

## How can Volcanoes affect the Weather?



Observation of past eruptions throughout the world suggest that volcanoes can have a bit impact on weather and climate. Below are 4 historic eruptions, with their observed effect on global temperatures.

### **LAKI (1783)**

This volcano in Iceland erupted in 1783. European winter temperatures were abnormally low the year after and the eastern U.S. recorded the lowest-ever winter average temperature in 1783-84, about 4.8°C below the 225-year average. Benjamin Franklin theorised that the cold conditions were a result of the dust and gases produced by the volcano, blocking out sunlight. This eruption also poured out masses of basalt lava. Franklin's theory is consistent with thinking that large hypothesis is consistent with current thinking that large volumes of Sulphur Dioxide (SO<sub>2</sub>) are a culprit in haze-effect global cooling.

### **TAMBORA (1815)**

Mount Tambora in Indonesia erupted in 1815 and this was followed by an extremely cold spring and summer in 1816, which became known as "the year without a summer". The Tambora event was believed to be the largest in the last ten thousand years. Europe was hit hard and snowfalls and frost occurred in June, July and August. All but the hardiest grain crops were destroyed, forcing farmers to kill their animals as they could not feed them. Sea ice migrated over shipping lanes and glaciers advanced to lower than normal heights..

### **KRAKATAU (1883)**

One of the best known eruptions, Krakatau in Indonesia generated twenty times the amount of volcanic matter released by Mt St Helens in 1980. Krakatau was the second largest recorded eruption in history, second only to Tambora (see above). For several months after the eruption the world had unusually cool weather, the distinctive red sunsets and prolonged twilight all due to the spread of particles through the air. There was considerable debate about

the origin of the brilliant sunsets and the eruption also inspired artists. See below for an artist's



impression of the eruptiuon..

## **PINATUBO (1991)**

The latest in the four eruptions covered here, Mount Pinatubo in the Phillipines, erupted in 1991, within a few weeks Mount Hudson in Chile also erupted. Observartions collected after these eruptions show that mean world temperatures decreased by about 1°C over the subsequent two years.

There have obviously been many more eruptions than these, but the examples above give a good idea of the effect a volcanic eruption can have on global temperatures.

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