

A geo-tour for disaster prevention in the Bandaisan Geopark -relation between the Nagase River flood and the Bandai Volcano eruption-

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The intense rain caused by the typhoon No.19 generated in October 2019 brought heavy flood damage in the East Japan. There was a heavy human damage that 32 people died in Fukushima Prefecture, too. Flood hazard map having high precision is maintained for the disaster in each place, but the spread is insufficient, and it is thought that delay of the evacuation order, delay of the refuge and belief of the security enlarged damage.

Not only merely fixing the system sheltering in emergency based on flood hazard map, but also local inhabitants knowing the history of the river and understanding the character of the water current and the flood mechanism are important in preparing for the disaster.

Because a lot of natural disasters such as eruption, earthquake and typhoon occur in Japan, the Japanese Geopark network puts effort into the disaster prevention. The Bandaisan Geopark also has poured power for the spread of the Bandai volcanic disaster prevention until now. Triggered by this flood disaster, we want to concentrate power on not only the volcanic disaster but also the flood disaster prevention.

The Nagase River, located in the Bandaisan Geopark, gathers many branches of the north side mountains of Mt. Bandai, flows south along the east foot of Mt. Bandai, and flows into Lake Inawashiro. It is the maximum river flowing into the lake. The river formed a large Inawashiro plain in the north side of the lake and has given great usefulness for life and industry of people in this area. On the other hand, it often overflowed and changed the channel, and damaged the villages of the river basin. It is handed down by tradition that the flow channel of the Nagase River was once greatly different from the present.

The volcanic activity of Mt. Bandai also had a great influence on the channel change of the Nagase River. Especially, by the Mt. Bandai eruption in 1888, a large quantity of gravel that occurred by a mountain body collapse drifted along the Nagase River and let the delta of the river mouth extend. In addition, the thick gravel that deposited along the river brought a rise of the riverbed surface and often caused floods. Above all, by the flood in 1913, five places of dikes of the basin collapsed, and 64 people died. After the dams for regulating water level were built beside the lakes of the upper Nagase River, the flood control advanced, but danger of the flooding is not gone afterwards.

We will attempt a tour around the Nagase River basin as the "Geology Day geo-tour" in May of 2020. By the geo-tour, the participants can see the old flow channel, the present channel and flood plain of the Nagase River, and the delta and terrace formed by the gravel that flowed down by the Mt. Bandai eruption, including the trace of the inhabitants' effort who dealt with the floods.

We want to contribute to improvement of the disaster prevention consciousness by the local inhabitants and to deepen cooperation with the Japanese Geopark network in the disaster prevention field through this activity.

Keywords: Bandaisan Geopark, disaster prevention, Nagase River