



Mount Saint Helens A Case Study

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Mt St Helens, USA

Location: Washington State, USA

Status: Active

Type: Stratovolcano

Last Eruption: 10th July 2008

History:

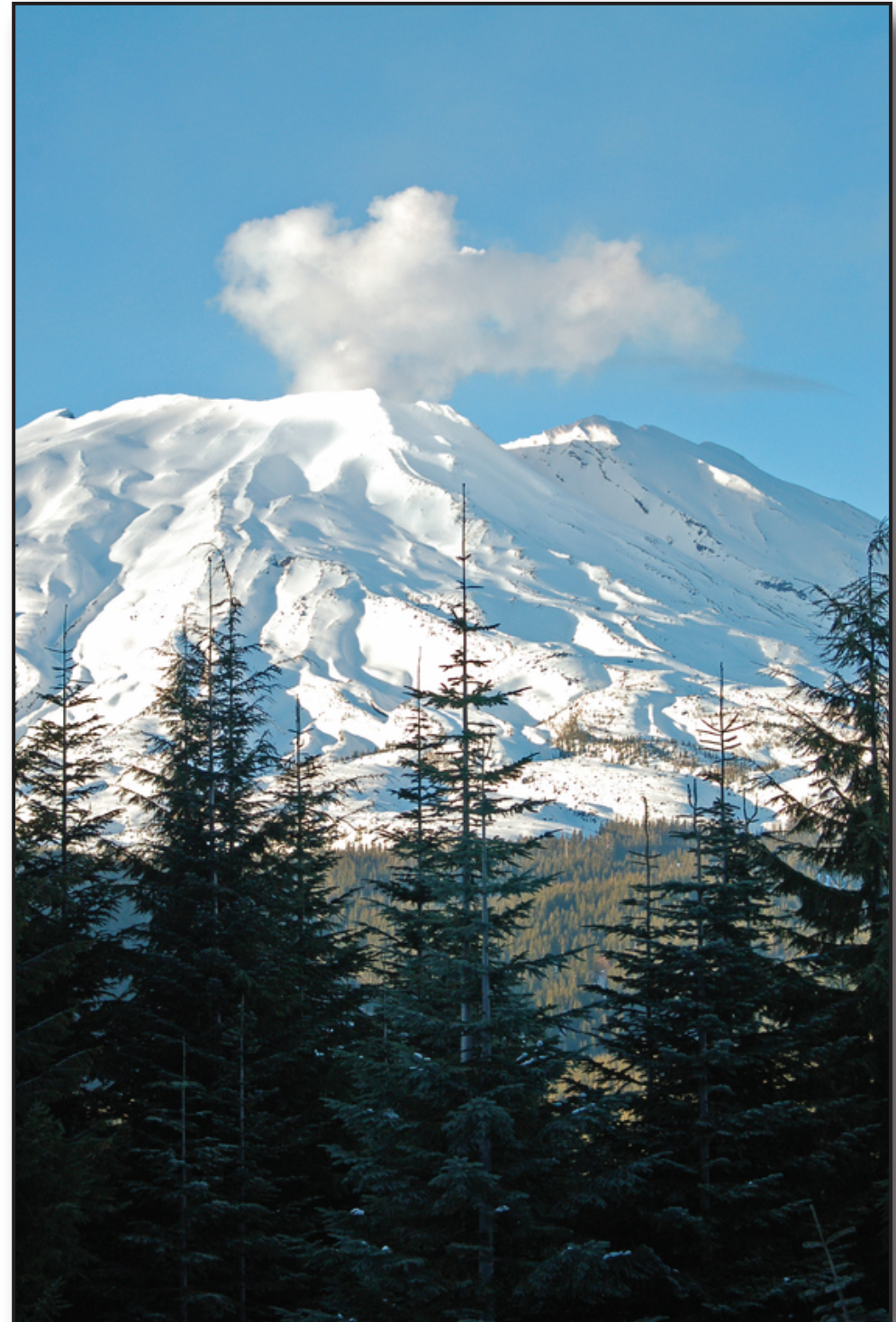
Scientists believe that the mountain grew from lava flows over the last few thousand years. The last major eruption was in 1980. There were 17 episodes of activity between 1980 and 1986. The last period of activity was between 2004 and 2008.

Native American Names:

Known as 'Luwala-Clough' (and also 'Loowit') from the language of the Klickitat people of the prairies of the Pacific North-West. The name means 'smoking/fire mountain'.

Known as 'Lawetlat'la' in the language of the Cowlitz people, of the North-West Coast.

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The Eruption of Mt St Helens in 1980

Before The Eruption

Mt St Helens has a long history of intermittent volcanic activity. The last significant event, before the eruption in 1980, occurred in 1857. It was followed by minor steam eruptions in 1898, 1903 and 1921. The volcano then became quiet until the events leading up to the catastrophic eruption in May 1980.

Events Leading Up To The Eruption on 18th May 1980

- 16th March: the first of several small earthquakes occurred.
- 27th March: the first of many eruptions occurred. Steam explosions blasted a crack through the summit of the mountain, covering the snow capped peak in ash.
- March - 22nd April: numerous earthquakes and eruptions occurred. The cracks in the summit continued to widen.
- 22nd April: eruptions stopped.
- 7th -17th May: earthquakes and small eruptions resumed. A large rock-bulge grew in the north side of the mountain at a rate of about 2 m (6.5 ft) per day. This was magma rising up into the volcano, pushing up towards the surface of the mountain.

Mt St Helens before the eruption, elevation 2975m (9760 ft)



Mt St Helens after the eruption, elevation 2600m (8525 ft)



Events On The Day Of The Eruption

- At 8.32am on the 18th May 1980, a magnitude 5.1 earthquake occurred, triggering a huge landslide on the north side of the mountain. The avalanche continued towards the west.
- Powerful lateral (sideways) eruptions sent hot material rushing at great speeds, removing the top part of the summit.
- A massive plume of ash and hot rock emerged from the summit of the mountain as the volcano began to erupt.
- Ash falls spread eastwards with the prevailing wind.
- Numerous Pyroclastic flows of hot materials sped out of the volcano.
- Fast moving hot rock and gas surged over the rim of the crater, taking down trees, melting glaciers and snow and covering the side of the mountain in ash and rocks. The debris and water mixed together forming massive mudflows that destroyed homes, bridges and roads.

Aftermath of the Eruption

Landscape Changes: Mt St Helens' elevation prior to the eruption was 2975m (9760 ft). This was reduced to 2600m (8525 ft) after the eruption.

Deaths: 57

Property Losses: More than 200 homes

Forestry Losses: 600 sq km (230 sq miles)

Ash Distribution: As far as 1500km (930 miles) to the east.



Large forested areas were destroyed after the eruption of Mt St Helens on the 18th of May 1980. Trees were blown over by a pyroclastic flow; a fast moving current of hot gas and rock that sweeps down the mountainside. This photograph was taken in 1988. You can see some regrowth of vegetation after 8 years.





Post 1980 Eruption Activity

Mount Saint Helens erupted again on May 25th, June 12th, July 22nd, and August 16th -18th of 1980. A new dome began building inside the crater with continuing activity between 1981 and 1989. The volcano then became relatively quiet until it awakened in late September of 2004.

Eruptions continued between 2004 and 2008, forming a second dome in the crater. The two domes continued to grow in size. By 2013, about 7 percent of the crater had been refilled by the growing domes.

Predictions for the Future

Mount Saint Helens is an active volcano. Scientists believe that it is likely to erupt many more times in the future. However, the devastating landslides and lateral eruptions that occurred in the May 1980 event will likely not happen again as the crater is now so deep.

Scientists carefully monitor the seismic activity in the area. In addition to this they have installed multiple GPS devices that measure changes in position within the crater. All of this information helps them to predict the likelihood of an eruption and they are able to issue warnings before such an event occurs.

Mt St Helens erupting in 2004

