Scottish Avalanche Information Service

Interpreting Avalanche Reports

Overview

Avalanche reports are produced daily by SAIS forecasters. SAIS forecasters carry out a hazard evaluation in the field for part of the day, returning to their base in the afternoon, they will then obtain a specific weather forecast from the Met Office and begin the process of constructing the avalanche report for their region. The area forecaster will discuss the situation with other forecasters and the SAIS co-ordinator after which the report is published.

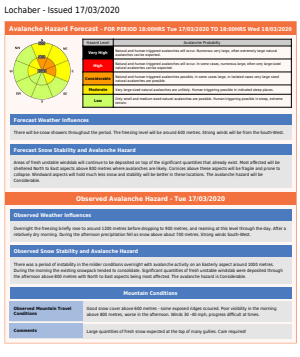
Important Considerations

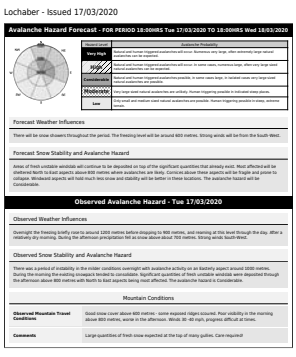
- Reading one avalanche report will provide insufficient information to enable someone to determine the complete avalanche hazard situation for an area for that day.
- For a complete understanding of the avalanche hazard prior to your day in the mountains or hills, it is important to take into account the snowpack history: reading avalanche reports from the most recent days, and by monitoring snowpack evolution from the start of the winter.
- Avalanche hazard is only one of the factors to consider when venturing into the mountains as a climber, walker, skier or snow boarder. In the decision making process it is important to consider together three important factors: the weather and mountain conditions, individual skill and experience levels, and the type of landscape to be travelled.
- The ‘Be Avalanche Aware’ process clearly illustrates a simple process mountain users should utilise before and during their winter mountain and hill excursions. It can be downloaded as an app

Avalanche report versions

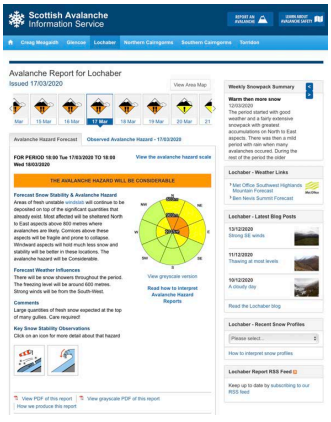
The report is presented in a number of formats, they all have the same content regarding avalanche reports but the online version has interactive elements.

pdf download and email, colour and b&w.





online and mobile digital



Presentation of reports
PDF download version

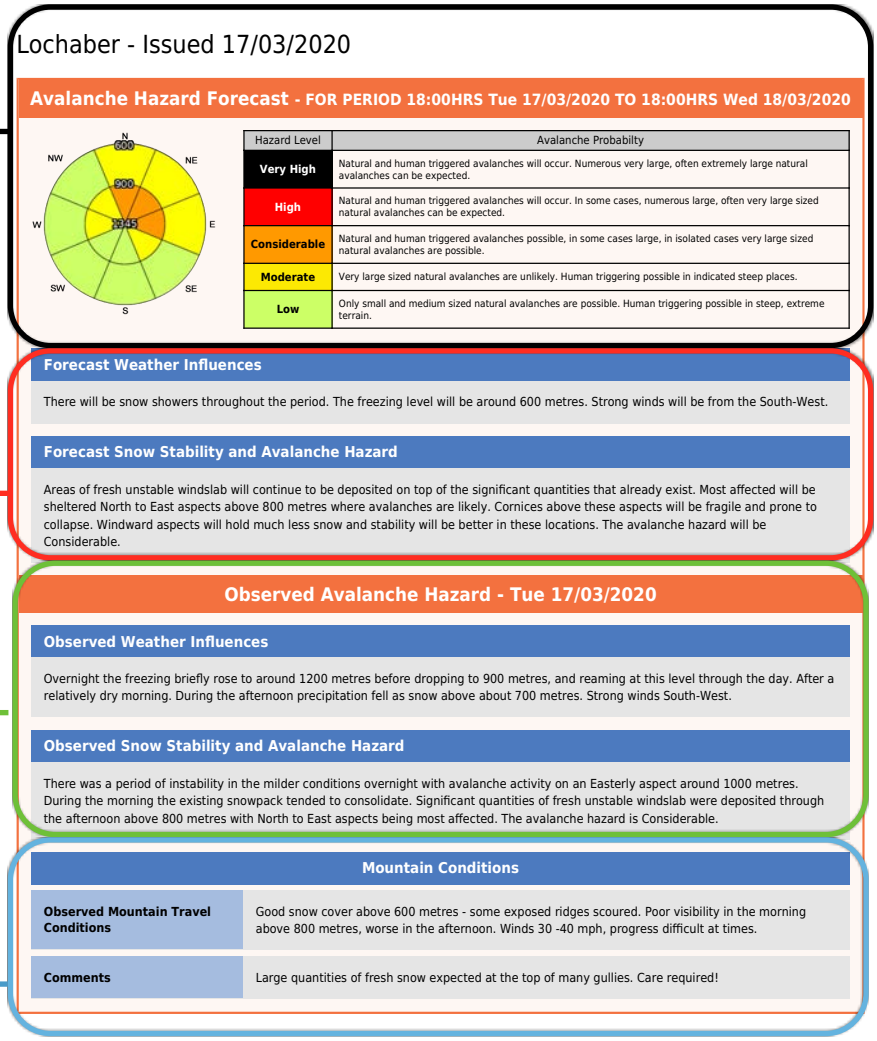
The report consists of 4 main sections of information.

A hazard compass rose presenting a visual representation of hazard distribution and altitudes. A chart with display of hazard levels and avalanche probability. Date of issue and period of validity.

Forecast avalanche hazard text with key weather influences; wind direction, altitude of snow-line, freezing levels, snow stability and avalanche hazard text section.

Observed avalanche hazard text of the weather conditions experienced by the SAIS forecaster in the field and the avalanche hazard observations obtained during their travel in the landscape.

Text description of the mountain conditions observed by the SAIS forecaster in the field; underfoot conditions, visibility and wind affect on physical progress are recorded. This information is also sent to the met office to enhance weather forecasting and public information. Comments on possible conditions for the next days or information of particular significance may also be written.



Lochaber - Issued 17/03/2020

Avalanche Hazard Forecast - FOR PERIOD 18:00HRS Tue 17/03/2020 TO 18:00HRS Wed 18/03/2020

Hazard Level	Avalanche Probabilty
Very High	Natural and human triggered avalanches will occur. Numerous very large, often extremely large natural avalanches can be expected.
High	Natural and human triggered avalanches will occur. In some cases, numerous large, often very large sized natural avalanches can be expected.
Considerable	Natural and human triggered avalanches possible, in some cases large, in isolated cases very large sized natural avalanches are possible.
Moderate	Very large sized natural avalanches are unlikely. Human triggering possible in indicated steep places.
Low	Only small and medium sized natural avalanches are possible. Human triggering possible in steep, extreme terrain.

Forecast Weather Influences

There will be snow showers throughout the period. The freezing level will be around 600 metres. Strong winds will be from the South-West.

Forecast Snow Stability and Avalanche Hazard

Areas of fresh unstable windslab will continue to be deposited on top of the significant quantities that already exist. Most affected will be sheltered North to East aspects above 800 metres where avalanches are likely. Cornices above these aspects will be fragile and prone to collapse. Windward aspects will hold much less snow and stability will be better in these locations. The avalanche hazard will be Considerable.

Observed Avalanche Hazard - Tue 17/03/2020

Observed Weather Influences

Overnight the freezing briefly rose to around 1200 metres before dropping to 900 metres, and reaming at this level through the day. After a relatively dry morning. During the afternoon precipitation fell as snow above about 700 metres. Strong winds South-West.

Observed Snow Stability and Avalanche Hazard

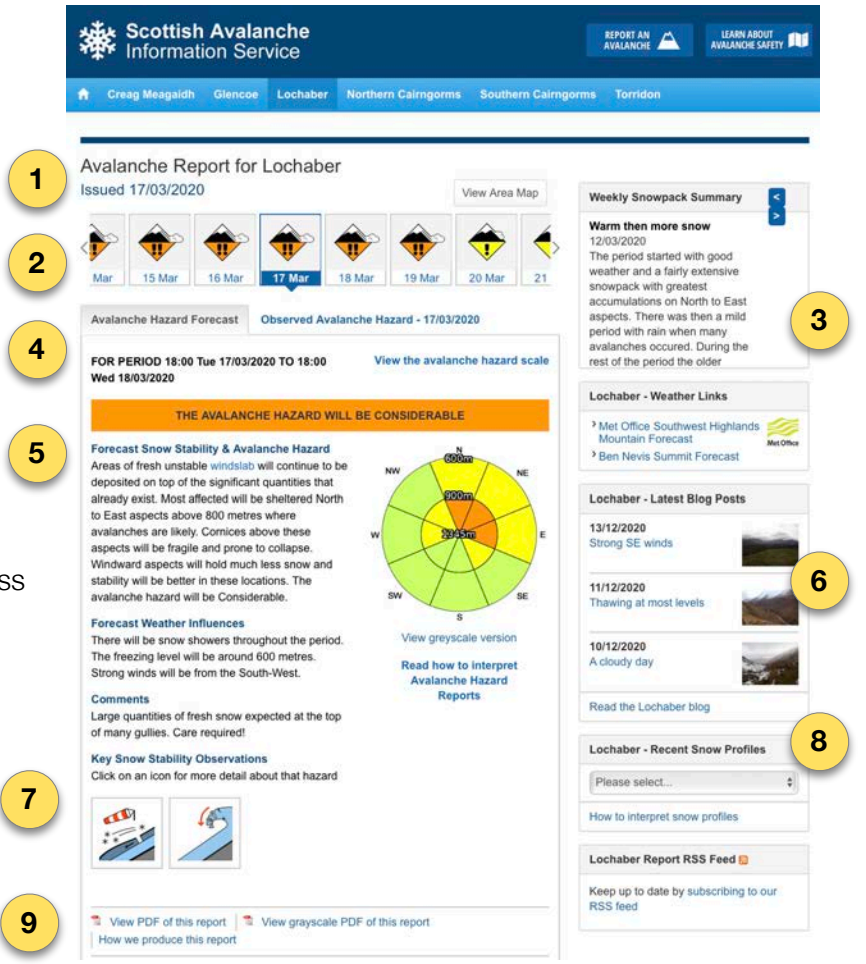
There was a period of instability in the milder conditions overnight with avalanche activity on an Easterly aspect around 1000 metres. During the morning the existing snowpack tended to consolidate. Significant quantities of fresh unstable windslab were deposited through the afternoon above 800 metres with North to East aspects being most affected. The avalanche hazard is Considerable.

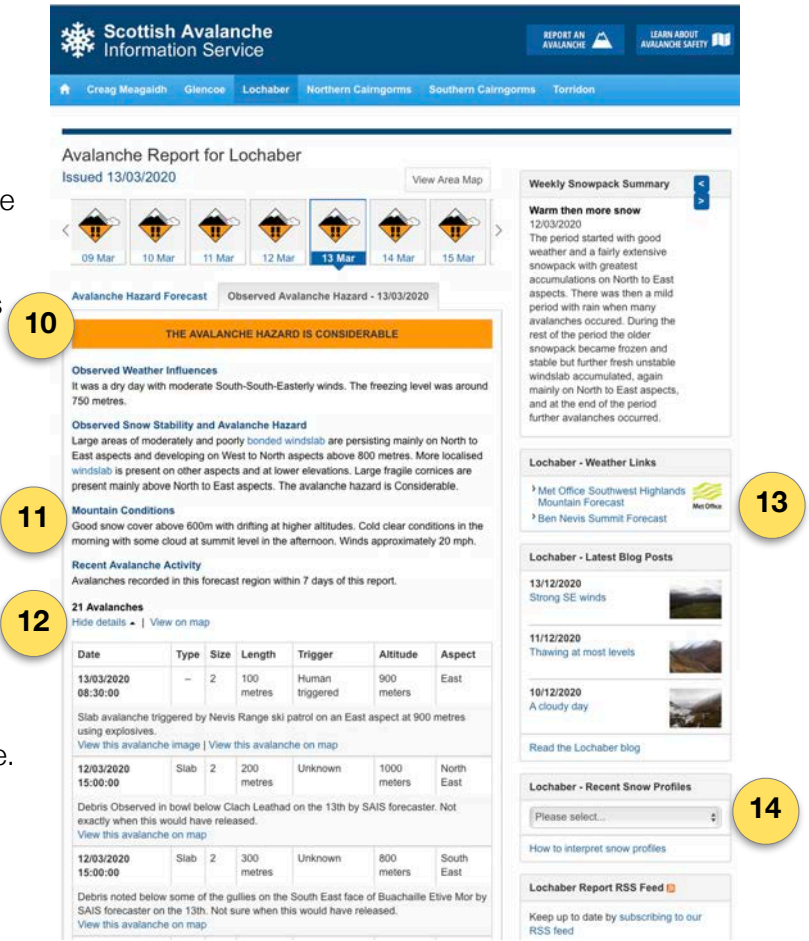
Mountain Conditions

Observed Mountain Travel Conditions	Good snow cover above 600 metres - some exposed ridges scoured. Poor visibility in the morning above 800 metres, worse in the afternoon. Winds 30 -40 mph, progress difficult at times.
Comments	Large quantities of fresh snow expected at the top of many gullies. Care required!

Online and mobile digital version

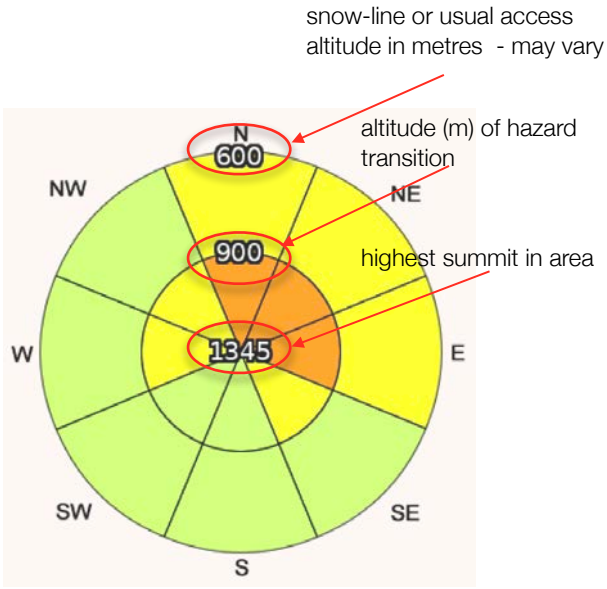
1. Area and issue date.
2. Past avalanche reports accessed by scrolling back in time.
3. Snowpack history summaries provide weekly descriptions from the start of the winter. These are published by each area every week and provide key snow stability observations. This may be used to determine any persistent factors such as weak layers and/or cornice threat.
4. On online versions either forecast Avalanche Hazard or observed avalanche hazard is displayed. Tabs are used to access one or the other.
5. Forecast snow and avalanche hazard text with tool tip glossary, and hazard compass rose are displayed together to present better interpretation of avalanche hazard distribution.
6. Area blog posts are presented conveniently so that area images and forecaster descriptions can be accessed and used in decision making.
7. Relevant Avalanche problems/key snow stability observations are highlighted and show the key stability factors or patterns that the forecaster considers are relevant for that day. Use these to determine any persistent hazards.
8. Snow profiles for current and previous days are available.
9. PDF downloads are available here, colour and B&W.
10. The observed avalanche hazard is accused via relevant tab.
11. Observed mountain conditions.
12. Recent recorded Avalanche activity provides incident information and a clear indication of instability.
13. Relevant weather forecasts and access to summit weather conditions data.
14. Snow profile interpretation and archive.





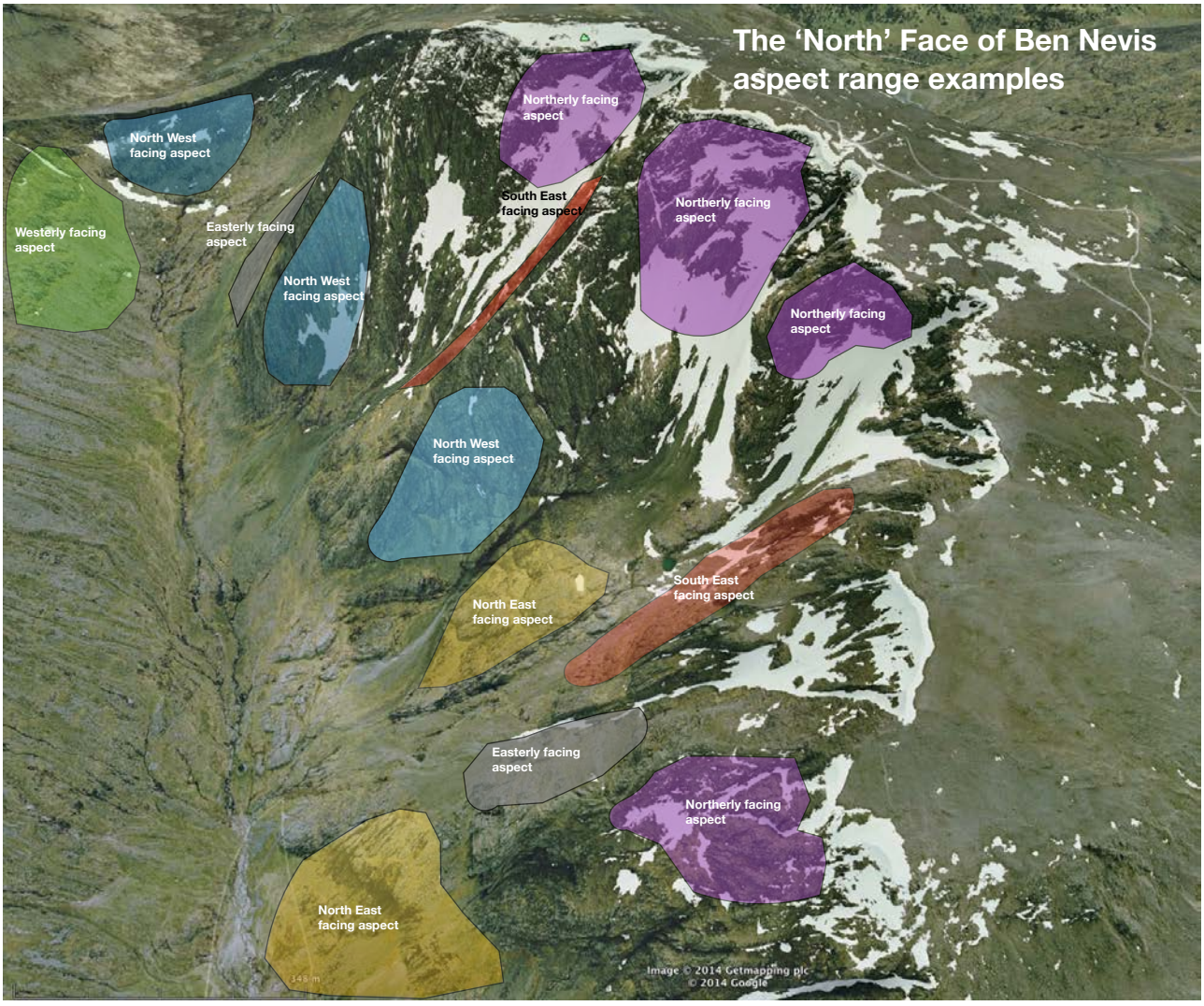
Interpretation of avalanche hazard reports

The hazard compass rose



The hazard rose is a supplement to the text description and should not be used in isolation as it cannot completely portray the situation on the ground.
The distribution of hazard according to aspect and compass direction by forecasters is generally determined by using observations on the ground during field excursions, and weather forecasts.

When using the hazard rose it is important to consider that in any particular mountain area or coirie many aspects may be encountered. eg The North Face of Ben Nevis or the Northern Corries of the Cairngorms contain most aspects in addition to Northerly ones.



Localised snow distribution and instabilities

The distribution of snow in our winter landscape is mainly determined by the wind. Areas often comprise wind scoured slopes and ridges and accumulations of deeper snow in wind sheltered places and specific slopes. This presents a landscape and situation of great variation.
As the snowpack evolves during the winter, layers of snow are built upon by subsequent snow accumulations. This often presents us with a situation where localised weakly bonded areas are distributed in a variety of small locations on an otherwise stable snowpack or often bare ground (see photo). In the photo below even a small avalanche therefore, would have serious consequences.

Corrie an t Sneachda, Cairngorms - Localised snow distribution

Localised definition

The term 'localised' is often used to describe limited snowpack cover and/or weaknesses in the snowpack being confined to small areas which can release as an avalanche with a loading of one person or more. Even small areas, once triggered, can effect the whole slope because of the increased load and produce avalanches of serious consequence and greater size.

Localised snow distribution and instabilities are described within the text description in the daily avalanche reports

The graphic presentation of localised snow distribution and instabilities is under review.

Forecast Snow Stability & Avalanche Hazard

Unstable windslab will persist mainly on West through North to East aspects and continue to develop on West through North to North-East aspects above 800 metres with more localised accumulations on other aspects and at lower elevations. Cornices will be fragile. The avalanche hazard will be Considerable.

Important considerations when interpreting avalanche hazard reports

All avalanche reports require the user to interpret their own observations when travelling in the mountains and to continually assess their encountered situation.

Identifying avalanche hazard in the hills and mountains throughout the winter is a challenging process. Constantly changing weather factors, from temperature and snowfall to wind speed and direction can affect the strength and stability and distribution of the snowpack.

It is also important to keep a close watch on conditions during the season and especially during any mountain excursions.
It is also recommended that as well as avalanche hazard, other factors such as weather and terrain should be taken account. The BAA process, as outlined below, shows the planning phase as one of the three important phases of information gathering before going into the mountains. This is the most important and will provide you with 75-80% of your hazard evaluation information.

Other useful information for determining avalanche hazard

The Avalanche Map

Avalanche maps provide up to date information on the location of avalanche activity, providing key information on snow stability in respect of altitudes, aspects, and locations.
They are updated daily by forecasters and from avalanche reports that are provided by the public and provide recent avalanche activity and therefore snow stability information which can be incorporated into any planning.
All avalanche reports are checked before being published to the map.