

# Why have record Japan rains been so deadly?

July 9 2018, by Kyoko Hasegawa

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Japan is famously prone to natural disasters including earthquakes and tsunamis, and is generally considered well-prepared to cope. So why has record rainfall caused at least 100 deaths?

Here are some of the factors that have contributed to the worst rain-related disaster in Japan in over two decades.

## **Typhoon season, record rains**

The [heavy rains](#) began with a typhoon front that hit as Japan entered its yearly typhoon season.

The archipelago is battered annually by an average of six typhoons, from around July to October or November.

The storm fronts bring torrential downpours and heavy winds, and are closely tracked by weather and government officials.

Despite various measures intended to prevent deaths, including dams to control flood waters, the country sees rain-related deaths most years.

But this rainfront has been unprecedented: record rainfall was recorded in the 72 hours to Sunday at 118 government observation points across the affected area, the weather agency told AFP.

## **A complicated geography**

About 70 percent of Japan's land is made up of mountains and hills, so homes are often built on steep slopes, or flood-prone flat plains below them.

"In addition, Japan's earth is geologically diverse, with tectonic plates and volcanic geological layers,—in a nutshell, it's weak," said Hiroyuki Ohno, head of the Sabo (sand erosion control) and Landslide Technical Centre.



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That puts many people's homes in the path of potential landslides and flooding.

The government has a long-term project nudging people in disaster-prone areas to move, and has even banned new construction in the most vulnerable places.

But the project is ongoing, and many remain in harm's way.

## **Wooden houses**



Many of Japan's homes are built of wood, particularly traditional or traditional-style houses that remain popular in the countryside.

Their foundations are also made of wood, which can be ideal for flexibility in the case of earthquakes, but stand little chance of withstanding the crushing pressure produced by a torrent of flood water or a massive landslide.



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AFP reporters saw homes where the top floor had been ripped away from the lower one, and carried away by landslides, and others that had been swept away wholesale from their plots.

## Evacuation orders

Japanese authorities issued evacuation orders to around five million people during the worst of the rains, but the orders are not mandatory, and many ignored them.

"Human beings have a so-called normalcy bias, meaning people try not to evacuate, ignoring negative information," said Hirotada Hirose, a disaster management expert.

"This human nature means people can't react to [disasters](#) like landslides and flash floods, which occur suddenly," he told AFP.

But experts also say Japan's warning system is problematic, with the decision to issue evacuation orders often left to local officials who may have no disaster management experience.



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"Reluctance to issue evacuation orders can result in delays... and if they are issued at odd hours, no one will hear about them," Hirose said.

## **Climate change?**

Many residents may simply have been lulled into a false sense of security by years of experience with severe, but not deadly, weather systems.

Many people in regions affected by the disaster told AFP that the rains were unlike anything they had seen before.

"The frequency of heavy rain-linked disasters is on the rise, and we are facing the world where the rules learnt from your experiences no longer apply," Ohno said.

Scientists have warned that one consequence of global warming could be an increase in rain-related disasters, and experts now say people should leave well in advance of evacuation orders where forecasts show heavy rain is possible.





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