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One Scottish snow patch survives until winter 2018/19

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Scottish snow patches 2018

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Here we present our twenty third annual report on the survival of Scottish snow patches, following the account for 2017 in Cameron *et al.* (2018).

Methods

Observations from interested walkers and climbers once again aided the authors greatly in compiling this report, and awareness of snow patches on Britain's hills continues to grow. Contributions from longstanding observers, as usual, were invaluable. Measurements of patches give greatest length, breadth and depth in that order.

Weather in winter through to autumn

Winter temperatures across Scotland stood broadly in line with the 1981-2010 mean¹, but precipitation levels across much of the Central and East Highlands were noticeably less, especially over the Cairngorms, where only about 70% of the usual falls occurred. By contrast, the West Highlands had near-normal levels of precipitation, and the Glen Coe ski area had its best ever year in terms of skier days (A. Meldrum). Winter was unremarkable, save for an extraordinary easterly snow event (dubbed 'The Beast from the East' by the press) in early March, which the Met Office categorised as 'red'.

The dry theme continued throughout spring and into summer, with the latter being accompanied by unusually warm temperatures. Cairn Gorm summit weather station (1245 m) recorded in excess of 20 deg C on numerous days in June, with nearby Aviemore surpassing 30 deg C. August and September were both in line with the 1981-2010 mean for temperature and precipitation. Fresh snow was noted on eight days in June to September: two in June and five in September.

Patches in late spring, summer and autumn 2018

April–July

Southern Uplands and Southern Highlands

The easterly snow event in early March deposited huge accumulations on many hills, including the Campsie Fells just north of Glasgow. The last piece to disappear on that range was situated at 425 metres a.s.l on Stronend, and lasted until the unusually late date of 9 May (R. Cooper). Mountain biker G. Smith, whilst at Glentress forest near Peebles, came across a small remnant of this storm at Dunslair Heights (570 metres a.s.l.) on 27 May.

In the Southern Uplands, many wreaths were in evidence during May on Corserine, Cairnsmore of Carsphairn, Broad Law and Hart Fell. The last recorded patch, spotted on Hart Fell on 30 May, would have succumbed by the end of the first week in June.

The hills of the Southern Highlands had fewer and smaller patches than usual. On Ben More near Crianlarich, the well-known Cuidhe Chrom (crooked wreath) was tiny on 28 June (A. Meldrum), and would have been outlasted by another on its neighbour Stob Binnein. The nearby

Ben Lui had a 20 metre-long patch at the usual location, on its south east flank, also observed by A. Meldrum on 28 June. It was seen again on 7 July, and would have lasted one more week. At Beinn Ime, near Arrochar, J.A. Subke ascended the peak on 29 June and found a small remnant. We estimate final melt by 3 July.

Central, West and North West Highlands

On 28 June at Ben Cruachan, B. Lindsay saw various patches near the summit, and we judge they would have lasted less than seven days in very hot weather. On 1 July at the Ben Lawers range of hills, a small wreath was seen at the usual place on An Stuc. The last snow on that range, its disappearance would have occurred few days later. Farther west, the Glen Coe ski resort at Meall a' Bhuiridh saw its last patch finally succumb on 26 July (A. Meldrum). The highest point in Glen Coe, and Argyll, Bidean nam Bian, was visited on 6 July by M. Figiel. He noted 15 patches of varying sizes, though none particularly large. Photographs of the same location taken on 25 July show none were left.

The Ben Nevis range of hills, including Aonach Mòr and Aonach Beag, had less snow on them than usual. Despite this, on Ben Nevis itself, it took until 28 June to find the body of a missing Polish walker after fell into Observatory Gully from the summit plateau in late January. Near this site on 21 July, a party of walkers – including the author IC – measured the main patch there at over 100 metres long.

North of the Great Glen, on 4 July, G. Paton photographed a large wreath on Sgurr nan Clachan Geala by the place where snow survived in 2015. C. Anton went here exactly three weeks later and saw the snow much-reduced, but likely to last into August. On a trip to Ben Wyvis, north of Inverness, he noted that no snow remained on 20 July, and estimated it had vanished that day, judging by the colour of the vegetation. A small remnant was still visible on Tom a' Choinnich on 30 July, but this would not have lasted long.

East Highlands

In May and June on the Cairngorms, maximum daily temperatures were 3.5 dec C higher than the 1981-2010 mean². Consequently, the final melt dates for various patches on this range occurred earlier than usual, as observed by S. Grant. These included: Coire Laogh Mor, Cairn Gorm, 24 June; Cuithe Crom and Coire an t-Sneachda, Cairn Gorm, 20 July; March Burn, Ben Macdui, 23 July; Coire an Lochain, Braeriach, 28 July.

In a visit of 9 June, AW went to Deeside with Derek Pyper and saw Lochnagar in good light. He marked that the snow in the north east corrie had almost gone, with two small patches by Douglas Gibson Gully and Parallel Buttress. E. James ascended the same hill on 5 July and saw snow persisting at Coire Lochan nan Eun: the largest of these patches likely to last another week or so.

The 43rd annual survey of the north-east Highlands was, as usual, undertaken on 1 July at Meall Odhar, above Glenshee ski centre. Due to ill-health AW could not attend, but IC – with help from Mick Mckie – conducted the survey in superb weather. They recorded thirty patches, none substantial (Fig. 1). Although this was a larger number than 2017, in the context of the last 40 years it is an extremely small amount. Once he completed the survey at Meall Odhar, IC went to the Cairngorms and undertook a 10 mile trip on to the Cairn Gorm/Ben Macdui plateau in very hot conditions, achieving a full survey of all the north-east Highland patches.

At Carn Ban Mor, above Glen Feshie, H. Rennie went on 14 July and witnessed the snow at Ciste Mhearad just a few metres long, and unlikely to endure more than 48 hours. A larger (50 metres) wreath lay in the adjacent gully of Allt Meall Dubhaig. This would have persisted until the last week of that month.

August and September

All-Scotland survey in late August

The eleventh all-Scotland survey since 2008 took place on 19 and 20 August. The total number of patches counted across the country was 27. Their location and numbers were: Aonach Beag, 8; Braeriach, 2; Creag Meagaidh, 2; Aonach Mòr, 4; Ben Nevis, 10; Beinn Dearg (Ullapool), 1. In the ten previous years (2008–2017) the number of patches had been 77, 35, 34, 36, 72, 81, 281, 678, 82 and 3.

West and North West Highlands

Only three patches of snow endured in the North-West Highlands at the start of August. One was on Tom a' Choinnich and another on Sgurr nan Clachan Geala, with the third at Beinn Dearg. Of these three, the first two would have vanished by the end of the second week in August, and the Beinn Dearg patch by about the 22nd.

At Aonach Beag on 8 August, Susan Houston noted the main patch there as being in excess of 60 metres long, as confirmed during a visit by IC on 19 August, who recorded it at 77 metres using a tape measure. The same location was visited by R. Frazer on 4 September, and again by IC on 22 September. By the latter date it measured 49 x 21 x 2.5 metres: by far the largest extant in the country at that time. Aonach Mòr, which adjoins Aonach Beag, had only small fragments persisting on 19 August. These were adjacent to the protalus rampart site, and at the foot of the Piranha rock climb. We judge that these would have endured until the end of that month, but no later.

Ben Nevis's Observatory Gully was seen in good light by K. Applegate on 7 September. It contained a large patch, but susceptible to quick melting. Also at Ben Nevis on the same day, two smaller wreaths below Point 5 Gully were viewed. A covering of fresh snow was spotted on the summit plateau of Ben Nevis on 14 September, and also during a four-day run between 20–23 September, which is unusual for that month.

Central and East Highlands

The patches visible on Creag Meagaidh at the survey visit of 19 August had all gone by 3 September, as relayed by R. Frazer, who witnessed in person their disappearance on that date.

At Braeriach's Garbh Choire Mòr, the UK's snowiest place, IC visited on 4 August and noted three patches (the so-called Pinnacles, Sphinx and Michaelmas Fare). They measured 28 x 7 x 1.5 metres, 12 x 15 x 2 metres and 1.5 x 1.5 x 0.4 metres respectively. Subsequent trips were made to this location on 18 August, 31 August (S. Houston), 8 September (K. Fallow), 14 September (A. Gill) and 21 September (A. Swanston). During the last visit, only the Sphinx remained, with a tiny piece no more than one 1 x 1 x 0.1 metres, covered with a dusting of fresh snow. This remnant would have endured until around 25 September. During a visit to this site, on 29 September (Fig. 2), IC confirmed that it had disappeared.

October and November

West and North West Highlands

Only Ben Nevis and Aonach Beag had any old patches on them going into October. At the former on 6 October, A. Kish saw small relics at Point 5 Gully and Observatory Gully. A photograph taken from Carn Mòr Dearg on 19 October showed just a couple of tiny fragments left. As expected, these had all vanished by the time of IC's visit on 28 October. We estimate their disappearance just a day or two before.

At Aonach Beag, also on 28 October, A. Kish visited the north-east corrie where the long-lying patch is situated. He measured the wreath at 35 x 25 x 2 metres, with a covering of new snow on it. Several weeks elapsed before another trip was made. IC did so on 25 November, and

recorded the patch at 19 x 12 x 1 metres (Fig. 3). It had a good covering of new snow on it, which had fallen during the last 24 hours.

Fresh snow

Heavy snow arrived at the Cairngorms' snow patch locations in early November, and we judge these were lasting, despite the prolonged mild spell that endured right through into December. At Aonach Beag during late October and November, heavy snow fell on numerous occasions, but mild weather meant this thawed. Heavier snow arrived on 24 November, which we estimate to be lasting at this location.

Conclusions

Only one patch of snow survived until the new winter season, on Aonach Beag. This is the first time since records began that a patch on this hill – or indeed any hill – has outlasted anything at Braeriach's Garbh Choire Mòr. It is also the first time that Garbh Choire Mòr's snow has completely vanished in two consecutive years.

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Addendum It is with great sadness that the lead author IC has to report that the second author, AW, died on 23 January 2019 after a short illness.

References

Cameron, I, Watson, A. 2018. No Scottish snow patches survive until winter 2017/18. *Weather* **73**: 123–125.

¹ <https://www.metoffice.gov.uk/climate/uk/summaries/2018/winter>

² <https://tinyurl.com/y9caofxr>

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Figure 1. The Laird's Tablecloth at Beinn a' Bhuid on 1 July. Far smaller than normal, the hot weather of May and June reduced this formerly very long patch to fragments. (© Iain Cameron)

Figure 2. Author IC squats in the Sphinx hollow at Garbh Choire Mòr on 29 September. This ground has been exposed to daylight only a handful of times in the last 200 years. (© Iain Cameron)

Figure 3. Scotland's sole surviving patch of 2018, at Aonach Beag on 25 November. Author IC's rucksack and walking poles mark the extremities of the patch, which is partly obscured by fresh snow (© Iain Cameron)

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