

Volcano Eruption Remains

to Teach about the Consequences of Volcanic Eruptions in Toya-Usu Global Geopark

Mount Usu is an active volcano and has erupted four times in the 20th century (in 1910, 1944-45, 1977-78, and 2000). Advised by academics, local municipalities have preserved collapsed apartments, a hospital, a public bath, roads, and bridges as the Volcano Eruption Remains in order to teach about the consequences of volcanic eruptions.

We always have geo-hazard risks no matter where we are on the living Earth. However, geo-hazards such as volcanic eruptions and earthquakes occur infrequently and it is difficult for us to understand the risks without experiencing them firsthand. Therefore, Volcano Eruption Remains are a highly effective tool to vividly see how the damage of a natural disaster will affect our lives by viewing the real devastated structures.



1944-45 ERUPTION



1977 Volcano Remain Park



Uplifted Bridge Remain Park



2000 Eruption Remains Park

The Toya Caldera and Usu Volcano Global Geopark is a volcanic Geopark containing both the Toya Caldera, which was created by catastrophic pyroclastic eruptions 110,000 years ago, and the world-famous Usu volcano which has been active for 20,000 years. Because the Japanese Islands are located in a quite active tectonic belt, many Geoparks in Japan feature geological hazards such as earthquakes and volcanic eruptions as their main theme. In particular, Toya Caldera and Usu Volcano Global Geopark is the most representative of these, having experienced at least nine eruptions in the past 350 years. This area constantly faces the risk of volcanic eruptions. Mt. Usu resumed volcanic activities in 1663, and has erupted repeatedly at least nine times until now. New lava domes and cryptodomes have been formed at each eruption, and the surrounding area has been damaged by topographic changes caused by ground deformations and ash falls. An Ainu village was burned, claiming many victims by pyroclastic flows during the 1822 eruption. In the 1944-1945 eruptions, the Showa-Shinzan lava dome was formed at the foot of Usu volcano, which caused the abandonment of the villages at the site. Volcanic mud flows accompanying the 1977-78 eruptions also claimed some casualties. On the other hand, although the 2000 eruption, which occurred at the foot on the volcano, caused a lot of property damage to the people living at the foot of the mountain (including the national roads, apartments, and houses collapsed by crustal movement) no lives were lost because of accumulated disaster prevention experience, volcanological research, and endeavors of the local residents.

After the 2000 eruption, the local residents appealed that the volcanoes blessings (hot springs, fertile earth and beautiful landscapes) and well-developed disaster safety measures could become new resources for tourism. The local residents choose to co-exist with the ever changing earth and began to aim for sustainable development. Advised by academics, the residents and municipality started to preserve collapsed apartments, a hospital, a public bath, roads, and bridges as the Volcano Eruption Remains to teach about the consequences of volcanic eruptions.