

HAGERMAN FOSSIL BEDS NATIONAL MONUMENT

The FOSSIL



RECORD

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TWO PLANNING DOCUMENTS FOR PUBLIC REVIEW AND COMMENT - The National Park Service has scheduled for a March release of its Site Selection Plan and Environmental Analysis (E.A.) for the proposed Paleontological Research Center/Museum in Hagerman. Fourteen potential locations were evaluated, and

the study presents conceptual plans for two of those sites on the Hagerman side of the Snake River. Planners determined that locating permanent facilities on the Monument side of the River is unacceptable because of unstable soils and poor access.

A consultant's report, funded cooperatively with the Idaho Department of Commerce's South Central Travel Committee, Region IV, evaluates the anticipated use of such a Center. It provides a profile of "typical" visitors and their expectations. It also evaluates the existing community infrastructure and traffic circulation options. The results of the study will be used by local and state agencies to plan the best way to provide for identified community and visitor needs in the future.

If you received this newsletter by mail, you will also be sent the Site Selection Plan and E.A.



Both planning documents are available for review at most libraries in southern Idaho or at the N.P.S. office in Hagerman across from the High School along Highway 30.

Meetings for the public to provide comments and input on the proposed Paleontological Research Center/Museum will be scheduled during the week starting April 19, and specific locations and times will be announced in news releases. Input is welcome by mail as well. If you have any questions, please phone 208) 837-4793.

PALEONTOLOGIST NOW ON STAFF -

Yes, Hagerman Fossil Beds National Monument now has one - a paleontologist. What kind of "...ologist"? A paleontologist is a scientist who explores for, and examines, fossil remains of ancient life to determine their life form and history. Dr. Greg McDonald comes to Hagerman from the Cincinnati Museum of Natural History, where he was Curator of Vertebrate Paleontology. Although new to the National Park Service, Greg is no stranger to the Hagerman area. He did his Idaho State University undergraduate work

here in the fossil beds for the Idaho Museum of Natural History. Greg also assembled the "horse" skeleton cast in the Hagerman Valley Historical Society Museum. Following graduation from ISU, Greg went to the University of Florida for his Masters and from there to the University of Toronto where he earned his Ph.D. Between the degrees, Greg spent a year as a museum intern in vertebrate paleontology at the Carnegie Museum in Pittsburgh. Prior to taking the position at Cincinnati, Dr. McDonald returned to Idaho and again worked at the Idaho Museum of Natural History, this time as the Collections Manager in vertebrate paleontology. The National Park Service is very pleased to draw to Hagerman a paleontologist of his caliber.

Dr. McDonald has already planned facilities in the existing office space for fossil preservation treatment and storage under controlled conditions for maximum preservation. He is also preparing for the upcoming field season when he will attempt to relocate and record the known fossil sites on the Monument. Greg will present issues in this and future newsletters.

TWO ACTIVE

"VIPs" - Hugh and Diane Harper are veteran "Volunteers In Parks" (VIPs) who are actively contributing nearly full-time services to the Monument. Hugh is retired from the Bureau of Land Management and the Idaho Department of Fish and Wildlife. Diane is retired from teaching elementary school and applies her skills in a variety of projects. They have moved to Hagerman from Boise, and say they'll be here to help "unless it gets too cold."

IMPROVEMENTS ARE COMING!

- The first improvement for visitors on the Monument itself has been funded and is in the design process. This Fall, a platform overlook will be built that provides a panoramic view of the Hagerman Valley, the Snake River, and the bluffs of the Monument. Several self-guided exhibits for the overlook and the Bell Rapids Boat Dock area are also underway. It should provide an informative and scenic stop for visitors.

Changes are also planned for the N.P.S. office in Hagerman. Negotiations are underway to

expand into the building next door. Sometime this summer exhibits will provide visitors with general information on the history of the fossil beds, their importance, and some interesting things about fossils. Limited but regularly scheduled hours of operation will better serve the public.

OREGON TRAIL SESQUICENTENNIAL -

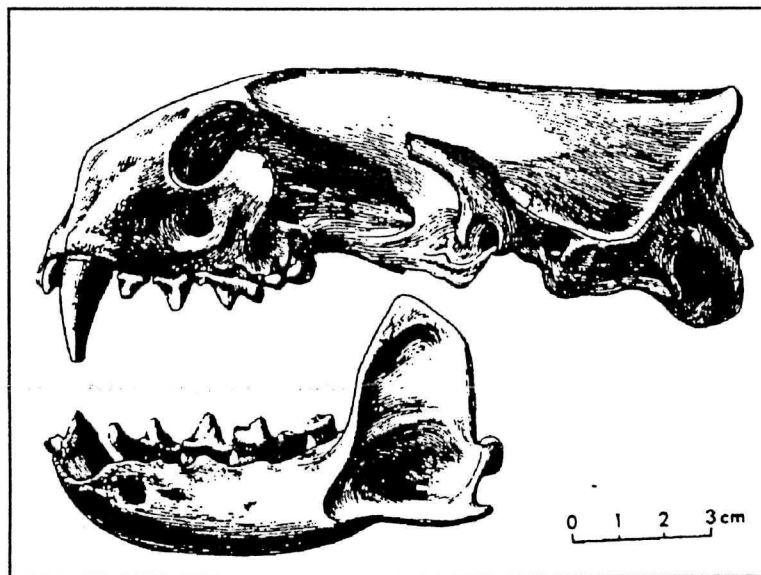
A sesqui-what?! It's the 150th anniversary of the Oregon Trail. A wagon train which will start at the eastern Idaho border will be travelling as closely as possible to the original route this summer. The wagons will be authentic -- no rubber tires! One of the wagons has been sponsored by the National Park Service. On July 16 the wagon train will be camped in the National Monument, and an evening interpretive program will be presented. More information will follow in the next issue of the "Fossil Record".

MORE TOURS

PROPOSED - Staff is gearing up to provide more tours of the Monument this upcoming summer. The type of activities will be announced in the next newsletter.

EXPANDED FORMAT-

Starting with this newsletter, various scientific topics will be covered in a section separate from the general issues regarding the Monument.



River Otter

MONUMENTAL SCIENCE

FOSSILS: WHAT'S AHEAD? - With more than 200 scientific papers already written about the different fossil species at Hagerman fossil beds, a reaction to a discussion of future research might be "What else is there to do?" These papers are merely the foundation for the needed research - the tip of the proverbial iceberg.

For example, the extraordinary sample of zebra-like horses from the famous Smithsonian Quarry has been examined and measured by many scientists of fossil horses, yet no one has done a "population study" of these specimens. How many males and females were represented and what age classes? Trends have shifted in paleontology from studying individual specimens to "populations" of fossil animals, and the environment in which they lived and died. Was the Hagerman deposit of "horses" a single catastrophic event that buried a single herd or did the large number of individuals accumulate over a long period of time? If it was a single

herd, what time of year did they die? For example, a large number of young colts might suggest the event took place in the spring. By comparing the Smithsonian specimens with what we know about herd structure of modern zebras and wild horses, we may gain some insight into the ecology of this extinct species.

Throughout the Monument there are numerous concentrations of small vertebrate fossils. Although collection has been conducted by many institutions, no one has yet investigated the relationship of these fossil concentrations to the layers of sediments. Do these concentrations only occur in certain types of sediments? Are they only found at a particular elevation? Are only certain species of animals found at these sites, and was the site an unusual one in the environment? These are some of the many different types of questions that the research program at Hagerman Fossil Beds National Monument will investigate. As the research program progresses, even more questions will appear to challenge paleontologists and geologists. As the song goes, "We've only just begun."

RESOURCE MANAGEMENT -

Evaluation is continuing on the landslide problems in the Monument. A group of scientists, representatives of the Bell Rapids Irrigation Company and the National Park Service (N.P.S.) met to discuss what is presently known about the water flow problems. A plan resulted which outlined the next possible steps.

The Bell Rapids Irrigation Company suggested that the rates of seepage from the canal and ponds be evaluated as the pumping stopped. They installed gauges and blocked the remaining water in several canal segments. The loss from the lined portion of the canal was about .03 feet per day, while the unlined portion lost over one foot per day.

Scientists are further evaluating the data. The N.P.S. expressed their appreciation of the company's involvement, and Manager Rick Kruse for his initiative and timeliness in the study.

As a result of the late October, 1991, landslide the N.P.S. had measurements taken of the water flowing from the seeps during 1992. The U.S. Geologic Survey data reveals

that the flows were at their peak levels from January through March. In April the flow started to drop and levelled out in May and remained consistent through August. This is interesting because the pumps are usually turned on in April of each year. By September, the flow was back to the same high rates as the first three months. What this indicates is that there is a five month lag-time for the water to seep from the unlined canal until it flows out on the slopes.

The analysis of aerial photographs showed that the 1991 landslide involved about ten acres and almost three million cubic feet of material. An area north of this landslide previously slid downhill and involved about one and a half million cubic feet. The two areas have surface cracks connecting them from the resulting unstable conditions and additional movement is anticipated. The area remains unstable, dangerous, and closed to all public access.

CRITTER CORNER-

By Dr. Greg McDonald,
Monument Paleontologist

This is the first of a series of articles describing some of the many animals that have been found as fossils at Hagerman Fossil Beds National Monument. Because attention was first drawn to the Hagerman area by the Smithsonian Institution's excavation of the Hagerman Horse Quarry, it seems appropriate to start this series with a discussion of the famous Hagerman "Horse", Equus simplicidens.

What makes the Hagerman Horse so important? First, the discovery from Hagerman is the largest sample of this extinct species from one locality. Over two hundred individuals of both sexes and all ages were recovered by the Smithsonian. Included are complete skeletons as well as skulls, jaws and detached bones. They were about the size of the present-day Arabian horse, and had a single toe (hoof). Vertebrate paleontologists must often work with single, isolated bones or teeth. So it is often difficult to assign them to an already described species when differences in sex or age of an

individual are taken into consideration. This problem is simplified here by the large number of individuals recovered at the Hagerman Horse Quarry.

Despite the popular use of the name, Hagerman Horse, it is actually more closely related to the zebras. Although we don't have fossil evidence of stripes, the pattern of the chewing surfaces of the teeth and details of the skull and rest of the skeleton indicate that this animal was more closely related to the living Grevy's Zebra of Africa than to horses. So the next time you're at the zoo, take a good look at the zebras on display and you'll have an opportunity to see a close relative of one of the earliest residents of the Hagerman area.

Many different scientific names have been applied to this horse. James W. Gidley, the Smithsonian paleontologist, who led the initial excavations at Hagerman in 1929, felt that the horse being uncovered was different enough in its skeleton that it represented a new species distinct from any other known fossil horse. He proposed the name Plesippus shoshonensis. By placing the Hagerman horse in the genus Plesippus, he considered it to

be closely related to another fossil species, Plesippus simplicidens, from Texas. Although another horse, Equus idahoensis, had been described from elsewhere in this region, Dr. Gidley considered his new species to be more primitive. Since the early work of Gidley, many other studies on fossil horses have been made and the consensus is that the horse at Hagerman does belong in the modern genus Equus and that it is the same as the extinct species from Texas, simplicidens. So today most paleontologists refer to the Hagerman Horse by the scientific name of Equus simplicidens.

The Hagerman Horse also has the distinction of being the earliest record of Equus, the genus that includes all modern horses, donkeys, and zebras.

Even though the species found at Hagerman, Equus simplicidens, is known from elsewhere such as Nebraska, Florida, and Texas, all of the other records are much younger, making the sample from Hagerman the oldest.



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