



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



THE SCIENTIFIC ADVISORY BOARD OF THE ICELANDIC CIVIL PROTECTION

Date: 31.10.2014 **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, the Environmental Agency of Iceland and the Directorate of Health.

Main points

- Volcanic eruption in Holuhraun
- Air quality
- Scenarios

Notes

- The volcanic eruption in Holuhraun continues with similar intensity. The lava field is now 65,7 square kilometres.
- Seismic activity in Bardarbunga continues to be strong. 200 earthquakes have been detected in the caldera over the last 48 hours. Just over ten earthquakes were bigger than magnitude M4,0. The largest one was M5,3 tonight at 01:30.
- The GPS station in the centre of Bardarbunga show that the subsidence of the caldera continues with similar rate as it has done over the last few weeks. The total depression in the caldera is now about 42 meters.
- Energy of the geothermal areas in Bardarbunga is now few hundred megawatts and the melting of water is estimated around 2 cubic meters per second. The water goes into Skjálfafljót og Jökulsá á Fjöllum. The flow is too small to effect the total water flow of the rivers.
- Around 20 smaller earthquakes are detected in the dyke and at the eruption site in Holuhraun, all around magnitude M1,0 and smaller.
- GPS measurements in the active area show minor changes.

A recommendation by the Scientific Advisory Board of the Icelandic Civil Protection: The Scientific Advisory Board concludes that it is necessary to increase monitoring of SO₄ so it is possible to evaluate the concentration of sulphuric acid particles and its potential influence on health.

Air quality:

- Considerable sulphuric dioxide (SO₂) pollution has been recorded widely around Iceland over the last few days. It is believed that reduced energy in the volcanic plume may result in that the gas pollution does not reach the higher layers of the atmosphere.
- Today (Friday) eastern gales are forecast so gas pollution is expected mainly in W-Iceland. Tomorrow (Saturday) light easterly winds are expected so gas pollution may be expected northwest and west of the eruption.
- 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](#)).



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- A new online gas detector has been put up in Hofn in Hornafjordur. Measurements of air quality can be found on the webpage www.airquality.is
- 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.
- Three scenarios are considered most likely:
 - The eruption on Holuhraun declines gradually and subsidence of the Bardarbunga caldera stops.
 - Large-scale subsidence of the caldera occurs, prolonging or strengthening the eruption on Holuhraun. In this situation, it is likely that the eruptive fissure would lengthen southwards under Dyngjajokull, resulting in a jokulhlaup and an ash-producing eruption. It is also possible that eruptive fissures could develop in another location under the glacier.
 - Large-scale subsidence of the caldera occurs, causing an eruption at the edge of the 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 3 of November.

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