

Stunning Sinkholes
by Sarah Wassner Flynn



What do you notice is happening in this photograph?

It was a typical November day in Taipei, a busy city in Taiwan. Then...*bam!* A blue construction truck driving down the street suddenly slipped into a hole in the road. In seconds, the truck began to sink deeper and deeper into the hole. The truck's driver barely managed to escape before the truck was nearly swallowed by the street.

Turns out, the truck had fallen into a **sinkhole**. A sinkhole is a hole in the ground caused by a collapse of the Earth's surface layer. In Taipei, the sinkhole had been caused by a leak in an underground pipe. The leak caused enough damage below ground that the layers below the street were no longer able to support the road. In a matter of seconds, a few cracks in the street turned into a hole big enough to swallow the small truck.

Underneath It All

Sinkholes occur all around the planet. These holes open up when water **erodes** the layer of rock beneath the surface level.

Groundwater or pipe bursts or leaks, like in the case of Taipei, can cause the rock to **dissolve** over time. This is because the **acidity** in the water



Most sinkholes occur in areas where the landscape is made of limestone.

will eat away at what is meant to serve as a **foundation** for the street or for the ground. Without that rock to support the soil—or the street—the surface layer has nothing to hold it up and gravity takes over. The land collapses, leaving a hole that is visible on the surface.

Sinkholes slowly develop over a long period of time. The water gradually dissolves the underground rock until it reaches its breaking point. Then, the damage occurs quite quickly and usually without warning. This is why many people are caught off guard when a sinkhole opens up on their property or on a street.

Man-made or Natural?

There are different types of sinkholes. Some are **man-made**, meaning they occur because of human action, like underground construction or a busted pipe. Sinkholes seen in city streets are often man-made. For example, a sinkhole in Guatemala City, Guatemala, that swallowed a three-story factory was caused by a combination of reasons, including leaky sewer pipes and a huge amount of rainfall due to a tropical storm.

Natural sinkholes occur all around the planet where the land is made of a soft underground rock layer, like limestone. Most of the state of Florida, for example, sits on limestone. There is even an area of the state called *Sinkhole Alley* that is especially at risk because it is built on the fragile rock.

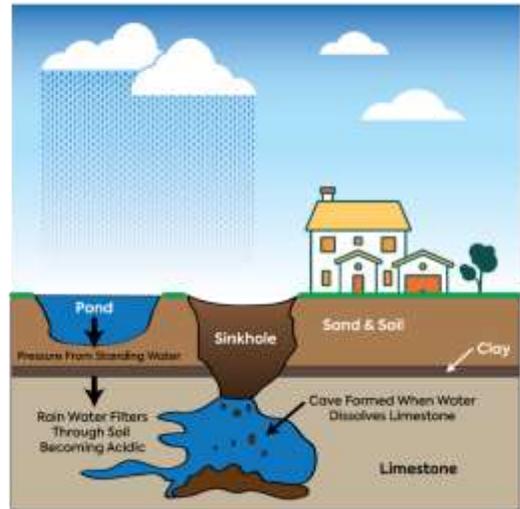


Other natural sinkholes occur in the land around the Dead Sea in the Middle East. It is made mostly of rock salt, which is easily dissolved by water.

Huge Holes

Just how sizable are sinkholes? Some are super deep—like one in Chongqing, China, which is as deep as a skyscraper is tall! Some sinkholes occur underwater. The Great Blue Hole in the Caribbean Sea off the coast of Belize is among the largest in the world. It's big enough to hold two jumbo jets!

How A Sinkhole Forms



This diagram gives a look into how sinkholes form and what is going on underground.

But not all sinkholes are huge. Some are small, at just about three feet deep. Technically, any cavity in the ground caused by water erosion is considered a sinkhole.



The Great Blue Hole is one of the largest underwater sinkholes in the world.

Stopping Sinkholes?

So, is there any way to stop a sinkhole? Sometimes. In nature, they will continue to occur because of the landscape. But when it comes to man-made issues, researchers are working on ways to identify locations where sinkholes may occur. They can do scans of underground areas and look for warning signs. Hopefully, that may prevent sinkholes from swallowing up cars on city streets in the future.