

Mexico quake triggered desert 'tsunami'

Research team captured rare phenomenon on video

By HENRY BREAN

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A powerful earthquake in southern Mexico last month churned the waters of a normally tranquil spring pool west of Pahrump, and a team of researchers was there to capture the bizarre phenomenon on video.

About 10 minutes after the magni-

tude-7.4 quake struck in the mountains east of Acapulco, some 1,700 miles from Southern Nevada, the water in Devil's Hole began to slosh back and forth. The inch-high waves gradually grew, eventually surging to more than 2 feet and splashing across the metal

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Video on YouTube gets thousands of hits



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catwalks researchers use to study the warm spring pool and its tiny population of endangered Devil's Hole pupfish.

The National Park Service is calling the event a "tsunami in the desert."

"To see it change that dramatically in such a short period of time was amazing," said Jeffrey Goldstein, a Park Service biotechnician who filmed the waves.

The video has since been posted on YouTube, where it has been viewed more than 32,000 times.

Goldstein went to Devil's Hole, about 90 miles west of Las Vegas, with two other technicians to calibrate data recorders on the surface of the water-filled cavern, something they do every two weeks or so.

But there was nothing routine about their March 20 visit.

In the video, you can hear the excitement in their voices as they realize what is happening and quickly start documenting the event.

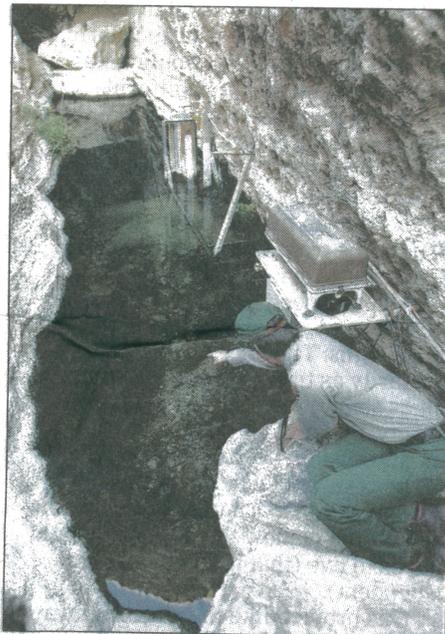
As the sloshing starts to intensify, Goldstein says, "We'd better get to higher ground."

From above, the water looks and sounds like small ocean waves crashing on a beach.

It was an exceedingly rare sight to see, let alone catch on video, said Kevin Wilson, a Death Valley aquatic ecologist for the National Park Service.

"There are more people that have walked on the moon than have witnessed an earthquake event at Devil's Hole," he said.

Wilson wasn't there to witness it, but he went out to the fenced cavern immediately afterward to check on the pupfish, which prefer to feed and spawn on a shallow, rocky shelf that can be seen getting battered by the waves in the video.



STEPHEN OSMAN/SPECIAL TO THE REVIEW-JOURNAL
A researcher points out the waterline in the rocks at Devil's Hole.

The small fish didn't seem bothered by the roughly 20 minutes of turbulence. "I think they're hard-wired for it," Wilson said.

Apparently, it happens more than you might think.

No one was there at the time, but scientific instruments recorded smaller ripples in the water at Devil's Hole during the magnitude-9.0 quake and tsunami that rocked Japan in March 2011 and during the magnitude-6.9 quake that struck western China in April 2010.

Oddly, there was barely a ripple in Devil's Hole when a magnitude-6.0 temblor shook Northern Nevada and damaged buildings in Wells, a comparatively short 325 miles away.

"It depends a lot on the magnitude of

the earthquake and the depth," Wilson said.

Though it lies within the boundaries of Ash Meadows National Wildlife Refuge, Devil's Hole is technically considered part of Death Valley National Park.

Wilson described the flooded limestone cavern as "a window into the groundwater table." It extends more than 430 feet underground, and the surface of the pool rises and falls slightly with the lunar cycle. Geothermal heat warms the water to about 93 degrees, and dissolved oxygen is scarce.

In 1965, three young men sneaked into Devil's Hole at night to explore the cave with lights and scuba gear. Two of the divers never resurfaced, and their bodies were never found.

"It's an extreme environment," Wilson said.

Lately, that environment has not been kind to the pupfish.

The most recent count, conducted earlier this year, showed just 63 adults, down from more than 100 the previous year.

Wilson said the reason for the decline is not clear, but the species has seen its numbers dwindle since the mid-1990s.

The pupfish has been under federal protection since 1967, and water measurements at Devil's Hole date back for more than 50 years.

A researcher, as part of a larger study, is now comparing that historic data with major earthquake events around the world in hopes of better understanding the "desert tsunami" phenomenon.

Goldstein, for one, would like to know more about it.

"It baffles me, but it makes sense. Everything's kind of connected in a way," he said. "It's weird. That's about all I can say."

Contact reporter Henry Brean at
hbrean@reviewjournal.com or 702-383-0350.