

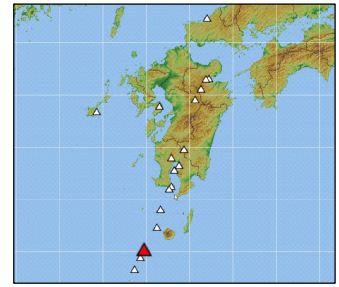
95. Kuchinoshima

Latitude: 29°58'05" N, Longitude: 129°55'32" E, Elevation: 628 m
(Maedake)

(Triangulation Point - Kuchinoshima)

Latitude: 29°57'41" N, Longitude: 129°55'59" E, Elevation: 425 m
(Moedake)

(Spot elevation measured by JMA)



Overview of Kuchinoshima taken from southeast side on December 6, 2007 by the Japan Meteorological Agency

Summary

Kuchinoshima is located at the northern end of the Tokara Islands, which stretch to the south of Kyushu. It is a volcano island, with a diameter of approximately 7 km from north-northwest to south-southeast, and approximately 3 km across its narrow axis. Kuchinoerabujima and Satsuma-Iojima are located to its north, and Nakanoshima and Suwanosejima to its south. It is made of a group of lava domes, composed of hornblende andesite and dacite, rare in the Tokara Islands. Maedake (628 m) is the highest, and is located at the center of the island. A steep scarp is located on its southeast flank of Maedake. A small lava dome called Moedake was formed between Maedake and Tanagiyama. Its surface clearly shows the shapes of lava clumps. The summit of the lava dome has some small fissure crater with a diameter of less than 100 m, and very weak fume has been observed. However, no records of eruptions exist.

Surge deposits, considered to have been discharged before the appearance of the lava dome, are found around Moedake, as well as pyroclastic material deposits, discharged after the dome was formed. These are not covered by Kikai-Akahoya ash (7,300 years ago). Based on the radiocarbon dating, they are estimated to have been erupted in historical time (Okuno et al., 2004; Geshi and Nakano, 2007). The SiO₂ content of the andesite - dacite is between 57.8 and 63.7 wt %.

Red Relief Image Map

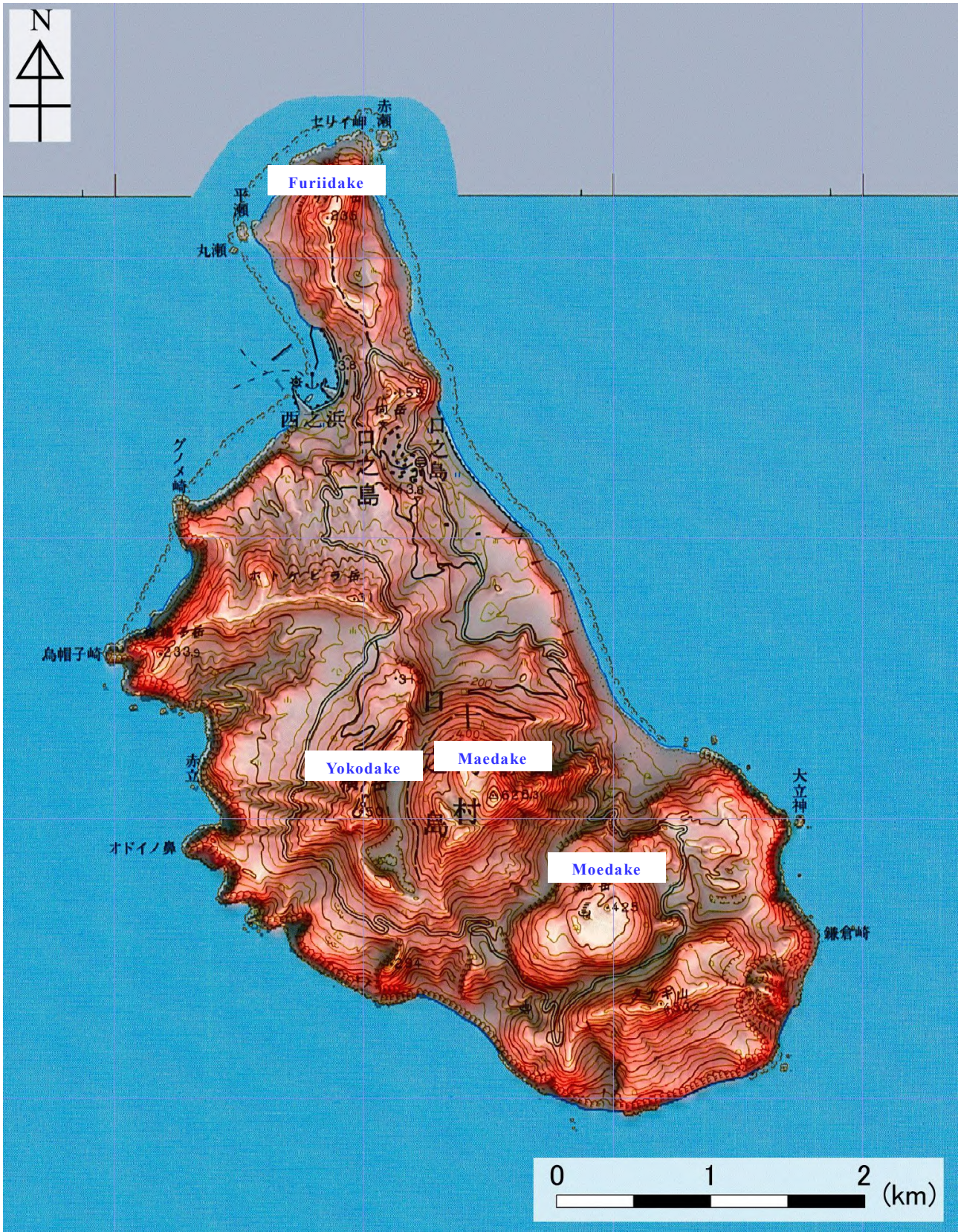


Figure 95-1 Topography of Kuchinoshima.

1:50,000 scale topographic map (Nakanoshima) and digital map 50 m grid (elevation) published by the Geospatial Information Authority of Japan were used.

Submarine Topographic Map

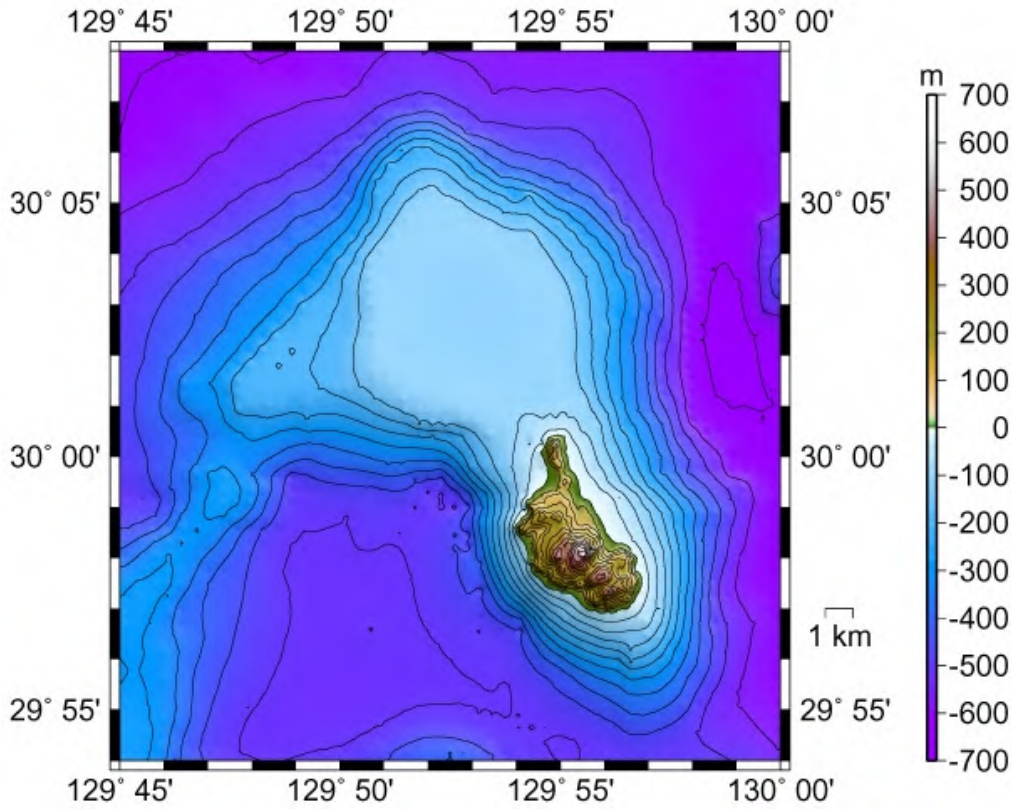


Figure 95-2 Submarine topographic map of the Kuchinoshima area (Japan Coast Guard).

Geological Map

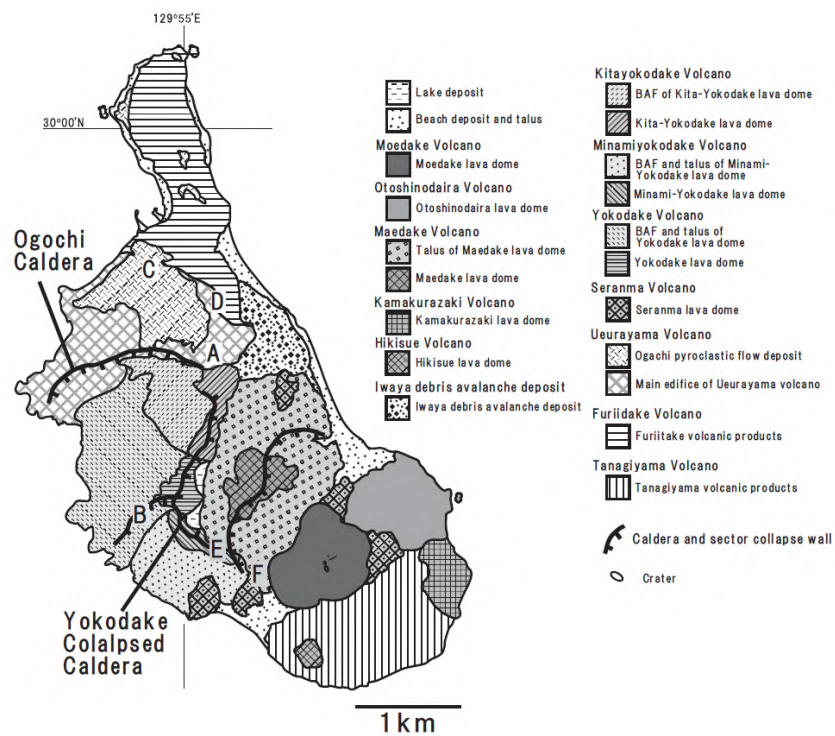


Figure 95-3 Geological map of Kuchinoshima (Geshi and Nakano (2007)).

Chronology of Eruptions

▪ Volcanic Activity in the Past 10,000 Years

The majority of the volcanic products overlain by the Akahoya ash deposits. Of these, ages of 13000 yBP and 11000 yBP have been determined from carbonized wood contained in air-fall pumice and pyroclastic flow from Yokodake (Moriwaki et al., 2002).

Sector collapse of Yokodake, Minamiyokodake, and Kitayokodake of 7,900 years ago generated the Iwayaguchi debris avalanche deposits, and formed a horseshoe-shaped crater, and the Maedake volcano was formed within this collapse area. Since the Akahoya ash deposits, the Otoshinodaira, Moedake volcano, and several other small lava domes were formed. The newest of these lava domes is the Moedake volcano. Several explosion craters are located at the summit of the Moedake lava dome, indicating that phreatic explosions have repeatedly occurred on the Maedake lava dome. It is likely that the most recent eruption occurred in the 18th century or later (Geshi and Nakano, 2007).

Period	Area of Activity	Eruption Type	Main Phenomena / Volume of Magma
8.8←→8.7ka	Yokodake, Maedake	Magmatic eruption	Tephra fall, pyroclastic flow, lava dome.
7.3←→1.2ka	Otoshinodaira	Magmatic eruption	2 lava domes formed.
1.3←→1.2ka	Moedake	Magmatic eruption	Tephra fall, pyroclastic surge, lava dome.
0.84←→0.78ka	Moedake		

* 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 Year, 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

Bibliography

- 1.西村智博・他(1993) トカラ列島口の島火山の噴火史. 日本地理学会予稿集, **43**, 56-57.
- 2.西村智博 (1995) トカラ列島口の島火山の地形発達史. 金沢大学文学部地理学報告, **7**, 75.
- 3.奥野 充・他(2004) トカラ列島,口の島火山の噴火史. 日本火山学会講演予稿集 2004, 46.

▪ Historical Activity

There are no records of volcanic activity.

Whole Rock Chemical Composition

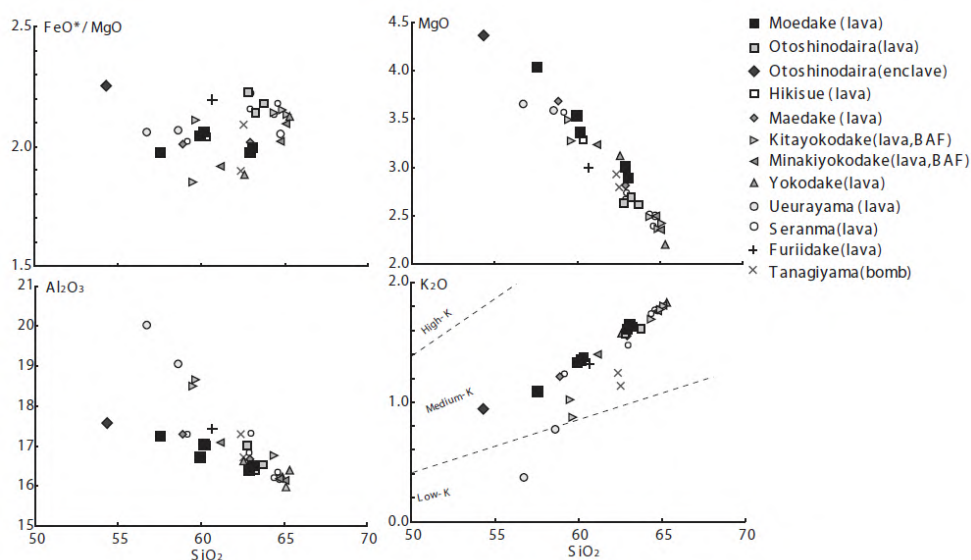


Figure 95-4 Whole rock chemical composition (Geshi and Nakano, 2007).

Recent Volcanic Activity

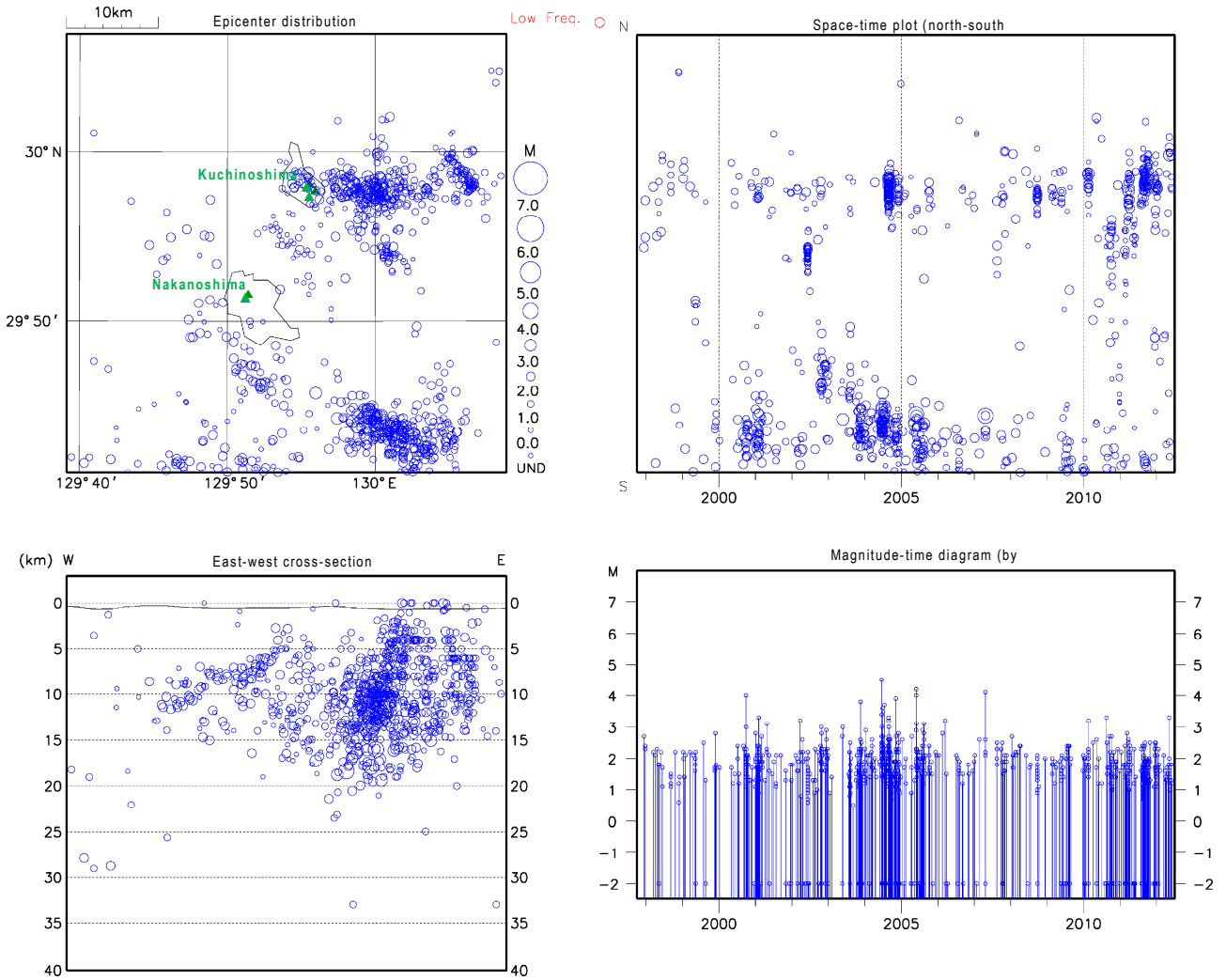


Figure 95-5 Activity of shallow VT earthquakes (blue circles) observed by a regional seismometer network (October 1, 1997, to June 30, 2012). Epicenter distribution (upper left), space-time plot (N-S cross-section) (upper right), E-W cross-section (lower left) and magnitude-time diagram (lower right).

Information on Disaster Prevention

① Hazard Map

None

Social Circumstances

① Populations

Toshima Village: 607 (Kuchinoshima: 115) (Toshima Village: as of October 31, 2011)

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

- National Parks, Quasi-National Parks: None designated. However, a Kagoshima Prefecture nature park does exist.
- Number of sightseers per year: 1,349
- Number of mountain-climbers per year: -

③ Facilities

None

Monitoring Network

See Suwanosejima

Bibliography

Geshi, N. and Nakano, S. (2007): Bull. Geol. Surv. Japan, **58**, 105-116 (in Japanese with English abstract).

Nishimura, T. (1995): The geographical reports of Kanazawa University, **7**, 75 (in Japanese).

Okuno, M. et al. (2004) Programme and Abstracts Volcanol. Soc. Jpn. 2004 Fall Meeting, 46 (in Japanese).

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