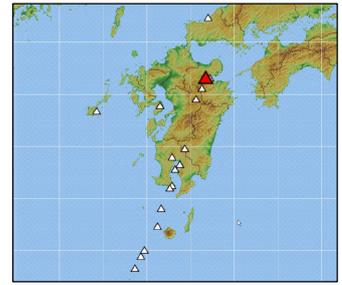


82. Yufudake

Latitude: 33°16'56" N, Longitude: 131°23'25" E, Elevation: 1,583 m
(Yufudake)
(Triangulation Point - Yufusan)



Yufudake on May 8, 2009 taken by the Japan Meteorological Agency

Summary

Yufudake is located at the west of Tsurumidake, in the Yufu-Tsurumi graben. Yufuin Spa is located on the west of Yufudake. The volcanic edifice is composed of the main volcanic edifice (basement lava), and several lava domes and summit lava (Kobayashi, 1984; Hoshizumi et al., 1988). Yufudake became active earlier than the Kuju 1 pumice eruption (approximately 60ka). Small scale pyroclastic flows were generated by the collapse of lava dome around the summit about 2,200 years ago. Volcanic rocks of this volcano are composed mainly of andesite of 58.4 to 63.9 wt % SiO₂.

Red Relief Image Map

See Tsurumidake Garandake.

Chronology of Eruptions

▪ Volcanic Activity in the Past 10,000 Years

Major eruptions occurred at Yufudake 2,200 years ago (Okuno et al., 1999). During this eruptive activity, the volcanic edifice flank was destabilized by rising magma, causing a collapse, followed by the formation of the Ikeshiro lava dome, and a pyroclastic flow from the northeastern side to the western foot of the volcano. Summit lava then appeared, with a pyroclastic flow to the southern foot and other areas. These eruptions caused volcanic ash to fall from Yufudake. Intermittent vulcanian eruptions occurred at the summit, producing air-fall volcanic ash from Yufudake (Fujisawa et al., 2001). No eruptive activity has occurred within recorded history.

Period	Area of Activity	Eruption Type	Main Phenomena / Volume of Magma
2ka	Ikeshiro - Yufudake summit area	(Collapse) → magmatic eruption	Debris avalanche → lava flow, lava dome, pyroclastic flow, pyroclastic surge, tephra fall. Magma eruption volume = 0.175 km ³ DRE. (VEI 3)
2←→1.9ka	Yufudake summit	Magmatic eruption	Tephra fall.

* Reference documents have been appended with reference to the catalog of eruptive events during the last 10,000 years in Japan, database of Japanese active volcanoes, and AIST (Kudo and Hoshizumi, 2006) for eruptive period, area of activity and eruption type. All years are noted in calendar years. "ka" within the table indicates "1000 years ago", with the year 2000 set as 0 ka.

A←→B: Eruption events taking place at some point between year A and year B

▪ Historical Activity

There are no records of volcanic activity.

Recent Volcanic Activity

* See Tsurumidake Garandake for details.

Information on Disaster Prevention

① Hazard Map

Yufudake / Tsurumidake / Garandake Volcano Disaster Prevention Map · Oita Prefecture / Beppu / Yufu / Usa / Hiji - June, 2006

<http://www.pref.oita.jp/site/sabo/volcano.html>

See Tsurumidake Garandake

Social Circumstances

① Populations

(According to basic counts, such as 2010 national population census (Bureau of Statistics of the Ministry of Internal Affairs and Communications: released October 26, 2011))

Beppu City population: 125,385

Yufu City population: 34,702

Usa City population: 59,008

Hiji City population: 28,221

② National Parks, Quasi-National Parks, Number of Climbers

Aso Kuju National Park - Kuju area

Number of mountain-climbers per year unknown

③ Facilities

None

Monitoring Network

See Tsurumidake Garandake

Bibliography

Fujisawa, Y., et al. (2001): Bull. Volcanol. Soc. Japan., **46**, 187-203 (in Japanese with English abstract).

Fujisawa, Y., et al. (2002): J. Geol. Soc. Japan., **108**, 48-58 (in Japanese with English abstract).

Hoshizumi, H. et al. (1988): Geology of the Beppu district. With geological sheet map at 1:50,000: Geological Survey of Japan, 131p (in Japanese with English abstract).

Kobayashi, T. (1984): Mem. Geol. Surv. Japan., **24**, 93-108 (in Japanese with English abstract).

Ohta, T., et al. (1990): J. Japan. Assoc. Min. Pet. Econ. Geol., **85**, 113-129 (in Japanese with English abstract).

Okuno, M., et al. (2004): Summaries of Researches Using AMS at Nagoya University, **15**, 35-40 (in Japanese with English abstract).

Saito, T., et al. (2000): Bull. Volcanol. Soc. Japan., **45**, 217-224 (in Japanese with English abstract).

Sugimoto, T., et al. (2006): J. Mineral. Petrol. Sci., **101**, 270-275.

(Hoshizumi, H.)