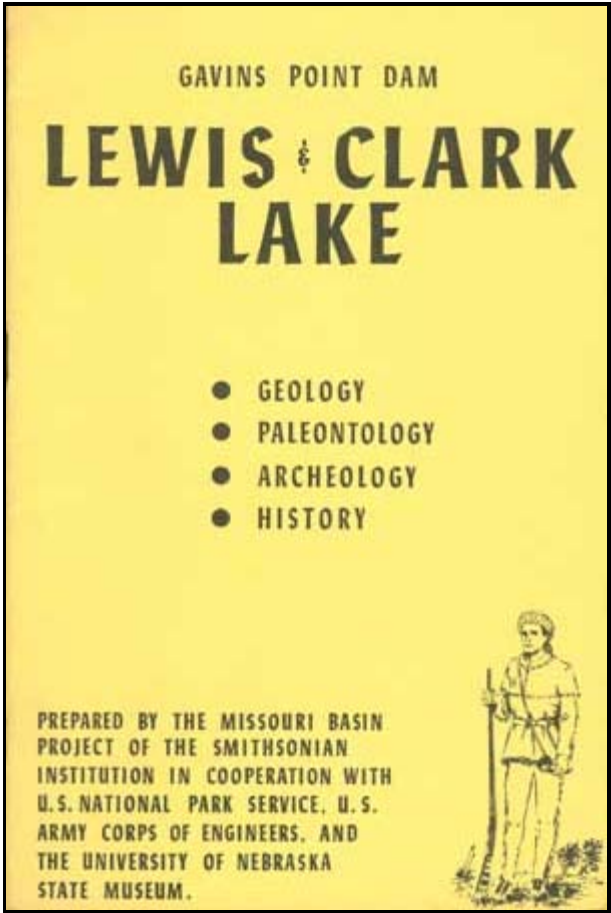


 **Smithsonian**

Gavins Point Dam—Lewis & Clark Lake

Geology, Paleontology, Archeology,
History

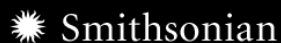




**GAVINS POINT DAM
LEWIS & CLARK
LAKE**
**Geology, Paleontology,
Archeology, History**

Prepared by the Missouri Basin Project of the
Smithsonian Institution in cooperation with
U.S. National Park Service, U.S. Army Corps
of Engineers, and the University of Nebraska
State Museum

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THE INTER-AGENCY ARCHEOLOGICAL SALVAGE PROGRAM

COORDINATING AGENCIES

National Park Service, U. S. Department of the Interior

The Smithsonian Institution

COOPERATING FEDERAL AGENCIES

Corps of Engineers, United States Army
Bureau of Reclamation, Department of the Interior
Federal Power Commission
International Boundary and Water Commission
United States Geological Survey, U. S. Department of the Interior

*COOPERATING STATE AGENCIES
INSIDE THE MISSOURI BASIN*

Nebraska State Historical Society	University of Missouri
State Historical Society of North Dakota	University of Montana
South Dakota Historical Commission	University of Nebraska
Kansas State Historical Society	University of North Dakota
University of Denver	University of South Dakota
University of Idaho	University of Utah
University of Iowa	University of Wisconsin
University of Kansas	University of Wyoming

*COOPERATING STATE AND OTHER AGENCIES
OUTSIDE THE MISSOURI BASIN*

Amerind Foundation, Arizona	State College of Washington
Archaeological Society of North Carolina	Temple University, Pennsylvania
Beloit College, Wisconsin	University of Alaska
Carnegie Museum of Pittsburgh	University of Arizona
Dallas Archaeological Society	University of Arkansas
Florida Historical Society	University of California at Berkeley
Florida State Parks Board	University of California at Los Angeles
Idaho Power Company	University of Colorado
Idaho State College	University of Florida
Indiana State Historical Society	University of Georgia
Missouri Archaeological Society	University of Kentucky
Museum of Northern Arizona	University of Mississippi
New Mexico State Museum	University of Missouri
New York State Museum	University of New Mexico
Ohio State Historical Society Public Utility	University of Oklahoma
District # 1, Chelan County, Washington	University of Oregon
Public Utility District #2, Grants County,	University of Southern California
Washington Roswell Museum of New	University of Texas
Mexico Sacramento State College, California	University of Utah
	University of Washington
	Western State College, Colorado

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SALVAGE PROGRAM**

COORDINATING AGENCIES

National Park Service, U. S. Department of the Interior

The Smithsonian Institution

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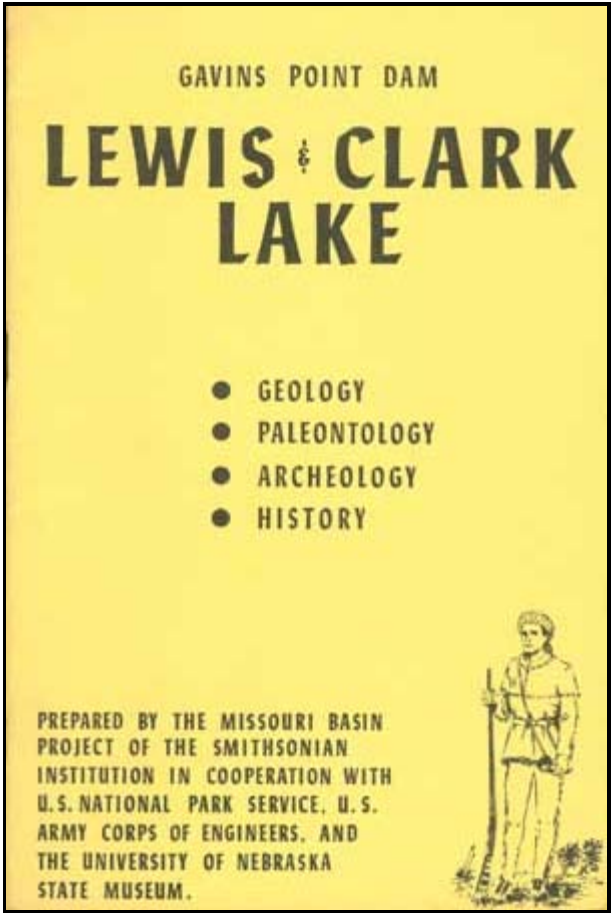
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Geology, Paleontology, Archeology,
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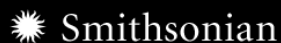




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THE INTER-AGENCY SALVAGE PROGRAM

The Inter-Agency Salvage investigations in the Lewis and Clark Lake Gavins Point Reservoir are part of a larger effort, coordinating federal, state, and local agencies in a history-making program of great national significance. Paleontological remains, archeological sites, historic places and historic buildings or monuments are as much a natural resource as our forests, our buried minerals, or our precious metals. What is even more important, they are heirlooms of the American past, unique documents of our national heritage, documents that, once destroyed, can never be replaced—and they *are* being destroyed, inevitably so, as we tame and develop the waterpower and irrigation resources of our river systems.

Rivers and their tributary streams often form deep channels, meandering and changing, cutting new courses and aggrading or abandoning the old. The exposure of deeply buried soils and rocks, and the creation of terrace systems often reveal the life-history of the river and the adjacent countryside, providing information on geology and documenting climatic changes that have occurred. River valleys were attractive to early Indian and White settlers alike. Here, Indians, pioneer farmers, fur traders, and soldiers found the needs of daily life—wood, water, game, and fertile soils—in abundance. In fact—and this is particularly true in the Missouri Basin—early settlement was often largely restricted to the terraces and flood plains of the streams.

With the construction of dams and canals, the improvement or stabilization of river channels, and other types of water-control projects, many of our stream valleys have been or are now being drastically altered. The purpose of the Inter-Agency Archeological Salvage Program is to salvage, to preserve, and to interpret the archeological, paleontological and historical remains that are threatened with destruction. This program serves the entire American people. It is a cooperative program, coordinating the knowledge, resources, and facilities of many agencies. Federal funds, appropriated for the purpose, provide much of the necessary money, but state, local, and even private sources are often called upon. Funds, however, are only part of the program. The actual field work and interpretation is done by scientific institutions staffed by trained specialists.

The Inter-Agency Archeological Salvage Program is nationwide in scope. The Gavins Point Dam and Reservoir fall within the Missouri Basin, the largest single geographical unit within the scope of the salvage effort. The Missouri Basin includes approximately one-sixth of the area of the United States, largely the region of the Central and Northern Plains. Ten states (Missouri, Iowa, Minnesota, Kansas, Nebraska, North Dakota, South Dakota, Colorado, Wyoming, and Montana), wholly or in part, fall within its boundaries.

The Committee for the Recovery of Archaeological Remains, an independent organization composed of representatives of the Society for American Archaeology, the American Anthropological Association, and the American Council of Learned Societies, provided the basic ground work and has offered continuing guidance for the salvage effort. Realizing the great scientific importance of the work, the U. S. Army Corps of Engineers, the Bureau of Reclamation, the National Park Service, and the Smithsonian Institution have given effective

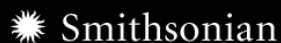
cooperation. The results of this cooperation have been gratifying. In reality, the program has meant more than mere salvage. While archeological sites and places of historical importance have been destroyed by the construction of dams and reservoirs, the progress of scientific investigation has been vastly accelerated. Archeological research, in particular, has received a new and unique impetus. The construction of a series of dams on the mainstem of the Missouri by the Corps of Engineers has made possible a planned, integrated program of archeological excavations. This would never have been possible under other circumstances; no single institution could bear the burden alone. What is more, work that might have been done casually over a period of decades has been compressed into relatively few years. This has been particularly desirable, since it has allowed problems to be formulated and solutions sought in rapid succession, each reinforcing the next in a pyramid of progress. In this sense, the destruction of archeological sites has not been a disaster. On the contrary, it has made possible a unique, scientific effort aimed at the ultimate reconstruction of a portion of the American past.

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Gavins Point Dam—Lewis & Clark Lake

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GEOLOGY AND VERTEBRATE PALEONTOLOGY

In the area of the Lewis and Clark Lake, the valley of the Missouri River is cut into the Upper Cretaceous Niobrara chalk (or limestone), a geologic formation rich in fossil remains of fishes, marine reptiles, flying reptiles, and toothed birds. It was within this very area, of Lewis and Clark Lake, in fact, that the first fossil skeleton from the whole Missouri River Basin was discovered and reported.

Lewis and Clark, on their trip up the Missouri in 1804, discovered a fossil skeleton, apparently in the Niobrara chalk in the Gavins Point area. The description of this discovery by these early explorers indicates that the bones were those of a marine reptile, approximately 45 feet long. Unfortunately, the specimen was not collected, but similar specimens have been found in the area during the past fifty years and have been preserved in various museums. The geological deposits in this basin are now known throughout the world for their abundant fossils.

In 1862, F. B. Meek and F. V. Hayden of the U. S. Geological Survey of the Territories gave the name "Niobrara" to the chalky limestone and silt which is exposed along the Missouri near the mouth of the Niobrara River in the vicinity of Lewis and Clark Lake. This Niobrara formation was deposited during the geologic period known as the Cretaceous, some 100 million years ago, when the area was covered by a shallow, inland sea. During those ancient times, various marine fishes, reptiles, and invertebrate animals lived in the warm, oceanic waters here, while the dinosaurs were living on the lands to the east and west of this sea. The fossilized teeth of giant sharks and lizards are commonly found in the region today.

Somewhat later, when the sea had disappeared, quite different sorts of animals roamed the reaches of what is now the Lewis and Clark Lake. Occasionally, rhinoceros bones are found here, and these, along with certain other animals of the time, indicate that deposits of the geologic period known as Pliocene once covered the region. A few good Pliocene exposures, ranging in age from two million to six million years, are to be found near the Gavins Point Dam.

Still later deposits of the Great Ice Age or Pleistocene geologic period are well exposed in the area surrounding the lake. All four of the major glaciers of the Pleistocene period, known as the Nebraskan, Kansan, Illinoian, and Wisconsin, in that order from earliest to latest, were present in this locality. The actual glacial till—rocks, earth and trash dumped on the land as the glaciers melted—left by these tremendous continental glaciers can be observed in exposures in the region today. The fossilized remains of caribou, musk oxen, woolly mammoths, mastodons, giant moose-like deer, and other arctic animals have been found nearby in northeastern Nebraska and southeastern South Dakota. The discovery of these fossil specimens indicates that arctic conditions prevailed in the area when these animals were alive. It may seem difficult, now, to realize this as one visits the area on a hot summer day.

There were times between the great glacial advances, however, when the climate was even

warmer than it is today. During these interglacial periods, camels, horses, southern mammoths, giant bison, peccaries, and ground sloths lived along this portion of the Missouri River Valley. The bones of all of these warm-climate animals are commonly found in the interglacial deposits here. These glacial and interglacial periods represent the latest climatic and geologic period prior to the Recent, or present-day climate, and cover the period from half a million to some nine or ten thousand years ago. During the very latest stages of the Pleistocene, man himself appeared on the scene and lived in various parts of the Central Plains area in time to hunt and gain his living from some of the typical animals of the Ice Age. Within the immediate area of Lewis and Clark Lake, however, none of the remains of these Early Man, or Paleo-Indian campsites have been found.

Wild life still lives in abundance in the region today. Deer, for example, are found in great numbers in the hilly country of the "Devil's Nest" to the south of Lewis and Clark Lake. A splendid natural habitat group, showing the White-tailed Deer in the "Devil's Nest" region, is on display at the University of Nebraska State Museum in Lincoln, Nebraska. In this exhibit, actual mounted specimens of deer are shown walking over gravels which contain the bones of extinct animals of the past, such as Pleistocene camels and horses. The actual prehistoric bones are exhibited just as they appear on the hills to the south of the present lake at Gavins Point. It is truly rewarding to view this area today and realize that many of the great museums of the country have secured some of their choicest exhibit materials in this very locality.

before the memorable Lewis and Clark expedition of 1804-06. Juan Munier claimed to have discovered the Ponca living on the Niobrara in the year 1789 and obtained a Spanish permit for exclusive trade with the tribe. In 1794, Jean Baptiste Truteau, en route to the Mandan villages in modern North Dakota, spent the winter of 1794-95 upstream from the reservoir, near Fort Randall. Other traders are known to have journeyed through the area before the close of the century; still others probably left us no record of their passing. Several fur posts or trading "forts" were established adjacent to the reservoir, but they never achieved great importance; they remain obscure, and their history, and even exact locations, are largely unknown.

In the 1850's, the lands on both sides of the river were opened to White settlement, but even earlier, parties of Mormons had wintered near the mouths of the Niobrara and Vermillion Rivers. Towns, such as Ponca, Ionia, St. Helena, Niobrara, and Frankfort, appeared, but settlement was restricted to the Nebraska side of the Missouri. The Yankton held the northern shore until 1859. Only then were Vermillion, Bon Homme, Yankton, and other towns established on the north bank.

Prior to the coming of the railroads, the Missouri River formed the principal highway to the Northern Plains. First by keelboat and bateau, and soon by steamboat, the river formed the most practical route to the opening Northwest. The most intensive period of navigation came in the late 1860's and early 70's, reaching a climax in 1873 with the completion of the railroad to Bismarck. For a short period, the city of Yankton was a major transshipment point on the river. River traffic retained a degree of importance, but with additional railroad construction and a growing highway system, steamboat commerce shrank to disappearance by the 1920's.

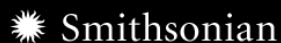
This rich agricultural region was little disrupted by the Indian alarms that loomed so large in other parts of the West. Although the settlers were fearful of Indian attack during the Minnesota uprising of 1862, the Yankton remained friendly. Under mission influence, Indians established in the vicinity of Gavins Point made steady progress in the adoption of White Man's ways, and the reservations were eventually opened to White settlement.

Today the Gavins Point area, with its major center at Yankton, South Dakota, reflects its untroubled past. It remains an agriculturally productive and commercially active segment of our Near West.

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THE ANCIENT INDIAN VILLAGES

The archeological sites adjacent to the Lewis and Clark Lake are neither abundant nor spectacular, but nonetheless, they are of considerable interest and importance to the student of the past. Two groups of burial mounds are known: the first, the Yankton Mounds Site (39YK1), consists of five low mounds on a high terrace overlooking the Missouri River. The site has been excavated by archeologists of the W. H. Over Museum, University of South Dakota, Vermillion. In one mound, the excavators found the skeletons of at least sixteen persons. Most of the bones were in a jumbled mass, suggesting that the bones had been reburied, perhaps after the bodies had been exposed on a scaffold, as was done in more recent times. The second mound group, the Larson Mounds Site (25KX8), includes at least 10 mounds, two containing burials. Nebraska State Archeological Survey excavators reported the presence of "bundle burials", possibly similar to those of the Yankton Mounds, and cord-roughened potsherds from which a typical Woodland vessel was restored. A group of burials (39YK202), discovered just below the dam, probably represents another such reburial of fleshed bodies, but a mound was lacking. Included were a number of shell beads and a group of shell "bear-claw" pendants. Such ossuaries or reburials of a group of individuals have been found elsewhere in the Central Plains; they have long been thought of as Woodland in origin.

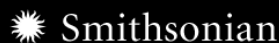
Other archeological sites adjacent to the reservoir are restricted to deeply buried camp areas. They appear to consist of only broken animal bone, flint chips, and charcoal. One area, the Larson Deep Site (25KX7), situated in a small ravine within the wooded river-bluffs, contained a hearth, a small projectile point, a hammerstone, stone and bone debris, and six small cord-roughened fragments of a clay pot. Again, the assemblage indicates an occupation by Woodland peoples.

"Woodland" mound-builders, pottery-making hunters (and perhaps farmers) were once widely distributed in the eastern and central United States. In the Middle West, the Hopewellian and Effigy Mound variants are best known. Other related groups moved westward, leaving evidence in the form of widely scattered villages and camps throughout the Missouri Basin, extending as far west as the foothills of the Rockies.

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THE LEWIS AND CLARK CAMPSITES

In the late summer of 1804, the joint commanders of the great exploring expedition to the Northwest had brought their men into the middle reaches of the Missouri Valley. The trip had been arduous and dangerous—sailing, paddling, and towing against a swift current in an uncertain and treacherous river. The course, often found only by frustrating trial-and-error, threaded through tortuous channels constantly threatened by hidden obstructions and unpredictable sandbars. Early on the morning of August 28, the party left its overnight campsite near the mouth of the Riviere aux Jacques (the modern James River) and moved upstream toward what was to become the city of Yankton. Unfortunately, before reaching their goal, one of the expedition canoes was pierced by a snag, and in near-sinking condition was brought to shore for repair. Camp was made opposite and slightly below Yankton, and here the party remained through the 31st. Late in the afternoon of the 29th, Sgt. Pryor and the interpreter, the elder Dorion, who had been sent on the previous day to invite the principal Indian chiefs of the region to a council, arrived opposite the camp with five chiefs of the Yankton Sioux and a large group of their men. The next day, a grand council was held a short distance upstream near the landmark of Calumet Bluff, which is now the site of the Gavins Point Powerhouse. Here, after two days of conference and ceremony, the assembled Indians promised to seek peace with their enemies, the Oto and Missouri, and agreed to send a delegation to Washington City the following year. Again the interpreter Dorion was called upon for diplomatic duties, this time to accompany the Yankton chiefs to the White Man's East.

The council having been concluded, the expedition proceeded upriver, covering some sixteen miles before coming to camp on the evening of September 1st. The site chosen lay near the lower point of Bon Homme Island, today part of the southern or Nebraska mainland.

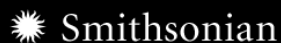
The following morning, September 2nd, the men passed the head of Bon Homme Island, but after traveling only about four miles, violent winds forced them to shore. Camp was established "under a Yellow Clay Bluff 110 feet high". Recent shifts in the river channel make the exact location dubious. On the 3rd, the expedition set out at sunrise, proceeded to the mouth of Emanuel Creek, where solar observations were made, and camped some five miles beyond. During the day they saw "a great many Beaver Sign & Cabbins on (the river)...." On the 4th of September, after investigating the lower Niobrara River, the Lewis and Clark party passed beyond the extent of the reservoir.

Late in the summer of 1806, on the return trip from the Pacific to St. Louis, the explorers again passed through the area. This time, with the swift current of the Missouri speeding them on, the passage was a brief one, and they moved rapidly beyond the range of our story.

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A MORMON EPISODE: THE NEWELL KNIGHT MEMORIAL

Erected 1908

NEWELL KNIGHT

Born Sept. 13, 1800. Died Jan. 11, 1847

A member of the Church of Jesus Christ of
Latter Day Saints

Knight was one of a party of Mormons that spent the winter of 1846-47 on the Niobrara River not far from modern Niobrara, Nebraska. A group of 65 families left Kanesville, Iowa, in the summer of 1846, bound for the West. The party followed the Platte valley to the vicinity of Columbus, or Genoa, Nebraska. Here they contracted to harvest a grain crop planted by federal agents. With the undertaking completed and the season advancing, it was apparent that they could not proceed farther with safety. A band of Ponca guided them to a suitable campsite near the mouth of the Niobrara River, where winter quarters were established. During the prolonged course of the cold winter, Newell Knight and sixteen others, mostly women and children, died of pneumonia. Many years later, the family of Knight, and others, discovered the old camp, but the graves could not be found. Subsequently, the monument was erected on the site by Knight's sons and daughters.

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