

WINTER MOUNTAIN LEADER SCHEME PROVISION: 2023/2024 SEASON REPORT

Facts, figures, and informative insights relating to the provision
of the Winter Mountain Leader scheme by Mountain Training
Scotland Providers: Winter season 2023/24

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Introduction



This report aims to provide an in-depth look into every facet of the delivery of the Mountain Training Winter Mountain Leader scheme by Mountain Training Scotland approved providers in Scotland during the 2023-2024 winter season.

In 2023-2024 winter season six Mountain Training Scotland Winter Mountain Leader providers successfully conducted a total of 24 courses, comprising 12 training courses and 12 assessments. Additionally, they ran six re-assessments. No courses were cancelled due to conditions.

Mountain Training Scotland would like to extend our warmest congratulations to all the candidates who achieved their Winter Mountain Leader qualification during the 2023-2024 season. To those who completed their training, we send our best wishes for the next phase of your Winter Mountain Leader journey.

Mountain Training Scotland would also like to express our profound gratitude to our dedicated providers and their hardworking staff. Despite the numerous challenges posed by the unpredictable weather and conditions, their unwavering commitment played an instrumental role in making this season a success.



Figure 1 The two images show contrasting snow conditions separated by one week in March.

The emerging theme for winter is a trend of highly dynamic and increasingly unpredictable weather and conditions. Snow cover, similar to the 2022/2023 season, was patchy with some exceptions. However, where snow was present, it proved useful for winter techniques like cramponing and step cutting, with “hard snow” conditions offering good training opportunities. Though ‘runouts’ had to be carefully managed. Freezing levels were typically higher than usual, creating instabilities at higher elevations. This meant many approaches were often over largely snow-free terrain.

From an avalanche perspective, the limited snow at lower elevations reduced the opportunity to gather observational data on the approach. Coupled with dynamic weather patterns, fluctuating temperatures, and periods of heavy snowfall, these conditions created

a complex, ever-changing snowpack—one that was difficult to both observe, assess and ‘check and challenge’ one’s mental model of the avalanche problem during the approach.

A shallow or non-existent snowpack has wider implications. The Scottish mountains, with their unique ecosystems are particularly vulnerable to the effects of climate change. The increasing frequency and intensity of extreme weather events, coupled with rising temperatures and altered precipitation patterns, are transforming the region's environment at an alarming rate. These changes have far-reaching consequences, not only for the landscape itself but also for the flora, fauna, and the activities that depend on these mountainous areas.

Mountain Training Scotland cannot control weather, conditions, or unforeseen events like pandemics. While efforts are made to mitigate such impacts, the priority remains preserving the quality and integrity of the training scheme. The main challenge ahead lies in delivering the scheme in unpredictable winter conditions due to climate change, ensuring candidates can complete their Winter Mountain Leader pathway whilst maintaining the qualification's integrity and relevance.

Although climate change will continue to complicate the provision of the Winter Mountain Leader courses, the flexibility and adaptability of the course providers have proven invaluable in managing these challenges.



Figure 2 A group of Winter ML candidates walking into the evening above Drumochter Pass.

Winter 2023/2024 Overview

Scottish winters are increasingly becoming consistent at being inconsistent...! The winter of 2023/2024 once again proving this assertion.

Like the winter of 2022/2023, the winter of 2023/2024 was as dynamic and unpredictable, albeit thankfully cooler overall compared to the previous year. While snow cover, with a few noteworthy exceptions, tended to be patchy, what snow was available proved invaluable, particularly for covering 'hard snow' techniques such as cramponing and step cutting. Nevertheless, the lack of consistent snow cover (and depth) and fluctuating temperatures posed challenges when it came to snow holing.

Of the 24 courses that ran, a total of 8 courses spent one or more nights out in a snowhole.

Of that 8, five courses (four training; one assessment) managed an overnight in a snowhole, with three assessment courses spending two nights out.

Limited very shallow snow pack (either bullet hard, or thawing) and mild conditions (weather system timings continue to be unreliable) were the most common cited reasons for groups not overnighting in a snow hole. Though three assessments chose not to snow hole in response to a 'reasonable adjustment' request/consideration from candidates. Various alternative strategies including using emergency shelters to have a break and a meal, then navigate off the hill in darkness, plus camping, bothies and bivvies were all successfully used. During this season, a total of 102 (down from 113 last season) candidates completed their training, and 77 (up from 66 last season) undertook assessment. Of the 77 who underwent assessment, 56 achieved a pass. The pass rate (after 2023's 83% blip) at 73% has dropped back to slightly below the average on previous seasons. In previous years, the pass rate has been around 77% (2019, 2018) and 75% (2017).

We cancelled no training or assessment courses due to conditions, though there were moments when things looked to be on a very shoogly nail.

Overnight snow holing

One of the trends noted in the past eleven years is the challenges with regards to overnight snow holing. Overnight snow holing has never been without challenges, though in the 90s/early 00s the author's experience of these challenges was more often around excessive snow and drifting; now it's patchy cover, decreased snow depth (and increased risk of roof collapse in thaws) and wildly fluctuating temperatures.

The role of snow holes within the Winter Mountain Leader qualification

The Winter Mountain Leader does not qualify leaders to conduct expeditions using snow holes as the base or main form of accommodation. As such personal snow holing skills are not assessed within the syllabus.

Historically the inclusion of snow holing/snow shelters in the Winter Mountain Leader qualification is part of the process we use to ensure candidates are fit and resilient enough to cope with the demands of the winter environment. The Winter Mountain Leader handbook states that candidates should be aware that when conditions are overly hazardous, for example in conditions of a rapid thaw or high avalanche risk, it may not always be possible, nor safe, to overnight in a snow hole during the course.

What do we do when snow holes are not viable?

Providers and their staff have significant experience in fulfilling the scope and content of the Winter Mountain Leader syllabus in challenging weather and snow pack conditions, including making adaptations to what is viewed as the 'exped' phase of the course when it may not be possible or unsafe to snow hole due to weather, snow conditions, or a combination of both.

Post COVID we also recognise candidate tolerance for close contact with strangers in a confined space will vary.

Providers and their staff have extensive experience of methods for adapting the expedition phase due to unfavourable conditions, examples of which include, but are not limited to, walking through the night with a short halt to dig a single person emergency shelter within which to cook/brew then continue on; phased extended day into night activity; lectures/discussions on snow holing. Examples of this can be read about in the ['Weather: Conditions and Impact on programmes'](#) section.

Winter ML Snow hole/snow shelter activity 2018 to 2024

The following charts illustrate the change in how we conduct what is often referred to as the 'expedition phase' of the Winter ML.

As an aside Scotland's 'permanent' snow pack called the Sphinx melted out in September 2024 thus vanishing for the 11th time. The snow patch had previously melted fully in 1933, 1959, 1996, 2003, 2006, 2017, 2018, 2021, 2022, and 2023. In 2024 it is now certain that all the snow patches have all gone making this 4 years in a row now. The [annual July snow patch survey](#) on some of Scotland's highest mountains recorded the third lowest total in 50 years this summer.

For Winter Mountain Leader groups lack of snow depth has been one of the main challenges in groups using snow holes, though uncooperative weather has then also played a significant part.

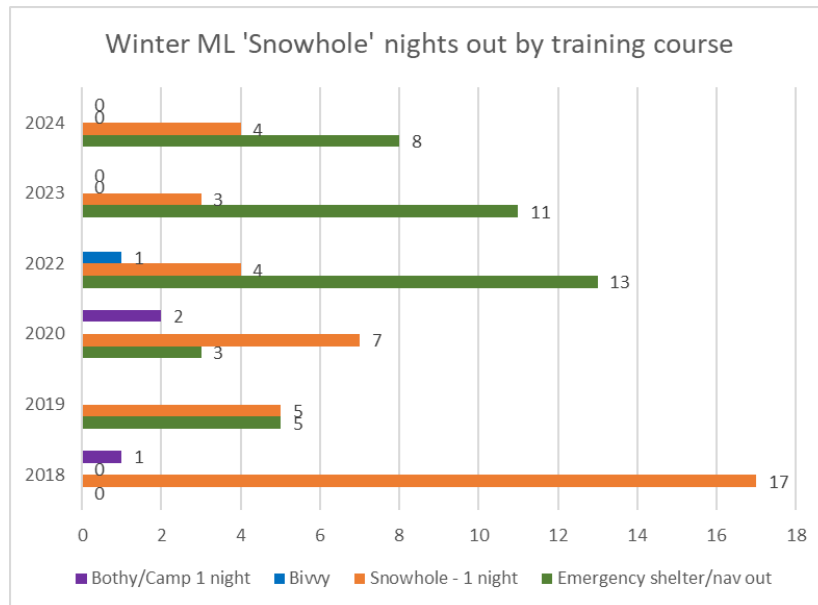


Figure 3 Winter Mountain Leader 'snowhole' nights out by training course

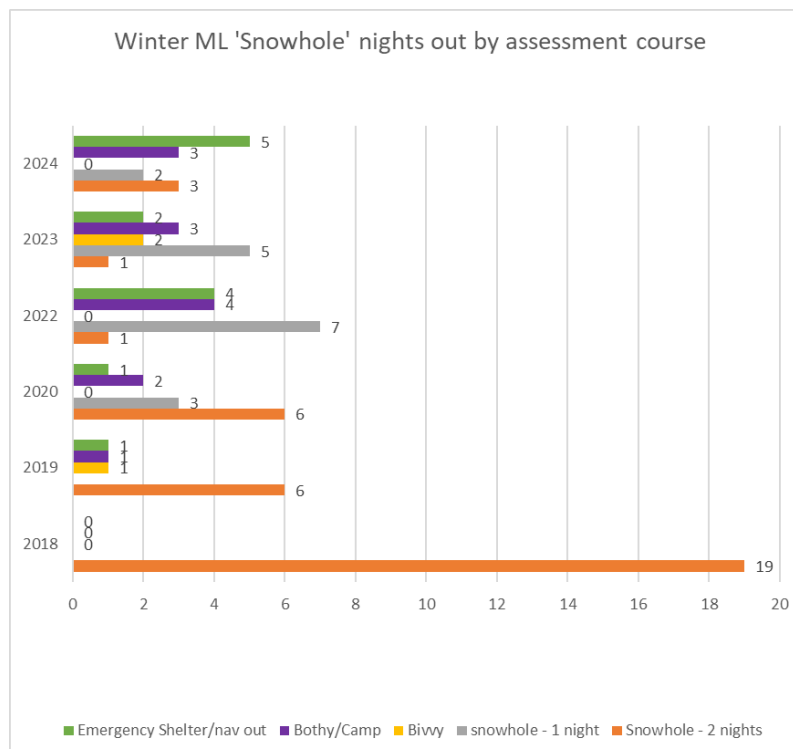


Figure 4 Winter Mountain Leader 'Snowhole' nights out by assessment course

Snow hole/emergency shelter activity venues

Historically Winter Mountain Leader courses have tended to avoid ‘honey pot’ locations when undertaking snow hole activity to avoid concentrated use and associated impact. In the past an extensive snow pack and less ‘dynamic weather’ supported journeying to more remote locations.

Since the early 2000s Winter Mountain Leader groups, particularly those operating in the Cairngorms, have adopted a ‘pack in, pack out’ approach to solid human waste. This principle is aided by groups operating in the Cairngorms using the ‘Snow White’ project (which was set-up by Heather Morning, current Chief Instructor at Glenmore Lodge, when she was with the Cairngorm Mountain Ranger Service in 2007). Since then the service have been operating the ‘Keep Cairngorm Snow White’ project which continues to be run free of charge.

In the past few years, several things have impacted on accessing more remote locations, particularly in the Cairngorms: snow level increasingly higher; a less consistent, extensive and deep snow pack; increasingly stormier weather which limits access to higher/more remote locations.

In the past few years in response to changing snow conditions the centre of gravity of Winter Mountain Leader course activity has shifted to the Cairngorms. This has tended to concentrate use on those sites in the Cairngorms that a/ are often more accessible b/ offer ease of egress in ‘bad’ weather and/or c/ have more reliable and deeper snow depositions.



Figure 5 Winter Mountain Leader snowhole nights by venue in 2024

Whilst the above is a snapshot of the 2024 season you can see snowhole activity – particularly on assessment – was concentrated in two Cairngorm venues – Coire Domhain

and Ciste Mhearad. For context, the majority of assessments are undertaken in March (in 2024 ten ran in March).

You can also see how the weather and conditions impacted on alternate strategies for when overnight snow holing is not an option. A strategy commonly used when overnight snow holing is not feasible is to either dig, or improve upon an existing shelter, and use that as a temporary 'rest stop' to prepare a meal/rest for a few hours (or less) before heading off to navigate. On training the intent is to undertake a one night overnight expedition using a snow hole as a high-level base. Given on training candidates are very much in a learning phase, decisions regarding overnighting are cautiously evaluated. For information three trainings were run in March 2024.

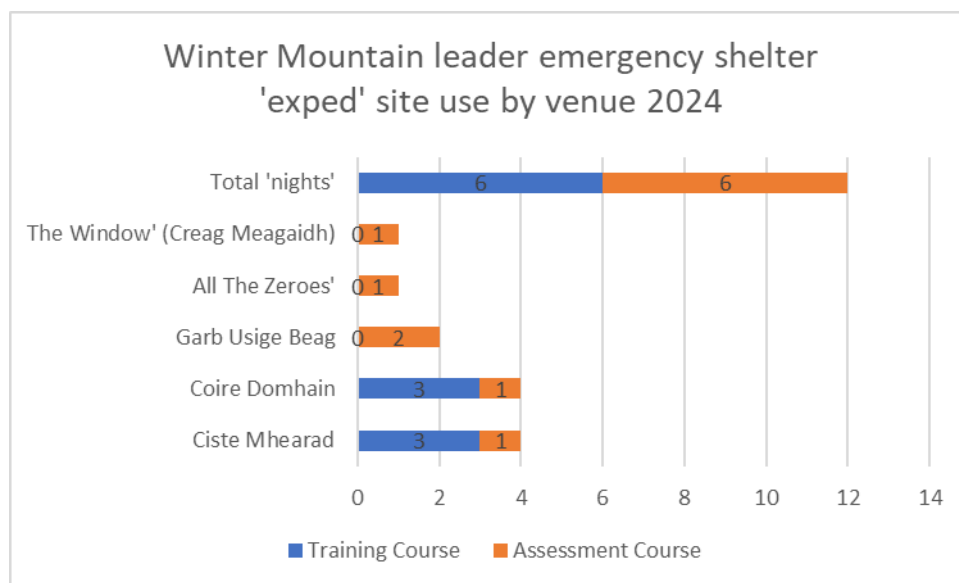


Figure 6 Winter Mountain Leader emergency shelter 'exped' site use by venue 2024

As can be seen the bulk of venue use for the creation and/or use of snow holes/emergency shelters are the two Cairngorm venues – Domhain and Mhearad.

Out of a total of 23 occasions where a snow hole/emergency shelter was used/created both Coire Domhain and Ciste Mhearad were used 7 times each (total of 14 occasions). Or 61% of all snow hole/emergency activity took place in these two venues.

Monitoring overuse of 'honey pot' snow hole and shelter venues

This is a level of concentrated activity that needs monitoring with an intent to reduce significantly that burden of increased use. It should be noted these venues are also considerably used by other winter instructional groups for a variety of activities, ranging from digging shelters, snow anchors, avalanche rescue and winter skills. So whilst the numbers involved with Winter Mountain Leader 'shelter and snow hole' course activity are comparatively small, they tend to be 'lumped in' with this course activity and all counted as 'Winter Mountain Leaders'.

Registrations

The bar chart below shows the trend with Winter Mountain Leader registrations over the past 22 years. *Note: 2003/2004 Winter ML training was a requirement for International Mountain Leader. This changed in 2005.*

As can be seen the trend is currently downwards. Factors impacting on this include:

- Fickle winters – and associated challenges gaining required winter QMDs.
- Less demand for Winter Mountain Leaders from local authorities.

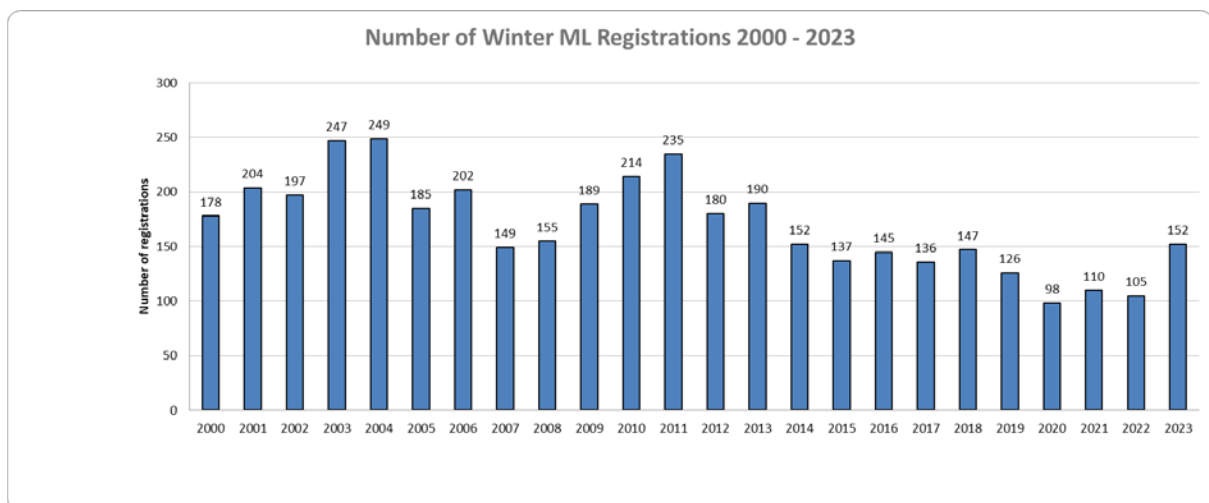


Figure 7 Winter Mountain Leader registrations 2000-2023

Winter Mountain Leader registrations YTD August 2024 are sitting at 95 which compares with 79 for the same period YTD August in 2023, and well for same YTD 2019 (or pre-COVID benchmark) which saw 66 registrations. The percentage of female candidates has increased since 2019 from 9% to 21% in 2023.



Figure 8 Winter Mountain Leader registrations in 2023 by gender

Completion rates

Winter Mountain Leader candidates are more likely to be trained than Mountain Leader candidates. The average time from registration to training for all candidates is mean = 1.17 years (14 months) and median = 0.28 years (just over 3 months). There are no significant differences in the proportion of female and male candidates getting to training, after two years - 84% and 82%, respectively. After two years over 80% of Winter Mountain Leader candidates have completed a training course.

The average time from training to assessment for all Winter Mountain Leader candidates: mean = 4.37 and median = 3.1 years.

It is noteworthy that significantly more male candidates than female candidates get to assessment, after four years 44% and 37% respectively (Hardy, 2020).

Overview of training and assessment course places

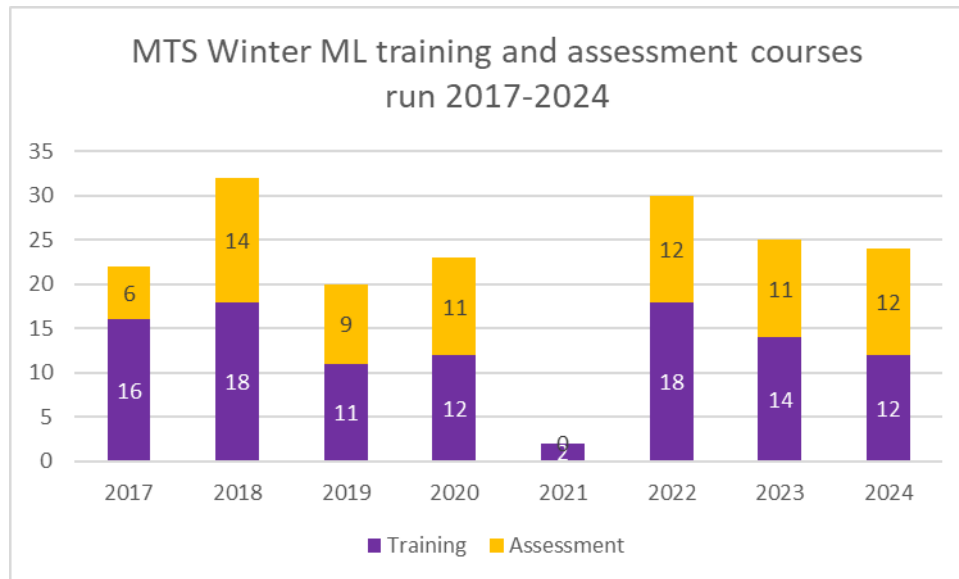


Figure 9 Comparison of Winter Training and assessment courses run from 2017 to 2024

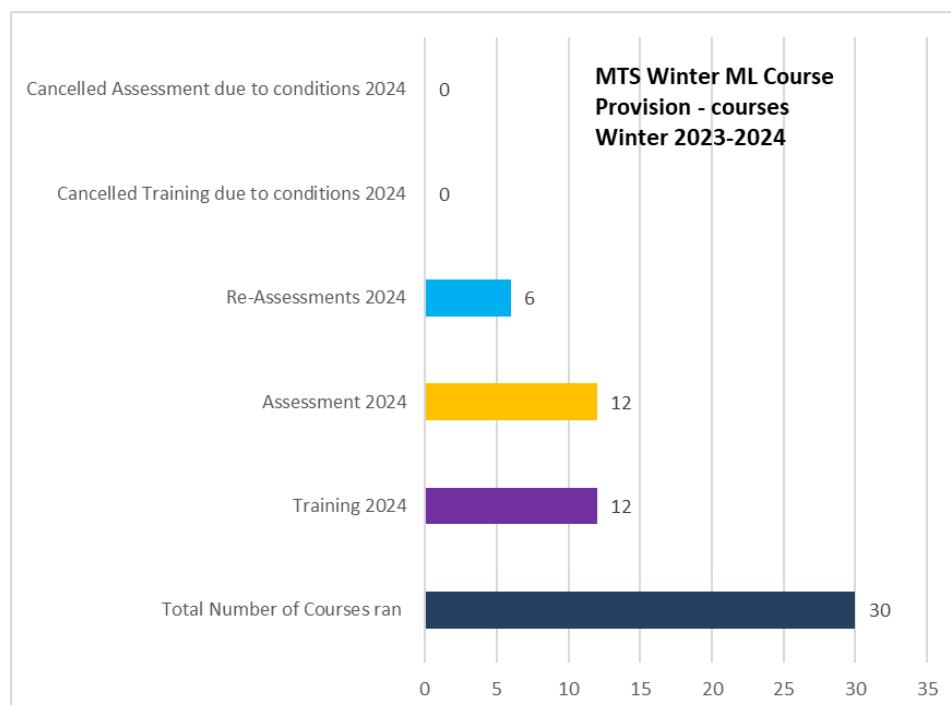


Figure 10 Winter Mountain Leader Training and assessment courses ran in Winter 2023/2024

Breakdown of Winter Mountain Leader Training and assessment places Winter 2023/2024

In the season 2023-2024, five MTS Winter Mountain Leader providers successfully delivered 12 training courses; 12 assessment courses and 6 re-assessments. The following is a breakdown of this activity.



Figure 11 Winter Mountain Leader breakdown of training and assessment places 2023-2024

Winter Mountain Leader training 2023-2024 summary stats.

- Number booked onto training course: 103
- Number completed training: 102 (of which 25 were female; 76 were male; and 1 neutral/not specified gender)
- Number not completing training due to various reasons: 1

Winter Mountain Leader assessment 2023-2024 summary stats.

- Number booked onto assessment course: 77
- Number completing assessment: 73
- Number not completing their assessment due to various reasons: 4

Overall a total of 179 candidates booked on a course which is up on pre COVID 2019 numbers of 149.

Analysis of Defer/Fail Results

Out of the 77 who attended assessment, 73 completed their assessment:

55 (of which 10 were female (18%); 44 males; and 0 gender neutral/not specified) passed.

- Number deferred: 15

- Number failed: 2
- Withdrew/no show: 4
- 73% pass rate (compared with pass rate of 86% in 2022/23)

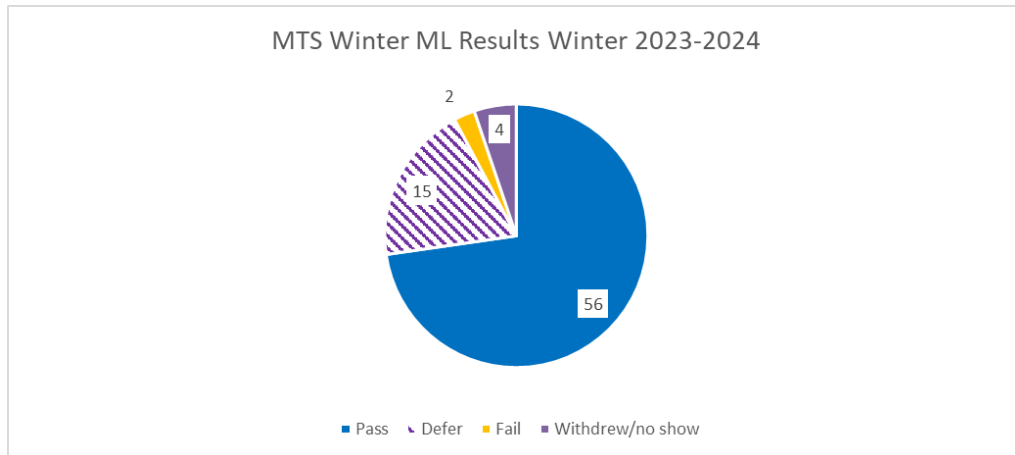


Figure 12 Winter Mountain Leader assessment results Winter 2023/2024

What did candidates defer on?

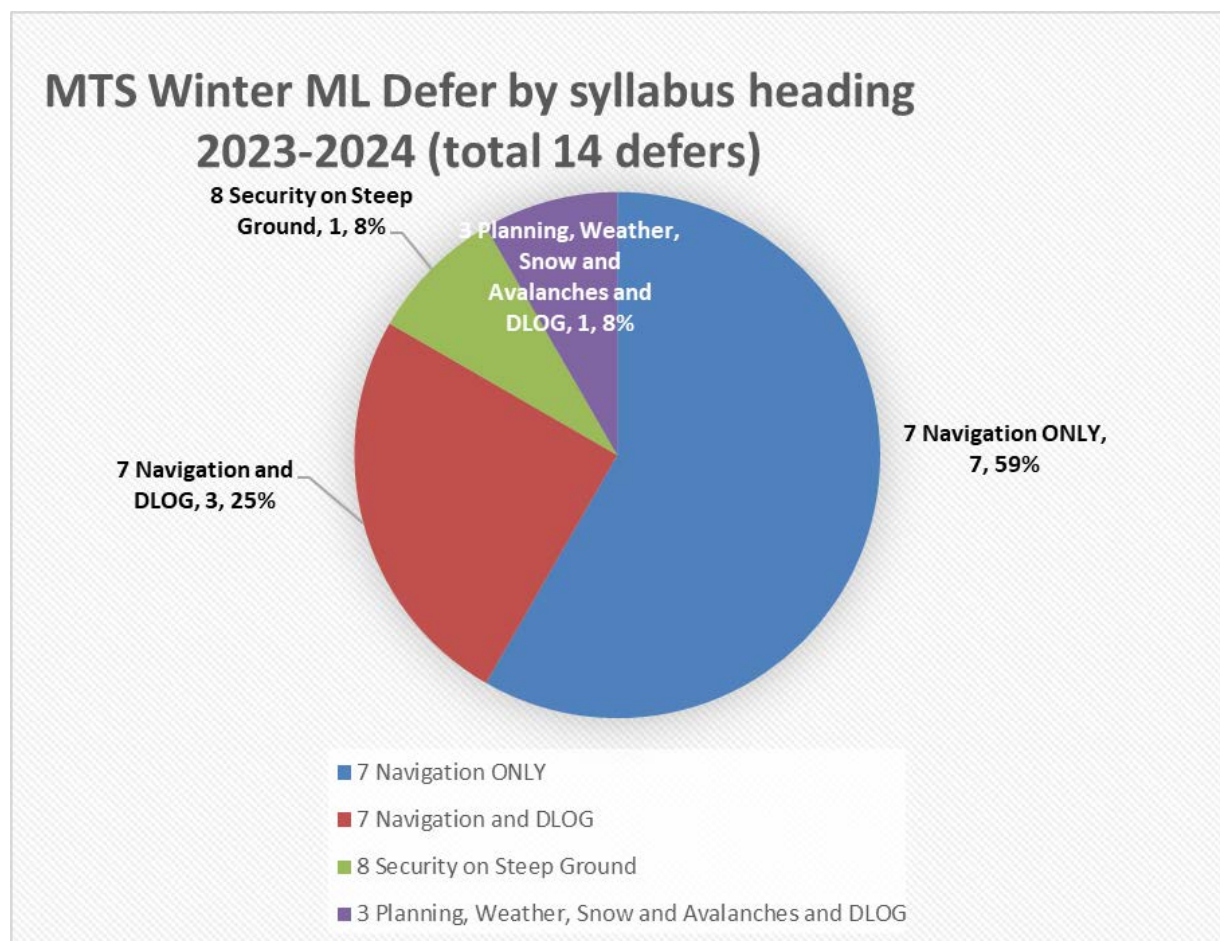


Figure 13 MTS Winter Mountain Leader Defer by syllabus heading 2023-2024

Defers	Number of candidates	Comment
7 Navigation ONLY	7	The common syllabus item mentioned in five out of the seven defers involving navigation only were syllabus item 7.2 7.3 7.4 7.5 7.9
7 Navigation and DLOG	3	An underpinning reason in three navigation defers was not having the required logged winter QMDs. On average candidates deferred on logged QMDs were asked to gain an additional 10.
6 Snowcraft and Walking Skills; 8 Security on Steep Ground and 9 Teaching and learning skills	1	MTS advises that more than two major syllabus items would equal a fail. In this case there were significant skills gap around using rope/snow anchors with some attendant personal weaknesses which assessment team thought could be covered within context of main defer issue/1 day.
8 Security on Steep Ground	1	This defer referenced syllabus item '8.7.4. Demonstrate safe and appropriate methods of belaying, including choice and construction of anchors in snow and mixed terrain.' as the reason for the defer. Lack of practice and familiarity with snow anchors was cited in the action plan.
3 Planning, Weather, Snow and Avalanches and DLOG	1	Syllabus items 3.3 Candidates should be able to create a route plan for a winter mountain/hill walking journey that incorporates the Be Avalanche Aware process and specifically identifies 'Key Places'. 3.4.6 Explain an understanding of snowpack spatial variation and how snowpack structure, snow grain and weak layer combinations can contribute to instability. 3.4.7 Be able to identify and demonstrate methods for monitoring key snow stability indicators (also known as 'Avalanche Problems') and recognise increasing or decreasing trends in snowpack stability. 3.6.2 Be able to use the avalanche forecast to identify on the map terrain that is likely to present an avalanche hazard and use this to create a route plan that avoids hazard. Also had to gain additional 10 days and 5 x Grade I routes.
DLOG only	1	One candidate deferred DLOG only (five days)
total	14	

What did candidates fail on?

Fails	Number of Candidates
7 Navigation (7.2 . 7.3 . 7.4 7.5 .) AND 8 Security on Steep Ground (8.3; 8.7.3.; 8.7.4.)	1
2 leadership and Decision Making (2.1.1 2.1.2) AND Snowcraft and Walking Skills (6.1, 6.2, 6.10, 6.11, 6.12.) AND 8 Security on Steep Ground (8.6.4, 8.7.6 i & iii.).	1
Total	2

Community of Practice

Provider and Course Director Support Visits

Three moderations, one on training and two on assessment, were undertaken which was down on the planned eight. I'd planned to visit four probationary training Course Directors but only one ended up directing a training course. On the plus side all the visits observed courses being extremely well run, with enthusiastic groups of candidates, in a relaxed, professional and friendly manner, with the staff involved running excellent quality days which made effective use of the (often limited) terrain options and challenging snow conditions.

Staffing

In the 2023-2024 winter season MTS had a total of 25 course directors of training (22 m; 3f) and 16 course directors of assessment (15 m; 1 f). Of these four were probationary training director (one completed probation this season). There are currently three outstanding probationary directors of training.

Seminars

The annual seminar for MTS Providers, Course Directors, and staff involved in delivering Mountain Training Scotland's Winter Mountain Leader qualification was a reflective, discussion-based session aimed at reviewing the previous season, sharing experiences, and updating on key issues related to the Winter Mountain Leader (WML) scheme.

The event began with an overview of the 2023 season, covering registration numbers, training and assessment outcomes, pass/defer/fail analysis, and incidents from the past winter. Equality considerations and reasonable adjustments were also addressed to ensure inclusivity within the scheme.

Participants then broke into groups to discuss their experiences and challenges in delivering the WML programme, focusing on strategies for teaching and assessing 'Leadership and Decision Making' competencies. Attention later shifted to how trainers approached the teaching and learning elements of the syllabus, emphasising the delivery of key skills required for leading groups safely in winter mountain conditions.

The afternoon featured a session on how sub-optimal weather impacts programme delivery and strategies for managing adverse conditions. The day ended with a review of plans for the next seminar, guidance on handling marginal conditions, and a final summary.

Weather: Conditions and Impact on programmes (including course director comments)

This is a detailed timeline of the winter matching the weather prevailing each week with course report comment submitted by course directors. It provides insight into how course directors manage a tonne of variables to ensure courses run are both viable and authentic. They also offer insight into how Winter ML courses of the future may run and may look, considering the challenges inherent with climate change.

December 2023

Weather and Conditions

Proper' winter arrived in late November/early December with heavy snowfall (focussed on east side of Highlands) followed by a very calm cold period (NE airflow) with temperatures in some parts of the Highland dropping to -15/-18 at times.

NOTE: this early cold spell saw two reported avalanche incidents - first of the season - one in the Taylor's Burn 5/12/2023 and a climbing related incident in central Gully (Coire an t-Sneachda) on the 6/12/2023

The Northern Cairngorms experienced fluctuating snow conditions throughout December 2023, marked by periods of instability and gradual consolidation influenced by variable weather patterns. There were three named storms. Two of which, Storm Elin (9/12/2023) and Storm Fergus (10/12/2023) occurred in quick succession. The third, Storm Gerrit occurred in late December and created large snowfields on NW aspects which then consolidated and remained throughout the winter.

Throughout December, the Northern Cairngorms experienced a series of fluctuating snow conditions, beginning with shallow, unconsolidated snow cover that gradually deepened in sheltered areas. Cold, clear days allowed wind-driven snow transport, leading to the formation of unstable windslab layers, causing both natural and triggered avalanches. Subsequent snow showers and strong winds redistributed snow, creating localized instabilities, particularly in wind-sheltered terrain. Although mild weather in mid-December helped consolidate the snowpack in some areas, stormy conditions and fluctuating temperatures in late December introduced new challenges, with unstable windslab forming at higher altitudes increasing the avalanche risk.

Winter ML Course Activity

There was no early season course activity.

January 2024

Weather and Conditions

During early January, the Northern Cairngorms saw unstable snowpack conditions, with fluctuating temperatures leading to the formation of friable crusts atop soft windslab, creating widespread instability. Thin layers of snow drifted, contributing to poorly bonded windslab, especially on NW to NE aspects above 900 meters. These isolated weaknesses persisted under freezing conditions, with a fragile surface crust developing at higher altitudes. Over the following days, very cold temperatures maintained the snowpack's fragility, leading to deeper and more widespread poorly bonded windslab, with persistent weak layers at depth posing significant risks.

By late January, a shift toward milder, stormy conditions (with two named storms – Isha and Jocelyn) led to a transitional period of fresh snow and rapid snowpack consolidation in places like Glen Coe. The snowpack underwent several thaw-freeze cycles, resulting in a number of avalanches, both natural and human-triggered, before ending with improved stability due to wet conditions. In the Northern Cairngorms and Northern Corries, this period of instability began to resolve as moisture penetrated the snowpack, stabilising the deeper weak layers. With the old snowpack largely consolidated, refreezing firmed it up, although new snow accumulations continued to present short-term instability risks.



Figure 14 Winter Mountain Leader training group crossing burn at Drumochter pass, in January 2024

Winter ML Course Activity

This coincided with the first Winter ML courses of the season (both training and based in the Cairngorms). The Course Directors running the first courses (both training) faced the

challenging situation of settled weather and an interesting avalanche problem with persistent weak layers on many NW to NE aspects above 900m.

One Course Director remarked:

“What a week. Yes the good weather and stable snow conditions meant for some creative delivery around avalanche and navigation but still an amazing week. Normally the lack of some wild weather would be disappointing from a coaching point of view but this team have all spent a lot of time in the Scottish winter mountains... ”

By the end of January normal service had been resumed as another Course Director added

“Two named storms this week, Isha and Jocelyn, making very challenging conditions. Only one 12 hour period during the six days allowed access to the plateau and that fell on Wednesday night. We took that opportunity for a good journey through the night. This offered the candidates multiple long stints leading in the dark. We covered emergency procedures in Coire Domhain which also allowed food to be taken on board.”

Not all storms are a curse though, as the Course Director added:

“The low-ish altitude snow pack from Storm Gerrit made life a bit easier....”

February 2024

Weather and Conditions

From early February through the end of the month, snow conditions across the Northern Corries, Glen Coe, and Lochaber areas were shaped by fluctuating temperatures, alternating thaw and freeze cycles, heavy rain, and shifting wind patterns. This period created dynamic conditions in the snowpack, with regular consolidation interrupted by instability from new snowfall and wind deposition.

Winter ML Course Activity

Two training courses and one assessment were run in early February. Following the theme of fluctuating conditions, being flexible in managing the programme was key to making best use of both the prevailing weather and resulting conditions. However the dynamic weather still posed issues with timings.

At the start of February the firm snowpack posed several issues. As one training course Director wrote:

“Week of challenging conditions with strong winds and very serious runouts (the norm now!). Later in the week very cold with -20 wind-chill

Good teaching conditions underfoot if not over head. We did not slide during the week due to hard snow and inappropriate terrain, however this was discussed at length.

Expedition: We did not snow hole but chose to journey across the plateau and have dinner out. This was due to the snowpack being very hard, I decided that the 4-6hours of digging would be better used in another way, the team all agreed with this. .”

The assessment course ran at the start of the month faced similar issues.

“The conflicting weather forecasts the week before the course was due to start definitely caused some head scratching however it was felt that with some adaptations and longer days in the better weather the course should run. In hindsight this was definitely the correct decision, all it took was a little traveling to find varied and appropriate conditions.”

The assessment course, like the training chose not to snowhole:

“No overnight expedition took place, this was due to a couple of factors: The only period of low winds was on the Monday into Tuesday when the snowpack was rock solid, (a thaw followed by -7 on the plateau). I decided not to bivi as one of the candidates had a history of epileptic seizures which happened after a poor night's sleep. This also ensured that we could have a longer day 2, taking advantage of the weather before the next storm came through. Instead the candidates were briefed prior to the course to expect a late evening on the first day with dinner being cooked on the hill. This meant that day 1 of the course was spent with the morning in the classroom (theory, planning etc), a couple of hours off followed by 2 - 10pm on the hill. Excellent night nav conditions with crampons on and complete snow cover from 1083m.”

Challenging conditions meant the assessment course did some travelling:

Beinn a Chaorainn worked surprisingly well on Wednesday despite the winds and temperature, allowing a longer day and covering more of the syllabus than was initially hoped. Aonach Mor provided a very different snowpack than the candidates had experienced on the first three “.”

February Weather and Conditions cont.

As we moved past mid-February and into late February we saw diminishing snow cover at lower elevations, while higher, wind-exposed aspects experienced periodic windslab instability due to renewed snowfall and persistent cold. The dominant pattern of fluctuating thaw and freeze created a stable base layer but introduced intermittent hazards where new snow layers formed, especially on leeward slopes and around fragile cornices. Winter ML Course Activity

Course activity for the rest of February was equally split between training and assessment courses, with three being run, and three assessment courses. Whilst conditions overall were sparse, the weather did improve which allowed access to areas of snow that the previous stormier conditions had limited or barred access to.

Conditions mid-February posed significant challenges as described by this training Course Director:

“The first four days of the training involved walking in summer conditions to access the main snow patches at around 1000m. This left me with a big dilemma in how to make the best use of the final two days when winter finally returned (of sorts). All the main accessible snowhole sites did not enough widespread depth of snow to dig successful snowholes for such a large

group, carrying tents was considered but I was concerned about the forecasted wind speeds (and temperature as forecast -7 overnight), plus several candidates wished to use their own single person tents of which I had concerns over the integrity of their design. I then considered doing a big day, building an emergency shelter, cooking and night navigating back, but I knew in doing this the candidates would be too tired to get out on the last day which was going to deliver another 'winter day'! So after going around the houses and with lots of soul searching I decided to do a 'big' hill day on day five which then left day six to have another winter day on the hill to make the best use of the winter conditions!

In hindsight I really did try and make the best use of the conditions that were available through the week. I think it is probably one of the leanest WML training course that I have delivered in 22 years of working on the award!"

Things picked up a wee bit as we came to the end of February with one assessment Course Director expressing some relief.

"A challenging week to manage the weather and I was glad it snowed on Wednesday night and Thursday! However it worked and all staff were happy with the course at the end of the week as were the candidates."

The colder weather hung about through the end of February. One assessment course director had other considerations to manage as well as the conditions on exped:

"We planned not to attempt to snowhole due to one candidate expressing a fear of snow-holing and their non-attendance should we snow hole. Whilst this led to us choosing a camping option, it surprisingly in no way affected the expedition.... "

This assessment and another being ran in parallel that week choose to camp. As the same director added:

The weather proved suitably challenging with goggles and headtorches on at the end arriving at camp about 1900."

March 2024

Weather and Conditions

In March 2024, snow conditions across the Northern Cairngorms, Glen Coe, Lochaber, and Northern Corries were very dynamic. With new snowfall, fluctuating temperatures, wind redistribution of new snow, and thaw-freeze cycles. Whilst snowpack stability improved overall, areas of instability persisted, especially where windslab developed on sheltered aspects.

Early March through to mid-March saw overall (in context of the overall winter) colder weather periods and associated snow which resulted in decent winter conditions.

Winter ML Course Activity

March is the month of assessments, and this March was no exception with eight assessments run. Three training courses were also run, making March the busiest month for Winter ML activity.

The wintrier weather helped smooth course provision though still posed challenges in itself.

“6 days of South Easterly winds! Made for a windy and cold week which at times was challenging.”

As March progressed the winter conditions persisted.

“A week of decent winter conditions considering the overall nature of the season. All days carried out in full snow cover, and the exped carried out entirely from a snowhole. “

The snowpack and conditions also posed some localised challenges. Whilst overall snow holing was an option MTS also had a reasonable adjustment request which related to snow holing for an assessment candidate. This was granted and resulted in two assessment courses which were being run in parallel not snow holing.

Despite a period of calmer weather one assessment Course Director noted:

“The impression I got from conversations was that the candidates were finding the conditions challenging despite it being relatively benign on the expedition. Light winds and warmish temperatures meant that I thought that it was actually "nice" conditions with just enough realistic winter for assessing. This might reflect the challenge candidates have in preparing in "proper" winter conditions.”



Figure 15 Winter Mountain Leader assessment undertaking a steep ground journey in very wintry conditions.

The same Course Director, given the snow conditions, also made the decision to snowhole. This did not go as smoothly as they had anticipated:

"Given the forecast and conditions I was keen to try and snow hole both nights on the "exped" phase... Despite digging into pre-existing holes it still took one team 4 hours to dig in. Also due to the warm temperatures, we had a frustrating situation that each hole had difficult digging, but within the same hole the other half was in weak wet snow that had to be monitored for collapse. In the end the conditions weren't quite as forecast therefore it was marginal if it was worth it. We could have just as easily done a day trip Wednesday and then delayed start Thursday into night (given that I didn't get low visibility until Thursday afternoon)."

March Weather and Conditions cont./

In late March, the wintry conditions persisted but colder conditions brought widespread snowfall across the mountains, followed by strong winds that redistributed snow, creating unstable windslab on north to northeast-facing slopes. This windslab resulted in significant avalanche activity. The strong winds near the end of March posed access challenges to the snow which existed at higher elevations.

March Winter ML Course Activity cont./

Late March saw one training and two assessment courses being run.

The strong winds caused issues for the two assessment courses being run at the end of the month. As one assessment Course Director noted:

"This was a challenging course to run, with tricky weather and conditions. The decision was made not to snowhole in order to maximise the chance for assessment on Weds. This worked very well and we achieved a good long day and night in real wintry conditions."

Another assessment Course Director facing the same issues remarked:

"A very challenging week for the assessment team as the arrival of the storm force winds on Wednesday night effectively shut down access to the higher mountains and the snow line. This was managed by a longer first day and priority given to teaching skills on the second rather than a mountain journey. Candidates were out from 9am Wednesday morning until midnight, no snow hole was dug but old ones were utilised for cooking prior to heading out for night navigation. Winds picked up as forecasted by the end of the night and the team got off the mountain at the right time. This did provide more than enough information to be able to assess the candidates level and they all had ample opportunities to demonstrate their skill set."

Still dynamic adaptations to the programme and canny planning ensured the courses were conducted in such a way to ensure a realistic and authentic assessment of the candidates' abilities.



Figure 16 Winter ML assessment group on one of the last courses of the season. Still some large snow fields around and what was there was comparatively firm.

Incidents and Unusual Occurrences

MTS were notified of only one event. This involved a candidate who had caught their lip/tooth on the adze of their ice axe, resulting in a small cut on the lip and a chipped tooth. No first aid or medical attention was required, and after a five-minute break the candidate continued to participate fully in the course with no ill-effects.

This event highlights the inherent hazards and risks associated with teaching and training self-arrest.

Though COVID is not covered under our 'Incidents' policy it is worth noting that remarkably no courses were significantly impacted – though we still had candidates who did not appear to do their course due to being unwell.

Candidate Reasonable Adjustment Adaptations

MTS is fully committed to unimpeded access to, and equal opportunities in, training and assessment and to considering the needs of all potential candidates. One of the strengths of the Winter Mountain Leader qualification is the emphasis through the syllabus on competencies rather than prescriptive techniques. This allows both trainers, assessors and candidates flexibility in their choice and use of appropriate techniques.

The expectation is that course directors and providers of MTS Winter Mountain Leader training and assessment courses will make provision for reasonable adjustments and assistance to be given to candidates where required. The provider (if required, after seeking support and advice from the MTS Executive Officer) should outline the nature of the candidate's special requirement, and through discussion with them suggest an appropriate adjustment.

In winter of 2023/2024 MTS had notification of six candidates for whom 'reasonable adjustments' were made, or their course staff considered their condition, though the candidates did not require any specific 'reasonable adjustments' to be made.

A summary of each candidate is given below.

Winter ML assessment – candidate with epilepsy

Course Director decided not to snowhole or bivi as one of the candidates had a history of epileptic seizures which happened after generally after a poor night's sleep.

Winter ML Training – Deaf candidate

One deaf candidate who was known to course staff before the course started. Minimal adjustments required, mainly trainer positioning relative to candidate in order to allow lip reading and maintaining continuity of trainer contact with candidate as they were more familiar with lip reading one trainer versus the other. Also required more regular check ins to establish if comms had been understood.

Winter ML Training – candidate with anxiety

A candidate with anxiety, who experiences panic attacks and periods of non-verbal communication, disclosed their condition beforehand, allowing for reasonable adjustments. The training team discussed coping strategies with the candidate, based on their preferences. Despite an increase in these episodes, especially during the expedition, the candidate managed to participate fully, using basic sign language to communicate and even leading night navigation legs.

Winter ML training – candidate with stoma

One candidate shared they had a stoma which did not inhibit their performance, just needed managing prior to activity such as ice axe arrest.

Winter ML Training – candidate with Type 1 diabetes

A candidate who was a type 1 diabetic faced challenges managing blood sugar levels due to a cold, requiring occasional pauses during activities. Trainers managed these breaks effectively. Additional planning and support, including backup transport and personnel, were arranged by the provider but ultimately were not needed.

Winter ML assessment – candidate with bi-polar disorder

Course Director took decision prior to course starting not to snow hole due to one candidate with bi-polar disorder which can be exacerbated by disturbed sleep.

Course did a longer mountain journey on the Cairngorm plateau including the construction of emergency shelters.



Figure 17 A group of Winter ML candidates undertaking a steep ground journey in firm snow conditions and poor visibility.

Looking Ahead

Since 1st Jan 1975 (that's as far as CMS records go back) MTS Providers and their staff have trained, assessed, and passed the following number of candidates.

5841 Winter Mountain Leaders trained

4007 Winter Mountain Leaders assessed,

2923 Winter Mountain leaders passed

Congratulations to all the individuals who have successfully completed their Winter Mountain Leader journey! Our best wishes go out to those currently on this challenging path, and a warm welcome to those who have enrolled in the scheme but have yet to undergo their training. While winter offers no guarantees, one thing is certain – it will continue to frustrate, disappoint, challenge, and captivate us for the near future.

However, the challenges of the last season, much like previous ones, continue to raise significant questions. Given the undeniable impact of climate change on current and future winters, we face the ongoing challenge of ensuring that the Winter Mountain Leader qualification remains pertinent and applicable to leaders operating in winter conditions in the UK and Ireland.

One notable impact of climate change is the increase in extremes of weather, influencing both average temperatures and precipitation, consequently affecting snow cover.

“There has been an overall decline in observed snow cover in the Cairngorms National Park (1969-2005). This trend conforms to those seen across other mountain areas and the Arctic and is in keeping with the observed global warming trend.

There is a clear observed decrease in the number of days of snow cover at all elevation levels over the 35 winters between 1969/70 and 2004/05, with higher elevations having a larger proportional decrease.”¹

The reduction in the number of days of snow cover at all elevation levels underscores the challenges presented by inconsistent and variable snow cover. This trend has long posed a challenge for running Winter Mountain Leader courses, and the current season has reinforced the need for a dynamic and flexible approach to our course programmes. Adapting course programmes and activities to account for the increasingly dynamic winter conditions is crucial. Moreover, it emphasises the necessity to redefine our mental model of what constitutes 'proper winter' and embrace a model that encompasses a wider range of conditions more commonly experienced in recent, and future, winters.

It is essential to note that there is no specific requirement in the syllabus for candidates to snow hole, and this technique has always been considered an 'emergency' measure. The decision to snow hole overnight is at the discretion of the course director, considering various safety factors. The ability to snow hole has historically depended on the snowpack and weather conditions. Looking at recent data, fewer courses are managing an overnight in a snowhole, a trend likely to persist given the anticipated sudden and dramatic changes in winter weather and the observed decline in snow cover and depth of the snowpack.

Considering the physical impact on candidates of digging holes and staying out overnight, especially in challenging conditions, it is imperative to continually question whether a similar experience could be achieved without the overnight stay.

Some candidates have provided positive feedback regarding not snow holing. Not digging a snowhole may allow greater accessibility for those who may struggle with the physically demanding task of shifting several tonnes of snow to create a snowhole or the mental challenges of living in a very confined space. On the other hand, staying out overnight in well-built snow holes in wild, remote areas offers a unique and challenging experience and allows demanding mountain terrain to be accessed.

It is crucial to clarify that the Winter Mountain Leader scheme does not qualify candidates to lead snow hole expeditions. The inclusion of a snow holing expedition in a course has previously caused confusion with some candidates thinking that having snow holed this in some qualifies them to lead snow hole-based expeditions.

¹ Snow Cover and Climate Change in the Cairngorms National Park: Summary Assessment
Mike Rivington, Mike Spencer, Alessandro Gimona, Rebekka Artz, Douglas Wardell-Johnson and Jonathan Ball.
James Hutton Institute, November 2019 – Executive Summary page 1



Our intention is to continue to carefully monitor snowhole activity and its impact in the upcoming season as part of a review assessing the viability, relevance, and impact of planned overnight snow holing within the Winter Mountain Leader scheme. This reflective approach is essential to ensure the continued effectiveness and adaptability of the qualification in the face of evolving environmental conditions.

In the meantime, we look ahead at the prospect of another winter on the mountains of the Scottish Highlands. One thing that characterises all those who undertake any winter sport that is dependent on snow, is unbridled optimism. Against a background of climate change we need optimism in heaps as we approach the 58th season of the Winter Mountain Leader scheme being run.

George McEwan

Executive Officer

Mountain Training Scotland

Appendix 1: Overview of training and assessment course places completed by candidates since 2012

