



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



THE SCIENTIFIC ADVISORY BOARD OF THE ICELANDIC CIVIL PROTECTION

Date: 20.02.2015 **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

- The volcanic eruption in Holuhraun continues, but it has diminished substantially over the last few weeks. Visual activity in the crater has decreased and the lava field is hardly increasing in size.
- Seismic activity in Bárðarbunga continues to diminish although it can still be considered strong. The strongest earthquake since Tuesday was measured M4.3 at 01:26 yesterday. Two other earthquakes stronger than magnitudes M3.0 were detected over the period. In total around 70 earthquakes were detected around the caldera since last Tuesday. No earthquake over M5.0 has been detected in Bárðarbunga since 8. January. A distinct pulse of earthquakes occurred yesterday between 01:25 and 02:10. Time intervals between such pulses have significantly increased from 2-4 hours in the beginning to 12-24 hours or more at the moment.
- Around 65 earthquakes were detected in the dyke during the same period. The strongest one was measured M1.6 today at 08:24 in Dyngjújökull glacier.
- The rate of the subsidence in Bárðarbunga caldera had decreased substantially. But that is not the whole story. Ice is subsiding into the caldera with the effect that the GPS station does not show any changes. The estimated depression of the rock foundation of the caldera, in the light of the ice subsidence, is about 5 cm per day. The flow of magma from under Bárðarbunga is believed to be 25-30 m³ per second, which is about one tenth of the flow in September last year.
- GPS measurements near Vatnajökull glacier show continuing slow deflation towards Bárðarbunga, indicating a flow of magma from under the volcano.
- About 7 earthquakes were detected around Askja and 15 around Herðubreið since last Tuesday. All of them smaller than M1.5.

Air quality:

- Today (Friday) gas pollution is expected south and southwest of the volcano, but south and southeast of it tomorrow (Saturday).
- 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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- 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
- 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 almost half a year. The lava flow has decreased substantially in Holuhraun and the rate of the subsidence of the Bárðarbunga caldera has also decreased substantially. Three scenarios are considered most likely:
 - The eruption in Holuhraun continues until the subsidence of the Bárðarbunga caldera stops. The eruption could come to an end in the next few weeks but it cannot be ruled out that a small eruption could go on for many months.
 - The volcanic fissure may lengthen southwards under Dyngjújökull, resulting in a jökulhlaup 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 Bárðarbungu caldera. Such an eruption would melt large quantities of ice, leading to a major jökulhlaup, accompanied by ash fall.

Other scenarios cannot be excluded.

- **From the Icelandic Met Office:** The Aviation Colour Code for Bárðarbunga remains at 'orange'.
- The next meeting will be held on Tuesday 24th of February 2015.