



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



**THE SCIENTIFIC ADVISORY BOARD OF THE ICELANDIC CIVIL PROTECTION**

**Date:** 23.06.2016    **Time:** 10:30    **Location:** Crisis Coordination Centre, Skogarhlid.

**Regarding:** Bardarbunga

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

**Main points**

- **Activity in the Bardarbunga system since the end of the eruption.**

**Notes**

Today the Civil Protection Scientific Advisory Board met to review new data on the volcano Bárðarbunga.

During a scientific expedition on Vatnajökull June 3rd to 10th echo soundings of the glacier were done to examine whether changes in bedrock topography in the Bárðarbunga caldera could be detected from last year. No changes in the bedrock topography were apparent. There are no indications that meltwater is accumulating within the caldera. The 65-meter-deep depression in the glacier formed during the events of 2014-2015 are getting shallower to the flow of ice into the caldera and snow accumulation, the depression has decreased in depth by 8 meters since last year.

Expedition scientists measured gas emissions at ice cauldrons along the caldera rim, these cauldrons are formed by subglacial geothermal activity. These measurements show little change in gas emissions since last year's expedition. The depth and width of the cauldrons has not been measured for quite some time, such measurements can only be carried out with airborne surveillance. Therefore no statement can be made on changes in geothermal activity from last year.

A new seismographic station was installed at approximately 1600 meters elevation northwest of the Bárðarbunga caldera on June 5th. The station greatly improves the positional accuracy for earthquake locations underneath the Bárðarbunga caldera.

Seismographic monitoring shows that accumulated seismic moment magnitude has been increasing from mid September 2015. All in all 51 earthquakes stronger than M3 have been registered in Bárðarbunga since the end of the eruption in 2015. Further information about the Bárðarbunga seismicity may be found at : <http://en.vedur.is/about-imo/news/on-the-bardarbunga-earthquakes>.

GPS stations around Bárðarbunga show slow movement away from the caldera.

The most probable explanations for ground deformation and earthquake activity in the area are inflow of magma at about 10 to 15 km of depth below Bárðarbunga into the place of origin of the magma erupted at Holuhraun 2014 to 2015. There are no indications of magma collecting at shallower depths. This process is common in the aftermath of volcanic eruptions.

In the aftermath of the caldera subsidence and following increased geothermal activity it is probable that meltwater will start collecting under the cauldrons along the caldera rim or within the caldera itself. Therefore it is imperative to monitor the evolution of the cauldrons, seismic activity, ground deformation, geothermal activity and gas emissions in Bárðarbunga.