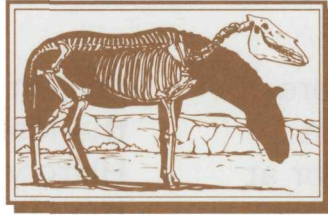


HAGERMAN FOSSIL BEDS NATIONAL MONUMENT

The
FOSSIL



RECORD

SUMMER, 1999

VOLUME 8, NUMBER 3

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FOSSIL DAYS RECAP -

Hagerman Fossil Beds National Monument was honored with two Second Place prizes in the Fossil Days Parade! Students from Mrs. Moore's second grade class won for "Best Theme" as they depicted animals from long ago, and Bob Willhite, Chief Ranger won for the "Wagons and animals, horses and mules" division as he portrayed an old-fashioned National Park Service Ranger on horseback.

The Visitor Center received over 900 patrons during the two-day festival. If you missed the tours to the Horse Quarry, check out the Summer Schedule for more tours and other programs being offered all summer long!

**Winter Hours for the Visitor
Center begin September 1.**



SEASONAL STAFF - We are happy to welcome our seasonal staff members. Many of these people leave the comfort of homes and family behind so that they may contribute their skills and talent to science, as well as enjoy the outdoors.



Fossil Survey Crew - These staff members accurately map in fossil locations using current technology.

Janet Bertog is returning to the park for a third season as crew boss. She is working on her Ph.D. in geology at the University of Cincinnati, Ohio.

Summer Hinton is returning for her second season. She will be a senior this fall at Northwestern University in Evanston, Illinois. This Jerome, Idaho native is studying biomedical engineering, evolutionary biology and biological anthropology and hopes to graduate with a Bachelor's of Arts/Science Spring 2000.

Paul Leonard, a native of Idaho Falls, is studying civil engineering at Idaho State University. He will be contributing his knowledge of Global Positioning Systems (GPS) and Geographic Information Systems (GIS) to the survey crew work.

Preparation Crew - These staff members analyze, document, and

prepare specimens using computer documentation, curation, and fossil preparation.

May Faulk earned her Cultural Anthropology degree from the University of Montana. She comes to Hagerman as a Student Conservation Association volunteer and is currently attending the University of Arkansas.

Phil Gensler is returning for a second year to clean the bones. Phil is finishing a Master's Degree in Quaternary Studies from Northern Arizona University in Flagstaff. His thesis area is a Pleistocene vertebrate site in Anza-Borrego Desert State Park in California.

Debbie Greene, originally from New Hampshire, is studying Environmental Science, along with the sun and snow, at the University of Colorado at Boulder. As a Student Conservation Association volunteer, she will be dividing her time between the prep lab and the field.

Joe Groenke, a senior at the University of Michigan, is studying natural resources and creative writing/literature. He normally works on marine mammals from the Tethys Sea (Eocene Epoch), and so, "Preparing horses is a welcome change. Of course the fantastic Idaho weather has its perks, too." He hopes

to visit any wild places he can while here...so any suggestions on favorite spots are welcome.

Mavis Irwin, a native of Jerome, Idaho, decided to work for the Park Service so she can get the “taste” for paleontology. “You see, I’m fool of bones!”

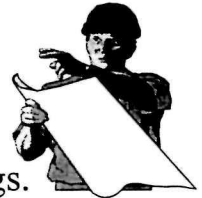
Interpretive Rangers - These staff members provide the visitor with information concerning the natural, geological, paleontological, historical, and cultural resources featured at the Monument and surrounding area through talks, guided tours, and audiovisual programs.

Katie Martin, born and raised in Hagerman, graduated this spring from Hagerman High School. Katie plans to attend college after her season at the Fossil Beds. She was very excited for the opportunity to work at the Fossil Beds. “I really enjoy all of the people I work with and the information I am learning about the park. I look forward to coming to work everyday.”

Scott May has lived in Hagerman for most of his life. A recent graduate from Hagerman High School, Scott’s plans for the future include having a great time working for the Park Service this summer and continuing

his schooling this fall at Boise State University. He loves all kinds of art, and has decided to study graphic design. “I am very excited about taking this next big step in life.”

Project Crew - These staff members are involved in the renovation and remodeling of park buildings.



Eric Foemmel is returning to Hagerman for a second season as crew foreman. He is a student at Sacramento State studying Parks and Recreation Management.

Isaac Larsen comes to Hagerman as a Student Conservation Association volunteer from Clear Lake, Iowa. He has just finished his second year at Carleton College in Northfield, Minnesota, where he is pursuing a degree in geology.

Volunteers - contribute their time and talents by assisting in the field with collection and preparation of fossils; preparing and cataloging collections; and analyzing natural resources.

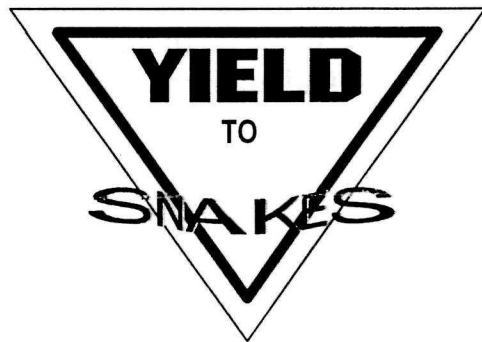
Bob Lorkowski is back for his fourth year of volunteer work (thank you!). This year he is preparing a detailed petrological description of the stratigraphy of the Glens Ferry Formation in the Peter’s Gulch area, from river to rim.

RANGER PATROL - It is encouraging to see increasing numbers of visitors using the trails on the Monument! Please be sure to carry enough water during the heat of summer, and be aware of the signs and symptoms of heat exhaustion: dizziness, profuse sweating, weakness, nausea, weak pulse. Any or all of these signs indicate a need to rest in a cool place and drink water or a sports drink. Continuation could lead to the more serious condition of heat stroke.

Two employees are finishing their annual refresher requirements for fire fighting qualifications. The fire truck is being maintained by the Shoshone district of the BLM. Remember that fireworks on the National Monument are not allowed.

Two motorcyclists were apprehended prior to entering the Emigrant Trail at the Oregon Trail Overlook parking area. No resource damage was done. Handicapped parking signs have been stolen from both overlooks and the Oregon Trail wayside exhibit has again been vandalized with gunfire. Any visitors or residents of the area passing through the Monument are encouraged to call 837-4793 anytime they believe suspicious activities are occurring. Please help protect your National Parks!

RESOURCE MANAGEMENT - Our fossil survey crew is beginning a three-year project to relocate historically-known fossil sites originally found by the University of Michigan and the Idaho Museum of Natural History. The purpose of this study is to accurately locate and map these sites for research to include them in a database and also to benefit future planning of visitor access in the Monument. There are nearly 600 known fossil sites.



CRITTER CORNER

Hagerman's Fossil Cormorants: Double Trouble for Fish

By Dr. Greg McDonald,
Monument Paleontologist

For bird watchers, the Hagerman Valley provides a great variety of species to observe. While the

diversity of fossil birds found in the Fossil Beds is not as great as the modern fauna what we do know about the types of birds living in the Hagerman area more than 3 million years ago indicates that the diversity must have been just as good. As with the mammals, the fossil birds from Hagerman include forms that have no close relatives living in the area today. However, species probably would appear quite similar to their living relatives and an avid bird watcher would probably have little problem recognizing them. Many of the birds that lived in the ancient Hagerman ecosystem are types often associated with water. Many of their close living relatives can be seen on the Snake River or in the ponds and lakes of the area today.

During the summer one of the birds often seen either perched on tree limbs next to the river or flying overhead is the double-crested cormorant, *Phalacrocorax auritus*. Cormorants belong to the same group of aquatic birds as pelicans, anhingas, frigate birds, boobies and gannets. We tend to associate members of this group with the ocean and not inland Idaho. This is true for many members of the group. While many species of cormorants are found only near the ocean, a few, such as the double-crested cormorant are associated with fresh water and can

be seen along the Snake River far inland from the ocean.

During the four summers the Smithsonian Institution worked at Hagerman, a few bird bones were collected. These were given to Alexander Wetmore, the leading student of fossil birds at that time and also on the staff of the Smithsonian. Wetmore published a short paper on these bird remains in 1933 and established for the first time the presence of birds as part of the Hagerman fossil fauna. The initial sample was small and mostly consisted of partial bones, but included in the sample was a bone of a cormorant. Wetmore considered it to be the same as the species living in the area today, *Phalacrocorax auritus*. Not much more was done on birds from Hagerman until the 1950's. Renewed interest in the Hagerman area and field work done by Claude Hibbard and his students from the University of Michigan produced a large sample of birds from the Fossil Beds. Some of the first material found was given to Pierce Brodkorb of the University of Florida to study. Included in the sample was more cormorant material which Brodkorb decided was a new species which he named *Phalacrocorax macer*. One of the characters of Brodkorb's new species was that it was smaller than the species living in the area today. As Hibbard and his crews continued

their work at Hagerman, more and more bird bones were found. Finally enough specimens were recovered that it seemed worthwhile to restudy the cormorants from Hagerman. This study was published in 1970 by Bertram Murray and resulted in the recognition that there was not one but two species of fossil cormorant at Hagerman.

Murray did not describe a new species of cormorant, but determined that in addition to Brodkorb's small species, there was a large species similar in size to the local living species called *Phalacrocorax idahensis*. This large species had first been described in 1870 by O.C. Marsh of Yale University, one of the leading paleontologists of the 19th century. As might be guessed from the name, Marsh's specimen was found in Idaho, but came from Castle Creek in Owyhee County. It was collected during the geological survey of Idaho conducted by Clarence King.

While most of the bones Murray had to study consisted of isolated specimens, he also had the advantage of a partial skeleton. While lots of individual bird bones have been found at Hagerman over the years, only one skeleton has been found. This was collected in 1966 by the Natural History Museum of Los Angeles County during their excavations at the Smithsonian Horse Quarry. Such a find is particularly

valuable since it permits paleontologists to show conclusively that various isolated bones actually do come from the same species and not different animals.

Since the partial skeleton from the Smithsonian Horse Quarry included the same bone used by Marsh to create his fossil cormorant species, *Phalacrocorax idahensis*, Murray could be sure he had the same animal and not *Phalacrocorax macer* as identified by Brodkorb. The distinctive bone that permitted the recognition that two distinct species were present at Hagerman, has the rather strange name of carpometacarpus. Since birds are highly specialized for flying, many of their bones have distinctive shapes.



Carpometacarpus of double crested cormorant.

The carpometacarpus is actually the fusion of many bones including the wrist or carpus, and the bones that are the same as those in the palm of the hand or metacarpus, hence the name carpometacarpus. This bone plays an important role in how the bird flies so its shape tends to be distinctive in different birds. It is this distinctive shape that allows paleontologists that

study birds to tell the different species apart. Other bird bones are equally distinct and also useful in making an accurate identification. When these bones are found associated in a single skeleton, it makes it possible for a paleontologist to be sure that an animal is correctly identified even if only a single bone is available.

Modern cormorants are fish eaters and it is most likely this was the case for the two fossil species at Hagerman. Their size difference would suggest that they ate different size fish. The fossil deposits at Hagerman include a wide variety of fish of various sizes. The exact diet of the two cormorants is unknown but perhaps someday another complete skeleton will be found that not only includes the bones of the bird but remains of its last meal in its ribcage as well.

FURTHER READING

- Brodkorb, P. 1958. Fossil birds from Idaho. *Wilson Bulletin* 70:237-242.
- Marsh, O.C. 1870. Notice of some fossil birds, from the Cretaceous and Tertiary formations of the United States. *American Journal of Science* 49:205-217.
- Murray, B. G. Jr. 1970. A redescription of two Pliocene cormorants. *The Condor* 72(3):293-298
- Wetmore, A. 1933. Pliocene bird remains from Idaho. *Smithsonian Miscellaneous Collections* 87(20):1-12.

ANNOUNCEMENT

Western Conference of the Association for Asian Studies is the western regional affiliate of the Association for Asian Studies. Established in 1963, it is a dynamic scholarly organization with a worldwide membership. Boise, Idaho is the site of the next annual WCAAS conference to be held September 17 and 18th at Boise State University. Participants are expected from Europe, Asia-Pacific, and the Americas. To attend, please contact the 1999 conference chair, L. Shelton Woods at swoods@bsu.edu. For more information, visit their website <http://www.business.utah.edu/WCAAS/>

Q: What's blue or green, weighs less than 30 pounds, and travels all over the United States?

A: Our traveling trunks! These educational tools hold trunkloads of information, including curriculum guides, books, videos, geology samples, horse skull casts, and much more. Currently, our trunks service 4-6 and 7-9th grade classes, but can be adapted for lower and upper grades. Curriculum guides for 10-12 grades are available. For more information, call Judi Hart at (208) 837-4793.

Calendar of Events

Tours are scheduled throughout the summer on Saturdays. Participants should plan to meet at the Visitor Center in the town of Hagerman 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 National Park Service for more information (208) 837-4793.

July 3 Horse Quarry Tour 9:00 am

Participants will meet at the Visitor Center and travel to the Monument. After a short hike from the quarry parking area, visitors will be able to see fossils and where the previous two summer excavations have taken place.

July 10 Fire on the Range 9:30 am

Program begins at the Visitor Center and then proceeds to the field for a hands-on look at range fire techniques, management, and fire ecology.

July 17 Monument by Water 10:00 am

Bring your own canoe or kayak and view the Monument paddling along the Lower Salmon Falls reservoir. Please call 837-4793 for more information.

July 24 Ancient Stone Tools of the Northern Great Basin 1:00 pm

James Woods, Director of the Herrett Center for Arts and Science will discuss and demonstrate techniques used to fashion stone tools. Mini-exhibit includes replicas of tools used in ancient times. Visitor Center auditorium.

July 31 Horse Quarry Tour 9:00 am

Participants will meet at the Visitor Center and travel to the Monument. Please see July 3 tour.

August 7 Storytelling Time 1:00 pm

Join rangers for an afternoon of adventure, fun, mystery, and discovery as they take you on a journey into the animal kingdom. Children 6 and under must be accompanied by an adult. Each child will receive a bag of goodies at the end of the program! Visitor Center auditorium.

August 14 Three Island Crossing Event (at Glenns Ferry)

August 21 Oregon Bound 1852 1:00 pm

Grammaw Maudie's widowed sister Carrie takes the Oregon Trail in the largest migration ever, nine years after Maudie's journey. Relive the route which is filled with ferries and toll bridges, trading posts, army posts, Bluecoats, Indians, the cholera, and graves. Living History program in Visitor Center auditorium.

August 28 Fossil Identification Day 1:00 pm

Here's your chance to find out what those old bones are that have been cluttering up your closet. Our experts will be on hand to examine and identify your treasures. In the Visitor Center until 3:00 pm.

The Ancient Stone Tools and the Oregon Bound 1852 programs are supported in part by the Idaho Humanities Council.



Beginning July 17th and continuing through August 21st, children in 4 - 6th grade will have an opportunity to visit **Camp Pliocene**. The day camp is for students to have fun learning about the sciences of paleontology, geology, and ecology. Activities will include a look at the quarry, studying animals and plants in the Monument and what our role should be as stewards of the land. Interested participants need to contact Judi Hart at **837-4793**.