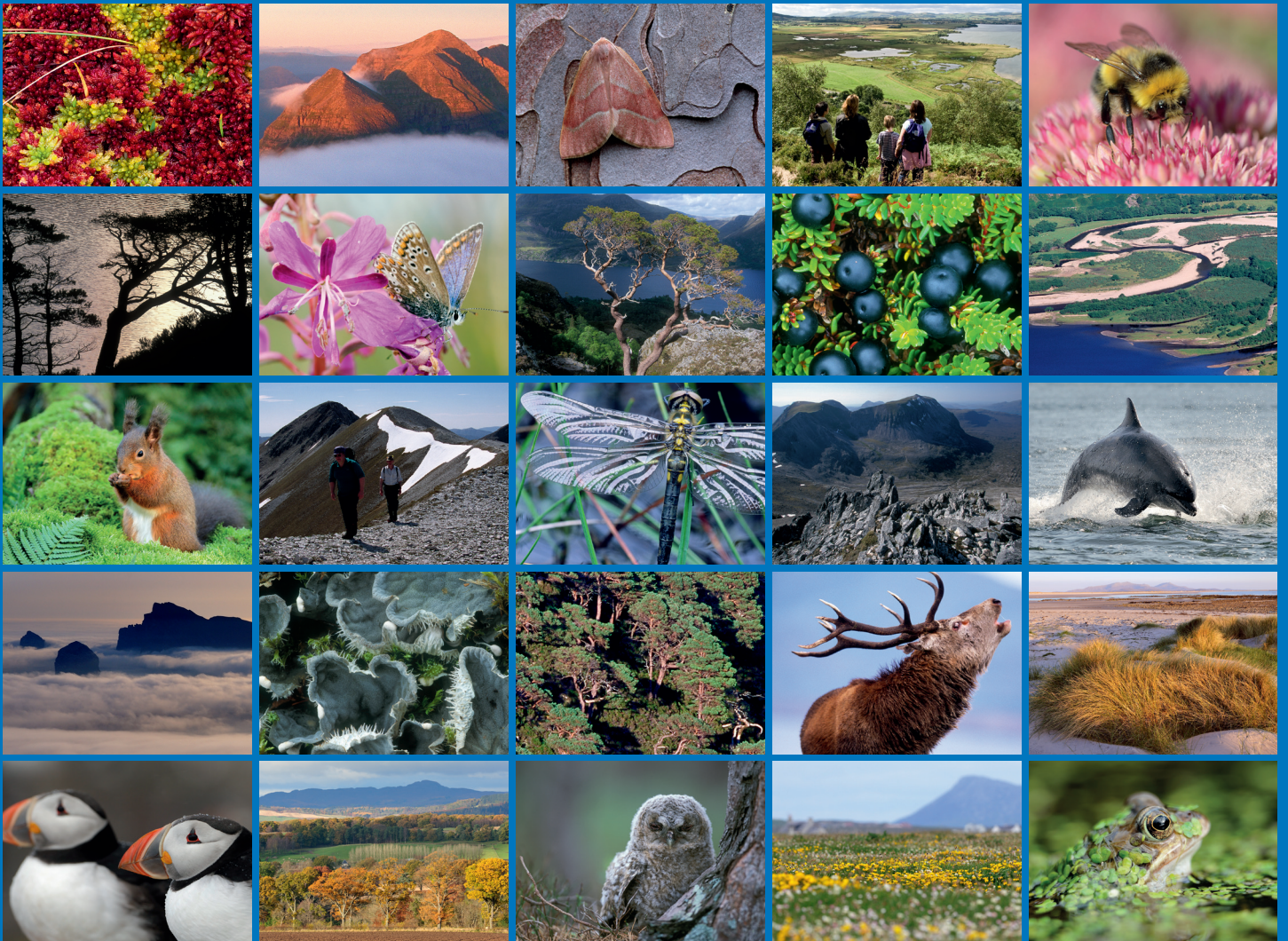


Site Condition Monitoring survey of upland notified features on designated sites – An Teallach





Scottish Natural Heritage
Dualchas Nàdair na h-Alba

All of nature for all of Scotland
Nàdar air fad airson Alba air fad

RESEARCH REPORT

Research Report No. 1024

**Site Condition Monitoring survey of upland
notified features on designated sites –
An Teallach**

For further information on this report please contact:

Brian Eardley
Scottish Natural Heritage
Great Glen House
INVERNESS
IV3 8NW
Telephone: 01463 725304
E-mail: brian.eardley@nature.scot

This report should be quoted as:

Wells, C. 2018. Site Condition Monitoring survey of upland notified features on designated sites – An Teallach. *Scottish Natural Heritage Research Report No. 1024*.

This report, or any part of it, should not be reproduced without the permission of Scottish Natural Heritage. This permission will not be withheld unreasonably. The views expressed by the author(s) of this report should not be taken as the views and policies of Scottish Natural Heritage.

© Scottish Natural Heritage 2018.

SCM Reports

This report was commissioned by SNH as part of the Site Condition Monitoring (SCM) programme to assess the condition of special features (habitats, species populations or earth science interests) on protected areas in Scotland (Sites of Special Scientific Interest, Special Areas of Conservation, Special Protection Areas and Ramsar). Site Condition Monitoring is SNH's rolling programme to monitor the condition of special features on protected areas, their management and wider environmental factors which contribute to their condition.

The views expressed in the report are those of the contractor concerned and have been used by SNH staff to inform the condition assessment for the individual special features. Where the report recommends a particular condition for an individual feature, this is taken into account in the assessment process, but may not be the final condition assessment of the feature. Wider factors, which would not necessarily be known to the contractor at the time of the monitoring, are taken into consideration by SNH staff in making final condition assessments.



RESEARCH REPORT

Summary

Site Condition Monitoring survey of upland notified features on designated sites – An Teallach

Research Report No. 1024

Project No: 013952

Contractor: Colin Wells

Year of publication: 2018

Keywords

Site Condition Monitoring; Protected Area; Upland; Site of Special Scientific Interest; Condition; Grazing

Background

Sites of Special Scientific Interest (SSSIs) and Special Areas of Conservation (SACs) are designated on the basis of notified features of interest. Site Condition Monitoring is a six year rolling programme of assessment, against quality standards, of the state of notified features of interest on designated sites. This project is concerned with upland habitat features on An Teallach SSSI (NGR NH 070 850) in SNH's Northern Isles and North Highland Area (Highland Council local authority area, Wester Ross district).

Main findings

The SSSI feature upland assemblage was assessed at this site between 25th and 28th July 2012. The upland assemblage on An Teallach comprises the component habitats:

- subalpine dry dwarf shrub heath ('dry heath')
- subalpine wet heath ('wet heath')
- alpine heath
- alpine summit communities

This represents a change from the three assemblage components assessed in the second cycle following the Nature Conservation (Scotland) Act 2004 review. Then, the only component in common with the current assessment was dry heath, the other two habitats selected being differed tall herb and silicious rocky slopes. The second cycle SCM assessment was also based principally on the extent of the component features rather than their condition as recommended in the guidance at the time (O'Hanrahan, 2007). Hence the area of dwarf shrub heath easily exceeded the target area and the other two vegetation types were well represented.

No waypoints were specifically generated for this feature, but the habitats were examined in detail at a total of 87 locations scattered across the site. At each of these locations the appropriate habitat was assessed for its species composition, cover, structure, signs of grazing, browsing, trampling, erosion, etc, against attributes and targets laid down in the guidance notes for these habitats. The results of the survey were as follows:

- The upland assemblage feature failed the condition assessment overall since <90% of three of the assemblage components (subalpine dry dwarf shrub heath, subalpine wet heath and alpine heath) were found to be in favourable condition.
- Most of the unfavourable condition was due to red deer browsing and trampling with some sheep and goats contributing further pressure in some areas.
- The pattern and type of failures of the Upland Assemblage components, together with results from a Herbivore Impact Assessment carried out in tandem suggest that significant amounts of the damage may reflect ‘legacy’ impacts from historically greater numbers of animals and/or burning damage.
- The feature is best described as being in ‘unfavourable’ condition.

For further information on this project contact:

Brian Eardley, Scottish Natural Heritage, Great Glen House, Inverness, IV3 8NW.

Tel: 01463 725304 or brian.eardley@nature.scot

For further information on the SNH Research & Technical Support Programme contact:

Knowledge & Information Unit, Scottish Natural Heritage, Great Glen House, Inverness, IV3 8NW.

Tel: 01463 725000 or research@nature.scot

Table of Contents	Page
1. BACKGROUND	1
2. METHODS	1
2.1 Survey and assessment of condition targets	1
2.2 Field procedure	1
2.3 Data spreadsheets	2
2.4 Features surveyed on An Teallach	3
2.5 Areas surveyed	3
2.6 Logistics and survey weather conditions	3
3. RESULTS	4
3.1 Upland assemblage	4
3.1.1 Wet heath	5
3.1.2 Dry heath	5
3.1.3 Alpine heath	5
3.1.4 Alpine summit communities	6
3.1.5 Discussion	6
4. GENERAL OBSERVATIONS ON MANAGEMENT	7
4.1 Negative management activities	7
4.2 Positive management activities	7
5. POSSIBLE PROBLEMS DUE TO TIMING OF ASSESSMENT	7
6. GENERIC PROBLEMS WITH ATTRIBUTES AND TARGETS	7
7. REFERENCES	8

Acknowledgements

I wish to thank the landowners and occupiers for giving us access permission. I would also like to thank Tamara Lawton and Graham Sullivan of SNH for providing access information, advice and relevant background information and to Ruth Maier for help in undertaking the fieldwork.

1. BACKGROUND

Sites of Special Scientific Interest (SSSIs) and Special Areas of Conservation (SACs) are designated on the basis of notified features of interest. These features of interest may be particular habitats or vegetation types, particular species, or particular geological or geomorphological features. Site Condition Monitoring (SCM) is a six year rolling programme of assessment, against quality standards, of the state of notified features of interest on designated sites. This report details the results from the third cycle of SCM of upland habitat features within An Teallach SSSI, (NGR NH 070 850) in SNH's Northern Isles and North Highland Area (Highland Council local authority area, Wester Ross district).



Figure 1. An Teallach

2. METHODS

2.1 Survey and assessment of condition targets

The methods for assessing the condition of the habitats followed those given in the document Common Standards Monitoring guidance for upland habitats ([JNCC, 2009](#)).

The only feature assessed at the site was 'Upland Assemblage', comprising four component habitats. The habitats were assessed according to the attribute and target tables corresponding to these habitats to produce sufficient data with which to assess the condition of the feature as a whole.

2.2 Field procedure

Standard upland assemblage monitoring methodology is designed to allow a rapid survey by means of broad assessment from vantage points across a site supplemented by point sampling.

During the current exercise however, an opportunity was taken to undertake more informative monitoring than is normally achievable by virtue of the fact that SCM fieldwork was undertaken simultaneously with a baseline Herbivore Impact Assessment (Wells 2012).

In order to establish the latter, a regular grid of 102 sample plots generated on a spacing of 700m was provided by SNH (Figure 1). The same grid was therefore used as a template for recording SCM plots where any of the suitable upland assemblage component habitats coincided with the grid points. Further plots were assessed opportunistically during traverses across the site to augment these where necessary in order to gain as wide a geographical coverage of the feature as possible in the time available. This allowed a broad coverage across the SSSI (Map 1).

Where condition assessments were made, the list of targets for various attributes from the relevant generic table such as vegetation composition, indicators of grazing pressure and of physical disturbance (JNCC, 2009) was checked in order and if the target was met it was recorded as a 'Y', if not, as an 'N'. Where the target was a quantitative one, e.g. the proportion of the ground intensively disturbed, then the approximate percentage of disturbed ground was noted (unless there was no significant disturbance).

For the component habitats surveyed here, assessments were made at an 'immediate' scale of four square metres or the scale of the entire feature visible from the sample location.

2.3 Data spreadsheets

The data are presented in spreadsheet form in Appendix 1. Each record consists of the waypoint code, date, surveyor, 12-figure grid reference and 'Y's or 'N's for each target followed by details of photographs and any appropriate notes. The column headings for the targets are often severely abbreviated to allow an overview in as economical a space as possible – the full details of the target requirements for the different attributes are available on the JNCC website (JNCC 2009)

The column headings representing the targets are phrased to ensure that a negative answer means failure, whereas a positive one means that the waypoint passes, e.g. the target for blanket bog referring to intensively disturbed areas covering more than 100 m² – the column heading is phrased 'no patches ...of ... disturbed bare ground?' and a 'Y' result means that, yes, there were no such areas present, while an 'N' result means that no, there was at least one of these areas present.

Data are presented in the spreadsheets for the upland assemblage component habitats where locations were assessed using the appropriate attribute and target table.

The scale(s) at which assessments for each target were carried out is given in cells underneath the column headings with the abbreviated texts for the targets.

There are columns for details of photographs taken and notes at the far right of the columns containing results for the various targets. The notes generally contain information about the NVC community and any discussion or extra information on any of the results, particularly where a failure is considered to be unmerited or where results need to be explained in more detail.

Nomenclature follows Rodwell (1991, 1992) for NVC communities, Stace (1997) for vascular plants and Atherton et al (2010) for bryophytes.

2.4 Features surveyed on An Teallach

It comprised the following component habitats:

- subalpine dry dwarf shrub heath ('dry heath')
- subalpine wet heath ('wet heath')
- alpine heath
- alpine summit communities

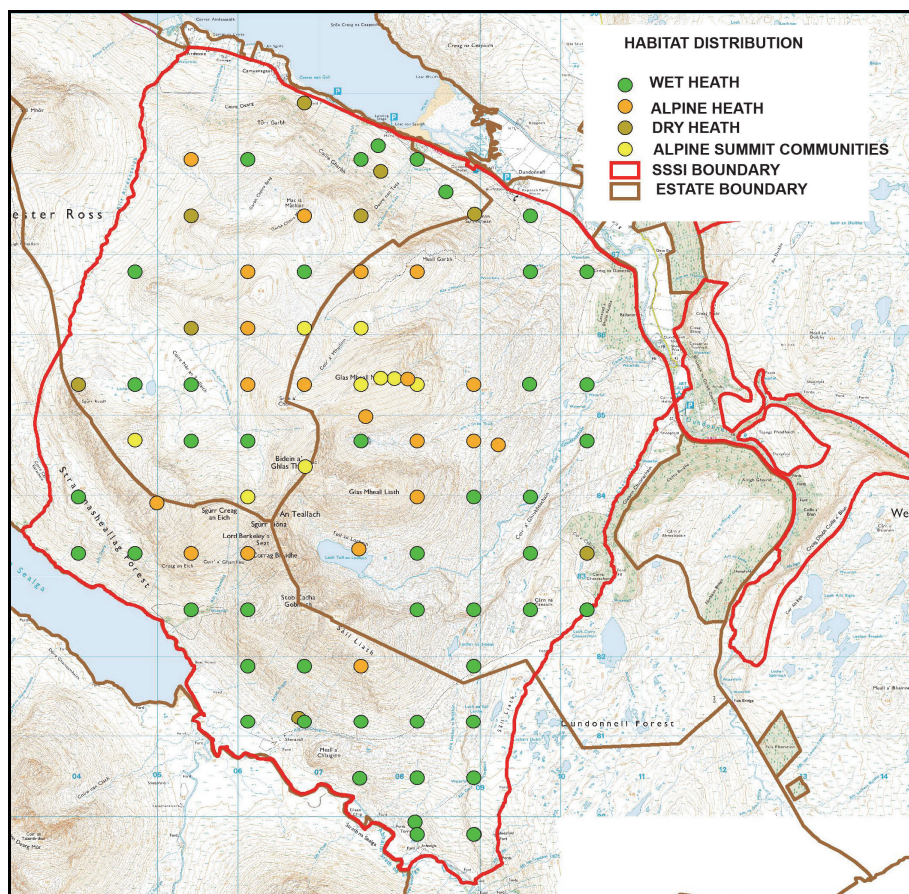
2.5 Areas surveyed

The regular grid of assessment plots allowed a broad survey of the SSSI in geographical terms. Because the component habitats of the upland assemblage varied in distribution and relative area numbers of plots recorded from each type varied. Table 1 shows the numbers of SCM plots recorded from each component habitat type.

2.6 Logistics and survey weather conditions

Field survey was carried out during June 2012 by a survey team comprising Colin Wells and Ruth Maier. Access was undertaken on foot from road heads.

87 waypoints were visited during this period (Map 1, Appendix 1). The weather ranged from warm, humid and sunny through to periods of heavy rain and hill fog during the fieldwork.



Map 1. Distribution and type of habitat sampling plots © Crown copyright [and database rights] 2018 OS 100017908

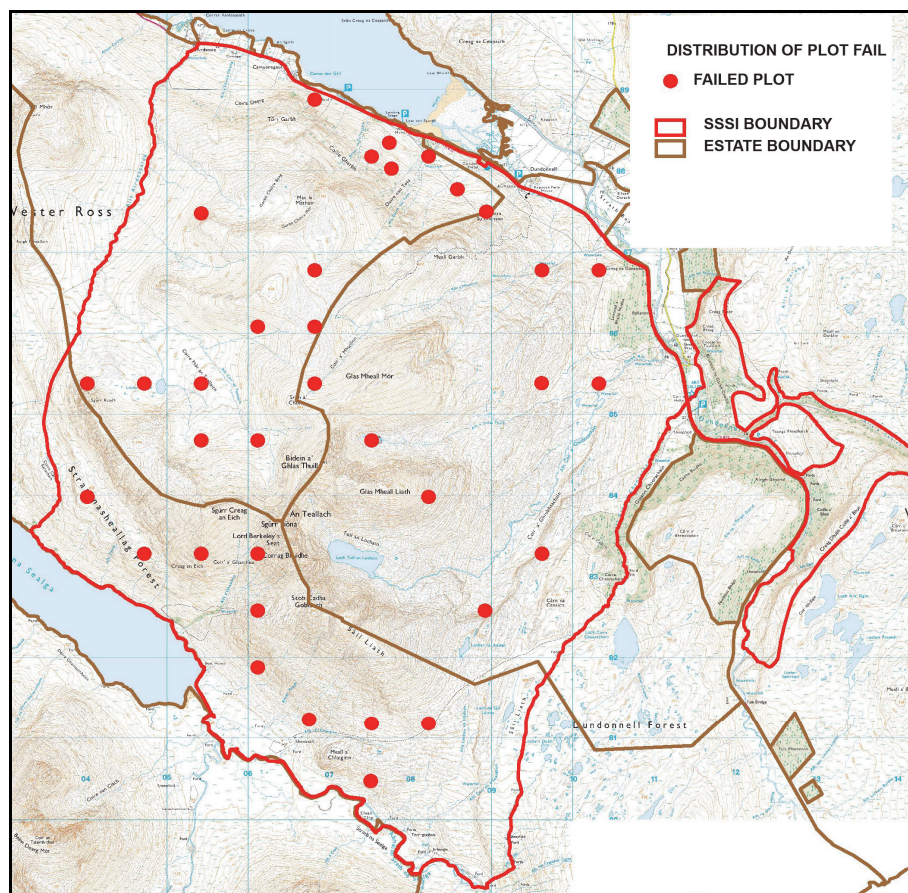
3. RESULTS

3.1 Upland assemblage

Table 1 and Appendix 1 summarise the results of the assessment of the four habitats as part of the upland assemblage feature. The component habitats of the upland assemblage were sampled at a total of 87 locations and their condition was assessed.

In total, of these samples, ca. 59% passed in favourable condition, while 41% failed.

Overall the minimum condition for the feature upland assemblage to meet favourable condition status overall is that 90% of it should meet the monitoring standards required. The quantitative results, together with the wide geographical incidence of failing plots (Map 2) confirms the general observation that the feature currently falls well below this threshold.



Map 2. Distribution of failed plots © Crown copyright [and database rights] 2018 OS 100017908

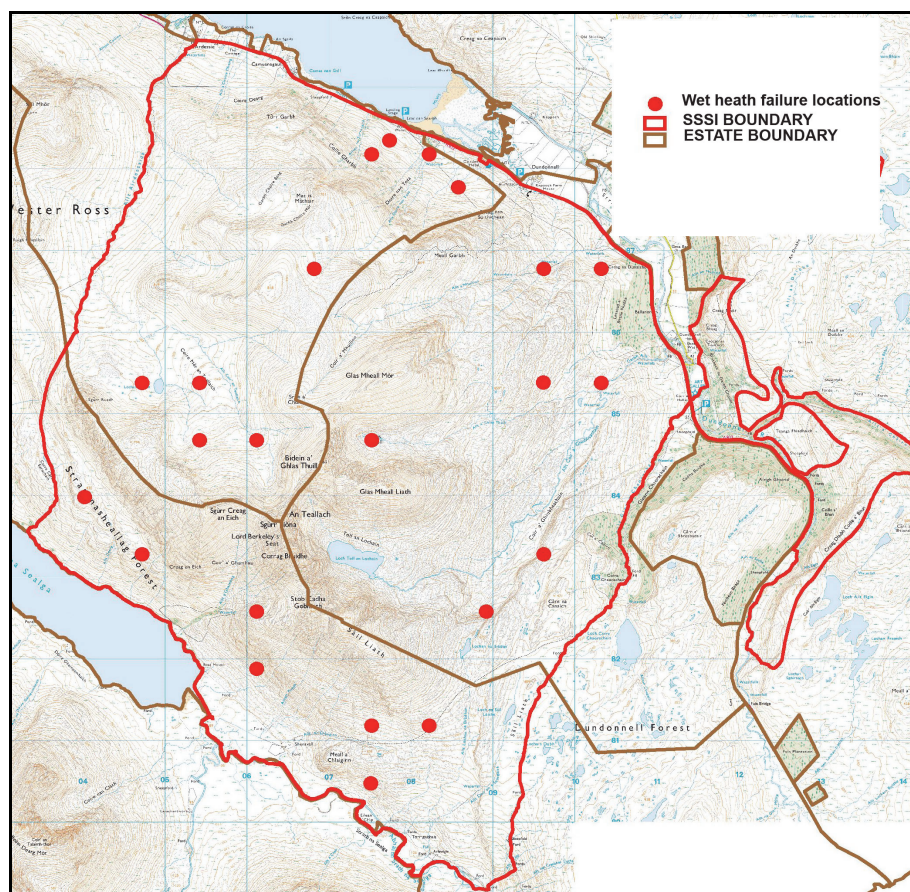
The upland assemblage feature is therefore considered overall to have ‘failed’.

A breakdown by component habitats shows that the failure rates for assessment plots for each component were as follows:

- wet heath: 50%
- dry heath: 58%
- alpine heath: 25%
- alpine summit communities: 11%

3.1.1 Wet heath

Wet heath is the most extensive and widespread of the component habitats (Map 1) and the distribution map of its failing plots (Map 3) shows that they occur widely through the SSSI. Many of the plot failures stemmed from insufficient cover of key indicator species, especially Ericaceous species, although trampling effects also remained high in several areas as did browsing in a significant number of plots. Other targets which failed in this habitat included excessive cover of bracken or soft rush. The plot data support the observers' judgement that less than 90% of the feature extent meets the required targets for favourable condition.



Map 3. Distribution of wet heath plot failures © Crown copyright [and database rights] 2018 OS 100017908

3.1.2 Dry heath

Dry heath plot failures are similarly widespread (Map 2) and are largely attributable to the presence of invasive bracken and also, in some areas towards the north-east edge of the site, to grazing and trampling where sheep numbers still remain relatively high. The plot failures support the judgement that less than 90% of the feature extent meets the required targets for favourable condition.

3.1.3 Alpine heath

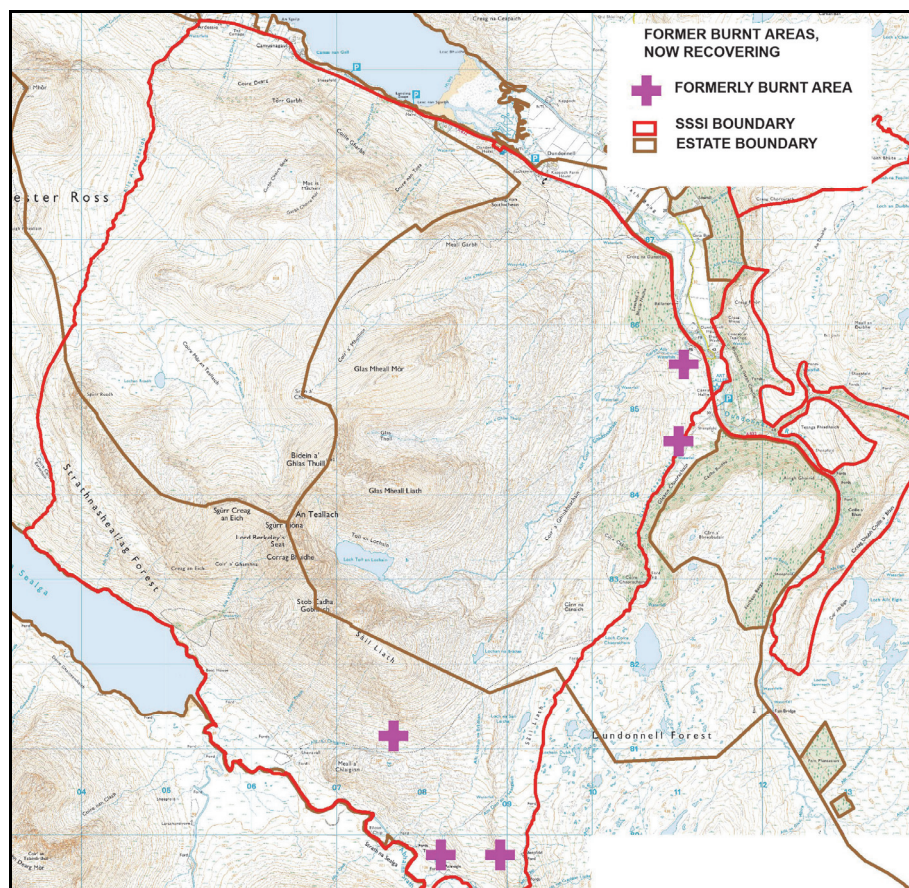
Alpine heath failures were largely attributable to trampling effects in samples concentrated near to areas still experiencing relatively high herbivore pressures from red deer, sheep or goats and, in a few plots, to excessive cover of 'undesirable' grasses and grazing of dwarf shrubs. The plot failures support the judgement that less than 90% of the feature extent meets the required targets for favourable condition.

3.1.4 Alpine summit communities

Alpine summit communities represented the most restricted of the component habitat types, being restricted to higher elevations. More than 10% of the extent of the habitat was in a condition that meant it would fail to meet the required targets, as reflected in the sample plots. Disturbed bare ground was the main reason for failures, although one or two areas also carried excessive amounts of undesirable grasses or lacked sufficient indicator species. This may in part be due to the fact that much of the habitat lies close to main access routes to and across the summit ridge for both hillwalkers and animals. The plot failure supports the judgement that less than 90% of the feature extent meets the required targets for favourable condition.

3.1.5 Discussion

The relative lack of Ericaceous species in many wet heath plots – one of the major reasons for feature failure - could be regarded as a ‘legacy’ impact from previously higher numbers of sheep and deer on the site and formerly high levels of burning which combined to suppress the plants. Although recent burning of vegetation was not noted during the survey the long-term effects of historically intensive burning were noted on the eastern and southern boundaries of the SSSI on wet and dry heath communities (Map 4, Target Notes 21, 27, 48; Photos: An T TN21, 27).



Map 4. Areas showing evidence of former historic muirburn or wildfire © Crown copyright [and database rights] 2018 OS 100017908

Areas affected mostly appeared to be recovering well, probably helped by the current generally low herbivore impacts in these parts of the site. In a few locations however, bracken encroachment was noticeable, possibly helped by the combined effects of such

burning together with previously higher herbivore impacts which have suppressed cover of Ericaceous species.

In addition, the trampling and browsing effects responsible for the failure of alpine heath and alpine summit community plots are localised and mostly confined to areas where sheep and goats were seen to be concentrated, especially close to paths.

Nevertheless, despite these caveats, the feature overall must be regarded as being in 'Unfavourable' condition.

Table 1. A summary of the results of the field survey showing the number of locations at which different habitats within the upland assemblage feature were assessed and the number of passes and failures for each habitat.

Habitat	Total plots	Number of locations at which habitat		Total number of targets failed
		passed on all targets	failed on at least one target	
Subalpine wet heath	46	23	23	6
Subalpine dry heath	12	5	7	4
Alpine heath	20	15	5	4
Alpine summit	9	8	1	2

4. GENERAL OBSERVATIONS ON MANAGEMENT

Sheep were present in the north-east of the site on the lower slopes above Loch Broom between Camusnagaul and Dundonnell, where at least 30 individuals were present. Smaller numbers were recorded on higher ground at around 400-450 m north-east Glas Mheall Mòr and to the north-east of Sron a Choire at ca. 800-850 m.

During the survey period, red deer were observed widely across the lower ground between ca. 100-600 m. Mostly small numbers of hinds and calves were sighted, the largest group comprising 10 animals.

Feral goats were to be found more locally around the mountainous heart of the SSSI in family groups ranging from 9-22 individuals. They were found between ca. 500 m and 700 m to the east of Toll an Lochain and Glas Mheall Liath and at 1020 m on the summit of Bidean a Ghlas Thuill.

4.1 Negative management activities

Deer grazing and trampling
Sheep grazing and trampling

4.2 Positive management activities

None

5. POSSIBLE PROBLEMS DUE TO TIMING OF ASSESSMENT

None

6. GENERIC PROBLEMS WITH ATTRIBUTES AND TARGETS

None

7. REFERENCES

Atherton, I., Bosanquet, S. & Lawley, M. 2010. Mosses & Liverworts of Britain & Ireland. British Bryological Society.

JNCC, 2009. Common Standards Monitoring Guidance for Upland Habitats, Version July 2009, ISSN 1743-8160.

O'Hanrahan, B. 2007. Condition survey of upland and peatland notified features on designated sites: An Teallach SSSI. Report to SNH.

Rodwell, J.S. 1991. British Plant Communities. Volume 2 Mires and heaths. Cambridge: Cambridge University Press.

Rodwell, J.S. 1992 British Plant Communities. Volume 3 Grasslands and montane communities. Cambridge: Cambridge University Press.

Stace, C.A. 1997. New Flora of the British Isles, 2nd edition. Cambridge University Press, Cambridge.

Wells, C. 2012. An assessment of herbivore impacts on notified upland features within the An Teallach site of special scientific interest. Report to SNH.

www.nature.scot

© Scottish Natural Heritage 2018
ISBN: 978-1-78391-512-5

Policy and Advice Directorate, Great Glen House,
Leachkin Road, Inverness IV3 8NW
T: 01463 725000

You can download a copy of this publication from the SNH website.



Scottish Natural Heritage
Dualchas Nàdair na h-Alba

All of nature for all of Scotland
Nàdar air fad airson Alba air fad