

## Why there's a ring of natural disasters around the Pacific?



*There's been a lot of \_\_\_\_\_ in 2018.*

*Mount Mayon in the Philippines erupted in January. It continued for over a month.*

*In February, Mount Sinabung erupted in Indonesia. Here's the \_\_\_\_\_ is seen from space.*

*And in June an eruption in Guatemala killed more than 100 people.*

*Turns out this is pretty normal.*

*On average, there are 10 to 20 volcanoes \_\_\_\_\_ around the world at any given time.*

When you look at these on a map and add volcanoes that are not currently erupting, you'll start to see a pattern.

[https://www.youtube.com/watch?v=DrwYtGf40hA&t=375s&ab\\_channel=Vox](https://www.youtube.com/watch?v=DrwYtGf40hA&t=375s&ab_channel=Vox)

Most are concentrated here, along the edges of the \_\_\_\_\_ .  
This region is known as the Ring of Fire, a stretch of \_\_\_\_\_ of volcanoes spanning 40,000 kilometers.  
It's also where most of the earthquakes and tsunamis in the world \_\_\_\_\_ .

This year alone, the region saw 4 eruptions and 5 of the world's biggest earthquakes .

The Ring of Fire is where some of history's most devastating natural \_\_\_\_\_ have happened and will continue to happen.

Volcanoes have terrorized people for centuries. In the 1800s, explorers and scientists started \_\_\_\_\_ them \_\_\_\_\_ .

Take a look at this map from 1852. It has "the volcanic series of Australasia" and "the volcanic series of Japan and Kamchatka, in Russia."

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By the 1960s, most scientists concluded the earth's surface is made up of a series of \_\_\_\_\_ that slowly move into and apart from each other.

Now look at where the eruptions and earthquakes occur.

The Ring of Fire is the result of these plates crashing into \_\_\_\_\_.

The plates in the Pacific are moving \_\_\_\_\_ than other plates around the world, adding stress where the plates interact.

This plate is moving northwest, crashing into the North American plate, which \_\_\_\_\_ all the volcanoes here.

Over in California, the Pacific plate is grinding past the North American Plate -- where they meet is called the San Andreas Fault.

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The \_\_\_\_\_ causes thousands of earthquakes a year. A few of them are even large enough to cause serious \_\_\_\_\_.

Like the San Francisco-Oakland earthquake in 1989, which killed 63 people and injured nearly 4,000.

All these plate interactions are \_\_\_\_\_ from each other. But when grouped together, they make up the most seismically active region in the world.

The problem with the Ring of Fire is that geologists can't accurately \_\_\_\_\_ when a volcano is going to erupt or an earthquake will shake the ground.

They can monitor tremors, gas emissions and temperature changes around a volcano to \_\_\_\_\_ when it might erupt, but they can't be sure of the exact timing or the severity.

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*And those predictions get even weaker with earthquakes which aren't preceded by any \_\_\_\_\_, so we can't even see them coming. One way scientists forecast the future of these phenomena is by looking at the past -- take New Zealand, for example.*

*Earthquakes have occurred on this fault line every 500 to 1,000 years. There was a \_\_\_\_\_ over 800 years ago and another one around the 500 mark. So scientists now believe New Zealand is due for mega quake.*

*Over here in California, there is a 72% chance of a major earthquake along \_\_\_\_\_ section of the San Andreas faultline in the next 30 years.*

*Parts of Japan have a 25% chance of a big quake and Seattle could see one in the next 50 years that could impact 7 million people.*

*In fact many countries along the Ring of Fire will continue to be \_\_\_\_\_ for the foreseeable future.*

*They can't get out of harm's way, but there is something they can do about it.*

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*In 2011, an earthquake and a following tsunami, killed 15,000 people and \_\_\_\_\_ \$300 billion in damages in Japan.*

*But those numbers \_\_\_\_\_ (can be) a lot higher. See, Japan requires buildings be constructed with anti-earthquake designs, like the one in this video.*

*And it has an early \_\_\_\_\_ system that stopped high-speed trains, factory lines, and sent countrywide text \_\_\_\_\_ a full minute before the tremor hit. While Japan's precautions didn't prevent the disaster, they did save countless lives.*

*The problem is, not every country in the Ring of Fire is like Japan. Most of these countries have some form of anti-earthquake building code, but the \_\_\_\_\_ and implementation of these codes varies. And none of these countries have early warning systems for earthquakes. In developing countries, \_\_\_\_\_ these projects can be a problem.*

*But even richer countries aren't taking the risk seriously enough.*

*California, Oregon, Washington are some of the most \_\_\_\_\_ states in the US, still don't have a public early-warning system in place. Because volcanoes and earthquakes continue to be \_\_\_\_\_ threats, governments tend to treat them as a low priority.*

*And that's what makes the Ring of Fire even more \_\_\_\_\_.*

*We know for certain that there will be more natural disasters along this belt. What we don't know is if we'll be prepared for them.*