

CAVE RESOURCES

Nominated ACEC: Cave Resources ACEC

Nominated by: BLM

Size: 18,800 acres

Boyd's Cave

Historic Value

Relevance

Boyd's Cave has been investigated by the professional and amateur archaeology community over a long time period. R. M. "Bill" Burnet and C. T. R. Bohannon had crews doing extensive work in Boyd's Cave as early as 1936. In the 1930s, E. B. Howard conducted excavation for the University of Pennsylvania.

Importance

- Has qualities or circumstances that make it fragile, sensitive, rare, irreplaceable, exemplary, unique, endangered, threatened, or vulnerable to adverse change.
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Cultural Value

Relevance

Recent professional ethnographic and archaeology investigations have been conducted at Boyd's Cave. Boyd's Cave is an important, sacred place for the Mescalero Tribe and tribal members use it year-round.

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Natural Hazard

Relevance

All undeveloped caves contain some hazards including total darkness, loose rocks, low ceilings, low tight passages, slippery surfaces, and unstable and uneven floors.

Importance

- Has qualities which warrant highlighting in order to satisfy public or management concerns about safety and public welfare.

Burton Flats

Fish or Wildlife Resource

Relevance

Almost every large cave entrance in the Burton Flats Cave Complex is used as a nesting site by Barn or Great Horned Owls. Very few in-cave biological surveys have been conducted in Burton Flats. It is suspected, as is the case in Sinkhole Flats Caves, that obligate cave species exist in the. The presence of water in these systems provides high probability of the presence of cave adapted invertebrates.

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Natural System or Process

Relevance

While all of Burton Flats is comprised of a gypsum karst terrain, three particular areas contain a high concentration of known significant caves. These caves often appear as dramatic surface collapses with little indication of their presence. All of these caves reach a local water table that has been tested and shown to be relatively fresh. Rocking Chair Cave contains extensive rare gypsum speleothems.

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Natural Hazard

Relevance

All undeveloped caves contain some hazards including total darkness, loose rocks, low ceilings, low tight passages, slippery surfaces, and unstable and uneven floors. In addition, several of the caves in the Burton Flats areas contain steep pit entrances posing a hazard to surface users. These areas are also subject to sudden surface collapse which can be triggered by surface use or by natural processes. Gypsum caves are subject to flash flooding, creating a drowning hazard to cave visitors. Harmful water borne bacteria is also present in some gypsum caves.

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Chosa Draw Caves

Natural System or Process

Relevance

Several hundred gypsum caves are located within the nominated ACEC. Parks Ranch cave is the longest at 4.2 miles in length. The cave contains 21 known entrances and is the most visited cave in the planning area. It is also the longest gypsum cave on federal lands in the United States and the second longest gypsum cave in North America. Generally, overland water flow enters cave and karst features, travelling for several miles in some cases, and is discharged back to the surface in Chosa Draw resulting in sensitive riparian areas in an otherwise dry desert environment. Documentation of karst features in the Chosa Draw area has shown that it is the most dense karst terrain in terms of features per area in the United States.

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Natural Hazards

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Fence Canyon Caves

Fish or Wildlife Value

Relevance

Biological inventories in the caves of Fence Canyon were done as part of a wider study in caves throughout the Guadalupe Mountains. A possible new species of scorpion was discovered in Jurnigan Cave #1. *Vejoavis* sp. was found to exhibit reduced eye structure and color pattern although found in the same area as those with normal eyes and color pattern. A harvestman spider was found in Jurnigan Cave #1 and Doc Brito Cave. This species, *Texella* sp., has only been documented in five caves within the Guadalupe Mountains and may represent one or more new species. A pseudoscorpion *Aphrastochthonius pachysetus*, documented in caves in California, was identified by a sole species in Doc Brito Cave and has not been documented in other Guadalupian caves. The close proximity of Wind Cave and Jurnigan Cave #2 suggest that these species may also be present at these locals.

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Natural System or Process

Relevance

This area contains five known significant caves. Doc Brito Cave, Jurnigans Cave #2, KFF Caverns and Wind Cave all receive regular recreational visitation. Jurnigans Cave #1 is open for research only due to the presence of a rare cave-adapted invertebrate. Recent discoveries in Wind Cave have expanded the mapped portion of the cave to over three miles in length and greatly extended its footprint. Passage size and morphology in areas of Wind Cave are extremely similar to those in Lechuguilla Cave. KFF Cavern was not discovered and explored until the 1980s. Limited visitation has maintained an almost pristine condition of the cave. Delicate speleothem displays are present. Airflow in back portions of the cave indicate more passages yet to be discovered.

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Lost Cave

Historic Value

Relevance

Lost Cave is unique in that it contains high quality replications of early-man rock art from famous rock art cave sites in France and Spain (Altamira Cave, Lascaux Cave, and Chauvet Cave), and miscellaneous Apache rock art. These replications were made for a television documentary and are easily viewed by cave visitors. These replications occur in one large panel spanning the walls and ceiling of a 30-foot section of Lost Cave.

In 1989, Pioneer Frontier Explorations and Researchers, a research group from Ancona, Italy, in conjunction with NASA, conducted a solitary space-temporal isolation experiment within Lost Cave. The experiment involved placing a volunteer within the cave for over four months to study the effects of isolation that might be experienced by humans on deep space travels.

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Manhole/Mudgett's Caves

Historic Value

Relevance

Mudgett's Cave is historically known for its Guano mine. Mining began around 1909 and historic mining artifacts associated with the cave include a Guano cart and wooden tracks. These rare cultural legacies document early historic cave exploration in southeast New Mexico.

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Natural System or Process

Relevance

Big Manhole Cave is currently the site of an ongoing dig to discover a new cave system. Air movements out of the breakdown in the cave in excess of 40 miles per hour, lineament studies, drilling logs, and geophysical studies showing the presence of large anomalies indicate existence of a large cave system. Recent airflow studies suggest that Big Manhole Cave is part of the Lechuguilla Cave system. Extensive paleontological resources have been found and documented in Big Manhole Cave. Little Manhole Cave is slightly bigger than that current known passages in Big Manhole Cave. Little Manhole Cave contains a wide variety of delicate, active speleothems. Several soda straw formations in excess of 6 feet in length are present. Mudgett's Cave is located on a steep exposed cliff face overlooking Serpentine Bends. The cave has extensive deposits of calcite speleothems including stalactites, stalagmites, helictites, columns, and pool features. Some pool features include u-loops, a biothem (or formation formed with the aid of microbial communities), which are of specific interest to researchers. Delicate gypsum needles, gypsum hair, and gypsum cotton can be found in the less disturbed side passages.

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Natural Hazards

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McKittrick Hill Caves

Historic Value

Relevance

Endless and McKittrick Caves have unique early historic signatures that date from the late 1800s to the early 1900s, including one signature with a date of 1894 (Kunath 1978:3). These signatures include historic graffiti that gives the date, person, and often the home town of the individual. A historic structure constructed by Robert G. Brookshire is situated outside one of the entrances of McKittrick that dates between 1910 and 1913. Native American rock middens are located outside both McKittrick and Endless Caves.

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Fish or Wildlife Resource

Relevance

McKittrick, Sand, and Endless Caves are all important summer bat roost sites. McKittrick Cave houses a bachelor roost of *Myotis Velifer* while Endless Cave houses the corresponding maternity roost. A small roost of Hoary Bats uses Sand Cave.

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Natural System or Process

Relevance

McKittrick Hill contains 12 known significant caves that range from 50 feet to over 12 miles in length. The caves of McKittrick Hill offer the best example of hypogenic, multi-level maze cave development in New Mexico. Several areas within these caves contain significant displays of delicate speleothems. Conservation efforts have helped newly discovered areas in some of the caves remain in near pristine condition. Paleontological deposits have been excavated and documented in several of the caves.

Excavations beginning in the 1930's and continuing into the 1980's have led to the discovery of the largest Pleistocene aged faunal deposit sites within the planning area. Remains of nearly 150 different vertebrate species have been documented from the site. Twenty-three of these species are extinct while many more are not found in the desert southwest at present.

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Natural Hazards

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Sinkhole Flats

Fish or Wildlife Resources

Relevance

An extensive biological survey of the caves of Sinkhole Flats was conducted in the early 1990s. Several rare invertebrates were documented in the caves of Sinkhole Flats. Some of these species were endemic only to the planning area while others represented the first documentations in the state of New Mexico. A biological inventory performed 1993 identified several species of interest including:

- A previously undescribed mermithid nematode.
- A comb-footed spider (*Achaearanea canionis*) not previously documented in New Mexico.
- *Ixodes conepati*, a tick only known to exist in Eddy County, New Mexico, and Brewster and Culberson counties in Texas.
- The first report of *Belonuchus* sp from a cave in southeastern New Mexico.
- *Rhadine longicollis* Benedict, a beetle only known from caves near Carlsbad and Artesia in New Mexico and Gyp Joint in Culberson County, Texas.
- *Trox carinatus* Loomis, a scarab beetle, otherwise known only from Texas.
- Batman Cave contained an active *Myotis velifer* maternity colony with a population estimate of 10,000 individuals.

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Yellowjacket

Fish or Wildlife Resource

Relevance

Yellowjacket Cave is maternity roost containing over 4,000 bats. Lair Cave, located on private land, houses the male bat population that corresponds with the maternity roost found in Yellowjacket Cave.

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Natural System or Process

Relevance

Yellowjacket Cave is a significant cave over 1.5 miles in length. It is the best example of a rectilinear maze cave on BLM-managed lands in New Mexico. Several passages form along a geological fold in bedding planes known as teepee structures. The cave contains extensive examples of velvet calcite speleothems. Velvet calcite is not common and is also very delicate.

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Natural Hazards

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