

**CYNGOR CEFN GWLAD CYMRU
COUNTRYSIDE COUNCIL FOR WALES**

**CORE MANAGEMENT PLAN
(INCLUDING CONSERVATION OBJECTIVES)**

FOR

Cardiff Beech Woods Special Area of Conservation (SAC)

**(underpinned by Garth Woods SSSI, Castell Coch Woodlands and Road Section SSSI,
and Fforestganol a Chwm Nofydd SSSI)**

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A Welsh version of all or part of this document can be made available on request.



CONTENTS

Preface: Purpose of this document

- 1. Vision for the Site**
- 2. Site Description**
 - 2.1 Area and Designations Covered by this Plan**
 - 2.2 Outline Description**
 - 2.3 Outline of Past and Current Management**
 - 2.4 Management Units**
- 3. The Special Features**
 - 3.1 Confirmation of Special Features**
 - 3.2 Special Features and Management Units**
- 4. Conservation Objectives**

Background to Conservation Objectives

 - 4.1 Conservation Objective for Feature 1:**
Asperulo-fagetum beech forest
 - 4.2 Conservation Objective for Feature 2:**
Tilio-acerion forest of slopes, screes and ravines
- 5. Management Objectives for SSSI-only Features**
 - 5.1 Conservation Objective for Feature 3:**
Semi-natural broadleaved woodland
 - 5.2 Conservation Objective for Feature 4:**
Porrhoma rosenhaurei (cave-dwelling spider)
 - 5.3 Conservation Objective for Feature 5:**
Geological exposures
- 6. Assessment of Conservation Status and Management Requirements:**
 - 6.1 Conservation Status and Management Requirements of Feature 1:**
Asperulo-fagetum beech forest
 - 6.2 Conservation Status and Management Requirements of Feature 2:**
Tilio-acerion forest of slopes, screes and ravines
 - 6.3 Conservation Status and Management Requirements of Feature 3:**
Semi-natural broadleaved woodland
 - 6.4 Conservation Status and Management Requirements of Feature 4:**
Porrhoma rosenhaurei (cave-dwelling spider)
 - 6.5 Conservation Status and Management Requirements of Feature 5:**
Geological exposures
- 7. Action Plan: Summary**
- 8. Glossary**
- 9. References and Annexes**

PREFACE

This document provides the main elements of CCW's management plan for the site named. It sets out what needs to be achieved on the site, the results of monitoring and advice on the action required. This document is made available through CCW's web site and may be revised in response to changing circumstances or new information. This is a technical document that supplements summary information on the web site.

One of the key functions of this document is to provide CCW's statement of the Conservation Objectives for the relevant Natura 2000 site. This is required to implement the Conservation (Natural Habitats, &c.) Regulations 1994, as amended (Section 4). As a matter of Welsh Assembly Government Policy, the provisions of those regulations are also to be applied to Ramsar sites in Wales.

1. VISION FOR THE SITE

This is a descriptive overview of what needs to be achieved for conservation on the site. It brings together and summarises the Conservation Objectives (part 4) into a single, integrated statement about the site.

The woodland is dominated by beech trees with their bright green leaves forming what appears to be a dense canopy overhead. Natural woodland processes however ensure a dynamic shifting pattern of canopy gaps. Viable saplings emerge from the understorey, not just locally native beech but also ash and oak. Sycamore is a small component, accepted here as a natural part of the system. The distinctive bark of hornbeam can also be seen. Areas of steep or rocky ground support ash, wych elm and lime trees. Trees of different ages are present; wizened veterans contrasting with fresh young growth.

Away from the network of public footpaths and bridleways, large trees are present with potential to fall and create gaps in the canopy. Areas of advanced regeneration are maintained; saplings waiting their turn for a canopy gap and opportunity to flourish. Both standing and fallen dead wood abound with invertebrate life and fungi.

In spring, the garlicky smell of ramsons and the blue haze of bluebells draw attention to the ground layers which also yield sanicle, birds nest orchids, dogs mercury and ferns. These plants remind us that the woodlands are centuries old and the soils are lime-rich.

Cultural heritage interest and recreational use is promoted alongside the nature conservation interest of the site. A safe environment is maintained for public access through the woodland. Recreational use is restricted to the extensive network of pathways and access routes leaving natural woodland processes unhindered away from areas of public use. The balance of interests is maintained for all to enjoy - now and in the future.

2. SITE DESCRIPTION

2.1 Area and Designations Covered by this Plan

Grid reference: ST 118824 (approximate central point of the SAC)

Unitary authorities: Caerdydd/ Cardiff; Rhondda, Cynon, Taf/ Rhondda, Cynon, Taff

Area (hectares): 115.62

Designations covered:

The Cardiff Beech Woods Special Area of Conservation (SAC) is underpinned by three component Sites of Special Scientific Interest (SSSIs):

- **Garth Wood SSSI** (grid reference ST 125825). This was re-notified in 2001 to make the SSSI boundary identical to that of the SAC where they overlap. The SAC habitats occupy 67.9% of the SSSI. The rest of the SSSI supports semi natural broad-leaved woodland that does not meet SAC criteria. In addition, the SSSI supports a population of *Porrhoma rosenhaueri* (a cave dwelling spider) found within Lesser Garth Cave.
- **Fforestganol a Chwm Nofydd SSSI** (grid reference ST 147835). This was re-notified in 2001 to make the SSSI boundary identical to that of the SAC where the two overlap and to amalgamate the two SSSIs of Fforestganol, Tongwynlais and Cwm Nofydd. The SAC habitats occupy 12.9% of the SSSI. The rest of the SSSI supports semi natural broad-leaved woodland that does not meet SAC criteria. The site also includes Fforest Ganol and Cwm Nofydd Local Nature Reserve.
- **Castell Coch Woodlands and Road Section SSSI** (grid reference ST 131827). This was notified in 1990. The SAC habitats occupy 71% of the SSSI. The rest is made up of the geological interest of the Road Section.

Detailed maps of the designated sites are available through CCW's web site:

<http://www.ccw.gov.uk/interactive-maps/protected-areas-map.aspx>

A summary map showing the coverage of this document is shown in Annex A.

2.2 Outline Description

Cardiff Beech Woods SAC represents an area of semi-natural broadleaved woodland dominated by beech. There are two European features of interest present, ***Asperulo-fagetum* beech forest and *Tilio-acerion* forest of slopes, scree and ravines**. Both of these features are present within Garth Wood and Fforestganol a Chwm Nofydd SSSI but only the *Asperulo-fagetum* is found within Castell Coch Woodlands and Road Section SSSI.

Cardiff Beech Woods is considered to be one of the best areas in the United Kingdom for ***Asperulo-fagetum* beech forest**. The site contains one of the largest concentrations of *Asperulo-fagetum* beech forest in Wales, and represents the habitat close to the western limit of its range in both the UK and Europe. The woods show mosaics and transitions to other types, including more acidic beech woodland and oak *Quercus* and ash *Fraxinus excelsior* woodland. Characteristic and notable species in the ground flora include ramsons *Allium ursinum*, sanicle *Sanicula europea*, bird's-nest orchid *Neottia nidus-avis* and yellow bird's-nest orchid *Monotropa hypopitys*.

This habitat type occurs on circumneutral to calcareous soils. In the UK it mostly corresponds to NVC type W12 *Fagus sylvatica* – *Mercurialis perennis* woodland, but more calcareous stands of NVC type W14 *Fagus sylvatica* – *Rubus fruticosus* woodland may also conform to this habitat type. The two NVC types often occur together on a site.

The area is considered to support a significant presence of **Tilio-acerion forests of slopes, screes and ravines**. These woods consist of ash *Fraxinus excelsior*, wych elm *Ulmus glabra* and lime (mainly small-leaved lime *Tilia cordata* but more rarely large-leaved lime *T. platyphyllos*). Introduced sycamore *Acer pseudoplatanus* is often present.

The habitat type is found on calcareous substrates. The main NVC types conforming to *Tilio-acerion* forests are the ‘western’ forms (sub-communities d-g) of W8 *Fraxinus excelsior* – *Acer campestre*-*Mercurialis perennis* woodland, and the equivalent north-western community W9 *Fraxinus excelsior* – *Sorbus aucuparia* – *Mercurialis perennis* woodland.

Semi-natural broadleaved woodland is a feature of all three component SSSIs. In addition, Garth Wood SSSI supports a nationally rare cave dwelling spider *Porrhoma rosenhaueri*, and Castell Coch Woodlands and Road Section SSSI supports geological exposures.

The geological exposures present at Castell Coch Road Section show a sequence of rocks that includes the Devonian Old Red Sandstone and the younger Carboniferous Limestone. This site illustrates the boundary and environmental changes between the Devonian and Carboniferous periods. The Devonian rocks here come from a river delta environment, while the Carboniferous rocks were formed in shallow seas. The Carboniferous Limestone also includes a number of fossil-rich layers, including the remains of coral-like creatures (bryozoa and crinoids) and hinged shells (brachiopods).

2.3 Outline of Past and Current Management

General

There is a history of timber exploitation in some areas. Fellings in the 20th century have resulted in some areas of even-aged woodland structure with no successful natural regeneration.

Where there has been much disturbance from the history of quarrying and iron working, natural colonisation has been encouraged. However, some active woodland management is required to address health and safety issues arising from these areas.

The presence of a number of species considered to be non-native e.g. sycamore and Japanese knotweed, is currently under review to determine any detrimental effects on the woodland communities of special interest.

Cardiff County Council, Cadw and Forestry Commission carry out woodland management for conservation purposes and occasionally health and safety purposes.

For further details of current management issues, please see sections 5 and 6 of this report.

Garth Wood

Much of the woodland appears to have been managed in the past as high forest and includes areas that have been planted with beech and Corsican pine. Past and current quarrying in this area has caused disturbance and natural colonisation of these areas continues to be encouraged.

Castell Coch Woodlands

The last major management of the Castell Coch woodland took place over 50 years ago when the last thinning occurred. The only subsequent canopy gaps have appeared as a result of tree falls. For health and safety of the public who visit this site, dangerous trees adjacent to access routes are felled. There has also been sporadic removal of sycamore. All safely fallen trees have been left where they fell and dead wood has increased the biological diversity of the woodland. In addition, natural regeneration is occurring throughout the woodland, both underneath the canopy and within the gaps.

CCW is working with the Forestry Commission, Cadw and Cardiff County Council in allowing the natural woodland processes to continue, allowing wildlife to flourish on the site. This is reflected through an overall management policy of minimal intervention.

Fforestganol a Chwm Nofydd

The woodland has been managed for some time for nature conservation. Selective thinning, removal of sycamore and ride creation have occurred in the past. However, the long term aim has been to apply minimal management to the woodland and allow gap creation and regeneration processes to occur naturally.

There are areas of semi-natural woodland and plantation where all the trees are of similar age and there is little regeneration. These areas would benefit from some selective thinning, to stimulate the process of natural regeneration of tree species.

Current management of other habitat areas within the SSSI include grazing and scrub control to maintain their extent and distribution.

Fforestganol a Chwm Nofydd and Castell Coch Woodlands and Road Section experience heavy recreational pressure and are actively managed by Cardiff County Council and Cadw respectively for this purpose.

2.4 Management Units

The plan area has been divided into management units to enable practical communication about features, objectives, and management. This will also allow us to differentiate between the different designations where necessary. In this plan the management units have been based mainly on tenure, but also with reference to features and land management requirements.

A map showing the management units referred to in this plan is shown in Annex B.

The following table confirms the relationships between the management units and the designations covered:

Unit number	SAC	SSSI	CCW owned	LNR
Garth Wood SSSI				
GW 1	✓	✓	x	
GW 2	x	✓	x	
GW 3	x	✓	x	
Castell Coch Woodlands & Road Section SSSI				
CC 1	x	✓	x	
CC 2	x	✓	x	
CC 3	✓	✓	x	
CC 4	✓	✓	x	

Unit number	SAC	SSSI	CCW owned	LNR
Fforestganol & Cwm Nofydd SSSI				
FCN 1	✓	✓	x	
FCN 2	✓	✓	x	✓
FCN 3	✓	✓	x	
FCN 4	✓	✓	x	✓
FCN 5	x	✓	x	✓

3. THE SPECIAL FEATURES

3.1 Confirmation of Special Features

<i>Designated feature</i>	<i>Relationships, nomenclature etc</i>	<i>Conservation Objective in parts 4 and 5</i>
<i>SAC features</i>		
<i>Annex I habitats that are a primary reason for selection of this site</i> 1. <i>Asperulo-fagetum</i> beech forest (EU Habitat Code 9130)	Generally referred to as ' <i>Asperulo-fagetum</i> ' throughout this document.	4.1
<i>Annex I habitats present as a qualifying feature, but not a primary reason for selection of this site</i> 2. <i>Tilio-acerion</i> forest of slopes, screes and ravines (EU Habitat Code 9180)	Generally referred to as ' <i>Tilio-acerion</i> ' throughout this document.	4.2
<i>SPA features</i>		
Not applicable		
<i>Ramsar features</i>		
Not applicable		
<i>SSSI features</i>		
3. Semi-natural broadleaved woodland		5.1
4. <i>Porrhoma rosenhaueri</i> (cave dwelling spider)		5.2
5. Geological exposures		5.3

3.2 Special Features and Management Units

This section sets out the relationship between the special features and each management unit. This is intended to provide a clear statement about what each unit should be managed for, taking into account the varied needs of the different special features. All special features are allocated to one of seven classes in each management unit. These classes are:

Key Features

KH - a 'Key Habitat' in the management unit, i.e. the habitat that is the main focus of management and monitoring effort, perhaps because of the dependence of a key species (see KS below). There will rarely be more than one Key Habitat in a unit.

KS – a 'Key Species' in the management unit, often driving both the selection and management of a Key Habitat.

Geo – an earth science feature that is the main focus of management and monitoring effort in a unit.

Other Features

Sym - habitats, species and earth science features that are of importance in a unit but are not the main focus of management or monitoring. These features will benefit from management for the key feature(s) identified in the unit. These may be classed as 'Sym' features because:

- a) they are present in the unit but are of less conservation importance than the key feature; and/or
- b) they are present in the unit but in small areas/numbers, with the bulk of the feature in other units of the site; and/or

c) their requirements are broader than and compatible with the management needs of the key feature(s).

Nm - an infrequently used category where features are at risk of decline within a unit as a result of meeting the management needs of the key feature(s), i.e. under Negative Management. These cases will usually be compensated for by management elsewhere in the plan, and can be used where minor occurrences of a feature would otherwise lead to apparent conflict with another key feature in a unit.

Mn - Management units with no special feature present but which are of importance for management of features elsewhere on a site e.g. livestock over-wintering area included within designation boundaries.

x – Features not present in the management unit.

The tables below sets out the relationship between the special features and management units identified in this plan:

Garth Wood	Management Unit		
	GW 1	GW 2	GW 3
SAC	✓	x	x
SSSI	✓	✓	✓
SAC features			
<i>Asperulo-fagetum</i> beech forest	KH	x	x
<i>Tilio-acerion</i> forest	KH	x	x
SSSI features			
Semi-natural broadleaved woodland	Sym	KH	KH
<i>Porrhoma rosenhaurei</i>	KS	Sym	x

Castell Coch Woodlands & Road Section	Management Unit			
	CC 1	CC 2	CC 3	CC 4
SAC	x	x	✓	✓
SSSI	✓	✓	✓	✓
SAC features				
<i>Asperulo-fagetum</i> beech forest	x	x	KH	KH
<i>Tilio-acerion</i> forest	x	x	x	x
SSSI features				
Semi-natural broadleaved woodland	NM	NM	Sym	Sym
Geological	Geo	Geo	x	x

Fforestganol & Cwm Nofydd	Management Unit				
	FCN 1	FCN 2	FCN 3	FCN 4	FCN 5
SAC	✓	✓	✓	✓	x
SSSI	✓	✓	✓	✓	✓
SAC features					
<i>Asperulo-fagetum</i> beech forest	x	KH	KH	KH	x
<i>Tilio-acerion</i> forest	KH	x	KH	KH	x
SSSI features					
Semi-natural broadleaved woodland	Sym	Sym	Sym	Sym	KH

The above management units reflect the presence of *Asperulo-fagetum* beech forest and *Tilio-acerion* forest of slopes, screes and ravines. Both of these features are present within Garth Wood SSSI and Fforestganol a Chwm Nofydd SSSI but only *Asperulo-fagetum* is found within Castell Coch Woodlands and Road Section SSSI. The semi-natural broadleaved

woodland feature of the SSSIs will benefit from sympathetic habitat management in these units.

The presence of the cave dwelling spider *Porrhoma rosenhaurei* as a feature of Garth Wood SSSI is considered compatible with the management needs of the woodland habitat in these units.

A small part of the semi-natural broadleaved woodland feature is present in units 1 and 2 of the Castell Coch Woodlands and Road Section SSSI and is considered potentially at risk of decline within these units as a result of meeting the management needs of the geological feature. However, this is considered to be compensated for by management elsewhere.

4. CONSERVATION OBJECTIVES

Background to Conservation Objectives:

a. Outline of the legal context and purpose of conservation objectives.

Conservation objectives are required by the 1992 'Habitats' Directive (92/43/EEC). The aim of the Habitats Directives is the maintenance, or where appropriate the restoration of the 'favourable conservation status' of habitats and species features for which SACs and SPAs are designated (see Box 1).

In the broadest terms, 'favourable conservation status' means a feature is in satisfactory condition and all the things needed to keep it that way are in place for the foreseeable future. CCW considers that the concept of favourable conservation status provides a practical and legally robust basis for conservation objectives for Natura 2000 and Ramsar sites.

Box 1

Favourable conservation as defined in Articles 1(e) and 1(i) of the Habitats Directive

“The conservation status of a natural habitat is the sum of the influences acting on it and its typical species that may affect its long-term natural distribution, structure and functions as well as the long term survival of its typical species. The conservation status of a natural habitat will be taken as favourable when:

- Its natural range and areas it covers within that range are stable or increasing, and
- The specific structure and functions which are necessary for its long-term maintenance exist and are likely to continue to exist for the foreseeable future, and
- The conservation status of its typical species is favourable.

The conservation status of a species is the sum of the influences acting on the species that may affect the long-term distribution and abundance of its populations. The conservation status will be taken as 'favourable' when:

- population dynamics data on the species indicate that it is maintaining itself on a long-term basis as a viable component of its natural habitats, and
- the natural range of the species is neither being reduced nor is likely to be reduced for the foreseeable future, and
- There is, and will probably continue to be, a sufficiently large habitat to maintain its populations on a long-term basis.”

Achieving these objectives requires appropriate management and the control of factors that may cause deterioration of habitats or significant disturbance to species.

As well as the overall function of communication, Conservation objectives have a number of specific roles:

- Conservation planning and management.

The conservation objectives guide management of sites, to maintain or restore the habitats and species in favourable condition.

- Assessing plans and projects.

Article 6(3) of the ‘Habitats’ Directive requires appropriate assessment of proposed plans and projects against a site's conservation objectives. Subject to certain exceptions, plans or projects may not proceed unless it is established that they will not adversely affect the integrity of sites. This role for testing plans and projects also applies to the review of existing decisions and consents.

- Monitoring and reporting.

The conservation objectives provide the basis for assessing the condition of a feature and the status of factors that affect it. CCW uses ‘performance indicators’ within the conservation objectives, as the basis for monitoring and reporting. Performance indicators are selected to provide useful information about the condition of a feature and the factors that affect it.

The conservation objectives in this document reflect CCW’s current information and understanding of the site and its features and their importance in an international context. The conservation objectives are subject to review by CCW in light of new knowledge.

b. Format of the conservation objectives

There is one conservation objective for each feature listed in part 3. Each conservation objective is a composite statement representing a site-specific description of what is considered to be the favourable conservation status of the feature. These statements apply to a whole feature as it occurs within the whole plan area, although section 3.2 sets out their relevance to individual management units.

Each conservation objective consists of the following two elements:

1. Vision for the feature
2. Performance indicators

As a result of the general practice developed and agreed within the UK Conservation Agencies, conservation objectives include performance indicators, the selection of which should be informed by JNCC guidance on Common Standards Monitoring¹.

There is a critical need for clarity over the role of performance indicators within the conservation objectives. **A conservation objective, because it includes the vision for the feature, has meaning and substance independently of the performance indicators, and is more than the sum of the performance indicators.** The performance indicators are simply what make the conservation objectives measurable, and are thus part of, not a substitute for, the conservation objectives. Any feature attribute identified in the performance indicators should be represented in the vision for the feature, but not all elements of the vision for the feature will necessarily have corresponding performance indicators.

As well as describing the aspirations for the condition of the feature, the Vision section of each conservation objective contains a statement that the factors necessary to maintain those desired conditions are under control. Subject to technical, practical and resource constraints, factors which have an important influence on the condition of the feature are identified in the performance indicators.

¹ Available through www.jncc.gov.uk and follow links to Protected Sites and Common Standards Monitoring.

4.1 Conservation Objective for Feature 1:
***Asperulo-Fagetum* beech forest (EU Habitat Code 9130)**

Vision for feature 1

The vision for this feature is for it to be in a favourable conservation status, where all of the following conditions are satisfied:

- The existing *Asperulo-fagetum* beech forest will be maintained.
- At least 95% of canopy forming trees will be locally native species such as beech, ash and oak, with some areas dominated by beech.
- The tree canopy will not be completely closed; approximately 10% of the canopy will include a dynamic shifting pattern of gaps encouraging natural regeneration of tree species of all ages.
- Dead wood, standing and fallen, will be maintained where possible to provide habitat for invertebrates, fungi and other woodland species.
- There are pockets of ground flora across the site, comprising species typical of lime-rich beech wood, including indicators of ancient woodland such as wood anemone, ramsons and sanicle.
- There is little evidence of browsing or squirrel damage to trees.
- Recreational use of the site will continue to be managed so it does not damage the wildlife interest of the site.
- All factors affecting the achievement of these conditions are under control.

Performance indicators for feature 1

The performance indicators are part of the conservation objective, not a substitute for it. Assessment of plans and projects must be based on the entire conservation objective, not just the performance indicators.

<i>Performance indicators for feature condition</i>		
<i>Attribute</i>	<i>Attribute rationale and other comments</i>	<i>Specified limits</i>
A1. Extent	For a habitat feature to be considered to be at favourable conservation status, the area of the habitat must be stable in the long-term or increasing. Upper limit – restricted by the limits set in the conservation objective for the <i>Tilio-acerion</i> feature. Lower limit - based on current extent.	<i>Upper limit:</i> None set <i>Lower limit:</i> As mapped (Garth Wood and Fforestganol a Chwm Nofydd in 1997 and Castell Coch Woodlands and Road Section in 1990)
A2. Quality	For a habitat feature to be considered to be at favourable conservation status, its quality (including in terms of ecological structure and function) must be maintained. <u>Good condition <i>Asperulo-fagetum</i> woodland of Garth Wood definition:</u> Within a 25m radius of a sample point* all of the following criteria must be met:	<i>Upper limit:</i> Not required <i>Lower limit:</i> The following are met: In Unit 1 of Garth Wood, 70% of the woodland habitat is referable to ‘good condition <i>Asperulo-fagetum</i> woodland of Garth Wood’ and there are at least 4 patches of advanced beech regeneration.

	<ul style="list-style-type: none"> ○ At least 95% of the canopy forming trees are native to the site with at least 50% of the canopy forming trees being <i>Fagus sylvatica</i> <li style="text-align: center;">AND ○ There are at least 5 mature trees present <li style="text-align: center;">AND ○ There are at least 5 sapling present <li style="text-align: center;">AND ○ There are at least 3 relevant ground flora species present and there is no evidence of grazing <li style="text-align: center;">AND ○ Dead wood is present in at least 2 forms <p><u>Good condition <i>Asperulo-fagetum</i> woodland of Castell Coch definition:</u> As above except the definition requires the criteria to be met in a 12.5m radius of a sample point* (NOT 25m radius) and only requires 3 mature trees to be present</p> <p><u><i>Asperulo-fagetum</i> forest definition:</u> The canopy is generally dominated by <i>Fagus sylvestris</i> however in some areas <i>Fraxinus excelsior</i> shares dominance. The shrub layer is sparse with scattered <i>Corylus avellana</i> and <i>Fagus</i> saplings and occasional <i>Ilex aquifolium</i>. The field layer is also characterised by its sparseness, largely due to the presence of deep leaf litter, low light levels and thin soils. Patches of bare ground are frequent. However in some areas <i>Rubus fruticosus</i> or <i>Hedera helix</i> can form dense patches. Other associated ground flora species include <i>Mercurialis perennis</i>, <i>Hyacinthoides non-scripta</i> and <i>Luzula sylvatica</i> and <i>Dryopteris filis-mas</i></p>	<p>In Units 3 and 4 of Castell Coch Woodlands, 60% of the woodland habitat is referable to ‘good condition <i>Asperulo-fagetum</i> woodland of Castell Coch’ and there are at least 4 patches of advanced beech regeneration.</p> <p>In Unit 1 of Fforestganol a Chwm Nofydd, <i>Fagus sylvatica</i> is present within a 25m radius of a sample point*.</p> <p>In Units 2 and 3 of Fforestganol a Chwm Nofydd, habitat present within a 25m radius of a sample point* meets the definition of ‘<i>Asperulo-fagetum</i> forest’.</p>
A3. Canopy cover	Woodland structure to include a shifting dynamic of canopy gaps to encourage natural regeneration	<p><i>Upper limit:</i> No more than 85% canopy cover</p> <p><i>Lower limit:</i> As existing</p>
A4. Viable saplings	Native species sapling of > 1.5m	<p><i>Upper limit:</i> Not required</p> <p><i>Lower limit:</i> 5 no. of successive cohorts in 25m x 25m sample plot* of understorey</p>
A5. Advanced regeneration	Areas of regeneration >10m x 10m with 50+ beech saplings/seedlings. Each area	<i>Upper limit:</i> Not required

	of advance regeneration needs to be separated by a minimum of 10m	<i>Lower limit:</i> 4 areas of regeneration in each of Garth Wood, Castell Coch Woodlands and Fforestganol a Chwm Nofydd noted every 6 years
A6. Species composition	Any species native to the area, including <i>Acer pseudoplatanus</i>	<i>Upper limit:</i> At least 95% of the canopy forming trees are native to the site with at least 50% of the canopy forming trees being <i>Fagus sylvatica</i> <i>Lower limit:</i> As existing
A7. Age structure	All age classes represented including mature and veteran trees. Mature tree: canopy forming tree with a girth of >150cm at chest height	<i>Upper limit:</i> None set <i>Lower limit:</i> At least 5 mature trees present within a 25m radius of a sample point*
A8. Ground flora species	Three of the following: <i>Mercurialis perennis</i> , <i>Hyacinthoides non-scripta</i> , <i>Hedera helix</i> , <i>Allium ursinum</i> , <i>Anemone nemorosa</i> , <i>Circaea lutetiana</i> , <i>Arum maculatum</i> , <i>Sanicula europaea</i> , <i>Geum urbanum</i> or <i>Melica uniflora</i>	<i>Upper limit:</i> Not required <i>Lower limit:</i> At least 3 ground flora species present within a 25m radius of a sample point* and no evidence of browsing
A9. Dead wood	Fallen trees, fallen branches, dead branches on living trees or standing dead trees (all > 20cm in diameter) All dead wood (standing or fallen) left in situ	<i>Upper limit:</i> None set <i>Lower limit:</i> Dead wood present in at least 2 forms within a 25m radius of a sample point*
A10. Evidence of browsing	Signs of browsing particularly on saplings (where tops have been taken off) or ferns (where fronds/pinnae have been removed)	No limits set
A11. Evidence of bark stripping by squirrels	Signs of bark stripping by squirrels	No limits set
* Sampling points as defined in Wilkinson, K. (17 March 2004) Cardiff Beech Woods cSAC, Annex 1 Habitat (9130) <i>Asperulo-Fagetum</i> beech forests SAC Monitoring Report (draft)		
<i>Performance indicators for factors affecting the feature</i>		
<i>Factor</i>	<i>Factor rationale and other comments</i>	<i>Operational Limits</i>
F1. Recreational Use	The woodlands, especially Castell Coch and Fforestganol a Chwm Nofydd, experience heavy recreational pressure and certain areas are managed for this purpose. Health and safety considerations (discussed below) are relevant here.	No limits set. Pending a fuller understanding of current situation and impact on habitat. Access issues need to be kept under review.
F2. Health & safety	In addition to general health and safety issues arising from woodland	No limits set.

	management for conservation purposes, site-specific safety issues need to be addressed by management. Such issues may arise from the presence of old quarry workings, and ‘unsafe’ trees in vicinity of public footpaths, access routes and car parks etc.	
F3. Atmospheric pollution	The location of the woodland in industrialised South Wales, together with the presence of nearby quarrying and associated activities, means that there is the potential for localised atmospheric pollution.	No limits set. There is no evidence to date that this has had an adverse impact on the features but this may need to be addressed in more detail in the future.
F4. Development	Its location in the populated South Wales area means that there is considerable development pressure in the vicinity including associated infrastructure on land adjacent to the site. There is the potential for a range of impacts arising from increasing urbanisation.	No limits set. May need to be considered in the future.
F5. Commercial forestry	Commercial forestry in the vicinity of Castell Coch may have implications for surface water supply and quality, and this needs to be kept under review.	No limits set. Pending a fuller understanding of current situation and impact on habitat.
F6. Mineral extraction	There are a number of active and disused limestone quarries in the area. Garth Wood surrounds Taff’s Well Quarry but there are other, smaller quarries in and around all component SSSIs. Quarrying can lead to direct loss of the feature together with indirect impacts from issues such as access. There are also a number of impacts arising from restoration at the end of a quarry’s working life. (For aerial impacts see atmospheric pollution above.)	No limits set. Pending a fuller understanding of current situation and impact on habitat. Quarry restoration may need to be considered in the future.
F7. Cultural heritage	There is considerable cultural heritage interest in the area, including Castell Coch and industrial workings. The associated health and safety issues are addressed above. The management of these sites needs to be balanced with the requirements of the conservation objectives.	No limits set.

4.2 Conservation Objective for Feature 2:

Tilio-Acerion forest of slopes, screes and ravines (EU Habitat Code 9180)

Vision for feature 2

The vision for this feature is for it to be in a favourable conservation status, where all of the following conditions are satisfied:

- The existing *Tilio-acerion* forest will be maintained.
- At least 95% of canopy forming trees will be locally native species (sycamore included).
- The tree canopy will not be completely closed; approximately 10% of the canopy will include a dynamic shifting pattern of gaps encouraging natural regeneration of tree species of all ages.
- Dead wood, standing and fallen, will be maintained where possible to provide habitat for invertebrates, fungi and other woodland species.
- There are pockets of ground flora across the site, comprising species typical of lime-rich beech wood, including indicators of ancient woodland such as wood anemone, ramsons and sanicle.
- There is little evidence of browsing or squirrel damage to trees.
- Recreational use of the site will continue to be managed so it does not damage the wildlife interest of the site.
- All factors affecting the achievement of these conditions are under control.

Performance indicators for feature 2

The performance indicators are part of the conservation objective, not a substitute for it. Assessment of plans and projects must be based on the entire conservation objective, not just the performance indicators.

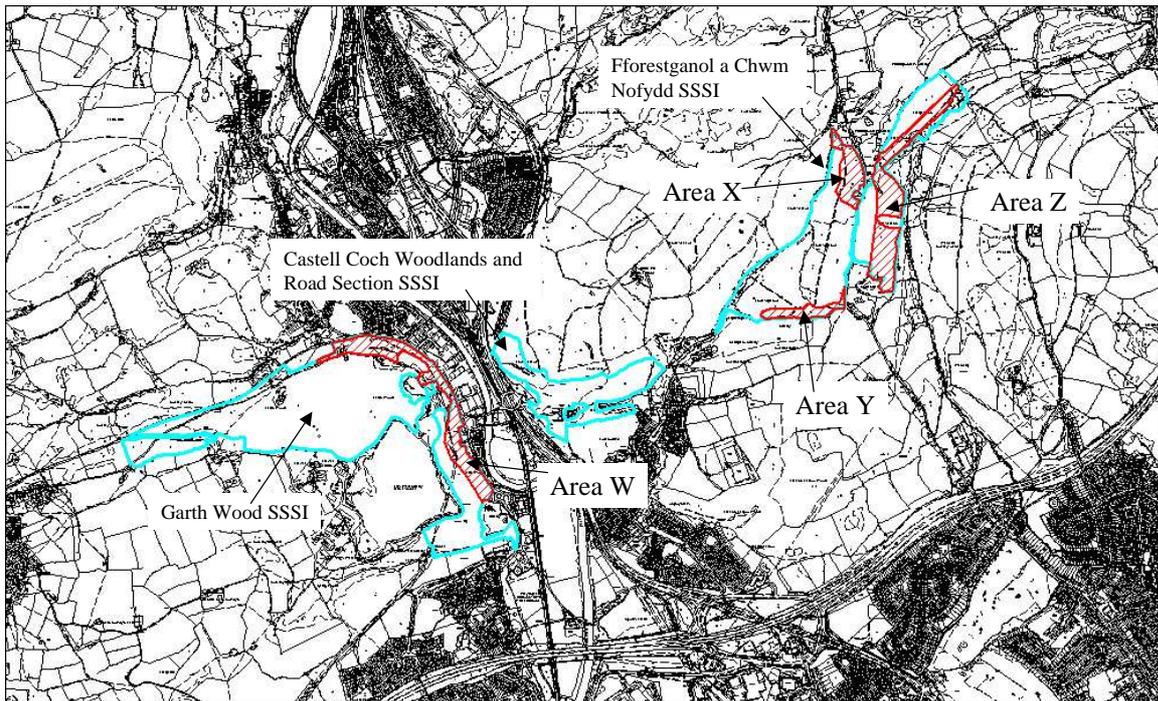
<i>Performance indicators for feature condition</i>		
<i>Attribute</i>	<i>Attribute rationale and other comments</i>	<i>Specified limits</i>
A1. Extent	<p>For a habitat feature to be considered to be at favourable conservation status, the area of the habitat must be stable in the long-term or increasing.</p> <p>Upper Limit – restricted by the limits set in the conservation objective for the <i>Asperulo-fagetum</i> feature.</p> <p>Lower limit - based on current extent.</p> <p><u><i>Tilio-acerion</i> forest definition:</u> Woodland on steep, rocky limestone slopes or sloping, ‘undulating’ ground. <i>Fraxinus excelsior</i> is at least present in the canopy and is generally associated with a wide variety of other canopy forming species e.g. <i>Fagus sylvatica</i> and <i>Acer pseudoplatanus</i>. <i>Phyllitis scolopendrium</i> is at least present in the ground flora within a 10m radius of a sample point*. In addition <i>Dryopteris</i> species are often present.</p>	<p><i>Upper limit:</i> None set</p> <p><i>Lower limit:</i> <i>Tilio-acerion</i> is present in at least four locations in Unit 1 of Garth Wood, two locations in Unit 1 of Fforestganol a Chym Nofydd, and as mapped in Units 3 and 4 of Fforestganol a Chym Nofydd (see Map 1 below)</p>

<p>A2. Quality</p>	<p>For a habitat feature to be considered to be at favourable conservation status, its quality (including in terms of ecological structure and function) must be maintained.</p> <p><u>‘Good condition’ semi-natural broadleaf woodland definition:</u> Woodland where within a 25m radius of a sample point* all of the following are met:</p> <ul style="list-style-type: none"> ○ At least 95% of the canopy forming trees are native to the site <li style="text-align: center;">AND ○ At least 5 mature trees are present <li style="text-align: center;">AND ○ There are 5 viable saplings present <li style="text-align: center;">AND ○ There are at least 3 relevant ground flora species present and there is no evidence of browsing <li style="text-align: center;">AND ○ Dead wood is present in at least two forms <li style="text-align: center;">AND ○ There are no tracks present other than those highlighted on Map 2 below 	<p><i>Upper limit:</i> Not required</p> <p><i>Lower limit:</i> The following are met:</p> <p>In Units 3 and 4 of Fforestganol a Chym Nofydd (Area Z of Map 1 below) the <i>Tilio-acerion</i> is referable to ‘good condition’ semi-natural broadleaf woodland.</p>
<p>A3. Canopy Cover</p>	<p>Woodland structure to include a shifting dynamic of canopy gaps to encourage natural regeneration</p>	<p><i>Upper limit:</i> No more than 85% canopy cover</p> <p><i>Lower limit:</i> As existing</p>
<p>A4. Viable saplings</p>	<p>Native species sapling of > 1.5m</p>	<p><i>Upper limit:</i> Not required</p> <p><i>Lower limit:</i> 5 no. of successive cohorts in 25m x 25m sample plot* of understorey</p>
<p>A5. Species composition</p>	<p>Any species native to the area, including <i>Acer pseudoplatanus</i></p>	<p><i>Upper limit:</i> At least 95% of the canopy forming trees are native to the site</p> <p><i>Lower limit:</i> As existing</p>
<p>A6. Age structure</p>	<p>All age classes represented including mature and veteran trees. Mature tree: canopy forming tree with a girth of >150cm at chest height</p>	<p><i>Upper limit:</i> None set</p> <p><i>Lower limit:</i> At least 5 mature trees present within a 25m radius of a sample point*</p>
<p>A7. Ground flora species</p>	<p>Three of the following: <i>Mercurialis perennis</i>, <i>Hyacinthoides non-scripta</i>, <i>Hedera helix</i>, <i>Allium ursinum</i>, <i>Anemone nemorosa</i>, <i>Circaea lutetiana</i>, <i>Arum maculatum</i>, <i>Sanicula europaea</i>, <i>Geum</i></p>	<p><i>Upper limit:</i> Not required</p> <p><i>Lower limit:</i> At least 3 ground flora species present within a 25 m radius of a sample point* and no evidence</p>

	<i>urbanum</i> or <i>Melica uniflora</i>	of browsing
A8. Dead wood	Fallen trees, fallen branches, dead branches on living trees or standing dead trees (all > 20cm in diameter) All dead wood (standing or fallen) left in situ	<i>Upper limit:</i> None set <i>Lower limit:</i> Dead wood present in at least 2 forms within a 25m radius of a sample point*
A9. Evidence of browsing	Signs of browsing particularly on saplings (where tops have been taken off) or ferns (where fronds/pinnae have been removed)	No limits set
A10. Evidence of bark stripping by squirrels	Signs of bark stripping by squirrels	No limits set
* Sampling points as defined in Wilkinson, K. (17 February 2004) Cardiff Beech Woods cSAC, Annex 1 Habitat (9180) <i>Tilio-Acerion</i> forests of slopes, screes and ravines, SAC Monitoring Report (draft)		
Performance indicators for factors affecting the feature		
Factor	Factor rationale and other comments	Operational Limits
F1. Recreational Use	The woodlands, especially Castell Coch and Fforestganol a Chwm Nofydd, experience heavy recreational pressure and certain areas are managed for this purpose. Health and safety considerations (discussed below) are relevant here.	No limits set. Pending a fuller understanding of current situation and impact on habitat. Access issues need to be kept under review.
F2. Health & safety	In addition to general health and safety issues arising from woodland management for conservation purposes, site-specific safety issues need to be addressed by management. Such issues may arise from the presence of old quarry workings, and 'unsafe' trees in vicinity of public footpaths, access routes and car parks etc.	No limits set.
F3. Atmospheric pollution	The location of the woodland in industrialised South Wales, together with the presence of nearby quarrying and associated activities, means that there is the potential for localised atmospheric pollution.	No limits set. There is no evidence to date that this has had an adverse impact on the features but this may need to be addressed in more detail in the future.
F4. Development	Its location in the populated South Wales area means that there is considerable development pressure in the vicinity including associated infrastructure on land adjacent to the site. There is the potential for a range of impacts arising from increasing urbanisation.	No limits set. May need to be considered in the future.
F5. Commercial forestry	Commercial forestry in the vicinity of Castell Coch may have implications for	No limits set. Pending a fuller understanding of current situation

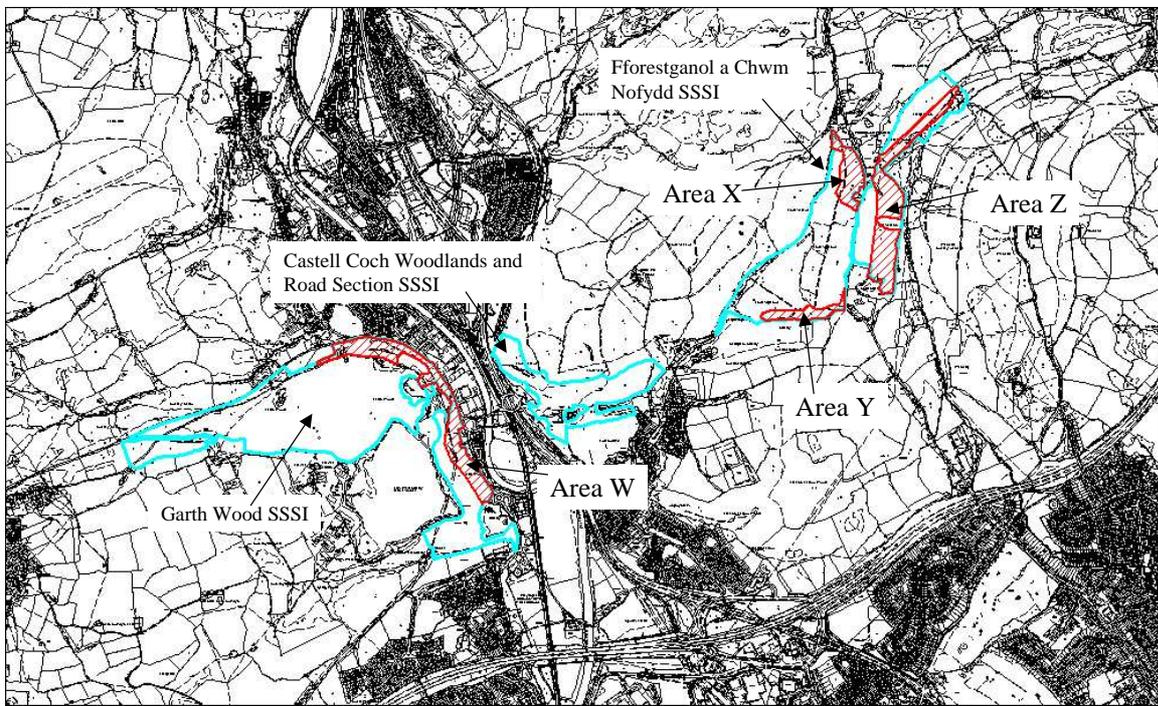
	surface water supply and quality, and this needs to be kept under review.	and impact on habitat.
F6. Mineral extraction	There are a number of active and disused limestone quarries in the area. Garth Wood surrounds Taff's Well Quarry but there are other, smaller quarries in and around all the component SSSIs. Quarrying can lead to direct loss of the feature together with indirect impacts from issues such as access. There are also a number of impacts arising from restoration at the end of a quarry's working life. (For aerial impacts see atmospheric pollution above.)	No limits set. Pending a fuller understanding of current situation and impact on habitat. Quarry restoration may need to be considered in the future.
F7. Cultural heritage	There is considerable cultural heritage interest in the area, including Castell Coch and industrial workings. The associated health and safety issues are addressed above. The management of these sites needs to be balanced with the requirements of the conservation objectives.	No limits set.

Map 1:
Location of *Tilio-Acerion* Habitat (Areas W, X, Y and Z) at Cardiff Beech Woods SAC



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Map 2:
Rights of Way through Cwm Nofydd



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5. MANAGEMENT OBJECTIVES FOR SSSI-ONLY FEATURES

Conservation objectives for SSSI features are not covered by the requirements of the Habitat Regulations which relates to features of international sites.

The following visions and performance indicators for SSSI features will be used to guide the SSSI management.

5.1 Conservation Objective for Feature 3: Semi-natural Broadleaved Woodland

Vision for feature 3

As for features 1 and 2.

Performance indicators for feature 3

Semi-natural broadleaved woodland is a feature of all three SSSIs underpinning the SAC.

<i>Performance indicators for feature condition</i>		
<i>Attribute</i>	<i>Attribute rationale and other comments</i>	<i>Specified limits</i>
A1. Extent	Upper limit – restricted by the limits set in the conservation objectives for features 1 and 2. Lower limit - based on current extent.	<i>Upper limit:</i> No detrimental impact on features 1 or 2 <i>Lower limit:</i> As existing
A2. Quality	<i>Castell Coch</i> All the woodland within Castell Coch Woodlands and Road Section SSSI is referable to <i>Asperulo-fagetum</i> , so ‘Good condition <i>Asperulo-fagetum</i> woodland of Castell Coch definition’ and ‘ <i>Asperulo-fagetum</i> forest definition’ for feature 1 apply. <i>Fforestganol a Chwm Nofydd</i> Within the SAC ‘Good condition <i>Asperulo-fagetum</i> woodland of Garth Wood definition’ for feature 1, ‘ <i>Tilio-acerion</i> forest definition’ for feature 2 and ‘good condition semi-natural broadleaf woodland’ set out in feature 2 all apply. For those parts outside the SAC ‘good condition semi-natural broadleaf woodland’ applies. <i>Garth Wood</i> All the woodland within Garth Wood is within the SAC, so ‘Good condition	<i>Upper limit:</i> none set <i>Lower limit:</i> the woodland meets the definition of ‘good condition semi-natural broadleaf woodland’ set out above in feature 2

	<i>Asperulo-fagetum</i> woodland of Garth Wood definition' for feature 1, ' <i>Tilio-acerion</i> forest definition' for feature 2 and 'good condition semi-natural broadleaf woodland' set out in feature 2 all apply.	
<i>Performance indicators for factors affecting the feature</i>		
<i>Factor</i>	<i>Factor rationale and other comments</i>	<i>Operational Limits</i>
As features 1 and 2		

5.1 Conservation Objective for Feature 4: *Porrhoma rosenhaurei* (cave dwelling spider)

Although within the SAC boundary, the vision and performance indicators for this SSSI feature are unlikely to impact on the qualifying features 1 and 2 of the SAC. There is limited information on the extent or requirements for this spider. The following vision and performance indicators are therefore of a general nature reflecting our current knowledge and likely to change when more information is available.

Vision for feature 4

- The population of the nationally rare cave spider *Porrhoma rosenhaueri* will be maintained at its current level and distribution throughout the cave systems of Lesser Garth Cave.
- General conditions favourable to the cave invertebrate fauna of Lesser Garth Cave will be maintained.
- All factors affecting the achievement of these conditions are under control.

Performance indicators for feature 4

Performance indicators will be used to guide the SSSI management for this feature.

<i>Performance indicators for feature condition</i>		
<i>Attribute</i>	<i>Attribute rationale and other comments</i>	<i>Specified limits</i>
A1. Extent	For a species feature to be considered to be in favourable condition, sufficient habitat must exist to support the population in the long term. See Carter & Mann, 1997, for details of extent of cave system.	<i>Upper limit:</i> None set <i>Lower limit:</i> As existing
A2. Quality	Although there is information on the extent of the cave system, there is little knowledge about the quality of the cave habitat required to support the feature	<i>Upper limit:</i> To be determined <i>Lower limit:</i> To be determined
A3. Size of population	For a species feature to be considered to be at favourable conservation status, the size of the population must be maintained or increased. Some information on the species at this location is contained in Carter & Mann, 1997, but this baseline is yet to be confirmed.	<i>Upper limit:</i> To be determined <i>Lower limit:</i> To be determined

<i>Performance indicators for factors affecting the feature</i>		
<i>Factor</i>	<i>Factor rationale and other comments</i>	<i>Operational Limits</i>
F1. Recreational Use	<p>Garth Wood experiences some recreational pressure and access to the caves is restricted. However, caving does occur and needs to be kept under review. Health and safety considerations are relevant here.</p> <p>Carter & Mann, 1997, felt that cavers were affecting the distribution of the spider by eliminating it from narrow sections of the cave where people tend to rub against the wall. However, the level of disturbance the spider can tolerate and still maintain a viable population is unknown.</p>	<p><i>Upper limit:</i> To be determined</p> <p><i>Lower limit:</i> To be determined</p>
F2. Health & safety	<p>Site-specific safety issues which may arise from the presence of the caves and old quarry workings need to be addressed by management.</p>	<p><i>Upper limit:</i> To be determined</p> <p><i>Lower limit:</i> To be determined</p>

5.3 Conservation Objective for Feature 5: Geological Exposures

Vision for feature 5

- The rock layers are sufficiently free from soil, vegetation or other covering for them to be seen and to see how each layer relates to the layers above and below in the sequence.
- The rocks are clean and accessible in key areas within the site and this is sustainable in the long term.
- All factors affecting the achievement of these conditions are under control.

Performance indicators for feature 5

Performance indicators will be used to guide the SSSI management for this feature.

<i>Performance indicators for feature condition</i>		
<i>Attribute</i>	<i>Attribute rationale and other comments</i>	<i>Specified limits</i>
A1. Extent	<p>The rock outcrop to be of sufficient quantity and distribution to enable a full understanding of the feature.</p> <p>Upper limit – restricted by the limits set in the conservation objectives for features 1 and 2.</p> <p>Lower limit - based on current extent.</p>	<p><i>Upper limit:</i> No detrimental impact on features 1 or 2</p> <p><i>Lower limit:</i> As existing</p>
A2. Quality	<p>The rock outcrop to be of sufficient quality to enable a full understanding of the feature.</p>	<p><i>Upper limit:</i> None required</p> <p><i>Lower limit:</i> As existing</p>

<i>Performance indicators for factors affecting the feature</i>		
<i>Factor</i>	<i>Factor rationale and other comments</i>	<i>Operational Limits</i>
Natural Woodland Processes	Growth of scrub and other vegetation on the rock face/ledges and floor has the potential to cover the exposures.	None set.
Natural Erosion and Deposition Processes	Weathering and erosion of the rock face, mass movement of scree, wash of soil from the top of exposures, solution, and karstification may also cover the exposures. This can be followed by growth of vegetation.	None set.
Recreational Use	The road section is becoming increasingly popular for climbing and fixed rock anchors have been attached to the rock face in places.	No limits set. Although this is unlikely to be a problem for the geological part of the site, this will be kept under review.

6. ASSESSMENT OF CONSERVATION STATUS AND MANAGEMENT REQUIREMENTS

This part of the document provides:

- A summary of the assessment of the conservation status of each feature.
- A summary of the management issues that need to be addressed to maintain or restore each feature.

6.1 Conservation Status and Management Requirements of Feature 1: *Asperulo-Fagetum* beech forest (EU Habitat Code 9130)

Conservation Status of Feature 1

The sites were monitored in March 2004 to gather the extent or condition of the habitat. The current feature status for the *Asperulo-fagetum* beech forest is **Unfavourable - Unclassified** (March 2004).

The justification for the above feature status (March 2004) is as follows:

CCW view is that the site is still recovering from undesirable effects of past management. Although most if not all aspects of the component sites are heading in the right direction the status is still short of favourable. Implementation of appropriate management will be addressed but in our view there is no urgent or immediate need for action.

The Garth Wood component is thought to be 'unfavourable unclassified'. The management is mostly limited intervention and for most of the site there is good age structure and gap regeneration. Natural processes could be enhanced by localised intervention and this will be addressed through management recommendations.

Fforestganol a Chwm Nofydd is thought to be 'unfavourable unclassified. Although there are small areas of even age structure there is generally a diverse age structure. This, together with concerns at the percentage of beech at some locations, will be addressed through management recommendations.

Castell Coch Woodlands and Road Section is thought to be 'favourable'. There is generally an even age structure with low canopy cover. However, there is evidence of natural woodland processes, with good regeneration within the pattern of gaps. Recovery is expected over time and this could be hastened with increased localised intervention. This, together with concerns over the species composition (particularly ash and sycamore) at some locations will be addressed through management recommendations.

Please refer to the following report for further details:

Wilkinson, K. (17 March 2004) Cardiff Beech Woods cSAC, Annex 1 Habitat (9130) *Asperulo-Fagetum* beech forests SAC Monitoring Report (draft).

Management Requirements of Feature 1

The following summarises the current management requirements of the feature based on the current feature status for the *Asperulo-fagetum* beech forest (March 2004).

It is very important to recognise that management may need to change with time. Problems that we are aware of today may be resolved or completely removed and new unforeseen problems may arise. New improved management techniques may also become available. Consequently the management outlined in this document is considered appropriate for the short term but may need to change in the long term.

Woodland Management

The management policy of minimal intervention allows natural woodland processes to continue and wildlife to flourish. Tree falls create canopy gaps to encourage natural regeneration. All safely fallen trees should be left where they fell wherever possible and standing dead wood retained in situ.

The presence of a number of species considered to be non-native e.g. sycamore and Japanese knotweed, will be kept under review. Control measures may be required if monitoring indicates any detrimental effects on the woodland communities of special interest.

The long term aim for the woodlands is to apply minimal management and allow gap creation to occur naturally as a result of woodland processes. CCW will continue to work with the Forestry Commission, Cadw and Cardiff County Council in this regard.

Localised intervention in certain areas could enhance natural processes, for example:

- Garth Wood – removal of pine species in areas previously managed as high forest to encourage natural regeneration of native species.
- Castell Coch Woodlands –review percentage of ash and sycamore in certain locations with selective felling if required. In areas experiencing high levels of bark stripping and other damage, squirrel control may need to be considered.
- Fforestganol a Chwm Nofydd – selective thinning within areas of even age structure to break up uniformity where appropriate. Review percentage of beech in certain locations.

Please refer to Section 6 for the Action Plan, which assesses the specific management actions required on each management unit.

Recreational Management

All component SSSIs are used to a greater or lesser extent for recreation purposes. Castell Coch Woodlands and Fforestganol a Chwm Nofydd experience the most recreation pressure, and are popular for walking, climbing and mountain biking.

The Taff train runs through part of the Castell Coch Woodlands site and the historic building of Castell Coch attracts many visitors, which increases the access pressure on the woodlands. The road section is becoming increasingly popular for climbing, and this is unlikely to be a problem for the geological interest of the site. However, climbing could be potentially damaging to trees at the top of the crag and needs to be kept under review.

Fforestganol a Chwm Nofydd Local Nature Reserve also attracts a significant number of visitors.

Management of access is nominally through the individual site owners but there are potential conflicts between different users which to date have been addressed through the Local Authority Access Forum. Access issues need to be kept under review.

There is pressure to open up additional areas for access, with potential adverse implications for the ground flora and, depending on the scale of the proposals, the trees themselves. Again, this needs to be kept under review and advice provided through the relevant strategic planning processes and user groups.

CCW will continue to work with Cardiff County Council to ensure that the Taff Trail has no adverse affects on the habitat feature. CCW will also work with the climbing clubs and Cardiff County Council to ensure the trees alongside the Castell Coch Road Section are unaffected by climbing and other activities.

Management of the recreational use of the woodlands should focus on maintaining the network of public footpaths and access routes. Regular maintenance of the footpaths and bridleways is essential to stop them spreading onto the adjacent woodland habitat. By restricting recreational use of the woodlands to certain areas and paths, natural woodland processes can be left to occur away from these areas of recreational use and without the need for intervention from a public health and safety perspective.

A balance is sought between managing the recreational use, cultural heritage value and nature conservation importance of the woodlands. CCW will continue to work with the Forestry Commission, Cadw and Cardiff County Council in this regard.

Please refer to Section 6 for the Action Plan, which assesses the specific management actions required on each management unit.

6.2 Conservation Status and Management Requirements of Feature 2: *Tilio-Acerion* forest of slopes, screes and ravines (EU Habitat Code 9180)

Conservation Status of Feature 2

The sites were monitored in February 2004 to gather the extent or condition of the habitats and the species. The current feature status for the *Tilio-Acerion* forest of slopes, screes and ravines is **Unfavourable - Recovering** (February 2004).

The justification for the above feature status (February 2004) is as follows:

CCW view is that the site is still recovering from undesirable effects of past management. Although most if not all aspects of the component sites are heading in the right direction the status is still short of favourable. Implementation of appropriate management will be addressed but in our view there is no urgent or immediate need for action.

The Garth Wood component is thought to be 'unfavourable recovering'. The management is mostly limited intervention and for most of the site there is good age structure and gap regeneration. Natural processes could be enhanced by localised intervention and this will be addressed through management recommendations.

Fforestganol a Chwm Nofydd is thought to be 'unfavourable recovering'. Although there are small areas of even age structure there is generally a diverse age structure. This, together with concerns at the percentage of beech at some locations, will be addressed through management recommendations.

Please refer to the following report for further details:

Wilkinson, K. (17 February 2004) Cardiff Beech Woods cSAC, Annex 1 Habitat (9180) *Tilio-Acerion* forests of slopes, screes and ravines, SAC Monitoring Report (draft)

Management Requirements of Feature 2

The following summarises the current management requirements of the feature based on the current feature status for the *Tilio-acerion* forest of slopes, screes and ravines (February 2004).

It is very important to recognise that management may need to change with time. Problems that we are aware of today may be resolved or completely removed and new unforeseen problems may arise. New improved management techniques may also become available. Consequently the management outlined in this document is considered appropriate for the short term but may need to change in the long term.

Woodland Management

Much of the areas described as true *Tilio-acerion* occur on steep rocky ground, particularly in Garth Wood where it is not possible, for health and safety reasons, to undertake any management.

The management policy of minimal intervention applies to areas supporting *Tilio-acerion* habitat, allowing natural woodland processes to take place. CCW will continue to work with the Forestry Commission, Cadw and Cardiff County Council in this regard.

Recreational Management

Recreation within the areas supporting this habitat feature is restricted due to the steep and rocky nature of the terrain. Therefore the recreational pressure on areas of *Tilio-acerion* is less than on areas of *Asperulo-fagetum* habitat. Nonetheless, given the high recreation pressure experienced by Fforestganol a Chwm Nofydd, which supports areas of *Tilio-acerion* habitat, aspects of recreational management still apply to this feature.

As discussed above for the *Aperulo-fagetum* feature, management of the recreational use of the woodlands should focus on maintaining the network of public footpaths and access routes. By restricting recreational use of the woodlands to certain areas and paths, natural woodland processes can be left to occur away from these areas of recreational use and without the need for intervention from a public health and safety perspective.

A balance is sought between managing the recreational use, cultural heritage value and nature conservation importance of the woodlands. CCW will continue to work with the Forestry Commission, Cadw and Cardiff County Council in this regard.

Please refer to Section 7 for the Action Plan, which assesses the specific management actions required on each management unit.

6.3 Conservation Status and Management Requirements of Feature 3: Semi-natural Broadleaved Woodland

Conservation Status of Feature 3

Castell Coch

All the woodland within Castell Coch Woodlands and Road Section SSSI is referable to *Asperulo-fagetum*, therefore it is possible to derive the condition of the woodland SSSI feature from the work undertaken as part of the 2004 monitoring for the SAC. The woodland feature is therefore considered to be in favourable condition.

Fforestganol a Chwm Nofydd

Less than 50% of the woodland within this SSSI lies within the SAC. Therefore significant additional monitoring of the non-SAC areas is required before the condition can be fully determined. However, in 2004 Unit 4 failed to meet the definition of 'good condition semi-natural broadleaved woodland'. Based on this and survey work undertaken as part of the SSSI renotification process, we therefore consider that as a whole the SSSI is unfavourable-recovering.

Garth Wood

The majority of Garth Wood SSSI lies within the SAC. Therefore some additional monitoring of the non-SAC areas is required before the condition can be fully determined. However, it is possible to derive the condition of the woodland SSSI feature from the work undertaken as part of the 2004 monitoring for the SAC. The woodland feature is therefore considered to be in 'unfavourable recovering'.

Management Requirements of Feature 3

As per features 1 and 2.

The overall management policy is one of minimal intervention. It is anticipated that allowing the natural woodland processes to continue will achieve the conservation objectives for the site.

6.4 Conservation Status and Management Requirements of Feature 4: *Porrhoma rosenhaurei* (cave dwelling spider)

Conservation Status of Feature 4

To be determined.

Management Requirements of Feature 4

It is very important to recognise that management may need to change with time. Problems that we are aware of today may be resolved or completely removed and new unforeseen problems may arise. New improved management techniques may also become available. Consequently the management outlined in this document is considered appropriate for the short term but may need to change in the long term.

Recreational Management

The entrance to Lesser Garth Cave is currently open, allowing free access. Human disturbance is largely limited to the cave entrance and the first sections of the passage; this disturbance may have adverse effects on the environmental conditions within the cave. A gated grille over the entrance will be required to control public access to the cave, minimizing human disturbance. The grille must be suitable to allow access to the cave by bats.

6.5 Conservation Status and Management Requirements of Feature 5: Geological Exposures

Conservation Status of Feature 5

To be determined.

Management Requirements of Feature 5

Recreational Management

The road section is becoming increasingly popular for climbing. Although this is unlikely to be a problem for the geological part of the site, this will be kept under review.

Vegetation Management

The natural processes of erosion and deposition can cause debris to build up over the rocks, and this can be followed by growth of vegetation. This process means the rocks can become completely covered and inaccessible. The cleaning of certain areas of the site has been undertaken in the past and this work will be periodically undertaken again. The current lack of vehicular access means that such work has to be done by hand.

Management may be needed to maintain the exposures if monitoring indicates any detrimental effects on the geological features.

CCW will continue to work closely with Cardiff County Council, Forestry Commission and Welsh Assembly Government on any management required to keep the road section clear and observable.

7. ACTION PLAN: SUMMARY

This section takes the management requirements outlined in Section 5 a stage further, assessing the specific management actions required on each management unit. This information is a summary of that held in CCW's Actions Database for sites, and the database will be used by CCW and partner organisations to plan future work to meet the Wales Environment Strategy targets for sites.

Unit Number	CCW Database Number	Unit Name	Summary of Conservation Management Issues	Action needed ?
1	000330	FCN 1 (Fforestganol)	Owned by Cardiff County Council. The woodland has been managed for some time for nature conservation. Selective thinning, removal of sycamore and ride creation have occurred in the past. The current policy is one of minimal intervention. There are areas of semi-natural woodland and plantation where all the trees are of similar age and there is little regeneration. Selective thinning in these areas may be required, to increase the age structure. A review of the percentage of beech present should be undertaken in certain locations. Heavy recreational pressure by walkers, cyclists and horse-riders is experienced in this unit.	Yes
2	000331	FCN 2 (Cwm Nofydd - Cefncarnau-fawr Farm)	The unit is in private ownership, comprising a small area in the north of the site. The unit does not experience the heavy recreational pressure of adjacent units. The current policy for woodland management is one of minimal intervention. Where all the trees are of similar age and/or there is little regeneration, selective thinning may be required to increase the age structure.	Yes
3	000332	FCN 3 (Cwm Nofydd - north)	Owned by Cardiff County Council. The woodland has been managed for some time for nature conservation. Selective thinning, removal of sycamore and ride creation have occurred in the past. The current policy is one of minimal intervention. There are areas of semi-natural woodland and plantation where all the trees are of similar age and there is little regeneration. Selective thinning in these areas may be required. A review of the percentage of beech present should be undertaken in certain locations. Heavy recreational pressure by walkers, cyclists and horse-riders is experienced in this unit.	Yes
4	000333	FCN 4 (Cwm Nofydd - south)	Owned by Cardiff County Council. The woodland has been managed for some time for nature conservation. Selective thinning, removal of sycamore and ride creation have occurred in the past. The current policy is one of minimal intervention. There are areas of semi-natural woodland and plantation where all the trees are of similar age and there is little regeneration. Selective thinning in these areas may be required. A review of the percentage of beech present should be undertaken in certain locations. Recreational pressure is considered to be less in this unit than in adjacent units.	Yes

Unit Number	CCW Database Number	Unit Name	Summary of Conservation Management Issues	Action needed ?
8	000337	CC 3 (Forestry Commission)	Unit owned by Forestry Commission. The overall management policy is of minimal intervention. All safely fallen trees are left where they fell to increase the dead wood component of the woodland. Trees felled for health and safety purposes (in the vicinity of public footpaths etc.) are left in situ wherever possible. Heavy recreational pressure by walkers, cyclists and horse-riders is experienced and some site-specific health and safety issues need to be addressed by management. There is no evidence that potential aerial pollution from the A470 is having as adverse impact on the features but this may need to be addressed in more detail in the future. Commercial forestry to the north and east of this unit may have implications for surface water supply and quality and should be kept under review.	Yes
9	000338	CC 4 (Castell Coch)	Unit owned by Marquis of Bute and Cadw. The overall management policy is of minimal intervention. All safely fallen trees are left where they fell to increase the dead wood component of the woodland. Trees felled for health and safety purposes (in the vicinity of public footpaths etc.) are left in situ wherever possible. Heavy recreational pressure by walkers, cyclists and horse-riders is experienced and some site-specific health and safety issues need to be addressed by management. There is no evidence that potential aerial pollution from the A470 is having as adverse impact on the features but this may need to be addressed in more detail in the future. Commercial forestry to the north of this unit may have implications for surface water supply and quality and should be kept under review. There is considerable development pressure in the vicinity and a potential range of impacts arising from increasing urbanisation. Squirrel damage has been recorded and is being kept under review. The percentage of ash and sycamore trees is also to be kept under review and consideration given to selective felling if required.	Yes
10	000339	GW 1 (SAC woodland)	Unit in ownership of Quarry company. Much of the woodland appears to have been managed in the past as high forest and includes areas that have been planted with beech and Corsican pine. The current policy is one of minimal intervention. There are area of semi-natural woodland and plantation where all the trees are of similar age and there is little regeneration. Selective thinning of these areas may be required. A review of the percentage of beech present should be undertaken in certain locations. Past and current quarrying in this area has caused disturbance to the habitat and natural colonisation of these areas continues to be encouraged. Health and safety issues also need consideration. There is no evidence to date that potential aerial impacts from the adjacent quarry and A470 have had an adverse impact on the features but this may need to be addressed in more detail in the future. Although footpaths are present along the northern boundary and within the north-west corner of the site, it is considered that this unit experiences less recreational pressure in comparison to other units. Access to Lesser Garth Cave is restricted but caving may cause disturbance to the cave-dwelling spider feature of the SSSI, and needs to be kept under review.	Yes

8. GLOSSARY

This glossary defines some of the terms used in this **Core Management Plan**. Some of the definitions are based on definitions contained in other documents, including legislation and other publications of CCW and the UK nature conservation agencies. None of these definitions is legally definitive.

- Action** A recognisable and individually described act, undertaking or **project** of any kind, specified in section 6 of a **Core Management Plan** or **Management Plan**, as being required for the **conservation management** of a site.
- Attribute** A quantifiable and monitorable characteristic of a **feature** that, in combination with other such attributes, describes its **condition**.
- Common Standards Monitoring** A set of principles developed jointly by the UK conservation agencies to help ensure a consistent approach to **monitoring** and reporting on the **features** of sites designated for nature conservation, supported by guidance on identification of **attributes** and monitoring methodologies.
- Condition** A description of the state of a feature in terms of qualities or **attributes** that are relevant in a nature conservation context. For example the condition of a habitat usually includes its extent and species composition and might also include aspects of its ecological functioning, spatial distribution and so on. The condition of a species population usually includes its total size and might also include its age structure, productivity, relationship to other populations and spatial distribution. Aspects of the habitat(s) on which a species population depends may also be considered as attributes of its condition.
- Condition assessment** The process of characterising the **condition** of a **feature** with particular reference to whether the aspirations for its condition, as expressed in its **conservation objective**, are being met.
- Condition categories** The **condition** of **feature** can be categorised, following **condition assessment** as one of the following²:
- Favourable: maintained;
 - Favourable: recovered;
 - Favourable: un-classified
 - Unfavourable: recovering;
 - Unfavourable: no change;
 - Unfavourable: declining;
 - Unfavourable: un-classified
 - Partially destroyed;
 - Destroyed.

² See JNCC guidance on Common Standards Monitoring <http://www.jncc.gov.uk/page-2272>

- Conservation management** Acts or undertaking of all kinds, including but not necessarily limited to **actions**, taken with the aim of achieving the **conservation objectives** of a site. Conservation management includes the taking of statutory and non-statutory measures, it can include the acts of any party and it may take place outside site boundaries as well as within sites. Conservation management may also be embedded within other frameworks for land/sea management carried out for purposes other than achieving the conservation objectives.
- Conservation objective** The expression of the desired **conservation status** of a **feature**, expressed as a **vision for the feature** and a series of **performance indicators**. The conservation objective for a feature is thus a composite statement, and each feature has one conservation objective.
- Conservation status** A description of the state of a **feature** that comprises both its **condition** and the state of the **factors** affecting or likely to affect it. Conservation status is thus a characterisation of both the current state of a feature and its future prospects.
- Conservation status assessment** The process of characterising the **conservation status** of a **feature** with particular reference to whether the aspirations for it, as expressed in its **conservation objective**, are being met. The results of conservation status assessment can be summarised either as ‘favourable’ (i.e. conservation objectives are met) or unfavourable (i.e. conservation objectives are not met). However the value of conservation status assessment in terms of supporting decisions about **conservation management**, lies mainly in the details of the assessment of feature **condition**, **factors** and trend information derived from comparisons between current and previous conservation status assessments and condition assessments.
- Core Management Plan** A CCW document containing the conservation objectives for a site and a summary of other information contained in a full site **Management Plan**.
- Factor** Anything that has influenced, is influencing or may influence the **condition** of a **feature**. Factors can be natural processes, human activities or effects arising from natural process or human activities, They can be positive or negative in terms of their influence on features, and they can arise within a site or from outside the site. Physical, socio-economic or legal constraints on **conservation management** can also be considered as factors.
- Favourable condition** See **condition** and **condition assessment**

Favourable conservation status See **conservation status** and **conservation status assessment**.³

Feature **The species population, habitat type or other entity for which a site is designated. The ecological or geological interest which justifies the designation of a site and which is the focus of conservation management.**

Integrity See **site integrity**

Key Feature The habitat or species population within a **management unit** that is the primary focus of **conservation management** and **monitoring** in that unit.

Management Plan The full expression of a designated site's legal status, **vision, features, conservation objectives, performance indicators** and management requirements. A complete management plan may not reside in a single document, but may be contained in a number of documents (including in particular **the Core Management Plan**) and sets of electronically stored information.

Management Unit An area within a site, defined according to one or more of a range of criteria, such as topography, location of **features**, tenure, patterns of land/sea use. The key characteristic of management units is to reflect the spatial scale at which **conservation management** and **monitoring** can be most effectively organised. They are used as the primary basis for differentiating priorities for conservation management and monitoring in different parts of a site, and for facilitating communication with those responsible for management of different parts of a site.

Monitoring An intermittent (regular or irregular) series of observations in time, carried out to show the extent of compliance with a formulated standard or degree of deviation from an expected norm. In **Common Standards Monitoring**, the formulated standard is the quantified expression of favourable **condition** based on **attributes**.

Operational limits The levels or values within which a **factor** is considered to be acceptable in terms of its influence on a **feature**. A factor may have both upper and lower operational limits, or only an upper limit or lower limit. For some factors an upper limit may be zero.

Performance indicators The **attributes** and their associated **specified limits**, together with **factors** and their associated **operational limits**, which provide the standard against which information from **monitoring** and other sources is used to determine the degree to which the **conservation objectives** for a **feature** are being met. Performance indicators are part of, not the same as, conservation objectives. See also **vision for the feature**.

³ A full definition of favourable conservation status is given in Section 4.

- Plan or project** **Project:** Any form of construction work, installation, development or other intervention in the environment, the carrying out or continuance of which is subject to a decision by any public body or statutory undertaker.
Plan: a document prepared or adopted by a public body or statutory undertaker, intended to influence decisions on the carrying out of **projects**.
 Decisions on plans and projects which affect Natura 2000 and Ramsar sites are subject to specific legal and policy procedures.
- Site integrity** The coherence of a site’s 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 is designated.
- Site Management Statement (SMS)** The document containing CCW’s views about the management of a site issued as part of the legal notification of an SSSI under section 28(4) of the Wildlife and Countryside Act 1981, as substituted.
- Special Feature** See **feature**.
- Specified limit** The levels or values for an **attribute** which define the degree to which the attribute can fluctuate without creating cause for concern about the **condition** of the **feature**. The range within the limits corresponds to favourable, the range outside the limits corresponds to unfavourable. Attributes may have lower specified limits, upper specified limits, or both.
- Unit** See **management unit**.
- Vision for the feature** The expression, within a **conservation objective**, of the aspirations for the **feature** concerned. See also **performance indicators**.
- Vision Statement** The statement conveying an impression of the whole site in the state that is intended to be the product of its **conservation management**. A ‘pen portrait’ outlining the **conditions** that should prevail when all the **conservation objectives** are met. A description of the site as it would be when all the **features** are in **favourable condition**.

9. REFERENCES AND ANNEXES

References

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Annexes

Annex A Map of Cardiff Beech Woods SAC

Annex B Map of Cardiff Beech Woods SAC Component SSSI Management Units