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## WKU grad student conducts research at Hidden River Cave

By GINA KINSLOW Glasgow Daily Times Aug 16, 2018 Updated 7 hrs ago

HORSE CAVE -- While Hart County Jail inmates were helping to carry large sections of steel into Hidden River Cave for the assembly of the world's largest swinging bridge this week, Cesalea Osborne was conducting research inside the cave.

Osborne, who is originally from Pauls Valley, Oklahoma, is a graduate student at Western Kentucky University, studying karst hydrogeology.

"I've been doing a research project to see how infrastructure plays kind of a role in impacting cave water," she said.

To determine if there is an impact on cave water, she is doing dye tracing in storm drains and injection wells to see how the water from them may drain into the cave system.

"So far we've already confirmed that there is a storm drain and an injection well in the city that's draining directly to the cave," she said. "Now we're going to get our dye receptors to see if a couple of other storm drains are draining into the cave too."

Water from storm drains and injection wells can cause problems for the cave.

"It definitely brings in more contaminants and as a lot of people know around here this cave has gone under a lot of contamination and there have been all kinds of issues," she said. "I think up until the late 1980s they got all of that solved, but there is still some local contamination going

on where this is draining into the cave system. We are trying to pinpoint that so that if the ACCA (American Cave Conservation Association) wants to do anything to try to mitigate that they can."

Dave Foster, director of ACCA, which oversees the management of Hidden River Cave and the American Cave Museum, said the work Osborne is doing is ongoing research.

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"We've been studying this cave for I guess 20 years. There is so much stuff over top of us we really try to keep an eye on water quality," he said.

ACCA did a major groundwater quality study a couple of years ago with funding from the Kentucky Division of Water.

The results of the study showed the main cave stream is almost drinking water quality during normal flow conditions, which Foster said is great when considering how badly polluted the cave was about 20 years ago.

"There are still small tributaries coming into the cave where some bad things are coming in and we're trying to figure out what those are and Western is helping us with it," Foster said.

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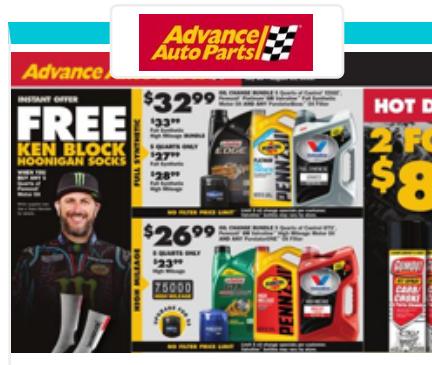
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