Avalanche Map Viewer 2.0 – User guide

The Avalanche Map Viewer is a web map application aimed at easing user access to avalanche and landslide data gathered and processed at the Icelandic Met Office. The following user guide describes content and functionalities of the Avalanche Map Viewer version 2.0.

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Overview

Four thematic layers are featured in the viewer:
- Risk zones
- Evacuation zones
- Snow depth measurements
- Outlines of historical avalanches

Although the viewer covers Iceland as a whole, detailed information is available only for settlements and areas surveyed by snow observers.

The viewer also features links to external web pages, as well as tools nested in specific consoles. The main console and the toolbar have a fixed position. The other consoles can be dragged to any location on top of the map. Draggable consoles can also be hidden by clicking on corresponding icons located on the toolbar.

The viewer has been designed as a desktop application. The guidelines given below are pertaining only to a use of the viewer with desktop/laptop computers.

Main console

The main console (Figure 1) features links to documentation and webpages pertaining to the viewer. The console has a fixed position on the map and cannot be hidden.
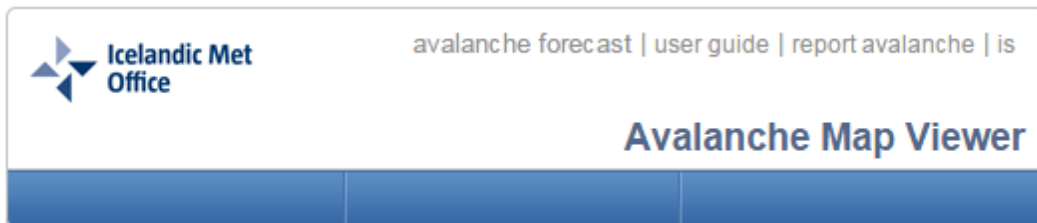
avalanche forecast | user guide | report avalanche | is

Avalanche Map Viewer

Figure 1: Overview of the main console

Links

avalanche forecast	Link to the avalanche forecast of the Icelandic Met Office
user guide	Link to the Avalanche Map Viewer user guide (this book)
report avalanche	Link to the avalanche reporting form of the Icelandic Met Office
is	Link to the Icelandic version of the Avalanche Map Viewer

By clicking on the logo of the Icelandic Met Office, you will open the main web site of the institute.

Toolbar

The toolbar contains a variety of tools aimed either at controlling the visibility of consoles or enabling feature information retrieval. Depending on the version of the application, the toolbar appears either nested in the main console or detached. The toolbar cannot be hidden.

	Show/hide the map layer console when clicked
	Show/hide the spatial bookmark console when clicked
	Show/hide the measurement console when clicked
	Show/hide the map extent console when clicked
	Activate the Info pop-up tool
	Open the avalanche fact sheet search engine on clicking

Navigation

Navigation is ensured by clicking the map with the mouse left button and dragging. The area of the map that is grabbed ends up wherever the mouse button is released.

Zooming in and out can be performed either by using the mouse (scrolling forward/backward) or the slider adjacent to the scale information window (Figure 2), located on the bottom left corner.

Figure 2: Zoom slider

Map layers

The map layer console (Figure 3) can be dragged to any location on top of the map. The console can also be hidden by clicking on the corresponding button located on the toolbar (Click again on the button and the console reappears).

Base layers

Users can choose between four different base layers by clicking on the appropriate radio button:

- Imagery (SPOT © CNES 2002-2007 © NLSI)
- Imagery with place names (SPOT © CNES 2002-2007 + place names from IS 50V geodatabase © NLSI)
- Basemap (made from IS 50V geodatabase © NLSI)
- Basemap with place names (made from IS 50V geodatabase © NLSI)

The base layer showing on application opening is the basemap with place names. Improvement to base layers, e.g. with aerial imagery at high resolution, is on the agenda.

The base layer controls which scales are available when zooming in and out, as following:
1:5.000 – 1:10.000 – 1:25.000 – 1:50.000 – 1:100.000 – 1:250.000 – 1:500.000 – 1:1.000.000 – 1:2.000.000
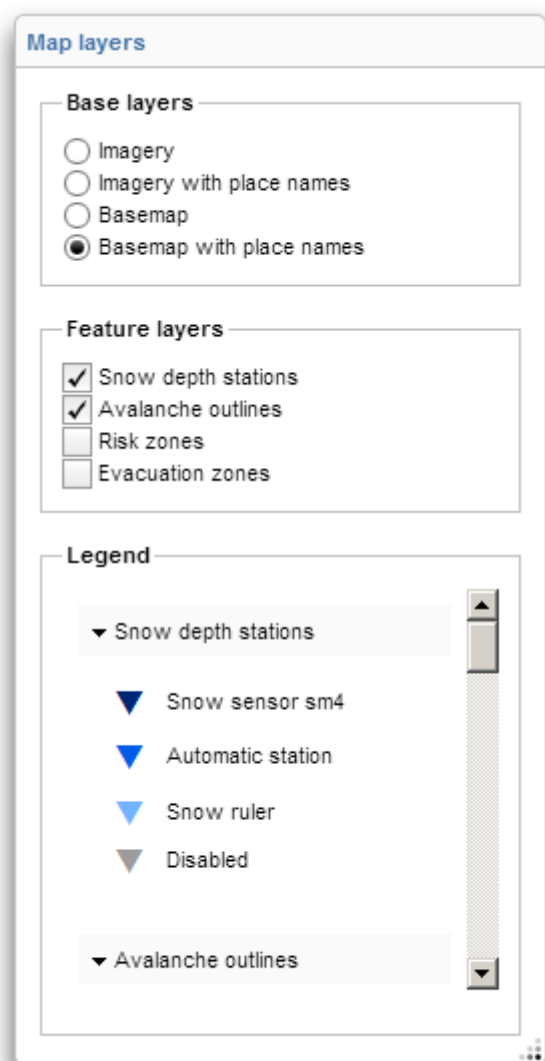
Figure 3: Overview of the map layer console

Feature layers

Data on snow depth, avalanche outlines, risk zones, and evacuation zones are accessible in the map viewer as distinct features layers.

Feature layers can be checked or unchecked by clicking on the corresponding check boxes in the feature layer console. On application opening, only the avalanche outlines and snow depth layers are checked (Figure 3).

Additional feature layers, e.g. defence structures, may be added in future versions of the map viewer.

Updates

Updates are performed on a regular basis (Table 1).

Table 1: Layer's update frequency

Feature layers	Update
Base layers Evacuation zones Risk zones	As needed
Avalanche outlines	1-2 a year
Snow-depth measurements	Real-time

Visible scales

Feature and base layers are programmed to be visible within a predefined scale range (Table 2). When zoom is set to a scale outside of a given layer programmatic range of visibility, the name of the layer appears as greyed in the map layer console. At scale 1:5.000, base layers may take time to display beyond areas and settlements monitored.

Table 2: Layer's visibility scale ranges

Layers	Visibility scale ranges
Snow depth measurements	1:5.000 to 1:100.000
Avalanche outlines	1:5.000 to 1:100.000
Evacuation zones	1:5.000 to 1:10.000
Risk zones	1:5.000 to 1:50.000
Base layers	1:5.000 to 1:2.000.000

Information on features

Information can be retrieved by clicking on GIS features on the map. A single click is needed. The tool info popup tool may need to be activated first by clicking on the corresponding button on the toolbar. When a feature is selected, a popup window opens which displays detailed information attached to the feature (Figure 4).

Selected features have their colour changed as long as the corresponding information displays in the popup window. If many features are clicked at the same time, the number of features identified appears in brackets in the upper left corner of the information window; switching between identified features is executed by clicking on the arrows in the upper right corner of the information window.

In the current version of the Avalanche Web Map Viewer, use of the information popup tool is limited to retrieving information about avalanches and snow depths measurements at monitoring stations.
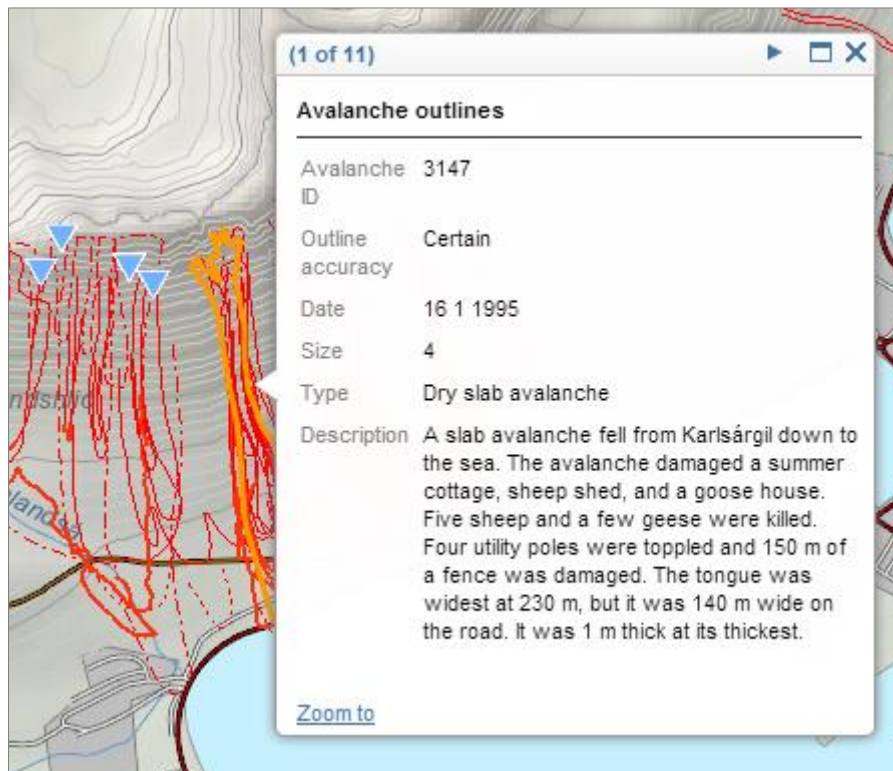

Figure 4: Overview of the information popup window

Bookmarks

Spatial bookmarks are accessible through the bookmark console (Figure 5). The bookmarks are distributed in two accordion panes, one dedicated to monitored areas, the other to monitored settlements. By default, the monitored areas pane is activated. Zooming to areas and settlements bookmarked is executed by clicking on the magnifying glass icons.

Links to the risk and evacuation maps published are available under each settlement bookmark in the pane dedicated to monitored settlements.

The bookmark console is draggable to any location on top of the map. The console can also be hidden by clicking on the corresponding button located on the toolbar (Click again on the button and the bookmarks console reappears).

Figure 5: Overview of the bookmarks console. Spatial bookmarks are distributed in two panes
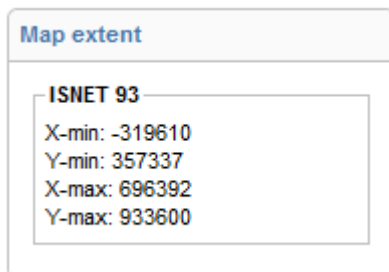
Map extent

Figure 6: Map extent console.

The measurement console displays information on the map extent visible on the screen (Figure 6). Extent is expressed in metres (Projected coordinate system ISNET93).

The console is draggable to any location on top of the map. The console can also be hidden by clicking on the corresponding button located on the toolbar (click again on the button and the console reappears).

Measurements

The measurement console features tools for finding out point coordinates, measuring lengths and areas.

The console is draggable to any location on top of the map. The console can also be hidden by clicking on the corresponding button $\overset{\circ}{x_Y}$ located on the toolbar (Click again on the button and the console reappears).

Find out coordinates ⊕

Click on the point coordinate tool button for activation then click a location on the map to display its coordinates (Figure 7). The point measured is indicated on the map by a red flag. Coordinates are expressed as longitude and latitude, either in decimal degrees or DMS.
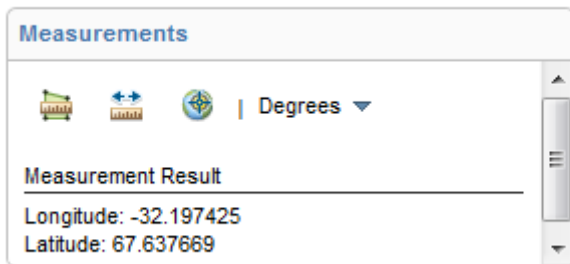

Figure 7: Find out coordinates

Measure lengths ⇔

Click on the length measurement tool button for activation then click on the map at locations that define the start-, mid-, and end points of the line to be measured (Figure 8). Double click to complete drawing and display results. One can choose between mile, kilometre, feet, metre, or yard as measurement unit.
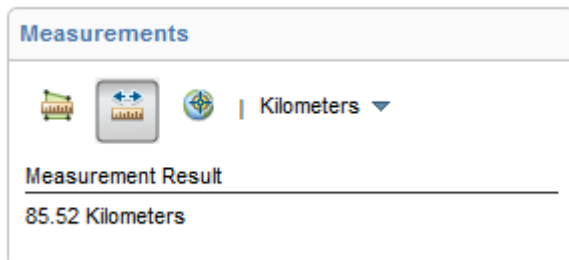

Figure 8: Measure lengths

Measure areas

Click on the area measurement tool button for activation then click on the map at locations that define the outline of the area to be measured (Figure 9). Double click to complete drawing and display results. One can choose between acre, square kilometre, square mile, hectare, etc. as measurement unit.
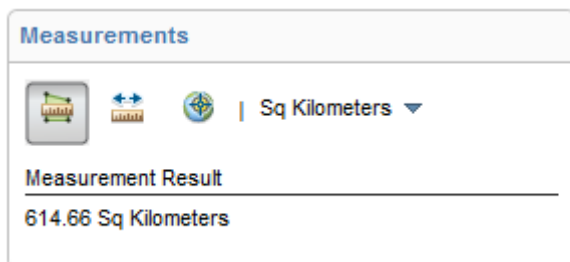
Figure 9: Measure areas

Avalanche fact sheets

Individual fact sheets are retrievable for a large number of avalanches. The search engine opens by clicking on the corresponding button ▣ on the toolbar. Fact sheets are retrieved by entering an avalanche ID number in the search box (Figure 10). On validation, sheets are rendered as an html pages.
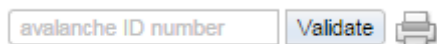

Figure 10: Avalanche report search engine

Please notice that for the time being online fact sheets are not available for all avalanches featured in the map viewer.

Browser settings

The Avalanche Map Viewer is a website designed to ensure very short response times. Accessibility and performance of the viewer may however be hindered by inappropriate browser settings on the user side.

JavaScript settings

JavaScript needs to be enabled in your web browser for the Map Viewer to display correctly. See online documentation for details.

Frequently Asked Questions

- [The map does not show in the viewer](#)
- [Feature layers display on the map but do not show in the map layer console](#)
- [Feature layers are checked in the map layer console but do not display on the map](#)
- [Base layers do not display or take a long time to display](#)

The map does not shows in the viewer

JavaScript needs to be enabled. If JavaScript is enabled but the map fails to display, it may due to map service maintenance. Try opening the application later and/or contact the Icelandic Met Office for further information.

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Feature layers display on the map but do not show in the map layers console

Application has failed to load successfully. Try reloading the application.

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Feature layers are checked in the map layer console but do not display on the map

Actual map scale is beyond the scale at which feature layers were prepared to be visible. See section on [visible scales](#) for more details. If failure persists please contact the Icelandic Met Office for further information.

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Base layers do not display or take a long time to display

Due to design settings, base layers may take time to display outside areas and settlements monitored at scale 1:5.000. Please notice that layers may also not display due to service maintenance. Try reloading the application. If failure persists please contact the Icelandic Met Office for further information.

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