



NATIONAL COMMISSIONER OF THE ICELANDIC POLICE
DEPARTMENT OF CIVIL PROTECTION AND EMERGENCY MANAGEMENT



THE SCIENTIFIC ADVISORY BOARD OF THE ICELANDIC CIVIL PROTECTION

Date: 19.12.2014 **Time:** 09:30 **Location:** Crisis Coordination Centre, Skogarhlid.

Regarding: Volcanic activity in the Bardarbunga system.

Attending: Scientists from Icelandic Met Office and the Institute of Earth Sciences University of Iceland along with representatives from the Icelandic Civil Protection and the Directorate of Health.

Main points

- Volcanic eruption in Holuhraun
- Air quality
- Scenarios

Notes

- Insubstantial changes have been in the volcanic eruption in Holuhraun over the last few weeks. Indication show that the lava is now mainly flowing inside closed channels except closest to the crater. One of the main lava channels is now flowing to the north.
- Seismic activity in Bardarbunga continues to be strong. The strongest earthquake since noon on Tuesday, 17. December, was magnitude M5,3 on Wednesday, 17. December, at 13:59 on the northern rim of the caldera. The earthquake was felt in Akureyri. About 6 earthquakes between M4,0-5,0 were detected since Tuesday. In total about 200 earthquakes were detected in Bardarbunga since noon on Tuesday.
- About 20 earthquakes were detected in the dyke and around the eruption site in Holuhraun since Tuesday. All smaller than magnitude M2,0.
- GPS measurements near northern Vatnajökull glacier show continuing slow subsidence towards Bardarbunga. The rate of the subsidence has slowly decreased.
- Yesterday, 18. December, scientists flew over Bardarbunga. The data collected in the flight show that the subsidence of the caldera continues with similar rate as before. The caldera has subsided between 4-5 meters since 4. December and the south caldera rim has subsided between 7-8 meters since the beginning of the seismic activity in August.
- Telecommunications with the GPS station in Bardarbunga caldera have not been established yet. Due to bad weather forecast it is unlikely that scientists will be able to travel to Bardarbunga in the next few days. A connection will be established with the GPS station as soon as possible.

Air quality:

- Today (Friday) gas pollution from the eruption is expected southeast of the eruption site. Tomorrow (Saturday) gas pollution is expected Widespread around the eruption site and to the north in the afternoon.
- The Icelandic Met Office provides two-day forecasts on gas dispersion from the eruptive site in Holuhraun. Most reliable are the forecast maps approved by meteorologist on duty, see [Gas forecast](#). And although still being developed further, an automatic forecast, see [Gas model](#), is also available (trial run, see [disclaimer](#)).
- Measurements of air quality can be found on the webpage www.airquality.is Data from handheld gas monitors, spread around the country, can also be found on that page



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- Instructions:
 - People who feel discomfort are advised to stay indoors, close their windows, turn up the heat and turn off air conditioning. Use periods of good air quality to ventilate the house. People experiencing adverse effects should be in immediate contact with their healthcare centre. Measurements of air quality can be found on the webpage www.airquality.is The Meteorological Office issues forecast on its web-page and warnings if conditions change to the worse.
 - Instructions from [The Environment Agency of Iceland](#) and [Chief Epidemiologist](#) can be found on their web-sites.
 - Check the Icelandic Met Office forecasts for sulphuric gas dispersion on the web as described above.
 - Handheld meters have been distributed around the country for SO₂ measurements three times a day.
 - Information and any questions on air pollution can be sent to The Environment Agency through the email gos@ust.is. The Environment Agency is especially looking for information from people who have been in contact with high concentrations of gas; where they were, at what time it happened, how the gas cloud looked (colour and thickness of the cloud) and how they were affected by it.
- The volcanic eruption has now been going on for over three months, the lava flow is still great in Holuhraun and the rate of the subsidence of the Bardarbunga caldera is still significant. Three scenarios are considered most likely:
 - The eruption in Holuhraun continues until the subsidence of the Bardarbunga caldera stops. The eruption can still go on for many months.
 - The volcanic fissure may lengthen southwards under Dyngjufjall, resulting in a jokulhlaup and an ash-producing eruption. It is also possible that eruptive fissures could develop in another location under the glacier. If such an eruption would be prolonged it could eventually produce a lava flow.
 - Volcanic eruption in the Bardarbunga caldera. Such an eruption would melt large quantities of ice, leading to a major jokulhlaup, accompanied by ash fall.

Other scenarios cannot be excluded.

- **From the Icelandic Met Office:** The Aviation Colour Code for Bardarbunga remains at 'orange'.
- The next meeting will be held on Monday 22 of December.

The National Commissioner of the Icelandic Police, Department of Civil Protection and Emergency Management
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