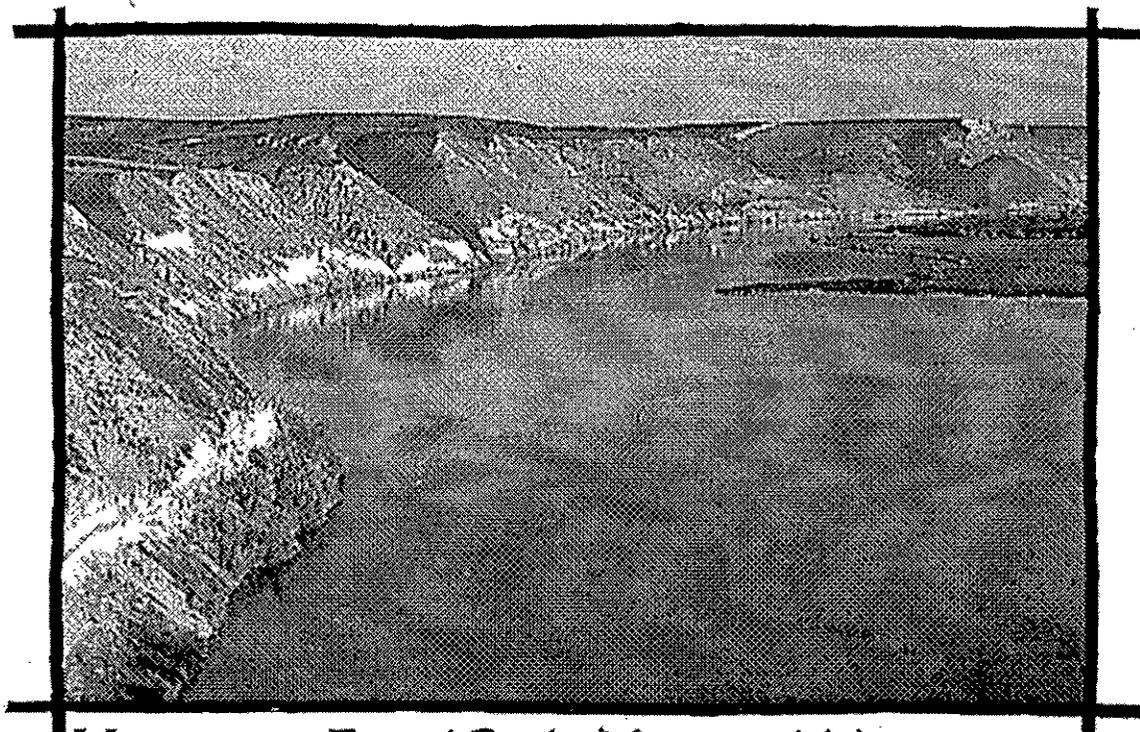
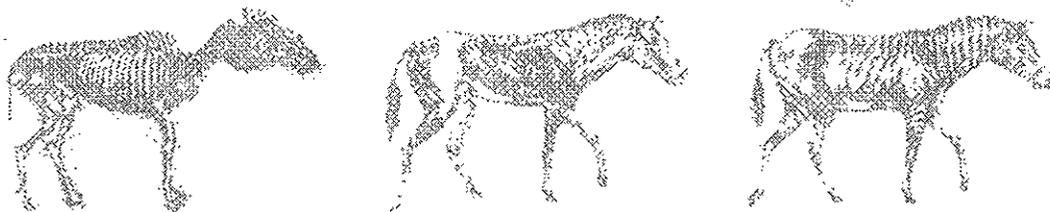


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Hagerman Fossil Beds National Monument



Long-Range Interpretive Plan

PLEASE RETURN TO:
TECHNICAL INFORMATION CENTER
DENVER SERVICE CENTER
NATIONAL PARK SERVICE



Today, Hagerman Fossil Beds National Monument contains one of the richest concentrations of Pliocene fossils in the world. Fossils are the only direct record of long-past life on earth. Few animals or plants ever form fossils; of those that do, few are found. A site like Hagerman is exceedingly rare and valuable.

Prepared by the Harpers Ferry Center Division of Interpretive Planning, Denver Service Center,
and staff of Hagerman Fossil Beds NM

LONG RANGE INTERPRETIVE PLAN

October 1998

Hagerman Fossil Beds

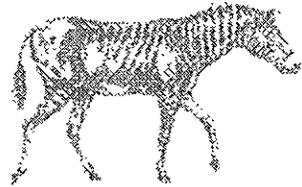
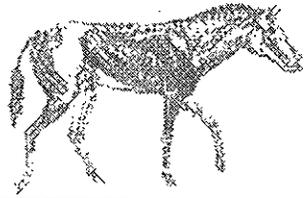
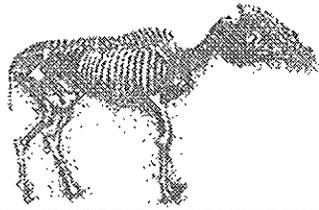
National Monument

Idaho

United States Department of the Interior / National Park Service



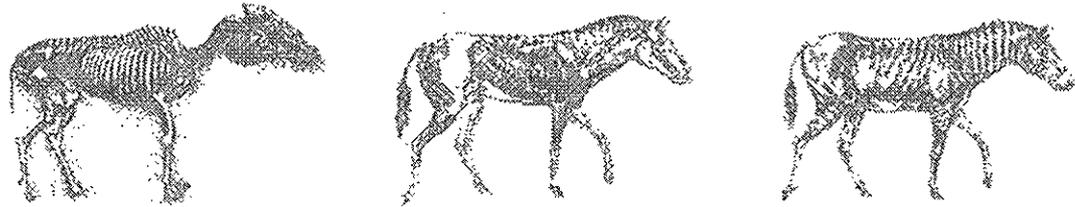
On a hot July afternoon, a herd of zebra-like horses drank from a backwater pool not far from Lake Idaho, pausing frequently to scan the savannah and forest nearby. The prints of a saber-toothed cat punctured the soft sand beside the waterhole. In the distance, several mastodons and llamas grazed on savannah grasses. A ground sloth stretched to nibble tree leaves at the savannah edge. Mice scuttled through dead leaves and grasses. In the pool ducks dove to filter tiny plants and animals from bottom sediments. Pond turtles and water snakes basked in the sun, frogs crouched in the mud. An otter chewed noisily on a crayfish at the water's edge. It was a typical day, 3½ million years ago.



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Introduction

OVERVIEW

Interpretation and education at Hagerman Fossil Beds National Monument will do many things. They will orient people to resources within and near the park. They will tell the stories of the Pliocene, introduce fossils, provide context, explore the science of paleontology, and interpret other natural and cultural resources in the park. They will enlist visitors to help protect park resources, to visit and enjoy with a light touch. And they will do a bit of magic: to help visitors enjoy and make sense of stuff that's dead, mostly small and at first perhaps not terribly exciting.

It's a challenge fit for magicians: drop a few bones in a hat and pull out meaningful, diverse and enjoyable experiences for park visitors. Hagerman's fossils don't move. They aren't from dinosaurs; most of them are from animals smaller than the family dog. Most are the size of the family mouse. And the question about those bones is, (a question common and crucial to all paleontological areas) "So what?"

The magic involves bringing those bones to life (and not only bones — fossilized burrows, pollen, geological strata, potassium/argon fission tracks, . . .). In the minds of visitors, those bones need to be fitted with flesh, mobility, homes, neighbors, dispositions, a place in a food web, identities. They also need a place in our pantheon of things to care about. Which brings us back to "So what?"

And the question about those bones is, (a question common and crucial to all paleontological areas) "So what?"

One of the most important goals at Hagerman is that when visitors leave the Monument they think and feel that this experience has added something to their lives; equally important is that they enjoyed themselves. In fact, one is unlikely to happen without the other. It is also important that visitors have good opportunities to comprehend the ecological significance of the Hagerman story (which is much more than the details of individual fossils).

There will be considerable initial fascination with actual fossils, even the tiny ones. Visitors will be especially interested in horses. Interpretive media and visitors' imaginations will enlarge small items such as mouse jaws or pollen, put flesh on bones, animate inanimate objects, and reconstruct Pliocene environments. Complex stories may be told initially through concrete examples, with additional details available through publications and personal services. The interpretation of paleontology as science will be an important objective; our major tools will be the actual fossils and stories of research that happened and are happening at Hagerman.

The media and programs need to communicate effectively with people of diverse interests, ages, backgrounds, learning styles and abilities. By their nature, parks offer diverse experiences that will appeal to varied audiences. Within any particular medium — for example, exhibits — we need to provide a variety of sensory, behavioral and cognitive experiences. Especially important will be experiences designed for children.

Cultural history stories such as the Oregon Trail and American Indians, and natural history stories such as current ecological relationships will be told. Resources and significance are present and compelling. The interpretation will require careful treatment so that visitors aren't confused and primary themes receive primary attention.

This Interpretive Plan will describe ways to help visitors gain meaning and enjoyment out of their visit to Hagerman Fossil Beds National Monument. It should help visitors (and readers) answer "So what?" for themselves.

PURPOSE OF PLAN

This interpretive plan has three components:

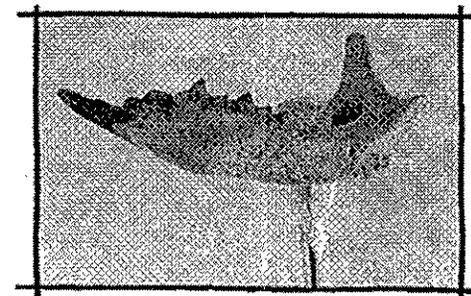
- Describe educational and experiential goals
- Recommend ways to achieve those goals through interpretive facilities, media and programs, and access to resources
- Provide necessary background information

This plan summarizes some five years of workshops, discussions and deliberations concerning interpretation and education at Hagerman Fossil Beds. It is a long-range plan, recommending actions that may occur over the next 15 years. It joins an annual interpretive plan and an interpretive data base to constitute a comprehensive interpretive plan for Hagerman Fossil Beds National Monument (NM). It is prepared in conjunction with a general management plan/environmental impact statement (GMP/EIS) for the monument, and a site selection study/environmental assessment (SSS/EA) for the research center/museum (RC/M). It is the primary source of direction for the design of interpretation and education media, facilities, and programs at the monument.

Relationship to Other Plans

A general management plan/environmental impact statement (GMP/EIS) for Hagerman Fossil Beds NM was started in January, 1990. The project was suspended in FY 1991 due to a reprogramming of funds. In October, 1991, planning began on a site selection study/environmental assessment (SSS/EA) for the research center/museum (RC/M). The GMP/EIS project began again in FY 1993; the FONSI (finding of no significant impact) decision on the SSS/EA was incorporated into the GMP/EIS.

This plan recommends goals and actions that arise from the purpose, significance, themes, issues, and other general considerations described in the GMP/EIS.



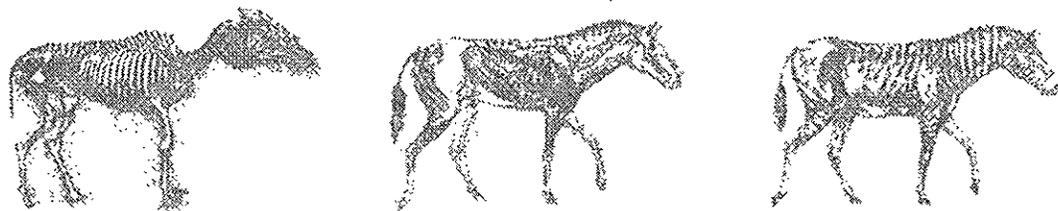
Shrew Jaw

PLANNING PROCESS

Work on the interpretive plan began in 1991 with a 3-day workshop at the monument, which was attended by staff from the park, Pacific Northwest Regional Office, Denver Service Center, and Harpers Ferry Center. This was followed by a workshop at Harpers Ferry Center to involve designers and planners from the media divisions. Members of the planning team also visited the Cincinnati Natural History Museum, Fossil Butte National Monument, Dinosaur National Monument, the High Desert Museum, and the Mount St. Helens Visitor Center. The team met with design and interpretation staff, and observed contemporary approaches to museum interpretation.

The plan initially covered only the research center/museum, since the parkwide GMP project had been suspended. Work renewed in 1995 on the interpretive plan, which was modified to include the entire monument. In April, 1995, a 3-day workshop was held in the park.

This plan represents a consensus of those involved in the planning process. Media recommendations are examples of concepts discussed in planning workshops; they are not intended to be prescriptions for designers.



Site Significance

PURPOSE

THE FOLLOWING PURPOSE STATEMENTS DESCRIBE THE PRIMARY REASONS FOR WHICH THE MONUMENT WAS SET ASIDE. THEY ARE USED TO DEFINE MANAGEMENT PRIORITIES AND ARE CENTRAL TO QUESTIONS ABOUT HOW THE MONUMENT SHOULD BE USED AND MANAGED.

- to preserve for the benefit and enjoyment of present and future generations the outstanding paleontological sites known as the Hagerman Valley fossil sites
- to provide a center for continuing paleontological research
- to provide for the display and interpretation of the scientific specimens uncovered at such sites
- to provide for the orderly and regulated use of and research in the monument by qualified scientists, scientific groups, and students under the jurisdiction of such qualified individuals and groups

These statements derive from the monument's establishing legislation, Title III of Public Law 100-696, November 18, 1988.

The legislation and subsequent purpose statements contains a strong mandate for preservation, research, and education. This plan follows that mandate.

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SIGNIFICANCE

HAGERMAN FOSSIL BEDS NATIONAL MONUMENT IS NATIONALLY AND INTERNATIONALLY SIGNIFICANT FOR THE FOLLOWING REASONS:

- The monument contains world-class paleontological resources. These include the world's richest (in terms of quality, quantity, and diversity) known deposits of fossils from the late Pliocene (Blancan) time period. Many of the monument's fossils represent the last vestiges of species that existed before the Ice Age, or Pleistocene, and the earliest appearances of modern flora and fauna.
- The monument's paleontological resources are contained in a continuous, undisturbed stratigraphic record spanning at least 500,000 years. In addition, the monument's fossil deposits represent what appears to be an entire paleontological ecosystem with a variety of habitats such as wetland, riparian, and grassland savanna. The quantity and quality of information in the monument's sediments and fossils permit scientific analyses that allow comparisons with modern ecosystems and permit studies of environmental changes and biodiversity. In light of the monument's mandate to provide a center for paleontological research, its resources also afford opportunities to contribute new approaches (including applying ecological principles) and to adapt technologies from other fields to the science of paleontology.
- The monument contains the Hagerman Horse Quarry, a national natural landmark recognized as one of the six most important sites in the world regarding the fossil history of the horse (MacFadden 1992). The large number of high-quality specimens at the Hagerman Horse Quarry facilitate studies of the ecology and population structure of the earliest known representative of the modern horse genus *Equus*.

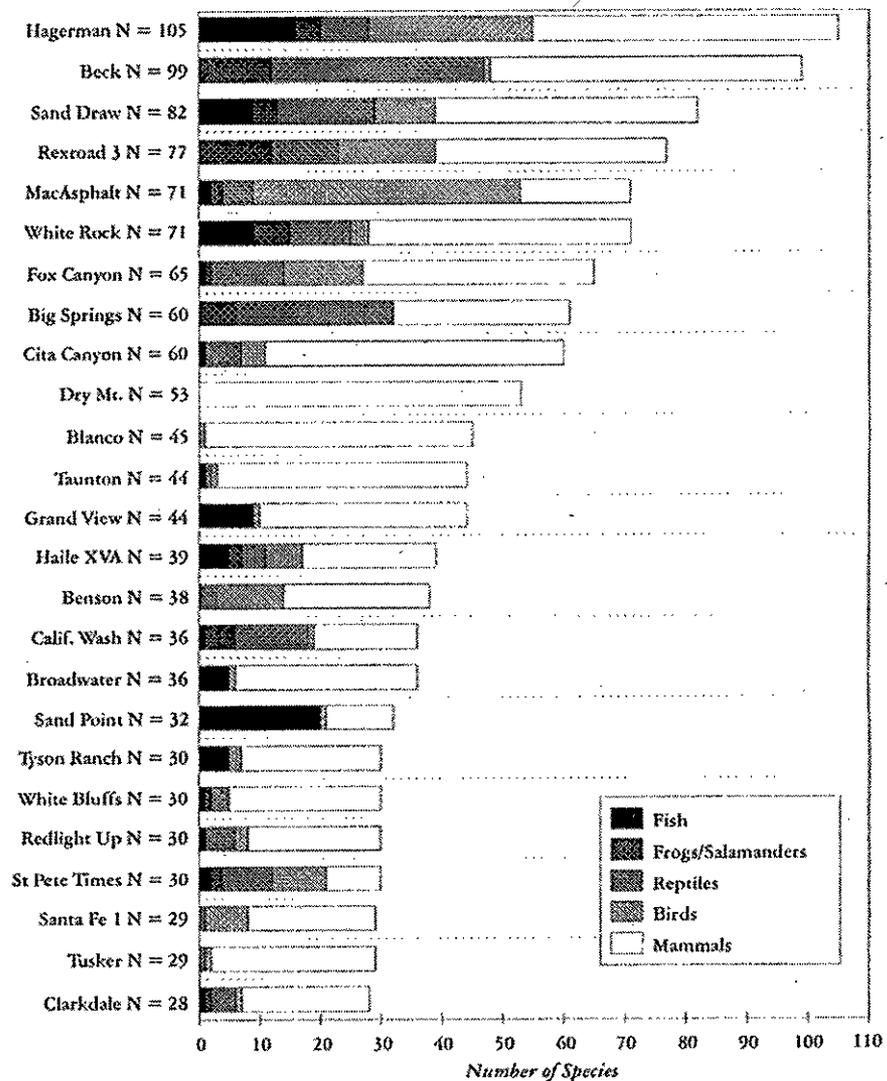
- The history of paleontological research at Hagerman Fossil Beds in many ways parallels the history of the science of paleontology, providing opportunities for education and interpretation about the science as well as the resource.
- The monument is one of three national park system units containing a portion of the Oregon Trail National Historic Trail.
- The monument contains cultural resources potentially eligible for inclusion on the National Register of Historic Places, and has cultural significance to American Indians.
- The monument contains evidence of many aspects of the geologic history of southern Idaho, including cycles of sedimentation and erosion; the history of ancient Lake Idaho, which is linked to long-term climatic change; the cataclysmic and geologically instantaneous Bonneville Flood; and basalt flows that affected the course of the Snake River which borders the monument.

THE FOLLOWING SIGNIFICANT RESOURCES ALSO ARE FOUND IN HAGERMAN FOSSIL BEDS NATIONAL MONUMENT:

- natural quiet, which predominates in many places within the monument
- habitat for sensitive plant and animal species, and portions of several natural ecosystems, including important waterfowl habitat along the Snake River
- one of the primary public federal access points in south-central Idaho to the Snake River and its significant hunting, fishing, and recreational resources
- important opportunities to interpret local and regional history

The monument contains world-class paleontological resources, including the world's richest known deposits of fossils from the Blancan time period.

Blancan Localities Species Diversity



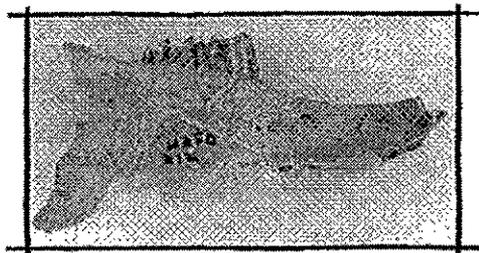
MANAGEMENT GOALS

MANAGEMENT GOALS ARE BROAD STATEMENTS OF THE ENDS TO BE ACHIEVED IN ACCOMPLISHING THE LEGISLATED PURPOSE OF A NATIONAL PARK OR MONUMENT. THESE GOALS ARE INFLUENCED BY THE MONUMENT'S SIGNIFICANCE, THE KNOWN PLANNING CONSTRAINTS, AND THE NECESSARY ACTIONS TO MANAGE AND PROTECT THE RESOURCES FOR THE PUBLIC'S LONG-TERM USE AND ENJOYMENT.

Consistent with the monument's purpose and applicable laws and policies, Hagerman Fossil Beds National Monument will be managed for the benefit and enjoyment of present and future generations to accomplish the following goals:

- Preserve and protect the paleontological resources of the Hagerman Valley fossil sites, including both specimens and their context.
- Provide a center for continuing paleontological research, education, and interpretation.
- Encourage and support scientific research and related activities associated with monument resources and the science of paleontology.
- Achieve appropriate accreditation for monument facilities and programs.
- Provide a range of opportunities for visitors to experience and understand the present and past environmental interrelationships, resources, and values of the monument.
- Preserve, protect and interpret the natural and cultural resources associated with the monument.
- Provide for the health and welfare of monument visitors, researchers, and staff.
- Cooperate with the operation, maintenance, repair, upgrade, and modification of existing electrical and irrigation facilities within the boundaries of the monument as legislatively required, while minimizing any adverse impacts of these activities on monument resources, values, research, or visitors.

- Consistent with the above, strive to be a “good neighbor” and an asset to the long-term welfare of the Hagerman Valley region. Maintain effective relations with local communities, state and federal agencies, and tribal governments.



Rabbit

INTERPRETIVE THEMES

INTERPRETIVE THEMES ARE THOSE IDEAS, CONCEPTS, OR STORIES THAT ARE CENTRAL TO A PARK'S PURPOSE, IDENTITY, AND VISITOR EXPERIENCE. EVERY VISITOR SHOULD HAVE ACCESS TO THOSE IDEAS, CONCEPTS, AND STORIES. THEMES PROVIDE THE FRAMEWORK AND BACKBONE OF A PARK'S INTERPRETIVE PROGRAM. THEY PROVIDE DIRECTION FOR PLANNERS AND FOR DESIGNERS OF INTERPRETIVE MEDIA SUCH AS EXHIBITS, PUBLICATIONS, AND AUDIOVISUAL AND PERSONAL PROGRAMS.

- 1) Hagerman Fossil Beds National Monument contains the richest known late Pliocene (Blancan) fossil deposits in the world in terms of quality, quantity, and diversity.

Fossils include 144 species of animals — 105 vertebrates and 39 invertebrates. They also include 44 “holotypes,” which are the first examples of a particular species found and described. The fossils are very well preserved in relatively undisturbed deposits, which allows us to learn a great deal about the ecological relationships of the area.

The Hagerman fossil assemblage is truly international, including species that originated in many continents, and dispersal between North America and Eurasia and between North and South America.

- 2) The monument's fossil record includes plants and animals (including the Hagerman Horse) that lived at Hagerman about 3½ million years ago in a wet, mostly forested floodplain.

Study of sediments indicate that Hagerman had a number of ecosystems: aquatic, flood plain, riparian, forest, and savannah. The climate may have become gradually drier during the 500,000 years represented by fossil-bearing sediments. Animal remains suggest a

meandering river system providing drinking water for terrestrial species such as zebras (horses), camels and mastodons, and providing habitat for more aquatic animals such as otters, beavers, waterfowl, turtles and fish.

The best-known animal fossil is the "Hagerman Horse," *Equus simplicidens*, which is actually a zebra that lived 3 ½ million years ago; the best examples were found at Hagerman Fossil Beds. It is a one-toed horse, one of several species of *Equus*, and a direct ancestor of modern horses. It is the Idaho state fossil, and has been found in large numbers at the site known as the "Hagerman Horse Quarry."

- 3) National park system areas such as Hagerman Fossil Beds NM are created to preserve nationally significant resources and to be enjoyed by current and future visitors. Visitors can help by leaving fossils in place and respecting all other monument resources.

Fossils are a truly non-renewable resource: once gone, they can't be replaced. Much of their value is lost if they are removed from their context without proper documentation of their locations and deposition.

Fossils are fragile and can be destroyed by many factors including trampling, weathering, and vandalism. It is important for visitors to help protect resources for future generations and to allow for the enjoyment of others. Fossil collecting is prohibited.

- 4) Paleontology is a science that tells the story of past life on earth, as well as revealing valuable insights about life today.

Paleontologists study fossilized materials and other traces of past life — including bones, shells, teeth, soft body parts, plants, pollen, footprints, and burrows — that were preserved by unique geological conditions. Often only a tiny portion of animal or plant remains are preserved as fossils; just a few of these remains are eventually unearthed.

The analysis of fossils reveals changes in species, past climates, the structure and adaptations of life forms, and ecological relationships. Paleontology can also help us understand life on earth today, including the relationships between living things and the earth's climate, and the adaptation of plants and animals to their environment (or their extinction).

- 5) Paleontologists are scientists with the added skills of explorers and detectives who study past life on earth.

Their training usually includes geology, biology, and anatomy in addition to paleontology. Activities include locating and excavating fossils, preserving them from further deterioration, piecing together as much as possible of the specimens, analyzing the fossils removed from a site, studying the area's geology, comparing these results with those from similar sites, writing and publishing their results in scientific journals or books, and keeping up with the rest of the field.

Ancient bones or other materials are compared to modern examples to determine their structure and function. Paleontologists try to figure out an animal's appearance, behavior, diet, locomotion, and other adaptations. Much work is like assembling a jigsaw puzzle with most of the pieces missing. Often, materials have been distorted or damaged by geological or physical forces. Similar remains from different specimens or locations can be compared to answer taxonomic and evolutionary questions. Dating methods such as measuring the deterioration of radioactive elements (e.g., potassium to argon), or locating the find at a certain depth or stratum can provide an approximate age for the fossils.

- 6) There have been several paleontological investigations in what is now Hagerman Fossil Beds NM. The first was conducted by the Smithsonian Institution in 1929.

A local resident, Elmer Cook, showed fossils he found to geologist Harold Stearns, who alerted the Smithsonian. The Institution sent their first Hagerman paleontology expedition in 1929 to investigate the "Horse Quarry." Since that time, many universities and museums have sponsored investigations at Hagerman.

The term "excavation" is applicable for Hagerman only at the Horse Quarry. Elsewhere in the monument, most finds have been made on the surface, with limited digging.

- 7) The primary geological story of Hagerman spans about 4 million years, and includes Pliocene sediments, lava flows, and the Bonneville Flood.

The bluffs contain sedimentary deposits made during the Pliocene some 3-4 million years ago in the streams and backwaters that inundated this area. The bluffs are topped by Pleistocene sediments. The Bonneville Flood carved the present Hagerman Valley about 14,500 years ago. These geological conditions allowed the preservation of an unusual number of fossils at Hagerman. The present Snake River cuts between the sedimentary bluffs on the west and the igneous lava flows to the east.

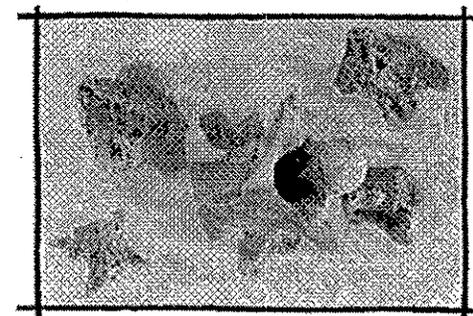
- 8) Hagerman Fossil Beds NM is one of more than 370 units in the national park system, and one of nine national park system areas that preserve and interpret major fossil deposits.

Other agencies also administer fossil parks; there are many within the western United States. Each area preserves a unique chapter of the past.

- 9) People have lived in the Hagerman Valley at least 10,000 years. In the 19th century, American Indians traded fish for other goods with fur trappers and with pioneers on the Oregon Trail, the ruts of which can still be seen in the monument.

For thousands of years, Indians harvested the rich fisheries near the present park boundaries at Upper and Lower Salmon Falls; they harvested other area resources as well. Both of these sites are now altered by dams, power plants and other development. There are several prehistoric sites within the monument.

Historically, Indians now known as Shoshone, Bannock and Paiute lived in this area. Portions of the Oregon Trail remain in the southern end of the park, gouged by oxen and wagons of nineteenth century pioneers on their way to their manifest destinies.



Snake Vertebrae

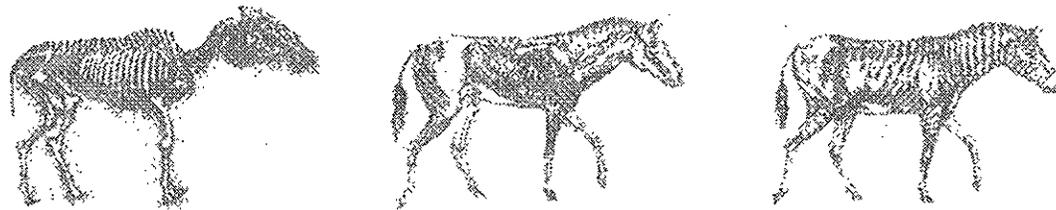
- 11) Irrigated farming, hydroelectric dams, residential development, and increasing ease of transportation are important contributors to the twentieth century history of Hagerman Valley. The national monument will also play a role in the area now and into the 21st century.

Water for irrigation west of the monument was provided by two pumping stations on the Snake River; one was destroyed by a landslide. Excess irrigation water has increased erosion and contributed to landslides, and threatens paleontological resources. Hydroelectric dams provide relatively cheap electricity, but disrupt the natural flow of the river and may threaten salmon migration and spawning. As the population of the Hagerman Valley and surrounding areas increases, pressures mount on open space and other natural and cultural resources. Sound planning is required to promote sustainable development for the benefit of all citizens; this involves partnerships among agencies and organizations throughout the region.

- 12) The present monument looks very different from the way the area looked during the Pliocene. Vegetation is dominated by an arid sagebrush/grass complex with riparian species along the Snake River. Wildlife includes significant seasonal waterfowl populations.

No federally listed threatened or endangered species live in the monument; bald eagles hunt here in the winter.

Some animals attract hunters, anglers, birdwatchers, and photographers. Some — such as flies, mosquitoes, ticks, scorpions, and rattlesnakes — may provide nuisance or safety concerns. Some non-native plants and animals are competing with native species. All are linked through complex, changing, and often fascinating relationships, which may be affected by natural dynamics, visitor behavior, or other human activities.



Existing Conditions

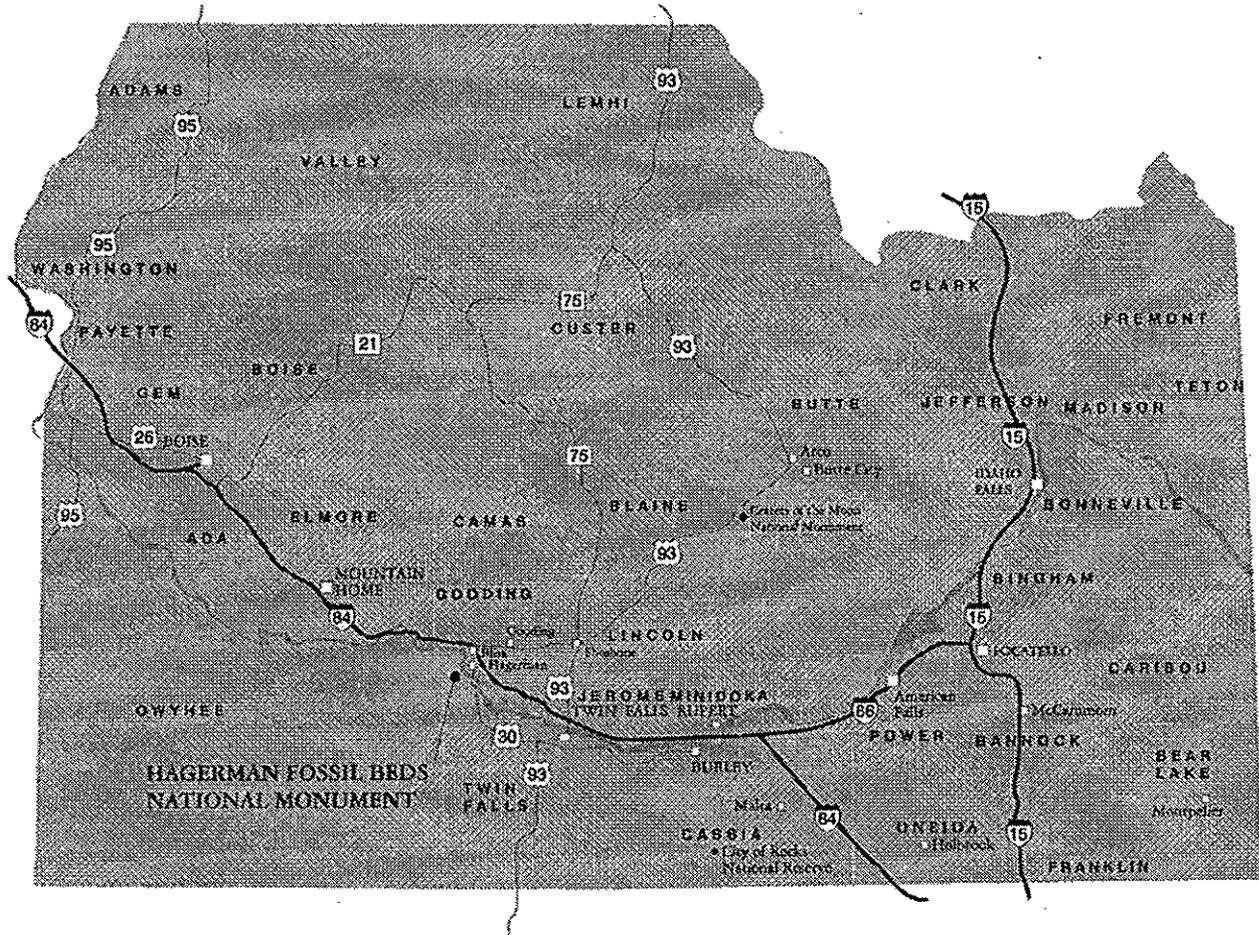
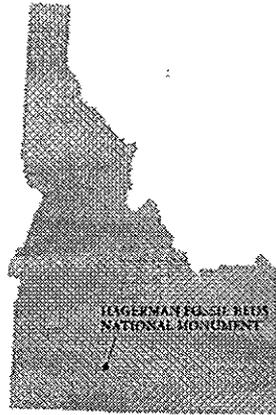
THE MONUMENT

Hagerman Fossil Beds is located adjacent to the Snake River in southern Idaho, 2 miles from the town of Hagerman, 37 miles from Twin Falls, and 12 miles from Interstate Highway 84. It encompasses 4,180 acres and includes over 400 sites where fossils have been found.

The monument rises steeply from the west bank of the Snake River. These slopes are difficult and often unsafe to traverse, and feature numerous landslides. Vegetation is sparse, except around the river and artificial seeps. The west boundary of the monument borders on agricultural lands.

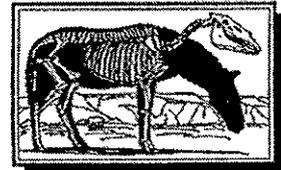
Geological formations consist largely of the sedimentary deposits of the Glens Ferry Formation, and several minor basaltic lava flows. Fossils are found within the sedimentary deposits. Plateaus are topped with a permeable layer of gravel, sand, and silt known as *Tuana Gravel*, and a less permeable layer known as *caliche*. Soils are classified as shallow to very shallow; their available water-holding capacity is very low.

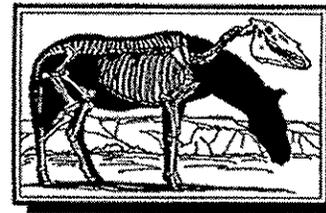
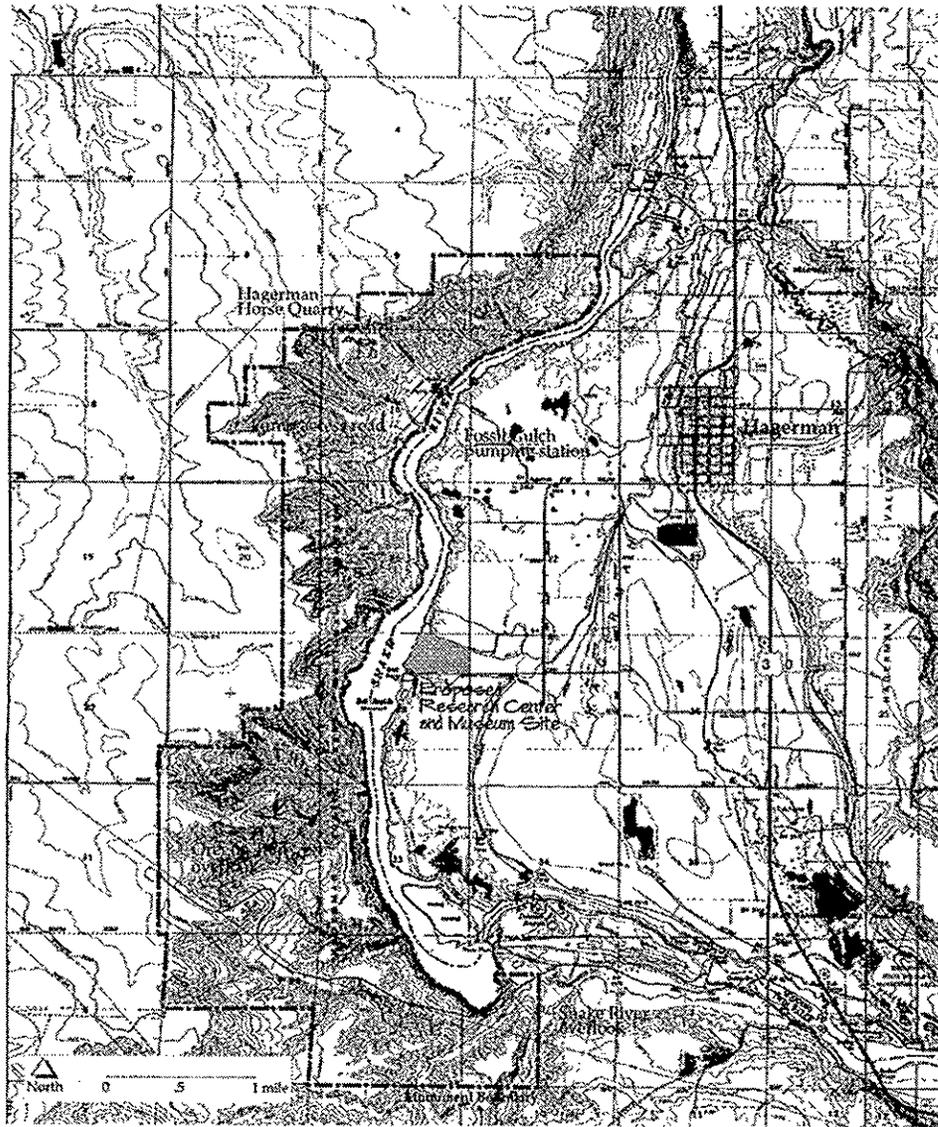
Vegetation is dominated by the sagebrush/grass plant community common to much of southern Idaho. Plant cover is generally sparse, except in riparian areas where Russian olive, willows and cottonwoods form the overstory. Wildlife includes mammals such as rabbits, deer, marmots, coyotes, ground squirrels, and other rodents; birds include sage hens, pheasants, partridge, quail, many species of waterfowl, and golden eagles and other raptors. A variety of aquatic life in the



Vicinity Hagerman Fossil Beds National Monument

U.S. Department of the Interior / National Park Service
300/20018/DSC/Sept. 95



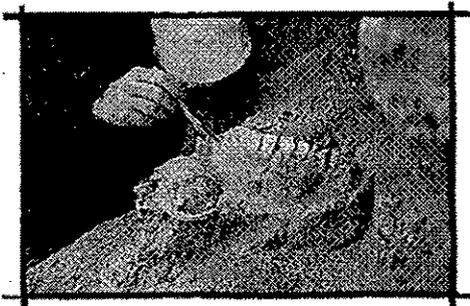


Location

Hagerman Fossil Beds National Monument

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

300/20019/DSC/Sept. 95



Today a fossil tooth, properly curated, can reveal a horse's health and its last meal.

Snake River attracts anglers and conservationists. Reptiles, amphibians, and invertebrates have not been inventoried in the monument.

Paleontology Resources

Paleontology is rather like assembling a jigsaw puzzle with most of the pieces missing. At Hagerman, an unusually large number of the pieces are still in the ground. We have barely scratched the surface of potential research.

More than 400 sites have yielded fossils over a six square mile area of the Glens Ferry Formation that includes the monument. These include over 100 species of vertebrates, including 18 fish, 4 amphibians, 9 reptiles, 27 birds, and 50 mammals, as well as molluscs, plants and plant pollen.

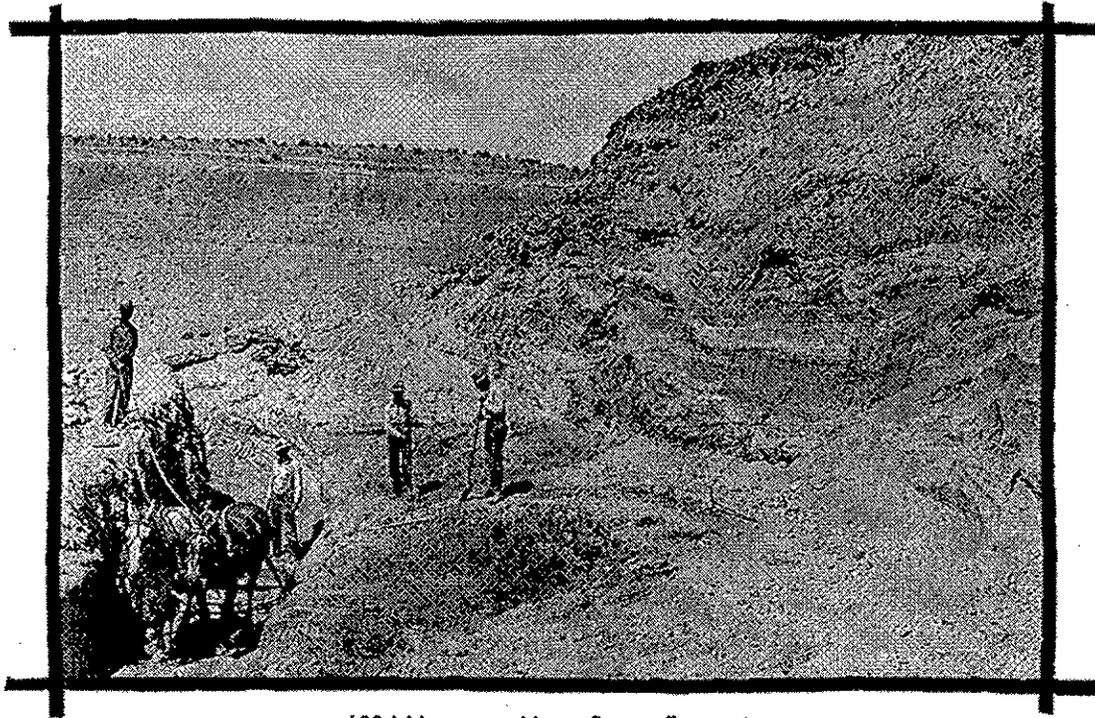
Two recent and notable finds include a complete skull and femur of a camel, *Camelops*, in the Tuana Gravels (previously thought to be devoid of fossils); even more significant is a nonmineralized section of tree that contains original organic materials. Such discoveries will add significant information about climate and environmental relationships.

Extraction of paleontological information requires the preservation of the physical resources. The clock begins ticking when a fossil is uncovered. Wind, water, freezing and thawing combine to measure its life in months, unless it is promptly and properly collected. Private and illegal collecting destroy paleontological information. Proper collecting begins a permanent commitment by the National Park Service to preserve fossils in the park study collection.

Fossils earn compound interest in a study collection. What we can learn from fossils today far exceeds what we learned 60 years ago from the Horse Quarry excavations. Then, a horse's tooth indicated the species, age and diet. Today the same tooth, properly curated, can reveal a horse's health and its last meal. A few hundred teeth can tell intricate stories of the Pliocene environment. Certainly, future techniques will expand our ability to "read the past," as long as resources are preserved.

Cultural History

Humans have lived in the Hagerman area for at least 10,000 years. The earliest evidence shows that Paleo-Indians on the Snake River Plain hunted mammals that are now extinct: mammoths, mastodons, ground sloths, horses, and camels. Later, during the Archaic and Historic periods, small groups camped, hunted, fished, and gathered food throughout the area; anadromous fish from the Snake River were an important source of food. Artifacts have been found at many sites in and near the monument.



1934 Hagerman Horse Quarry Excavation

These investigations uncovered the largest single sample ever found of an extinct species of horse.

Lifeways of many groups changed with the introduction of the horse into present-day Idaho around A.D. 1700. Some northern Shoshone and Bannock groups obtained horses and vastly extended their range. Other groups (such as western Shoshone) eschewed a dependence on horses and maintained their seasonal pedestrian nomadism with emphasis on fishing. At the time of European contact, Bannocks, Paiutes and Shoshones lived in the area.

During the early 1800's, Indians along the Snake River traded fish and other products with fur traders and trappers. This trade extended to emigrants on the Oregon Trail, who began passing by in 1841. The Trail through southern Idaho was typically hot, dry, and dusty; travelers were exhausted and a stop at the Snake River was a welcome respite. Indians were later removed to reservations, and white settlement followed with ferries, mining, farming, ranching, and other activities. The railroad arrived in 1882 and Snake River dams in 1910.

In 1928, a rancher named Elmer Cook, who was running cattle in the present-day monument, showed some fossil bones to Harold T. Stearns of the United States Geological Survey, who passed them on to James W. Gidley of the Smithsonian Institution. In 1929 Dr. Gidley excavated what is now the Hagerman Horse Quarry. Additional excavations were conducted in the 1930's. These investigations uncovered the largest single sample ever found of an extinct species of horse. They also uncovered many other animal remains. In the 1950's and 1960's, paleontologists looked at other areas, and found an astonishing number and diversity of fossils.

The area around the Hagerman Horse Quarry is a national natural landmark. The official brief of the national natural landmarks program reads, "The site contains the world's richest known deposits of Upper Pliocene age terrestrial fossils. The site can therefore be considered to be of international significance."

THE REGION

The Hagerman Valley is now rather arid, averaging less than 10 inches of yearly precipitation. Winters are cold (the average low temperature in January is 19 degrees) and summers are hot (the average high in July is 91 degrees). Prevailing westerly winds can stir up dust. Local

agricultural burning and regional haze can reduce visibility for short periods of time. Otherwise, air quality is excellent, and throughout much of the year this is a very pleasant location.

Scenic values are considerable. The views from the monument bluff tops are expansive and pleasant. Views from the east, with the Snake River in the foreground and the monument bluffs behind, are equally compelling. The basaltic gorge of the nearby Malad River is dramatic. Mountains in the distance draw attention to the horizon. Most adult visitors will find this an appealing setting.

There are many parks, forests, recreation areas, preserves and other outdoor attractions within a day's drive of Hagerman. Many travelers on Interstate 84 are heading to regional recreation areas.

THE AUDIENCE

Likely audience segments include the following groups: local and regional residents on day trips, national and international tourists, schools, amateur and professional paleontologists, scouts, group tours, and other organizations such as service clubs.

Schools and professional groups offer opportunities for more specialized programs and media; facility needs will include classrooms and lab facilities; program and staffing plans should accommodate the need for more in-depth program designs, pre-site and post-site activities, and intensive preparation by interpreters. Tour and school buses call for design consideration such as bus drop-off and pick-up areas, bus parking, and lobbies and information areas of sufficient size to handle pulses of 60 to 100 people arriving at one time.

It is difficult to predict how many visitors will come to Hagerman. There are several factors that may encourage visitation:

- scenic values
- natural quiet
- general interest in fossils and paleontology
- general interest in NPS areas
- close proximity to highways (especially Interstate 84)
- popularity of travel by car or camper
- publicity of a new area, especially with a new research center/museum

Other factors may discourage visitation:

- the monument isn't well known
- most fossils are small or otherwise somewhat "ordinary"
- scenic value isn't overwhelming

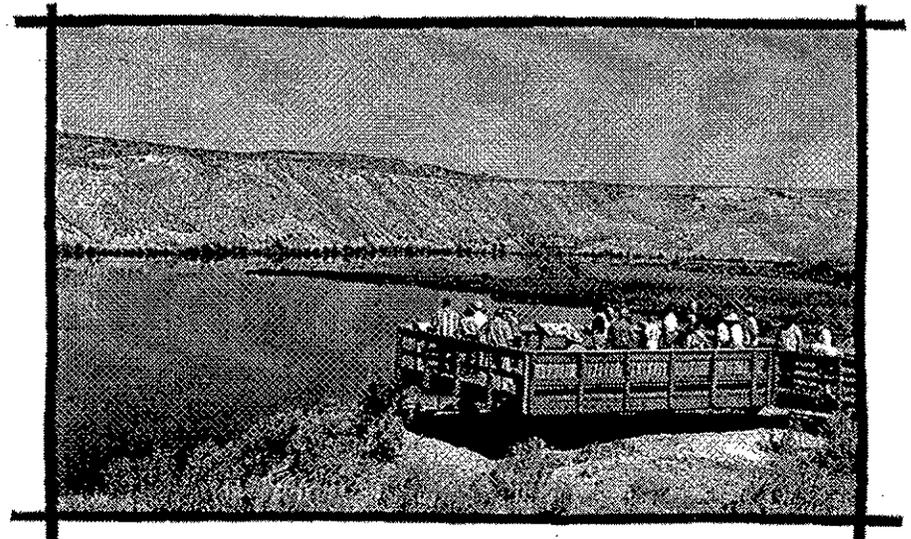
A 1993 study (*The Hagerman Fossil Beds National Monument Visitor and Infrastructure Analysis*), using regional mail and telephone surveys, made the following projections of visitor characteristics:

- 88% indicated they had been on a driving vacation in the last two years, and 94.7% said they would be taking a driving vacation in the next two years.
- 64% travel by car, and another 23.5% travel by motor-home or pickup with camper.
- 75% of the groups include two adults, and about 35% of the groups include children as well.

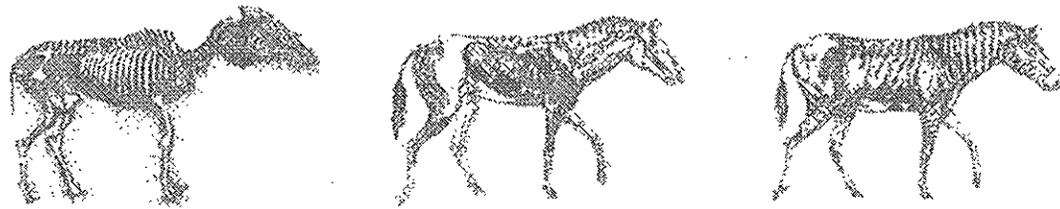
- 64% indicated they would make a planned stop at a national monument, while 56% said they would make an unplanned stop at a national monument.
- When asked if they would stop at a fossil bed national monument, when they had not planned to do so prior to leaving on their trip, 59% of those surveyed indicated that they would either be likely or very likely to do so. If these same individuals knew about the monument prior to leaving on their trip, the percentage increased to almost 67%.
- 70% would like to see fossils at the site.
- 79% said they liked to relax, 64% wanted to be educated, and 40% expected to be entertained while on vacation.
- 84% of likely travelers had some college education.

**1992-1994
Visitation for Similar Areas**

	1992	1993	1994
Fossil Butte	23,800	26,500	25,100
Agate Fossil Beds	18,800	19,500	19,000
Dinosaur	480,400	534,300	480,600
John Day	111,600	131,900	114,900
Petrified Forest	930,000	936,400	922,900



Snake River Overlook



Visitor Experience

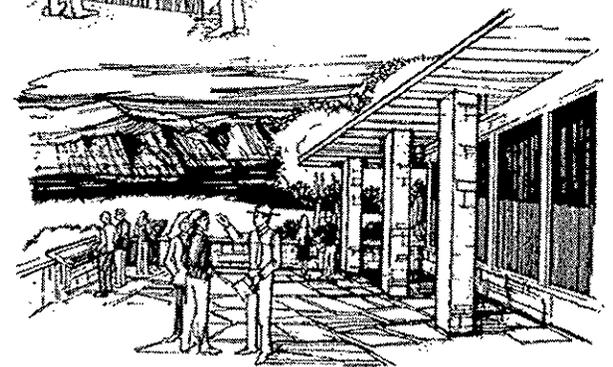
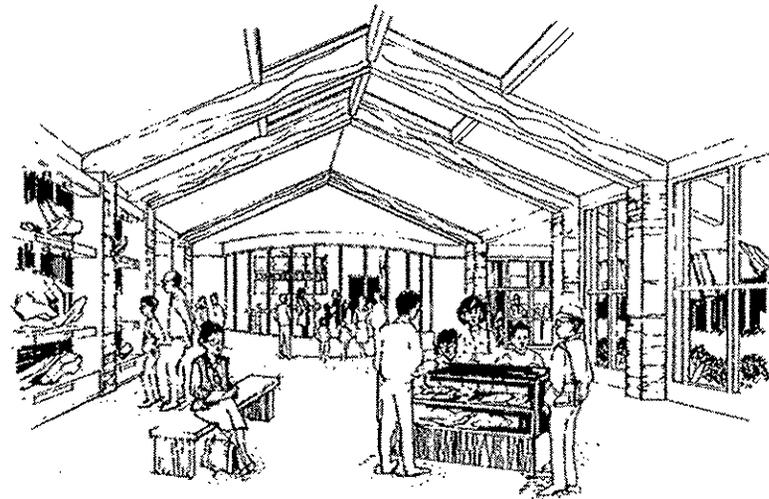
SUMMARY: Visitors will have the opportunity to learn part of the story of life on earth 3 ½ million years ago. They will have opportunities to learn the story in many ways, to choose what is relevant or interesting to them, and to help preserve monument resources, values, and experiences.

Most visitors will likely spend most of their time in the research center/museum. Education, whether for the public or for scheduled groups, will play a major role in the experience for most visitors.

VISITOR EXPERIENCE ISSUES

The nature and degree of visitor access to fossils, fossil sites, and paleontological interpretation must be designed to both protect fossil resources and provide interesting, enjoyable, and educational experiences for a wide variety of audiences.

Several factors may limit visitors' interests in spending time outdoors in the monument: the drive to get to the monument west of the river, seasonal weather extremes, wind-blown dust, the lack of potable water, the presence of rattlesnakes and noxious insects, and the difficulty of viewing fossils *in situ*.



Other factors will encourage outdoor visitation. The monument is a pleasant landscape, particularly during spring and fall. There are scenic views from the bluff tops. The drive across the river won't seem too long to many people. And the fascination of real resources — especially fossils and the Oregon Trail — will attract many.

The complexity of paleontology and the legislatively-mandated scientific purpose of this Monument will require a comprehensive and well-designed interpretive and educational program. Whereas most public interest in paleontology centers on “charismatic mega-fauna” — large animals such as dinosaurs — much of the scientific story of the monument revolves around small creatures such as mice, and around ecological, geological, and evolutionary relationships.

Interpretive and educational programs need to be designed to communicate park stories effectively with people of diverse interests, ages, backgrounds, learning styles, and abilities.

Fossils lying on the surface are vulnerable to unauthorized removal by visitors.

Public law requires access to the monument for hunting and fishing.

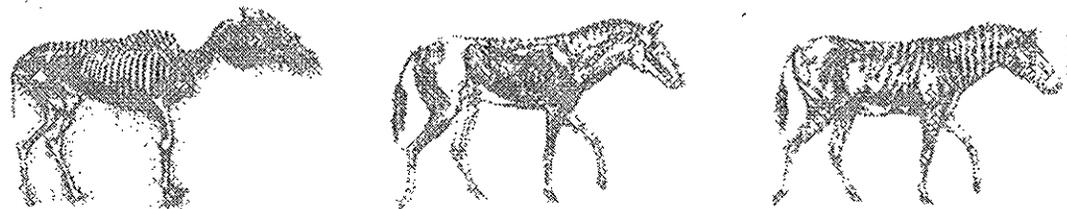
The research mandate and emphasis on paleontology may require a more specialized monument staff than most National Park Service areas.

VISITOR EXPERIENCE GOALS

Visitor facilities and interpretive media and programs will be designed to give visitors opportunities to:

- Understand the significance of park resources, support the need for preservation and research, and appreciate the relevance of the park story to the world today
- Enjoy and benefit from their visit — whether a child or adult, artist or scientist, active or passive learner, hiker or loungeur, whether a foreign, minority, disabled or elderly visitor

- Get a sense of the ecological and human stories of Hagerman, and be able to imagine the Pliocene, prehistoric, and historic environments
- For school and other groups, facilities and resources will support their educational goals, provide "hands-on" experiences and encourage scientific literacy — without unduly disturbing other visitors
- Better understand the complex and fragile interworkings of ecological systems and how we can affect those processes (especially relating to global warming and biological diversity)
- Find their basic service and orientation needs met, including information about nearby attractions, other fossil areas, and the National Park System
- Be curious to find out more about Hagerman, paleontology, geology, the Oregon Trail, American Indians, and/or other relevant stories
- Increase their understanding and appreciation of paleontology and history
- Further develop a feeling of caring about their world, an understanding of the span of life on earth, and a sense that their activities make a difference
- Want to cross the river to visit the Monument
- Feel welcome and want to extend their stay
- Recommend this park to others



Research Center / Museum Facility Program

BUILDING PROGRAM

The research center/museum will be designed to welcome and orient visitors, provide basic visitor services, interpret park resources, support educational programs, support and facilitate paleontological research at Hagerman, and help make the science of paleontology interesting, relevant and accessible to park visitors.

The research center/museum is essential for the park for the following reasons:

- due to the fragility of the resource, the research center/museum will be a moderate drive from the monument itself. There will, however, be a panoramic view of the monument and the historic Hagerman Horse Quarry from the center.
- the center may be most or all of what the visitor remembers of Hagerman Fossil Beds;
- Hagerman's resources include fragile, inaccessible and often extremely small fossils which need interpretation to be interesting, relevant and significant to visitors;

*B*ecause of the nature of the resource and the location of the research center / museum, this building will bear a greater share of interpretation and visitor experience responsibility than in most parks.

- paleontology, a science frequently involving tedious measurements and arcane terminology, also requires interpretation to become relevant and accessible to visitors.

Because of the nature of the resource and the location of the research center/museum, this building will bear a greater share of interpretation and visitor experience responsibility than in most parks.

The research center/museum will be pivotal to continuing the research begun at Hagerman, and will directly involve students, families and other visitors in educational activities. Supervised groups of park visitors and students may excavate fossils, analyze their finds in the preparation lab, and add to the park study collection.

The preparation lab and the study collection will be visually open to the public, with personal and video-based interpretation of research and preparation activities. Seminars will attract not only top researchers, but students and the interested public as well.

The Hagerman research center/museum provides an unequalled opportunity to involve the public in the study of our past and the charting of our future. There is no substitute for hands-on involvement to encourage scientific literacy. Ten miles from a major interstate highway, Hagerman Fossil Beds offers access to a major scientific and educational resource.

BUILDING FUNCTIONS

Museum:

- Orient visitors to site significance, resources and area attractions
- Create an inviting mood, to encourage visitors to stay longer
- Support the environmental significance of the paleontological story, rather than fixing on isolated specimens

- Provide accessible visitor services (restrooms, information, assistance)
- Communicate interpretive stories
- Protect resources through effective interpretation
- Provide educational programs to schools
- Provide visitor access to paleontology research

Research Center:

- Prepare and store fossils
- House and facilitate research by resident and visiting professionals, with important assistance by volunteers
- Interpret work to public
- Promote research and publications dealing with Hagerman
- Facilitate interaction with other paleontological and educational institutions
- Promote the protection of paleontological resources and information



FACILITY RECOMMENDATIONS

Auditorium

The auditorium would function as a theater for both recorded and live programs. It would seat about 80-100 people, with some room for portable seats or floor sitting (elementary school classes) in front of the stage. It should have a sloping floor, good acoustics, and an accessible projection booth. Controls would be located in the booth and in front; control for the automatic video program would also be at the information desk. There would be a low stage with a lectern at one side.

Stage lighting would allow spot as well as flood and colored lighting of the entire stage. A video projector would be used for audiovisual programs, and could be connected to a computer.

Recorded programs would include the park introduction video available on schedule or on request, specialty videos or films available on schedule, and slide programs prepared by park or research staff.

Live programs would include scientific symposia, evening programs, lectures, meetings, environmental education programs, puppet shows, living history programs, and demonstrations.

Storage for props, equipment and a puppet stage would be located back stage. Storage for chairs would also be available.

The projection booth or an adjacent space would provide storage for audiovisual equipment, videotapes, cassettes, CD's, films, and slide programs.

Spaces would be provided at different locations for wheelchairs. The auditorium, stage, and booth would be handicap accessible.

Video Room

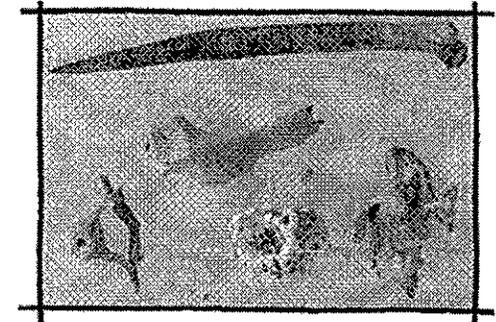
At least two areas are needed to show audiovisual programs and give short talks and demonstrations. The theater would be used mostly for showing the introductory video program; the video room would provide a venue for showing additional video programs and presenting personal programs.

Bench seating in the alcove or room would accommodate some 30 people. This area would give the park the flexibility to show video tapes or videodiscs on topics related to the park. Programs could be offered on a scheduled basis. They might include a video tour of the Preparation Lab and Study Collection, explaining the activities that occur there. They might include programs on excavations of the Horse Quarry, research at another paleontological site, the Oregon Trail, or the prehistory of southern Idaho. Short interpretive talks and demonstrations would be presented there. The room would be acoustically designed for good sound qualities, without bleeding significantly into the surrounding areas.

Both laserdisc and video tape should be available: laserdisc for a set of programs that repeat every hour or half hour, and video tape for special programs prepared by the park, TV stations, universities, or commercial producers. Computers could offer programs on compact disk.

Exhibit Areas

Exhibit areas would be designed in conjunction with preliminary exhibit designs; space should not be too specifically tied to a particular exhibit design, since the building will last far longer than the exhibits, and replacement exhibits may not fit a facility treatment that is suited only for the initially installed exhibits. Wall treatments such as sheetrock over 3/4" plywood will allow flexibility in hanging exhibit materials on walls. Electrical service in exhibit areas should be available in the floor, low on walls, and in the ceiling. Noise abatement will be an important consideration.



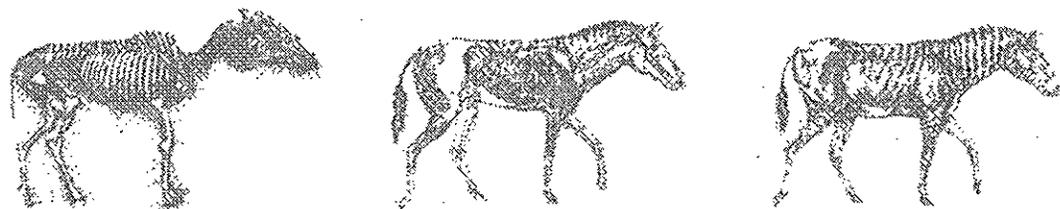
*Fish Spine, Fish & Snake Vertebrae,
Frog Pelvis*

Consideration should be given to providing flexibility in circulation, display, and activity areas. Park and design staff should consider movable partitions, seating, and other exhibit area elements.

Classrooms, Library

Flexible space for educational activities will be available for schools and other groups. A library will provide a variety of media resources for research. Design and access criteria will be determined during facility design.

Considerations for treatments of other areas are described in the Site Selection Study.



Media Recommendations

THIS SECTION CONTAINS OBJECTIVES AND RECOMMENDATIONS FOR INTERPRETIVE MEDIA AND FOR FACILITY TREATMENTS THAT AFFECT VISITOR EXPERIENCE. THEY WERE DEVELOPED THROUGH INTERPRETIVE PLANNING WORKSHOPS THAT INCLUDED PALEONTOLOGISTS, PARK STAFF, AND NPS PLANNERS, DESIGNERS, AND ARCHITECTS. MEDIA RECOMMENDATIONS ARE EXAMPLES OF POTENTIAL APPROACHES THAT MEET MEDIA OBJECTIVES.

RC/M SITE ARRIVAL EXPERIENCE

The preferred site for the research center/museum is located on the east bank of the Snake River, 2 miles outside of Hagerman, Idaho, and about 10 miles from Interstate 84; signs will direct visitors to the center. A significant number of visitors probably will arrive at the Center without much knowledge of its story or resource, attracted by the NPS arrowhead, the association with fossils, or the presence of restrooms. For all visitors, interpretation would begin before they enter the building.

No media are proposed along the drive to the parking lot, which affords a wide and dramatic view of the monument bluffs across the Snake River.

As visitors leave their cars or buses and approach the Center, paleontological and geological themes and impressions would be introduced, and some basic orientation provided.



Borophagus (hyena-like dog) jaw

Approach Sequence Objectives:

- Introduce overall themes and significance of the park;
- Identify the monument and the National Park Service;
- Prepare visitors for the interpretive experiences in the Center;
- Summarize basic interpretation and provide basic orientation when the Center is closed;
- Help visitors start to imagine the Pliocene environment at Hagerman.

Approach Sequence Recommendations:

TIME LINE

- A time line etched in the walkway or represented in some other fashion could introduce geologic time, and relate it to our sense of time.

PARK INTRODUCTION WAYSIDES

- Wayside exhibits (perhaps in a kiosk; perhaps at the 3.5 million mile mark in the walkway) would identify the bluffs across the river, summarize their significance, and invite visitors to imagine the Pliocene at Hagerman.

PLIOCENE PLANTS

- Surrounding vegetation could include those species present in the Pliocene (and existing today).

OUTDOOR ANIMALS

- As visitors walk from the kiosk to the Center, fiberglass models of some of the larger animals could be displayed. Animals and vegetation could be briefly interpreted with small waysides. (These could instead be displayed within a recreated Pliocene wetlands; see p. 45.)

OUTDOOR MAPS, BULLETIN CASE

- Two maps would be mounted on the wall outside the door. One would locate the monument in the context of southern Idaho; the other would locate the center and the monument in their immediate environs, and identify major sites, landforms and resources in the monument.
- There would also be a bulletin case where resource protection, orientation, visitor services, interpretation and other messages can be displayed and updated.

OUTDOOR AMPHITHEATER

- An amphitheater for a variety of programs could be located in the swale below the building.

RC/M ENTRY EXPERIENCE

- The entrance into the lobby would afford a dramatic view of the Snake River and the bluffs of the park. To one side, an attended information counter and a bookstore are visible.

Lobby Objectives:

- Welcome visitors
- Provide a dramatic and scenic connection to the resources across the river
- Introduce overall significance and stories (reinforcing important messages given on approach to center)
- Let visitors know what opportunities are available, and enough information about the different options to help visitors make intelligent choices
- Reinforce the identities of the National Monument and the National Park Service

- Provide several ways for visitors to get information (e.g., personal contacts, maps, brochures, exhibits, computers)

Lobby Recommendations:

LOBBY SIGNS

- Signs would indicate the directions for Information, Restrooms, Bookstore, Exhibits, Research Center, and Auditorium.

LOBBY WAYSIDES

- The view across the river would be interpreted by one or two low waysides. They could locate the Hagerman Horse Quarry, former pump station (landslide) location, features such as Crane Knob and Peters Gulch, and visible geological strata.

LOBBY HEADLINE EXHIBIT

- The significance of the park would be introduced through a piece or display that could include a combination of graphics, sculpture, text and fossils. This would form a multimedia "headline" for visitors. It would be placed where many visitors will be drawn upon entry, but without obscuring the view of the river and bluffs. Most visitors would get a sense of why the park was created, and of being in a special place.

LOBBY ORIENTATION AREA

- One corner of the lobby would include a map, photos and brochures (perhaps consolidated in a binder) to provide area orientation. Several nearby attractions, such as Malad Gorge State Park and the town of Hagerman would be described.

LOBBY PAINTING

- On one wall would be a copy of the Hagerman painting from the Smithsonian Museum of Natural History. This painting is an artist's conception of the environment and many of the creatures present at Hagerman 3½ million years ago.

Seating such as benches (some with backs) will be available in several locations, especially for looking at the view across the river, browsing through books, resting sore feet, or waiting for the rest of the group.

EXHIBITS

Exhibits would be experienced through a variety of senses, including visual, auditory, and kinesthetic. Each individual exhibit would tell its story in the most effective way.

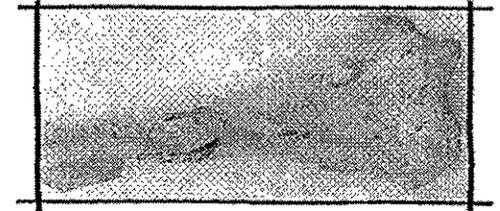
Visitors would be able to experience the exhibits at several levels. For those rushing through, large text and compelling objects and graphics could tell the basic stories of each area. These "headlines" would also help visitors decide which area to spend time in. More detailed treatments could be presented in a less obtrusive fashion, so that masses of text and esoteric terminology are avoided.

Both fossils and casts would be displayed and used in activities. Original fossils would be used when possible. Common fragments that have lost their provenance (e.g., those collected at the bottom of a landslide) could be available for visitors to touch and examine; this should be done under supervised conditions, so the fossils don't slip out the door. It is important to recognize that many visitors care about whether an object is original or fabricated; wherever possible and appropriate, we should tell them.

For simplicity in this plan, both fossils and casts will be called "fossils."

Exhibit Objectives

- Display items (mostly fossils) associated with the park story
- Help visitors understand the related disciplines and activities that make up paleontology
- Help visitors interpret fossils: their origins, identification, morphology, adaptations, and connections to larger groups and concepts (including taphonomy)



*Sabertooth cat humerus
(upper arm bone)*

- Interpret small or subtle objects by magnification of the objects or the characteristics that make them significant
- Provide concrete experiences and examples to illustrate often esoteric but important concepts
- Help make the obscure, esoteric yet potentially fascinating world of paleontology accessible and interesting
- Tell stories that can't be as effectively told elsewhere in the park
- Involve visitors in the scientific processes of paleontology, both directly and vicariously

Exhibit Recommendations

The exhibit area could be divided into the following areas:

Field paleontology
Laboratory paleontology
Geology
Pliocene environment
So what?
Natural history
Cultural history

Each area would be identified. Divisions would subliminally support the seven major subjects, with various colors, textures, partitions, etc. Sound baffling would be a desirable result. Visitors would be consciously aware of the different areas, and be able to choose where to go. Visitors could be encouraged through building layout and exhibit design to follow a certain progression; a strict linear experience would not, however, be required.

FIELD PALEONTOLOGY

This area would interpret field activities of paleontologists, the history of paleontology at Hagerman, fossilization, and resource management and protection issues. Visitors would learn what a taphonomic block is, how paleontologists interpret the distribution of fossils, and what other traces (burrows, footprints) can be found. They could trace a fossil on its 3 ½ million year journey from living bone to skeleton to mineralized fossil to collected specimen labeled and mapped and in a plastic bag headed for the lab.

Exhibit Ideas:

SO WHAT HAPPENED TO THOSE HORSES?

Exhibit illustrating and explaining alternative scenarios (including the preferred alternative) leading to the extraordinary deposits in the Hagerman Horse Quarry. Graphics, text, objects, models and/or interactive computer could be used.

TAPHONOMY: WHAT THE DISTRIBUTION TELLS US

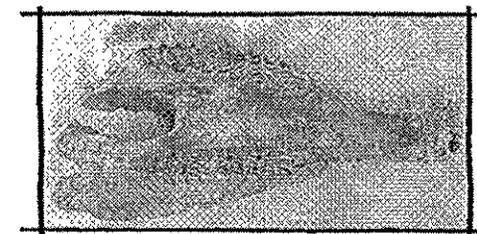
A taphonomic block with bones in place as they were found in the field, with text interpreting what the fossil locations, distribution and relationships may tell us.

BONES TELL US ABOUT NATURAL HISTORY AND PALEOECOLOGY

"Bones in cases" — exhibits of disarticulated bones and articulated skeletons representing the diversity of species found at Hagerman. Label text would discuss the paleoecology and natural history of the specimens.

FOLLOW THAT FOSSIL: FROM FIELD TO LAB TO COLLECTION TO PUBLICATION

This would be part of a series of exhibits that follows one or more fossils from discovery and mapping in the field to the laboratory and beyond. At this stage, field techniques would be explained, including the recording of location and distribution information. This exhibit would provide an overview for most visitors, as well as an example to be followed by those who choose the following activity.



Horse Palate

DO-IT-YOURSELF (LEARN-IT-YOURSELF) EXCAVATION

A "sand box" would be salted with fossil casts that could be mapped and excavated by visitors, who then take them to the laboratory area to measure, identify and interpret these finds. Instructions and a key to the box could be checked out at the front desk. This activity would be designed primarily for families, schools and other groups, but could be used by individuals as well. Care would have to be taken to avoid giving the messages that fossil interpretation is easy, and that people should look for them and collect them.

LABORATORY PALEONTOLOGY

In this area visitors would watch fossil preparation in action (though "action" may seem a bit overstated). They would learn to analyze their finds from the field area. They would learn of the values of collections, the nature of evidence in paleontology, and the measurement and interpretation of variation among individuals and species.

Exhibit Ideas

PREPARATION AREA

The preparation area would be a focal point. Visitors would watch preparators work with fossils. Preparators would include park staff, volunteers, students, and visiting paleontologists. Visitors would view preparation work through a window. A visitor-operated video camera could show close-up and detailed views. Much work would be conducted near the window in full view of visitors. Other work requires greater concentration, and would be conducted farther from or out of public view. Preparation activities would be described by low waysides in front of the window (in addition to a video shown periodically in the video room). This would make the lab an effective interpretive attraction even when it's not in use.

FOLLOW THAT FOSSIL: FROM FIELD TO LAB TO COLLECTION TO PUBLICATION

This is the second part of the series of exhibits that follows one or more fossils from discovery and mapping in the field to the laboratory and beyond. At this stage, laboratory analysis techniques

would be explained, including preservation, measurements, comparisons, and formations of hypotheses.

DO-IT-YOURSELF (LEARN-IT-YOURSELF) EXCAVATION

Also second in a series; visitors would bring their fossils from the "sand box" to the laboratory area to measure, identify and interpret these finds. Exhibit stations with panels and interactive video could guide visitors through a systematic analysis of the fossils they excavated from the Field area "sand box." Alternative programs could be targeted at different age and skill levels. Again, there are dangers that the simplification needed for public or group activities may be perceived as applying to the science of paleontology.

DEMONSTRATION AND EXPLORATION AREA

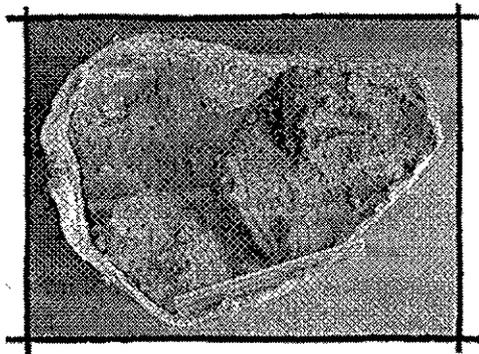
There would be a demonstration area where staff and volunteers can demonstrate and help visitors with their paleontological investigations. It could be furnished with low tables, perhaps one with a sand box; there should be seating for visitors. An ideal location would be in a corner or along a wall with a door in back of the tables leading to the research area.

WHAT HAVE THESE BONES TOLD US?

"Bones in cases" in this area would include examples for which important and interesting conclusions were discovered through the analysis of the fossils. An example is the comparison of two species of rabbits. Analyzing the dimensions of their femurs and other skeletal patterns leads to an hypothesis of different niches exploited by the two species. (Campbell, 1969)

HOW TO EXPLAIN VARIATION

This exhibit would explore the nature of variation. One question to be posed and answered: how do we know whether this smaller individual is smaller because it is a juvenile, a female, a small male or a different species? This exhibit can also discuss the need for large numbers of specimens in order to effectively interpret variation. One possible approach would use variation in modern breeds of horses.



Peccary (partial skeleton in block)

GEOLOGY

This area would tell parts of the regional geological story, including geomorphology, sedimentology, and stratigraphy. Visitors would have the opportunity to find out why the land looks the way it does today, what it looked like during the Pliocene, and how geology is an integral part of paleontology.

OBJECTIVES

Most visitors who experience the geology exhibits will understand:

- how physical forces shaped the land in the Hagerman area;
- what the region (Idaho/Hagerman) looked like during the Pliocene;
- how plants and animals get buried and become fossils, and how we interpret the layers of sediments (sedimentology and stratigraphy);
- why the stories of fossils (paleontology) can be told only by knowing as well the story of the surrounding earth (geology).
- basic information and concepts of geology necessary to understand more specific information

Exhibit Ideas

WHY DOES THE LAND LOOK THAT WAY?

An exhibit illustrating and explaining general principles of geomorphology, with examples from the Hagerman area. The basic outlines of geomorphology, sedimentology and stratigraphy, as they pertain to Hagerman, can be interpreted with exhibit panels that employ graphic illustrations, photographs, samples of strata from the Monument, and text. Sedimentology and stratigraphy can be interpreted together, exploring the basic concepts and the specific descriptions of Hagerman.

GTV: GEOLOGY TV

A video program that depicts and explains the geological changes that created the Pliocene environment (especially the Glens Ferry Formation) at Hagerman, and the changes that resulted in today's landscape. The changes in the Snake River and the Bonneville Flood would be included.

HOW ARE FOSSILS FORMED? WHY ARE THEY SO RARE?

This story could be told with an exhibit panel and a taphonomic block, with text, graphics and simulations of fossil stages. It might also be interesting to discuss the degree of mineralization in different bones.

DO YOU KNOW THE TIME?

A geological time line would be depicted on the wall or on a panel. The difficult concept of geological time would be introduced on the outside walkway, repeated in greater depth here in the exhibit room, and referred to by other interpretive media and programs. It is important not to get too detailed or technical in the geology area. Paleontology is the main story. Geology will be interpreted to help visitors understand the paleontological story, and to answer common questions about the surrounding landforms (for example, why does the land on opposite sides of the Snake River look so different?).

PLIOCENE ENVIRONMENT

This is the area where we help visitors recreate in their minds a sense of what Hagerman was like during the Pliocene. Here also we interpret the paleoecology of the area.

The Pliocene Environment would be the highlight indoor experience for most visitors. It would appeal to all ages and backgrounds, and most types of learners. This kind of multi-sensory and aesthetically appealing experience would help motivate visitors to attend subsequently to more didactic experiences.

Exhibit Ideas

PLIOCENE ENVIRONMENT: WHAT MIGHT IT HAVE BEEN LIKE?

This would be a restful yet interesting area. Two circular dioramas (in the round) would depict a savannah and a wetland scene. Life-size plants and animals would be fabricated. The plants and animals chosen would be those that illustrate key ecological relationships discussed in the text. Wayside-type exhibits could identify species and discuss key relationships. They would be located to allow people to look back and forth while identifying species, but not to interfere with the view of the environments themselves. Ample bench seating would allow people to sit while reading and while viewing the two environments. Barriers (such as railing, plexiglas) would protect the models from disturbance.

The Wetland environment could contain species such as turtles, water snakes, crayfish, otter, beaver, muskrat, fish, snails, clams, ducks, herons, and perching birds. Vegetation could include emergent aquatics, riparian, and swamp/bog species that have been identified at Hagerman or other similar Pliocene locations. Ecological discussions could focus on food webs, adaptations to the braided stream environment, and similarities and differences from wetlands today.

The Savannah environment could include horses, a ground sloth, dirk-toothed cat, peccaries, hyena-like dogs, ground squirrels and mice. Vegetation might include pines, oaks, birches, shrubs, grasses, forbs and fungi. Exhibit panels and/or a background mural could depict mastodons, camels and other large specimens that can't be economically fabricated. Ecological discussions would parallel those of the Wetland.

This area would be designed to encourage "right brain" activities involved with imagination and contemplation, as well as the more "left brain" activities such as reading, comparing, and classifying. The two types of activities would be complementary.

ALTERNATIVE METHODS

There are several ways to help visitors imagine the Pliocene environment at Hagerman, including video animation, outdoor environmental recreations, "Pepper's Ghost" animation with mirrors, paintings, interpretive talks, wayside and indoor exhibits, and publications with graphics.

A facsimile of the Pliocene environment could be recreated outdoors; most of the vegetation identified at Hagerman during the Pliocene exists today, and could be planted in a recreated wetland. Animal models could be displayed. Animals and vegetation could be briefly interpreted with small waysides or a brochure.

SO WHAT?

This area would offer visitors opportunities both for reflection upon their Hagerman experience, and encourage them to take advantage of additional experiences. It would pose the question "So what?" and encourage visitors to develop their own answers. It would describe other similar areas to visit, and tell stories of others who have become interested in paleontology or parks. Particular emphasis would be given here to children's interests.

Exhibit Ideas

SO WHAT?

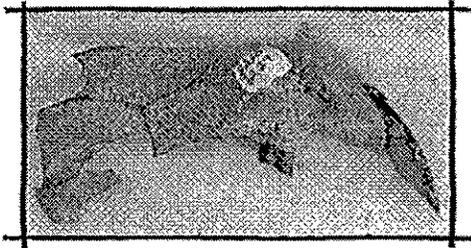
Visitors would read short quotes from different paleontologists and other scientists and humanists about the value of paleontology, and how it helps us understand and deal with issues such as biological diversity and global warming.

WHAT ELSE?

A panel with maps, photos and text would identify, locate and briefly describe other paleontological areas open to the public.

WHAT'S DOING AT HAGERMAN?

Changeable exhibits would describe current and future research at Hagerman, including new discoveries, timely issues and concerns (e.g., threats to salmon, global climatic change), and opportunities to get involved as volunteers. These exhibits would be of special interest to repeat visitors. Monument staff would update these exhibits periodically. These exhibits are a high priority.



Beaver jaw

NATURAL HISTORY

A small indoor exhibit area would interpret the contemporary natural history of the monument. Visitors would be introduced to monument ecology, which would be related as appropriate to paleontology and cultural history.

Natural history topics would include the ecology of sagebrush grassland and riparian zones at Hagerman, emphasizing concepts such as adaptation and evolution that are also applied to understanding past environments such as the Pliocene.

Objectives

- help answer visitors' common questions about natural history of area
- enhance visitors' enjoyment of their site visits
- relate present environment to past environments
- introduce ecological communities in area
- introduce common and interesting residents
- introduce endangered species (are they future fossils?)
- encourage a sense of stewardship

Exhibit Ideas

RESOURCE MANAGEMENT

Topics such as resource protection, endangered species, habitat preservation and restoration, fire management, and biological diversity could be interpreted and kept current with changeable exhibits.

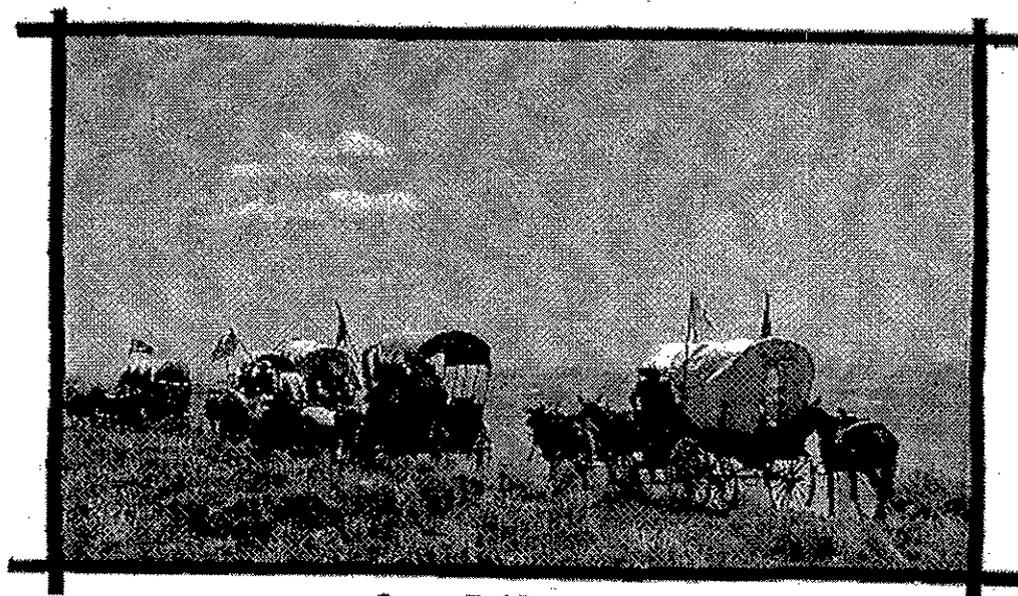
MONUMENT ECOLOGY

Exhibits would introduce visitors to the highlights of park ecological communities, primarily to motivate and prepare visitors to experience the resources themselves, introduce a sense of place, and relate current resources to other paleontological and cultural themes.

CULTURAL HISTORY

This area would provide a brief historical overview of the monument and immediate environs, emphasizing prehistoric and historic Indian life, the Oregon Trail, and subsequent settlement and development. The history of paleontology at Hagerman should be placed in context with paleontology worldwide, and with other historical changes.

Cultural history topics to interpret would include historic activities in and around the site (notably the Oregon Trail, American Indian habitation, placer mining near the research center/museum, irrigation and settlement), and prehistoric habitation and activities in the area of the monument. As with paleontology interpretation, the values of preserving remains and information would be stressed. Archeology and history could also be interpreted, to answer the question, "How do we know?" and to emphasize the importance of preserving evidence.



Oregon Trail Reenactment

Exhibit media could include artifacts, photos, artwork, and first-person accounts. The exhibits would enhance visitors' appreciation of resources, their ability to picture previous activities in the area, and their ability to comprehend experiences such as traveling on the Oregon Trail, and being invaded by people more numerous and powerful.

Personal programs such as living history and interpretive demonstrations would complement exhibits. Programs could be offered in a variety of locations. Off-site school programs would be especially useful. Partnerships with the local historical society and others would enhance the scope and effectiveness of programs.

The cultural history story offers an excellent opportunity to engage monument neighbors and those who may be interested in more recent events.

AUDIOVISUAL ARTS

Audiovisual media such as videotapes, slide shows, audio recordings, and computer-based programs would be important elements in the Hagerman interpretive program. There would be an introductory video program, other video programs on topics relating to interpretive themes, and audiovisual media in association with exhibits. Audiovisual programs can be powerful and compelling; they can capture the attention of a wide variety of visitors; of particular value is the appeal to young visitors.

Audiovisual Ideas

INTRODUCTORY VIDEO: HAGERMAN OVERVIEW

Objectives:

- introduce basic themes and significance of the park

- provide context for appreciating other media, facilities and experiences
- establish an emotional connection with visitors
- motivate visitors to spend time in and around the RC/M, and visit the area west of the river and other regional sites

Recommendations

This program could be the first significant park interpretive experience for many park visitors; it would play an important role in their visit. It would last between 10 and 20 minutes.

The program should describe the overall story and significance of Hagerman Fossil Beds, including paleontology and natural and cultural history. It should be a motivational piece, to encourage visitors to experience the RC/M, and outdoor resources. A very short overview of paleontology and geology should be given.

In the video, visitors might meet paleontologists working at Hagerman, and watch as fossils are found, mapped, and moved to the RC/M, measured, classified, recorded, and stored in the collection. They could hear as evidence is discussed, hypotheses formed, and further research planned. They would learn why fossils found by visitors should be left in place and reported. They could see old photos and hear descriptions of early paleontology expeditions at Hagerman.

Visitors could hear stories (watch living history recreations, listen to music) of American Indian life in the area, and emigrant life on the Oregon Trail. They could learn of the present living communities of the park, and the values of preserving and studying monument resources.

This program would be primarily intended as an introductory piece for those who will see much of the rest of the park. For a small number of visitors, the introductory video might constitute most of their park experience.

Other Audiovisual Programs

GTV: GEOLOGY TV

In the geology exhibit area a video program would summarize the area's geological history. This would include computer animation of the geological changes that led to the Pliocene environment at Hagerman, and to the landscape that we see today.

PREPARATION AREA

There would be a short video tour of the Preparation Area and the Study Collection. This would be designed to interpret research activities, and to make a view of the Preparation Lab intelligible and enjoyable, even when no research activities are occurring there. This would be shown in a small viewing area contiguous to the Preparation Area, so visitors can maintain a close correspondence between actual preparation activities and those explained on the video.

DIRECT REAL-TIME TV

Using technology such as slow-scan video or another video format, visitors would be able to watch a field paleontology investigation from the RC/M. Ideally, this would be an interactive program, with visitors able to ask questions; however, interactive technologies are often expensive, which might limit the feasibility of this component. Parts of the program could be accessed through the Internet. Sites would include Hagerman, and could include sites around the world (although slow-scan video transmissions would probably be limited to the immediate environs). Video transmissions would allow visitors access to an essential activity while protecting fossil sites, and allowing access to distant areas.

HAGERMAN PALEONTOLOGY

In the video alcove, a program of interviews with paleontologists, many of whom have worked at Hagerman, would give both a human and historical perspective on 70 years of paleontology on the banks of the Snake River.

SPECIAL TOPICS

Additional video programs should be produced, and commercially available programs should be purchased, on a variety of topics that relate to Hagerman interpretive themes. Many of these may be incorporated into exhibits.

WAYSIDE EXHIBITS

Wayside (outdoor) exhibits would be placed in accessible locations where there are relevant and interesting stories to tell about that place or about places visible from the exhibit. Generally, trailheads, trails, overlooks and road pulloffs are prime candidates as wayside locations.

All waysides in the monument should display the same design scheme and materials; exceptions might include temporary waysides or those requiring special treatment due to unique requirements of subject matter or site characteristics. Embedded fiberglass is the material of choice. All waysides should be accessible to unassisted visitors in wheelchairs, unless resource conditions don't permit access (in those cases, substitute media such as brochures would be used if interpretive messages represent primary themes not interpreted elsewhere). Waysides should be situated so that they are visible but not intrusive.

Primary sites for waysides at Hagerman include the Oregon Trail overlook and trail, the Snake River overlook, the trailhead to the Hagerman Horse Quarry, on trails around the research center/museum, and inside the center beneath windows showing panoramic views. Topics could include the Oregon Trail, Indian history and prehistory, hydro-electric power, resource management, fossils, the Hagerman Horse Quarry, erosion, the high-desert ecosystem, vulcanism, geology, animals, the Snake River, placer mining, the farmstead at the RC/M site, and landscape features.

A wayside exhibit plan will be coordinated with Harpers Ferry Center; it will specify locations, topics, text, and graphics for waysides in the monument.

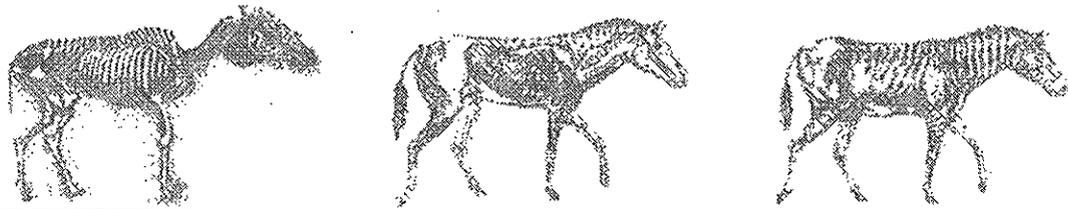
PUBLICATIONS

Publications would include books, pamphlets, folders, site bulletins, maps, and CD-ROM's. Free publications would include the monument Map and Guide (being produced by Harpers Ferry Center) and park-produced site bulletins providing general interpretive overviews and more in-depth treatments of special topics. Publications and other theme-related interpretive items would be offered for sale by the cooperating association.

Most commercially-available books on paleontology deal with dinosaurs or with eras other than the Pliocene. Efforts should continue to locate more relevant commercial paleontology publications (e.g., those covering fossil mammals, the Pliocene, horses).

A park handbook should eventually be produced, since the stories are complex and a commercial publication on Hagerman isn't available. It could be produced by the cooperating association, by a partner (such as the Hagerman Fossil Council, Inc.), or by a commercial publishing company specializing in park publications. The advent of the research center/museum would bring enough visitors to make such a venture commercially viable.

Environmental education curricula and outreach materials would be produced by a variety of cooperative arrangements involving the park, cooperating association, system support office, Harpers Ferry Center, and partners such as school districts, universities and the National Park Foundation.



Personal Services

EDUCATION

There would be a major emphasis on educational programming for schools and other groups; this emphasis is called for in the monument's enabling legislation. Both off-site and on-site programs would be offered, with generally greater priority for programs in the monument. All grades and ages would be served. Programs would correspond both to park themes and to school curricula, with themes being the primary guide.

There is a large, increasing and eager audience for education programs. College classes in paleontology, geology, and history visit the monument from across the country. School districts from Twin Falls, Boise, Pocatello and dozens of smaller communities (including, of course, Hagerman) currently send students on field trips. The population of the area is increasing.

Scheduled groups potentially would use all areas open to the public, so design of public space would need to accommodate groups of up to two classes (80-100 people) arriving at one time, and to minimize disruption to other visitors. Areas designed specifically for education programs would be needed as well: individual labs or classrooms are necessary for many of the indoor activities. Many groups would also travel to the monument on the west side of the river or hike the trail outside the RC/M.

Education programs would include a variety of activities, with an emphasis on participatory approaches that include "hands-on" activities with fossil casts or materials that have lost their provenance, and actual involvement in paleontology and geology research activities. More intensive activities with older students could include field seminars, workshops, and volunteer opportunities. Younger students would receive shorter programs, but still have access to resources and simple scientific activities such as measuring, comparing, and hypothesizing. Other activities would include interpretive talks, demonstrations, discovery activities, worksheets, and guided hikes. All students should be given at least an introduction to basic tenets of science. Programs would be conducted by rangers, teachers, trained volunteers, or a combination of these.

Education packages should be developed for specific grade levels and subjects. These should be developed with teachers and other partners; they should correspond to park themes and school curricula as well as to the capabilities of each grade level. These should contain lesson plans, background information, evaluation guidelines, and the tools needed to do the activities. Packages could be developed for cultural and natural history as well as paleontology. Some packages could be developed to be sent off-site, or to be used by teachers on their own.

Special workshops and seminars would be offered to allow more in-depth activities for interested students and the public. These could be on a fee and reservation basis, and offered in cooperation with a friends group or cooperating association.

Off-site programs would include interpretive talks, slide shows, and demonstrations. Interpretive trunks would contain cast fossils or those without provenance, measuring equipment, comparison illustrations, directions for inquiry activities, and background information; these could be available for schools and other groups to borrow.

Education programs on cultural and natural history would be offered as well; these would also focus on resources and stories that relate directly to the monument; these could also be given in the monument and off-site. Cultural history programs would be enhanced by the use of photographs and other audiovisual products, original and reproduction objects (including clothing), and techniques such as living history. The use of such items in the same locations where past events occurred (such as a program on the Oregon Trail or Salmon Falls trading) could be very effective.

Even though the primary story of the monument is paleontology, there are many ways that students can develop an interest in park stories and resources. Language arts, mathematics, chemistry, biology, engineering, geography, history, art, literature, and music can be taught along with paleontology. Subjects connect and overlap: interest in fossil horses leads to the history of the Horse Quarry excavations, which is part of the history, prehistory, and geologic history of the area.

Partnerships will be vital in reaching important constituencies, designing effective programs, and achieving education and preservation goals. Park staff will need to work closely with the education community and other groups to build a successful program.

Public Programs

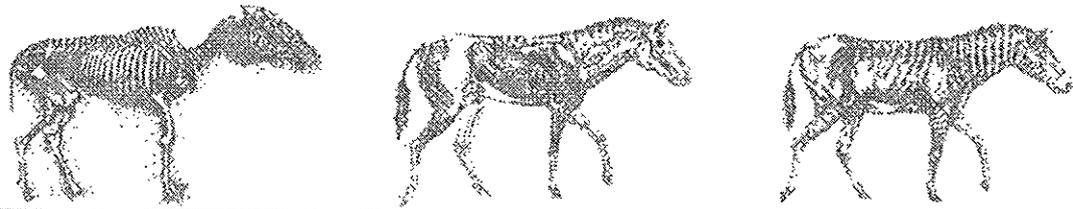
Programs for the general public would include interpretive talks, guided hikes, prep lab and other demonstrations, roving contacts, concession operated boat tours, off-site presentations, and living history.

Talks would be given mostly in the auditorium and outdoor amphitheater, and may deal with any monument themes. Guided hikes would be offered around the RC/M and across the river; those around the center would deal mostly with natural history, human history, and park values; those across the river would interpret paleontology, the Oregon Trail, American Indian history and prehistory, and natural history. Interpretive demonstrations could highlight nearly the entire range of paleontological research activities; they would occur mostly in the research center/museum.

Roving interpretation would be most useful in and around the research center/museum, on trails, and at overlooks. Off-site presentations could cover any themes and be offered within reasonable driving distance; these are especially effective during slow visitation seasons. Living history presentations would be offered at appropriate outdoor sites; topics could include the Oregon Trail, early paleontology, Indian history and prehistory, and placer mining.



Living history encampment, interpreting the Oregon Trail.



Short-Term and Interim Program

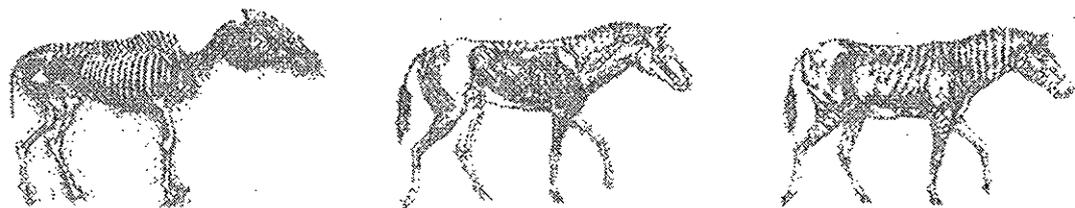
The present visitor center, in leased space on the main street of Hagerman, contains exhibits, publications, an auditorium, and information counter. This center will provide primary orientation and interpretation of the park story for most visitors until the research center/museum is open.

The effectiveness of this center is restricted by limited space, generic facility design, rudimentary interpretive media, and difficult access to research activities and information.

Despite these limitations, the current visitor center provides minimum visitor services and interpretation. The space is well designed and the exhibits are informative and visually appealing. The basic significance of park resources is explained. Visitors can see fossils in exhibit cases, and learn basic information about them, and about topics such as stratigraphy and fossilization. Audiovisual programs and publications provide additional interpretation (two locally produced video programs are regularly available).

Interim improvements will continue to enhance visitor experiences. Temporary exhibits can reveal recent research activities and provide new experiences for return visitors. Additional audiovisual programs can provide both an overall introduction to the paleontology story and interpret special topics. Additional efforts to locate publications covering Pliocene paleontology, along with park-produced site bulletins, will expand existing efforts.

Personal programs such as environmental education, guided hikes, talks, off-site presentations, interpretive demonstrations, and living history provide valuable interpretive services. The efficiency of these programs can be limited during periods of sporadic visitation, but they are easily adapted to fit visitation and staffing patterns.



Appendix: Special Populations — Programmatic Accessibility Guidelines for Interpretive Media

National Park Service
Harpers Ferry Center
June 1996

Prepared by
Harpers Ferry Center
Accessibility Task Force

Contents:

Statement of Purpose
Audiovisual Programs
Exhibits
Historic Furnishings
Publications Wayside Exhibits

STATEMENT OF PURPOSE

This document is a guide for promoting full access to interpretive media to ensure that people with physical and mental disabilities have access to the same information necessary for safe and meaningful visits to National Parks. Just as the needs and abilities of individuals cannot be reduced to simple statements, it is impossible to construct guidelines for interpretive media that can apply to every situation in the National Park System.

These guidelines define a high level of programmatic access which can be met in most situations. They articulate key areas of concern and note generally accepted solutions.

Due to the diversity of park resources and the variety of interpretive situations, flexibility and versatility are important.

Each interpretive medium contributes to the total park program. All media have inherent strengths and weaknesses, and it is our intent to capitalize on their strengths and provide alternatives where they are deficient. It should also be understood that any interpretive medium is just one component of the overall park experience. In some instances, especially with regard to learning disabilities, personal services, that is one-on-one interaction, may be the most appropriate and versatile interpretive approach.

In the final analysis, interpretive design is subjective, and dependent on both aesthetic considerations as well as the particular characteristics and resources available for a specific program. Success or failure should be evaluated by examining all interpretive offerings of a park. Due to the unique characteristics of each situation, parks should be evaluated on a case by case basis. Nonetheless, the goal is to fully comply with NPS policy:

“ . . . To provide the highest level of accessibility possible and feasible for persons with visual, hearing, mobility, and mental impairments, consistent with the obligation to conserve park resources and preserve the quality of the park experience for everyone.”

— NPS Special Directive 83-3, *Accessibility for Disabled Persons*

Audiovisual Programs

Audiovisual programs include motion pictures, sound/slide programs, video programs, and oral history programs. As a matter of policy, all audiovisual programs produced by the Harpers Ferry Center will include some method of captioning. The Approach used will vary according to the conditions of the installation area and the media format used, and will be selected in consultation with the parks and regions.

The captioning method will be identified as early as possible in the planning process and will be presented in an integrated setting where possible. To the extent possible, visitors will be offered a choice in viewing captioned or uncaptioned versions, but in situations where a choice is not possible or feasible, a captioned version of all programs will be made available. Park management will decide on the most appropriate operational approach for the particular site.

Guidelines Affecting Mobility Impaired Visitors

1. The theater, auditorium, or viewing area should be accessible and free of architectural barriers, or alternative accommodations will be provided. UFAS 4.1.
2. Wheelchair locations will be provided according to ratios outlined in UFAS 4.1.2(18a).
3. Viewing heights and angles will be favorable for those in designated wheelchair locations.
4. In designing video or interactive components, control mechanisms will be placed in accessible location, usually between 9" and 48" from the ground and no more than 24" deep.

Guidelines Affecting Visually Impaired Visitors

1. Simultaneous audio description will be considered for installations where the equipment can be properly installed and maintained.

Guidelines Affecting Hearing Impaired Visitors

1. All audiovisual programs will be produced with appropriate captions.
2. Copies of scripts will be provided to the parks as a standard procedure.
3. Audio amplification and listening systems will be provided in accordance with UFAS 4.1.2(18b).

Guidelines Affecting Learning Impaired Visitors

1. Unnecessarily complex and confusing concepts will be avoided.
2. Graphic elements will be chosen to communicate without reliance on the verbal component.
3. Narration will be concise and free of unnecessary jargon and technical information.

Exhibits

Numerous factors affect the design of exhibits, reflecting the unique circumstances of the specific space and the nature of the materials to be interpreted. It is clear that thoughtful, sensitive design can go a long way in producing exhibits that can be enjoyed by a broad range of people. Yet, due to the diversity of situations encountered, it is impossible to articulate guidelines that can be applied universally.

In some situations, the exhibit designer has little or no control over the space. Often exhibits are placed in areas ill suited for that purpose, they may incorporate large or unyielding specimens, may incorporate sensitive artifacts which require special environmental controls, and room decor or architectural features may dictate certain solutions. All in all, exhibit design is an art which defies simple description.

However, one central concern is to communicate the message to the largest audience possible. Every reasonable effort will be made to eliminate any factors limiting communication through physical modification or by providing an alternate means of communication.

Guidelines Affecting Mobility Impaired Visitors

1. Exhibit space will be free of physical barriers or a method of alternate accommodation shall be provided.
2. All pathways, aisles, and clearances will meet standards set forth in UFAS 4.3. Generally a minimum width of 36" will be provided.
3. Ramps will be as gradual as possible and will not exceed a slope of 1" rise in 12" run, and otherwise conform with UFAS 4.8.
4. Important artifacts, labels, and graphics, will be placed at a comfortable viewing level relative to their size. Important text will be viewable to all visitors. Display cases will allow short or seated people to view the contents and the labels. Video monitors associated with exhibits will be positioned to be comfortably viewed by all visitors.
5. Lighting will be designed to reduce glare or reflections, especially when viewed from a wheelchair.
6. Ground and floor surfaces near the exhibit area will be stable, level, firm, and slip-resistant. (UFAS 4.5).
7. Operating controls or objects to be handled by visitors will be located in an area between 9" and 48" from the ground and no more than 24" deep. (UFAS 4.3)
8. Horizontal exhibits (e.g. terrain model) will be located at a comfortable viewing height.

9. Information desks and sales counters will be designed for use by visitors and employees using wheelchairs, and will include a section with a desk height no greater than 32 to 34 inches, with at least a 30 inch clearance underneath. The width should be a minimum of 32 inches, with additional space provided for cash registers or other equipment, as applicable.
10. Accessibility information about the specific park should be available at the information desk and the international symbol of access will be displayed where access information is disseminated.
11. Railings and barriers will be positioned in such a way as to provide unobstructed viewing by persons in wheelchairs.

Guidelines Affecting Visually Impaired Visitors

1. Exhibit typography will be selected with readability and legibility in mind.
2. Characters and symbols shall contrast with their backgrounds, either light characters on a dark background or dark characters on a light background. (UFAS 4.30.3)
3. Tactile and participatory elements will be included where possible.
4. Audio description will be provided where applicable.
5. Signage will be provided to indicate accessible restrooms, telephones, and restroom elevators. (UFAS 4.30)

Guidelines Affecting Hearing Impaired Visitors

1. Information presented via audio formats will be duplicated in a visual medium, either in the exhibit copy or by printed material.

2. Amplification systems and volume controls will be incorporated to make programs accessible to the hard of hearing.
3. Written text of all audio narrations will be provided.
4. All narrated AV programs will be captioned.
5. Allowance for Telecommunication Devices for the Deaf (TDD) will be included into information desk designs.

Guidelines Affecting Learning Impaired Visitors

1. Exhibits will avoid unnecessarily complex and confusing topics.
2. Graphic elements will be developed to communicate non-verbally.
3. Unfamiliar expressions and technical terms will be avoided and pronunciation aids will be provided where appropriate.
4. To the extent possible, information will be provided in a manner suitable to a diversity of abilities and interests.
5. Where possible, exhibits will be multi-sensory. Techniques to maximize the number of senses utilized in an exhibit will be encouraged.
6. Exhibit design will be cognizant of directional handicaps and will utilize color and other creative approaches to facilitate comprehension of maps.

Historic Furnishings

Historically refurnished rooms offer the public a unique interpretive experience by placing visitors within historic spaces. Surrounded by historic artifacts visitors can feel the spaces "come alive" and relate more directly to the historic events or personalities commemorated by the park.

Accessibility is problematical in many NPS furnished sites because of the very nature of historic architecture. Buildings were erected with a functional point of view that is many times at odds with our modern views of accessibility.

The approach used to convey the experience of historically furnished spaces will vary from site to site. The goals, however, will remain the same, to give the public as rich an interpretive experience as possible given the nature of the structure.

Guidelines Affecting Mobility Impaired Visitors

1. The exhibit space should be free of architectural barriers or a method of alternate accommodation should be provided, such as slide programs, videotaped tours, visual aids, dioramas, etc.
2. All pathways, aisles, and clearances shall (when possible) meet standards set forth in UFAS 4.3 to provide adequate clearance for wheelchair routes.
3. Ramps shall be as gradual as possible and not exceed a 1" rise in 12" run, and conform with UFAS 4.8.
4. Railings and room barriers will be constructed in such a way as to provide unobstructed viewing by persons in wheelchairs.
5. In the planning and design process, furnishing inaccessible areas, such as upper floors of historic buildings, will be discouraged unless essential for interpretation.

6. Lighting will be designed to reduce glare or reflections when viewed from a wheelchair.
7. Alternative methods of interpretation, such as audiovisual programs, audio description, photo albums, and personal services will be used in areas which present difficulty for the physically impaired.

Guidelines Affecting Visually Impaired Visitors

1. Exhibit typefaces will be selected for readability and legibility, and conform with good industry practice.
2. Audio description will be used to describe furnished rooms, where appropriate.
3. Windows will be treated with film to provide balanced light levels and minimize glare.
4. Where appropriate, visitor-controlled rheostat-type lighting will be provided to augment general room lighting.
5. Where appropriate and when proper clearance has been approved, surplus artifacts or reproductions will be utilized as "hands-on" tactile interpretive devices.

Guidelines Affecting Hearing Impaired Visitors

1. Information about room interiors will be presented in a visual medium such as exhibit copy, text, pamphlets, etc.
2. Captions will be provided for all AV programs relating to historic furnishings.

Guidelines Affecting the Learning Impaired

1. Where appropriate, hands-on participatory elements geared to the level of visitor capabilities will be used.
2. Living history activities and demonstrations which utilize the physical space as a method of providing multi-sensory experiences will be encouraged.

Publications

A variety of publications are offered to visitors, ranging from park folders which provide an overview and orientation to a park to more comprehensive handbooks. Each park folder should give a brief description of services available to the disabled, list significant barriers, and note the existence of TDD phone numbers, if available.

In addition, informal site bulletins are often produced to provide more specialized information about a specific site or topic. It is recommended that each park produce an easily updatable "Accessibility Site Bulletin" which could include detailed information about the specific programs, services, and opportunities available for the disabled and to describe barriers which are present in the park. These bulletins should be in reasonably large type, 18 points or larger.

Guidelines Affecting Mobility Impaired Visitors

1. Park folders, site bulletins, and sales literature will be distributed from accessible locations and heights.
2. Park folders and Accessibility Site Bulletins should endeavor to carry information on the accessibility of buildings, trails, and programs by the disabled.

Guidelines Affecting Visually Impaired Visitors

1. Publications will be designed with the largest type size appropriate for the format.
2. Special publications designed for use by the visually impaired should be printed in 18 point type.
3. The information contained in the park folder should also be available on audio cassette. Handbooks, accessibility guides, and other publications should be similarly recorded where possible.

Guidelines Affecting Hearing Impaired Visitors

1. Park site bulletins will note the availability of such special services as sign language interpretation and captioned programs.

Guidelines Affecting Learning Impaired Visitors

1. The park site bulletin should list any special services available to this group.

Wayside Exhibits

Wayside exhibits, which include outdoor interpretive exhibits and signs, orientation shelter exhibits, trailhead exhibits, and bulletin boards, offer special advantages to disabled visitors. The liberal use of photographs, artwork, diagrams, and maps, combined with highly readable type, make wayside exhibits an excellent medium for visitors with hearing and learning impairments. For visitors with sight impairments, waysides offer large type and high legibility.

Although a limited number of NPS wayside exhibits will always be inaccessible to visitors with mobility impairments, the great majority are placed at accessible pullouts, viewpoints, parking areas, and trailheads.

The NPS accessibility guidelines for wayside exhibits help insure a standard of quality that will be appreciated by all visitors. Nearly everyone benefits from high quality graphics, readable type, comfortable base designs, accessible locations, hard-surfaced exhibit pads, and well-landscaped exhibit sites.

While waysides are valuable on-site "interpreters," it should be remembered that the park resources themselves are the primary things visitors come to experience. Good waysides focus attention on the features they interpret, and not on themselves. A wayside exhibit is only one of the many interpretive tools which visitors can use to enhance their appreciation of a park.

Guidelines Affecting Mobility Impaired Visitors

1. Wayside exhibits will be installed at accessible locations whenever possible.
2. Wayside exhibits will be installed at heights and angles favorable for viewing by most visitors including those in wheelchairs. For standard NPS low-profile units the recommended height is 30 inches from the bottom edge of the exhibit panel to the finished grade; for vertical exhibits the height of 6-28 inches.
3. Trailhead exhibits will include an accessibility advisory.
4. Wayside exhibit sites will have level, hard surfaced exhibit pads.
5. Exhibit sites will offer clear, unrestricted views of park features described in exhibits.

Guidelines Affecting Visually Impaired Visitors

1. Exhibit type will be as legible and readable as possible.
2. Panel colors will be selected to reduce eye strain and glare, and to provide excellent readability under field conditions. White should not be used as a background color.
3. Selected wayside exhibits may incorporate audio stations or tactile elements such as models, texture blocks, and relief maps.
4. For all major features interpreted by wayside exhibits, the park should offer non-visual interpretation covering the same subject matter. Examples include cassette tape tours, radio messages, and ranger talks.
5. Appropriate tactile cues should be provided to help visually impaired visitors locate exhibits.

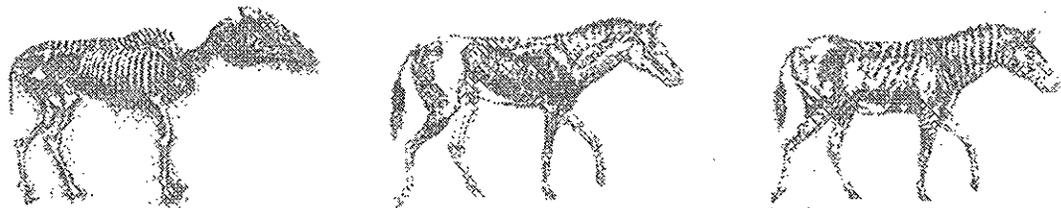
Guidelines Affecting Hearing Impaired Visitors

1. Wayside exhibits will communicate visually, and will rely heavily on graphics to interpret park resources.
2. Essential information included in audio station messages will be duplicated in written form, either as part of the exhibit text or with printed material.

Guidelines Affecting Learning Impaired Visitors

1. Topics for wayside exhibits will be specific and of general interest. Unnecessary complexity will be avoided.

2. Whenever possible, easy to understand graphics will be used to convey ideas, rather than text alone.
3. Unfamiliar expressions, technical terms, and jargon will be avoided. Pronunciation aids and definitions will be provided where needed.
4. Text will be concise and free of long paragraphs and wordy language.



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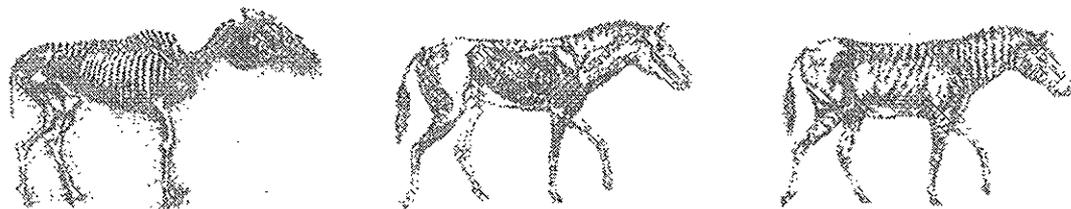
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Planning Team and Consultants

HAGERMAN FOSSIL BEDS NATIONAL MONUMENT

Neil King, Superintendent
Bob Willhite, Chief Ranger
Dr. Greg McDonald, Paleontologist
Dave Pugh, Superintendent (former)
Cliff Dickey, Volunteer (photo credits)

HARPERS FERRY CENTER

Sam Vaughn, Interpretive Planner, Interpretive Plan Team Captain
Ron Roos, Exhibit Designer
Brian Jones, Audiovisual Producer
Rich Helman, Wayside Exhibit Planner
Jack Spinnler, Wayside Exhibit Planner
Linda Thomas, Editorial Assistant

DENVER SERVICE CENTER

Rick Ernenwein, GMP Team Captain
Clifford Hawkes, GMP Team Captain (former)
Deborah Wait, Architect (former)
Terry Urbanowski, Landscape Architect
Mike Morelli, Landscape Architect, SSS Team Captain

PACIFIC WEST REGION

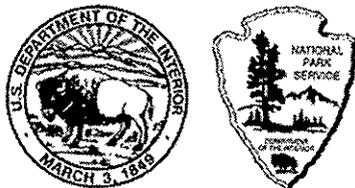
Deanne Adams, Lead Interpretive Specialist
Peggy Dolinich, Interpretive Specialist

PARTNERS

Bob Luntz, Park Planner (retired), ichthyologist

PUBLICATION SERVICES

Joan E. Huff, Visual Information Technician, Denver Service Center



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