

Ben Nevis North Face Survey 2014-16, final botanical report

Dr Ian M Strachan, April 2017



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Summary

Over the summers of 2014-16 a remarkable and innovative survey took place, to explore the flora and geology of the dramatic North Face of Ben Nevis. Organised and funded through the Nevis Landscape Partnership (NLP), with key support from Scottish Natural Heritage (SNH), this involved a team of botanists, geologists and climbing guides working together to access the extreme environment of the North Face.

The botanical findings are presented in this report and summarised below. The geological findings contributed to a major reassessment of the structure and origins of Ben Nevis which has been published in the *Journal of Geology*. The full project report is available on the NLP website.

The North Face of Ben Nevis comprises a complex of cliffs, ridges, crags, gullies and scree, and includes the highest cliffs in Britain. Centred on Coire na Ciste, the survey area rises from the Allt a Mhuillin and Coire Leis to the plateau of Carn Dearg and Ben Nevis, with the highest point of the face just a few metres from the summit at 1345m. The survey covered nearly all the main areas, and a total of 558 records were made for 16 'target' plant species, defined as those which are Nationally Rare or Scarce. It is estimated that these included more than 300 populations; before the survey only about 50 populations were known, mostly on the more accessible margins.

Individual species accounts and maps showing locations are given in the report. Some of the most important finds were new sites for Tufted Saxifrage *Saxifraga cespitosa*, Highland Saxifrage *S. rivularis*, Wavy Meadow-grass *Poa flexuosa*, Curved Woodrush *Luzula arcuata* and Hare's-foot Sedge *Carex lachenalii*, as well as Alpine Meadow-grass *Poa alpina*, Alpine Speedwell *Veronica alpina* and Alpine Saxifrage *Saxifraga nivalis*, the last of these previously unknown on Ben Nevis. Two Lady's-mantles, *Alchemilla glomerulans* and *A. wichurae*, were refound after many years, and additional populations of Alpine Lady-fern *Athyrium distentifolium*, Russet Sedge *Carex saxatilis*, Starwort Mouse-ear *Cerastium cerastoides*, Arctic Mouse-ear *C. nigrescens* and Sibbaldia *Sibbaldia procumbens* were located. New altitudinal records for Great Britain have also been established for eight of these species.

New counts were made for known populations of Drooping Saxifrage *S. cernua* and Tufted Saxifrage *S. cespitosa*, and a large number of records were collected for various non-target species, including several altitudinal records. The survey has produced a valuable baseline for future monitoring, as well as contributing to Site Condition Monitoring for the Ben Nevis SSSI, and is considered to have been a resounding success, thanks to the efforts and commitment of all involved.

1. Introduction and fieldwork

This report covers the botanical survey carried out over the three years of the North Face Project (NFP), and incorporates the findings from 2016 together with those from 2014 and 2015 as reported in the interim reports. The full Nevis Landscape Partnership report, incorporating this botanical report, is available on the NLP website at <http://www.nevislandscape.co.uk/local/projects/index.php?projectID=14>.

Fieldwork was carried out around the second week of August each year, with one or more training days beforehand. The botanical team comprised Ian Strachan (2014-16), Gordon Rothero (2014-15), Dan Watson, NTS (2015-16) and Matt Harding (2016), with help throughout from Cathy Mayne (SNH). Alison Austin (JMT) and other team members also contributed botanical skills, and Jim McIntosh, Scottish Officer for the Botanical Society of Britain and Ireland (BSBI), joined us for a day in 2014.

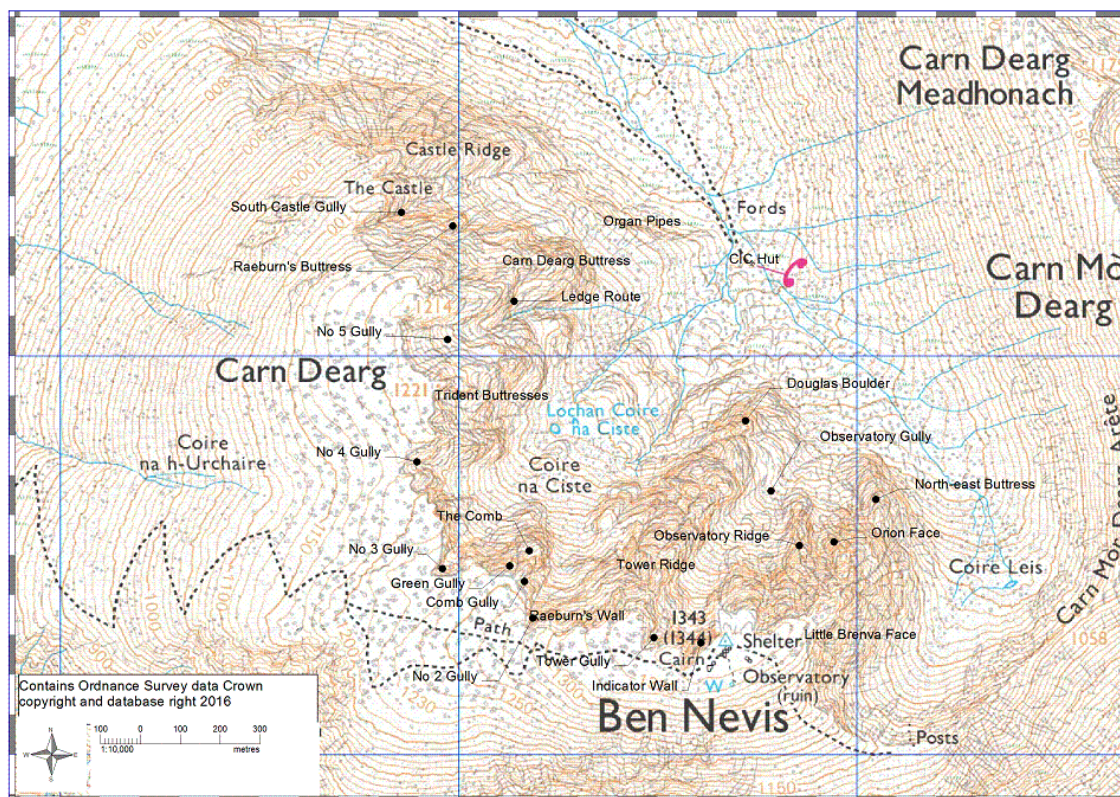
The core of the survey team was a group of eight professional climbing guides, led by Mike Pescod. A mixture of climbing, scrambling and abseiling was used, as appropriate to the areas being surveyed. In general, each botanist was accompanied by two climbers for safety. A key factor in the success of the project was the climbers' familiarity with the North Face, not only for safe access, but also for identifying potential survey areas, which often proved to be of high botanical interest. NLP staff organised and supported the project and in 2015-16 their Trainee Volunteer Rangers (TVRs) joined the team.

The focus of recording was on Nationally Rare (NR) and Nationally Scarce (NS) vascular plant species, forming part of the Ben Nevis SSSI vascular plant assemblage feature (Table 1). These are referred to as 'target species' in this report. Other notable/indicator species were also recorded when seen e.g. Alpine Saw-wort *Saussurea alpina* and Moss Champion *Silene acaulis*, but more general species lists were also compiled as a contribution to the BSBI Atlas 2020 project. Gordon Rothero also recorded bryophytes (mosses and liverworts) in 2014-15 but these have been reported on separately.

Most records were made on iPhones using the Midland Valley FieldMove app, which had been adapted by the geologists working with the team to record both geological and botanical information. The botanists also used handheld GPS units and notebooks. Counts and/or population/habitat extent were also recorded, with associated photographs taken and labelled. Climbing teams surveying without an expert botanist took photographs to confirm plant identifications. On the training days, the botanists carried out introductory or refresher identification work with the climbers and other team members. Laminated ID cards were provided by Cathy Mayne for all the target species.

Map 1 shows the survey area, which comprises the northern and eastern cliffs and slopes of Ben Nevis and Carn Dearg, including Castle Ridge in the north, Coire na Ciste in the centre and Coire Leis in the east. Most of the ridges, buttresses, crags and gullies have been named by climbers over the years and the main ones have been added to Map 1. Details of these and many other climbing routes can be found in the SMC Climbers' Guide for Ben Nevis and other guides.

Map 1. Locations of ridges, gullies, buttresses and other sites on the North Face named in this report.



2. Data analysis

The collated records were imported into GIS for checking against maps and air photos. For 'Fieldmove' records, latitude and longitude was converted to OS grid reference. Because of the nature of the terrain on the North Face, considerable difficulties were experienced using GPS units and iPhones, especially in gullies and on steep crags. Some records with obviously incorrect locations could be repositioned manually but others had to be rejected where there was uncertainty. Altitude measurements were also sometimes wrong for the same reasons and were corrected where possible from the OS map. Where available, species photographs were also checked for identification by IS.

The 'accepted' records were collated into a single spreadsheet and sorted by species and year. Separate layers were created in GIS for each target species and examined to determine the number of 'populations' as defined by SNH for Site Condition Monitoring (SCM) i.e. stands, or clusters of stands, within a 20m radius. Although somewhat arbitrary, this does give an element of consistency. These were compared with previous records from SCM and the BSBI database.

All plant records have been incorporated into the [BSBI Distribution Database](#), and in due course will be submitted by BSBI to the [NBN Atlas Scotland](#).

3. Summary of survey findings 2014-16

During the survey, the following 16 target species were recorded on the North Face:

Nationally Rare (6)

- *Carex lachenalii* Hare's-foot Sedge
- *Luzula arcuata* Curved Woodrush
- *Poa flexuosa* Wavy Meadow-grass
- *Saxifraga cernua* Drooping Saxifrage
- *Saxifraga cespitosa* Tufted Saxifrage
- *Saxifraga rivularis* Highland Saxifrage

Nationally Scarce (10)

- *Athyrium distentifolium* Alpine Lady-fern
- *Carex saxatilis* Russet Sedge
- *Cerastium cerastoides* Starwort Mouse-ear
- *Cerastium nigrescens* Arctic Mouse-ear
- *Poa alpina* Alpine Meadow-grass
- *Saxifraga nivalis* Alpine Saxifrage
- *Sibbaldia procumbens* Sibbaldia
- *Veronica alpina* Alpine Speedwell
- *Alchemilla glomerulans* a Lady's-mantle
- *Alchemilla wichurae* a Lady's-mantle

Map 2 shows the distribution of all records for these 16 target species made in each of the three survey years. As expected on Ben Nevis, weather conditions were 'mixed' in all three years with frequent mist, rain and wind, and this influenced where survey was carried out to some extent. Late snow-lie was also a limiting factor in the first two years but there was much less in 2016 enabling us to access areas such as Observatory Gully, and over the whole period excellent coverage of the North Face was achieved.

A remarkable total of 558 records were made for target species. These are listed, broken down by year, in Table 1. Section 4 gives individual species accounts and distribution maps, highlighting the most important findings. Many other records were made for various other notable species as well as general recording which will contribute to the BSBI Atlas 2020 project.

Map 2. Locations of all records for target species made during the project 2014-16, by year. Key: blue 2014, green 2015, red 2016.

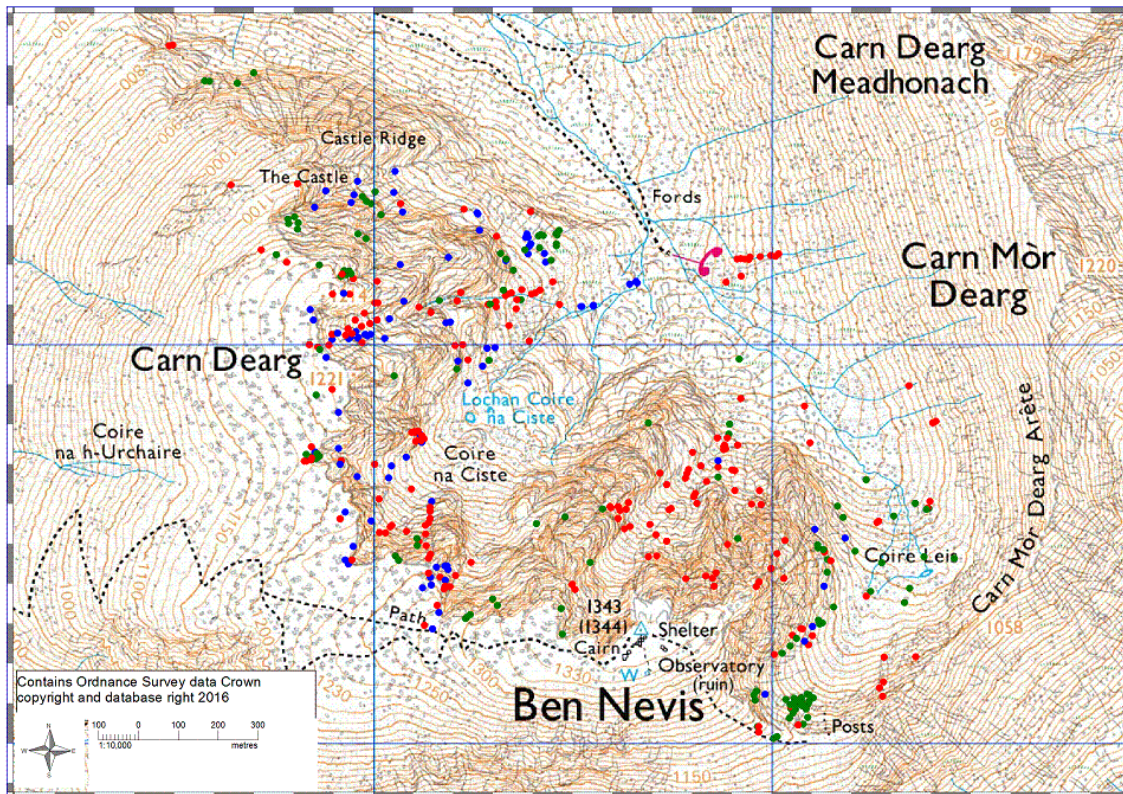


Table 1. Nationally Rare (NR) and Nationally Scarce (NS) vascular plant species recorded from Ben Nevis North Face, 2014-16, with number of records for each survey year.

Common name	Species name	Status	2014	2015	2016	Total
(a Lady's-mantle)	<i>Alchemilla glomerulans</i>	NS	0	0	5	5
(a Lady's-mantle)	<i>Alchemilla wichurae</i>	NS	0	0	2	2
Alpine Lady-fern	<i>Athyrium distentifolium</i>	NS	10	20	27	57
Hare's-foot Sedge	<i>Carex lachenalii</i>	NR	1	1	4	6
Russet Sedge	<i>Carex saxatilis</i>	NS	19	20	20	59
Starwort Mouse-ear	<i>Cerastium cerastoides</i>	NS	22	30	49	101
Arctic Mouse-ear	<i>Cerastium nigrescens</i>	NS	13	15	34	62
Curved Woodrush	<i>Luzula arcuata</i>	NR	0	9	14	23
Alpine Meadow-grass	<i>Poa alpina</i>	NS	15	7	20	42
Wavy Meadow-grass	<i>Poa flexuosa</i>	NR	1	1	17	19
Drooping Saxifrage	<i>Saxifraga cernua</i>	NR	0	3	1	4
Tufted Saxifrage	<i>Saxifraga cespitosa</i>	NR	6	1	6	13
Alpine Saxifrage	<i>Saxifraga nivalis</i>	NS	2	0	3	5
Highland Saxifrage	<i>Saxifraga rivularis</i>	NR	9	11	18	38
Sibbaldia	<i>Sibbaldia procumbens</i>	NS	30	21	28	79
Alpine Speedwell	<i>Veronica alpina</i>	NS	10	9	24	43
	total		138	148	272	558

Table 2 lists the estimated number of ‘populations’ (as defined for SCM) recorded for each target species over the three years, broken down by 1 km grid square (see Map 3). A very large number of populations of target species were mapped (>300), far exceeding expectations. The final column of Table 2 lists the number of sites known prior to 2014 for each species within the project area (mostly based on SCM in 2002 and 2013) for comparison. Several of these figures are underestimates as some sites may include more than one ‘population’. Nevertheless, it is clear that for most species the project has greatly increased the number of known locations.

The altitudinal range of our native flora is a subject of considerable interest to botanists and ecologists, given additional importance with climate change. The altitudinal range of each target species from the North Face Survey has been estimated from the records and using GIS, as listed in Table 3. Comparison with the BSBI spreadsheet of altitudinal ranges indicates that we have established new upper altitudinal limits for Britain & Ireland for eight of the target species, including Tufted and Highland Saxifrages, Alpine and Wavy Meadow-grasses, Arctic and Starwort Mouse-ears, Alpine Lady-fern and the lady’s-mantle *Alchemilla glomerulans*. New upper limits have also been found for several other species, such as Mountain Sorrel, Autumn Hawkbit and Stone Bramble.

Table 2. Number of ‘populations’ (sensu SCM) recorded for each target species in 2014-16, broken down by 1 km grid square (see Map 3), with number of sites known prior to 2014 within the project area for comparison. In the final column, + indicates a minimum value, as some sites probably include more than one ‘population’. Square brackets indicate pre-1980 records only.

Species	1 km grid square (NN)					total	pre-2014
	1571	1572	1671	1672	1771		
<i>Alchemilla glomerulans</i>		2	1	1	1	5	[1]
<i>Alchemilla wichurae</i>			1	1		2	[1]
<i>Athyrium distentifolium</i>	2	6	19	3	11	41	5+
<i>Carex lachenalii</i>			2			2	1
<i>Carex saxatilis</i>		1	1	12*	10	24	7+
<i>Cerastium cerastoides</i>	7	10	24	6	7	54	4+
<i>Cerastium nigrescens</i>	3	6	14	2	9	34	4+
<i>Luzula arcuata</i>			6		4	10	[1]
<i>Poa alpina</i>	3	1	14	3	1	22	3+
<i>Poa flexuosa</i>	2		3	4		9	1
<i>Saxifraga cernua</i>	1					1	1
<i>Saxifraga cespitosa</i>	1		4**			5	1
<i>Saxifraga nivalis</i>	1		2			3	0
<i>Saxifraga rivularis</i>	5	4	12	1		21	4
<i>Sibbaldia procumbens</i>	4	11	20	11	11	57	14+
<i>Veronica alpina</i>	3	3	10	5	2	23	2+
total	32	44	133	49	56	313	

*One population extends into NN1772

** plants in Great Chimney area of Tower Ridge have been classed as 2 ‘populations’

Map 3. Ben Nevis North Face survey area: OS 1 km grid squares.

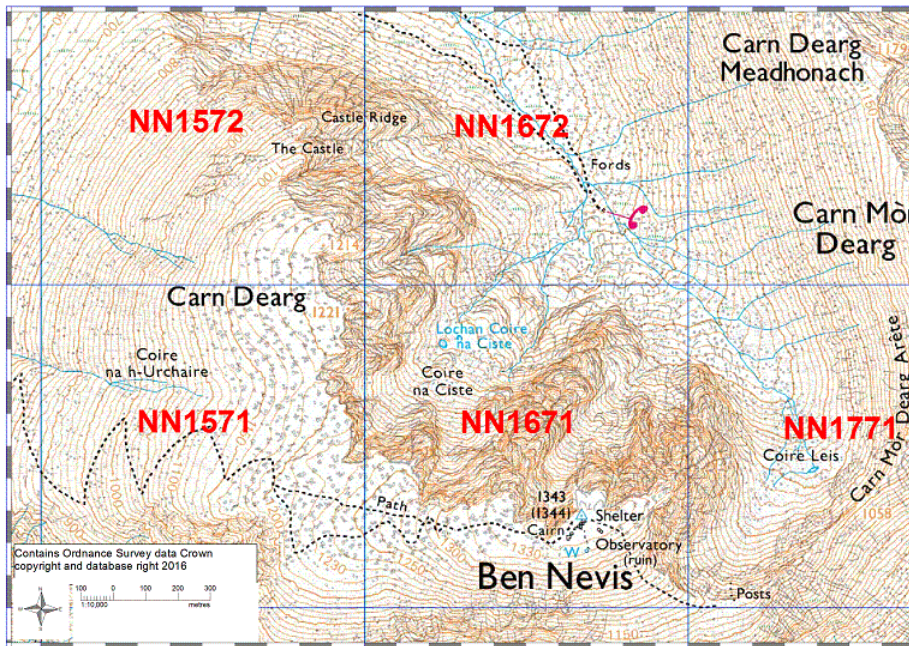


Table 3. Altitudinal range for each target species, as recorded in 2014-16. An asterisk indicates a new upper limit for Great Britain.

Common name	Species name	minimum altitude (m)	maximum altitude (m)
(a Lady's-mantle)	<i>Alchemilla glomerulans</i>	750	1130*
(a Lady's-mantle)	<i>Alchemilla wichurae</i>	760	970
Alpine Lady-fern	<i>Athyrium distentifolium</i>	730	1230*
Hare's-foot Sedge	<i>Carex lachenalii</i>	980	1130
Russet Sedge	<i>Carex saxatilis</i>	720	1110
Starwort Mouse-ear	<i>Cerastium cerastoides</i>	750	1275*
Arctic Mouse-ear	<i>Cerastium nigrescens</i>	810	1270*
Curved Woodrush	<i>Luzula arcuata</i>	860	1240
Alpine Meadow-grass	<i>Poa alpina</i>	790	1275*
Wavy Meadow-grass	<i>Poa flexuosa</i>	800	1214*
Drooping Saxifrage	<i>Saxifraga cernua</i>		1180
Tufted Saxifrage	<i>Saxifraga cespitosa</i>	1024	1250*
Alpine Saxifrage	<i>Saxifraga nivalis</i>	1080	1190
Highland Saxifrage	<i>Saxifraga rivularis</i>	920	1256*
Sibbaldia	<i>Sibbaldia procumbens</i>	700	1310
Alpine Speedwell	<i>Veronica alpina</i>	843	1214

4. Individual species accounts

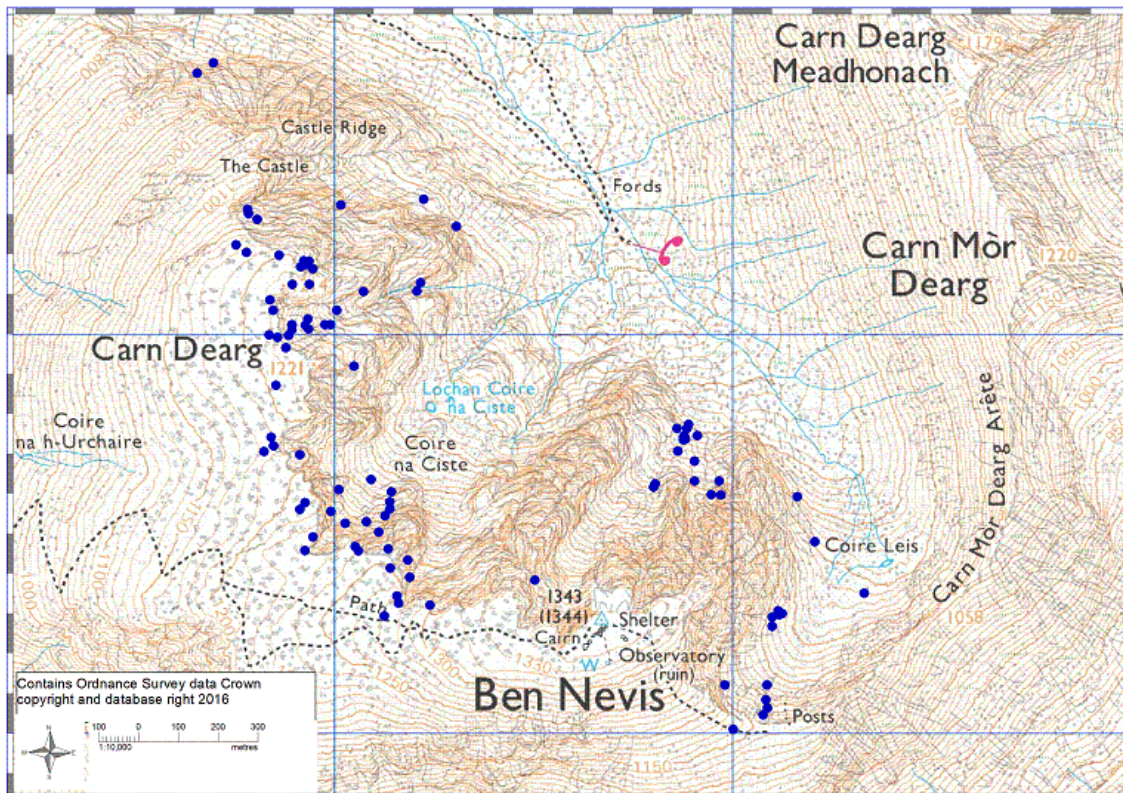
a. Dicots ('typical' flowering plants)

Starwort Mouse-ear *Cerastium cerastoides* (NS) (Map 4)

A straggling, mat-forming plant with white flowers that grows on wet acidic scree and rocks, often in areas of late snow-lie. It is usually found above 750 m. Previously known from the tops of No 2, No 4 and South Castle Gullies and from the base of Observatory Gully, during the project it was recorded much more widely across the North Face. Notable populations were found in gullies such as No 5, Observatory and Green Gully as well as many others. The main concentrations of sites were on Carn Dearg, Coire na Ciste, Observatory Gully and Coire Leis, but it was also recorded on the north side of Castle Ridge and occasionally on the plateau itself.

The altitudinal range was from 750m to 1275 m, the latter near the top of No 2 Gully representing a new altitudinal limit for this species in Great Britain.

Map 4. Records for Starwort Mouse-ear (Cerastium cerastoides) 2014-16 (blue dots).

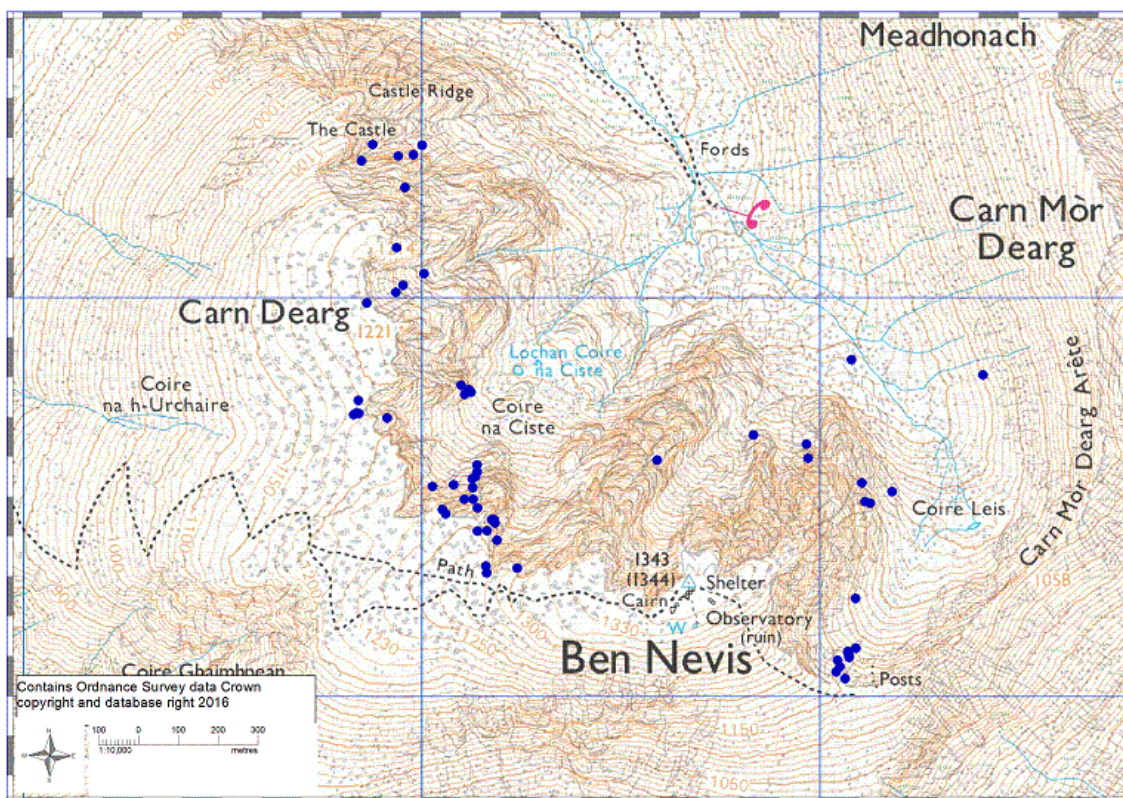


Arctic Mouse-ear *Cerastium nigrescens* (NS) (Map 5)

This is a patch-forming perennial with large white flowers (formerly known as *C. arcticum*). It grows on rock ledges and crevices, and in scree. It was previously known from the tops of gullies No 2, 3 and 4 and Coire na Ciste. During the NFP it was recorded much more widely, including South Castle Gully and the north face of Carn Dearg; No 5 Gully, Trident Buttress, Green Gully and the Comb (Hesperides Ledge); Zero Gully and Coire Leis/Little Brenva Face. Several large populations were found.

Altitude ranged from 810 m to 1270 m at the top of No 2 Gully, a new altitudinal record for Great Britain. Arctic Mouse-ear occurs quite widely across the SSSI, which is an important site nationally for this species.

Map 5. Records for Arctic Mouse-ear (*Cerastium nigrescens*) 2014-16 (blue dots).



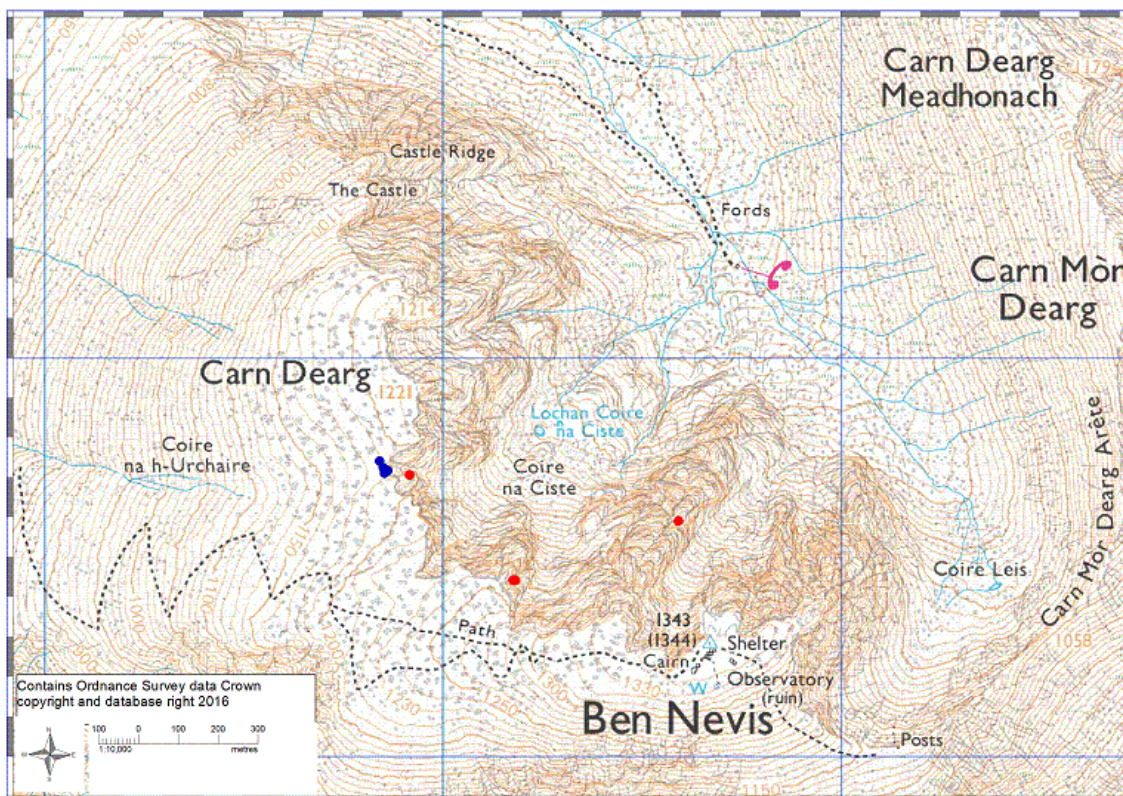
Drooping Saxifrage *Saxifraga cernua* (NR) (Map 6)

This is the rarest and perhaps the least conspicuous of the Ben's arctic-alpines. It grows on tiny crevices and ledges on basic rock. It has distinctive red bulbils on the stems, by which it reproduces. An important population (the second largest of three in the SSSI) occurs on a crag at the top of No 4 Gully where it has been monitored for many years, although it is difficult to count all the plants unaided. A count could not be made in 2013 for SCM due to high winds. Counts were carried out in 2014 and 2016 with rope support; the 2016 survey gave a population of 83 plants. This exceeded the 2002 count of 73 plants and contributed to the 'favourable' assessment for the SSSI plant assemblage made in 2016 by SNH. Despite searching, no other sites have yet been found on the North Face.

Alpine Saxifrage *Saxifraga nivalis* (NS) (Map 6)

The individual rosettes of this scarce plant grow on small ledges and cracks in rock faces. Previously unknown from Ben Nevis itself, in 2014 two populations were discovered on the North Face including 11 plants in Comb Gully/Buttress and two plants on a ledge in No 4 Gully. In 2016 a third plant was found at the No 4 Gully site and a new population of six plants was found around the base of Great Chimney (Observatory Gully/Tower Ridge). This species is known from only seven other sites in the SSSI.

Map 6. Records for Drooping Saxifrage (*Saxifraga cernua*) (blue dots) and Alpine Saxifrage (*Saxifraga nivalis*) (red dots), 2014-16.



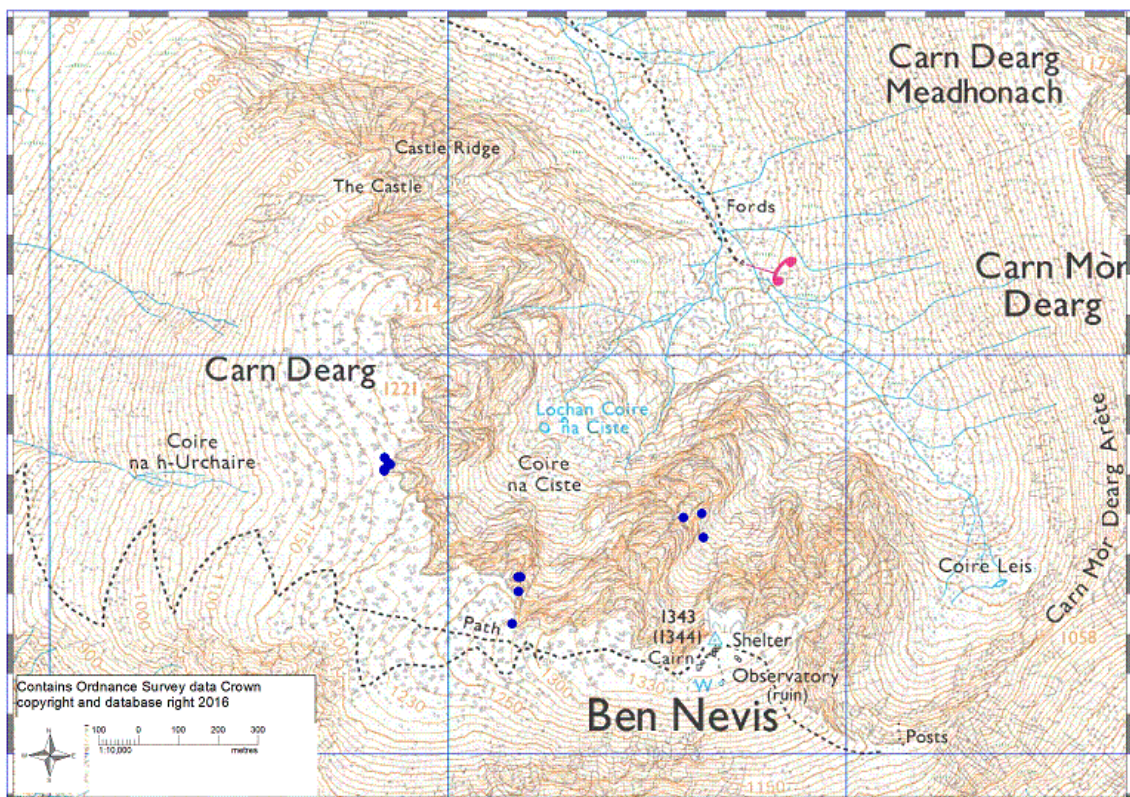
Tufted Saxifrage *Saxifraga cespitosa* (NR) (Map 7)

Like Drooping Saxifrage, this rosette plant grows on crevices and ledges on basic rocks, though can expand to form large 'tufts'. It seems to be declining nationally. A moderate population was already known from the top of No 4 Gully, with only one other small population elsewhere in the SSSI. Like the nearby Drooping Saxifrage population, a count could not be made in 2013 for SCM, due to high winds. Counts were carried out in 2014 and 2016 with rope support; the 2016 survey gave a count of 79 plants, more than double the 2002 count of 39 plants.

In addition, several new locations were found for this species during the project. In 2014 eleven plants were found on Hesperides Ledge and nearby on the Comb, also a single plant in No 2 Gully; and in 2016 nine plants were found in and below the Great Chimney on Tower Ridge. This is a major increase in the overall population size and, importantly, the number of locations (from two to five) within the SSSI (and nationally) for this rare species, and as with *S. cernua* contributed to the 'favourable' assessment for the SSSI plant assemblage made in 2016 by SNH.

Altitude ranged from 1024 m beside Tower Ridge to 1250 m in No 2 Gully, a new altitudinal record for GB.

Map 7. Records for Tufted Saxifrage (*Saxifraga cespitosa*) 2014-16 (blue dots).

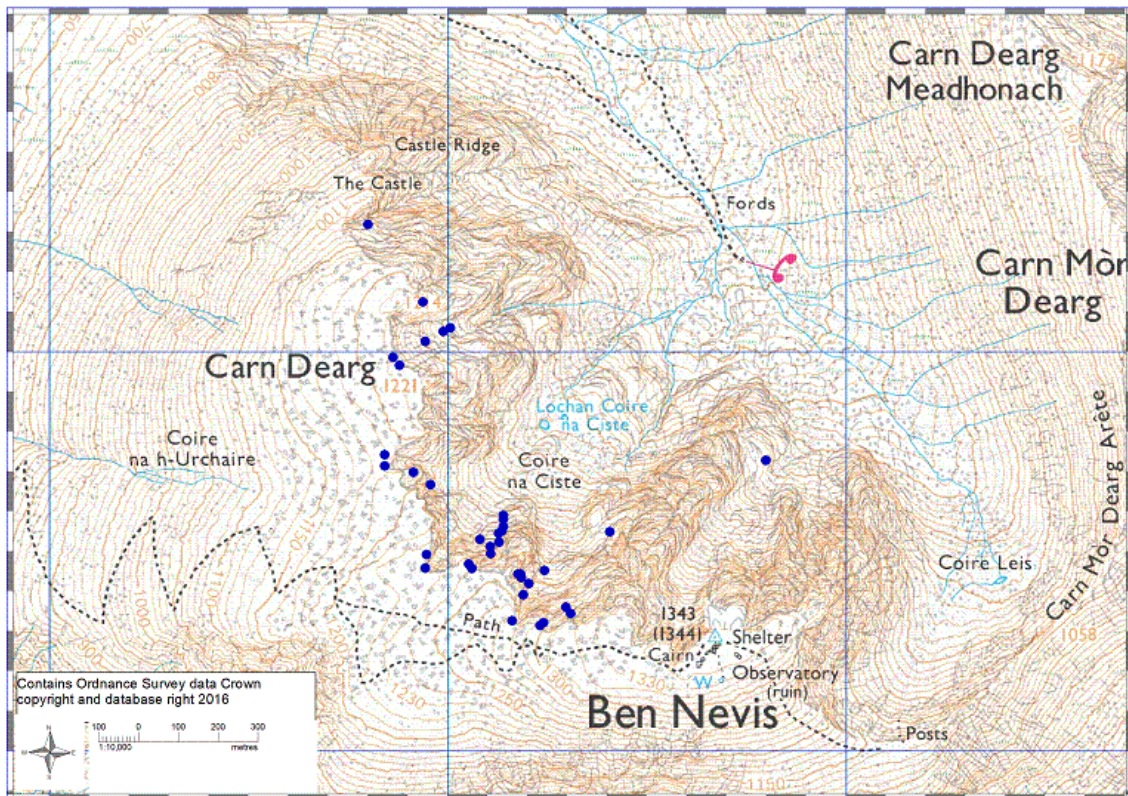


Highland Saxifrage *Saxifraga rivularis* (NR) (Map 8)

Highland (or Brook) Saxifrage is a small, often inconspicuous plant with white flowers which grows on wet ledges, but especially in wet flushes on eroding screes with abundant mosses, especially *Pohlia wahlenbergii*. It was already known from the tops of Nos 2, 3 and 4 Gullies, but proper survey had not been possible because the substrate is so loose and dangerous. Using careful abseil techniques we were able to conduct more thorough survey in these gullies. Many new locations were also found on the North Face over the survey period, with some substantial populations recorded, for example in No 5 Gully, in Green Gully, on Comb Gully Buttress and the Upper Cascades on Raeburn's Wall.

Altitude ranged from 910m in Observatory Gully to 1256m on Raeburn's Wall, east of No 2 Gully, a new altitudinal record for GB.

Map 8. Records for Highland Saxifrage (*Saxifraga rivularis*) 2014-16 (blue dots).

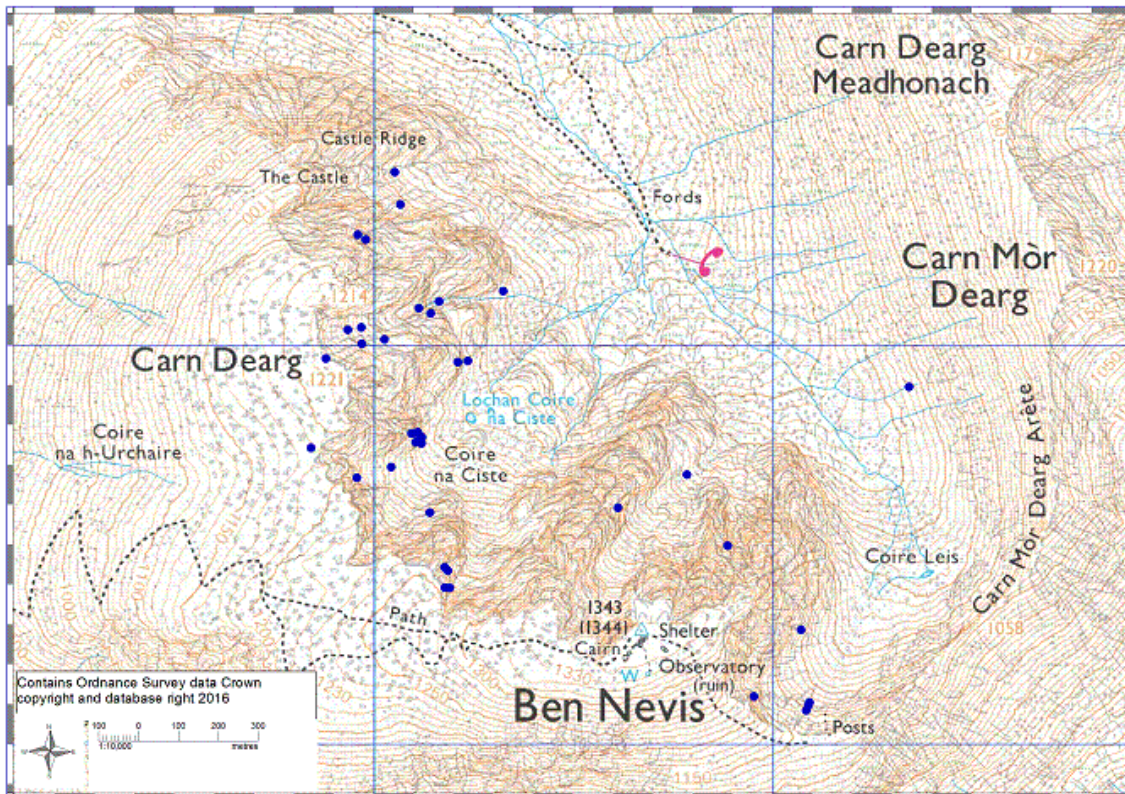


Alpine Speedwell *Veronica alpina* (NS) (Map 9)

The dark blue flowers of this mountain plant usually grow on wet rock ledges, stony flushes and scree. Prior to the NFP it was recorded from Coire na Ciste and the top of No 4 Gully. Over the project period 2014-16 many new sites were discovered, with large populations found in No 2, No 5, Observatory and South Castle Gullies, on the Little Brenva Face, in upper Coire Leis, and the largest (>400 plants) on the Comb (Hesperides Ledge). Other new sites include Green Gully, Carn Dearg North Wall and Ledge Route.

Elsewhere in the SSSI Alpine speedwell grows on Aonach Beag, Aonach Mor and a few other locations.

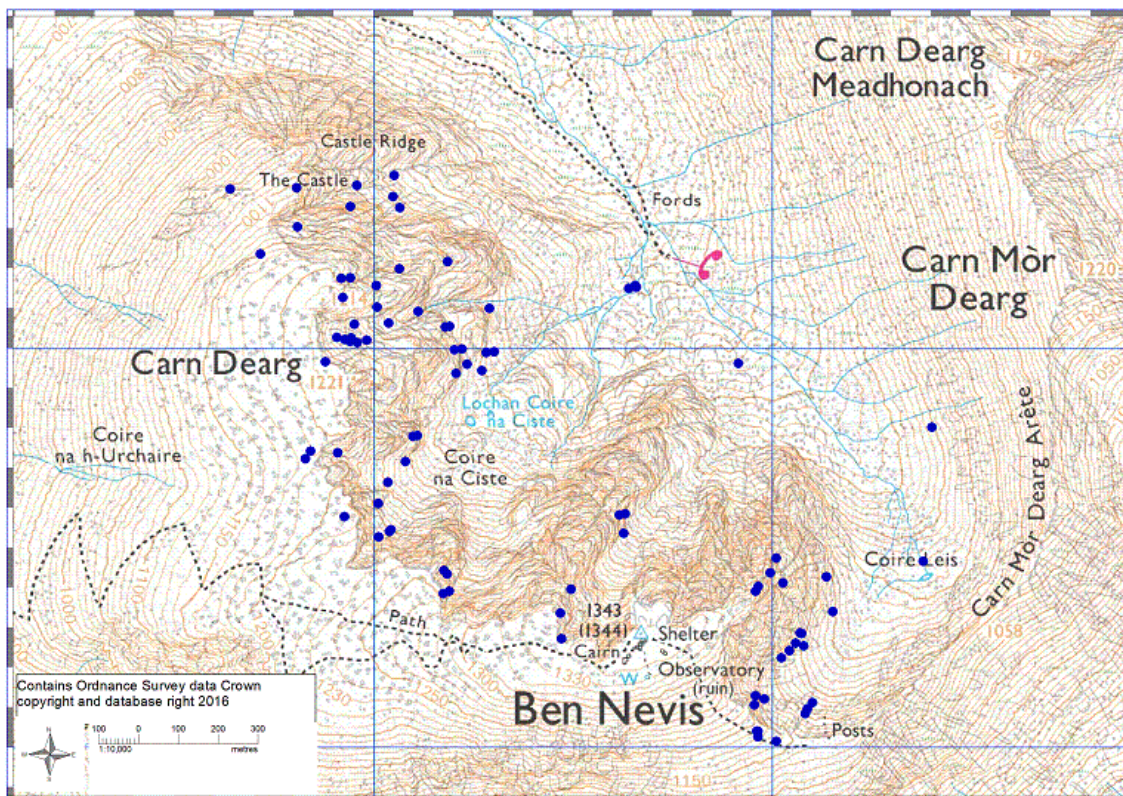
Map 9. Records for Alpine Speedwell (*Veronica alpina*) 2014-16 (blue dots).



Sibbaldia *Sibbaldia procumbens* (NS) (Map 10)

Sibbaldia is a low-growing plant with distinctive trefoil leaves that grows on fine, base-rich scree including areas of late snow-lie, also on mountain ledges and ridges. It is the most widespread of the target species on Ben Nevis. Previously recorded from the tops of several gullies and the base of Carn Dearg buttresses, many new sites have been found on the North Face during the project. It is especially abundant on Carn Dearg and in Coire Leis/Little Brenva Face, but was also found widely elsewhere in gullies, on ledges and on scree slopes. Altitude ranges from 700m to 1310m near the top of Tower Gully (GB altitudinal limit).

Map 10. Records for *Sibbaldia* (*Sibbaldia procumbens*) 2014-16 (blue dots).



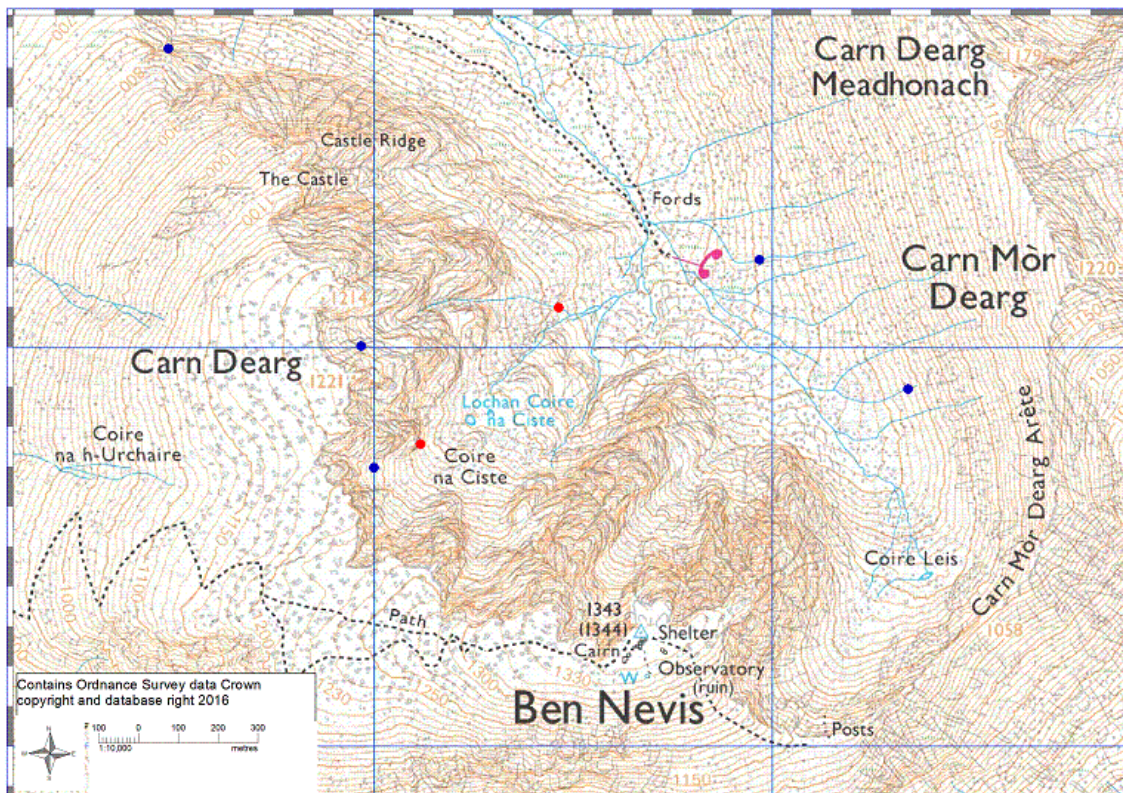
Two Lady's-mantles: *Alchemilla glomerulans* (NS) and *A. wichurae* (NS) (Map 11)

Various 'critical' species of Lady's-mantle (*Alchemilla*) occur in Britain, including two Nationally Scarce mountain species that have been recorded previously on Ben Nevis (without detailed grid references). These are *A. wichurae*, recorded in 1957 from 'Ben Nevis: slopes near hut' (presumably the CIC Hut); and *A. glomerulans* recorded from 'Coire Leis, Ben Nevis' in 1947 and 'Ben Nevis: Allt a Mhuillin' in 1953. There were no subsequent records for either species. Both are perennial herbs of grassland and rock ledges. In 2016 both species were found on the North Face, thanks to the attentions of Matt Harding and Dan Watson.

Alchemilla wichurae was discovered above the CIC Hut near the stream from No 5 Gully and on ledges in Coire na Ciste at the base of South Trident Buttress.

Alchemilla glomerulans was found on the north-west face of the Castle at the base of Red Gully, in No 5 Gully, and in Coire na Ciste below No 4 Gully. It was also found on streams to the east of the CIC Hut and on the east side of Coire Leis. Both species could well be more widespread.

*Map 11. Records for the Ladies'-mantles *Alchemilla glomerulans* (blue dots) and *Alchemilla wichurae* (red dots), 2014-16.*



4b. Monocots (Grasses, Sedges and Rushes) and Ferns

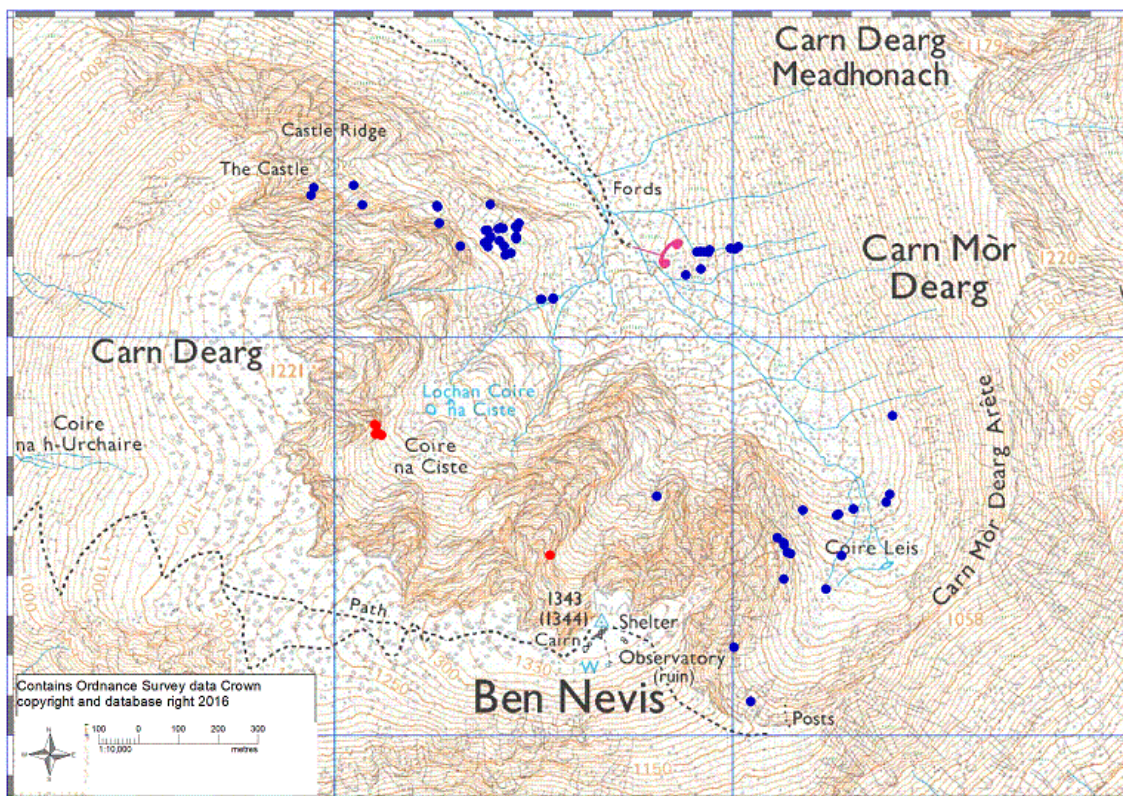
Hare's-foot Sedge *Carex lachenalii* (NR) (Map 12)

This rare, tufted sedge grows on wet mountain ledges. A small population grows near the base of Trident Buttress in Coire na Ciste (42 plants with 12 flowering spikes counted in 2013). In 2016 the original site in Coire na Ciste was resurveyed and 61 plants were counted, including two possible new sub-populations nearby (45% increase on 2013 count). In 2015 a new, much larger population was discovered high up on the east side of Tower Ridge (1130m altitude) with more than 100 flowering plants. Elsewhere in the SSSI there are only two sites known, each with very few plants. These finds represent a major increase in the known population for the SSSI.

Russet Sedge *Carex saxatilis* (NS) (Map 12)

This patch-forming sedge grows in high-altitude areas flushed with base-rich water in corries and on rock slabs and ledges. It was already known from sites below Carn Dearg buttresses and in Coire Leis, but many new sites were recorded in 2014-16. The main stands occur to the east and north of Carn Dearg, in Coire Leis and on the Little Brenva Face/Northeast Buttress. One site was found in Observatory Gully but this sedge was not found in Coire na Ciste. Stands were also recorded east of the CIC Hut.

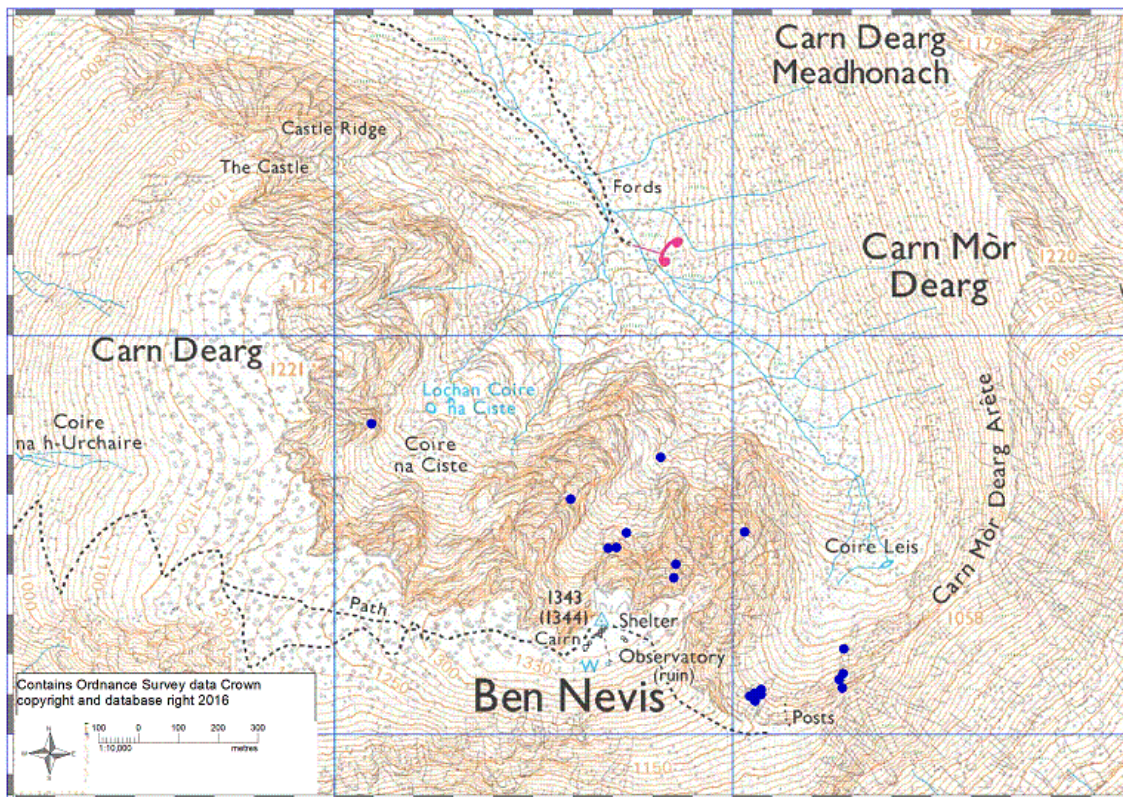
Map 12. Records for Russet Sedge (*Carex saxatilis*) (blue dots) and Hare's-foot Sedge (*Carex lachenalii*) (red dots), 2014-16.



Curved Woodrush *Luzula arcuata* (NR) (Map 13)

This delicate tufted plant grows on stony plateaus and screes. It is abundant on the summit of Aonach Beag with small patches nearby but, apart from an old record from the north-east of Coire Leis (NN174714, 1972), was not previously known elsewhere in the SSSI. In 2015 a new large, scattered population was found in south-west Coire Leis, the first definite record for Ben Nevis. In 2016 additional sites were discovered on Observatory Ridge and Tower Ridge, in Observatory Gully, and below the Arete at the head of Coire Leis. A single locality on Carn Dearg was also found.

Map 13. Records for Curved Woodrush (*Luzula arcuata*) 2014-16 (blue dots).

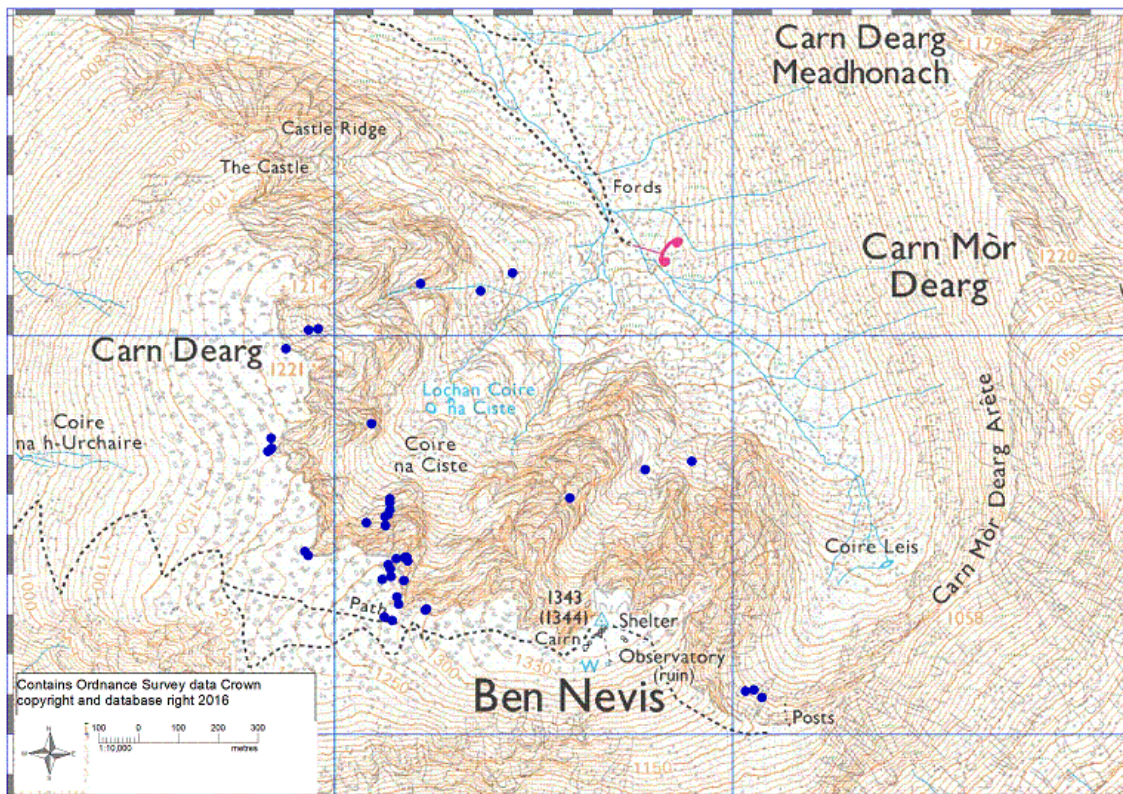


Alpine Meadow-grass *Poa alpina* (NS) (Map 14)

Alpine Meadow-grass grows in base-rich rock crevices, ledges, screes and flushes. It nearly always has distinctive proliferating (pseudoviviparous) flowering spikes. It is fairly widespread around the eastern peaks of the SSSI and was known from the tops of several gullies on the North Face, although some counts were known to be incomplete because of access difficulties. In 2014 a very large population (thousands of plants) was found in the upper part of No 5 Gully - possibly the largest population in the UK (GPR). Large stands have also been found in Coire na Ciste, notably on the Comb, with smaller stands at several other locations, such as Raeburn's Easy Route and Upper Coire Leis. Proper counts have also been made in the other main gullies.

The altitudinal range was from 790 m to 1275 m, the latter near the top of No 2 Gully representing a new altitudinal limit for this species in Great Britain.

Map 14. Records for Alpine Meadow-grass (*Poa alpina*) 2014-16 (blue dots).



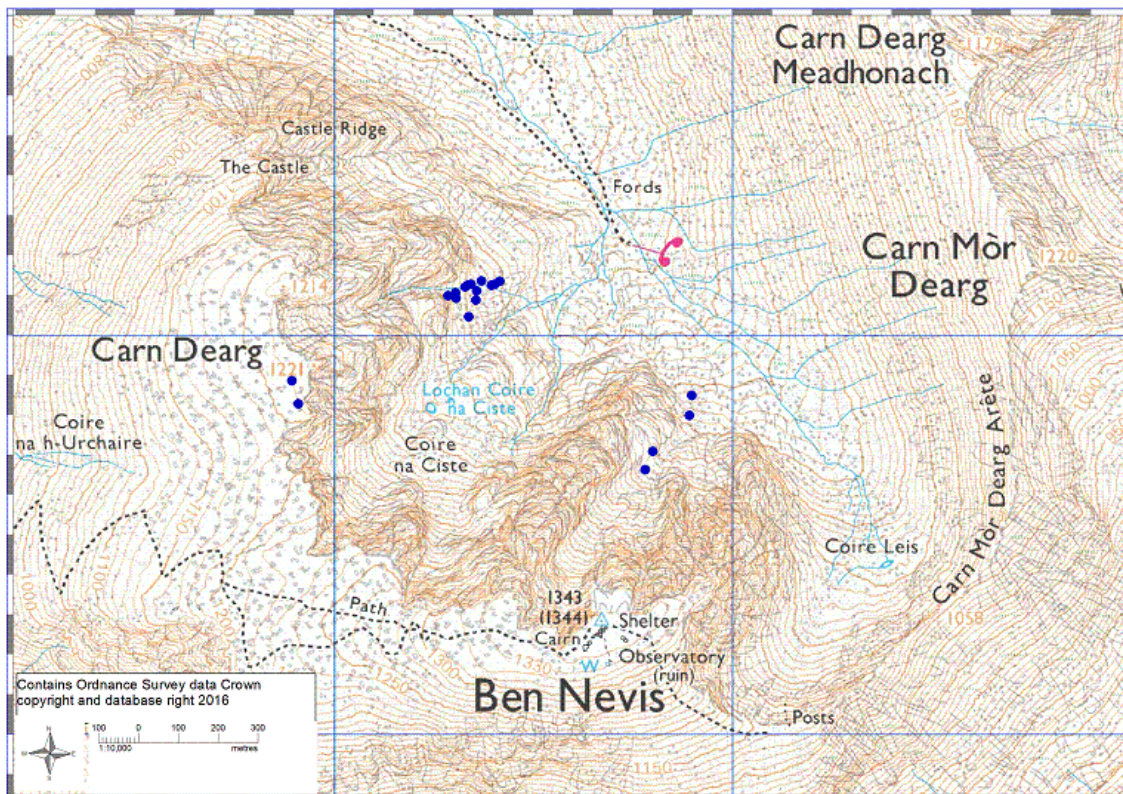
Wavy Meadow-grass *Poa flexuosa* (NR) (Map 15)

Wavy Meadow-grass is a delicate, tufted plant that grows mainly on fine acidic scree in coires and on mountain plateaus. Observatory Gully on Ben Nevis has long been known as the largest of its few populations in Britain. In 2014 a new population of 95 plants was spotted by one of the project climbers on the Carn Dearg plateau, at the top of a gully on Trident Buttress, with two plants found in 2016 further north. This represents a new altitudinal record for Britain (1214 m).

In 2016 a huge scattered population (more than 500 plants/clumps over an area of c. 150 x 100 m), thought to be the largest in Britain, was found on the screes below the Carn Dearg Buttress (at 800-900 m altitude). The Observatory Gully population was also counted in 2016 and had over 300 plants, far more than previous counts, with the population extending for over 200 m up the gully from 808 m to 895m altitude (mapped dots only show limits of this population).

There is only one other record for the SSSI, on Aonach Beag (1993).

Map 15. Records for Wavy Meadow-grass (*Poa flexuosa*) 2014-16 (blue dots).



Alpine Lady-fern *Athyrium distentifolium* (NS) (Map 16)

Alpine Lady-fern grows on acidic rock ledges, gullies, block screes and in shallow hollows where snow lies late. It is plentiful across the SSSI with several scattered populations already known in Coire na Ciste. During the project, many new populations were discovered on the North Face. It is particularly abundant in Observatory Gully and Coire Leis, but also on or below the north face of Carn Dearg/South Castle Gully, Zero Gully, the north face of Castle Ridge, Raeburn's Buttress, Tower Ridge, Orion Face and elsewhere.

Altitude ranged from 730 m on Castle Ridge to 1230 m on Tower Ridge, a new altitude limit for GB.

Map 16. Records for Alpine Lady-fern (*Athyrium distentifolium*) 2014-16 (blue dots).

