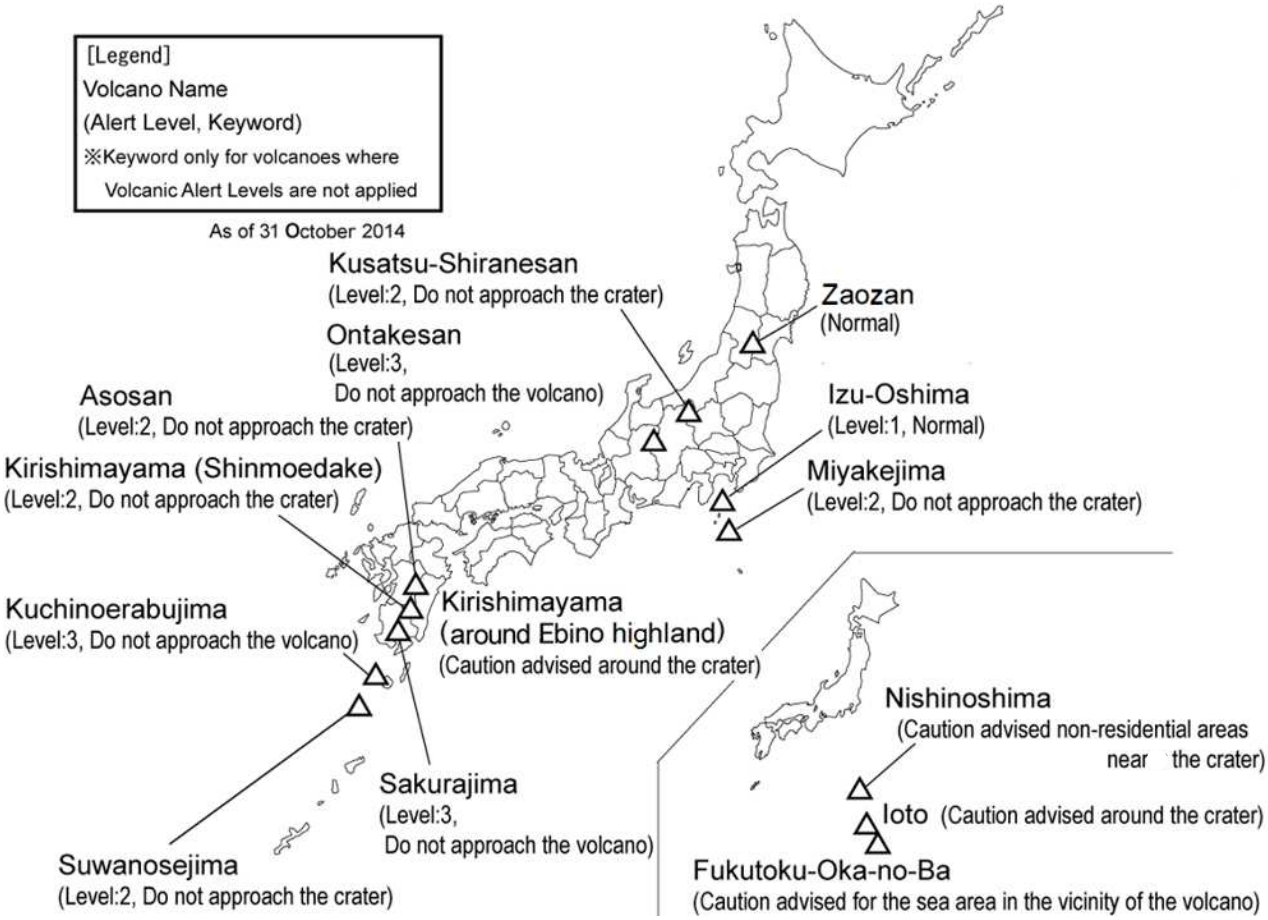
Monthly Volcanic Activity Report (October 2014)

Japan Meteorological Agency



Zaozan (Normal)

Four volcanic tremors that occurred were accompanied by a certain amount of tilt change. Whitish discoloration of water on the eastern side of Okama (a crater lake) was observed on 8 and 19 October 2014. No remarkable change in ground deformation (according to continuous GNSS* observation data) or fumarolic activity has been observed.

Volcanic activity has remained at high levels since August 2014.

* 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 began to fluctuate at high levels in early March 2014, but has remained at relatively low levels since 20 August of the same year. Data from ground

deformation observation show a trend of inflation around Yugama. According to the Tokyo Institute of Technology, composition of gas in a fumarolic area to the north has also shown 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.

Ontakesan (Alert Level: 3)

Although volcanic activity has shown a declining trend, the potential for minor eruptions remains. If fumarolic activity and/or seismicity increase, eruptions may be accompanied by pyroclastic flows with scattering of ballistic projectiles around the crater.

Since the eruption of 27 September 2014, further eruptions emitting volcanic ash have continued. However, the amount of volcanic ash in the plume has gradually decreased, and the plume itself has been white since after 21:00 on 10 October 2014.

The results of volcanic gas observation conducted at the foot of the volcano indicate that SO_2 emissions amounted to 500 – 1,500 tons a day until 4 October 2014. Since then, amounts have been smaller at 100 – 500 tons a day.

Volcanic tremors began before the eruption at around 11:41 on 27 September, but have been too small to be detected since 7 October. Volcanic seismicity remained at high levels immediately after the eruption but gradually decreased, and has remained at relatively low levels since 7 October.

Continuous GNSS observation data show no remarkable change.

According to data from a tiltmeter installed around 3 km southeast of the volcano, ground deformation with a rising trend began on the mountainside seven minutes before the eruption of 27 September but subsided after the eruption. A slow subsiding trend continues to be observed on the mountainside.

Izu Oshima (Alert Level: 1)

Volcanic seismicity on the western part of the island and elsewhere increased on 24 and 29 – 30 October 2014. Neither low-frequency earthquakes nor volcanic tremors have been observed.

The results of continuous GNSS measurement show a continuous trend of long-term inflation over the entire island, which is considered to stem from the magma supply deep underground. The trend slowed around 2011 before resuming again around August 2013. No remarkable change has been seen in other observation data, and no signs of eruption have been detected.

Miyakejima (Alert Level: 2)

The rate of volcanic gas emission has exhibited a long-term declining trend and has remained relatively low since February 2013. According to a report from Miyake Village, relatively high concentrations of SO_2 were recorded only occasionally in inhabited areas.

Volcanic seismicity has generally remained at low levels, and no volcanic tremors have been observed.

According to continuous GNSS observation data, ground deformation indicating contraction in shallow parts of the mountains began to diminish gradually in 2000 and stopped around 2013. Long-term extension of the baselines along the long section of Miyakejima has also been observed since 2006, indicating expansion in deeper parts.

Nishinoshima (Near-crater Warning)

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

Aerial observation conducted by JCG on 16 October 2014 found repeated eruptions from a crater located on a pyroclastic cone in the center of the island. These are called Strombolian eruptions, which produce a brown plume and emit pieces of lava over a short period. No rows of craters were detected during a survey conducted on 17 September 2014, and the land was conical in shape. Lava was flowing from the northern hillside of the pyroclastic cone and covering most of the original island. The newly formed land had expanded 250 – 400 m to the north compared with the situation observed in the previous survey (17 September 2014). It measured around 1,530 m in the east-west direction and 1,720 m in the north-south direction, creating an area of around 1.85 km^2 (1.49 km^2 as of 17 September 2014). Light-brown discoloration was seen in water around the island.

Ioto (Near-crater Warning)

Volcanic tremors have occasionally occurred, but volcanic seismicity has generally remained at relatively low levels.

The results of continuous GNSS measurement showed a rising trend of ground deformation from late February 2014 onward. However, deformation entered an almost-static state in September 2014. No anomalies were observed in other data.

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

Past observations conducted by JCG, the Japan Maritime Self-Defense Force (JMSDF) and JMA have frequently identified discoloration and floating objects 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)

Traces of volcanic ash were detected near the Nakadake No. 1 crater in a field survey conducted on 24 October 2014. No plume was identified from visual observation at this time due to inclement weather. However, very small eruptions are considered to have occurred, as short-period volcanic tremors were recorded from late at night on 22 October to before dawn on 23 October.

Volcanic activity remains at high levels; the numbers of isolated volcanic tremors and volcanic earthquakes have

been large, and the temperature inside the crater remains high.

Kirishimayama (Shinmoedake) (Alert Level: 2)

According to GNSS observation data, ground deformation indicating magma chamber inflation at a depth of several kilometers northwest of Shinmoedake stopped in December 2011 before resuming again around December 2013.

Volcanic seismicity immediately under the Shinmoedake crater has generally remained at low levels.

Kirishimayama (around Ebino highland) (Near-crater Warning) ← issued on 24 October

Since December 2013, volcanic earthquakes have occasionally occurred near Karakunidake, on the northeastern side of Karakunidake and near Ioyama.

A volcanic tremor occurring on 20 August 2014 beneath Ioyama lasted around seven minutes. Tiltmeter data showed simultaneous ground deformation with a rising trend on the northwestern side of Ioyama.

These phenomena indicate increased volcanic activity around the Ebino highland area and the potential for fumaroles and volcanic gas emissions. A Near-crater Warning (Caution advised around the crater) was issued on 24 October 2014 in consideration of the potential for very minor eruptions depending on future volcanic activity.

Sakurajima (Alert Level: 3)

Eruption activity at the Showa crater has remained at high levels, with 19 explosions during this period.

Eight explosive eruptions with ballistic projectiles reaching the fourth station (800 to 1,300 m from the Showa crater) occurred. An explosive eruption at 12:05 on 24 October 2014 sent a plume up to 3,200 m above the crater rim.

No eruptions were observed at the Minamidake summit crater.

Kuchinoerabujima (Alert Level: 3)

No eruptions were observed. Volcanic earthquakes occasionally occurred, and volcanic gas emissions have been relatively high compared to those before the eruption. Volcanic activity has remained high.

According to a field survey conducted on 7 and 8 October 2014, SO_2 emissions amounted to 500 tons a day on both days (as compared to 300 tons a day in the previous survey on 12 September 2014), which was more than before the eruption (60 tons a day on 21 May 2014). Plumes were observed at the Shindake crater and around a fissure to its west, and fumarolic gas was newly observed on the southwestern slope of the crater. Thermal infrared data indicate ongoing thermal anomalies to the west of the Shindake crater rim and around a fissure in the area. A new fumarolic area on the southwestern slope was also identified as a thermally anomalous area.

Suwanosejima (Alert Level: 2)

Eruptions occurred at the Otake crater on 7 and 17 – 21 October.

According to the Suwanosejima branch of the Toshima Village administration, rumbling was heard on the island on 25 October 2014 but no ash fall was observed in the village (located around 4 km SSW of Otake).