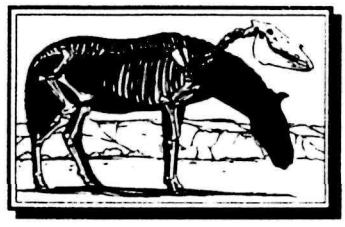
HAGERMAN FOSSIL BEDS NATIONAL MONUMENT

The FOSSIL RECORD



SPRING, 2002

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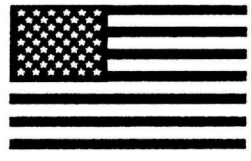
THE BARE BONES OF THIS ISSUE:

This newsletter is printed on recycled paper.

VISITOR CENTER HOURS

The Visitor Center is now open Thursday through Sunday, 10:00 a.m. to 4:00 p.m. through May 23rd. Beginning May 26th, the Center will be open daily from 9:00 a.m. to 5:00 p.m.

CELEBRATE FOSSIL DAYS - MAY 24-25!



Stop in the Visitor Center to see the Idaho State fossil – the Hagerman Horse! Come in and explore our exhibits and slide show. The Center will be open 9:00 a.m. to 7:00 p.m. Friday and Saturday, May 24 and 25! Join a ranger at the Fossil Beds Horse Quarry for a guided tour on Saturday from 1-5; Sunday 1-3. For more information and directions to the Fossil Beds, stop in the Visitor Center.

EDUCATION

Can't come to the Fossil Beds? No problem...have the Fossil Beds come to your classroom, with our Science Traveling Trunks! These marvelous tools include curriculum guides, books, videos, and casts of horse skulls, geology samples, and so much more. And, they are free to use; all you do is pay for the return shipping. We have trunks for 4-6th grade and 7-12th grade available. For more information, call Judi Hart at (208) 837-4793.

CRITTER CORNER

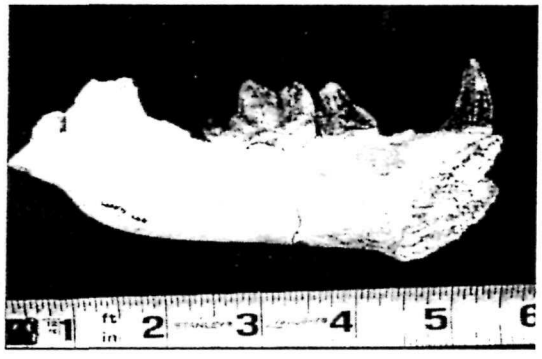
The Hagerman Bone Crusher

One of the truly remarkable aspects of the fossil fauna of the Hagerman Fossil Beds National Monument is the wide variety of carnivores represented. Out of the 113 different species of vertebrates recorded, 14 are carnivores, which include dogs, cats, bears, and members of the weasel family. Of the two dogs found at the Hagerman Fossil Beds, one fits our idea of what a dog should look like, as it is the ancestor to our modern coyote. The other dog represents a lineage that has no living relatives, but at one time was more widespread and diverse than the group we think of as the modern canids. This other group of dogs is known as the borophagines (boro: meaning carrion or flesh and phagus: meaning to eat) and is represented at the Hagerman Fossil Beds by the species *Borophagus hilli*.

In North America, the borophagine dogs filled a wide range of ecological niches ranging from omnivorous generalists to hypercarnivores. Some, including *Borophagus*, filled an ecological niche similar to that of hyenas in Africa today. Like modern hyenas, *Borophagus* had a proportionately large head for its body size. The head was broad with expanded strong cheekbones (the zygomatics) reflecting the powerful jaw muscles that would have allowed them to crush bones. Also, like modern hyenas, the muzzle and jaw were shortened to increase the leverage of the jaw for crushing bones. However, *Borophagus* was not as large as today's hyena, but roughly the size of a small wolf.

Previous records of *Borophagus* at the Hagerman Fossil Beds have been scarce and until recently knowledge of its presence has been based on a jaw lacking teeth and a single upper canine. Since the material was so fragmentary, paleontologists were not able to determine exactly what species was present at the Hagerman Fossil Beds. During a survey project on the monument, the back portion

of a left jaw of *Borophagus* was found with the large molar in place. Careful examination of the area lead to the recovery of the front end of the jaw, which was still in place.



When the two specimens were reconnected in the monument's laboratory this now complete specimen permitted a detailed comparison with specimens from other localities and has made it possible to assign the Hagerman *Borophagus* to the species *hilli*. *Borophagus hilli* was first described from a locality in Texas.

The Hagerman *Borophagus* is not the only record of borophagine dogs in Idaho. The fossil record of the group in Idaho extends back to the late Miocene and into the younger part of the Glenns Ferry Formation in the late Pliocene. We know that as a general rule borophagine dogs increased in size through time and the Hagerman Fossil Beds specimen is larger than its earlier ancestors, but smaller than later species.

Besides Hagerman, *Borophagus hilli* has been found in Kansas, New Mexico and Texas. Its larger descendent *Borophagus diversidens* is also found in Idaho in younger parts of the Glenns Ferry Formation and has been found at a number of other locations across North America as well as south into Mexico.

The borophagine dogs became extinct around the end of the Pliocene and beginning of the Pleistocene. We are not sure why. The borophagine dogs that became bone crushers left an ecological niche that was not filled by any other group of carnivores. During the Pliocene, true hyenas did enter North America from Eurasia but these were not hyenas that were bone crushers, but rather, ones that were more cat-like with teeth designed for slicing meat rather than crushing bone.

Additional Reading:

Bjork, P. R. 1970. The Carnivora of the Hagerman local fauna (Late Pliocene) of southwestern Idaho. Transactions of the American Philosophical Society n.s. 60:54.

Wang, X., R. H. Tedford, and B. E. Taylor. 1999. Phylogenetic systematics of the Borophaginae (Carnivora: Canidae). Bulletin of the American Museum of Natural History 243:1-391.

Revised from an earlier article by Greg McDonald, Paleontology Program Coordinator, NPS.

ARCHAEOLOGY CORNER

Minidoka Internment National Monument and Historical Archaeology

By Jan Harper

Archaeology involves a lot more than digging or excavation, and does not always seek to study cultures that have long vanished. To be considered an artifact, a cultural item need only be over 50 years old. Minidoka Internment National Monument located near Jerome, Idaho is a good example of historical archaeology. This year marks the 60th anniversary of the internment of over 120,000 Nikkei, or persons of Japanese ancestry, who were interned by the U.S. government during World War II.

The National Park Service is working with former internees, archaeologists, historians, and community members to reclaim Minidoka's past by learning how it impacted the lives of internees and affected local communities. Oral histories are being gathered so that valuable information can be recorded before it is lost. Oral histories are a luxury item in that normally the cultures, or peoples being studied are long gone. We cannot really know what they were thinking or feeling. We can only *infer* such things from the artifacts that they left behind. Historical archaeology can gain much more perspective on past lifeways because it can benefit from the luxuries of written accounts, photos, and oral histories. These first hand accounts allow us to better understand the experiences and feelings of the people being studied.

The Minidoka Internment National Monument was established in 2001 to commemorate the hardships and sacrifices of those interned during World War II and to preserve a scattering of remnant features from the former camp, such as the entry guard station, waiting room, and rock garden.

The first year of a 3-year initial planning stage and development of a General Management Plan is well underway for the new Monument. In the summer of 2001, an archaeological survey was conducted in order to obtain an inventory of the cultural resources and document their condition. Some additional features were identified as being

eligible for placement on the National Register of Historic Places. This summer the National Park Service has plans for projects primarily at the entrance station, which will provide opportunities for both public participation and education. Modern litter and debris will be removed and vegetation will be cleared from around the historic structures. Archaeological excavation techniques will be used to expose and map the rock garden and other structural remains at the entrance station.

JUNE SCHEDULE

Different activities are scheduled throughout the summer. All participants are advised to meet at the Visitor Center in Hagerman on Highway 30, prior to the actual tour for information and directions, unless otherwise noted. Participants need to drive their own vehicles to the Monument. Be prepared for variable weather (layered clothing is best), wear sturdy shoes (closed toes), bring plenty of water, sunscreen, and a hat. Call the Hagerman Fossil Beds for more information (208) 837-4793. All programs are free.

June 1 – Annual Snake River Clean Up Meet at **9:00 am** at the Banbury Hot Springs Resort parking lot. Sponsored by Malad Gorge State Park and High Adventure River Tours. This will be a floating litter pick-up along the Snake River. Please call Kevin Lynott at Malad Gorge State Park (837-4505) for further information.

June 8 – National Trails Day **9:30 am**
This hike offers panoramic views of the valley as well as flora and fauna surprises. Trail distance will vary depending on hikers' abilities. Shuttle service available.

June 15 – Horse Quarry Tour **9:30 am**
Participants will travel to the Monument in their own vehicles (a portion of the road is gravel). You will be hiking approximately ½ mile total with one short, steep section. Visitors will be able to see fossils in the ground and where the famous Hagerman Horse was first discovered.

Hagerman Fossil Beds National Monument
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JUNE SCHEDULE continued

June 22 – Geology for Kids **9:30 am**
Learn about rocks and the "rock cycle" both in the Visitor Center and in the field. This will be a hands-on learning experience. "Kids" of all ages welcome.

June 29 – Snakes Alive! **2:00 pm**
Have you ever been curious about what snakes are really all about? Spend an afternoon with Russ Jones, a herpetologist (snake expert). Get the facts straight on these misunderstood reptiles as he shows off his slithering friends! Children six and under must be accompanied by an adult. The program will be located in the Visitor Center auditorium.