sportscotland
Avalanche
Information
Service

SPORTSCOTLAND AVALANCHE INFORMATION SERVICE REPORT FOR WINTER 2010/11

Coire an Lochain - Northern Cairngorms

Mark Diggins - Co-ordinator

July 2011

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The General Snowpack Situation - Winter 2010/11

Ben Nevis and Glencoe

The first winter storms arrived as usual in the months of October and November, unusually however, these winter conditions remained with us for the rest of the season but without the normal pre-festive season warm period. For the first time the SAIS started its operation in a November month. This followed SAIS forecaster condition observations in the mountains, and consultation with the Met Office weather forecaster team in Aberdeen establishing that the winter was here to stay. A weekend avalanche forecast service was started for the most popular, Lochaber and Northern Cairngorm areas on the 19th November until full operation commenced on the 16th December 2010.

November winter conditions presented snow cover mainly in the Cairngorms and Eastern regions that initially exhibited characteristics of the winter 2009/10, a new snow cover and cold calm conditions developed a layer of surface hoar grains. Clear conditions but with light South Westerly winds presented drifting snow which formed overlying windslab layers onto the surface hoar layer and this produced a very unstable snowpack condition on North to East facing slopes. The first snows of the winter and blue skies enticed many enthusiastic climbers and skiers into the hills, which resulted in five avalanches being triggered in the space of a few hours in the Northern Corries of the Cairngorms. All escaped unscathed but the episode provided a winter warning. The following thaw and freeze that occurred from mid November into December helped stabilise the snowpack after this initial period of weak snowpack structures. Snow distribution was very localised in the early part of December with heavy snowfalls occurring mainly on the Eastern side of Scotland most notably in the Central belt and the Southern Uplands but with very little accumulation in the Highland areas at this time..

During the festive holiday period of Christmas, Hogmanay and into mid January the refrozen and hard snowpack was covered with significant accumulations of fresh snow and windy conditions prevailed. Additionally cold air temperatures resulted in a weak snowpack for a significant number of days, this was followed by thaw conditions in all areas, Considerable Avalanche Hazard conditions with some High Hazard levels were forecasted by the SAIS and approximately 30 avalanches were recorded during this time. A cycle of cold,windy and snowfall periods followed by heavy thaw conditions continued through February and into March with notable wet avalanche conditions occurring in Glencoe on 4th february when wet avalanches were noted roaring from Great gully on Buachaille Etive Mor and on the 12th February in the Cairngorms when a number of very large windslab avalanches both natural and triggered occurred in the Northern Corries, with some victims needing helicopter evacuation. Cold snowy conditions in mid March, once more, presented an unstable snowpack with triggered windslab avalanches occurring on Ben Nevis and numerous very large events being witnessed in most SAIS operational areas.

With warmer conditions developing in the latter days of March and into April the snowpack generally became more stable with small surface activity immediately following winter storms and deeper spring releases . The snowpack and avalanche hazard diminished considerably in the first weeks of April and this signaled the end of the winter.

SAIS Operation

Personnel

Avalanche Hazard information is provided on a daily basis in the 5 main mountain areas of Scotland. Avalanche hazard assessment is achieved by traveling in the mountains on foot or by ski and carrying out snow profiles and field tests, noting many factors which, when combined, present an indication of the current avalanche hazard. On return to base the weather forecast provided to us by the Met office forecaster team Aberdeen is used for further information. With this an avalanche hazard forecast is determined, and after discussion between the SAIS forecasters and the Co-ordinator an Avalanche hazard report is published.

The avalanche reports are provided by SAIS Avalanche forecasters who have many years experience of avalanche hazard assessment, (in most cases over 15yrs) who have undergone an SAIS verification process and meet the relevant SAIS observer and forecaster standards. Additionally forecasters are very experienced and committed climbers, skiers and outdoor enthusiasts who are competent in all the skills necessary for safe travel in the most challenging of winter conditions. The team comprise Mountain Guides, Instructors and Avalanche Experts from many countries and their experience and professionalism is integral to providing the best service possible to all persons that engage with the winter mountain environment of Scotland.

The SAIS team

SAIS Senior Forecasters

Paul Moores - Glencoe

Arthur Paul - Glencoe

Tom Rupar- Creag Meagaidh

Wes Sterrit - Creag Meagaidh

Alan Dennis - Southern Cairngorms

Graham Moss - Lochaber

Mark Diggins - Northern Cairngorms

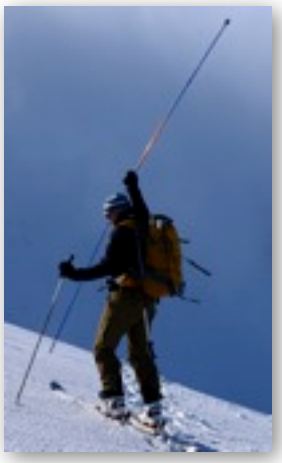
SAIS Forecasters

Kathryn Grindrod

Keith Millar

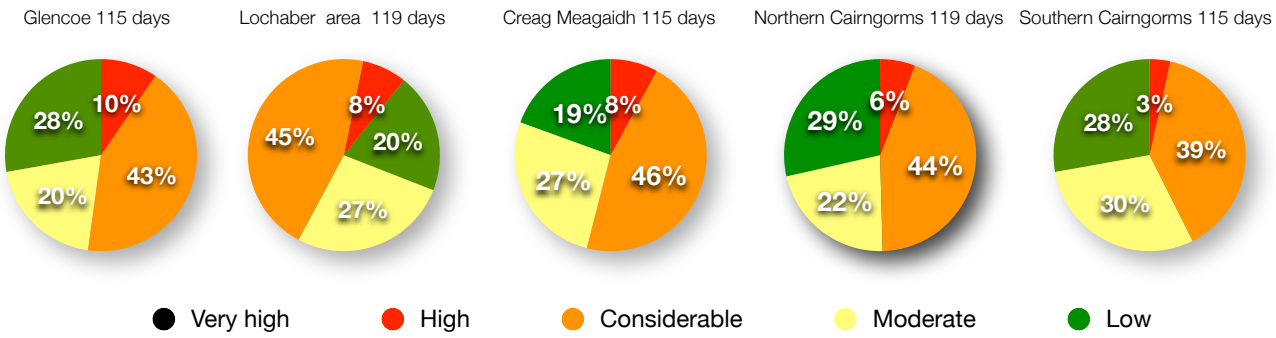
Blair Fyffe

Sandy Allan



Avalanche Hazard Information Reports

The following pie charts show the Avalanche Hazard levels as a percentage of the number of SAIS operational days in the five areas during the winter 2010/11.



The percentage of hazard levels shows a reasonable consistency between all five areas and demonstrates that for a significant part of the winter the hazard level is Considerable or High. The implication for the mountain traveller is that for approximately 50% of the winter there are areas in the mountains where avalanches would occur naturally and triggering by human activity is likely. This is a normal situation in most winters and for the mountain traveller highlights the importance of identifying in the written Avalanche report the location where instability may be present. This information helps with route choice and vigilance whilst traveling in the mountains and hills, and knowing where you are located in avalanche terrain. .

The SAIS avalanche bulletin board with avalanche report insert

The moderate level of hazard occurred for approximately 20-30% of the winter days. Human triggered avalanches are still a possibility at this level and it is often considered by many National avalanche warning agencies that the Moderate level of hazard presents strong potential for catching people out, the mountain traveller may be off guard, the areas of instability are often more limited in location and may only be present in isolated, steep places, usually high up in corries. Additionally, although the snowpack may be moderately stable and or limited in area, the size of a group and its spacing is critical in how people can load a snowpack with their weight and the triggering of an avalanche becoming possible. Moderate levels of hazard therefore still require vigilance, and a good spacing out of group members in order to minimise the loading on a slope.

The five hazard levels are defined by the European Avalanche Hazard Warning Scale which is also the recognised scale worldwide.

Avalanche Occurrences

Recorded Avalanche Occurrences for the Winter of 2010/11

Recorded avalanches are a compilation of observed avalanche occurrences from a number of different sources, namely;- SAIS observers in the 5 areas of operation, submitted reports from winter mountain activists and non mountain users.

Triggered windslab avalanche - Goat track Coire an t Sneachda

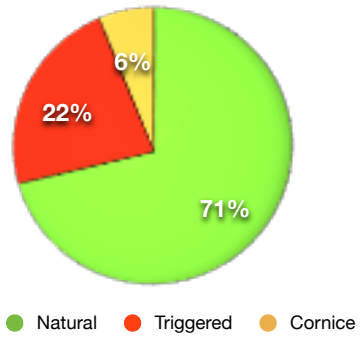
The new SAIS avalanche reporting facility on the website has helped greatly with the public being able to send details of avalanche occurrence observations which, once verified, provides good information. Observations however require good visibility and human identification, in this respect avalanche occurrences are recorded only where people can travel in the mountains or can see clearly from roads and paths. There are many places in the mountain areas where people do not travel or cannot see when the weather is poor. Therefore it can be assumed that a greater number of avalanche occurrences have taken place than have been recorded.

The recording of avalanche occurrences is the best indicator of the immediate short term snow stability situation. Avalanche occurrence location and the reporting of avalanche incidents is therefore very valuable in enabling the SAIS to pass on good information to the public, provide snowpack stability verification and to illustrate the extent of avalanche occurrences.

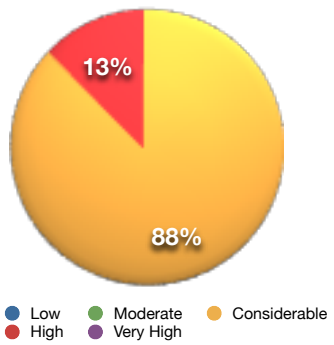
The Total number of avalanche occurrences recorded by the SAIS for the winter of 2010/11 was **178.** Of this number, **127** were natural, **11** cornice release and **40** were triggered by persons. Of of the 40 triggered by persons: **7** avalanche occurrences were purposefully triggered by ski patrol or SAIS observers during the avalanche hazard assessment process, **9** were triggered by skiers and boarders. **24** were triggered by climbers/walkers. (1 fatality occurred during the winter).

Although the total number of recorded avalanches for this winter season was less than the previous winter season 2009/10 (220), for this winter the number of human triggered avalanches is similar 44 in 2009/10 season, 40 in 2010/11 season.

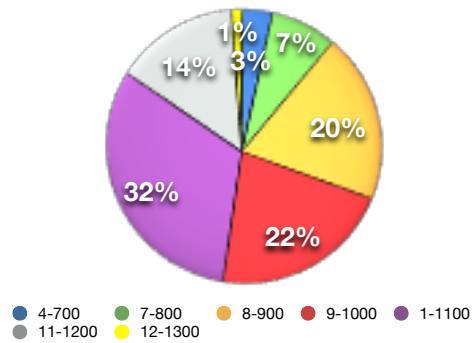
Recorded Avalanche Occurrences winter 2010/11 by Trigger type (Total 178)



Human Triggered Avalanche Occurrences winter 2010/11 by observed Hazard level (Total 40)



Recorded Avalanche Occurrences winter 2010/11 by Start Altitude in metres (Total 178)



Reaching the Public

SAIS Public Survey 2010

A survey was carried out following the winter of 2010 to gather information about the effectiveness of the service and characteristics and understanding of the winter mountain user groups, how they participate in their sport, and their understanding of avalanche hazard in the winter season. The survey ran for approximately 6 months and received **451** responses.

The survey has provided invaluable information not only for the avalanche service but for all users and groups that interact with the Scottish winter mountains. We would like to thank all those who contributed to the survey.

To highlight some findings, for example to the question 'Where have you carried out your winter activities in 2009/10 ; the mean number of days that the **441 person responses** carried out was **10,974**. Some individuals spend just one or 2 days in the mountains per winter but some are active for over 50 days.

In answer to the question 'Have you been avalanched in Scotland', of the **449 persons** that answered it was established that they where involved in **148 avalanche incidents** (some more that once) Of the 148 incidents, **86% were human triggered** either by themselves or another party. This corresponds to the worldwide view.

The SAIS survey feed back responses to the 8 main questions are as follows;

1. About You?

Age Group ? (451 responses)

under 11	12 to 18	19-30	31-45	46-60	61-75	76+
0	5	112	192	125	17	0

What mountain activities do you do ? (451)

Climb	Hill walk	Climb and hill walk	Ski (piste)	Ski (off piste / touring)	Snowboard	Snowboard (off piste or touring)	Most	All
33	64	142	1	27	3	5	148	28

For work or pleasure ? (451)

Pleasure	Profession	Both
333	6	112

Male	Female
379	59

Where do you live ? (450)

Highlands and Islands	Central Belt	Southern Uplands	England	Wales	Ireland	Outside of the UK
135	148	9	131	15	11	1

How often to you go into the Scottish winter mountains in a season ? (440)

Every weekend	Every weekday	A couple of days a week	Once a month	2-3 days a month.	Most days of the winter.
79	7	67	105	135	47

How many years of experience in the Scottish winter mountains do you have? (449)

1-2 years	2-5 years	5-10 years	10- 20 years	20-40 years.	40-50 years	50+ years
53	74	85	130	96	11	0

2. What do you think of the current format of Avalanche hazard report in comparison to the old ? (450)

Better	86.0%	387
Worse	3.1%	14
The Same	3.6%	16
Don't know	8.0%	36

3. Using the SAIS website.

What part of the Avalanche report do you use most ? (450)

The avalanche hazard rose.	The avalanche forecast description.	The observed avalanche hazard description.	A combination of all parts
100	31	9	310

Which part of the avalanche report do you think provides you with the most accurate information. ? (443)

The avalanche hazard rose.	The avalanche forecast description.	The observed avalanche hazard description.	Don't know
113	131	158	41

Do you use the area blogs ? (450)

No	Occasionally (once or twice a month)	Frequently (once or twice a week)	Most of the time (4-7 days per week)
54	106	150	140

4. When do you mostly consider the avalanche report ? (449)

Every day	41.9%	188
The day before my excursion	30.7%	138
Before I consider planning my trip/climb/walk/ski.	28.3%	127
During the planning of my trip/climb /walk/ski.	37.9%	170
After I have planned my trip/climb /walk/ski.	3.8%	17

5. Interpreting the avalanche hazard

How often do you think avalanches occur in Scotland? (450)

Very rarely (once or twice a season)	Occasionally (once or twice a month)	Often (approximately fifty in a season)	Commonly occurring. (over a hundred in a season)	Don't know
2	15	180	242	11

During which forecasted avalanche hazard level do you think a person is NEVER likely to get avalanched? (446)

Low	Moderate	Considerable	High	Very High	None	Don't know
94	5	1	2	2	332	10

During which forecasted hazard level do you think a person is potentially most likely to get avalanched?(450)

Low	Moderate	Considerable	High	Very High	Don't know
0	24	151	51	210	14

How do you evaluate avalanche hazard when you are in the mountains? (450)

I rely solely on the information provided in the Avalanche forecast	I make my own hazard evaluation independent of the SAIS Avalanche forecast.	I use the SAIS avalanche forecast as a guide but also make my own observations.	I tend not to consider the avalanche hazard when I am in the mountains.
8	17	422	1

At what level of OBSERVED avalanche hazard do you think most avalanches occur in Scotland ? (408)

Low	Moderate	Considerable	High	Very High	Don't know
1	21	185	110	45	46

6. Personal avalanche experiences

Have you been avalanched in Scotland ? (449)

Never	once	twice	three	more than three times
342	77	22	5	3

If avalanched, what was most common reason ? (111)

Self triggered.	Triggered by one of your party.	Triggered by another party or person.	A natural event.	Cornice collapse triggered.
61	20	6	10	14

7. Where have you tended to go when carrying out your winter activities this season (2009/10) ? (441)

Answer Options	0 days	1- 2 days	3-5 days	6-10 days	11-20 days	21-40 days	41-50 days	51-100 days	100+ days
Lochaber	27	121	90	56	26	17	2	3	1
Glencoe	33	102	107	48	19	13	1	0	0
Creag Meagaidh	76	91	50	10	2	3	0	0	0
Southern Cairngorms	67	71	45	26	19	11	2	3	0
Northern Cairngorms	27	64	96	69	47	17	7	8	2
North-West Highlands	71	51	49	28	12	3	0	1	0
Islands	126	19	3	3	1	0	0	0	0
Southern Uplands	101	43	26	7	5	1	2	0	0
Central Lowlands	105	32	20	11	4	0	1	0	0

8. Overall, how do you rate the quality of products and services we provide? (450)

Excellent	68.7%	309
Good	29.3%	132
Adequate	2.0%	9
Poor	0.0%	0
Unacceptable	0.0%	0

Additional Survey Comments

For most questions additional comments were received and they have provided us with individuals experiences and observations and provide us with a varied interpretation of the service. A general summary of the responses are as follows;

- The blogs are used extensively as an additional source of information
- We have received good feedback on how people use the reports as indicated clearly in the answers to question 5 re hazard evaluation in mountains.
- That further help in interpretation of hazard reports would be useful.
- Flexibility of operational period.
- SAIS Area coverage.

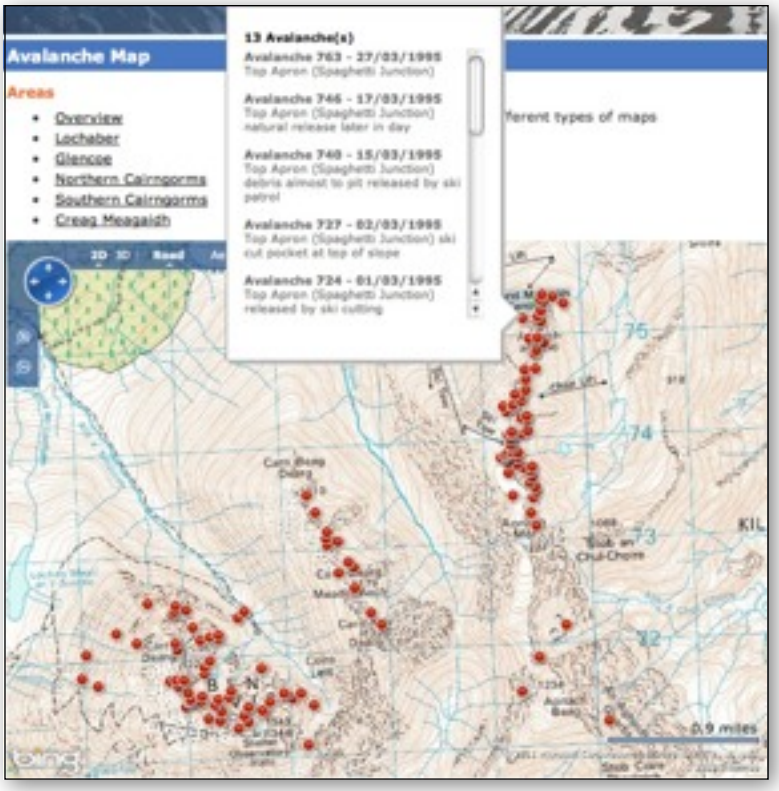
Summary

The responses to the survey have given both the SAIS and SAFOS invaluable information on how people use the service and indicates the areas that need more attention and development.

The development of initiatives is a continuing process and some of the latest modifications go some way to addressing the issues that have been identified , however we always welcome any comments and suggestions.

New Avalanche Mapping System

In the early part of the winter a new online avalanche mapping system was introduced which presents a visual indication of avalanche occurrences throughout Scotland for the first time.



All mountain users can now see the full extent of avalanches that have been recorded by the SAIS since 1990. Up to 3000 avalanches have been placed on maps, which can be viewed on our website at www.sais.gov.uk

This significant development graphically illustrates to all mountain users the extent and number of avalanches that take place in the Scottish Mountains and hills .

The data used has been collected by the SAIS avalanche forecasting team over many years and collated by Blyth Wright who was the co-ordinator of the sportscotland Avalanche Information Service from its inception in 1990 until 2009.

The new Avalanche Mapping System is the result of much work from:- Ross Purves who developed the initial recording programme many years ago and is currently the Chair of the Snow and Avalanche Foundation of Scotland, the Hotscot web design team based in Fort William, Mark Diggins the current SAIS co-ordinator and the whole SAIS forecasting team.

Additionally a new online report system allows the public, who observe avalanche activity to accurately report and place the avalanche on an online map. Also the notification on the map system of recent avalanche activity is a very useful tool in helping the mountain traveller consider route choice in the winter mountains.

Interpretation notes

- It can be assumed that many more avalanches will have occurred than those presented on the mapping system, they may not have been reported or noted.
- The mapped avalanches occurrences have been observed by SAIS forecasters in the field or reported to the SAIS over a 20 year period.
- Most mapped avalanche occurrences are mainly located in the 5 SAIS operational areas, where SAIS forecasters are active. However many avalanches occur in other areas.
- Avalanche involving people are, in 90% of cases, triggered by their victims. Thus many occurrences are located in the most popular areas visited by the public.
- It should not be concluded that the presented avalanche occurrences identify the main locations where avalanches take place.
- Avalanche occurrences generally occur where human activity takes place.
- All avalanche reports sent in by the public are verified by the SAIS before publication on the mapping system

Online Report System

The Website

Website activity

The website is the main source of information that the SAIS provides, through the analysis of site usage an indication of user numbers, user location and potential mountain visitors can be obtained. During the winter period 1 Dec 2010 to 21 April 2011, 3098 pages were viewed a total of 563,610 times. During the winter period 1 Dec 2009 to 25 April 2010, 3933 pages were viewed a total of 847,428 times. During the winter 1 Dec 2008 to 25 April 2009 winter for the same period pages were viewed 288,165 times.

Winter website views via google analytics

Numbers viewing the daily SAIS Avalanche Forecast Report.

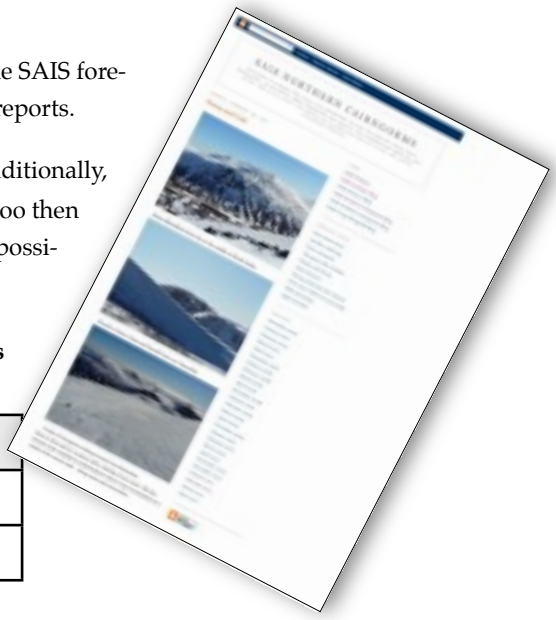
For period 1 Dec 2010 to 15 April 2011 the actual daily Avalanche Forecast Reports have been viewed 296,964. A comparison with previous years can be viewed in the table below.

AREA	2010/11 SEASON	2009/10 SEASON	2008/9 SEASON
Northern Cairngorms	89,236	111,573	66,813
Southern Cairngorms	44,936	69,492	37,855
Lochaber	63,653	92,188	65,848
Creag Meagaidh	40,066	63,744	37,843
Glencoe	59,073	95,907	67,937
TOTALS	296,964	432,904	276,296

SAIS Blog Activity

The information placed on the blog is additional to the observations that the SAIS forecasters carry out on the hill in order to compile the daily avalanche hazard reports.

We recognise that even one picture can provide a wealth of information, additionally, if information such as field observations and experiences can be provided too then this can help the public best decide where to go. However this may not be possible every day due to visibility and the time available.



For the winter period 20010/11 the area blogs where viewed **327,967 times**

N Cairngorms	Lochaber	C Meagaidh	Glencoe	S Cairngorm
108124	69007	37173	41629	71634
Total All Areas	**327967**			

Media

It is important that the public are aware of the presence of the avalanche information service and the source of information that it provides in terms of daily avalanche forecast reports. The media play a significant role in this regard and we are grateful for the support we get. Just as important however, are the reminders that any media coverage will provide in helping illustrate the fact that there is always, to varying degrees, an avalanche hazard in Scotland's mountains and hills. A reminder that we have to consider the avalanche hazard whenever we plan our walk, climb ski and snowboard trip is a useful service that the media provide. Being aware of the hazards, and the opportunity to plan our excursions and climbs with up to date information enables us to enjoy the Highlands of Scotland with more confidence and safety.

The following is a summary of media activity;

Date	Article/feature	notes
8 th Dec 2010	Scottish Gov research report avalanches in Scotland	Article in Spice magazine following snowfall in late November early December 2010 http://www.scottish.parliament.uk/business/research/briefings-10/SB10-91.pdf
20 Dec 2010	Scotland	Feature on Hazard evaluation with Mark Stephen
25 Dec 2010	BBC Landward	BBC Avalanches in Scotland - off piste skiing - transceivers with Dougie Vipond http://www.bbc.co.uk/programmes/b00x3y5z
10 Jan 2011	Scotsman Feature - Snow Patrol	Work of SAIS - Hazards etc http://thescotsman.scotsman.com/features/Snow-patrol-Keeping-Scots-safe.6684699.jp
21 January 2011	ITV DAY Break	Feature on ITV's am DAY BREAK National coverage Working in the Mountains with the SAIS.
28 Feb	Avalanches in Britain - article UKC climbing .com	http://www.ukclimbing.com/articles/page.php?id=3496
17 th feb	S&B Herald Avalanche occurrences 5 in a day	http://www.strathspey-herald.co.uk/news/printpage.php/aid/6094/Eight_swept_up_in_avalanches.html
3 March	Article/feature on New avalanche mapping system	http://www.ukclimbing.com/news/item.php?id=60739
15 March	BBC News Highlands and Islands	http://www.bbc.co.uk/news/uk-scotland-highlands-islands-12744417
28 March	Avalanche teams capture mountain snow scenes use of SAIS blog - BBC News website	http://www.bbc.co.uk/news/uk-scotland-highlands-islands-12811375
6 April	BBC News website Avalanche debris dwarfs walkers	http://www.bbc.co.uk/news/uk-scotland-highlands-islands-12990834

Working with Agencies and Groups

Snow and Avalanche Foundation Of Scotland

SAFOS, originally formed in 2001, provides important guidance to the Sportscotland Avalanche Information Service. The group comprise representatives from, Scottish National Outdoor Training Centre, The Met Office,, Mountaineering Council of Scotland , Scottish Mountain Training, Universities of Edinburgh, Heriot Watt and Glasgow, **sport**scotland, sportscotland Avalanche information service forecasters and co-ordinator. SAFOS has a number of roles including:

- the provision of advice to **sport**scotland on the **sport**scotland Avalanche Information Service;
- providing a forum for discussion of, and support for, research on avalanches in Scotland;
- promoting a better understanding of the avalanche problem amongst all who use the hills in winter conditions in conjunction with representative bodies; and
- giving advice on course content and syllabi for all levels of avalanche training and supporting appropriately qualified providers.

Further information of the role of SAFOS and seminars can be found on the SAFOS website

European Avalanche Warning Service

The SAIS is member of the European Avalanche Warning Service which comprises 16 countries that provide avalanche information services. The organisation meets annually in order to develop harmonisation, exchange information, ideas, methods and findings, it also provides a useful portal through its website www.avalanches.org to access national avalanche reports, multilingual information and glossaries. The SAIS will present at the next meeting in Grenoble 15-16 September 2011.

International Snow Science Workshop

The ISSW is predominantly hosted in North America (a conference was held for the first time in 2009 at Davos Switzerland,) it exists to facilitate the interdisciplinary exchange of ideas and experiences between snow science researchers and practitioners, who attend from throughout the world.

Representatives from the SAIS have presented papers at both ISSW and EAWS conferences. for many years and attendance at the seminars provides an essential opportunity to keep abreast of worldwide developments and initiatives. This enables the SAIS to remain at the forefront of avalanche forecasting and snowpack knowledge. This information can be utilised both in forecasting methods, public avalanche reports, education and the dissemination of new developments to agencies and individuals.

Mountaineering Organisations

Throughout 2010/11 winter season the SAIS has liased with agencies and organisations such as: the Scottish Government , the Mountaineering Council of Scotland and the Scottish Mountain Safety Forum providing important avalanche hazard information and advice which can then be provided to the public and other agencies. Additionally presentations on Scottish Avalanche Hazard and associated subjects have been presented to the following groups.

British Association of Ski Patrollers. - Scotland

Association of Mountaineering Instructors - Glenmore Lodge

Ireland and United Kingdom Mountain Rescue Conference - Dublin

Scottish Mountain Rescue Avalanche Training - Braemar

British Mountain Guides

Other Agencies and Groups

The avalanche service are often called upon to advise and co-operate with agencies out-with the normal mountain user groups, but who nonetheless work, operate, and are affected by mountain conditions and factors . Additionally the snow covered mountains can provide information which may be of value in identifying potential hazards and monitoring effects created by natural events.

The following is a summary of those activities

SEPA and the Met Office

Flooding

The SAIS continues to provide information to SEPA for public warnings and flood potential. Observers carried out measurements and collected data from a number of operational areas and provided valuable information , this enabled an assessment to be made of the amount of water being retained by snow in the highland mountains.

Snow Discolouration observation winter 2010

It was noticed that there was an extensive red/brown colouration of snowfields on most NW-N-NE aspects after snow storm cycle up to 23 Feb 2011 accompanied with very strong S-SW winds On 24/02/11 at 12:30 two samples were collected and sent to SEPA East Kilbride. The discolouration was noted in many locations in the highlands.

A study and very interesting report was carried out by a SEPA COMBINED SCIENCE TEAM Stephen Nowacki - Marine Ecology, Gillian Fowl - Field Chemistry, Dr. Pauline Lang - Freshwater Ecology, (a complete copy of the report can be requested by email from the SAIS co-ordinator)

After analysis the conclusion was that the colouration was due to an algae bloom of Chlorophyta as indicated in the extract from the report:

" It has been thought that a release of nutrients from melt water from previous years which can contain minerals leached from the underlying soil and degraded plant material brought in by strong winds help to create a habitat to sustain the bloom. ". Because of the paucity of nutrients in snow and ice fields they are heavily reliant on air transported nutrients to sustain the ecosystem there. "

Conclusion

Pink snow is a natural occurring, but unusual event and the "blooms" can appear sporadically when conditions are an optimum or be persistent over many years. They have been reported by ancient writers such as the Greek philosopher Aristotle, tourists, naturalists, explorers and mountain climbers in the past. The snow algae are harmless to the environment and no known cases of fatalities have been reported, although some cases of upset stomach due to drinking the pink melted snow are not uncommon. Further reference can found here :
http://en.wikipedia.org/wiki/Watermelon_snow

SAIS/Snowsport scotland Freeride initiative

In co-operation with Snowsport Scotland, Anatom and the ski areas of Cairngorm Mountain and Glenshee a series of avalanche awareness and avalanche situation rescue days took place in order to develop avalanche knowledge for freeriders. This was carried out in recognition of the number of freerider avalanche involvements in Scotland, and with the aim of helping to prevent future avalanche incidents in the highlands and when enthusiasts carry out their activity elsewhere in the world. The groups comprised snowboarders, ski tourers and off piste skiers and took place in the ski areas. The programme will continue for the 2011/12 season.

Support and Sponsorship

The SAIS are supported by many agencies and organisations who provide help in many ways, from equipment and clothing, to providing facilities from where we carry out our operation, help with access into the mountains and with support from many individuals who recognise the service that we provide to the public. We are very grateful for all the help we are given and would like to thank all those who provide support. and enable us to carry out our work for the avalanche service in a more effective way.

The SAIS are funded by the Scottish Government through **sport**scotland.	
Weather forecast information	
Essential snow and avalanche field equipment and mountain clothing	
Administrative support and main office location	
SAIS Area bases, location support for Northern Cairngorms, Southern Cairngorms,Glencoe, Lochaber and Craig Meagaidh	
Area location support and access	