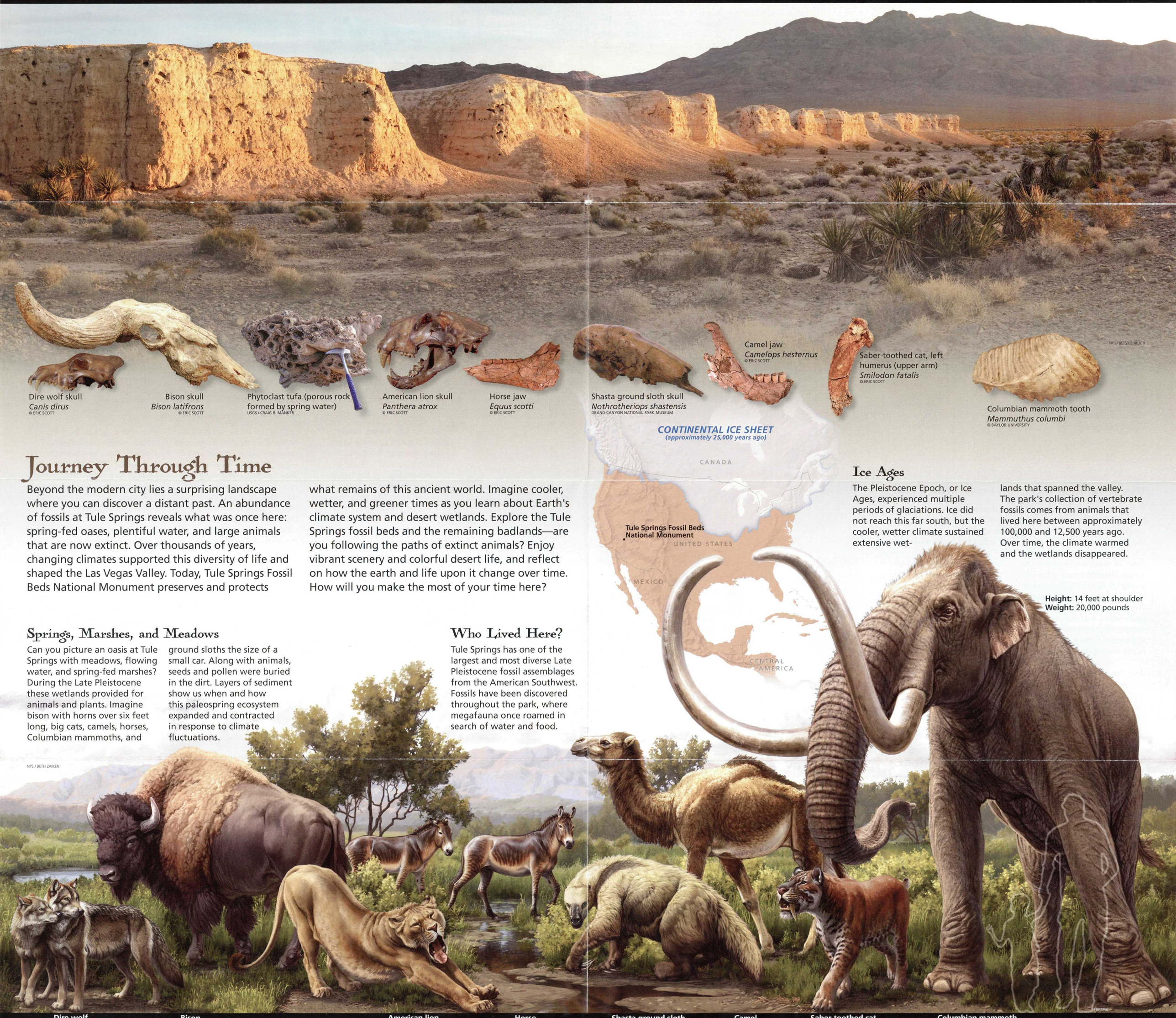
Tule Springs Fossil Beds

Tule Springs Fossil Beds
National Monument
Nevada

National Park Service
U.S. Department of the Interior



Dire wolf skull
Canis dirus
© ERIC SCOTT

Bison skull
Bison latifrons
© ERIC SCOTT

Phytoclast tufa (porous rock formed by spring water)
USGS / CRAIG R. MANKER

American lion skull
Panthera atrox
© ERIC SCOTT

Horse jaw
Equus scotti
© ERIC SCOTT

Shasta ground sloth skull
Nothrotheriops shastensis
GRAND CANYON NATIONAL PARK MUSEUM

Camel jaw
Camelops hesternus
© ERIC SCOTT

Saber-toothed cat, left humerus (upper arm)
Smilodon fatalis
© ERIC SCOTT

NPS / BETSY EHRLICH

Columbian mammoth tooth
Mammuthus columbi
© BAYLOR UNIVERSITY

Journey Through Time

Beyond the modern city lies a surprising landscape where you can discover a distant past. An abundance of fossils at Tule Springs reveals what was once here: spring-fed oases, plentiful water, and large animals that are now extinct. Over thousands of years, changing climates supported this diversity of life and shaped the Las Vegas Valley. Today, Tule Springs Fossil Beds National Monument preserves and protects what remains of this ancient world. Imagine cooler, wetter, and greener times as you learn about Earth's climate system and desert wetlands. Explore the Tule Springs fossil beds and the remaining badlands—are you following the paths of extinct animals? Enjoy vibrant scenery and colorful desert life, and reflect on how the earth and life upon it change over time. How will you make the most of your time here?

Springs, Marshes, and Meadows

Can you picture an oasis at Tule Springs with meadows, flowing water, and spring-fed marshes? During the Late Pleistocene these wetlands provided for animals and plants. Imagine bison with horns over six feet long, big cats, camels, horses, Columbian mammoths, and ground sloths the size of a small car. Along with animals, seeds and pollen were buried in the dirt. Layers of sediment show us when and how this paleospring ecosystem expanded and contracted in response to climate fluctuations.

Who Lived Here?

Tule Springs has one of the largest and most diverse Late Pleistocene fossil assemblages from the American Southwest. Fossils have been discovered throughout the park, where megafauna once roamed in search of water and food.

Ice Ages

The Pleistocene Epoch, or Ice Ages, experienced multiple periods of glaciations. Ice did not reach this far south, but the cooler, wetter climate sustained extensive wet-lands that spanned the valley. The park's collection of vertebrate fossils comes from animals that lived here between approximately 100,000 and 12,500 years ago. Over time, the climate warmed and the wetlands disappeared.

Height: 14 feet at shoulder
Weight: 20,000 pounds

NPS / BETH ZAIKEN

FREEPIK

Dire wolf | Bison | American lion | Horse | Shasta ground sloth | Camel | Saber-toothed cat | Columbian mammoth

Explore an Ancient Landscape

Linking Past, Present, and Future

Scientific discoveries of fossils at Tule Springs have occurred since the early 1900s. In 1933, explorers discovered an intriguing artifact: a small obsidian flake (*right*). Why was this discovery important? What did it tell us about the people who have used this land?

© AMERICAN MUSEUM OF NATURAL HISTORY

The flake—a piece of volcanic glass chipped by a human—was found near a fossil from a type of camel that lived during the Pleistocene and is now extinct. It gave archeologists firm evidence that an early stone toolmaker had been in North America.

But was the toolmaker here at the same time as the camel? If a correlation could be verified, this discovery could rewrite the history of Tule Springs and add to what we know about ancient life in North America.

For decades, scientists explored the area. In 1962–63, the Tule Springs archeological expedition (later referred to as the Big Dig) carved giant trenches up to 43 feet deep. The trenches exposed sediment layers for scientists to study in detail. Scientists used the ages of these layers to date the fossils and artifacts they contained.

Along with traditional field techniques, the radiocarbon dating method had its first widespread use during the Big Dig. Never before had a fossil site been investigated this way.

What did the scientists learn? Artifacts occurred only in the youngest layers—and those layers lacked fossilized remains of Pleistocene animals. The early stone toolmaker who left the flake behind likely did not coexist with the extinct camel at Tule Springs, though both may have been drawn to the abundant water that was once this valley's hallmark.

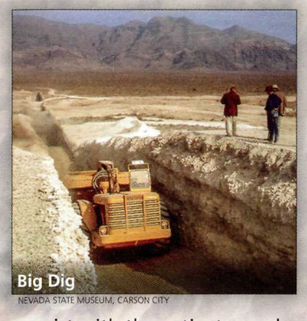
Among the earliest known people here, the Tudinu ("Desert People") lived along the Colorado River by 1100. These ancestors of the Las Vegas Paiute Tribe developed a culture suited to the desert environment. They hunted; gathered plants, seeds, and berries; and used water from many natural springs in the area. Their way of life changed forever as trappers and traders arrived in the early 1800s.

By 1848, the US government assumed control of the land. The urbanization of Las Vegas began in the early 1900s and grew over the next century.

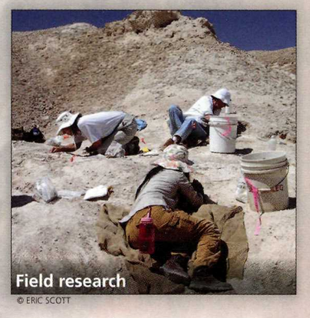
From the earliest discoveries, Tule Springs has been a hub of investigation into Pleistocene life and ecosystems. Discoveries continue—like the 7 foot long, 14,500 year old Columbian mammoth tusk unearthed in 2003.

The scientific value of the fossil beds and threats of losing them led a team of citizens to work to preserve and protect the land. This led to its establishment as a national monument in 2014.

Today, you can be involved in Tule Springs as a scientist, student, neighbor, friend, visitor, or volunteer. Caring for and studying this land and its treasures help us understand our past and our world today—and look to our future with greater wisdom.



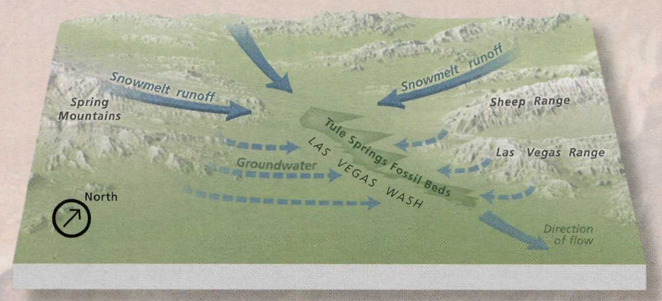
Big Dig
NEVADA STATE MUSEUM, CARSON CITY



Field research
© ERIC SCOTT

Columbian mammoth tusk
© ERIC SCOTT

Visitors in Tule Springs
NPS / BETSY EHRLICH



Upper Las Vegas Wash
The Upper Las Vegas Wash runs through the park. The wash is part of a regional basin-and-range landscape—where the earth's crust was pulled apart like taffy, creating a distinctive geography of parallel valleys bordered by mountains.

During the Pleistocene a vast wetland ecosystem developed. Large amounts of rain and snow fell in higher elevations then percolated through the mountains. The water table rose so high that groundwater flowed up to the surface through faults and porous rock, forming springs and marshes in the valley.

The fossil beds formed when soggy ground and dense vegetation trapped windblown dust and sand. These mixed with organic material and chemical deposits. During floods, water flowed—and flows to this day—from the surrounding ranges, down alluvial fans, and through the valley before draining into the Colorado River. This ecosystem existed on and off for at least 500,000 years.

Spanish explorers of the 1800s came to an oasis they named Las Vegas—The Meadows. The Las Vegas Valley was dotted with springs back then. Groundwater pumping caused them to dry up in the 1940s.

© ERIC SCOTT

Las Vegas bearpoppy

Visiting Tule Springs Fossil Beds

The park is an undeveloped historic landscape with several ways to explore and imagine the abundance of water and life that was once here. Less than 20 miles north of the Las Vegas Strip, the park sits east along US 95 north. Open year-round during daylight hours. The park has no bike racks, bathrooms, water, food, trash receptacles, camping, or on-site parking. Park on public roads then enter on foot.

A visitor center is at the US Fish and Wildlife Service Desert National Wildlife Refuge. National Park Passport stamps are available at the visitor center and at Lake Mead National Recreation Area. Kiosks throughout the park have exhibits and information. *Researchers and student groups*: contact the park to arrange your visit.

Recreation Photograph desert vistas, sunsets, plants, geology, and fossils. • Hike in Eglington Preserve and explore the calcium carbonate tufa rock that formed on branches and logs in ancient flowing streams. • For information about available transportation routes to the park please visit www.rtcsnv.com. • Horseback riding is allowed on existing roads, trails, flood channels, and washes.

Safety Check the park website for alerts and conditions. • Flash floods are possible and extremely dangerous. Monitor conditions. When rain is forecast, seek high ground, even if it is not raining where you are. • The climate is hot, dry desert. Temperatures are often above 100°F May–September. Hiking is not recommended in these months. Always carry plenty of water, and use common sense. • Wear sturdy hiking shoes, sunscreen, and a hat. Pack salty food, a first aid kit, a map, and a whistle. Tell someone where you are going and when you plan to return. • Be alert when horseback riding. Fossils can crumble under a horse's weight. • Unstable trench walls and some areas are not recommended for access due to safety concerns.

Emergencies call 911

Regulations Federal law protects all natural and cultural features. Fossils and geologic features are fragile—do not touch or remove. • Pets must be on a leash less than six feet long at all times; clean up after your pet. • Off-roading is prohibited. • Please respect neighboring private property and tribal lands. • Pack out your trash. • Use of firearms in the park is prohibited.

Accessibility We strive to make our facilities, services, and programs accessible to all. For information go to a visitor center, ask a ranger, call, or check our website. Service animals are welcome.

More Information
Tule Springs Fossil Beds is one of over 400 parks in the National Park System. To learn more about national parks and National Fossil Day, please visit www.nps.gov.

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