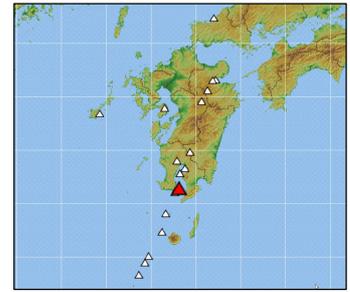


91. Ikeda and Yamagawa

Latitude: 31°12'48" N, Longitude: 130°34'02" E, Elevation: 256 m
(Nabeshimadake) (Triangulation Point - Nabeshima)

Latitude: 31°12'36" N, Longitude: 130°38'12" E, Elevation: 3 m
(Bandokorobana) (Triangulation Point - Yamagawa Bay)



Ikeda and Yamagawa taken from East Side on December 6, 2007 by the Japan Meteorological Agency

Summary

"Ikeda and Yamagawa" is located at the southeast edge of Kagoshima Prefecture's Satsuma Peninsula. The name is used to refer to the Ikeda caldera, with a diameter of approximately 4 km, the Matsugakubo, Ikezoko, Unagiike, and Yamagawa maar group, and the Nabeshimadake lava domes at the southern rim of the Ikeda caldera. The active volcano, Kaimondake, is located to the southwest of the Ikeda caldera. The SiO₂ contents of the erupted materials from those vents are ranging from 56.3 to 72.7 wt %.

Red Relief Image Map

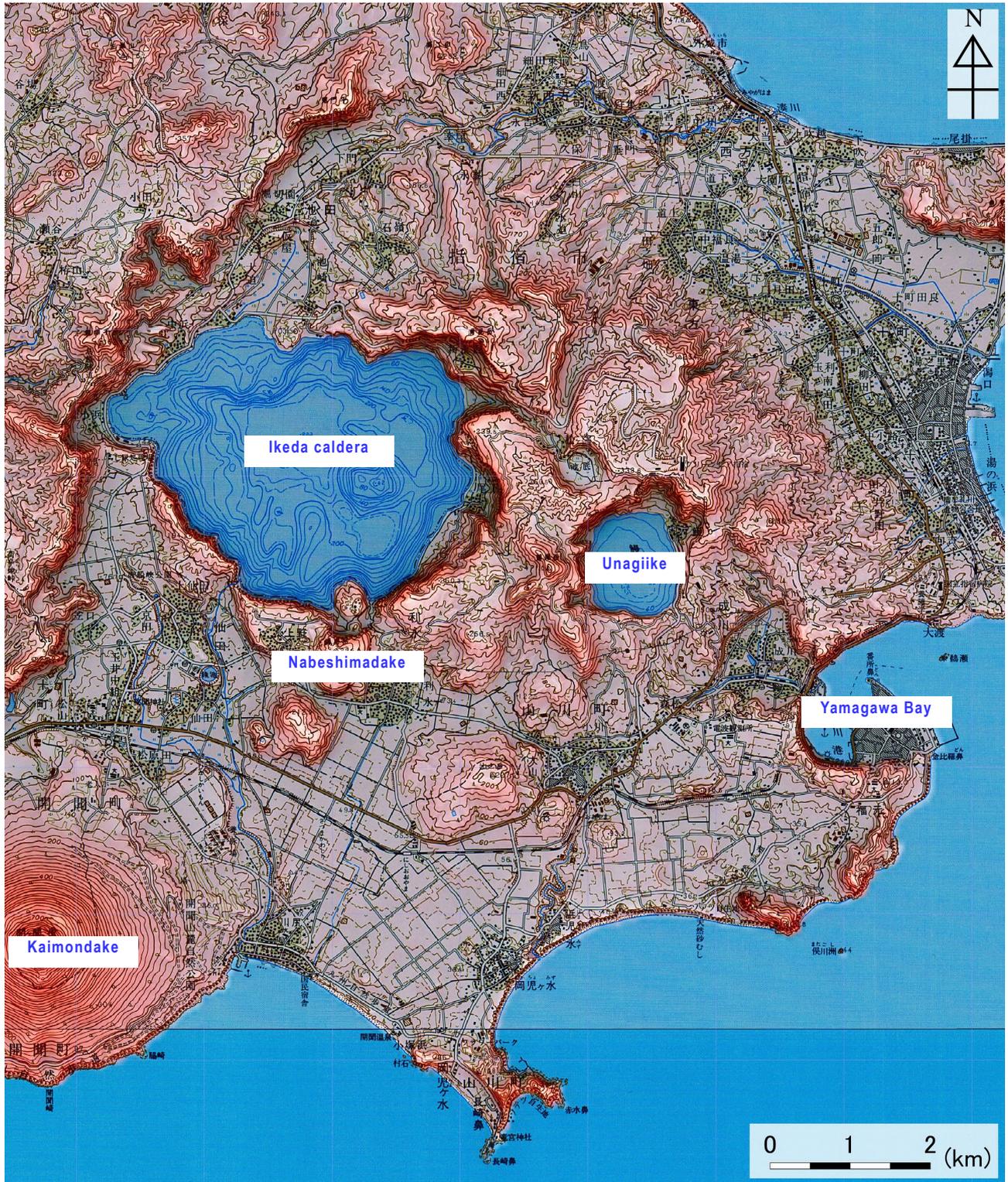


Figure 91-1 Topography of Ikeda and Yamagawa.

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

Chronology of Eruptions

▪ Volcanic Activity in the Past 10,000 Years

A strong phreatic eruption began approximately 6,400 years ago near the current location of Lake Ikeda. Scoria was then ejected, followed by a plinian eruption and finally a large-scale pyroclastic flow eruption. This sequence of volcanic activity formed the current Ikeda caldera. After the plinian eruption, the eruption expanded to the east-southeast, forming a maar group extending from the west-northwest to the east-southeast. The Yamagawa maar produced a base surge. This sequence of volcanic activity formed the current Ikeda caldera (Ui, 1967; Kobayashi and Naruo, 1983). After the subsequent formation of the Kagamiike and Mizunashiike maars, approximately 4,800 years ago an eruption began on the southern rim of the Ikeda caldera, forming the Nabeshimadake lava dome (Okuno and Kobayashi, 1991).

Period	Area of Activity	Eruption Type	Main Phenomena / Volume of Magma
6.5ka	Ikezaki village area, Lake Ikeda area, Matsugakubo, Ikezoko, Unagiike, Narikawa, and Yamagawa Bay maars	Phreatic eruption → phreatomagmatic eruption → magmatic eruption → phreatomagmatic eruption	Lake Ikeda eruption: Tephra fall, pyroclastic surge, pyroclastic flow. Magma eruption volume = 0.92 km ³ DRE. (VEI 5)
6.5←→4.9ka	Kagamiike maar, Mizunashiike maar	Phreatic eruption	
4.9ka	Nabeshimadake, Osokozuki, Kosokozuki, Suigenchi maar	Phreatic eruption, magmatic eruption, phreatomagmatic eruption	Tephra fall → lava dome (Nabeshimadake) →? Magma eruption volume = 0.08 km ³ DRE. (VEI 3)

* 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.

▪ Historical Activity

Fumarolic activities are ongoing in the surrounding area from August 5 to 8, 1967 a swarm of felt earthquakes occurred in the Ibusuki area.

Recent Volcanic Activity

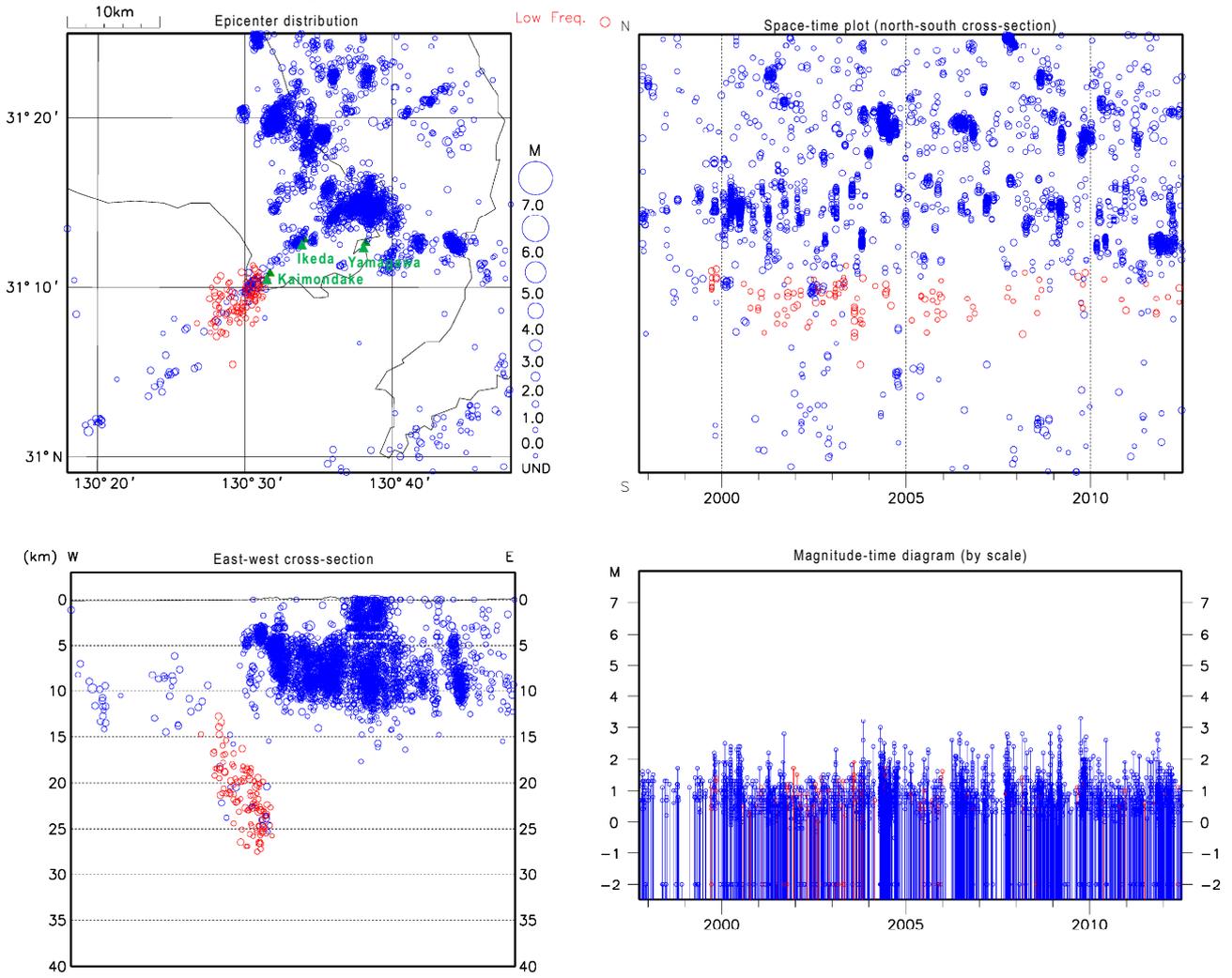


Figure 91-2 Shallow VT seismic activity (blue circles) and deep low-frequency seismic activity (red circle) observed by a regional seismometer network (January 1, 1997, to June 30, 2012). Epicenter distribution (upper left), space-time plot (N-S cross-section)(upper right), E-W cross-section (lower left) and magnitude-time diagram(lower right).

Information on Disaster Prevention

① Hazard Map

None

Social Circumstances

① Populations

- Minamikyushu City: (39,565: as of October 31, 2011, according to Minamikyushu City website)
- Ibusuki City: (44,030: as of November 1, 2011, according to Ibusuki City website)

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

Kirishima-Kinkowan National Park (special area, regular area)

③ Facilities

None

Monitoring Network

Wide Area

* Monitoring sites with multiple observation instruments are indicated by small black dots, and other symbols indicate types of monitoring.



1:200,000 scale regional maps (Kagoshima and Kaimondake) published by the Geospatial Information Authority of Japan were used.

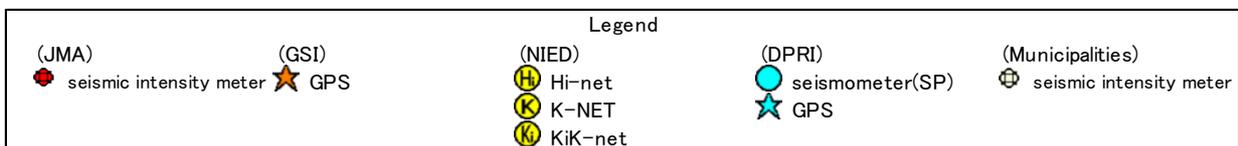


Figure 91-3 Regional monitoring network.

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