National Vegetation Survey of

Watchtower Path, Trossachs Pier, Loch Katrine

For

The Steamship Sir Walter Scott Ltd, October 2020



Naiad Environmental Consultancy Birnam Guest House 4 Murthly Terrace Dunkeld PH8 0BG Tel/Fax 07761673231 E-mail: naiadsecology@gmail.com

CONTENTS

Executive summary

- 1.0 Introduction
- 2.0 Wildlife Legislation and policy
- 3.0 Survey Methodology Habitats
- 4.0 Results
 - National Vegetation Classification
- 5.0 Ecological Appraisal
- 6.0 Construction Affects
- 7.0 Conclusions
- Appendix 1 NVC Quadrat data
- Appendix 2 Designated sites and maps

SUMMARY

A small short footpath to the Rhoderick Dhu viewpoint is being proposed on land above Loch Katrine pier, Stirlingshire. The development is primarily on woodland with upland habitats. The site is situated within the *Ben A'an and Brenachoile woods site of special scientific interest* which is a statutory designation under the wildlife and Countryside Act 1981 (as amended) and the Nature Conservation (Scotland) Act 2004. The area is also designated as part of the Trossachs Woods Special Area of Conservation (SAC) for the European habitats listed as Western Acidic Oak Woodland SSSI. The area is also within the Loch Lomond and Trossachs National Scenic Area.

A National Vegetation Classification was carried out to determine the vegetation type and its status. The vegetation communities surveyed included taking quadrats and identified three main woodland types W4 wet birch woodland, W11 Oak-birch woodland with a small area of flush (water seepage area), beneath the oak woodland and W18 scots pine woodland. Detailed NVC survey found several habitats of high ecological value within the survey area including the mixture of native trees and conifers.

Current access and trampling has had a small effect on the lower woodland areas, W11 and W4 woodland. The linear path will affect wet woodland W4 and drier woodland W11 on rocky scree with large boulders and a knoll above the pier and car park area at the top which is W18 pine woodland on drier rock and soils.

1.0 INTRODUCTION

1.1 Naiad was asked to provide a National Vegetation Survey (NVC) of the proposed Watchtower footpath to Rhoderick Dhu viewpoint at Loch Katrine pier, Stirlingshire, within the Loch Lomond and Trossachs National Park. This report considers current nature conservation and ecological information relating to the study area including an NVC survey and evaluation of the main habitats.

1.2 The purpose of the ecological appraisal is:

- To identify the key habitats and species in the area in terms of their relative significance
- To comment on the potential impacts on the flora as a result of the footpath and to report them accurately

Terms of reference.

1.3 This report concerns a proposal to develop a footpath as shown in Figure 1. The NVC surveys are to determine the vegetation communities within the woodlands. This report is required to feed into the submission for a planning application. The report is not a full Environmental Appraisal of the impacts on the development on the NVC community types.

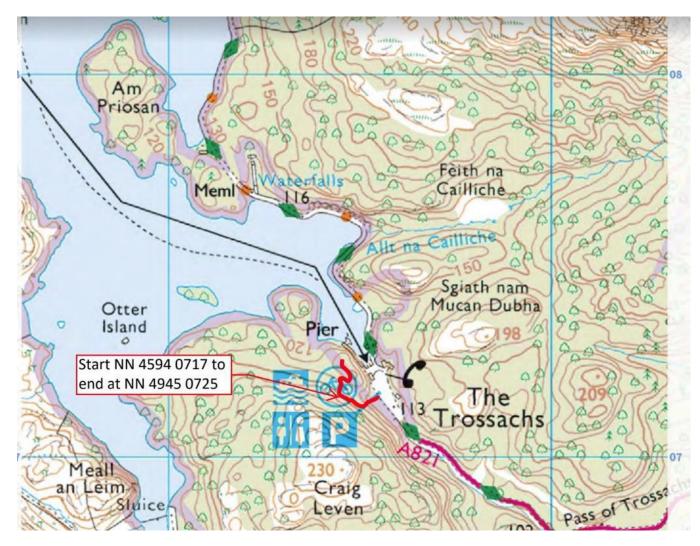
Background

1.4 The footpath is being proposed to offer a short walk option at Loch Katrine pier. Located in the heart of Loch Lomond and Trossachs National Park, Loch Katrine is approximately 10 miles west of Callander and 7 miles north of Aberfoyle. The site is generally one of steep sided wooded hills with high mountains and extensive peatlands on the higher ground (over 400m). Land management is generally for recreational, landscape and nature in the National Park with some sheep grazing in open areas.

1.5 Naiad Environmental Consultancy have over 25 years experience in carrying out NVC surveys all over Scotland including large scale windfarm and SNH NVC contracts. Naiad carried out a baseline ecological appraisal 8 -9 October 2020 to scope the main ecological interests on site. The following key tasks were undertaken:

- NVC background survey and desk top study. This survey included more detailed desk top survey and satellite imagery to support the NVC field survey. This enables important location and boundary information to be assessed. The desktop survey also allows identification of international and national habitats such as protected sites to be identified such as protected sites and species.
- Information regarding the design, layout and method of construction were also provided by MW Consultants in association with the footpath specifications. Detailed plans were provided by A.C.T. Heritage Limited, a footpath design company.

Figure1 Footpath and survey location map



Path construction – Rationale and techniques

1.6 A.C.T Heritage described the route in detail. Due to the sensitivities of the site to be developed, a fully 'Hand Built' path construction is prescribed. Given that the area is within designated sites for woodland habitat, the least disturbance to any ground will be favourable. All hand build techniques are tried and tested and fully specified within the Upland Path Advisory Group (UPAG) guidelines (revised 2015) and any contractor will be expected to be fully conversant with these techniques.

1.7 The path can be split into 4 discernible sections; all of which are fully detailed within the specification sheets included within the appendix. The path will run for approximately 188m from start at carpark OS GR NN 4594 0717 to termination at viewpoint at OS GR NN 4945 0725. There follows a brief synopsis.

- Section 1 circa 35m. From car park to flat terrace before rockfall area will, due to slope, require a comprehensive stone pitching solution. This will address the sensitivities of the slope where mature trees are most populous and will also minimise any ground disturbance through excavation thus keeping root disturbance to a minimum.
- Section 2 circa 72m from terrace to Boardwalk section. This section will be a mix
 of aggregate surfaced path and stone pitching to address gradient fluctuations.
 The aggregate surface will 'float' on a geotextile material which will allow drainage
 and prevent path slippage and muddying. Additional drainage features i.e. water
 bars and X-drains and/or culverts will be installed to manage water run off and
 reduce maintenance requirements.
- Section 3 circa 20m from end of section 2 to final accent, it is proposed to install a section of boardwalk to raise the path above the natural flush thus preventing changes to the hydrology of the flush by way of installing drainage channels or blockages from a 'raised bench style' path.
- Section 4 circa 61m. As section 2. From boardwalk to viewpoint. A mix of aggregate and pitching to reach final destination at the Rhoderick Dhu viewpoint.

2.0 LEGISLATION AND POLICY

2.1 International legislation from the European Union and national policy guidance in the UK underpins the primary environmental policies within the development-planning framework of Structure, Local and Subject Local Plans.

International Commitments

2.2 The EU has put in place requirements relating to the protection and enhancement of important habitats and species in the form of The Habitats Directive and the Wild Birds Directive. These obligations are transposed into the law of Scotland by means of The Conservation (Natural Habitats, &c.) Regulations 1994.

2.3 Under the EU Directives, Special Areas of Conservation (SACs) and Special Protection Areas (SPAs) combine to frame a Europe-wide network of important sites/areas known as Natura 2000 sites. These are complementary to Sites of Special Scientific Interest (SSSI's) which are designations protecting wildlife areas of national significance. Practical measures to safeguard biodiversity are set out in the UK Biodiversity Action Plan (UKBAP) and the Report of the UK Steering Group on Biodiversity. Sustainable development gives the planning system an important role in the protection of the natural environment and the maintenance of biodiversity at a local level. Local authorities are "signed up" to delivering these measures.

2.4 In weighing up the value of the interests and assessing the impact of development on them it places weight on the status and purpose of the statutory designation with greater concern for the interests of European Sites and nationally highly valued sites such as Sites of Special Scientific Interest.

2.5 In the wider countryside there are a number of policies which protect the environment. The Government signed the Biodiversity Convention at the UN Conference on Environment and Development held in Rio in 1992, requiring the components of the Earth's biological diversity to be used in ways that do not lead to their decline. Practical measures to safeguard biodiversity are set out in the UK Biodiversity Action Plan (UKBAP) and the Report of the UK Steering Group on Biodiversity. Sustainable development gives the planning system an important role in the protection of the natural environment and the maintenance of biodiversity at a local level. Local authorities are "signed up" to delivering these measures.

2.6 The Water Framework Directive (WFD) in the UK, also protects certain habitats which are groundwater dependent. Identification of "Ground Water Dependent Terrestrial Ecosystems" GWDTE's by botanical surveys allows assessment of those at risk from damage during development. The "Good Groundwater Status" is dependent upon there being no "significant damage" to GWDTE caused by either alterations to the flow of groundwater, groundwater chemistry, or concentrations of any pollutants in groundwater bodies. "Significant damage" to terrestrial systems including wetlands means the groundwater body will not be in "good status". Each specific habitat (Phase1) and vegetation community (NVC) has a site level of dependence based on criteria defined by the UKTAG¹. Some NVC communities are more likely to be dependent upon groundwater than others and these are highlighted in the text below under each NVC community.

2.7 The site is situated within the Ben A'an and Brenachoile woods site of special scientific interest which is a statutory designation under the wildlife and Countryside Act 1981 (as amended) and the Nature Conservation (Scotland) Act 2004. The area is also designated as part of Trossachs Woods Special Area of Conservation (SAC) for the European habitats listed as Western Acidic Oak Woodland.SSSI. The area is also within the Loch Lomond and Trossachs National Scenic Area. The notified areas include the oak and birch NVC woodland habitats.

¹ UKTAG Identification of groundwater dependent eco-systems 2004, Article 5 report. Naiad Environmental Consultancy NVC Loch Katrine footpath A Davis 15/10/2020

3.0 SURVEY METHODOLOGY

National Vegetation Classification

3.1 The NVC survey follows the methodology included in British Plant Communities, Rodwell, J.S.1991². The New Flora of the British Isles, Quadrats were taken of all natural communities with target notes of the less natural vegetation associations. C Stace, second edition, was used for the naming and keying of all vascular plants listed.

4.0 RESULTS

4.1 NVC survey identifies vegetation communities which can be cross-referenced with Annex 1 habitats which are of significance on a European scale as part of The European Habitats Directive. This survey has identified the following principal habitats within the survey area:

Woodland

4.1.1 W4 Betula pubescens-Molinia caerulea woodland, Sphagnum spp subcommunity

A wet birchwood within a shallow hollow, valley, predominantly Betula pubescens with frequent Betula pendula on very slightly drier ground and sometime difficult to separate as may be hybrids. The rich Sphagnum layer is strongly associated and Molinia caerulea is a conspicuous associate in places.

4.1.2. W11 Quercus petraea-betula pubescens-Oxalis acetosella woodland, Blechnum spicant sub-community

A steep sided and open birch oak woodland with a wide range of variation. The main woodlands include W11 consisting of birch (*Betula* spp.), with scattered oak (*Quercus* petraea) and rowan (Sorbus aucuparia). Steep rocky scree, fallen trees and occasional crags occur with dense scrub in places. A good range of shrub communities occur with tall stands of ferns and herbs. Very variable habitat and lightly grazed with deer the most obvious grazer.

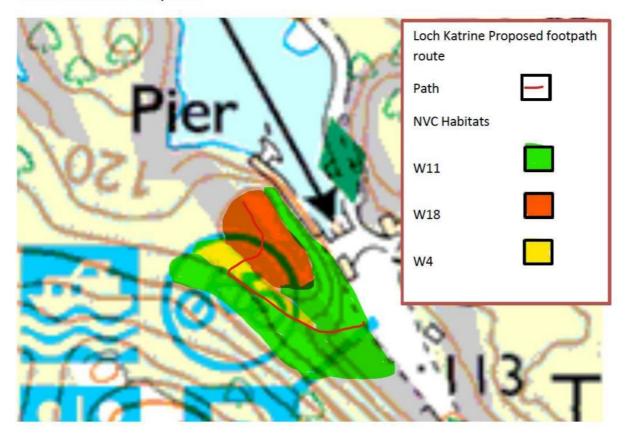
4.1.3 W18 Pinus sylvestris-Hylocomium splendens woodland, Vaccinium myrtillus- V.vitis-idaea sub-community

Scot's pine (*Pinus sylvestris*) forest with frequent birch association and a dense heathy understorey. An open young pine woodland W18b, or possibly W18d (Sphagnum capillifolium/quinquefarium sub-community) on the top of knolls above Loch Katrine car park with mixed birch and pines occasional. A heathy field layer approaching W11c below with some oak. W18 may be in a mosaic with W11 in places here but on the top of knolls is predominantly young pine and birch.

² Rodwell, J.S. (1991) *British Plant Communities, Volume 1 Woodland and scrub.* Cambridge University Press, Cambridge; Rodwell, J.S. (1991) *British Plant Communities, Volume 2 Mires and heath.* Cambridge University Press, Cambridge; Rodwell, J.S. (1992) *British Plant Communities, Volume 3 Grassland and Montane Communities.* Cambridge University Press, Cambridge; Rodwell, J.S. (2006) *National Vegetation Classification: Users' handbook.* Joint Nature Conservation Committee: Peterborough.

Naiad Environmental Consultancy NVC Loch Katrine footpath A Davis 15/10/2020

Figure 2 NVC Map Loch Katrine Footpath



5.0 ECOLOGICAL APPRAISAL

Habitats and Vegetation

A list of these is tabulated in Table 1, below.

Table 1 Vegetation comm	Vegetation communities of ecological value recorded at Loch Katrine footpath						
NVC community	Protected habitats EU and Water Framework Directive	Description					
W4 Betula pubescens- Molinia caerulea wet woodland	Part of the designated site Ben A'an and Brenachoile woods SSSI, Annex 1 habitat. GWDTE	A lightly grazed wet woodland mire on peat with tussocky Molinia caerulea and prominent sphagnum spp.					
W11 Quercus petraea-betula pubescens-Oxalis acetosella woodland, Blechnum spicant sub-community	Part of the designated site Ben a'an and brenachoile woods SSSI, Annex 1 habitat	Base rich flushes (often associated with small streams) down hillsides; often with very extensive and rich diversity of mire/grassland mosaic.					
W18 Pinus sylvestris- Hylocomium splendens woodland	Annex 1 habitat	This community is frequently dominated by birch with scattered scots pine with a heathy field layer.					

6.0 CONSTRUCTION EFFECTS

6.1 During the construction phase of the footpath, there will be a linear loss of woodland habitat from the construction of the path. Drainage may also impact on the W4 wet birchwood and may affect this potential GWDTE.

6.2 There will be permanent minor loss of small linear areas of woodland habitat and the ground flora, approximately 50m x 3m, heathland (200m x 3m) and a very small area of flush (less than $3m^2$).

Amount of habitat affected (metres)	Magnitude of impact	Magnitude of impact with mitigation	Mitigation		
W4 approximately 3m ² x 5m ² .	Neutral	Low linear impact but within national/internationally important habitat. W4 is also GWDTE and therefore drainage should be avoided or minimised to reduce any negative impact.	None		
W11 approximately 50m x 3m	Low	Low linear impact but minor in terms of landtake but within national/internationally important habitat.	Filed layer re-instate grassland turf and vegetation		
W18 heathland ground flora (200m x 3m)	Low	Low linear impact but minor in terms of landtake but within national/internationally important habitat.	Field layer re-instate turf and vegetation		

Table 2 - Summary table of cumulative impacts on valued habitats (estimated
areas) with mitigation by habitat type

7.0 CONCLUSIONS

7.1 The site supports internationally important woodland habitats including notified habitat W4 and W11 woodland, within the Ben A'an and Brenachoile woods SSSI. The area is also designated as part of Trossachs Woods Special Area of Conservation (SAC) for the European habitats listed as Western Acidic Oak Woodland SSSI. EU & Scottish biodiversity Action Plan habitat as identified under the EU Habitats Directive including W4, W11 and W18. Therefore, the impacts within the SSSI and SAC are likely to be significant,but are small and linear impacts. The wet W4 birch community may also be a GWDTE and is notable for protection of groundwater and run-off.

7.2 The site supports internationally recognised woodland habitats and small linear construction impacts will result from this project. Current damage and trampling is impacting small areas of the W4 and W11 but is negligible on the W18. At present the path is not heavily used but further activity could place pressure on this habitat and impact on surrounding habitats. Ideally public pressure should be directed away from sensitive and

fragile wet woodland areas and into drier areas with limited scope for spread of the path into sensitive woodland areas and high intensity use.

7.3 W4 habitats can be Ground Water Dependent Terrestrial Ecosystems (GWDTE) and are particularly sensitive to damage by construction activities and trampling. These communities are notable for protection of groundwater and run-off. Any new footpath scheme in this location on this habitat should address drainage issue and mitigate any affects. The footpath design recognises some of these issues and the method of design will address some of this potential impact over the small area of wetter woodland. Boardwalks over the wettest areas which do not interfere with the hydrology of the underlying vegetation will help but a path wide enough to accommodate passing groups so as to prevent access to wet sensitive vegetation such as bog moss, Sphagnum spp. within hollows would be beneficial.

Appendix 1 Quadrat data

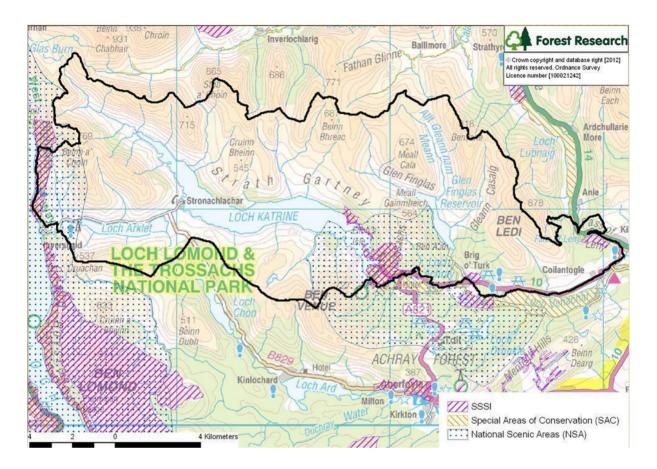
Owner					
NVC Code	W18b	Pinus sv	lvestris-H	vlocomium	
ium sub-community) on t nd pines occasional. A h This community occurs a nolls. W18 may be in a r	the top of neathy fiel bove the mosaic wit	knolls abo d layer app wetter W4	ove Loch k proaching found in a	W11c a small	
	id birch.	<u>г</u>	r	Domin	Constancy
5				Domin	Constancy
	2	3	Erec	Panga	
•		3	Fieq	гануе	
-					
				. ,	V
				· · ·	V
8	8			8	V
4	4		11	4	V
				-	-
1					
2				2	
5	2				
	3		1	3	
9	8		11	(8-9)	V
3	7			· · /	V
					V
					V
					V
	3				
			•	_	
2	3			(2-3)	V
1					
6	8	<u> </u>	11	(6-8)	V
-	1			(00)	
2	7	1	11	(2-7)	V
6	2		11	(2-6)	V
<u></u>	2			2	V
12				1 4	V
2	2			-	
2	2			2	
	NVC Code iodland W18b, or possible ium sub-community) on nd pines occasional. A h This community occurs a nolls. W18 may be in a r ominantly young pine ar Domin Rating for quadrats 1 49456 07247 5 3 4 3 9 3 4 3 4 3 4 2 2 6 2 6	NVC Code W18b NVC Code W18b wodland W18b, or possibly W18d (Sium sub-community) on the top of nd pines occasional. A heathy field his community occurs above the voltage of the v	NVC Code W18b Pinus sy splender Vacciniu idaea su vaccinity output of knolls about the setter W4 nolls. W18 may be in a mosaic with W11 in pominantly young pine and birch. Domin Rating for quadrats 2 3 1 2 3 49456 49464 07247 07247 07216 5 5 3 3 3 4 8 4 4 1 9 8 3 3 7 7 3 3 4 9 8 3 2 3 3 4 3 2 2 3 4 6 8 2	NVC Code W18b Pinus sylvestris-H splendens woodla Vaccinium myrillu idaea sub-community idaea sub-community ioun sub-community) on the top of knolls above Loch H nd pines occasional. A heathy field layer approaching nolls. W18 may be in a mosaic with W11 in places here omin Rating for quadrats 1 2 2 3 Freq 49456 49464 07247 07216 5 3 1 2 3 4 4 11 8 1 4 4 1 2 3 1 3 1 4 4 1 1 3 1 3 1 4 4 1 1 3 1 1 1 3 1 1 1 3 1 1 1 3	NVC Code W18b Pinus sylvestris-Hylocomium splendens woodland, Vaccinium myrtillus- V.vitis-idaea sub-community iodand W18b, or possibly W18d (Sphagnum ium sub-community) on the top of knolls above Loch Katrine car and pines occasional. A heathy field layer approaching W11c his community occurs above the wetter W4 found in a small nolls. W18 may be in a mosaic with W11 in places here but on ominantly young pine and birch. Domin Rating for quadrats Domin 1 2 3 Freq Range 49456 49464 Domin 1 (3-5) 3 4 II (3-5) 3 4 II 3 49456 49464 Domin 5 3 II 3(3-5) 3 4 II 4 4 4 II 4 5 3 II 3 4 4 II 4 9 8 II 8 4 1 1 3 4 1 1 3 4 1 1 3 9 8 II (8-9) 3 7 <

NVC RECORD CARD						
Site Loch Katrine	Owner					
footpath						
Date	NVC Code	W11	Quercus	petraea-	betula	
02/10/2020			pubesce	ns-Oxalis		
Notes				la woodla		
				m spicant	sub-	
A steep sided and open	hirch oak woodland wit	th a wide ra	commun		en rocky	
scree, fallen trees and c						
of shrub communities of						
lightly grazed with deer			,			
Species	Domin Rating for				Domin	
	quadrats					-
	1	2	3	Freq	Range	Constancy
Grid ref	49471	49525				
50x50	07167	07144				
Quercus petraea	6	5		II	(5-6)	V
Betula pendula	8	8		II	8	V
Alnus glutinosa	2			Ι	2	III
Sorbus aucuparia	3			1	3	III
Betula pubescens		3		I	3	
Shrub layer 10x10						
Corylus avellana	3	5		II	(3-5)	V
Betula pendula	3	3		II	3	V
Prunus avium		2		Ι	2	111
Field layer 2x2						
Dryopteris felix- mas	6	7		II	(6-7)	V
Anthoxanthum	7	5		П	(5-7)	V
odoratum					(2.2)	
Oxalis acetosella	2	8			(2-8)	V
Festuca ovina	3	2			(2-3)	V
Viola rivianni	3	2			(2-3)	V
Agrostis capillaris	7	7			7	V
Agrostis vinealis	7	7			7	V
Sorbus aucuparia	3	3			3	V
Corylus avellana	3	3			3	V
Betula pendula	2	2		П	2	V
seedlings Blechnum spicant	2	2			2	V
	6	2			6	
Vaccinium myrtillus Holcus lanatus	0	5			6 5	
Rubus fruticosus agg		5 4			5 4	
Pteridium aquilinum	4	7			4	
Calluna vulgaris	3				3	
Querus petraea	2				2	
Hyacinthoides non-	4	3	1		2	
Hyacintholdes non- scriptus		3			3	
			1	1	1	
Ground layer 1x1			1			
	1			1	1	

Eurynchium praelongum	6	7	II	(6-7)	V
Hylocomium splendens	6	5	Ш	(5-6)	V
Rhytidiadelhus loreus	4	5	11	(4-5)	V
Thuidium tamariscinum	6	5	11	(5-6)	V
Polytrichum commune	5	5		5	V

NVC RECORD CARD						
Otto Look Katring for the oth	0					
Site Loch Katrine footpath	Owner					
Date	NVC	W4	Betula	nubescens-	Molinia cae	rulea
Dato	Code					-community
02/10/2020						
Notes						
A wet birchwood within a shall frequent Betula pendula on ver separate as may be hybrids.						
Species	Domin R	Domin Rating for quadrats				
	1	2	3			
Grid ref						
				Freq	Domin	
50x50m					range	Constancy
Betula pendula/pubescens	8	8	2	III	(2-8)	V
Quercus petraea		3		1	3	I
Alnus glutinosa			3	I	3	I
10x10m						
Quadrat no						
Betula /pubescens	3	3	3	III	3	V
4x4m						
Sphagum palustre	6	7	7	III	(6-7)	V
Vaccinium myrtillus	9	4	5	III	(4-9)	V
Sphagnum fallax	8	4	9	III	(4-9)	V
Holcus mollis	3	8	2	III	(2-8)	V
Deschampsia flexuosa	3	2	4	III	(2-4)	V
Agrostis stolonifera		7	5		(5-7)	III
Molinia caerulea	3	5		II	(3-5)	
Pteridium aquilinum	3	4		II	(3-4)	
Polytrichum commune	3		4		(3-4)	III
Sorbus aucuparia	4		2	II	(2-4)	III
Festuca ovina		3	2	II	(2-3)	111
Dryopteris felix mas		3	2	II	(2-3)	
Blechnum spicant		2	2	II	2	III
Sphagnum recurvum	6			Ι	6	I
Juncus effusus	3			Ι	3	1
Vaccinium vitis idaea	3			Ι	3	1
Carex sp			2	Ι	2	l
Calluna vulgaris	2			1	2	
Rhytidiadelphus loreus	2			Ι	2	I
Eurynchium praelongum	2			Ι	2	

Appendix 2 Designated areas : SSSI and SAC map and citation



TROSSACHS WOODS SPECIAL AREA OF CONSERVATION (SAC) Designation date: 17 March 2005 Administrative area: Stirling Qualifying Interests for which the site is designated: SCIENTIFIC NAME COMMON NAME Old sessile oak woods with Ilex and Blechnum in the British Isles Western acidic oak woodland.

Annex I habitats that are a primary reason for selection of this site

91A0 Old sessile oak woods with llex and Blechnum in the British Isles

This complex of ancient, semi-natural woodland sites is one of the largest and most diverse in central Scotland, and represents **old sessile oak woods** within the South-west Highlands Atlantic bryophyte zone. The woodland is largely dominated by sessile oak *Quercus petraea* with downy birch *Betula pubescens* on acid soils. Within localised pockets, nutrient enrichment occurs, giving rise to ash *Fraxinus excelsior*, and where groundwater flushing occurs alder *Alnus glutinosa* dominates with ash and hazel *Corylus avellana*. The islands within Loch Katrine support ungrazed tree and shrub communities including juniper *Juniperus communis*. The ground flora of both sites in the complex is rich and the complex is notable for the presence of *Bazzania trilobata*, a liverwort typical of more western oceanic oakwoods.

CITATION BEN A'AN AND BRENACHOILE WOODS SITE OF SPECIAL SCIENTIFIC INTEREST Stirling Site code: 177 NATIONAL GRID REFERENCE: NN 482096; NN 498074

OS 1:50,000 SHEET NO: Landranger Series 57

1:25,000 SHEET NO: Explorer Series 11

AREA: 263.55 hectares

NOTIFIED NATURAL FEATURES

Biological: Woodlands: Upland oak woodland

DESCRIPTION

Ben A'an and Brenachoile Woods are large and diverse semi-natural ancient woodlands at the south-east end of Loch Katrine, approximately 6 kilometres north of Aberfoyle in the Loch Lomond and the Trossachs National Park.

The woodland consists mainly of sessile oak Quercus petraea, with a ground flora dominated by grasses, blaeberry and ling. The lichen flora is special because it is intermediate in character between that of the wet oceanic woods of western Scotland, and the more continental woods of the east. Local nutrient enrichment gives rise to pockets of ash with dog's mercury Mercurialis perennis and broad buckler-fern Dryopteris dilatata, with a variety of herbaceous species including ramsons Allium ursinum and the locally rare wood sedge Carex sylvatica. Where groundwater flushing occurs, alder dominates with ash and hazel, over a ground flora of species such as sharp-flowered rush Juncus acutiflorus, marsh violet Viola palustris and yellow pimpernel Lysimachia nemorum. The islands on Loch Katrine support ungrazed tree and shrub communities, including juniper Juniperus communis.

NOTIFICATION HISTORY

First notified under the 1981 Act: 31 January 1989

Notification reviewed under the 2004 Act: 29 August 2008 REMARKS

The measured area of the site has been corrected to 263.55 ha (from 275.4 ha). 2 m:\objcache\objects\c65358.doc

Ben A'an and Brenachoile Woods SSSI is designated as part of Trossachs Woods Special Area of Conservation (SAC) for the European habitats listed below: Habitat: Western acidic oak woodland

OPERATIONS REQUIRING CONSENT FROM NATURE SCOT (SCOTTISH NATURAL HERITAGE)

Date: 29 August 2008

BEN A'AN AND BRENACHOILE WOODS

SITE OF SPECIAL SCIENTIFIC INTEREST

If you propose to carry out, or permit to be carried out, any of the operations listed below, you must first obtain consent from SNH unless a local authority has granted you planning permission (under Part III of the Town and Country Planning (Scotland) Act 1997) or a designated regulatory authority has given you written permission (under s.15 of the Nature Conservation (Scotland) Act 2004). If you have such a permission you may proceed without obtaining consent from SNH for the same operation.

Standard

Ref. No.

Type of Operation

2 The introduction of grazing and changes in the grazing regime

(including type of stock or intensity or seasonal pattern of grazing).

3 The introduction of stock feeding and changes in stock feeding practice.

6 Application of pesticides, including herbicides (weedkillers).

7 Dumping, spreading or discharge of any materials.

8 Burning.

9 The release into the site of any wild, feral or domestic

animal1, plant2

or

seed.

11 The destruction, displacement, removal or cutting of any plant or plant remains, including tree, shrub, herb, dead or decaying wood, moss, lichen, fungus, leaf-mould and turf.

12 The introduction of tree and/or woodland management and changes in tree and/or woodland management3

13b Modification of the structure of water courses (e.g. streams, springs, ditches, drains), including their banks and beds, as by realignment, regrading and dredging.

20 Extraction of minerals, including topsoil, sub-soil and spoil.

21 Construction, removal or destruction of tracks, walls, fences,

hardstands, banks, ditches or other earthworks.

26 Use of vehicles or craft.

27 Recreational activities, other than those carried out responsibly in keeping with the Scottish Outdoor Access Code definition of responsible access, or organised events.

28 Changes in game and waterfowl management and hunting practice.

1 "animal" includes any mammal, reptile, amphibian, bird, fish or invertebrate.

2 "plant" includes any flowering plant, fern, alga, fungus, lichen or moss.

3 "Woodland management" includes afforestation, planting, clear and selective felling, thinning, coppicing, modification of the stand or underwood, changes in species composition, cessation of management.