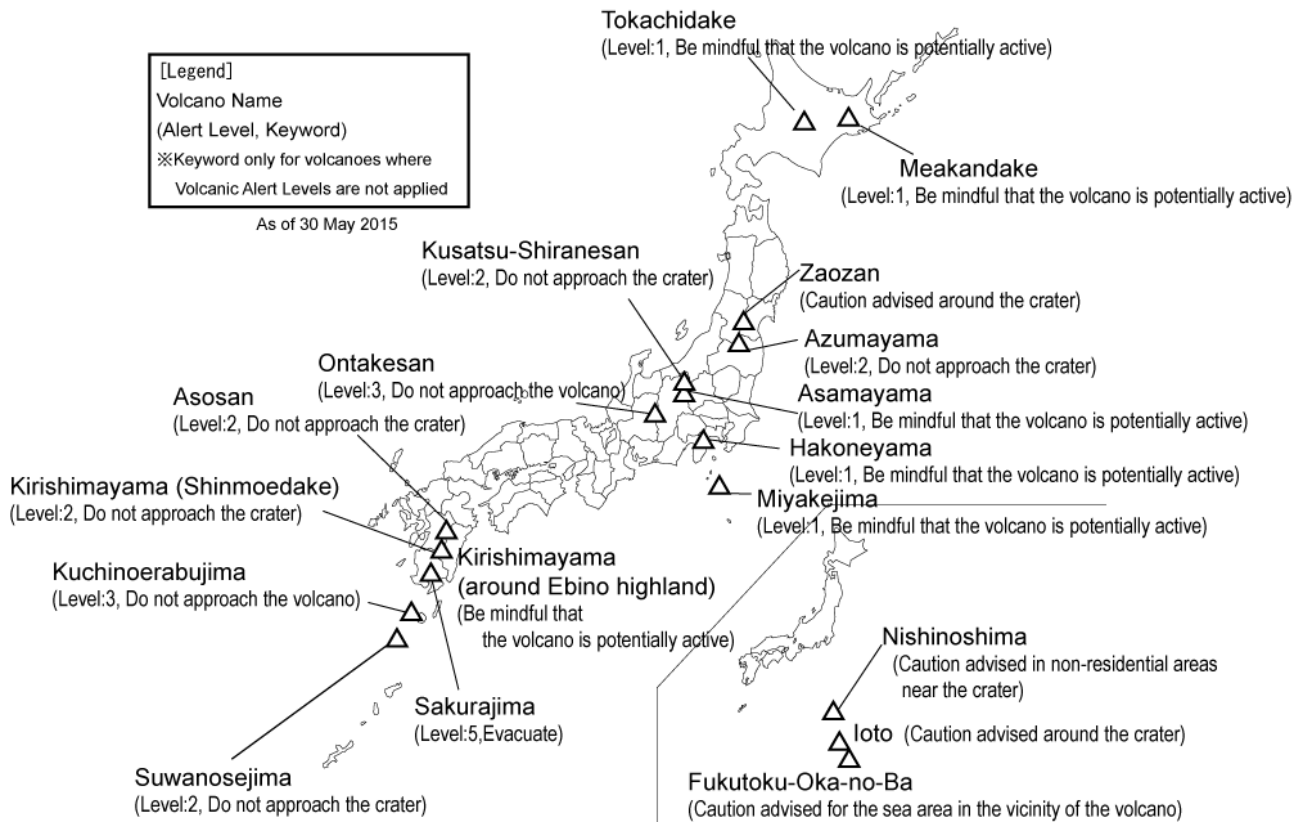


Monthly Volcanic Activity Report (May 2015)

Japan Meteorological Agency



Meakandake (Alert Level: 1)

The number of small shallow earthquakes occurring near the Ponmachineshiri crater increased from 15 to 18 April and volcanic seismicity has remained at relatively high levels thereafter.

Continuous observation of geomagnetic total intensity indicated that temperatures beneath the southern side of the Ponmachineshiri 96-1 crater have risen since mid-March 2015.

Tokachidake (Alert Level: 1)

The number of small shallow volcanic earthquakes (i.e., those occurring above sea level) near the 62-2 crater increased from the morning of 13 May to just before dawn on 16 May. A short-duration small-amplitude volcanic tremor occurred on 15 May but no remarkable change at the 62-2 crater and the Taisho crater was seen.

In recent years, expansion of the volcano in shallower parts, the quantity of plumes and the number of seismic events at the Taisho crater have increased, as has the occurrence of volcanic tremors and luminescence. Volcanic activity in the area has exhibited a long-term increasing trend.

Zaozan (Near-crater Warning)

The number of very small earthquakes estimated to be occurring under the area near Okama (a crater lake) has increased, and volcanic activity has been at high levels with volcanic tremors recorded since 7 April. Volcanic seismicity was at high levels from 8 to 11 May but it began to fluctuate at low levels on 12 May. According to field surveys conducted on 11 and 29 May and aerial observation conducted on 26 May in collaboration with Miyagi Prefecture, no fumes or geothermal fields were seen in or around Okama. No anomaly was seen in the Umanose Caldera or in the Maruyamasawa geothermal area, which is expected to become a crater after a future eruption.

Azumayama (Alert Level: 2)

Volcanic seismicity immediately under an area near the Oana crater has increased since 3 May, and became high on 6 May with 110 seismic events. A volcanic tremor occurred at around 03:20 on 6 May. Fumarolic activity at the Oana crater has remained at relatively high levels.

Data from a field survey conducted on 7 May showed the continued presence of a geothermal field that has been expanding since 2013.

Data from a tiltmeter at Joudodaira Station indicate that ground deformation with a slow rising trend has continued on the western side (toward the crater) since April 2014.

Continuous GNSS* observation data show a slow change in the baseline of Issaikyouzan-Minamisanpuku Station (around 500 m north of the Oana crater), since around September 2014 indicating inflation around Issaikyouzan.

* GNSS (Global Navigation Satellite System) is a generic name for satellite positioning systems such as GPS.

Kusatsu-Shiranesan (Alert Level: 2)

Volcanic seismicity beneath Yugama (a crater lake) and its southern area has increased since early March 2014. It has remained at relatively low levels since 20 August of the same year but temporary increases have occasionally been seen since January 2015. Data from ground deformation observation show a trend of inflation around Yugama.

A field survey conducted on 12 May revealed ongoing thermal activity on the northeastern side and the northern wall of the Yugama crater and on the north-to-northeastern slope of the Mizugama crater. According to the Tokyo Institute of Technology, composition of gas in a fumarolic area to the north has also shown the changes indicating increased volcanic activity. Geomagnetic total intensity variations, considered indicative of a temperature rise beneath Yugama, were seen in observation data from May onward but stopped around July.

Asamayama (Alert Level: 1)

The number of shallow volcanic earthquakes and tremors occurring immediately under the summit crater has shown an increasing trend since around 2014. Volcanic seismicity has further increased since around late April. No anomalies were observed in other data.

No remarkable changes are currently observed in the characteristics of fumes in the area. However, volcanic activity has been increasing in line with the long-term rise in the frequency of seismic events.

Ontakesan (Alert Level: 3)

Volcanic activity has declined to low levels, and the potential for eruptions on or exceeding the scale of the one that occurred on 27 September 2014 is low. Plume activity from a row of craters and seismic activity are ongoing, and the potential for minor eruptions remains.

The white-plume height from a row of craters was approximately 100 - 800 m above the crater rim.

Volcanic seismicity has remained at low levels but it has not yet returned to the levels observed before August 2014. Low-frequency earthquakes were recorded on 2 and 28 May (compared to one in April). No remarkable changes indicating increased volcanic activity were seen in observation data on plumes and ground deformation before, during or after the earthquakes.

Hakoneyama (Alert Level: 2) Alert level upgrade from 1 to 2 on 6 May

Volcanic seismicity near Owakudani (Hakoneyama) has remained at high levels since 26 April 2015. A total of 21 seismic events with a seismic intensity of 1 or greater on the JMA scale occurred in the Yumoto area of Hakone Town. The daily total of 442 seismic events recorded on 15 May was the highest since 2001. Data from ground deformation observation show changes considered attributable to this volcanic activity. Violent steam emissions have been observed at the local Owakudani hot spring supply facilities since 3 May.

Based on related observation data, JMA issued a Near-crater Warning on 6 May and raised the Volcanic Alert Level from 1 (Be mindful that the volcano is potentially active) to 2 (Do not approach the crater).

Miyakejima (Alert Level: 1) Alert level downgrade from 2 to 1 on 5 June

No eruptions have occurred since 22 January 2013. The rate of volcanic gas emission has exhibited a long-term

declining trend and has remained relatively low since February 2013. Volcanic seismicity has generally remained at low levels, and the potential for eruptions that would affect areas around the crater (inside the Oyama loop line) is considered low.

Based on this, JMA issued a Forecast at 14:00 on 5 June and lowered the Volcanic Alert Level from 2 (Do not approach the crater) to 1 (Be mindful that the volcano is potentially active).

Nishinoshima (Near-crater Warning)

A report from the Japan Coast Guard (JCG) and other institutions shows that lapilli pieces from eruptions and lava flow have continued to accumulate and the area of newly formed land has expanded.

Aerial observations conducted on 12, 19, 20 and 26 May by JCG revealed ongoing active eruptions at the 7th crater.

Lava from the northeastern slope of a pyroclastic cone at the 7th crater flowed southeastward over a fan-like area via the eastern side of the cone. The lava stream reached the coast and formed a white-vapor spout at its tip.

The newly formed land measured around 2,000 m in the east-west direction and 1,900 m in the north-south direction, creating an area of around 2.57 km² (2.45 km² as of 27 March 2015).

Light-brown discolored water was seen around the area where the lava stream reached the coast, and light-yellowish-green discolored water was seen along the coast of the island as a whole. Observation conducted on 20 May revealed light-yellowish-green discolored water in an area around 10 km offshore to the southwest, spreading linearly around 4,000 m from east to west and around 2,000 m from north to south.

No faults or cracks with the potential to generate tsunamis were seen on the island or on newly formed land.

Eruptions are expected to continue at the crater on the newly formed land, and submarine eruptions may also occur around the island. A submarine eruption affecting the sea surface may scatter ballistic projectiles or generate a base surge spreading across surface at a high speed. Related impacts may reach areas as far as around 2 km away.

Ioto (Near-crater Warning)

Volcanic seismicity has remained at relatively low levels. The results of continuous GNSS measurement showed a rising trend from around early December 2014 and the speed of the trend started to increase in around March 2015. No anomalies were observed in other data.

Steam was observed emitting up to 100 m at the highest at 14:58 and 17:33 on 22 and at 18:25 and 18:41 on 24 May in Idogahama, the northwestern area on the island.

Fukutoku-Oka-no-Ba (Near-sea-area Warning)

Data from aerial observation conducted by JCG on 26 May 2015 indicated no volcanic activity-related discoloration on the sea surface around Fukutoku-Oka-no-Ba.

Discoloration and floating objects have frequently been identified in the water surrounding Fukutoku-Oka-no-Ba in recent years. These are considered to stem from volcanic activity. The latest submarine eruption occurred on 3 February 2010.

Asosan (Alert Level: 2)

Eruptions occurred intermittently at the Nakadake No. 1 crater until 21 May. Grayish plumes rose as high as 1,000 m above the crater rim on 1 May. Volcanic ash is considered to have fallen in certain areas in the prefectures of Kumamoto, Oita and Miyazaki in conjunction with continuous eruptions.

Amounts of SO₂ emissions have been generally large at 900 – 1,700 tons a day (1,500 tons a day in April).

Amplitudes of volcanic tremors fluctuated but generally remained large.

A large-amplitude volcanic tremor that lasted around 5 minutes occurred at 22:04 on 3 May. It registered a seismic intensity of 1 in Nakamatsu in Minamiaso village. A field survey conducted on 5 May, after the volcanic tremor on 3 May showed that the southern side of the 141st pit in the Nakadake No. 1 crater had collapsed.

An earthquake in very shallow parts under the area near the Nakadake No. 1 crater occurred at 12:58 on 8 May. It registered a seismic intensity of 3 in Nakamatsu in Minamiaso village. No remarkable changes were seen in data from observation of plumes and ground deformation before or after the earthquake.

The extension of the baseline across Kusasenri (where a magma chamber is considered to be present in deeper parts) shown from the results of continuous GNSS measurement has slowed down since around March 2015.

Kirishimayama (Shinmoedake) (Alert Level: 2)

Volcanic seismicity immediately under the Shinmoedake crater decreased, but has remained at higher levels than those observed before mid-March 2015. According to GNSS observation data, ground deformation indicating deeper magma chamber inflation at several kilometers northwest of Shinmoedake has shown an extension since December 2013 but stopped around January 2015.

Kirishimayama (around Ebino highland) (Be mindful that the volcano is potentially active)

← Warning downgrade on 1 May

Volcanic seismicity had been at high levels since about December 2013 around the Ebino highland area but since about April 2015, it has been at low levels. A volcanic tremor occurred near Ioyama on 20 August 2014, but no tremors have been recorded since. Data from continuous GNSS observation indicate that an extension occurring in some parts of the baseline around the Ebino highland area from around December 2013 had stopped by around January 2015.

No changes in tilt related to volcanic activity have been seen. Thermal infrared data revealed no thermal anomalies and no fumes were observed. Data from ongoing geomagnetic total intensity observations around Ioyama show no increase in underground thermal activity.

In response to the decline in volcanic activity around the Ebino highland area and the absence of precursors to any eruption that would affect areas around Ioyama, JMA issued a Forecast at 10:00 on 1 May and lowered the information classification from Near-crater Warning (Caution advised around the crater) to Forecast (Normal).

Sakurajima (Alert Level: 3)

Volcanic activity has remained at high levels with 169 explosive eruptions recorded at the Showa crater.

Ballistic projectiles accompanying eruptions reached as far as the third station (1,300 to 1,800 m from the Showa crater).

Plumes rose as high as 4,300 m above the crater rim at the explosion at 10:20 on 21 May.

A very small eruption was observed at the Minamidake summit crater on 12 May and milk-white plumes rose as high as 200 m above the crater rim.

Data from strainmeter observation on the island showed an ongoing trend indicating expansion of the volcano since 1 January 2015. Data from tiltmeter observation on the island revealed that the volcano had exhibited a slight rising trend since January 2015 but entered an almost-static state in March. A future eruption may emit more volcanic ash than the amount recorded on 24 July 2012 or 18 August 2013. In addition, long-term extension of the baseline for continuous GNSS measurement across the Aira Caldera (at the inner part of Kagoshima Bay) has been observed, indicating expansion in deeper parts of the caldera.

Kuchinoerabujima (Alert Level: 5) Warning upgrade from 3 to 5 on 29 May

An explosive eruption occurred at the Shindake crater at 09:59 on 29 May. Black-gray plumes rose as high as over 9,000 m above the crater rim. A pyroclastic flow accompanying an eruption flowed **northwestward** from the **southwestern** side of the crater (in the Mukaehama district) and reached the coast.

Based on this, JMA issued a Warning at 10:07 on 29 May and raised the Volcanic Alert Level from 3 (Do not approach the volcano) to 5 (Evacuate). JMA issued a Volcanic Warning (sea area) at 10:34 on the same day.

Aerial observation conducted on the same day in collaboration with the Kyushu Regional Bureau of the Ministry of Land, Infrastructure, Transport and Tourism revealed pyroclastic flows moving in all directions from the Shindake crater. Those to its northwestern side were particularly remarkable. The survey also showed a pyroclastic flow reaching an area halfway down the mountain to the southwest and southeast of the crater.

Volcanic seismicity increased immediately after the eruption, but has remained at low levels since 13:00 on the same day.

The possibility of eruptions on the same scale as that of 29 May is present.

Suwanosejima (Alert Level: 2)

Volcanic activity at the Otake crater has remained at high levels with very small eruptions recorded on 5 and 17 May.