

## **GLEN SHIRA SPECIAL AREA OF CONSERVATION (SAC)**

### **CONSERVATION ADVICE PACKAGE**



Glen Shira © Catriona Laird/NatureScot

## Site Details

Site name:	Glen Shira
Map:	<a href="https://sitelink.nature.scot/site/8638">https://sitelink.nature.scot/site/8638</a>
Location:	Highlands and Islands
Site code:	UK0030346
Area (ha):	65.24
Date designated:	17 March 2005

## Qualifying features

Qualifying feature	SCM assessed condition	SCM visit date	UK overall Conservation Status
Western acidic oak woodland [H91A0]	Unfavourable – no change	20 February 2018	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.

## Overlapping Protected Areas

None.

## Key factors affecting the qualifying features

### Western acidic oak woods

This habitat type comprises a range of woodland types dominated by mixtures of oak (*Quercus robur* and/or *Q.petraea*) and birch (*Betula pendula* and/or *B.pubescens*). It is characteristic of base-poor soils in areas of at least moderately high rainfall. A key feature of importance within this habitat type is the well-developed Atlantic bryophyte communities it can support.

Glen Shira is located at the northern end of a typical U-shaped valley on a south-east – north-west axis, rising from sea level to above 500 m. The site comprises two distinct blocks of oak wood, separated by the River Shira and associated areas of open and grazed ground which are excluded from the site. The orientation of the valley means that the woodland is situated on both north-west and south-east facing slopes, which has encouraged the development of greater diversity.

A key factor that can affect this habitat is inappropriate levels of grazing. The habitat requires low but not zero grazing. High levels of grazing can distort the structure and composition of the woodlands, especially leading to an impoverished ground flora, and restricting regeneration of the more palatable tree species such as oak, ash and holly. This eventually results in a woodland dominated by older trees, and by the less palatable species such as birch, and lacking normal representation of intermediate life classes. Too little grazing can result in a lack of structural diversity in the canopy and over shading which can impact negatively on important lichen and bryophyte communities. The presence of non-native species such as *Rhododendron* 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, particularly from climate change and novel pests and pathogens, are anticipated. Ash dieback is already known to be present at Glen Shira.

The woodland is considered to be in an unfavourable condition at this site due to high browsing impacts from deer. As a result tree regeneration is very limited, with no seedlings or saplings recorded in the western block in 2018 monitoring.

Further information about western acidic oak woods can be found on the [JNCC website](#).

### **Conservation Objectives for western acidic oak woods (also known as old sessile oak woods with *Ilex* and *Blechnum* in the British Isles)**

<b>1. To ensure that the qualifying features of the SAC are in favourable condition and make an appropriate contribution to achieving favourable conservation status</b>
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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.
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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.
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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.
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## **2. To ensure that the integrity of the SAC is restored by meeting objectives 2a, 2b and 2c**

The aim at this SAC is to restore the western acidic oak woods habitat to a favourable condition as a contribution to its wider conservation status. Therefore any impacts to 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 restoring site integrity, specifically by meeting the objectives outlined in 2a, 2b and 2c. If these are met then site integrity will be restored. 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 restoration 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 western acidic oak woodland feature, taken from the Standard Data Form, has been estimated at 41.75ha. This should be maintained. There should be no measurable net reduction in the extent of the habitat and its distribution throughout the site.

To avoid any permanent reduction in the extent or distribution of the habitat, no habitat loss should take place from within or at the edge of the woodland, through non-native forestry planting, or dumping of waste. 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.

Although there is currently no decline in the extent or distribution of the woodland (when compared to 1999 maps) if the current low level of native species regeneration continues it may decline in the future as mature trees die back. However the western woodland block is now fenced, with plans to improve the fencing at the eastern block, which should reduce browsing impacts from sheep and deer and facilitate recruitment.

### **2b. Restore the structure, function and supporting processes of the habitat(s)**

Woodland are extremely complex ecosystems, and in order to maintain and enhance the structure, function and processes supporting the habitat the key elements that should be in place include:

- Mixed age classes of trees, canopy cover, deadwood/fallen trees, understorey, ground flora & epiphytic plants. At this site there are low levels of native tree species regeneration.

- Large, long lived trees with the characteristics of existing species, especially the defining species of oak (bark chemistry and structure, shade, leaf litter, fruiting, senescence and deadwood development)
- Low levels of herbivore impacts to allow all species of trees and shrubs to regenerate, and healthy growth of ground flora, including flowering and fruiting.
- Natural hydrological conditions, including humidity, splash, mist and spate events, capable of supporting characteristic oceanic bryophyte and lichen assemblages in wooded ravines. Avoidance of abstraction that will alter these conditions where the characteristic bryophyte interest is known to be high e.g. hydro-electric development.
- Absence of invasive non-native species, especially *Rhododendron*.
- Prevention of pathogen arrival, establishment and spread.

The main issue at Glen Shira SAC is high browsing pressure from sheep and deer which has severely limited regeneration of native tree species. The gap in continuity of tree recruitment has been recorded across the site in the past 3 cycles of Site Condition Monitoring, despite perimeter fences being installed around the eastern block in an attempt to minimise browsing impact. No seedlings or saplings were located in the western, stock fenced woodland block during monitoring in 2018, with deer and the occasional sheep seen in the eastern block along with signs of browsing. There are plans to reinforce the fencing around the eastern block, and the western block was deer fenced in February 2020.

Several of the ash trees in the eastern block are showing symptoms of ash dieback.

Although the occasional Sitka spruce has been noted in the woodland, invasive species are not considered to be a major issues at this site. No *Rhododendron* were recorded during monitoring in 2018.

### **2c. Restore the distribution and viability of typical species of the habitat**

The main NVC types representing old sessile oak woods across Glen Shira are W11 (*Quercus petraea* – *Betula pubescens* – *Oxalis acetosella* woodland) and W17 (*Quercus petraea* – *Betula pubescens* – *Dicranum majus* woodland). The woods support an outstanding assemblage of bryophytes, including both oceanic ‘Atlantic’ types and calcicolous species. The qualifying oakwood habitat in the western part of the site is interspersed with areas of non-qualifying alder–ash woodland and patches of open ground where regeneration is occurring. The eastern block consists almost entirely of qualifying old sessile oak wood, mainly oak-dominated, with alder *Alnus glutinosa*, ash *Fraxinus excelsior* and hazel *Corylus avellana* also present.

Western acidic oak woodland supports an important component of Britain’s oceanic bryophyte flora and lichen mycota. The distribution and viability of these assemblages should be maintained with particular focus on nationally rare, scarce and/or threatened species and on assemblages that indicate a long period of ecological continuity. Glen Shira as a whole is considered to be one of the richest woodland bryophyte sites in Scotland, with 128 species recorded within the western block alone, of which 27 are Atlantic species.

Conditions needed for lichens include maintaining sheltered but open old-growth conditions where the impact of shade, due to regeneration and climber growth, is balanced at the site scale against the need for continued woodland regeneration.

Pine martens, badgers, tawny owls, redstart, wood warbler, and treecreeper can all be found using the woodland. Black grouse use the woodland edge and golden eagles hunt woodland prey in the surrounding landscape.

Grazing levels can impact the typical species of this site. Measures are needed to ensure that native tree seedlings can establish and a mixed age classes of trees are present.

Constant species are:

<i>Quercus robur</i>	pedunculate oak
<i>Q. petraea</i>	sessile oak
<i>Betula pubescens</i>	downy birch
<i>Ilex aquifolium</i>	common holly
<i>Lonicera periclymenum</i>	common honeysuckle
<i>Pteridium aquilinum</i>	bracken
<i>Rubus fruticosus</i> aggr	blackberry species
<i>Corylus avellana</i>	common hazel
<i>Sorbus aucuparia</i>	rowan
<i>Alnus glutinosa</i>	common alder
<i>Blechnum spicant</i>	hard fern
<i>Fraxinus excelsior</i>	ash
<i>Hyacinthoides non-scripta</i>	common bluebell
<i>Carex remota</i>	remote sedge
<i>Carex pallescens</i>	pale sedge
<i>Carex nigra</i>	common sedge
<i>Galium saxatile</i>	heath bedstraw
<i>Galium odoratum</i>	woodruff
<i>Gymnocarpium dryopteris</i>	northern oak fern
<i>Vaccinium myrtillus</i>	blaeberry
<i>Oxalis acetosella</i>	wood-sorrel
<i>Potentilla erecta</i>	common tormentil
<i>Viola riviniana</i>	dog-violet
<i>Holcus mollis</i>	creeping soft-grass
<i>Agrostis capillaris</i>	common bent
<i>Anthoxanthum odoratum</i>	sweet vernal grass
<i>Deschampsia flexuosa</i>	wavy hair-grass
<i>Hylocomium splendens</i>	glittering wood-moss
<i>Pseudoscleropodium purum</i>	neat feather-moss
<i>Rhytidiadelphus squarrosus</i>	springy turf-moss
<i>R. loreus</i>	little shaggy-moss
<i>Thuidium tamariscinum</i>	comon tamarisk-moss
<i>Dicranum majus</i>	greater fork-moss
<i>Plagiothecium undulatum</i>	waved silk-moss
<i>Pleurozium schreberi</i>	red-stemmed feather-moss
<i>Polytrichum formosum</i>	bank haircap

Rare species include lichens *Arctomia delicatula* and *Arthonia vinosa*.

## Conservation measures

### Current and recommended management for western acidic oak woods

Issue	Measure	Responsible party
Hydrology	Ensure natural hydrological processes are maintained where they support significant populations of typical wooded ravine bryophytes and lichens.	Landowner SEPA NatureScot
Herbivore impacts	<p>Ensure that herbivore impacts are low based on the FCS/SNH (NatureScot) Herbivore Impact Assessment Process.</p> <p>High deer numbers, along with grazing by sheep are thought to have had a negative impact on the woodland for decades. Active management of deer is ongoing by both landowners. The Argyll Estate's western woodland block was deer fenced in February 2020. Deer are still getting into the FLS owned eastern block; however there are plans to reinforce fencing in the near future. Sheep are also omitted from the site.</p>	Land managers, NatureScot, Forest and Land Scotland (FLS) Deer Management Groups
Trampling (human, stock & wild mammal) and other mammalian plant damage	Trampling should be rare once the site is entirely deer proofed. Further monitoring should observe improvements, or advise further actions as required.	Land manager Local authority
Invasion by non-native species	A small number of sitka spruce have been noted in the eastern block; these should be removed before more establish. Future monitoring will inform any further works required.	Land manager
Prevention of pathogen arrival, establishment and spread.	Ash dieback is present at Glen Shira. Further observations and monitoring should be undertaken to advise appropriate management.	NatureScot
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

Climate change	Discussions on options available and participation in available local, national and international initiatives	Land manager, Local authority, Scottish/UK government, NatureScot
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

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