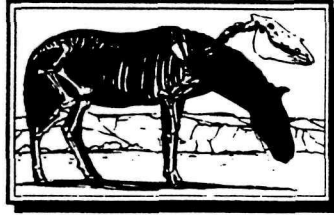

HAGERMAN FOSSIL BEDS NATIONAL MONUMENT

The
FOSSIL



RECORD

SUMMER, 2000

VOLUME 9, No. 3

**THE BARE BONES
OF THIS ISSUE:**

Re-Cap of Fossil Days
2000

Visitor Services

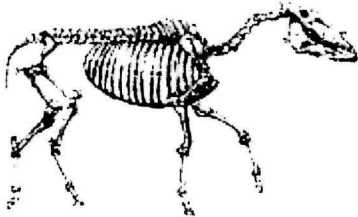
Resource Management

Critter Corner

Seasonal Staff

Junior Ranger

Calendar of Events



VISITOR CENTER HOURS

The Visitor Center is now open seven days a week. Winter hours for the Visitor Center will begin in September!

**RE-CAP THE MEMORIES
OF FOSSIL DAYS 2000-**

Not only did we win first place in the "Best of Theme" category, but we also placed first in the "Wagons, Animals, Horses, and Mules" category. The Fossil Beds also placed third in the "Floats" theme. Mrs. Daarud's sixth grade class won the Hagerman Fossil Beds float contest, depicting that the past is the key to the present.

We also had a booth in the park that allowed children to play games, receive prizes, and learn about the Fossil Beds. There were tours to the Horse Quarry as well, while other visitors came into the Visitor Center to view fossils and watch the slide show. We received over 1,200 visitors during the two-day festival. If you missed the quarry tours during the celebration, look at the schedule in the back for further information.



VISTOR SERVICES

Regional Trail System - Trail construction is progressing this summer on the Regional Trail System that extends from the north boundary of the Monument, down the Snake River canyon. Current work will involve about four miles on land managed by the Bureau of Land Management (BLM) through a cooperative agreement. The Hagerman Fossil Council, Inc., a non-profit support group, received a State grant to pay for part of the work and some volunteer groups will also be involved in the construction. These segments will connect existing trails and dirt roads to expand recreational uses.



NATURAL RESOURCE MANAGEMENT

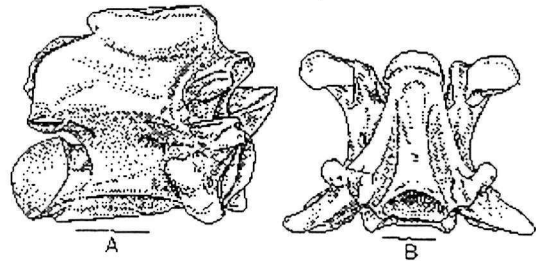
Vegetation Management - Invasive non-native plants have taken over a number of areas in the Monument. For the first time, staff is applying vegetation restoration techniques on a trial basis to see what methods work best before attempting larger-scale projects. The project this summer will apply methods to convert some small areas to native shrubs and grasses now invaded with Canada thistle, tumble mustard, cheat grass, and koshia. Wildfires, other disturbance, and unnatural sources of water are the primary reasons for the non-native invasions. The predominant shrub, Wyoming big sage, only has a life span of about 50 years, so some areas are beginning to decline in vigor and show die off.



CRITTER CORNER

Fossil Snakes on the Snake Greg McDonald Monument Paleontologist

Unlike many famous areas that boast about how big their fossils are, Hagerman Fossil Beds National Monument is famous for its small species. Many of the fossil localities within the Monument contain what paleontologists call microvertebrates, small animals like fish, frogs, shrews and mice. Often hard to spot on the ground while standing, these little fossils are collected by crawling around on hands and knees with your nose inches away from the ground. Among the variety of different small animal fossils encountered this way are snakes.



Elaphe pliocenica vertebra of the Pliocene rat snake from Hagerman. Inside and bottom view.

Lacking arms and legs, snakes are mostly vertebrae and ribs so it is not surprising that vertebrae are the part most commonly preserved. The bones of the skull and jaw of snakes are only rarely found. The reason is that they tend to fall apart quickly after the animal dies. Since they are held together by muscles and ligaments, the skull is flexible enough to allow the snake to swallow its prey whole. Snake vertebrae have a distinctive shape that allows them to be quickly identified. Each vertebra connects to the one before and behind it at the centrum, (main body of the vertebrae) via a ball and socket system. This type of connection provides the flexibility to the backbone that snakes use to slither along. While all snake vertebrae have this basic structure, fortunately the shape of the processes where muscles attach, and the proportions of the vertebrae of different snakes are sufficiently different that it is possible to tell the different types of snakes apart, even with only a single vertebrae.

Six different types of snakes are known as fossils at Hagerman Fossil Beds National Monument. Three of the fossil snakes: garter snake- *Thamnophis*, rattlesnake- *Crotalus*, and racer- *Coluber* are still found in the state. Today, Idaho has ten different types of snakes so the sample at Hagerman does not represent the same level of diversity present in the state. Changes in the environment through time have caused some snakes to disappear from the region, like the water snake- *Nerodius*, rat snake- *Elaphe*, and milk snake- *Lampropeltis*. Although the fossil wetlands found in the Fossil Beds may have been suitable

to the water snake, the drying of the environment now makes the area unsuitable for this species. Yet, while this environmental change eliminated one type of snake it made it possible for other types to enter the area. Likewise, snakes common in the area today, like the rattlesnake, which is often encountered on the Monument, may not have been as common in the past. Our fossil record for the rattlesnake is based on a single vertebra that was only recently found during excavations at the Horse Quarry.

Snakes like all animals and plants respond to environmental change and this is reflected in where they are found. An animal's distribution is not fixed but changes. It may expand as conditions become more favorable, or shrink during less favorable times. Every species, whether it is the fossil fauna at Hagerman, or the modern one, is the result of historical changes in the distribution of animals and is the result of the dynamic response of its animals to environmental changes.

REFERENCES:

- Holman, J.A. 1968. Upper Pliocene snakes from Idaho. *Copeia* 1:152-158.
- Mead, J. I., J.T. Sankey, and H.G. McDonald. 1998. Pliocene (Blancan) herpetofaunas from the Glens Ferry Formation, Southern Idaho. Idaho Museum of Natural History Occasional Paper 36:94-109.



~Hagerman Fossil Beds Seasonal Staff~

SEASONAL STAFF~

Our new seasonal staff is bringing us another great summer. We are excited to see the many new faces that are here and we welcome them to the staff at our National Monument.

FOSSIL SURVEY CREW~



This part of the staff is currently mapping and tracking historical sites and promising new fossil sites by using current technology.

CHRISTINA LONZISERO~ A Student Conservation Association intern from California. She has had an interest in fieldwork since taking undergraduate courses in archaeology and will be working primarily as part of the fossil survey crew this summer.

PREPARATION CREW~



These staff members are bringing their vast knowledge of preparing specimens to the Monument. They analyze, document, and prepare the specimens.

AMY MORRISON~ Originally from Santa Fe, New Mexico, Amy recently earned her Master of Science degree in Geology from Northern Arizona University in Flagstaff. She completed a thesis project on Pleistocene mollusks from the Black Hills of South Dakota. Amy is excited to be working with larger fossils as part of the prep crew.

JOSH SAMUELS~ Born and raised in Jerome, Idaho, Josh joins the NPS staff for the very first time. Currently he is attending Albertson College of Idaho

and is majoring in Biology. He will graduate this coming year and plans to attend graduate school in Evolutionary Biology or Paleobiology.

KRISTINE THOMPSON~ A graduate student at Northern Arizona University in the Geology Department. Kristine's thesis project is focused on paleontology and sedimentology in northern Arizona and southern Utah. She has worked in several National Parks and began her NPS experience at Big Cypress. Kristine has also worked at Fossil Butte National Monument and Sunset Crater Volcano National Monument. She is enjoying working as a Museum Tech this summer at Hagerman Fossil Beds.

INTERPRETIVE RANGERS~

This knowledgeable part of our staff interacts with the public. They explain the natural, geological, paleontological, historical, and cultural resources concerning the Monument. They provide guided tours, audiovisual programs, and talks.



MINDY HENSLEE~ Mindy has lived in Hagerman her entire life and graduated from Hagerman High School this spring. She plans to attend the College of Southern Idaho in the fall, majoring in Computer Graphic Design. "Jobs like this come once in a lifetime and I'm glad that I have the opportunity to be part of the Hagerman Fossil Beds National Monument."

ANDY STEPHENSON~ A recent graduate from Hagerman High School, Andy has lived in Hagerman for most of his life. In the fall he plans on attending the College of Southern Idaho

to study something in the field of secondary education. He enjoys fishing, camping, and playing sports.

REHABILITATION CREW~

Members of this crew are in charge of preserving the native species of plants that are located in this area.



ERICA J. CASE~ She is a first-time worker on the plant rehabilitation crew. Erica has just completed her freshman year at Albertson College of Idaho, majoring in Biology.

TAFFI AYERS~ A Student Conservation Association Intern, is Graduating with a psychology degree, from the University of North Carolina. Taffi wants to further her education in Biological Anthropology, with a particular interest in the evolution of modern human cognition.

Hydrogeology CREW~

This group of staff members is involved with monitoring the unnatural water seeps on the Monument and the paleo sediments, the study of which is called stratigraphy.



TOM ANDERSON~ Tom was raised in Melba, Idaho and he is entering his fourth year at Boise State University emphasizing in Environmental Geology. For the past two years, Tom has worked with the National Forestry Service, fighting fire and building trails. Tom came to Hagerman Fossil Beds National Monument for two reasons: the money and the geology.

Hagerman Fossil Beds National Monument Junior Ranger

The Junior Ranger Program is one of the more popular youth programs in the National Park Service. The program usually involves young visitors between the ages of 6 and 12. Asking for a Junior Ranger program when you arrive at the Visitor Center is a great way to get started. The booklet is made up of small projects that a young person may complete while they are visiting the Monument. After receiving the kit, participants will be able to complete each activity in the Junior Ranger booklet.

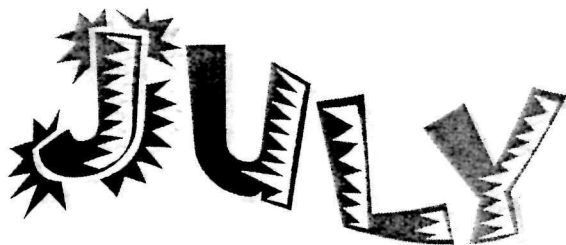


By doing this, it will show that you understand the importance of the Monument's resource. Most of the activities are crossword puzzles, fill in the blanks, and other little projects that can be completed in a short period of time. This program is especially important for families with young children because it gives young children access to the resource in a manner that they can understand more fully. For more information about the Junior Ranger Program you can call Hagerman Fossil Beds National Monument before you visit. Your child will receive various awards when they finish the booklet. So have your children get involved to become a Junior Ranger!



Calendar of Events

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. Dress properly and be prepared for variable weather. Participants are required to drive their own vehicles when in the field. Call the Hagerman Fossil Beds National Monument for more information (208) 837-4793. All programs are free.



July 15 BIKING THE MONUMENT 9:30 a.m.

Participants should gather at the Visitor Center first. A Ranger will lead a six-mile tour to the North boundary and following the tour, participants are encouraged to experience the trails on their own. Please wear suitable attire for mountain biking and for variable weather changes. Bring plenty of water, wear sunscreen, and wear sturdy footwear.

JULY 22 QUARRY TOUR 9:30 a.m.

Participants will meet at the Visitor Center and then travel to the Monument. You will be hiking approximately $\frac{1}{2}$ mile total with one short, steep portion. Visitors will be able to see fossils in the ground and where the previous excavations took place. Bring plenty of water and wear sturdy footwear.

JULY 29 CHILDREN'S STORYTELLING 1:00 p.m.

Join Rangers for an afternoon of adventure, fun, mystery, and discovery as they take you on a journey into the fun world of animals and wildlife. Children 6 and under must be accompanied by an adult. Visitor Center auditorium.

AUGUST

AUGUST 5 MONUMENT BY WATER 9:30 a.m.

Bring your canoe or paddleboat and get ready to experience Hagerman Fossil Beds National Monument by water. You will be paddling along the Snake River from the Bell Rapids Boat dock to the Lower Salmon boat dock. Meet at the Visitor Center by 9:30 and come enjoy the day.

AUGUST 12 CHILDREN'S STORYTELLING 1:00 p.m.

Join Rangers for an afternoon of adventure, fun, mystery, and discovery as they take you on a journey into the fun world of animals and wildlife. Children 6 and under must be accompanied by an adult. Visitor Center auditorium.

AUGUST 19 QUARRY TOUR 9:30 a.m.

Participants will be meeting at the Visitor Center before the excursion to the Horse Quarry. You will be hiking approximately $\frac{1}{2}$ mile total with one short, steep portion. Remember to bring plenty of water, sturdy footwear, and wear sunscreen. The summer heat is here, so be ready for any variable weather.



Hagerman Fossil Beds National Monument
P.O. Box 570
Hagerman, ID 83332

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