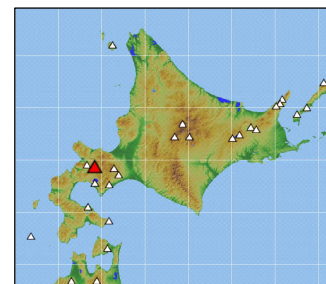


16. Yoteizan

Latitude: 42°49'36" N, Longitude: 140°48'41" E, Elevation: 1,898 m
(Ezo-Fuji) (Elevation Point)

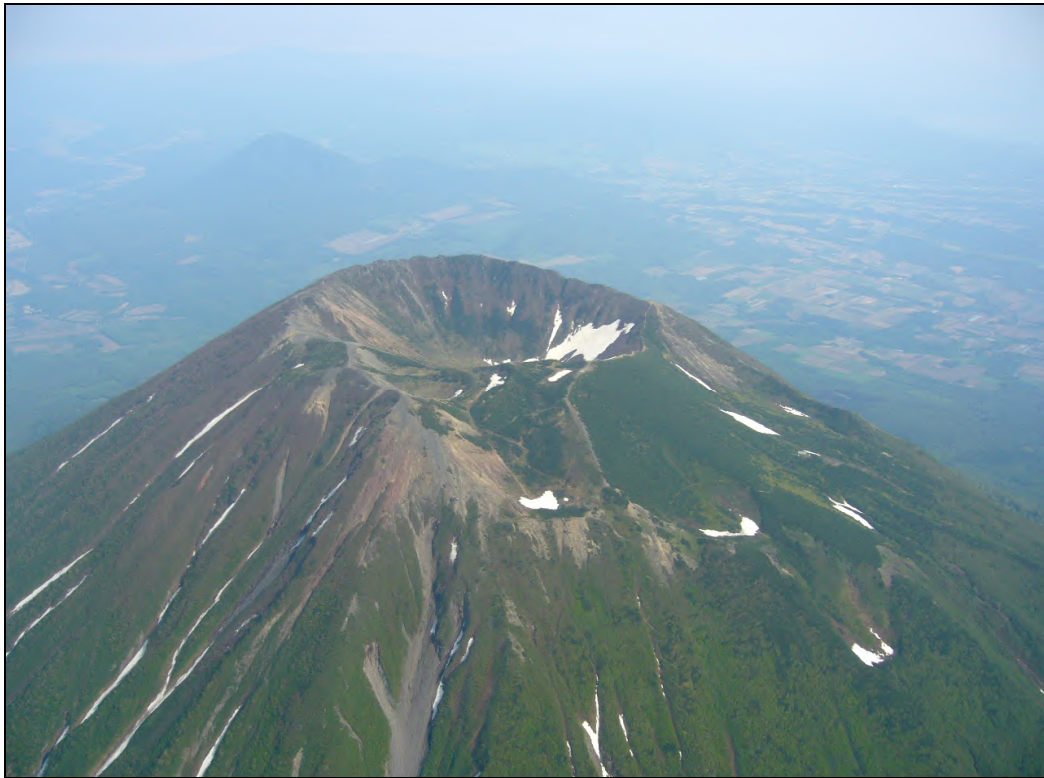


Overview of Yoteizan taken from northwest side on May 18, 2003 by the Japan Meteorological Agency

Summary

Yoteizan is an 1,898 m high conical stratovolcano located in the southwest of Hokkaido. The summit has a crater with 700 m in diameter, and parasitic craters such as the Kitayama crater are distributed on the west-by-southwest flank. Pyroclastic cones are also distributed such as the Fujimi pyroclastic cone at the foot of it. The eastern, northern, and western sides of volcanic edifice are surrounded by an alluvium splay 180 to 270 m high, created by the Shiribetsu River. Yoteizan activity began approximately 50,000 to 60,000 years ago, when it actively and repeatedly discharged pumice, volcanic ash, lava flows, and pyroclastic flows. The activity can be broadly divided into two stages. During the first, leading up to 40,000 years ago, the old Yoteizan was formed. After the large-scale collapse of the volcanic edifice, the new stage began (Uesawa and Nakagawa, 2009). During the last period, until the end of the Pleistocene epoch, the activity mainly consisted of flank volcano, but after 10,000 years ago, it has been centered on the summit crater. Currently, no fumarolic activity is observed. The SiO₂ content is between 52.4 and 65.9 wt %.

Photos



Summit Crater, taken from north side on June 18, 2008 by the Japan Meteorological Agency



Lake Hangetsu, taken from north side on June 25, 2006 by the Japan Meteorological Agency

Red Relief Image Map

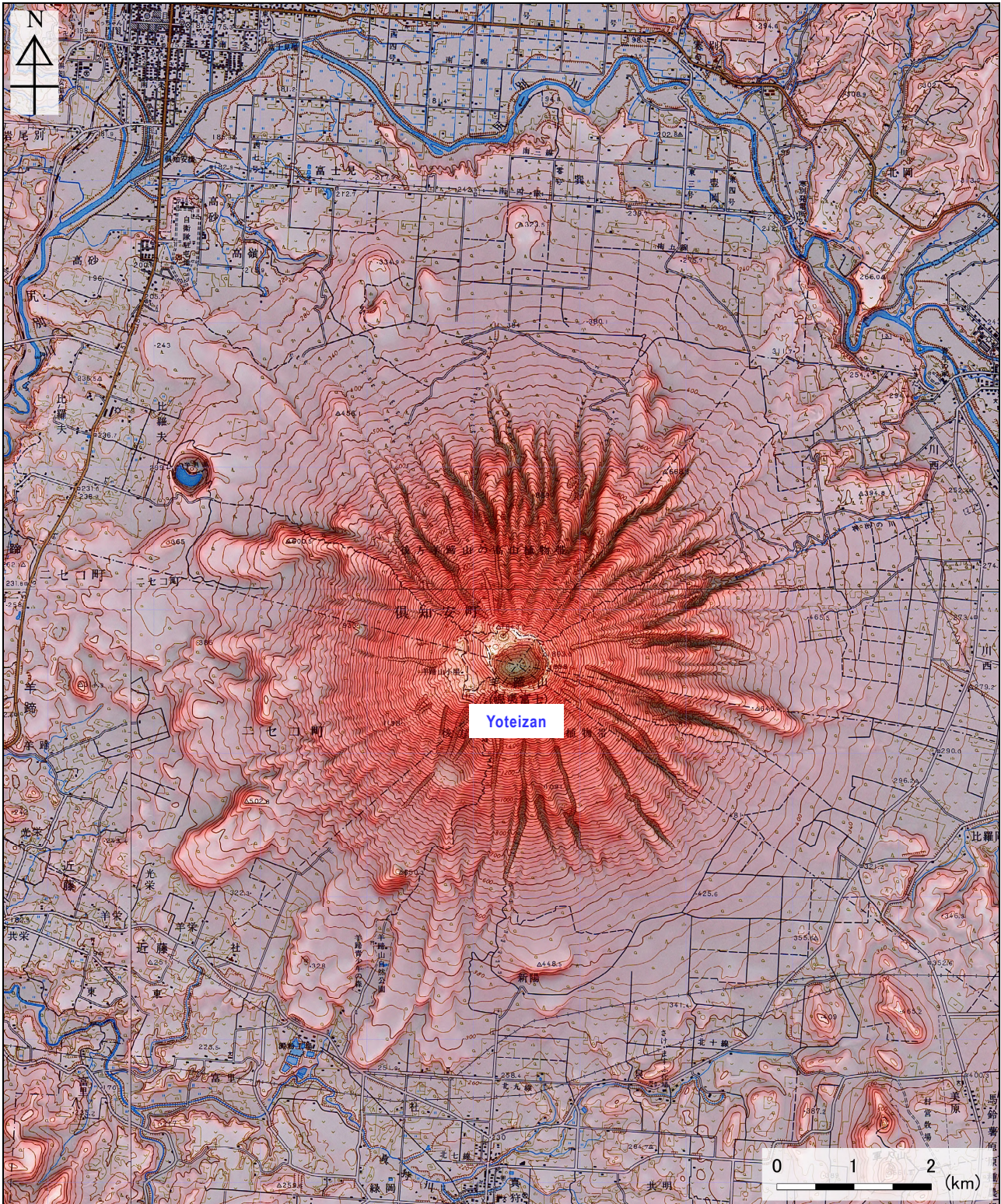


Figure 16-1 Topography of Yoteizan.

1:50,000 scale topographic maps (Niseko, Rusutsu, Iwanai and Kutchan) 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

Eruptive activity at the summit was intermittent from the middle of the Holocene to several thousand years ago. The lava flow produced by an eruption approximately 4,000 years ago reached part of what is now Kutchan. The last eruption occurred at the summit approximately 2,500 years ago. (Uesawa et al., 2011).

Period	Area of Activity	Eruption Type	Main Phenomena / Volume of Magma
5ka<	Summit west crater	Magmatic eruption	Pyroclastic fall. Total ejecta: approximately 0.004 km ³ . (VEI 2)
4ka	Summit west and north craters	Magmatic eruption	Pyroclastic fall. Lava flow. 2 eruptions occurred, resulting in pyroclastic material air-fall, and 1 which emitted lava. The total ejecta were, respectively approximately 0.0009 km ³ , (VEI 1), approximately 0.013 km ³ , (VEI 3), and approximately 0.10 km ³ (lava).
2.5ka	Summit west crater	Magmatic eruption	Pyroclastic fall. Total ejecta: approximately 0.0003 km ³ . (VEI 1)

* 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<: Eruption event before year A.

▪ Historical Activity

There are no records of volcanic activity.

Whole Rock Chemical Composition

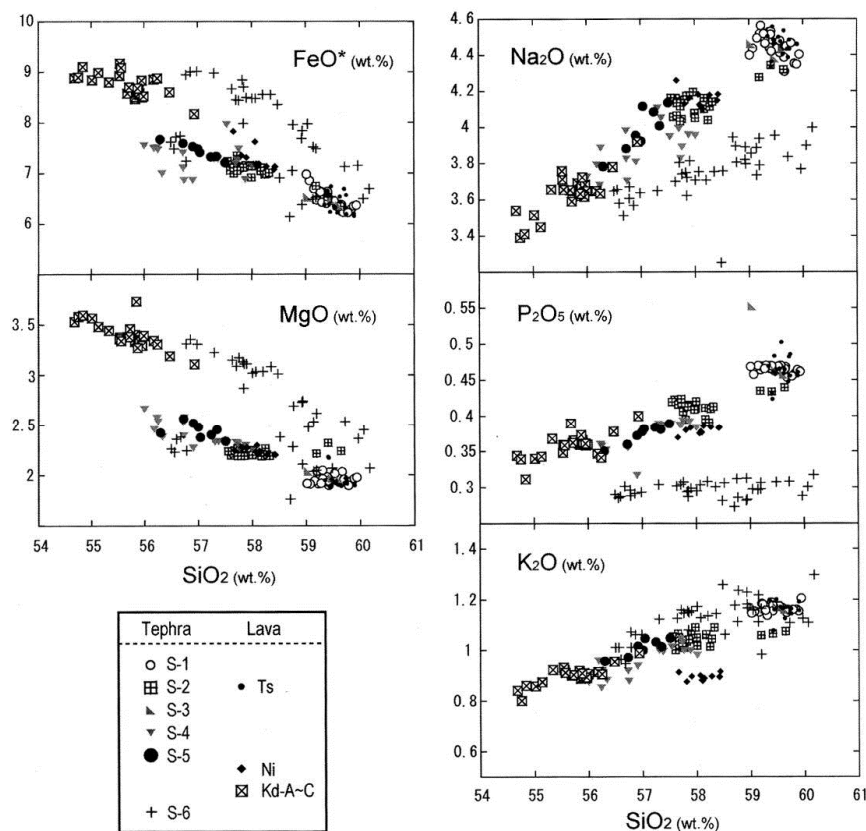


Figure 16-2 Whole rock chemical composition by Harker diagram for ejecta at the summit area of Yotei volcano (Uesawa et al., 2011).

Major Volcanic Activities

▪ Eruptions in Last 10,000 Years

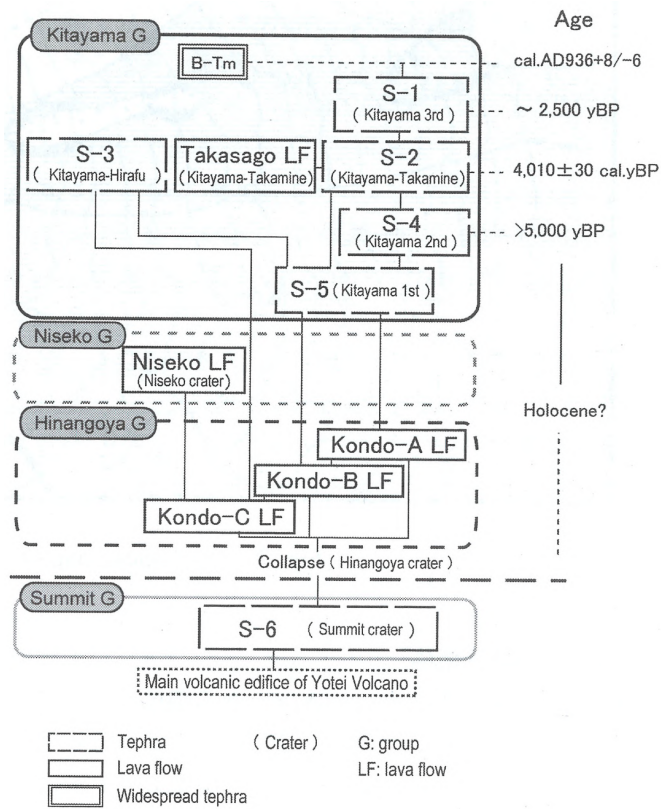


Figure 16-3 Stratigraphic diagram of ejecta near summit (Uesawa et al., 2011).

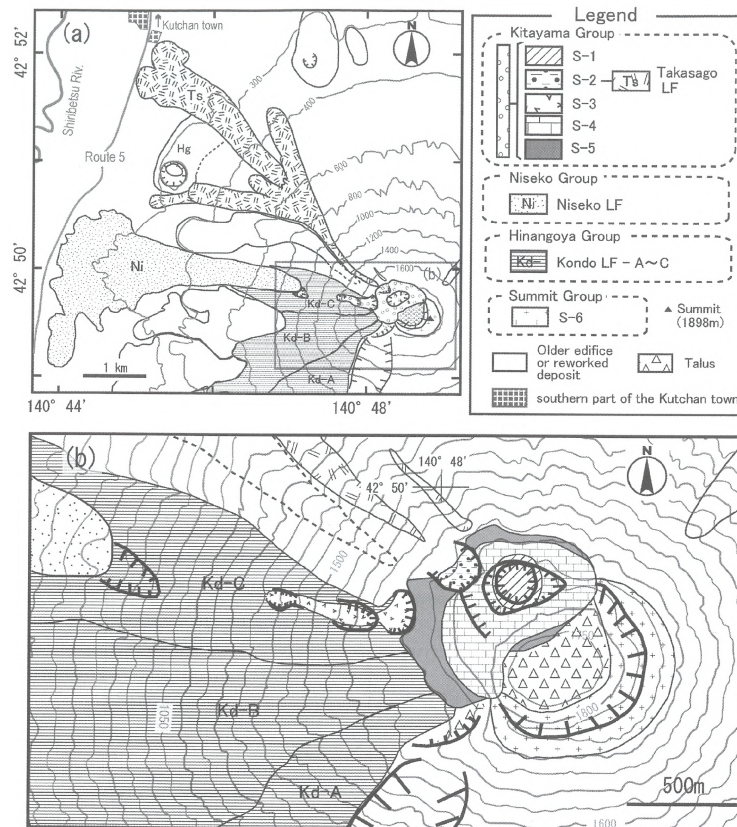


Figure 16-4 Distribution of ejecta at Yoteizan (Uesawa et al., 2011).

Recent Volcanic Activity

▪ Seismic Activity

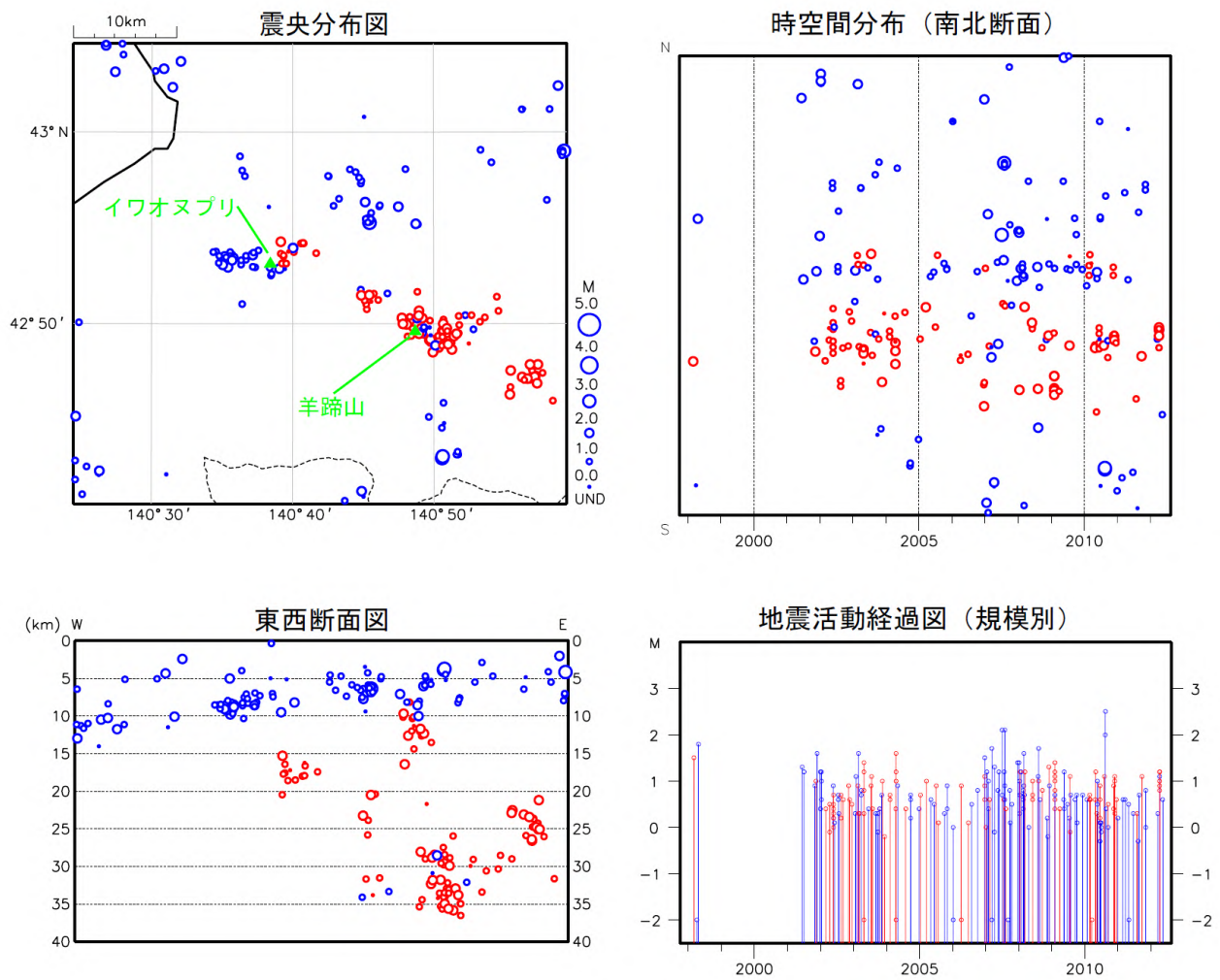


Figure 16-5 Activity of shallow VT earthquakes (blue circles) and deep low-frequency earthquakes (red circles) observed by a regional seismometer network (October 1, 1997, to June 30, 2012). Epicenter distribution (upper left), space-time plot (N-S cross-section) (upper right), E-W cross-section (lower left) and magnitude-time diagram (lower right).

Information on Disaster Prevention

① Hazard Map

None

Social Circumstances

① Population (from village websites as of October 31, 2011)

- Kutchan Town: 15,354
- Kyogoku Town: 3,400
- Kimobetsu Town: 2,409
- Rusutsu Village: 1,976
- Makkari Village: 2,193
- Niseko Town: 4,709

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

(according to 2010 Bureau of Tourism Department of Economic Affairs Hokkaido Government Hokkaido sightseeing estimate study)

- Shikotsu-Toya National Park

Kutchan Town: 1,499,800

Kyogoku Town: 773,500

Kimobetsu Town: 2,835,800

Rusutsu Village: 1,310,400

Makkari Village: 476,600

Niseko Town: 1,457,600

- Number of mountain-climbers: 9,609

(Hokkaido Regional Environment Office: Number of mountain trail users for 2010 year (June, 2010, to October, 2011))

(mountain-climber counters: Kutchan, Makkari, Kimobetsu, Kyogoku))

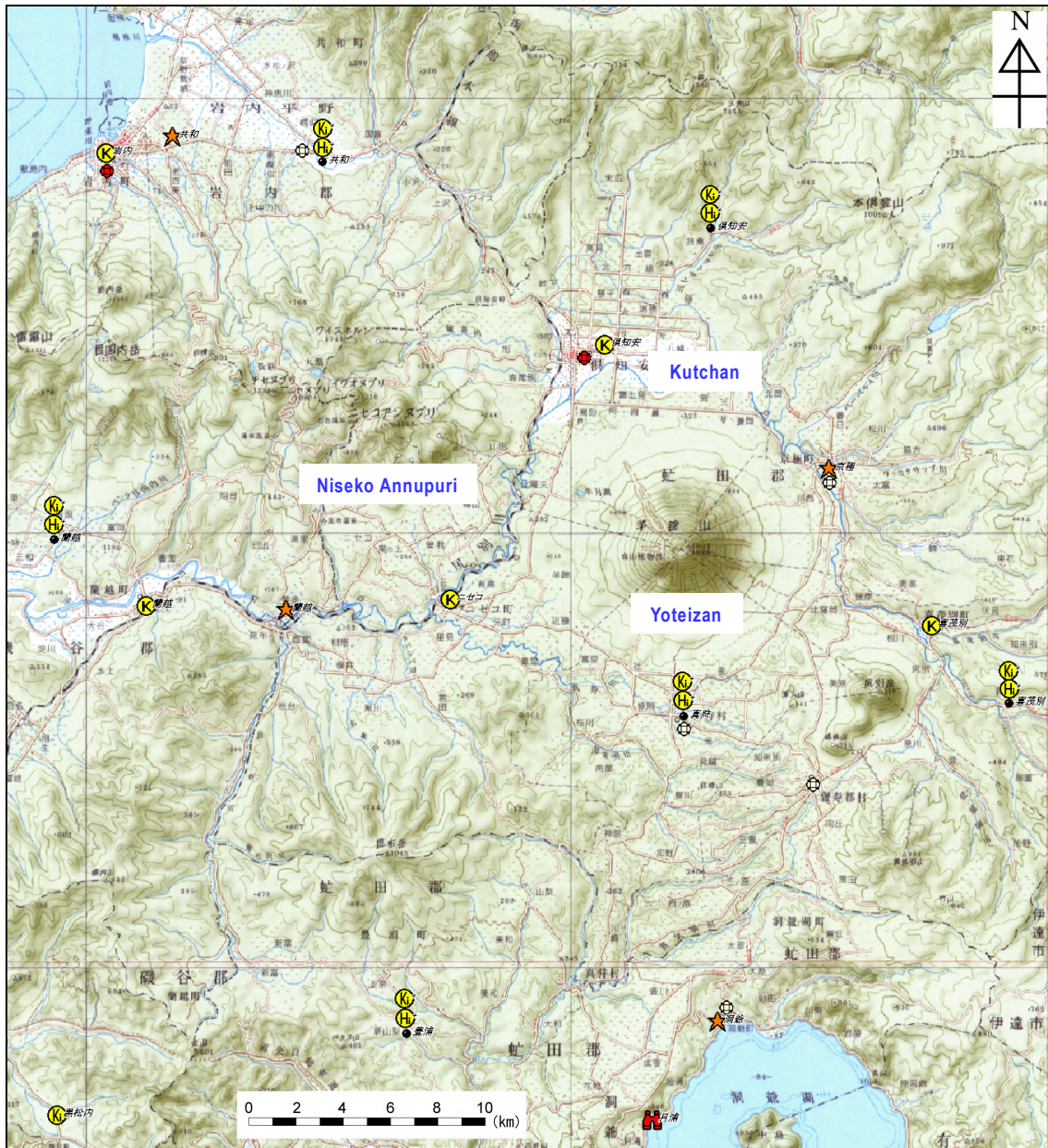
③ Facilities

- 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 (Iwanai and Muroran) published by the Geospatial Information Authority of Japan were used.

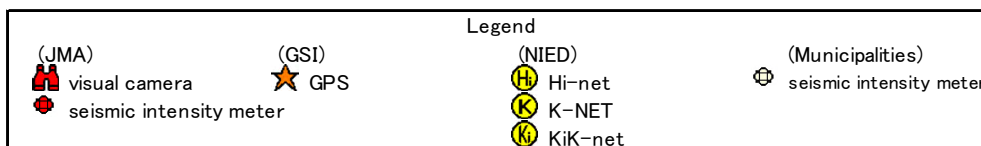


Figure 16-6 Regional monitoring network.

Bibliography

Uesawa, S. and Nakagawa, M. (2009): Abstracts Fall Meeting, Volcanol. Soc. Jap., 42 (in Japanese).

Uesawa, S. et al. (2011): Bull. Volcanol. Soc. Jap., **56**, 51-63 (in Japanese with English Abstract).

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