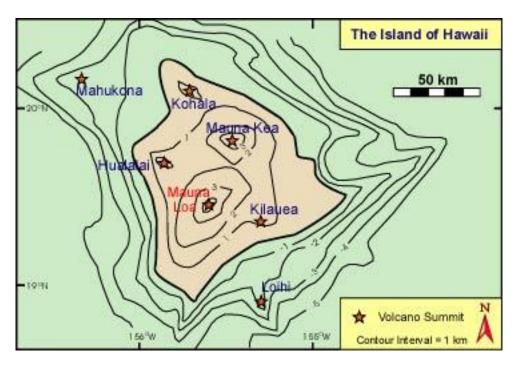
"How Can We Determine the Location, Size and Climate Effects of Volcanic Eruptions During the Past 2000 Years?"

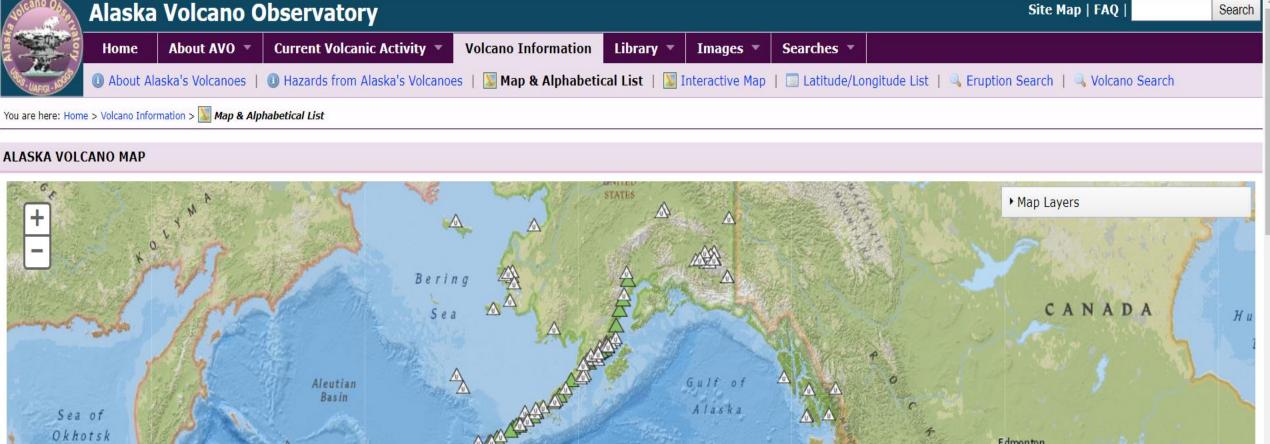
Dallas Abbott
Originally presented 5 May 2018

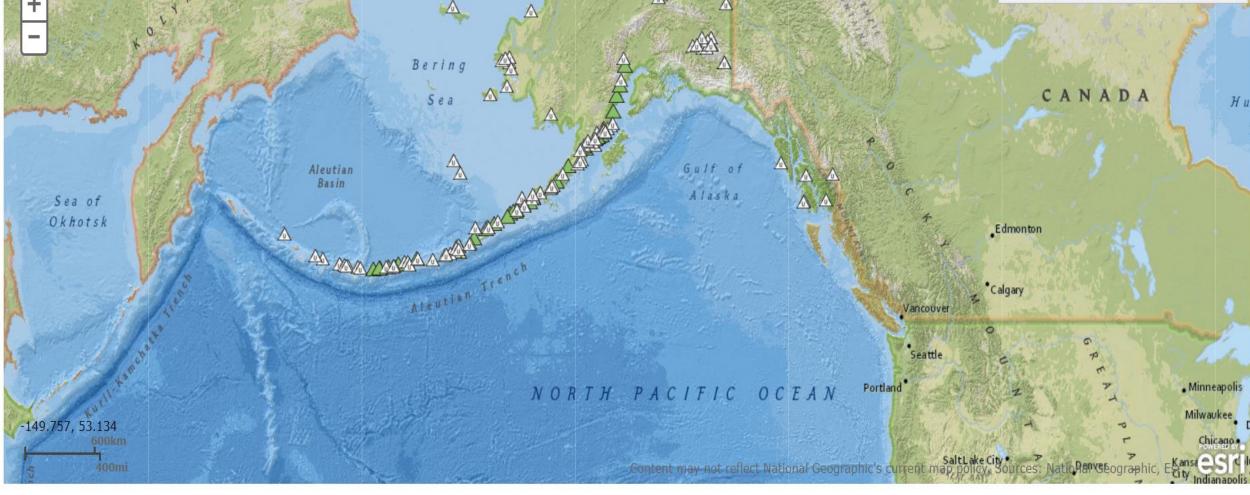


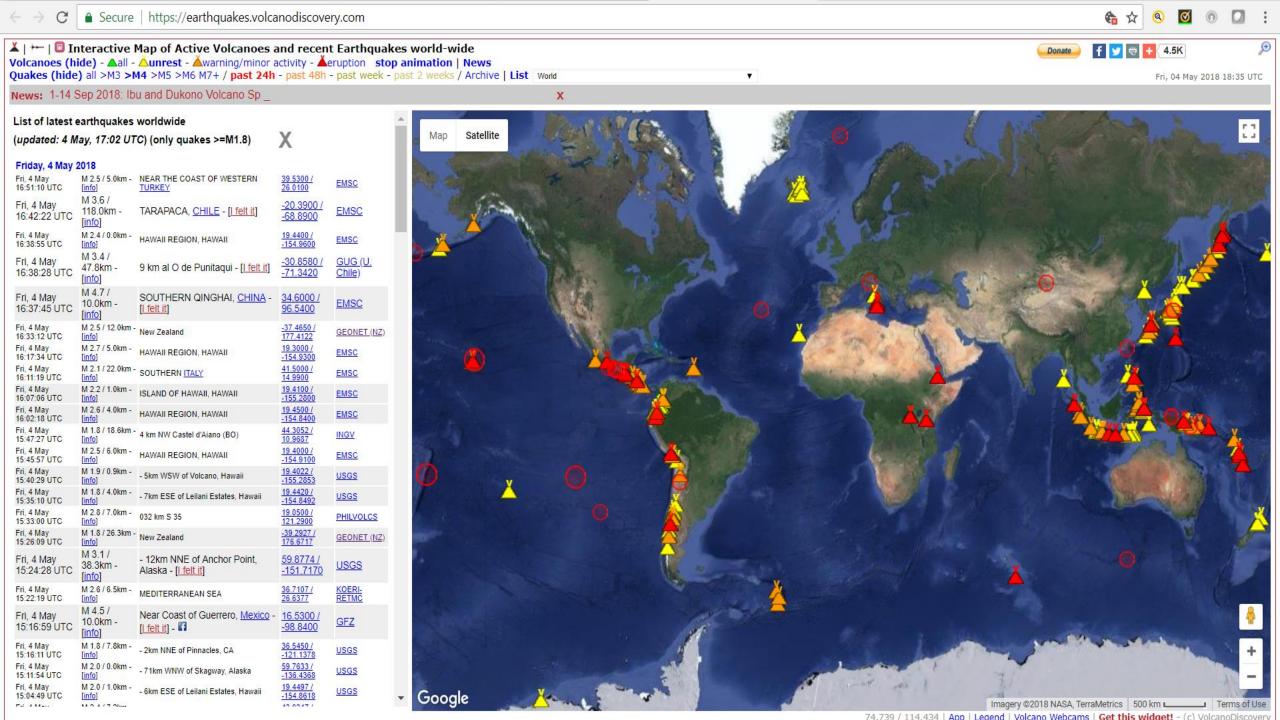
#### Mauna Kea and other Hawaiian volcanoes







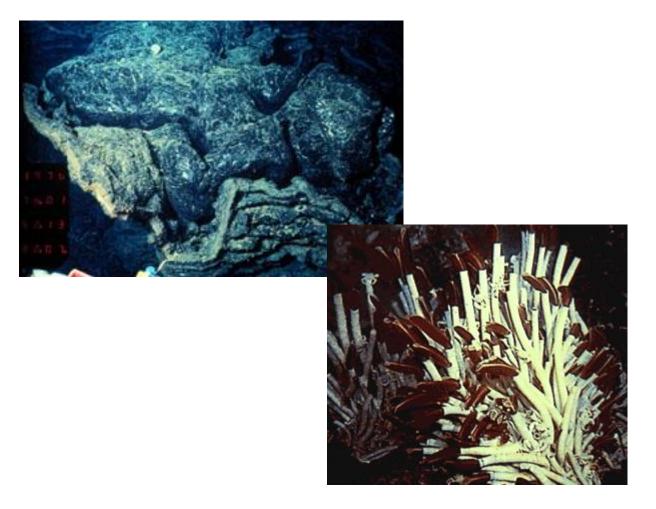






#### Submarine volcanoes

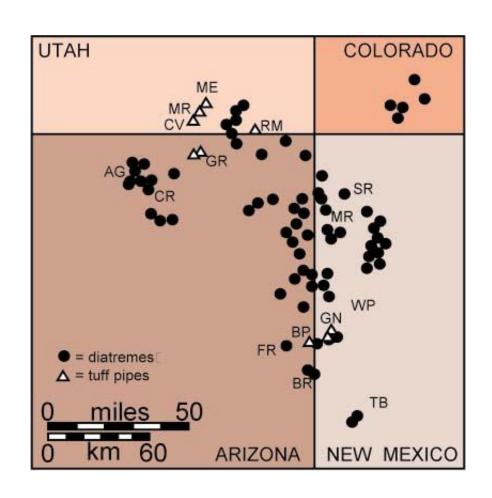
- 8,000 known volcanic eruptions in the last 10,000 years
- Only about 300 were submarine
- From 1975 to 1985, 160 volcanoes erupted
- Only 24 were submarine
- Mid-Ocean Ridges produces an estimated 75% of the annual output of magma
- "Black smokers"

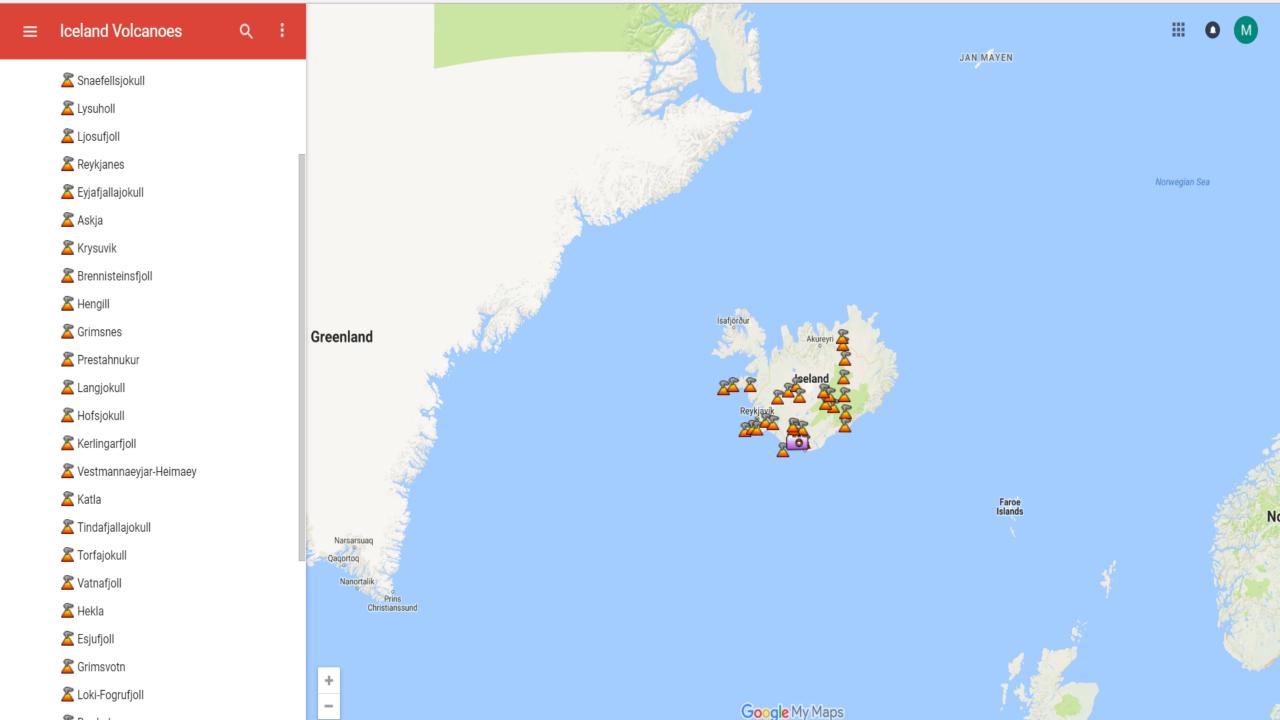


# Shiprock and other extinct volcanoes of the US Southwest



https://upload.wikimedia.org/wikipedia/commons/0/0b/Shiprock.snodgrass3.jpg

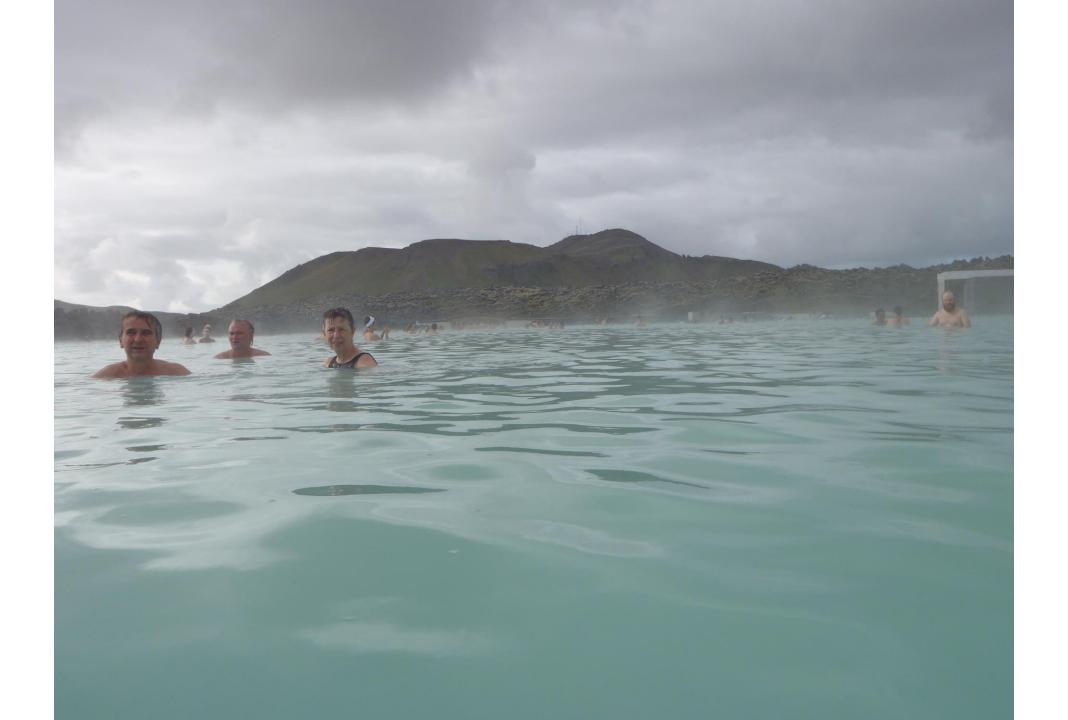




What part of **Eyjafjallajökull** can't you understand? (aye -ya fyah dla jow kudl)













# The original geyser

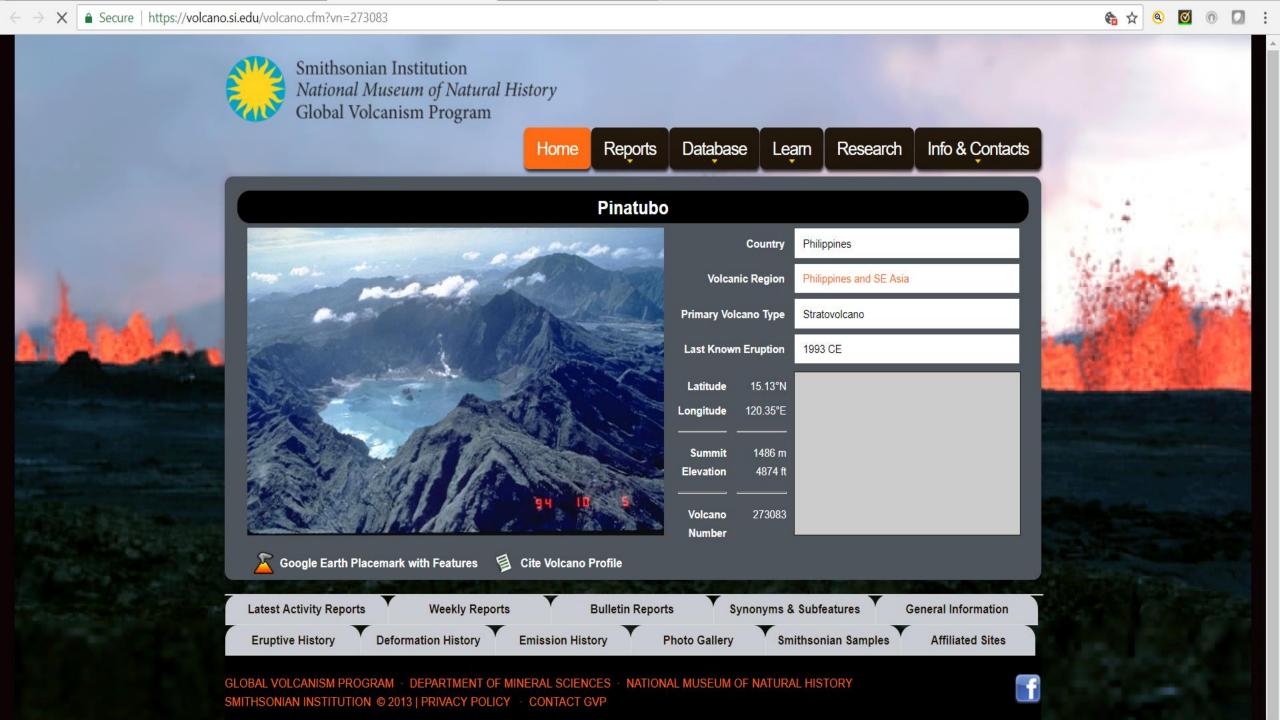






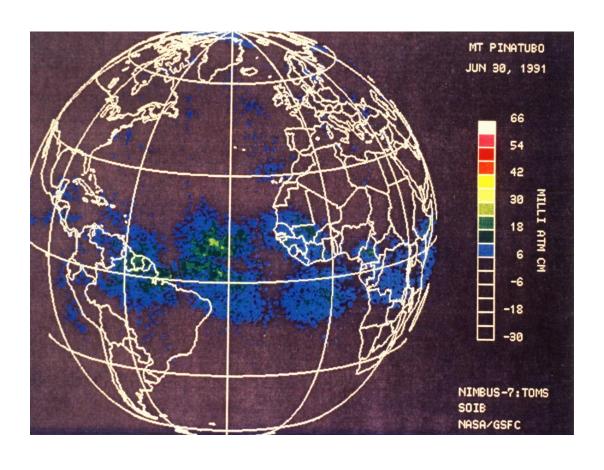






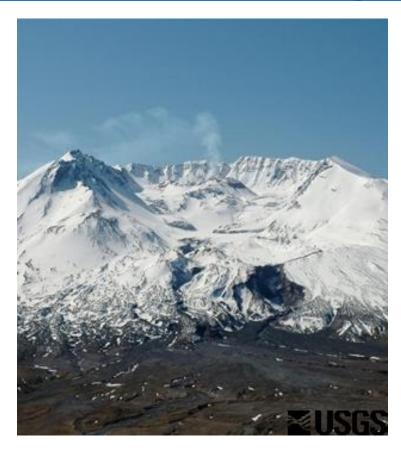
## Pinatubo's impact and worldwide effects (1991)





#### Mt St Helens (1980)

# https://volcanoes.usgs.gov/volcanoes/st helens/







https://en.wikipedia.org/wiki/1980\_eruption\_of\_Mount\_St.\_Helens#/media/File:MSH80\_eruption\_mount\_st\_helens\_05-18-80-dramatic-edit.jpg

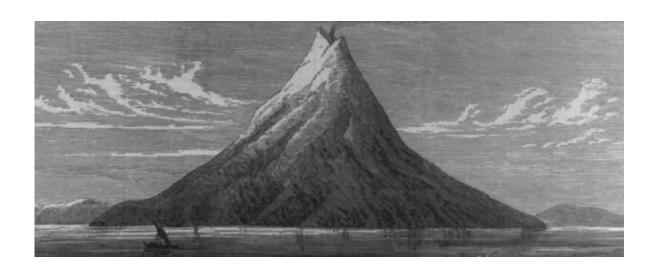






Japanese volcanoes

# Krakatau (not Krakatoa) (1883) http://volcano.oregonstate.edu/krakatau





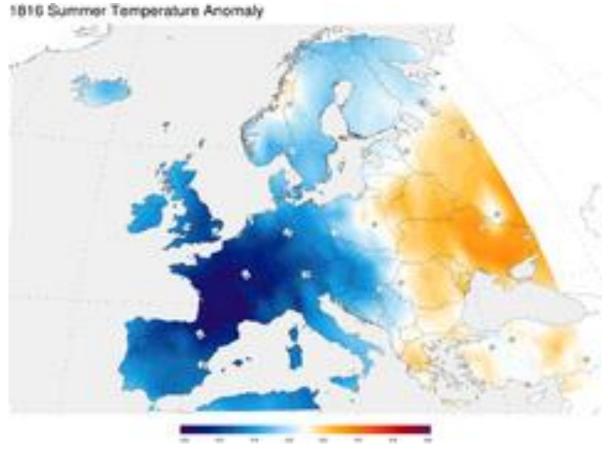
https://www.ncei.noaa.gov/news/day-historic-krakatau-eruption-1883

http://www.indonesia-tourism.com/banten/krakatoa-volcano.html

### Tambora (1815) and "The Year without Summer"

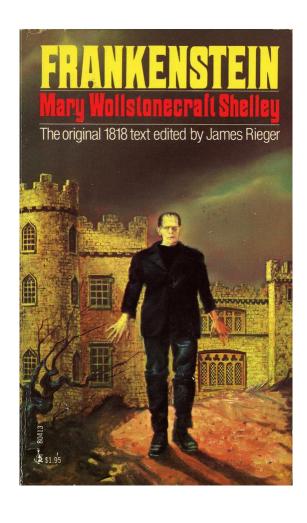


- Largest observed eruption in recorded history
- >71,000 deaths
- "Eighteen hundred and froze to death"



https://en.wikipedia.org/wiki/Year\_Without\_a\_Summer

# This is what you get when cooped up in a cold vacation house in Italy in 1816



- Mary Wollstonecraft Godwin (1797-1851), later Mary Shelley, devised this Gothic novel in 1816 while staying at Lake Geneva with Lord Byron, John Polidori, Claire Clairmont and her future husband Percy Bysshe Shelley.
- Byron proposed that the group should write ghost stories. The text was penned at a time when scientists were investigating the possibility of regenerating corpses with electricity.



1944 Eruption











Many 18<sup>th</sup> – 19<sup>th</sup>
Century buildings were influenced by the discovery of the Roman buildings in Pompeii

"Neoclassical style"





















#### FOR MORE INFORMATIO ABOUT VOLCANOES IN **GENERAL, SEE THE FEB 2018 E2C WEBPAGES**



"Volcanic Eruptions: How Wet? How Hot? How Fast?" with Terry Plank, Megan Newcombe, and Anna Barth Originally presented 10 Feb 2018





(Images: USGS)

What causes some eruptions to be more explosive than others? Is it the total driving gas fuel, or how fast the gas escapes? This talk examines both the volatile content and the speed of magma assent immediately prior to exuption Chamical zonation presented incide glass pockets and