

Last Canyon Cave: Late-Pleistocene Fauna and People

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Last Canyon Cave is a small rockshelter (approximately 30 m²) in the southwest foothills of the Pryor Mountains of south-central Montana. The unremarkable shelter was first recorded during an archaeological survey of the Pryor Mountains (Loendorf 1974). At the time a looter's hole had been dug in the center of the shelter and 1.3 m of sediment depth was noted. Cultural material was observed, but its nature was not identified. Last Canyon Cave might have been forgotten were it not for Glade Haden of the Bureau of Land Management (BLM), who noted looting in the shelter in 2004. Based on this observation the BLM requested an evaluation of the site. So far the investigation consists of removing the loose sediment from the looted hole (derived from sloughing of the pit walls after the looting), screening the removed sediment and recovering the content, cleaning the walls of the pit for photographing and profiling, sampling the intact profiles for sediment and ¹⁴C analysis, and analyzing the recovered material for content and age.

The approximately 1,000 liters of disturbed sediment produced 4 chipped

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stone items and 530 bones. About half the bone was not identifiable to species or element, being composed of cancellous or other indistinct fragments. However, 278 specimens could be identified to element and some of these could also be identified to species or animal body size class (Brain 1981). Seven taxa are represented in the sample: bird (raptor), *Neotoma* spp., *Spermophilus elegans*, *Lepus* spp., *Sylvilagus nuttallii*, *Ovis catclawensis* (based on the size of the distal tibia that is larger than any modern, even large male, comparative specimen), and *Equus* sp. At least one of these (sheep) is a Pleistocene species. About one quarter of the bone was burned; however, no clear human contribution to the bone assemblage could be established (such as cutmarks, impact fractures, or bone flakes). On the other hand, the only burned areas in the profiles were two cultural features, a hearth and another burned area of unclear function. The zooarchaeological analysis identified five potential depositional contexts on the basis of bone color, rodent gnawing, burning, carnivore damage, and digenetic condition. Controlled excavation will be required to verify the veracity of these contexts. The hearth and the burned area are on top of stratum 2c dating to 11,000 RCYBP (Beta 242806; all dates are presented as uncorrected RCYBP). The burned area is indistinct; however, the hearth is basin shaped and at least partially covered with stratum 2d. Both are overlain with stratum 3, a more recent packrat midden.

Other ^{14}C assays yielded dates from $39,570 \pm 800$ RCYBP (Beta-242808) on bighorn sheep dung from the second stratum from the bottom to 120 ± 40 RCYBP (Beta-242810) from an amberized packrat midden on the surface. Most interesting are the assays on horse bone ($13,860 \pm 50$ RCYBP, Beta-242809) and hearth charcoal ($10,860 \pm 40$ RCYBP, Beta-242805). The former demonstrates that the specimen is of Pleistocene age, while the hearth indicates an early-Paleoindian occupation of the shelter. The Pleistocene dates on the bottom of the stratigraphic sequence indicate that the shelter has been accumulating sediments since about 40,000 RCYBP. The dated horse bone and Pleistocene bighorn sheep bones, as well as the sheep and possibly other animal feces, the latter in sediment as old as 40,000 RCYBP, are evidence of early use of the shelter by animals. The dates suggest continuous accumulation of the sediment in the shelter without evidence of erosion.

In conclusion, Last Canyon contains evidence of early-Paleoindian occupation of about 10,900 RCYBP, possibly later-Holocene human occupation (the chipped stone of unknown age), and a Pleistocene faunal record in a rockshelter of the Bighorn region of the central Rocky Mountains. Along with False Cougar Cave, Natural Trap Cave, and the smaller samples from Juniper Cave, and Little Canyon Creek Cave, Last Canyon Cave gives us another window into late-Pleistocene fauna and paleoenvironments (Bonnichsen 1979; Martin and Gilbert 1978; Ostrom 2006; Shaw 1982). The abundant fecal material from as early as 40,000 RCYBP will allow reconstruction of dietary composition, DNA, and other important studies informative of the region's paleoecology and paleoclimatic conditions that accompanied the arrival of the First Americans.

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