Eruptive history of Osore-zan volcano, Shimokita peninsula, northeast Japan based on volcanic product analysis

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Osore-zan volcano, Shimokita peninsula, northeast Japan is composed of conic volcanoes such as Kamabuse-yama. It is classified active volcano due to fumarolic gas activities around lake Usoriyama inside caldera which exists at the summit of it.

The prediction of volcanic eruptions of Osore-zan based on geological information is very difficult because eruptive history of it during last about 200,000 years wasn't well known.

We clarified the eruptive history of Osore-zan volcano during last about 200,000 years to predict volcanic eruptions of Osore-zan by carrying out a series of geological surveys including geological mapping around Osore-zan, drillings at 4 points around lake Usoriyama and radiocarbon dating of drilling core samples.

Kuwabara and Yamazaki (2000,2001) inferred that the ages of Tn-A,B,C (tephras of Osore-zan volcano) are MIS8 from the stratigraphic relationships to the marine terraces developed in Mutsu lowland, and Osore-zan volcano occurred few explosive eruptions after MIS8.

We obtained almost same results of Kuwabara and Yamazaki (2000,2001) and eruption data of Osore-zan volcano older than these.

We recognized 11 pyroclastic flows around Osore-zan volcano after the main activity period(Togashi (1977)) or the pumice flows period(Moriya (1983)).The age of these inferred from the stratigraphic relationships to the marine terraces and tephras, are divided into the following three stages; 1)before 400Ka ,2)MIS12;about 400Ka,3)MIS8-MIS7;about 240Ka-200Ka.

We also recognized 6 tephras (about 400Ka,240Ka-200Ka) in the Mutsu lowland on the downwind side of Osore-zan volcano.

The latest tephra was recognized at the eastern foot of Osore-zan volcano but not in the Mutsu lowland on the downwind of Osore-zan. We inferred that the age of it is 80Ka from the stratigraphic relationships to the distal tephra.Moreover, we recognized small scale eruptions of Osore-zan volcano inside caldera after 50ka by analysis of drilling core and tephras , radiocarbon dating of drilling core samples.

As a result, we obtained eruption data before 400Ka and after 50ka besides Kuwabara and Yamazaki (2000,2001), and these data would contribute to the accuracy improvement of the prediction of volcanic eruptions of Osore-zan.