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.</p> <p>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.</p> <p>There is sufficient mature beech, but mostly confined to the outskirts of the woodland. The western side of Stubbings Wood – Dying Beech and competing larch reducing natural regeneration. Probably best not to encourage clearance to facilitate sapling growth because beech will germinate in dense shade. Areas</p>	Yes



Criteria feature	Attribute	Measure	Site-specific Targets	Comments	Use for CA?
				<p>along the middle slope may require planting up with beech/ ash.</p> <p>Regeneration of hazel is associated with coppice stumps.</p> <p>Sycamore stumps may need herbicide treatment in places to prevent regrowth.</p>	

<b>Audit Trail</b>
<b>Rationale for limiting standards to specified parts of the site</b>
<b>Rationale for site-specific targets (including any variations from generic guidance)</b>
No variations from generic guidance
<b>Rationale for selection of measures of condition (features and attributes for use in condition assessment)</b>
(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).
<b>Other Notes</b>
<p>Botanical Survey of Tring Woodlands SSSI, 2003 – prepared on behalf of Dacorum District Council by Dr Paul Clack, Jan 2004. LandMAS HMWT.  The composition of the woodland has changed considerably in recent years following storms in the late 1980's and 1990's, with some areas of Beech Woodland now dominated by regenerating Ash trees.</p> <p>Where possible beech should be selected and protected from squirrel and deer browsing throughout the wood by appropriately sized guards or fencing larger areas (e.g. plateau). Priority should be in areas where notable scarce plants typical to beech woodland community had been previously reported (see map)  Regular monitoring will assist with the protection of key species such as orchids and the impact of deer browsing.  Removal of non-native species notably horse chestnut, sycamore and larch) is a priority with focus on large seed producing specimens. Recommend herbicide treatment of stumps to prevent re-growth.</p>

- **Windsor Hill SSSI**

### **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 mixed broadleaf woodland

Lowland calcareous grassland

#### **Geological features (Geological Site Types)**

[n/a]

(\*) 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 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 2000 waterfowl
Lowland mixed broadleaf woodland	W12, W14 Beech woodland	Beech/oak/ash woodland	X	X						
Lowland mixed broadleaf woodland	Red helleborine (i) Cephalanthera rubra		X							
Lowland calcareous grassland with juniper scrub	juniper		X							

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**

<b>Conservation Objective for habitat extent</b>	To maintain the designated habitats 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:
<b>Extent - Dynamic balance</b>	On this site favourable condition requires the maintenance of the extent of the designated habitat type. Maintenance implies restoration if evidence from condition assessment suggests a reduction in extent.

<b>Habitat Feature (BAP Broad Habitat level, or more detailed level if applicable)</b>	<b>Estimated extent (ha) and date of data source/estimate</b>	<b>Site Specific Target range and Measures</b>	<b>Comments</b>
<b>Lowland mixed broadleaf woodland</b>	40 (estimated)	No reduction in area except where clearance is required to create habitat of higher conservation value.	Limited clearance of recent or plantation woodland is acceptable where it will result in benefits for juniper scrub or <i>Cephalanthera rubra</i> .
<b>Juniper scrub</b>	2 (estimated)	No reduction in area	The number of juniper bushes has declined significantly in recent years
<b>Lowland Calcareous grassland</b>			

<b>Audit Trail</b>
<b>Rationale for habitat extent attribute</b> <i>(Include methods of estimation (measures) and the approximate degree of change which these are capable of detecting).</i>
<b>Rationale for site-specific targets (including any variations from generic guidance)</b>
<b>Other Notes</b>

**Table 3 Site-Specific definitions of Favourable Condition**

<b>CONSERVATION OBJECTIVE FOR THIS HABITAT / GEOLOGICAL SITE-TYPE</b>		To maintain the broadleaved mixed woodland and juniper scrub 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:				
<b>Site-specific details of any geographical variation or limitations (where the favourable condition standards apply)</b>						
<b>Site-specific standards defining favourable condition</b>						
<b>Criteria feature</b>	<b>Standard Attribute Name</b>	<b>Attribute term in guidance</b>	<b>Measure</b>	<b>Generic Target</b>	<b>Comments</b>	<b>Use for CA?</b>
Beech woodland (W12, W14)	1. Habitat Extent	Area	Extent/location of stands	No loss of ancient semi-natural stands (Refer to Barneveld 1997) At least current area of recent semi-natural stands maintained, although their location may alter. At least the area of ancient woodland retained	Temporary stand loss due to natural processes would be acceptable. Stand destruction may occur if the understorey and ground flora are irretrievably damaged even if the canopy remains intact. Loss = 0.5 ha or 0.5% of the stand area, whichever is the smaller. 20% canopy cover is conventionally taken as the lower limit for an area to be considered as woodland. Beech may not be abundant throughout the stand, particularly in regeneration patches, but this does not count as stand loss.	

Criteria feature	Standard Attribute Name	Attribute term in guidance	Measure	Generic Target	Comments	Use for CA?
Beech woodland (W12, W14)	2. Natural processes and structural development		Age/size class variation within and between stands; presence of open space and old trees; dead wood lying on the ground; standing dead trees	<p>At least the current level of structural diversity maintained but where possible should be increased.</p> <p>Understorey (2-5m) present over 10-80% of total stand area.</p> <p>Ground flora present over at least 10% of area or current extent in mature stands, whichever is greater.</p> <p>Canopy cover present over 30-90 % of stand area.</p> <p>Age class structure appropriate to the site, its history and management.</p> <p>A minimum of 3 fallen lying trees per ha and 10 standing dead trees per ha.</p>	<p>Any changes leading to exceedance of these limits due to natural processes are likely to be acceptable. Structural variation in parts of the wood dominated by beech plantation is currently low.</p> <p>The understorey is mostly sparse- infrequent holly, elder &amp; cherry on plateau -elsewhere non existent through grazing or loss of canopy/understorey in storms and clearup operation.</p> <p>There is not a great deal of standing dead wood as is typical of beech woods but there is a fair amount of dead wood in the canopy and as fallen trees.</p>	

Criteria feature	Standard Attribute Name	Attribute term in guidance	Measure	Generic Target	Comments	Use for CA?
Beech woodland (W12, W14)	4. Positive quality indicators: Characteristic species	Species, habitats, structures characteristic of the site.	Ground flora type Distinctive and desirable elements for a given site Patches of associated habitats and transitions Presence of rare/notable species: <i>Cephalanthera rubra</i>	80% of ground flora cover referable to relevant NVC community  Distinctive elements maintained at current levels and in current locations (where appropriate) Patches and transitions maintained in extent and where appropriate location.  Suitable conditions. Maintained to support self-sustaining population of <i>Cephalanthera rubra</i> .- It is believed to require partially shaded grassland with low competition from other species and no heavy deposits of leaf litter	Targets not being met are acceptable where due to natural processes.  The ground flora is very sparse in many parts of the site; parts appear to have suffered significant ground disturbance which has affected the ground flora. The site includes some mature, specimen beech; these should be allowed to mature and die in situ.  The presence of and transition to grassland and scrub is a feature of interest and conservation value but it is accepted that its location may change over time due to natural succession.  <i>Cephalanthera rubra</i> is restricted to a small area of the site. Number of stems varies from year to year but location remains constant within small area. It is not clear whether seed production is successful at the site. The location of the plant is accurately mapped and held in the Bucks rare plant file.	



Criteria feature	Standard Attribute Name	Attribute term in guidance	Measure	Generic Target	Comments	Use for CA?
Beech woodland (W12, W14)	6. Natural processes/regeneration	Regeneration potential	Successful establishment of young stems in gaps or on the edge of a stand	Signs of seedlings growing through to saplings to young trees at sufficient density to maintain canopy density over a 10 yr period.  No regeneration by planting.	The minimum level of regeneration acceptable from a nature conservation viewpoint is likely to be much less than that needed where wood production is also an objective.  Much planting has been carried out, especially after the 1987 storm.  Natural regeneration esp ash is successful in parts of the wood.	
Juniper scrub	Habitat Extent	Area and distribution	Area and location of habitat supporting juniper	No reduction in area and any consequent fragmentation without prior consent, subject to natural change		
Juniper scrub	Reproductive potential		Measures in place to promote self-sustaining population.	Suitable conditions in place to encourage/promote regeneration and survival of seedlings.	Natural reproduction may not be feasible under current conditions. Intervention to create suitable ground conditions for seedling establishment and protection of seedlings may be required.	
Juniper scrub	Community composition	Associated species	Frequency of: privet, dogwood, bramble, hawthorn, false brome	at least occasional		

Criteria feature	Standard Attribute Name	Attribute term in guidance	Measure	Generic Target	Comments	Use for CA?
Juniper scrub	Health of bushes	Browsing effects	Evidence of browsing/ grazing impacts	<50% showing no or low to moderate impact		

TABLE FROM BEAR OVERYS = WOODLAND INCLUDING ATTRIBUTES FOR GHOST ORCHID SHOULD BE ACCEPTIBLE FOR RED HELLEBORINE ASWELL, COULD TAKE OUT WOODLAND TABLES ABOVE. TAKE OUT DIFFERENT SOIL TYPES EG ACID AS NOT RELEVANT AS WINDSOR HILL.

**Table 3 Site-Specific definitions of Favourable Condition**

<b>CONSERVATION OBJECTIVE FOR THIS HABITAT</b>		To maintain the <b>broadleaved semi natural woodland</b> 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:			
<b>Site-specific details of any geographical variation or limitations (where the favourable condition standards apply)</b>					
The attributes below apply to the whole site.					
<b>Site-specific standards defining favourable condition</b>					
Criteria feature	Attribute	Measure	Site-specific Targets	Comments	Use for CA?
Broadleaved, mixed and yew woodland	Area	Field survey and/or aerial photography, in relation to baseline map.	No loss of ancient semi-natural stands. No loss of ancient woodland.	Stand loss due to natural processes may be acceptable. Stand destruction may occur if the understorey and ground flora are irretrievably damaged even if the canopy remains intact. As a guideline, loss can be defined as at least 0.25 ha or 0.5% of the stand area, whichever is the smaller.	Yes
Broadleaved, mixed and yew woodland	Structure and Natural processes	Assess by field survey using structured walk and/or transects.	Understorey (2-5m) present over at least 10% of total stand area. Canopy cover present over 70-100 % of stand area. At least three age classes spread across the average life expectancy of the commonest trees. Some areas of relatively undisturbed mature/old growth stands or a scatter of large trees allowed to grow to over-maturity/death on site (e.g. a minimum of 10% of the woodland or 3-10 trees per ha).	As is typical in beech plantations the ground flora and shrub layer at this site is characteristically sparse. This characteristic is thought to be very important in providing suitable conditions for <i>Epipogium aphyllum</i> which requires the presence of a deep layer of slowly decaying leaf litter, preferably of beech or oak. It is entirely saprophytic (does not require light) and may in fact be adversely affected should the canopy become too open, allowing ash to dominate and alter the character of the location, or more directly by drying out the leaf litter. This means that the maintenance of closed canopy conditions is desirable if not essential. Equally, in those areas where <i>Epipogium aphyllum</i> has occurred in the past it is undesirable to have conditions	Yes

Criteria feature	Attribute	Measure	Site-specific Targets	Comments	Use for CA?
				which promote the development of a dense ground layer.	
Broadleaved, mixed and yew woodland	Quality indicators	Assess by field survey using structured walk and/or transects, or as appropriate to feature.	At least 80% of ground flora referable to the relevant NVC communities.  <i>Epipogium aphyllum</i> present. Suitable habitat conditions for <i>Epipogium aphyllum</i> maintained in those areas where it has been known to occur in the past: ie Layer of deep (>5cm) leaf litter (ideally of oak and/or beech) present; no signs of gross disturbance of the ground surface; ground flora very sparse.	A significant aspect of the special interest of this site is the range of NVC types present, reflecting different soil types. It is desirable that the distinctive elements are maintained. An increase in the abundance of yew and consequent change in community type to W13 is undesirable.  It is not considered practical to monitor <i>Epipogium aphyllum</i> specifically. The plant largely survives as an underground organism flowering intermittently with gaps of many years, may actually flower underground on occasion, and the above ground parts may only be visible for 2-3 weeks. Nevertheless, it is important that efforts are made to record any sightings of the plant and to ensure that habitat conditions remain suitable. The site should not necessarily be considered to be unfavourable if the plant is not recorded for many years. The locations of sightings of the plant are recorded in the site file.	<b>Yes</b>  <b>No</b>
Broadleaved, mixed and yew woodland	Regeneration potential	Assess by field survey using structured walk and/or transects.	Sufficient regeneration to maintain canopy density over a 10 yr period. No more than 20% of areas regenerated by planting. All planting material of native stock.	A proportion of gaps at any one time may develop into permanent open space; equally some current open space/glades may in time regenerate to closed canopy.	<b>Yes</b>

Criteria feature	Attribute term in guidance	Measure	Generic Target	Comments	Use for CA?
CG2 Festuca ovina-Avenula pratensis lowland calcareous grassland	Extent	Total area (ha), mapped in relation to baseline (ie first available map of interest feature when/after notified), in period May-July.	No reduction in area and any consequent fragmentation without prior consent	Recoverable reduction = unfavourable; non-recoverable reduction = partially destroyed. Excludes bare ground associated with rabbit warrens (see below).	Yes
CG2 Festuca ovina-Avenula pratensis lowland calcareous grassland	Sward structure: bare ground	Record extent of bare ground (not rock) distributed through the sward, noticeable without disturbing the vegetation, in period May-July. Measure annually if possible.	No more than 10%.	Outside target indicates management problems eg over-grazing.	
CG2 Festuca ovina-Avenula pratensis lowland calcareous grassland	Sward structure: localized bare ground	Record extent of localized bare ground around rabbit warrens. Measure annually if possible.	No more than 0.05 ha ie approx 20x20 metres	Outside target indicates rabbit grazing and disturbance levels are too high.	
CG2 Festuca ovina-Avenula pratensis lowland calcareous grassland	Sward structure: litter	Record cover of litter where in a more or less continuous layer, distributed either in patches or in one larger area.	Total extent no more than 25% of the sward	Outside target indicates biomass removal is insufficient eg under-grazed.	

Criteria feature	Attribute term in guidance	Measure	Generic Target	Comments	Use for CA?
CG2 Festuca ovina-Avenula pratensis lowland calcareous grassland	Sward structure: average height	Record sward height in period May-July.	Sward 2-10 cms.	Outside target indicates insufficient grazing or over-grazing.	
CG2 Festuca ovina-Avenula pratensis lowland calcareous grassland	Sward composition: grass/herb ratio	Proportion of non-Graminae (“herbs”), in period May -July.	40-90%	Low proportion outside target indicates eutrophication, usually from fertilisers, or insufficient removal of biomass, leading to dominance by grasses.	Yes
CG2 Festuca ovina-Avenula pratensis lowland calcareous grassland	Sward composition: positive indicator species	Record the frequency of positive indicator species in period May- July. Anthyllis vulneraria, Asperula cynanchica, Campanula glomerata, Cirsium acaule, Filipendula vulgaris, Genista tinctoria, Gentianella spp., Helianthemum nummularium, Hippocrepis comosa, Leontodon hispidus/L. saxatilis, Leucanthemum vulgare, Linum catharticum, Lotus corniculatus, Pilosella officinarum (Hieracium pilosella), Plantago media, Polygala spp., Primula veris, Sanguisorba minor, Scabiosa columbaria,	At least four species/taxa frequent plus at least three species occasional throughout the sward.	Choice of species related to NVC type and restriction to unimproved grassland, considered satisfactory when inside target. Among possible species that could be used, choice further restricted by ease of identification, visibility in recording period.	Yes

Criteria feature	Attribute term in guidance	Measure	Generic Target	Comments	Use for CA?
		Serratula tinctoria, Succisa pratensis, Thymus spp..			
CG2 Festuca ovina-Avenula pratensis lowland calcareous grassland	Sward composition: negative indicator species	Record the frequency and % cover of negative indicator species. Record in period May-July. Cirsium arvense, Cirsium vulgare, Rumex crispus, Rumex obtusifolius, Senecio jacobaea, Urtica dioica.	No species/taxa more than occasional throughout the sward or singly or together more than 5% cover	Invasive species chosen to indicate problems of eutrophication and disturbance from various sources when outside target eg poaching, stock feeding.	Yes
CG2 Festuca ovina-Avenula pratensis lowland calcareous grassland	Sward composition: negative indicator species	Record % cover of Brachypodium pinnatum and Bromopsis erecta, in period May-July.	Neither species at more than 10% cover	Outside target indicates insufficient removal of biomass eg under-grazing.	Yes
CG2 Festuca ovina-Avenula pratensis lowland calcareous grassland	Sward composition: negative indicator species	Record the frequency and % cover of all tree and scrub species excluding Juniperus communis, considered together. NB If scrub/tree species are more than occasional throughout the sward but less than 5% cover, they are soon likely to become a problem if grazing levels are not sufficient or if scrub control is not being carried out.	No more than 5% cover.	Invasive species outside target shows that habitat is not being managed sufficiently eg under-grazed.	Yes

<b>Audit Trail</b>
<b>Rationale for limiting standards to specified parts of the site</b>
<b>Rationale for site-specific targets (including any variations from generic guidance)</b>
<b>Rationale for selection of measures of condition (features and attributes for use in condition assessment)</b>
(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).
A much greater level of intervention is required to maintain the <i>Cephalanthera rubra</i> population than might otherwise be appropriate for other parts of the beech woodland on site. It is thought to require dappled shade, low levels of competition from surrounding vegetation, low levels of leaf litter, and be readily damaged by trampling and browsing. Its flowers are thought to mimic those of <i>Campanula</i> spp so as to attract the same pollinators (leaf cutter bees).
<b>Other Notes</b>



- *Naphill Common SSSI*

### ***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 mixed broadleaf woodland

#### **Geological features (Geological Site Types)**

[n/a]

(\*) 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 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
Lowland mixed broadleaf woodland	W12, W14 Beech woodland	Beech/oak/ash woodland	*	*						

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**

<b>Conservation Objective for habitat extent</b>	To maintain the designated habitats 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:
<b>Extent - Dynamic balance</b>	On this site favourable condition requires the maintenance of the extent of the designated habitat type. Maintenance implies restoration if evidence from condition assessment suggests a reduction in extent.

<b>Habitat Feature (BAP Broad Habitat level, or more detailed level if applicable)</b>	<b>Estimated extent (ha) and date of data source/estimate</b>	<b>Site Specific Target range and Measures</b>	<b>Comments</b>
<b>Lowland mixed broadleaf woodland</b>	60 as at 2004.	At least 80 % of woodland referable to W12 and W14.	Some of the woodland is of recent origin a a result of scrub development on formerly grazed common. A small reduction in woodland area may occur in the course of the restoration of glades and broadening of rides to enhance the habitat.

<b>Audit Trail</b>
<b>Rationale for habitat extent attribute (Include methods of estimation (measures) and the approximate degree of change which these are capable of detecting).</b>
The presence of a mosaic of habitats including rides, glades and clearings as well as high forest is an important aspect of the interest of the site.
<b>Rationale for site-specific targets (including any variations from generic guidance)</b>
<b>Other Notes</b>

**Table 3 Site-Specific definitions of Favourable Condition**

<b>CONSERVATION OBJECTIVE FOR THIS HABITAT TYPE</b>		To maintain <b>the broadleaved mixed woodland habitat</b> 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:			
<b>Site-specific details of any geographical variation or limitations (where the favourable condition standards apply)</b>					
The attributes below apply to the whole site.					
<i>Site-specific standards defining favourable condition</i>					
<b>Criteria feature</b>	<b>Attribute</b>	<b>Measure</b>	<b>Target</b>	<b>Comments</b>	<b>Use for CA?</b>
Beech/oak woodland (W12, W14)	Habitat Extent	Field survey and/or aerial photography, in relation to baseline map.	No loss of ancient semi-natural stands (refer to Barneveld 1997)  At least current area of recent semi-natural stands maintained, although their location may alter.  At least the area of ancient woodland retained	Temporary stand loss due to natural processes would be acceptable. Some stand loss as a result of the restoration of glades, clearance around ponds or widening of rides is acceptable. Stand destruction may occur if the understorey and ground flora are irretrievably damaged even if the canopy remains intact. Loss = 0.5 ha or 0.5% of the stand area, whichever is the smaller. 20% canopy cover is conventionally taken as the lower limit for an area to be considered as woodland. Beech may not be abundant throughout the stand, particularly in regeneration patches, but this does not count as stand loss.	yes

Criteria feature	Attribute	Measure	Target	Comments	Use for CA?
Beech woodland (W12, W14)	Composition	Assess by field survey using structured walk and/or transects.	<p>At least the current level of site-native species maintained.</p> <p>At least 90% of cover in any one layer of site-native or acceptable naturalised species.</p> <p>Beech present in mature canopy at at least 30% cover for the feature on the site as a whole.</p> <p>Death, destruction or replacement of native woodland species through effects of introduced fauna or other external unnatural factors not more than 10% by number or area in a five year period.</p>	<p>Sycamore is present but is rare and is not currently of concern. Nevertheless any significant increase in distribution is undesirable and should be controlled.</p> <p>There are no indications of any external factors currently affecting beech, oak or the ground flora.</p> <p>Damage to trees by squirrels that does not lead to their death or replacement by non woodland species is not necessarily unacceptable in nature conservation terms.</p> <p>Excessive browsing/grazing by deer does not currently appear to be at a level which is causing damage to ground flora or regeneration, but may be encouraging the survival of holly at the expense of other shrub species.</p>	yes
Beech woodland (W12, W14)	quality indicators	Assess by field survey using structured walk and/or transects, or as appropriate to feature.	<p>At least 80% of ground flora cover referable to W12 and W14.</p> <p>Populations of notable species maintained, esp. <i>Damasonium alisma</i>, <i>Juniperus communis</i>.</p> <p>Rides maintained in good condition.</p>	<p>The ground flora is very sparse in parts of the site.</p> <p>The presence of and transition to heathy glades is a feature of interest and conservation value but it is accepted that the location of such features may change over time as a result of natural processes. 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.</p> <p>The mosaic of rides and glades and the associated interface with the woodland is an important feature of this site.</p>	yes

Criteria feature	Attribute	Measure	Target	Comments	Use for CA?
Beech woodland (W12, W14)	Regeneration potential	Assess by field survey using structured walk and/or transects.	Signs of seedlings growing through to saplings to young trees at sufficient density to maintain canopy density over a 10 yr period.  No regeneration by planting.	The minimum level of regeneration acceptable from a nature conservation viewpoint is likely to be much less than that needed where wood production is also an objective.  Natural regeneration is currently very successful in this wood.	yes

<b>Audit Trail</b>
<b>Rationale for limiting standards to specified parts of the site</b>
<b>Rationale for site-specific targets (including any variations from generic guidance)</b>
<b>Rationale for selection of measures of condition (features and attributes for use in condition assessment)</b> (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).
<b>Other Notes</b>

- *Hollowhill & Pullingshill SSSI*

### **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 mixed broadleaf woodland

#### **Geological features (Geological Site Types)**

[n/a]

(\*) 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 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
Lowland mixed broadleaf woodland	W12, W14 Beech woodland	Beech/ash woodland								
	Ghost orchid									

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**

<b>Conservation Objective for habitat extent</b>	To maintain the designated habitat 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:
<b>Extent - Dynamic balance</b>	On this site favourable condition requires the maintenance of the extent of the designated habitat type. Maintenance implies restoration if evidence from condition assessment suggests a reduction in extent.

<b>Habitat Feature (BAP Broad Habitat level, or more detailed level if applicable)</b>	<b>Estimated extent (ha) and date of data source/estimate</b>	<b>Site Specific Target range and Measures</b>	<b>Comments</b>
<b>Lowland mixed broadleaf woodland</b>	23	No reduction in habitat area.	The whole site area is occupied by high forest.

<b>Audit Trail</b>
<b>Rationale for habitat extent attribute (Include methods of estimation (measures) and the approximate degree of change which these are capable of detecting).</b>
<b>Rationale for site-specific targets (including any variations from generic guidance)</b>
<b>Other Notes</b>

**Table 3 Site-Specific definitions of Favourable Condition**

<b>CONSERVATION OBJECTIVE FOR THIS HABITAT / GEOLOGICAL SITE-TYPE</b>		To maintain the broadleaved mixed woodland 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:				
<b>Site-specific details of any geographical variation or limitations (where the favourable condition standards apply)</b>						
<i>Site-specific standards defining favourable condition</i>						
<b>Criteria feature</b>	<b>Standard Attribute Name</b>	<b>Attribute term in guidance</b>	<b>Measure</b>	<b>Generic Target</b>	<b>Comments</b>	<b>Use for CA?</b>
Beech woodland (W12, W14 )	1. Habitat Extent	Area	Extent/location of stands	No loss of ancient semi-natural stands  At least current area of recent semi-natural stands maintained, although their location may alter.  Area of ancient woodland retained	Temporary stand loss due to natural processes would be acceptable. Stand destruction may occur if the understorey and ground flora are irretrievably damaged even if the canopy remains intact. Loss = 0.5 ha or 0.5% of the stand area, whichever is the smaller. 20% canopy cover is conventionally taken as the lower limit for an area to be considered as woodland. Beech may not be abundant throughout the stand, particularly in regeneration patches, but this does not count as stand loss.	
<b>Criteria feature</b>	<b>Standard Attribute Name</b>	<b>Attribute term in guidance</b>	<b>Measure</b>	<b>Generic Target</b>	<b>Comments</b>	<b>Use for CA?</b>

<p>Beech woodland (W12, W14)</p>	<p>Composition:</p>	<p>Composition</p>	<p>Cover of native versus non-native species (all layers)</p> <p>Death, destruction or replacement of native woodland species through effects of non-native fauna or external unnatural factors</p>	<p>At least the current level of site-native species maintained.</p> <p>At least 90% of cover in any one layer of site-native or acceptable naturalised species.</p> <p>Beech present in mature canopy at at least 30% cover for the feature on the site as a whole.</p> <p>Death, destruction or replacement of native woodland species through effects of introduced fauna or other external unnatural factors not more than 10% by number or area in a five year period.</p>	<p>Sycamore is currently scarce; an increase in distribution is undesirable and should be controlled.</p> <p>Sweet chestnut and various conifers are scattered through the wood but are not considered a threat to the conservation interest and can be allowed to stay in situ if not required for timber.</p> <p>There are no indications of any external factors currently affecting beech or the ground flora.</p> <p>Damage to trees by squirrels that does not lead to their death or replacement by non woodland species is not necessarily unacceptable in nature conservation terms.</p> <p>Browsing/grazing by deer does not currently appear to be at a level which is causing damage to ground flora or regeneration.</p>
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Criteria feature	Standard Attribute Name	Attribute term in guidance	Measure	Generic Target	Comments	Use for CA?
Beech woodland (W12, W14)	6. Natural processes/regeneration	Regeneration potential	Successful establishment of young stems in gaps or on the edge of a stand	Signs of seedlings growing through to saplings to young trees at sufficient density to maintain canopy density over a 10 yr period.  No regeneration by planting.	Natural regeneration is currently successful in the wood.	

<b>Audit Trail</b>
<b>Rationale for limiting standards to specified parts of the site</b>
<b>Rationale for site-specific targets (including any variations from generic guidance)</b>
Ghost orchid has very specific requirements and may require intervention to maintain suitable conditions where minimal or non-intervention might otherwise have been appropriate at this site.
<b>Rationale for selection of measures of condition (features and attributes for use in condition assessment)</b> (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).
<b>Other Notes</b>

### 2003 Higher Plant Species List

Frequency uses DAFOR scale where D = dominant, A = abundant, F = frequent, O = occasional and R = Rare.

### Mosses and Liverwort Survey

On 28<sup>th</sup> September 2004, the Norfolk county recorder for mosses and liverworts, Robin Pearson, visited Tring Woodlands, and performed a one-day field survey.

A total of 50 species were recorded (45 mosses, 5 liverworts), which Colin suggests is about what could be expected in the habitat on a single days survey. He also comments that a more detailed examination, especially on a good damp day, would yield a slightly higher total. The smaller species associated with paths are not as well represented as they perhaps ought to be, presumably due to the relatively dry antecedent weather conditions, and the dry nature of beech woodland.

Colin was also slightly surprised by the general lack of epiphytes; however, he suggests that since he looked for them carefully enough their absence is real.

Colin divided the site in to 8 compartments, and comments that the (rather crude) picture that emerges is, however, quite nice: the smallest compartment had - inevitably - the lowest total. Those compartments that were predominantly acid (i.e. 1, 2, 3, 4 and 8) had slightly lower totals than did the more calcareous or mixed soil compartments, such as 5, 6 and 7.

The most interesting species included *Anomodon viticulosus*, *Cirriphyllum piliferum*, *Neckera complanata* and *Scleropodium cespitans* - 'good' woodland indicator species. Colin comments that it is good to see that they survived the storms.

*Rhizomnium punctatum* and *Riccardia chamedryfolia* were real surprises: they are usually associated with quite damp conditions - here they were found on moist rotting wood.

Taken from: Botanical Survey of Tring Woodlands SSSI, 2003 – prepared on behalf of Dacorum District Council by Dr Paul Clack, Jan 2004. LandMAS HMWT.