Scientific dig in weird Wyoming cave yields ice age insights

August 24 2016, by Mead Gruver

This July 13, 2016 photo provided by the U.S. Bureau of Land Management shows field manager Delissa Minnick descending into Natural Trap Cave in northern Wyoming. A third season of excavations in the cave in July uncovered

bison, wolf, lion and cheetah remains from the end of the last ice age around 12,000 years ago. (Bryan McKenzie/U.S. Bureau of Land Management via AP)

Paleontologists digging at the bottom of a strange cave in northern Wyoming say they have uncovered a trove of animal bones from the last ice age this summer and have enough funding to head back at the same underground site next year to continue their search.

Scientists digging in July and led by Des Moines University anatomy professor Julie Meachen excavated wolf, bison, lion, cheetah and wolverine bones from Natural Trap Cave.

"We started finding really whole, complete specimens, which is a little different from what we've been finding in the past," Meachen said in an interview this week. "The quality of the specimens is really good this year."

The only way into or out of Natural Trap Cave on the arid western slope of the Bighorn Mountains is a 15-foot-wide hole in the ground. The hole is right at the top of a bell-shaped cavern eight stories deep.

The paleontologists and their research assistants have to rappel down into the cave and bring lighting equipment to illuminate it. They use buckets hooked to ropes to lift specimens out.

The U.S. Bureau of Land Management reopened the cave to Meachen and colleagues in 2014 for the first excavations in more than 30 years. National Geographic paid for the first season, the National Science Foundation the last two and Meachen said there's enough money from the NSF to dig again next summer.

Three consecutive seasons of fieldwork have boosted knowledge about the animals that roamed northern Wyoming in the late Pleistocene, the era of ice ages that ended almost 12,000 years ago, Meachen said.

For millennia, all animals that fell into the cave were doomed. Now there's a locked grate over the opening and only people taking part in scientific research are allowed inside.

Meachen is especially interested in the wolves that fell into the cave. From measuring their jawbones, she theorizes they were Beringian wolves, an extinct type that ranged between Alaska and Wyoming when massive ice sheets covered much of northern North America.

Cool cave temperatures and high humidity have helped preserve genetic material. She hopes DNA analysis will provide new insights into Beringian wolves.

"Maybe we will know whether the Beringian wolf, at least at Natural Trap, is a different species or if it's a subspecies of the living gray wolf," she said.

Scientists plan to create a three-dimensional map of the remains found. They suspect a cone-shaped pile of snow used to linger year-round beneath the cave's entrance.

The map could show how thawing of the snow pile spread animal bones around the cave's floor.

"There may have been different amounts of snow on the sediment at different times of year," Meachen said. "It would have melted and thawed, melted and thawed. And I think that action probably would have broken up the skeletons and sort of scattered them around."

Enough NSF funding remains to go back next year, though for a shorter season than the recent three-week expeditions, Meachen said.

"We've made that money stretch," she said.