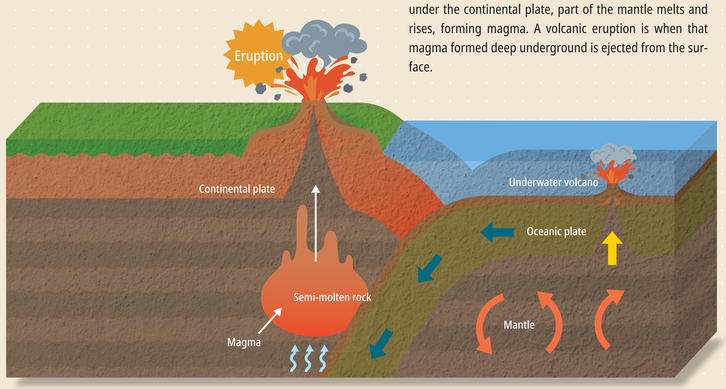
Volcanoes

What Causes a Volcanic Eruption?

Due to the action of water from the oceanic plate as it sinks under the continental plate, part of the mantle melts and rises, forming magma. A volcanic eruption is when that magma formed deep underground is ejected from the surface.



Source: Kumamoto Prefecture Disaster Prevention Handbook

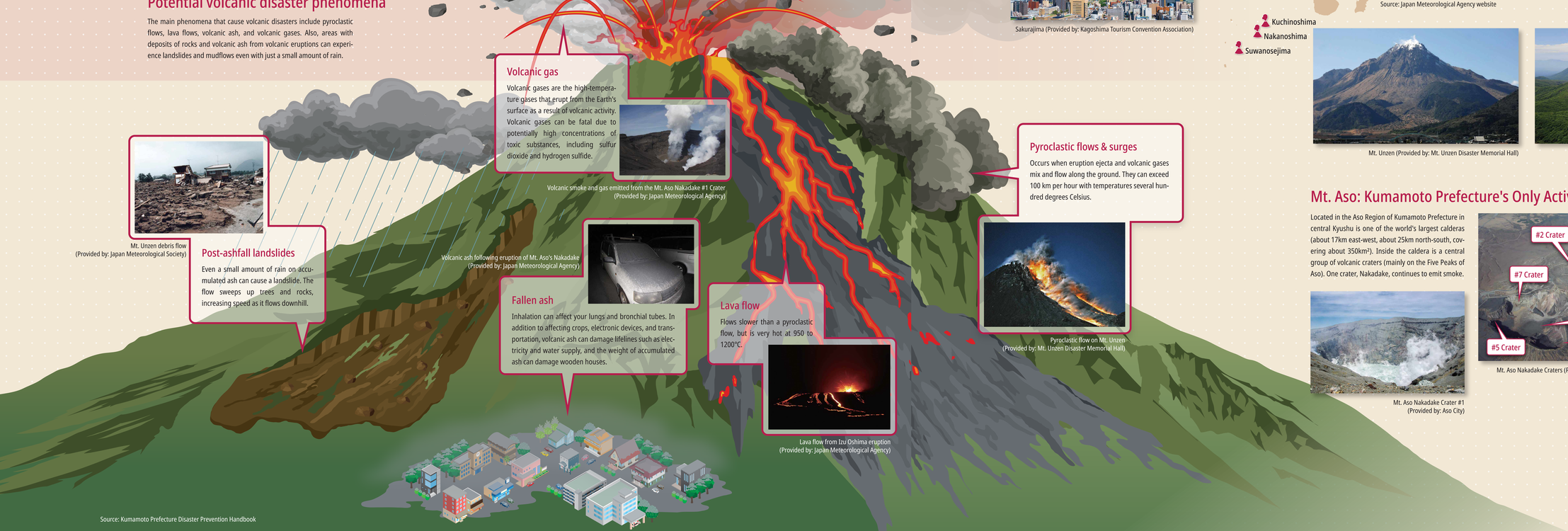
Cinder/Scoria

These rocks, when tens of centimeters in diameter, can be ejected around four kilometers from the crater. Smaller rocks can sometimes be thrown ten or more kilometers from the crater. The rocks can even pierce concrete.

Rock ejected from Mt. Aso's Nakadake crater (Provided by: Japan Meteorological Agency)

Potential volcanic disaster phenomena

The main phenomena that cause volcanic disasters include pyroclastic flows, lava flows, volcanic ash, and volcanic gases. Also, areas with deposits of rocks and volcanic ash from volcanic eruptions can experience landslides and mudflows even with just a small amount of rain.



Volcanic gas

Volcanic gases are the high-temperature gases that erupt from the Earth's surface as a result of volcanic activity. Volcanic gases can be fatal due to potentially high concentrations of toxic substances, including sulfur dioxide and hydrogen sulfide.

Volcanic smoke and gas emitted from the Mt. Aso Nakadake #1 Crater (Provided by: Japan Meteorological Agency)

Mt. Unzen debris flow (Provided by: Japan Meteorological Society)

Post-ashfall landslides

Even a small amount of rain on accumulated ash can cause a landslide. The flow sweeps up trees and rocks, increasing speed as it flows downhill.

Volcanic ash following eruption of Mt. Aso's Nakadake (Provided by: Japan Meteorological Agency)

Fallen ash

Inhalation can affect your lungs and bronchial tubes. In addition to affecting crops, electronic devices, and transportation, volcanic ash can damage lifelines such as electricity and water supply, and the weight of accumulated ash can damage wooden houses.

Lava flow

Flows slower than a pyroclastic flow, but is very hot at 950 to 1200°C.

Lava flow from Izu Oshima eruption (Provided by: Japan Meteorological Agency)

Pyroclastic flows & surges

Occurs when eruption ejecta and volcanic gases mix and flow along the ground. They can exceed 100 km per hour with temperatures several hundred degrees Celsius.

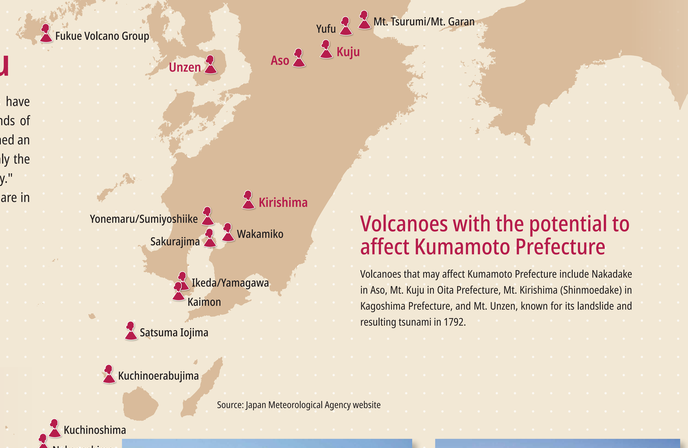
Pyroclastic flow on Mt. Unzen (Provided by: Mt. Unzen Disaster Memorial Hall)

Source: Kumamoto Prefecture Disaster Prevention Handbook

Major Active Volcanoes on Kyushu

In the past, there have been instances where volcanoes have resumed volcanic activity after being dormant for thousands of years. In 2003, the Volcano Eruption Prediction Council defined an active volcano as "a volcano that has erupted within roughly the last 10,000 years and currently has ongoing fumarolic activity." There are 111 active volcanoes nationwide, and 17 of them are in Kyushu.

Sakurajima (Provided by: Kagoshima Tourism Convention Association)



Source: Japan Meteorological Agency website

Volcanoes with the potential to affect Kumamoto Prefecture

Volcanoes that may affect Kumamoto Prefecture include Nakadake in Aso, Mt. Kuju in Oita Prefecture, Mt. Kirishima (Shinmoedake) in Kagoshima Prefecture, and Mt. Unzen, known for its landslide and resulting tsunami in 1792.

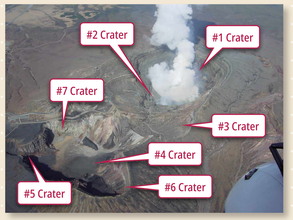
Mt. Unzen (Provided by: Mt. Unzen Disaster Memorial Hall)

Sakurajima

Mt. Aso: Kumamoto Prefecture's Only Active Volcano

Located in the Aso Region of Kumamoto Prefecture in central Kyushu is one of the world's largest calderas (about 17km east-west, about 25km north-south, covering about 350km²). Inside the caldera is a central group of volcanic craters (mainly on the Five Peaks of Aso). One crater, Nakadake, continues to emit smoke.

Mt. Aso Nakadake Crater #1 (Provided by: Aso City)



Mt. Aso Nakadake Craters (Provided by: Japan Meteorological Agency)