

CLYDE VALLEY WOODS SPECIAL AREA OF CONSERVATION (SAC)

CONSERVATION ADVICE PACKAGE



Image: Cleghorn Glen SSSI, Clyde Valley Woods SAC © Lorne Gill/NatureScot

Site Details

Site name:	Clyde Valley Woods
Map:	https://sitelink.nature.scot/site/8224
Location:	South Western Scotland
Site code:	UK0013089
Area (ha):	432.89
Date designated:	17 March 2005

Qualifying features

Qualifying feature	SCM assessed condition	SCM visit date	UK overall Conservation Status
Mixed woodland on base-rich soils associated with rocky slopes [H9180]*	Favourable Maintained	25 September 2002	Unfavourable-bad

Notes:

Assessed condition refers to the condition of the SAC feature assessed at a site level as part of NatureScot's [Site Condition Monitoring \(SCM\)](#) programme.

Conservation status is the overall condition of the feature throughout its range within the UK as reported to the European Commission under Article 17 of the Habitats Directive in 2019.

* Habitats Directive priority habitat

Other overlapping Protected Areas

[Avondale Site of Special Scientific Interest \(SSSI\)](#), [Upper Nethan Valley Woods SSSI](#), [Cleghorn Glen SSSI](#), [Fiddler Gill SSSI](#), [Garrion Gill SSSI](#), [Townhead Burn SSSI](#), [Gills Burn and Mare Gill SSSI](#), [Jock's Gill Wood SSSI](#), [Nethan Gorge SSSI](#), [Cartland Craigs SSSI](#), [Hamilton High Parks SSSI](#) and [Clyde Valley Woodlands National Nature Reserve \(NNR\)](#).

Key factors affecting the qualifying features

The Clyde Valley Woods SAC consists of 11 broadleaved gorge woodlands growing in the steep-sided valleys of tributaries to the River Clyde between the Lanarkshire towns of Hamilton and Lanark.

Mixed woodland on base-rich soils associated with rocky slopes

This habitat typically occurs in association with base-rich rocks in steep-sided immature river valleys, and is found on nutrient-rich soils that often accumulate in the shady micro-climates towards the bases of slopes and ravines. Such forests are not extensive but localised, topographically constrained stands that then grade into other woodland types on level valley floors or slopes above.

Key management issues for this habitat include browsing levels, problematic native and non-native species, air pollution and urban development. The key factors which are affecting the qualifying feature at this site are tree pathogens (including ash dieback and Dutch elm disease), problematic native and non-native species, herbivore impacts, air pollution, and recreational issues (including mountain bikes).

This habitat requires low but not zero grazing/browsing. High levels of grazing and browsing can distort the structure and composition of the woodlands, especially leading to a species poor ground flora, and restricting regeneration of the more palatable tree species such as oak, elm, rowan, hazel, holly and ash. This eventually results in a woodland dominated by older trees, and by less palatable species such as the non-native beech, and with little structural diversity. The presence of non-native species such as Rhododendron and exotic conifers can also impact the habitat, shading out ground flora and epiphytes, and preventing natural regeneration of native tree and shrub species. In the future new stresses to the feature are anticipated, particularly from climate change, continued chalara ash-dieback and possibly other novel pests and pathogens.

Further information about this woodland habitat can be found [here](#).

Conservation Objectives for mixed woodland on base-rich soils associated with rocky slopes (also known as *Tilio-Acerion* forests of slopes, screes and ravines)

1. To ensure that the qualifying feature of Clyde Valley Woods SAC is in favourable condition and makes an appropriate contribution to achieving favourable conservation status
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Favourable Conservation Status (FCS) is considered at a European biogeographic level. When determining whether management measures may be required to ensure that the conservation objectives for this site are achieved, the focus should be on maintaining or restoring the contribution that this site makes to FCS.

When carrying out appraisals of plans and projects against these conservation objectives, it is not necessary to understand the status of the feature in other SACs in this biogeographic region. The purpose of the appraisal should be to understand whether the integrity of the site (see objective 2) would be maintained. If this is the case then its contribution to FCS across the Atlantic Biogeographic Region will continue to be met. Further details on how these appraisals should be carried out in relation to maintaining site integrity is provided by objective 2 (including parts a, b and c). If broader information on the feature is available then it should be used to provide context to the site-based appraisal.

Note that “appropriate” within this part of the conservation objectives is included to indicate that the contribution to FCS varies from site to site and feature to feature.

2. To ensure that the integrity of Clyde Valley Woods SAC is maintained by meeting objectives 2a, 2b and 2c

The aim at this SAC is to maintain the habitat in a favourable condition as a contribution to its wider conservation status. Therefore any impacts on the objectives shown in 2a, 2b, or 2c below must not persist so that they prevent the achievement of this overall aim.

When carrying out appraisals of plans or projects the focus should be on maintaining site integrity, specifically by meeting the objectives outlined in 2a, 2b and 2c. If these are met then site integrity will continue to be maintained. Note that not all of these will be relevant for every activity being considered. Any impacts on the objectives shown in 2a, 2b or 2c below must not persist so that they prevent the maintenance of site integrity. Temporary impacts on these objectives resulting from plans or projects can only be permitted where they do not prevent the ability of a feature to recover and there is certainty that the features will be able to quickly recover.

This objective recognises that the qualifying habitat is exposed to a wide range of drivers of change. Some of these are natural and are not a direct result of human influences. Such changes in the habitat’s extent, distribution or condition within the site which are brought about by natural processes, directly or indirectly, are normally considered compatible with the site’s conservation objectives. An assessment of whether a change is natural or anthropogenic, or a combination of both, will need to be looked at on a case by case basis.

2a. Maintain the extent and distribution of the habitat within the site

The extent of the mixed woodland on base-rich soils associated with rocky slopes feature within the site has been estimated at 303.02ha. The area figure is an estimate and has been taken from the Standard Data Form. Fundamentally however there should be no measurable net reduction in the extent of the habitat and its distribution throughout the site.

The habitat typically occurs on nutrient-rich soils that have formed in association with base-rich rocks, and where there is base-rich flushing. These relatively rich soils have been largely undisturbed for hundreds of years and as a consequence they have developed numerous complex relationships with the woodland flora and fauna – resulting in one of the most biodiverse ecosystems in Scotland (much of the diversity being in the soils).

Impacts that could lead to a permanent reduction in the extent or distribution of the habitat should be avoided. In particular there should be no habitat loss from within or at the edge of the woodland and no habitat fragmentation. A lack of regeneration by native species, such as could occur through high herbivore impacts, will also lead to a long term decline in woodland extent.

The restriction of the habitat chiefly to steep-sided valleys means that expansion of the habitat type is somewhat constrained topographically, but there may be opportunities to encourage natural expansion along river corridors. In addition, some woods adjoin other, less natural woodland types along the same valleys, where there will be long-term opportunities to promote conversion to a more site-native species composition.

2b. Maintain the structure, function and supporting processes of the habitat

This habitat depends on nutrient-rich and base-rich soils and shady micro-climates found towards the bases of slopes, coarse scree, cliffs, steep rocky slopes and ravines. It is characterised by tree cover that:

- Has a mixed forest structure including young, mature, dying and dead trees in dense thickets and open glades with a range of shade cast on the woodland floor.
- Is made up of diverse broadleaved tree and shrub species, but most consistently and abundantly by species with the characteristics (shade, leaf decay, structure, bark pH and obligate/associated dependent species) of ash, hazel and wych elm.
- The slopes on which this woodland type develops are often unstable, leading to an element of dynamism in their structure. Whilst this adds to the diversity of the communities present, it also makes the woodland vulnerable to disturbance from human activities. If disturbance is too frequent, or present over too large an area, it may lead to loss of woodland area and typical species, and recovery might be slow.

The ground flora associated with the habitat is linked to variations in moisture and shade, or 'disturbance communities' associated with scree and cliff-bases. A wide range of other basiphilous herbs and grasses may occur within these stands. Many sites support notable bryophytes, in particular calcicoles associated with base-rich rock outcrops.

These characteristics can be achieved by maintaining an abundance of key tree species, particularly ash, hazel and wych elm, an absence of invasive species which compromise the critical characteristics of the habitat, and browsing levels that allow the full site-native assemblage of species of trees, shrubs and ground flora to develop naturally and flower, fruit etc. As noted below, elm has all but disappeared as a canopy species due to Dutch elm disease, while chalara ash dieback threatens to reduce the contribution of ash. As canopy composition changes, potentially with greater contribution of non-native species such as sycamore, management decisions should be guided by the need to maintain ecosystem function and supporting processes for wider woodland flora and fauna. (Wych elm is still surprisingly prevalent in places, but doesn't persist into the canopy stage).

Ground flora characteristics are vulnerable to edge effects, and particularly from nutrient inputs arising from run-off from adjacent improved pasture or arable fields, and soakaways from adjacent urban development.

2c. Maintain the distribution and viability of typical species of the habitat

The main NVC types conforming to mixed woodland on base-rich soils associated with rocky slopes are the 'western' forms of W8 *Fraxinus excelsior* – *Acer campestre*-*Mercurialis perennis* woodland, and the equivalent north-western community W9 *Fraxinus excelsior* – *Sorbus aucuparia* – *Mercurialis perennis* woodland.

The key tree species for this habitat are ash (*Fraxinus excelsior*), hazel (*Corylus avellana*) and wych elm (*Ulmus glabra*). However, although elm saplings remain frequent, mature elms are now largely or wholly absent due to Dutch elm disease. Ash trees are also expected to decline in abundance due to ash dieback, so will likely make less of a contribution to the future canopy of these woodlands. Canopy gaps may be filled by both native and non-native tree species; of non-native species, sycamore has historically been considered an undesirable component of these woods, but increasingly is seen as potentially valuable in supporting some of the ecosystem functions otherwise provided by elm and ash trees.

The ground flora can be very varied, but the following elements are usually present: fern banks (particularly hart's-tongue *Phyllitis scolopendrium*, soft shield-fern *Polystichum setiferum* and buckler-ferns *Dryopteris* species); stands of ramsons *Allium ursinum* in the moister zones; dog's mercury *Mercurialis perennis*, greater woodrush *Luzula sylvatica* and enchanter's-nightshade *Circaea* species on drier but still base-rich soils; wood avens *Geum urbanum*, water avens *Geum rivale* and natural 'disturbance communities' comprising common nettle *Urtica dioica*, herb Robert *Geranium robertianum* and cleavers *Galium aparine* associated with scree and cliff-bases. A wide range of other basiphilous (preferring base-rich soil) herbs and grasses may occur within these stands. At Clyde Valley Woods SAC these include less common flowering plants such as herb Paris *Paris quadrifolia* and broad-leaved helleborine *Epipactis helleborine*.

The variety of habitats present within the site has created conditions favourable for important invertebrate assemblages within some of the component SSSIs, especially saproxylic species associated with old or dead wood, fungi growing on dead wood and sap runs. Some of the woodlands support Nationally Rare species, including the minute fungus beetle *Orthoperus brunnipes*, the caddis fly *Adicella filicornis* and the small amber snail *Succinea oblonga*. Some of the sites also contain a number of Nationally Scarce species including the beetles *Bolitochara mulsanti* and *Datomicra zosteriae*, the flies *Dactylolabis transversa* and *Oxycera pardalina* and the hoverflies *Brachyopa insensilis* and *Aulacigaster leucopeza*, both of which feed on elm sap-runs.

Typical vertebrate species of these gorge woodlands include badgers (at high densities), roe deer, great spotted woodpeckers and treecreepers. Otters are present on the watercourses.

Tree Health implications

Many of the characteristics of mature Wych elm are reduced or absent in many locations due to Dutch elm disease (DED). However, it usually continues to persist as an 'auto-coppicing' shrub after the loss of the mature trees, so long as grazing impacts are low enough for it to continue to grow. Ash is beginning to show extensive infection from ash dieback. While the end point of the disease is not known, some level of resistance has been found in most populations, and the main threat to this is the prevention of regeneration by high herbivore impacts. Meanwhile, it is likely that a high proportion of the mature ash will be damaged, with a short-term increase in deadwood. Other native trees, such as hazel, rowan, willow and aspen, support many of the species associated with ash, although their nutrient cycling properties differ somewhat. As noted above, the non-native sycamore may also play a valuable role in providing some of the ecosystem functions otherwise provided by ash and elm. Probably the most important management requirement for this habitat is to ensure low enough herbivore impacts to allow all tree and shrub species present to regenerate. This will maximise the opportunity for ash to develop resistance to ash dieback,

and allow other species to regenerate as well, to ensure a species-rich tree and shrub layer.

Conservation Measures

Clyde Valley Woods is notified as a Site of Special Scientific Interest and management changes described on the list of Operations Requiring Consent must have prior consent from SNH (NatureScot).

The Clyde Valley Woods SAC consists of 11 separate SSSI woodlands. Of these, four are also part of the Clyde Valley Woodlands National Nature Reserve (Cleghorn Glen, Cartland Craigs, Nethan Gorge and Hamilton High Parks). These NNR sites are jointly owned and managed by the Scottish Wildlife Trust, South Lanarkshire Council and SNH (NatureScot). A steering group, comprising these three organisations, oversees the ecological and visitor management of the SAC / NNR woodland sites.

Current and recommended management for mixed woodland on base-rich soils associated with rocky slopes

Issue	Measure	Responsible party
Herbivore impacts	<p>Previous herbivore impact assessments have found high deer browsing impacts in at least two of the component SSSIs of the SAC (Avondale and Fiddler Gill SSSIs). Herbivore impact assessments should be kept up-to-date to reflect improved methodologies and potential changes in browsing intensity.</p> <p>Where deer browsing threatens woodland condition and long-term integrity, coordinated action will be required to implement deer control within the woods and on surrounding land.</p>	Land managers, Lowland Deer Network Scotland, NatureScot
Woodland expansion	Investigate opportunities to encourage natural expansion along river corridors. In addition, some woods adjoin other, less natural woodland types along the same valleys, where there will be long-term opportunities to	Land Managers, SF, NatureScot, FLS

	promote conversion to a more site-native species composition	
Agricultural impacts	Many of the woods occupy steep-sided valleys above which lie improved pasture or arable fields. Nutrient-rich run-off from these fields has the potential to alter ground flora. Relevant land managers can be encouraged to incorporate mitigation measures through agri-environment schemes, e.g. buffer strips around field boundaries.	Land managers, NatureScot, Scottish Government Rural Payments & Inspections Division (SGRPID)
Non-native plant species	<p>A variety of invasive non-native plants occur in the woods, and successful eradication in some cases will require whole catchment planning as well as targeted on-site control.</p> <p>Non-native tree species make a significant contribution to the canopy and understory of many woods. While ongoing management should continue to reduce the abundance of some non-native trees (e.g. beech), sycamore is increasingly regarded as potentially valuable in replacing some ecosystem functions of elm and ash.</p>	Land managers, NatureScot
Plant pathogens	<p>Dutch elm disease has already reduced or eradicated elm as a canopy species, while ash dieback is likely to reduce the contribution of ash. Management should avoid introducing trees of unknown and non-local provenance, to minimise the risk of introducing new pathogens. Potential measures to reduce the spread or impact of existing pathogens should follow national guidance and policy.</p>	Land managers, Scottish Forestry NatureScot

Recreational impacts	Some of the woods are close to urban centres and have high numbers of visitors. This creates opportunities to promote responsible enjoyment and appreciation of the environment, but informal recreation also generates pressures that need to be managed, e.g. litter, fly-tipping, erosion from bike trails. Community liaison, educational initiatives and on-site interpretation may be used to reduce the severity of these pressures.	Land manager, Local authority, NatureScot, local community
Future threats	A coordinated resilience planning process should be developed to respond to anticipated future threats to the habitat. Management actions arising from the resilience planning process, and site-level plans, should be implemented to anticipate future threats to the habitat on the site. This resilience work may also include further research to understand the vulnerabilities of the habitat.	NatureScot, land managers
Research and monitoring	To identify emerging impacts on the habitat and their causes, in order to understand the long term issues, identify refugia, review site-level resilience plans in the light of updated future threat projections and to inform future management of the habitat across Scotland.	NatureScot, universities, land managers

Contact details: NatureScot,
Cadzow Court,
3 Wellhall Road,
Hamilton
ML3 9BG,
tel. 01698 421668

Approved on 7 August 2020 by:

Greg Mudge
Principal Advisor
International Designations

Denise Reed
Area Manager
Tayside and Grampian