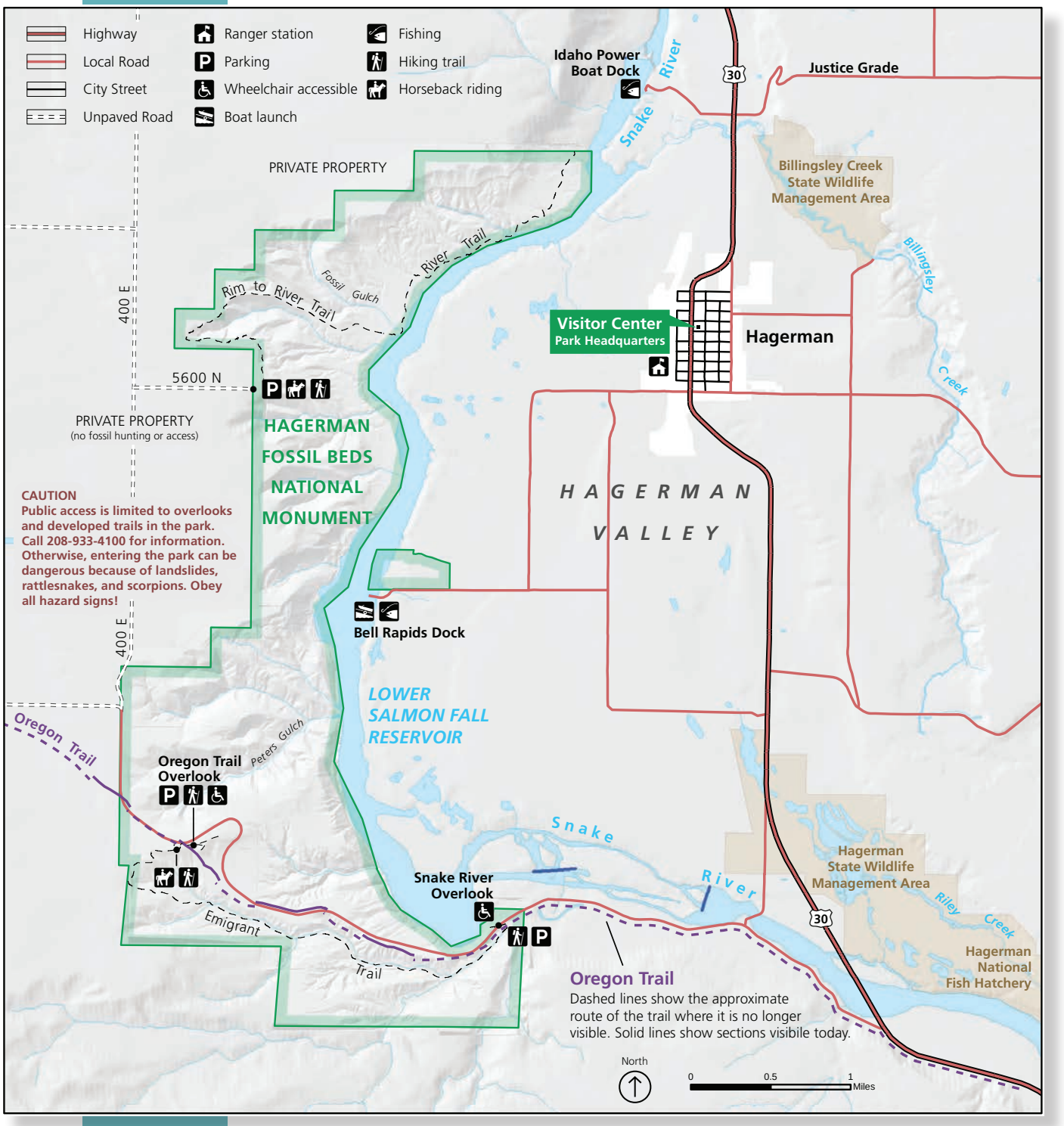
NATIONAL PARK SERVICE • U.S. DEPARTMENT OF THE INTERIOR

Foundation Document

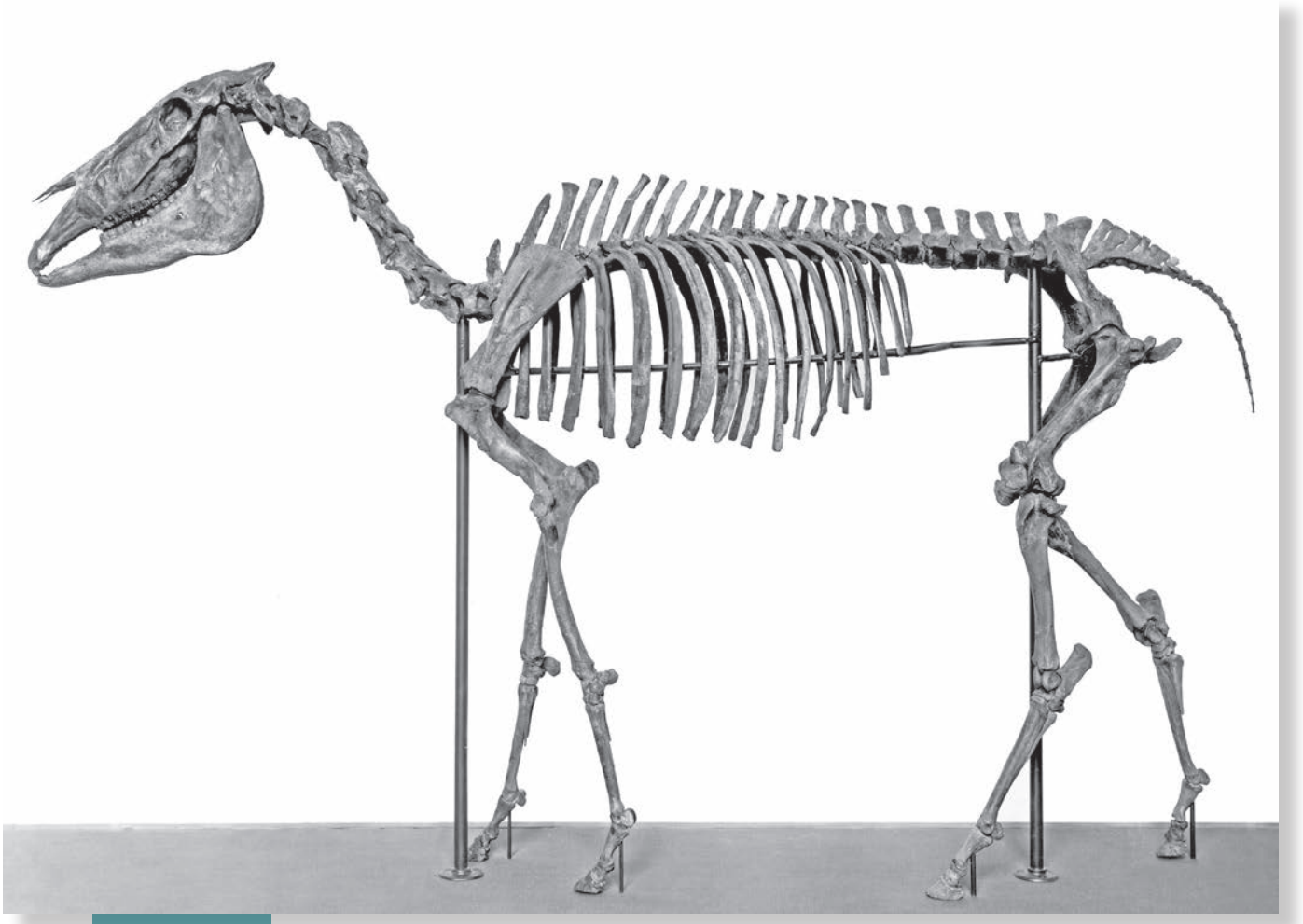
Hagerman Fossil Beds National Monument

Idaho

October 2015


Highway
Local Road
City Street
Unpaved Road
Ranger station
Parking
Wheelchair accessible
Boat launch
Fishing
Hiking trail
Horseback riding
Idaho Power Boat Dock
Snake River
30
Justice Grade
PRIVATE PROPERTY
Billingsley Creek State Wildlife Management Area
Billingsley Creek
Rim to River Trail
Fossil Gulch
River Trail
400 E
5600 N
Visitor Center
Park Headquarters
Hagerman
PRIVATE PROPERTY
(no fossil hunting or access)
HAGERMAN FOSSIL BEDS NATIONAL MONUMENT
HAGERMAN VALLEY
CAUTION
Public access is limited to overlooks and developed trails in the park. Call 208-933-4100 for information. Otherwise, entering the park can be dangerous because of landslides, rattlesnakes, and scorpions. Obey all hazard signs!
Bell Rapids Dock
LOWER SALMON FALL RESERVOIR
Oregon Trail
Peters Gulch
Oregon Trail Overlook
Snake River
Snake River Overlook
Emigrant Trail
Hagerman State Wildlife Management Area
Riley Creek
Hagerman National Fish Hatchery
Oregon Trail
Dashed lines show the approximate route of the trail where it is no longer visible. Solid lines show sections visibile today.
North
0
0.5
1
Miles

Contents



Mission of the National Park Service

The National Park Service (NPS) preserves unimpaired the natural and cultural resources and values of the national park system for the enjoyment, education, and inspiration of this and future generations. The National Park Service cooperates with partners to extend the benefits of natural and cultural resource conservation and outdoor recreation throughout this country and the world.

The NPS core values are a framework in which the National Park Service accomplishes its mission. They express the manner in which, both individually and collectively, the National Park Service pursues its mission. The NPS core values are:

- **Shared stewardship**: We share a commitment to resource stewardship with the global preservation community.
- **Excellence**: We strive continually to learn and improve so that we may achieve the highest ideals of public service.
- **Integrity**: We deal honestly and fairly with the public and one another.
- **Tradition**: We are proud of it; we learn from it; we are not bound by it.
- **Respect**: We embrace each other's differences so that we may enrich the well-being of everyone.

The National Park Service is a bureau within the Department of the Interior. While numerous national park system units were created prior to 1916, it was not until August 25, 1916, that President Woodrow Wilson signed the National Park Service Organic Act formally establishing the National Park Service.

The national park system continues to grow and comprises more than 400 park units covering more than 84 million acres in every state, the District of Columbia, American Samoa, Guam, Puerto Rico, and the Virgin Islands. These units include, but are not limited to, national parks, monuments, battlefields, military parks, historical parks, historic sites, lakeshores, seashores, recreation areas, scenic rivers and trails, and the White House. The variety and diversity of park units throughout the nation require a strong commitment to resource stewardship and management to ensure both the protection and enjoyment of these resources for future generations.

The arrowhead was authorized as the official National Park Service emblem by the Secretary of the Interior on July 20, 1951. The sequoia tree and bison represent vegetation and wildlife, the mountains and water represent scenic and recreational values, and the arrowhead represents historical and archeological values.

Introduction

Every unit of the national park system will have a foundational document to provide basic guidance for planning and management decisions—a foundation for planning and management. The core components of a foundation document include a brief description of the park as well as the park's purpose, significance, fundamental resources and values, other important resources and values, and interpretive themes. The foundation document also includes special mandates and administrative commitments, an assessment of planning and data needs that identifies planning issues, planning products to be developed, and the associated studies and data required for park planning. Along with the core components, the assessment provides a focus for park planning activities and establishes a baseline from which planning documents are developed.

A primary benefit of developing a foundation document is the opportunity to integrate and coordinate all kinds and levels of planning from a single, shared understanding of what is most important about the park. The process of developing a foundation document begins with gathering and integrating information about the park. Next, this information is refined and focused to determine what the most important attributes of the park are. The process of preparing a foundation document aids park managers, staff, and the public in identifying and clearly stating in one document the essential information that is necessary for park management to consider when determining future planning efforts, outlining key planning issues, and protecting resources and values that are integral to park purpose and identity.

While not included in this document, a park atlas is also part of a foundation project. The atlas is a series of maps compiled from available geographic information system (GIS) data on natural and cultural resources, visitor use patterns, facilities, and other topics. It serves as a GIS-based support tool for planning and park operations. The atlas is published as a (hard copy) paper product and as geospatial data for use in a web mapping environment. The park atlas for Hagerman Fossil Beds National Monument can be accessed online at: http://insideparkatlas.nps.gov/.

Part 1: Core Components

The core components of a foundation document include a brief description of the park, park purpose, significance statements, fundamental resources and values, other important resources and values, and interpretive themes. These components are core because they typically do not change over time. Core components are expected to be used in future planning and management efforts.

Brief Description of the Park

Background. Hagerman Fossil Beds National Monument (park) preserves the fossil remains of more than 140 fossil species from the Pliocene epoch (5.3 to 2.6 million years ago) and is recognized as one of North America's most important localities concerning the evolution of the horse. The park's geologic strata are a slice of the Pliocene, providing a detailed record of an evolving environment that spans at least 500,000 years. It includes fossils found nowhere else in the world. The density, diversity, and quality of fossils led to the site being designated as a national natural landmark in 1975.[1]

Hagerman Fossil Beds National Monument lies within a scenic region of southern Idaho where sandy bluffs, basalt canyons, waterfalls, and hot springs are interspersed between vineyards, ranches, and farms producing various crops including sugar beets, potatoes, and onions. The 4,394-acre park lies just west of the town of Hagerman. The unit was established November 18, 1988, through an act of Congress (Public Law 100-696) and is one of the few federally administered fossil sites specifically set aside for paleontological research. The park's fossil beds offer a world-class setting to conduct research that can better enable the scientific community, the public, and land managers to understand the past.

Paleontological Resources. Hagerman fossils are widely dispersed across the park's extent, and many are very small, such as the tiny teeth of voles. The diversity of species and the breadth of information they offer allows researchers to reconstruct the past and examine current and future climate change with a better understanding of how communities responded to similar environmental changes in the past.

The fossil beds have yielded more than just horses. Many important species have been recovered, with animals ranging from the diminutive deer mouse to the giant mastodon. The park has the largest known assemblage of the giant river otter (*Satherium piscinarium*), a large badger-like animal (*Ferinestrix vorax*) known only from Hagerman and Russia, and an exceedingly diverse number of carnivores. Hagerman was the locality where a number of turtle, bird, and rodent fossils were first described.

In addition to the ongoing research at Hagerman Fossil Beds, the park has signed a sister park agreement with Sibiloi National Park in Kenya. The National Park Service fosters such relationships as mutual learning opportunities that can lead to efficiencies, collaboration, and discoveries. Both Hagerman and Sibiloi are important Pliocene fossil sites known for their faunal diversity and the extensive nature (spatial and temporal) of their fossil deposits.

Topography and Climate. The park lies along the Snake River and includes 7 miles of river shoreline. Elevation of the park ranges from 3,508 feet at the top of the bluff to 2,799 feet at the base of the river. The climate in the region is semiarid. Precipitation averages less than 10 inches per year, with most occurring in the early spring and late fall. Winters are cold (average low is 19 degrees Fahrenheit (°F), and summers are hot (average high is 91°F).

The topography is characterized by large flat plateaus deeply dissected by water drainages. Sediment layers were deposited by rivers flowing into ancient Lake Idaho, a body of water that once flooded much of the region. The sediments on the bluffs include river sands, thin shale layers, clay flood deposits, and occasional volcanic deposits such as ash and basalt. There are many small and ephemeral riparian areas in the park.

1 A national natural landmark is a natural area that has been designated by the Secretary of the Interior in recognition that the site contains significant examples of the nation's biological and/or geological features.

Vegetation and Wildlife. In contrast to the moist, warm, and thriving environment that characterized the area during the Pliocene, the park is now dominated by sagebrush steppe vegetation and riparian areas. Common vegetation within the sagebrush steppe environment includes bitterbrush, greasewood, rabbitbrush, various bunchgrasses such as blue bunch wheat grass, crested wheat grass (nonnative), Indian rice grass, and Great Basin wild rye. Riparian areas are composed of black cottonwood, willow, bulrush, and cottontails.

Nonnative vegetation is established throughout the park. Some of the dominant nonnative species include Russian olive, tamarisk, and purple loosestrife along the shoreline of the Snake River and some of the drainages; also Russian thistle, cheat grass, wheatgrass, blue mustard, tansy mustard, and tumble-mustard. Agricultural crops have replaced much of the natural vegetation on private lands adjacent to the park.

The Snake River and adjacent wetlands provide valuable resources for a wide range of mammals, birds, reptiles, amphibians, and fish. The upland sagebrush steppe and grasslands provide important habitat for the Brewer's sparrow, grasshopper sparrow, and willow flycatcher. The area also supports a variety of mammals such as antelope ground squirrels, shrews and voles, pronghorn, and mule deer. Salamanders, lizards, and skink inhabit the shoreline and wetlands. Historically, salmon migrated up the Snake River but are no longer present.

Changes in fire frequency and precipitation challenge park managers. Nonnative species that can easily adapt may displace or harm native species. Species such as sagebrush, slow-growing trees, fish, and some small mammals are particularly at risk for survival because they have a limited ability to relocate and have very specific habitat needs.

Prehistory and History. During the Archaic and Historic periods, small groups of American Indians camped, hunted, fished, and gathered food throughout the area; salmon from the Snake River was an important source of food.

Lifeways of many groups changed with the reintroduction of the horse around AD 1700. Some Northern Shoshone and Bannock groups obtained horses and vastly extended their range. Other groups (such as Western Shoshones) eschewed a dependence on horses and maintained their seasonal pedestrian nomadism with an emphasis on fishing. At the time of European contact, Bannocks, Paiutes, and Shoshones lived in the area.

During the early 1800s, American Indians along the Snake River traded fish and other products with traders and trappers. This trade extended to emigrants on the Oregon Trail, who began passing through in 1841. The trail across southern Idaho was typically hot, dry, and dusty; travelers were exhausted, and a stop at the Snake River was a welcome respite. In the late 1800s, Indians were forcibly removed to reservations and settlers of European descent followed with ferries, mining, farming, ranching, and other activities.

In 1928, a rancher named Elmer Cook showed some fossil bones to Harold T. Stearns of the US Geological Survey, who passed them on to James W. Gidley of the Smithsonian Institution. In 1929 and 1930, Gidley excavated what is now known as the Hagerman Horse Quarry. These excavations uncovered the largest assemblage known of the first single-toed horse, *Equus simplicidens*. The Hagerman Horse later dispersed to Asia, where it may have given rise to other species of extinct horse.

The Smithsonian excavations resulted in the collection of more than 20 complete horse skeletons and material from more than 200 other individuals; many of these fossils were subsequently traded with museums across the nation and in Europe. Today, paleontological specimens from Hagerman Fossil Beds are housed on-site in the park collections and at more than 40 academic institutions across the nation. Since the Smithsonian first excavated in 1929, tens of thousands of additional fossils have been found, and new fossils, including those of new species, continue to be discovered. These fossils contribute to a vast database that today's researchers can use to help reconstruct the evolutionary history of species and of changing paleoclimatic conditions. For visitors, the collections and fossil beds offer a rare glimpse into an ancient past and a greater understanding of the scientific process.

Park Purpose

The purpose statement identifies the specific reason(s) for establishment of a particular park. The purpose statement for Hagerman Fossil Beds National Monument was drafted through a careful analysis of its enabling legislation and the legislative history that influenced its development. The park was established when the enabling legislation adopted by Congress was signed into law on November 18, 1988 (see appendix A for enabling legislation and subsequent amendments). The purpose statement lays the foundation for understanding what is most important about the park.

The purpose of Hagerman Fossil Beds National Monument is to preserve outstanding Pliocene paleontological resources, to serve as a center for furthering scientific research, and to broaden public understanding of the science of paleontology and the significance of the Hagerman fossil record.

Park Significance

Significance statements express why a park's resources and values are important enough to merit designation as a unit of the national park system. These statements are linked to the purpose of Hagerman Fossil Beds National Monument, and are supported by data, research, and consensus. Statements of significance describe the distinctive nature of the park and why an area is important within a global, national, regional, and systemwide context. They focus on the most important resources and values that will assist in park planning and management.

The following significance statements have been identified for Hagerman Fossil Beds National Monument. (Please note that the sequence of the statements does not reflect the level of significance.)

1. The park contains globally significant paleontological resources, representing a diversity of fossils from the Pliocene. Tens of thousands of fossils have been discovered in the park, including more than 140 species of animals and plants. This includes species that were first discovered here and species that have not been found anywhere else in the world.

2. The park's paleontological resources are contained in an extensive stratigraphic record, spanning at least 500,000 years. These fossil deposits are exposed across more than 4,000 acres of the park. They record a diverse fossil landscape representative of lake, wetland, riparian, woodland, and grassland environments. The majority of the park is classified as a national natural landmark.

3. The fossil record at Hagerman Fossil Beds provides a detailed glimpse into life that occurred during the Pliocene period, the most recent geologic time period that experienced global warming. The expansive timeframe exposed on the monument, coupled with the species diversity it contains, provides a framework for understanding climatic change and environmental response today and in the future.

4. The species found within the Hagerman fossil record include the ancestors of species living today. Some of these descendants occur in North America, while others are now only found in distant places like Asia and South America. Hagerman's fossils contribute to a growing understanding of evolutionary relationships and distributions of species across continents.

5. The park features a fossil horse quarry recognized as one of North America's most important sites concerning the evolutionary history of the horse.

6. The fossil-rich landscape at the park is the result of 4.2 million years of geologic history of sedimentary deposition, fossilization, and erosion. The park reflects the accumulation of sediments associated with ancient Lake Idaho, the cataclysmic impacts of the Bonneville flood, and the basalt flows that affected the course of the Snake River. Collectively, past and present geologic processes contribute to the ability to access, study, and understand this remarkable fossil record at Hagerman.

7. Hagerman Fossil Beds National Monument is one of the few federally administered fossil sites specifically set aside for paleontological research. Since the Smithsonian first excavated in 1929, tens of thousands of additional fossils have been found and new fossils continue to be discovered. Research since the 1930s has led to numerous scientific publications on the descriptions of new species, changing community dynamics throughout the geologic sequence, and the site's geologic history. The opportunities and benefits from multidisciplinary research will continue to grow as additional fossil and geologic discoveries occur and new technologies emerge.

Fundamental Resources and Values

Fundamental resources and values (FRVs) are those features, systems, processes, experiences, stories, scenes, sounds, smells, or other attributes determined to warrant primary consideration during planning and management processes because they are essential to achieving the purpose of the park and maintaining its significance. Fundamental resources and values are closely related to a park's legislative purpose and are more specific than significance statements.

Fundamental resources and values help focus planning and management efforts on what is truly significant about the park. One of the most important responsibilities of NPS managers is to ensure the conservation and public enjoyment of those qualities that are essential (fundamental) to achieving the purpose of the park and maintaining its significance. If fundamental resources and values are allowed to deteriorate, the park purpose and/or significance could be jeopardized.

The following fundamental resources and values have been identified for Hagerman Fossil Beds National Monument:

- **Pliocene Fossils –** The vertebrate, invertebrate, and plant fossils, including those from the area of the Smithsonian's Hagerman Horse Quarry, are fundamental to the purpose and significance of Hagerman Fossil Beds National Monument. The number, variety, and quality of the fossils preserved at and excavated from the park define what makes the park worthy of being a national park unit and national natural landmark. Hundreds of fossils are found each year during annual monitoring. These fossils represent a great variety of life, from small rodents and frogs to the giant mastodon.
- **Public Understanding of Paleontology at Hagerman Fossil Beds –** Understanding the steps involved in paleontology—discovery, collection, cleaning, identification, cataloging, and research—and the importance of access to collections underscore the park's mandated role as a paleontological research center. Interpretive displays, opportunities to observe researchers "in action," public outreach, and virtual tours of the park and collections are tools for explaining how the park staff preserve and protect the Hagerman fossil record and how the results of research are shared regionally and globally. A heightened understanding of the park's past, ongoing, and future contributions to paleontological research, including the study of past ecosystems, reinforce the park's purpose and significance.
- **Lead and Facilitate Research –** The park has the mandate to be a center for research. Place-based and facilitated research is critical to scientific progress and public understanding. The current fossil collection and new discoveries will allow important research on Pliocene fossils and their paleoecosystems to continue. The science is key to the understanding of changes that drove adaptation, migration, and extinction, and data from the monument can serve as an analog for species undergoing climate change today. As a center for research, the park helps the public understand the scientific process, as well as the associated relevance of evolution and the study of past ecosystems and environments.
- **Geologic Processes –** Past and current geologic processes—including sedimentation, tectonic uplift, and erosion—help define what the landscapes and communities were like in the ancient past. They also define how landscapes and communities may change in the future. At Hagerman, such geologic processes have produced ideal conditions for the fossilization, preservation, and subsequent exposure of species' remains.
- **A Record of Paleoecosystems –** Hagerman's fossils contribute to the world's understanding of fossil animals in their paleoenvironmental context. This allows researchers to reconstruct past ecological interactions and connections, including changes in an ecological community that may be linked to climate and environmental change. The changing climate and resulting ecosystem response observed during the Pliocene mirrors and can model—in some ways—today's observed and anticipated climate and environmental changes.

Other Important Resources and Values

Hagerman Fossil Beds National Monument contains other resources and values that are not fundamental to the purpose of the park and may be unrelated to its significance, but are important to consider in planning processes. These are referred to as "other important resources and values" (OIRV). These resources and values have been selected because they are important in the operation and management of the park and warrant special consideration in park planning.

The following other important resources and values have been identified for Hagerman Fossil Beds National Monument:

- **Oregon Trail –** The park includes portions of the Oregon Trail that extend above the Snake River. The Oregon Trail crosses the southern portion of Hagerman Fossil Beds. The park is one of three national park system units that contains parts of the Oregon National Historic Trail. Trail ruts can be seen at the Oregon Trail Overlook parking lot. Remnants of the trail are iconic and are used to convey the story of migrating settlers and interactions with native peoples.
- **Scenic Geologic Landscape –** Views from scenic overlooks provide opportunities for visitors to see the Snake River Valley, active geologic processes, and the surrounding geologic landscape formed through these processes.
- **Modern Flora and Fauna Communities –** The park features sensitive vegetation resources including the sagebrush steppe and riparian and wetland areas that occur along the lower Snake River. These communities support a variety of native species and contribute to wildlife viewing and hunting in a small designated part of the park.

Interpretive Themes

Interpretive themes are often described as the key stories or concepts that visitors should understand after visiting a park—they define the most important ideas or concepts communicated to visitors about a park unit. Themes are derived from, and should reflect, park purpose, significance, resources, and values. The set of interpretive themes is complete when it provides the structure necessary for park staff to develop opportunities for visitors to explore and relate to all park significance statements and fundamental and other important resources and values.

Interpretive themes are an organizational tool that reveal and clarify meaning, concepts, contexts, and values represented by park resources. Sound themes are accurate and reflect current scholarship and science. They encourage exploration of the context in which events or natural processes occurred and the effects of those events and processes. Interpretive themes go beyond a mere description of the event or process to foster multiple opportunities to experience and consider the park and its resources. These themes help explain why a park story is relevant to people who may otherwise be unaware of connections they have to an event, time, or place associated with the park.

The following interpretive themes have been identified for Hagerman Fossil Beds National Monument:

- Research and exploration at Hagerman Fossil Beds allow paleontologists, other scientists, park staff, and visitors to discover and understand evolutionary relationships, species distributions, and animal behavior both at the site and elsewhere in the world.
- The monument is a window into the Pliocene past; a diverse array of fossils of animals (such as the Hagerman Horse) and plants that allows scientists to reconstruct ancient landscapes, revealing relationships between species in lake, wetland, riverine, woodland, and grassland environments.
- Past and present geologic processes that formed the current landscape at Hagerman first preserved and are now exposing fossils, providing scientists, staff, and visitors with the ability to view, study, and understand Hagerman's remarkable fossil record.
- The fossil record at Hagerman provides an opportunity for visitors to explore the "life of a fossil": the chemical, physical, and biologic processes that created the right environment for its fossilization, and the events leading up to its discovery.
- Fossils are fragile and, once destroyed, can never be replaced. When a fossil is removed without scientific documentation, paleontologists are unable to piece together the relationships between specific plants, animals, and their environments. Stewardship of the fossils and respect for other monument resources are everyone's responsibility.
- Hagerman Fossil Beds National Monument was set aside for scientific research because its Pliocene fossils provide the opportunity to understand an important portion of the history of life. The fossils include animals with ties to Eurasia, South America, and Africa, as well as many that live in the Hagerman Valley today.
- People have lived in the Hagerman Valley for at least 10,000 years; their presence is recorded on the landscape in various ways.
- The Pliocene provides compelling evidence of the impact of climate change on animals and plants similar to those found in the world today. Hagerman Fossil Beds National Monument offers a venue for discussing the effects of past, current, and future climate change.

Part 2: Dynamic Components

The dynamic components of a foundation document include special mandates and administrative commitments and an assessment of planning and data needs. These components are dynamic because they will change over time. New special mandates can be established and new administrative commitments made. As conditions and trends of fundamental and other important resources and values change over time, the analysis of planning and data needs will need to be revisited and revised, along with key issues. Therefore, this part of the foundation document will be updated accordingly.

Special Mandates and Administrative Commitments

Many management decisions for a park unit are directed or influenced by special mandates and administrative commitments with other federal agencies, state and local governments, utility companies, partnering organizations, and other entities. Special mandates are requirements specific to a park that must be fulfilled. Mandates can be expressed in enabling legislation, in separate legislation following the establishment of the park, or through a judicial process. They may expand on park purpose or introduce elements unrelated to the purpose of the park. Administrative commitments are, in general, agreements that have been reached through formal, documented processes, often through memorandums of agreement. Examples include easements, rights-of-way, arrangements for emergency service responses, etc. Special mandates and administrative commitments can support, in many cases, a network of partnerships that help fulfill the objectives of the park and facilitate working relationships with other organizations. They are an essential component of managing and planning for Hagerman Fossil Beds National Monument.

Special Mandates

- **Permitting of Hunting and Fishing –** According to the Administrative Provisions of 104 STAT. 1924 Public Law 101-512, Nov. 5, 1990, "that with respect to lands and waters under the jurisdiction of the Secretary within the Hagerman Fossil Beds National Monument, established by title III of Public Law 100-696, the Secretary shall hereafter permit hunting and fishing as well as maintenance of structures necessary to undertake such activities, including but not limited to duck and goose blinds on those lands within an area fifty feet in elevation above the high water level of the Snake River in accordance with otherwise applicable laws of the United States and the State of Idaho."

- **Existing Facilities –** Public Law 100-696 Title III section 305 states: "Nothing in this title shall affect electrical generating and transmission and irrigation pumping and transmission facilities in existence within the boundaries of the monument, or the right to operate, maintain, repair, upgrade, and modify such facilities. Such facilities are hereby expressly determined to be compatible and consistent with the purposes of this title."

Administrative Commitments

Please see "Appendix E: Administrative Commitments."

Assessment of Planning and Data Needs

Once the core components of part 1 of the foundation document have been identified, it is important to gather and evaluate existing information about the park's fundamental and other important resources and values, and develop a full assessment of the park's planning and data needs. The assessment of planning and data needs section presents planning issues, the planning projects that will address these issues, and the associated information requirements for planning, such as resource inventories and data collection, including GIS data.

There are three sections in the assessment of planning and data needs:

1. analysis of fundamental and other important resources and values
2. identification of key issues and associated planning and data needs
3. identification of planning and data needs (including spatial mapping activities or GIS maps)

The analysis of fundamental and other important resources and values and identification of key issues leads up to and supports the identification of planning and data collection needs.

Analysis of Fundamental Resources and Values

The fundamental resource or value analysis table includes current conditions, potential threats and opportunities, planning and data needs, and selected laws and NPS policies related to management of the identified resource or value. Please see appendix C for the analysis of fundamental and other important resources and values.

Identification of Key Issues and Associated Planning and Data Needs

This section considers key issues to be addressed in planning and management and therefore takes a broader view over the primary focus of part 1. A key issue focuses on a question that is important for a park. Key issues often raise questions regarding park purpose and significance and fundamental and other important resources and values. For example, a key issue may pertain to the potential for a fundamental or other important resource or value in a park to be detrimentally affected by discretionary management decisions. A key issue may also address crucial questions that are not directly related to purpose and significance, but which still affect them indirectly. Usually, a key issue is one that a future planning effort or data collection needs to address and requires a decision by NPS managers.

The following are key issues for Hagerman Fossil Beds National Monument and the associated planning and data needs to address them:

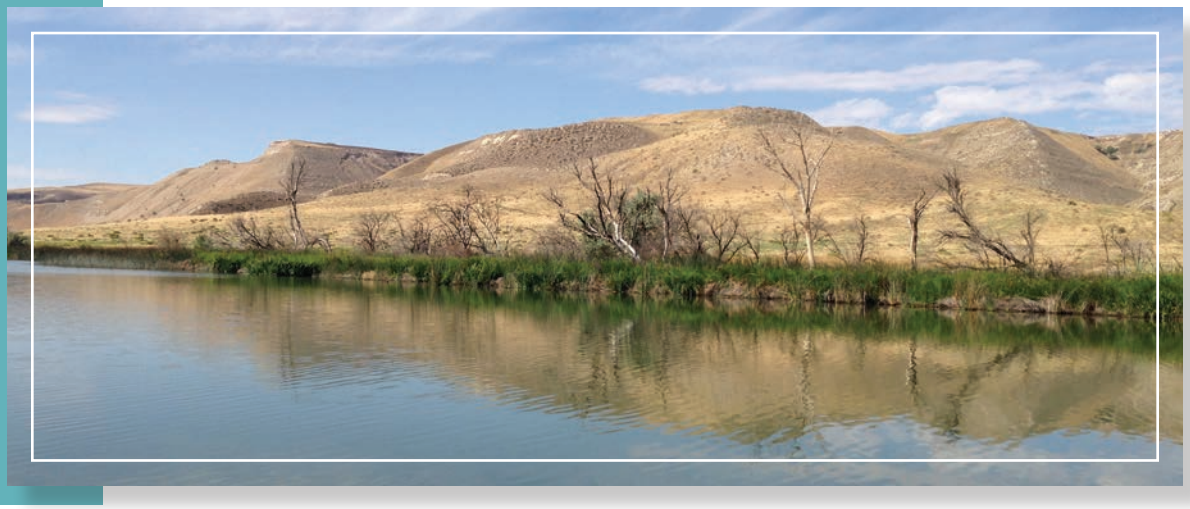
- **Public Understanding and Awareness –** There is a lack of public awareness about the park, its resources, and the research that occurs here. This includes not only a lack of proper facilities to process and store fossil resources, but also the ability to provide demonstrations of fossil research to visitors and appropriate facilities to enhance public outreach and interpretive media. The sensitivity of resources that are located in the field contributes to the lack of public awareness. Visitor access to the vast majority of the park is limited to ensure public safety and to protect nonrenewable paleontological resources; this increases the importance of facilitating public access to the research process.

  Associated high priority planning and data needs: site plan for research and laboratory area, stratigraphic analysis.

- **Visitor Experience –** The park staff needs to better understand visitor use and desired experiences of park visitors. The location of the visitor center in town (outside the park boundary) poses a challenge for accurately assessing who is visiting the park; some visitors come to the visitor center but do not visit the park itself, while others go directly to the park site and do not go to the visitor center, which is the primary place where staff are located and visitor activity can be assessed.

  Visitor ratings of the park are generally low, due to the lack of opportunities for the public to see the discovery, processing, and research associated with the fossils; the distance of the visitor center from the park entrance; and the lack of recreational opportunities. As mentioned above, due to the sensitivity of the fossil resources, visitor access to many parts of the park is restricted. Current land ownership prohibits visitors from reaching the area near the Horse Quarry, further diminishing interpretive opportunities.

  Associated high priority planning and data needs: site plan for research and laboratory area.



- **Capacity to Realize Park Mission –** A number of factors limit the park's ability to fully realize its legislated purpose.
  - The current location of administrative, research, and visitor facilities, several miles apart, leads to an awkward disconnection of park staff. The configurations and space constraints of those facilities also pose challenges for staff in terms of work efficiency and effectiveness. This disconnection between park facilities and the park proper has also been a source of visitor frustration, and a detailed visitor survey study showed low visitor satisfaction. Visitor complaints have included the separation of the visitor center from the park and the lack of ability to have a first-hand connection with the park's fossil resources and research. While it would not be safe or appropriate to allow direct visitor access to fossils in the field, the park would benefit from expanded opportunities to share their research with the public.
  - There are safety concerns with potential impacts to resources, visitors, staff, and facilities. Fires and landslide hazards threaten the park's natural resources and require monitoring and management. Facility safety concerns include the conditions for staff at the research complex (5 miles from the visitor center, and across the river from the bulk of the park) and visitor safety considerations for the newly acquired Bell Rapids substation site.
  - Staffing constraints limit the park's ability to keep up with research and monitoring, engage partners, and provide educational opportunities for visitors. The park's additional responsibilities with managing Minidoka National Historic Site pose challenges for staff time and workload.

  Associated high priority planning and data needs: research management plan, operations/strategic plan update, site plan for research and laboratory area, work space analysis, safety assessment and planning.

- **Current Natural Resource Understanding –** The park's susceptibility to geologic hazards (landslides) poses a safety concern for staff, visitors, and facilities. More baseline data are needed to understand the distribution of geologic hazard areas, as well as drawdown associated with irrigation in the valley.

  Fire threatens the park's natural resources, both from wild and manmade fires. Previous restoration projects have been destroyed by fire events.

  There is a need to understand current and potential future resource threats from climate change, including vegetation shift, possible changes in invasive species, fire regimes, flash floods, water cycles, water availability, and water quality. There is also a need to understand the impacts of past practices to current cultural and natural resources, for example, grazing, hunting, and other resource impacts.

  Associated high priority planning and data needs: resource stewardship strategy, climate change scenario planning.

- **Paleontological Research and Monitoring –** Park staffing levels are limiting the ability to leverage external assistance that would help ensure the viability of research and resource protection. While there is limited sporadic monitoring, the park is in need of a structured monitoring program. Existing monitoring has revealed fossil damage and loss through theft. Although research is called out in the legislation and purpose of the park, facilitation of such work is greatly limited by the current constraints of paleontological institutions, restrictions in transporting radon-emitting fossils, staffing for park oversight, lack of accommodations for guest researchers, and park constraints in storage and processing, as well as the need for safe facilities on site. The park is focused on examining ways to address all such needs, including improving partnerships in research.

  Associated high priority planning and data needs: research management plan, operations/strategic plan update, integrated pest management plan, resource stewardship strategy, site plan for research and laboratory area, paleontological resource monitoring, research library update, stratigraphic analysis, GIS data collection and analysis.

- **Collections Management –** There is currently a collections backlog at the park, which includes several thousand fossil specimens from the park, as well as cultural resource collections from other southern Idaho parks (Minidoka National Historic Site and City of Rocks National Reserve). Fossils are stored in a facility separate from the main paleontology lab. This requires fossils to be transported through a noncontrolled environment (outside and across the parking lot) for study. In addition, fossils from the Hagerman Horse Quarry, including several dozen large jackets (fossils encased in plaster matrix), contain high levels of radon, which becomes airborne in dust particles during fossil preparation and general movement of persons or items in the lab. The radon issue makes it difficult to find an external partner willing or able to support fossil preparation or collection storage. Currently, there are also pest issues in some of the research buildings that could threaten the health and well-being of staff. Deer mice, in particular, threaten building safety by chewing on electrical wires and urinating in what is a dusty environment. Hantavirus is also a potential concern.

  Associated high priority planning and data needs: operations/strategic plan update, integrated pest management plan, work space analysis, safety assessment and planning, resource stewardship strategy.

Planning and Data Needs

To maintain connection to the core elements of the foundation and the importance of these core foundation elements, the planning and data needs listed here are directly related to protecting fundamental resources and values, park significance, and park purpose, as well as addressing key issues. To successfully undertake a planning effort, information from sources such as inventories, studies, research activities, and analyses may be required to provide adequate knowledge of park resources and visitor information. Such information sources have been identified as data needs. Geospatial mapping tasks and products are included in data needs.

Items considered of the utmost importance were identified as high priority, and other items identified, but not rising to the level of high priority, were listed as either medium- or low-priority needs. These priorities inform park management efforts to secure funding and support for planning projects.

- **Criteria and Considerations for Prioritization.** The following criteria were used to evaluate the priority of each planning or data need:
  - Greatest utility to unit management.
  - Ability to address multiple issues; many issues are interrelated. For example, visitor satisfaction issues are related to the desire to see at least some researchers at work, but such access may be limited due to safety concerns in the park and in the lab facilities.
  - Emergency/urgency of the issue.
  - Prevention of resource degradation
  - Plans that consider protection of the fundamental resources and values.
  - Result in a significant benefit for visitors.
  - Feasibility of completing the plan or study, including staffing support and funding availability.
  - Opportunities, including interagency partnership or assistance.

High Priority Planning Needs

A clear overarching theme across the park is related to improved research facilities and improved resource management. Prioritization of resources to better educate park visitors about the significance of the site is also an important need. The following is a list and description of the park's high priority planning needs.

Research Management Plan.

Rationale — The park faces challenges with the adequacy of its research facility and needs appropriate guidance on research safety, training, equipment, staffing, and facility needs. A research management plan is needed to address these concerns.

Scope — This plan would cover the scope and execution of field and collections based research and determine appropriate and necessary equipment and training needed by staff. It would also include paleontological monitoring, stewardship of fossils, facilitation of partnerships with museums and universities, and the recruitment of highly trained research scientists and their students.

Site Plan for Research and Laboratory Area.

Rationale — As discussed above, the research area currently faces challenges with facility adequacy and safety. Site planning is needed to address the design issues that contribute to these concerns. A research facility was planned for in the 1996 general management plan and was later designed through a development concept plan, but has never been developed. Implementation of the research facility as conceived in the 1996 general management plan and subsequent development concept plan is no longer feasible; however, the need for such a facility still exists, and the park struggles to meet its legislated purpose as a research center without proper research facilities. Park visitors have also voiced a desire to be more connected to the park's research and resources, and the need for a space that connects the park's research with the visitor experience could be addressed as part of this site planning effort.

Scope — The site plan would address facility needs, access, and future use of the research. The plan would offer design solutions to address a number of key park issues, including facility safety issues and management of fossil collections that currently have to be transported outdoors between buildings in order to be examined. In addition, design of the research area could address the long-standing need to provide a venue for demonstrating research to the public. The research management plan and safety assessment would inform the site plan.

Operations/Strategic Plan Update.

Rationale — Adequate staffing is needed to oversee collaboration on research, monitoring, and education needs of the park. In addition, workload has significantly increased for staff who are now also responsible for the management of a WWII NPS site. The park is in need of immediate planning and implementation guidance over the next 3–5 years to address these issues.

Scope — An updated operations/strategic plan would enable the park to examine appropriate staffing levels for adequate resource management and operations and would provide a comprehensive look at goals and priorities for the park over the next several years.

Integrated Pest Management Plan.

Rationale — There are ongoing rodent issues in the fossil research lab and fossil collections storage area. Currently, this situation poses a safety risk for staff and collections.

Scope — A comprehensive pest management plan would address pest issues for park buildings (excluding the Museum Collections Building, which already has an integrated pest management plan and houses nonfossil collections). The plan could cover museum collections for all other buildings and address all identified pests, including museum, structural, and plant pests. A safety assessment would be needed in advance of this plan (see "High Priority Data Needs").

Resource Stewardship Strategy.

Rationale — Before the park takes action on natural and cultural resource management, a resource stewardship strategy (RSS) is needed to take a comprehensive, integrative look at appropriate resource management for the park. An RSS would serve as the basis for future resource management planning. There is currently a lack of information regarding the state of special-status species within the park and a need for analysis of impacts and management guidance for native plants and invasive species. In addition, the park needs to take a comprehensive look at the potential effects of climate change on its natural and cultural resources. An RSS would be the first step to addressing these and other pressing parkwide resource management issues.

Scope — A resource stewardship strategy would assist in the examination of overall ecosystem function within the sage-steppe ecosystem and any threatened and endangered species on site. This plan would also allow for the examination of threats from climate change. The plan would address paleontological resources, native plant restoration, and cultural resources.

Climate Change Scenario Planning.

Rationale — As the climate continues to change, the park will face new challenges for resource and facility management. As recent flash floods in the area have demonstrated, the park's preparedness for severe weather events is key to ensuring visitor, staff, and resource safety. The park has not, yet, examined the management implications of changes in precipitation patterns, water availability, fire regimes, and other projected climate change effects on the park. A greater understanding of these will help to inform effective future park management and will also provide a basis for improved climate change interpretation.

Scope — Scenario planning would examine potential climate futures to facilitate development of management actions to best care for park resources and facilities and also to inform climate change interpretation.

Bell Rapids Site Restoration and Rehabilitation Plan.

Rationale — The former Bell Rapids pump station, near the Horse Quarry, was recently added to the park and has existing structures that are in disrepair. There are safety concerns on the site due to the state of the unused facilities. The Rim to River trail runs along the site. A site plan is needed to address the design and use of this site, as well as to deal with safety concerns. Restoration of the natural conditions would support public education in this important area of the park.

Scope — A site restoration and rehabilitation plan would evaluate existing structures at the Bell Rapids pump station site, determine what (if any) structures could be retained and rehabilitated, and identify potential visitor opportunities in the area alongside natural resource restoration needs.

High Priority Data Needs

Safety Assessment.

Rationale — A safety assessment is needed at the laboratory/research complex due to the nature of the work done there, including radon levels emitted by the fossils and use of chemicals in the preparation lab. An issue paper that identifies the full scope and rationale of the safety concerns at the park is currently being prepared and should be referenced during a safety assessment.

Scope — The safety assessment would address safety issues and current standard operating procedures related to radon levels emitted by the fossils and use of chemicals in the preparation lab. It would also address rodent infestation. This assessment could also include chemicals used in the management of pests, application and storage of chemicals, certification of applicants, and other important considerations. It would also examine what is needed to provide additional safety features including, biohazard equipment (such as a ventilation hood), water for sanitation, and heating and cooling.

Paleontological Resource Monitoring.

Rationale — The park needs to assess whether additional monitoring is needed through a formal monitoring plan, as monitoring in the past has been informal and needs to be structured and quantifiable.

Scope — A formal monitoring plan would be developed, to include regularly scheduled monitoring and fossil collection. The park relies on seasonal staff to assist the paleontologist in paleontological resources monitoring. Implementation of the monitoring plan would require two seasonal staff to conduct the annual monitoring.

Research Library Update.

Rationale — A research library update is needed because the library has outdated materials and lacks access to relevant journal publications.

Scope — Coordination with local university library systems will ensure that the library is periodically updated. The update would include journal publications relevant to paleontology and Pliocene paleontological resources, including those at the park.

Stratigraphic Analysis.

Rationale — Tighter stratigraphic correlation of fossil sites across the monument is needed: this requires tephrostratigraphic correlation and better understanding of the relationship of the park's fossil localities across time and space.

Scope — The stratigraphic analysis would provide an analysis of the stratigraphy of the park's geologic landscape. GIS data points would be correlated with the geologic layers to provide insight into the age and composition of the stratigraphic layers.

GIS Data Collection and Analysis.

Rationale — The GIS data collection and analysis would include fossil location data, including fossil type as well as geologic (e.g., faults, braided streams, ash layers) and localized sedimentological (grain size and type, extent) features. GIS data collection would include site reassessment, ground truthing, and data correction where necessary for inaccurate existing data points. The information would be combined with the stratigraphic analysis data to provide a detailed picture of fossil locations, geologic conditions, and the park's tephrostratigraphy.

Scope — The GIS data collection and analysis would include fossil location data, as well as information on sedimentary faulting. GIS data collection would include site reassessment, ground truthing, and data correction where necessary for inaccurate existing data points.

Work Space Analysis.

Rationale — Currently, there are inadequate facilities to serve the park's legislated purpose of providing a research center. In addition, the existing administrative and research facilities are located and designed in a way that does not adequately accommodate the necessary functions of the park.

Scope — An analysis of the work spaces at the research and administrative facilities would assess the adequacy, safety, and space planning of those facilities. This information could then be used to address any inadequacy of those facilities.

Recently Completed and Ongoing Planning and Data Collection Efforts

See appendix D for recently completed and ongoing planning and data collection efforts that address park issues.

Part 3: Contributors

Hagerman Fossil Beds National Monument

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Appendixes

Appendix A: Enabling Legislation for Hagerman Fossil Beds National Monument

PUBLIC LAW 100-696-NOV. 18, 1988

TITLE III-HAGERMAN FOSSIL BEDS NATIONAL

MONUMENT

ESTABLISHMENT OF HAGERMAN FOSSIL BEDS NATIONAL MONUMENT

Sec. 301. (a) In order 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, and to provide for the display and interpretation of the scientific specimens uncovered at such sites, there is hereby established the Hagerman Fossil Beds National Monument (hereinafter in this title referred to as the "monument").

(b) The monument shall consist of approximately four thousand three hundred and ninety-four acres as depicted on a map entitled "Boundary Map, Hagerman Fossil Beds National Monument, Public Idaho" number HAFO-20,012A and dated September, 1987. The information, map shall be on file and available for public inspection in the office of the Director, National Park Service, Department of the Interior and the Office of the Superintendent, Hagerman Fossil Beds National Monument, Idaho.

(c) Within six months after the enactment of the title, the Secretary of the Interior (hereinafter in this title referred to as the "Secretary") shall file a legal description of the monument designated under this section with the Committee on Interior and Insular Affairs of the United States House of Representatives and with the Committee on Energy and Natural Resources of the United States Senate. Such legal description shall have the same force and effect as if included in this title, except that the Secretary may correct clerical and typographical errors in such legal description Public and in the map referred to in subsection (a). The legal description information, shall be on file and available for public inspection in the offices of the National Park Service, Department of the Interior.

ACQUISITION OF LANDS

Sec. 302. (a) The Secretary is authorized to acquire lands or property interests in lands within the monument only by donation or exchange.

(b) Notwithstanding any other provision of law, any Federal property located within the boundaries of the monument shall be transferred without consideration to the administrative jurisdiction of the Secretary to be administered in accordance with the purposes of this title.

(c) In acquiring non-Federal lands by exchange pursuant to this title, the Secretary shall utilize his existing authority including but not limited to applicable provisions of the Federal Land Policy and Management Act of 1976 (Public Law 94-579).

ADMINISTRATION OF MONUMENT

Sec. 303. The Secretary shall administer the monument established pursuant to this title in accordance with the Act entitled "An Act to establish a National Park Service, and for other purposes," approved August 25, 1916 (39 Stat. 535; 16 U.S.C. 1 et seq.), as amended and supplemented.

WATER RIGHTS

Sec. 304. Congress finds that there are unique circumstances with respect to the water or water-related resources within the Monument designated by this title. The Congress recognizes that there is little or no water or water-related resources that require the protection of a federal reserve water right. Nothing in this title, nor any action taken pursuant thereto, shall constitute either an expressed or implied reservation of water or water right for any purpose.

EFFECT ON EXISTING FACILITIES

Sec**.** 305. Nothing in this title shall affect electrical generating and transmission and irrigation pumping and transmission facilities in existence within the boundaries of the monument, or the right to operate, maintain, repair, upgrade, and modify such facilities. Such facilities are hereby expressly determined to be compatible and consistent with the purposes of this title.

CONTINUING PALEONTOLOGICAL RESEARCH

Sec**. 306.** In order to provide for continuing paleontological research, the Secretary shall incorporate in the general management plan provisions 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.

MINING PROHIBITION

Sec**. 307.** Subject to valid existing rights, Federal lands and interests therein, within the monument, are hereby withdrawn from disposition under the public land laws and from entry or appropriation under the mining laws of the United States, from the operation of the mineral leasing laws of the United States, and from operation of the Geothermal Steam Act of **1970,** as amended.

AUTHORIZATION OF APPROPRIATIONS

Sec. **308.** There are hereby authorized to be appropriated not to exceed **$5,000,000** to carry out the purposes of this title

Appendix B: Planning and Data Needs

Planning or Data Needs	Priority (H, M, L)	Notes
Management		
Plans		
Operations/strategic plan update	H	See "High Priority Planning Needs" narrative.
Data Needs and Studies		
Volunteer management strategy	M	This strategy would take a strategic look and help address some interpretation and education-related staffing issues.
Partner action strategy	M	A strategy is needed to examine how to engage research partners in on-site research, as well as data sharing. The park is interested in developing new partnerships for collaborative opportunities, including educational, sister parks program, university, fundraising, etc.
Data sharing guidance	L	Guidance would facilitate data sharing with partners, the academic community, and other relevant audiences.
Natural Resources		
Plans		
Resource stewardship strategy	H	See "High Priority Planning Needs" narrative.
Integrated pest management plan	H	See "High Priority Planning Needs" narrative.
Research management plan	H	See "High Priority Planning Needs" narrative.
Climate change scenario planning	H	See "High Priority Planning Needs" narrative.
Fire management plan update	M	This update would respond to fire safety concerns and changes in fire regimes.
Scenic resource management plan	L	Using the visual resource inventory identified in the "Data Needs and Studies" section, a plan will help identify management strategies and collaborations for protection of scenic views both within and outside the boundary.
Land acquisition plan	L	A land acquisition plan would focus on areas contributing to resource protection for landslide hazard areas and providing a facility buffer for the visitor center site.
Data Needs and Studies		
Paleontological resource monitoring	H	See "High Priority Data Needs" narrative.
Research library update	H	See "High Priority Data Needs" narrative.
Stratigraphic analysis	H	See "High Priority Data Needs" narrative.
GIS data collection and analysis	H	See "High Priority Data Needs" narrative.
Well water drawdown impact assessment	M	An assessment would assess any hazards related to the drawdown of wells and groundwater adjacent to and underneath park property. Groundwater is dropping about one foot per year.
Baseline assessment for paleontological resource theft and vandalism	M	An assessment would provide baseline data for monitoring of resource theft and vandalism and public entering of closed areas. Park staff is aware of public entering closed and sensitive areas, including the Horse Quarry area and other fossil sites.

Planning or Data Needs	Priority (H, M, L)	Notes
Natural Resources		
Landslide assessment	M to L	This assessment would identify geologic hazard areas within the park and include slope stability, predictive modeling, landslide history, and a geologic hazard map. Landslide hazard issues have been an issue for the park.
Understand how storm events due to climate change affect fire regimes and trace element levels in water supply	M	To inform resource management and climate change interpretation. This could be a follow-up data need after the resource stewardship strategy.
National register form for Horse Quarry	M	Site is eligible for national register listing.
Visual resource inventory	L	The inventory will assess the condition, value, and risks to scenic views and visual settings important to the park. The inventory will support the Scenic Geologic Landscape Resource designation.
Paleontological resource sensitivity map	L	To identify areas prone to erosion, landslides, etc. Identify occurrences of fossils along visitor use areas. This is separate from a landslide assessment. This could be a follow-up item after the landslide assessment.
Document night sky and natural sound values	L	To facilitate desired visitor experience and resource condition.
Gather baseline air quality data	L	To facilitate desired visitor experience and resource condition.
Conduct baseline inventory of natural resources and monitoring to support future management decisions	L	To identify needs for flora and fauna communities.
Cultural Resources		
Plans		
Museum emergency operations plan update	L	This would provide details to improve the safety of museum collections. The 2005 plan should be updated to include collections from the four parks.
Museum management plan	L	The plan would examine adequacy and make recommendations for storage and facility options and opportunities for curatorial partnerships.
Data Needs and Studies		
Administrative history	M	The park does not currently have an administrative history. The individuals that were instrumental in designation of the park are aging and therefore gathering their oral histories has become a time-sensitive matter. The creation of an administrative history would include oral histories and take a comprehensive look at the creation and evolution of the park. This could include park development actions and a history of practices such as hunting, grazing, and other special uses.
National register form for Oregon Trail segment	L	Site is eligible for national register listing.

Planning or Data Needs	Priority (H, M, L)	Notes
Facilities		
Plans		
Site plan for research and laboratory area	H	See "High Priority Planning Needs" narrative.
Bell Rapids site restoration and rehabilitation plan	H	See "High Priority Planning Needs" narrative.
Data Needs and Studies		
Work space analysis – adequacy, safety, space planning	H	See "High Priority Data Needs" narrative.
Interpretation		
Plans		
None		
Data Needs and Studies		
None		
Lands		
Data Needs and Studies		
Resource study	M	Required for land acquisition plan. The study would look at the resources in potential acquisition areas.
Safety		
Data Needs and Studies		
Safety assessment	H	See "High Priority Data Needs" narrative.
Visitor Use		
Plans		
Visitor resources assessment plan	L	This plan is required by the region; a new process for the plan is currently being developed.
Data Needs and Studies		
Visitor use study	L	The park would like to understand the relationship between park users and visitor center users, including: How many people visit the park but not the visitor center, and vice versa? Does the park provide appropriate visitor experiences?

Appendix C: Analysis of Fundamental Resources and Values and Other Important Resources and Values

Analysis of Fundamental Resources and Values

Fundamental Resource or Value	Pliocene Fossils
Related Significance Statements	1–7
Current Conditions and Trends	**Conditions** • Wind, rain, steep terrain, and vegetation loss due to wildfires can expose fossils. Such exposure can aid in finding and retrieving fossils, but it also can cause loss of fossils and disruption of a fossil site (loss of context), if not collected in a timely way to prevent damage from exposure to the elements. **Trends** • None identified.
Threats and Opportunities	**Threats** • Landslides and erosion can damage exposed fossils. • Human-caused and naturally ignited wildfires resulting in increased erosion. • Wildfire mitigation can potentially result in erosion if carried out improperly. • Altered fire regimes and precipitation patterns, stemming from climate change, may increase erosion and cause subsequent damage to fossils. • Based on climate model projections, fire frequencies could increase up to 25% by 2100 and the number of heavy rain events could double for the region that includes the park. • Looting and vandalism damage and destroy nonrenewable fossil features. **Opportunities** • Geological and paleontological research can lead to a greater scientific understanding of the evolution of species and changes in past environments. • Citizen science and volunteer watchdogs are proactive ways to engage the public in protecting Pliocene fossils and enhancing their understanding and appreciation of those fossils. • Educational opportunities, student training, interns, and visiting researchers will help ensure a continuity in and possible expansion of research on Pliocene fossils.
Existing Data and Plans Related to the FRV	• Resource management plan for fossil resources. • Lidar and satellite imagery. • Water quality data from the Natural Resource Stewardship and Science directorate. • Geologic mapping data.
Data and/or GIS Needs	• Stratigraphic analysis. • Paleontological resource monitoring. • Well water drawdown impact assessment. • Landslide assessment. • GIS data collection and analysis.
Planning Needs	• Updated fire management plan.

Fundamental Resource or Value	Pliocene Fossils
Laws, Executive Orders, and Regulations That Apply to the FRV, and NPS Policy-level Guidance	**Laws, Executive Orders, and Regulations That Apply to the FRV** • Paleontological Resources Protection Act (2009) • Wild and Scenic Rivers Act (1968) • Clean Water Act • Secretarial Order 3289, "Addressing the Impacts of Climate Change on America's Water, Land, and Other Natural and Cultural Resources **NPS Policy-level Guidance (NPS *Management Policies 2006* and Director's Orders)** • NPS *Management Policies 2006* (4.6.1) "Protection of Surface Waters and Groundwaters" • NPS *Management Policies 2006* (4.6.2) "Water Rights" • NPS *Management Policies 2006* (4.6.4) "Floodplains" • NPS Management Policies 2006 (4.7.2) "Weather and Climate • NPS *Management Policies 2006* (4.8.1.1) "Shorelines and Barrier Islands" • NPS *Natural Resource Management Reference Manual 77*

Fundamental Resource or Value	Public Understanding of Paleontology at Hagerman Fossil Beds
Related Significance Statements	3, 7
Current Conditions and Trends	**Conditions** • Visitor exposure to park paleontology is primarily carried out at the visitor center. Their ability to see and access fossils occurs here. • Fossil finds are very dispersed and many fossils are very small, making the majority of the park unsuitable for public viewing of fossil recovery. • The current interpretive and education programs focus on elementary education and local events. • The public cannot easily access fossils on site (visitor center is not located in the park). • The public cannot see the fossils from any of the overlooks on the monument. • There is no access for visitors to see the cleaning, reconstructing, and cataloging of fossils. **Trends** • More visitors seem to be interested in seeing fossils on site, in the park. • The park has received negative comments on social media sites regarding limited opportunities to see and learn about fossils.
Threats and Opportunities	**Threats** • Lack of access to viewing fossils and fossil "processing" diminishes the visitor experience (and appreciation of the site). **Opportunities** • Interpretation and public outreach provide opportunities to showcase paleontologists and other associated career fields. • Reaching out to the public with research carried out at Hagerman Fossil Beds provides the opportunity to broaden the public's view of evolution. • Interpretation and education provide opportunities for drawing clear distinctions between disciplines of archeology and paleontology. • Public programs can highlight the importance of the fossil beds for understanding evolutionary processes and animal response to climate change. • Highlight to the public that Hagerman's fossils are located at museums all over the world. • Interpreting current methods in paleontology affords the opportunity to describe the discipline's evolution and current technologies' contributions to understanding fossil histories and past environments. • Interpretation, exhibits, and potentially direct observation of laboratories, provide concrete ways for visitors to observe how fossils are cleaned and prepared for storage and display. • Interpretive programs and exhibits provide forums for underscoring the nonrenewable nature of fossils; once damaged or destroyed, they can never be replaced. • Symposiums and public programs offer opportunities for direct contact with the public on a variety of topics. • Citizen science, fossil stewardship, high school and college interns, field camps, post doctorate students, and visiting researchers are proactive ways to engage the public and researchers in protecting Pliocene fossils, enhancing their understanding and appreciation of those fossils, and providing research opportunities.

Fundamental Resource or Value	Public Understanding of Paleontology at Hagerman Fossil Beds
Opportunities	• Public programs can be used to illustrate the role of Hagerman fossils in museums and exhibits throughout the world. • Collaborations with Hagerman's sister park, Sibiloi National Park in Kenya, offers opportunities to compare the evolution of two diverse and contemporaneous fossil communities on different sides of the world. • Providing limited tours of fossil sites would allow visitors to have more direct access to fossil localities while providing protection for the fossils. • Online/website educational opportunities offer expanded ways of reaching out to a wider range of public to tell the Hagerman Fossil Beds stories. • Engagement in a variety of internal and external programs including Teacher/Ranger/Teacher and Geologists In Parks/GeoCorps America (Geological Society of America). • Special events, participations at parades, state fairs, expanded programs for nonprofit organizations—advertised through media releases—offer ways for the park to build connections with the local communities.
Existing Data and Plans Related to the FRV	• Long-range interpretive plan (in progress January 2015). • Visitor and research center plans (development concept plan, general management plan).
Data and/or GIS Needs	• Paleontological resource sensitivity map (areas prone to erosion, landslides, etc. occurrences of fossils along visitor use areas). • GIS data collection and analysis (of geologic and fossil data).
Planning Needs	• Long-range interpretive plan (in progress).
Laws, Executive Orders, and Regulations That Apply to the FRV, and NPS Policy-level Guidance	**Laws, Executive Orders, and Regulations That Apply to the FRV** • Americans with Disabilities Act of 1990 • Architectural Barriers Act of 1968 • Architectural Barriers Act Accessibility Standards 2006 • Rehabilitation Act of 1973 • NPS Concessions Management Improvement Act of 1998 • "Concession Contracts" (36 CFR Part 51) **NPS Policy-level Guidance (NPS *Management Policies 2006* and Director's Orders)** • NPS *Management Policies 2006* (chapter 7) "Interpretation and Education" • NPS *Management Policies 2006* (chapter 8) "Use of the Parks" • NPS *Management Policies 2006* (chapter 9) "Park Facilities" • NPS *Management Policies 2006* (chapter 10) "Commercial Visitor Services" • Director's Order 6: *Interpretation and Education* • Director's Order 42: *Accessibility for Visitors with Disabilities in National Park Service Programs and Services* • Director's Order 48A: *Concession Management* • Director's Order 48B: *Commercial Use Authorizations* • NPS *Transportation Planning Guidebook*

Fundamental Resource or Value	Lead and Facilitate Research
Related Significance Statements	7
Current Conditions and Trends	**Conditions** • There are unassessed safety and adequacy of work conditions in some park buildings due to high radon levels, rodent infestations, etc. • Capacity to oversee research, until safety conditions and mitigations can be assessed and until facilities are known to be adequate for such work, is limited due to potentially unsafe work conditions, as well as lack of facilities to store and process fossils. **Trends** • While the park paleontologist is focused on facilitating research there are significant constraints to facilitating collaborative efforts with outside institutions.
Threats and Opportunities	**Threats** • Suspected high radon levels and rodent infestations in some buildings make it hard to attract and maintain high quality staff (e.g., increase the potential for contracting Hantavirus from rodent feces). **Opportunities** • Student training, including international exchange, would ensure continuity in research and expanded opportunities for research. • Secure external expertise to help facilitate research. Research partnerships with academic institutions and museums and international sharing of data or results and sharing management processes, issues, and mitigation measures, thereby offering opportunities for collaboration and leveraging resources. Examples include sharing planning processes, planning documents, partnership strategies, etc. • Coordination with local university library systems would ensure that the library is periodically updated.
Existing Data and Plans Related to the FRV	• Database of the existing fossils found at the park. • External databases of fossils from the site that are not in NPS possession.
Data and/or GIS Needs	• Workspace analysis, which would include preparation lab functionality and adequacy, an analysis of existing facilities, and identify safe staffing needs. • Safety assessment, which would include chemical safety and preparation analysis and radon and ventilation analysis. • GIS data collection and analysis.
Planning Needs	• Paleontological research management plan. • Integrated pest management plan.

Fundamental Resource or Value	Lead and Facilitate Research
Laws, Executive Orders, and Regulations That Apply to the FRV, and NPS Policy-level Guidance	**Laws, Executive Orders, and Regulations That Apply to the FRV** • National Historic Preservation Act of 1966, as amended (16 USC 470a-b, 54 USC 300101) • Archeological and Historic Preservation Act of 1974 • Archaeological Resources Protection Act of 1979 • American Indian Religious Freedom Act of 1978 • Historic Sites, Buildings, and Antiquities Act of 1935 • Museum Act of 1955, as amended • Native American Graves Protection and Repatriation Act of 1990 • Paleontological Resources Preservation Act (2009) • Endangered Species Act of 1973, as amended • National Invasive Species Act • Federal Noxious Weed Act of 1974, as amended • Executive Order 13112, "Invasive Species" • Executive Order 11593, "Protection and Enhancement of the Cultural Environment" • Executive Order 13007, "American Indian Sacred Sites" • "Curation of Federally-Owned and Administered Archaeological Collections" (36 CFR 79) • "Protection of Historic Properties" (36 CFR 800) **NPS Policy-level Guidance (NPS *Management Policies 2006* and Director's Orders)** • NPS *Management Policies 2006* (1.6) "Cooperative Conservation Beyond Park Boundaries" • NPS *Management Policies 2006* (2.3.1.4) "Science and Scholarship" • NPS *Management Policies 2006* (4.1) "General Management Concepts" • NPS *Management Policies 2006* (4.1.4) "Partnerships" • NPS *Management Policies 2006* (4.2) "Studies and Collections" • NPS *Management Policies 2006* (4.4.1) "General Principles for Managing Biological Resources" • NPS *Management Policies 2006* (4.7.2) "Weather and Climate" • NPS *Management Policies 2006* (5.1) "Research" • NPS *Management Policies 2006* (8.10) "Natural and Cultural Studies, Research, and Collection Activities" • Director's Order 24: *NPS Museum Collections Management* • Director's Order 28: *Cultural Resource Management* • NPS *Museum Handbook*, parts I, II, and III • *NPS-75 Natural Resources Inventory and Monitoring Guideline* • NPS *Natural Resource Management Reference Manual 77*

Fundamental Resource or Value	Geologic Processes
Related Significance Statements	1–6
Current Conditions and Trends	**Conditions** • Rain and wind also contribute to the potential for landslides. • The erosion of geologic strata by wind, rain, fluctuating water levels, and temperature is an ongoing process. **Trends** • In the past, landslides were caused by irrigation; since irrigation has stopped, landslides occur from natural processes (wind, rain).
Threats and Opportunities	**Threats** • Fossils are constantly being exposed by erosion. If the fossils are not monitored and assessed in the field, park staff cannot make decisions on whether to stabilize or collect fossils and related information will be lost. • Flash floods may damage or cause loss of fossils. • Hunters and staff walking on steep terrain may contribute to erosion. • Water fluctuation levels can have cumulative impacts in eroding slopes. • Based on climate model projections, fire frequencies could increase up to 25% by 2100 and the number of heavy rain events could double for the region that includes the park. This could increase flooding and erosion impacts on geologic resources. **Opportunities** • Fossils are constantly being exposed by erosion. This allows for new fossil sites to be located and recorded. • The better park staff understand the geologic processes (geomorphology), the better they can design a monitoring strategy. • Improving native vegetation within the park can help stabilize slopes and work toward eliminating nonnative invasive plant species. • Securing more LiDAR imagery, 3D laser, and photogrammetry, will allow park staff to improve monitoring and increase understanding of the geomorphology.
Existing Data and Plans Related to the FRV	• There are many data related to irrigation. However, the irrigation has stopped. • Previous data are available on landslides in the park GIS database. • Landslide historical maps show where there have been landslides and where the probability of landslides is great. • The park has a study done on irrigation and the correlation to landslides.
Data and/or GIS Needs	• Landslide assessment, including predictive models. • Stratigraphic analysis including Lidar imagery, 3D laser, and photogrammetry.
Planning Needs	• None identified.

Fundamental Resource or Value	Geologic Processes
Laws, Executive Orders, and Regulations That Apply to the FRV, and NPS Policy-level Guidance	**Laws, Executive Orders, and Regulations That Apply to the FRV** • Endangered Species Act of 1973, as amended • National Invasive Species Act of 1996 • Migratory Bird Treaty Act of 1918 • National Environmental Policy Act of 1969; 42 USC 4321 • Federal Noxious Weed Act of 1974, as amended • Paleontological Resources Preservation Act (2009) • Executive Order 13112, "Invasive Species" • Secretarial Order 3289, "Addressing the Impacts of Climate Change on America's Water, Land, and Other Natural and Cultural Resources" **NPS Policy-level Guidance (NPS *Management Policies 2006* and Director's Orders)** • NPS *Management Policies 2006* (1.6) "Cooperative Conservation Beyond Park Boundaries" • NPS *Management Policies 2006* (4.1) "General Management Concepts" • NPS *Management Policies 2006* (4.1.4) "Partnerships" • NPS *Management Policies 2006* (4.4.1) "General Principles for Managing Biological Resources" • NPS *Management Policies 2006* (4.7.2) "Weather and Climate" • NPS Director's Order 18: *Wildland Fire Management* • Director's Order 28: *Cultural Resource Management* • *NPS Natural Resource Management Reference Manual 77* • NPS *Wildland Fire Management Reference Manual 18*

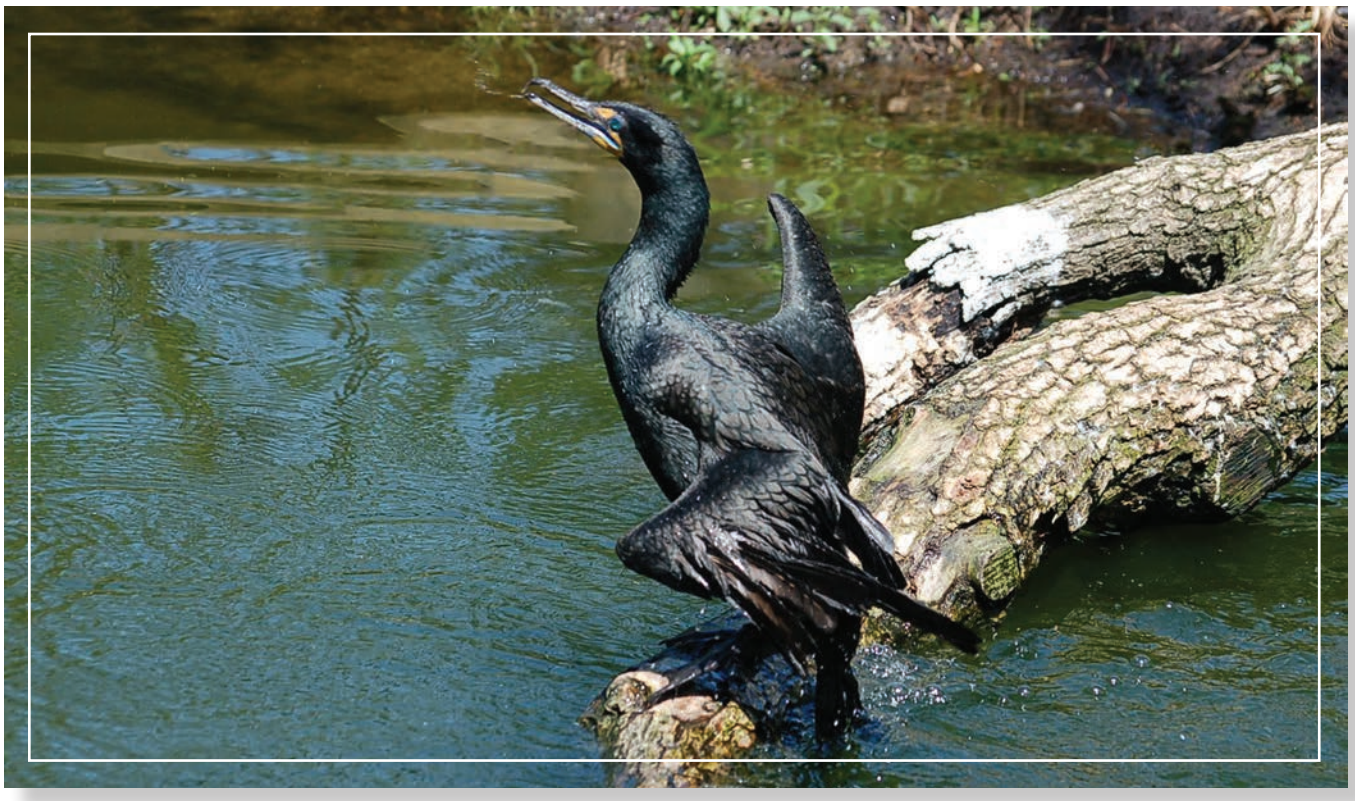
Fundamental Resource or Value	A Record of Paleoecosystems
Related Significance Statements	1–7
Current Conditions and Trends	**Conditions** • The park uses limited linkages, knowledge sharing, and collaboration with other institutions and fossil localities to globally reconstruct past paleoenviroments to better understand paleoecological trends. • Conveying information is critical part of the scientific process and to public outreach. It is facilitated by networking, numbers of researchers, technology (e.g., access to Skype or live demos, or sharing 3d laser image of a fossil bone with a researcher who is thousands of miles away), ability to do electronic field trips, and ability to access journals. Challenges can also be opportunities to partner. • There is a need for a greater bridge between scientific information and managers and the public. • There is a need for additional researchers to advance the understanding of the paleoenvironment, fossils, and potential analog use. Several factors contribute to having few researchers involved with the park. These include limitations due to facility conditions, safety, sharing of information abroad, and staffing to orchestrate and facilitate research. **Trends** • With the agreement that established Sibiloi National Park in Kenya as a sister park, park staff and researchers have the opportunity to share techniques, understanding of new technologies, and means of protecting fossils. • Recent research has trended to looking at the evolution of paleoecosystems (connecting with broader paleobiogeography) and ecosystem linkages / environmental trends over time.
Threats and Opportunities	**Threats** • Limited sharing of data and results impacts the standards of science and the ability of humankind to understand its past and how this can be applied to anticipating and mitigating future impacts to its future, such as those associated with species responses to climate change. This is a nonrenewable resource and requires specific management actions to ensure preservation. The inability to efficiently share information between institutions limits researchers' ability to share information and leverage resources through collaborative efforts. • Outside research is limited—due to restrictions in travel for researchers and inadequate housing (e.g., inadequate park housing, limited rentals within the community, lack of office space, insufficient rodent-free areas to work). • Delayed or restricted access to new communication technologies (e.g., Skype and 3-D laser) can limit efficiencies, add to travel costs, etc.). **Opportunities** • Taking advantage of opportunities to collaborate globally to maximize information sharing and leverage resources. • Adequate on-site facilities (housing office space/s) to support researchers' needs would attract more, high-caliber researchers to the park. • Assisting researchers in obtaining grants and research funds by sharing information about Hagerman Fossil Beds and its collections/databases.
Existing Data and Plans Related to the FRV	• None identified.

Fundamental Resource or Value	A Record of Paleoecosystems
Data and/or GIS Needs	• Stratigraphic analysis including mapping and tephrostratigraphy. The analysis would also include information on sedimentary faulting and would greatly assist in organizing and cleaning up the fossil location database. Splitting of locations has occurred over the years and the information should be combined. The analysis would also include a systematic system of collecting data established for the GIS data with site reassessment, ground truthing, and data correction. • Landslide assessment. • GIS data collection and analysis: Geological stratigraphy mapped. • Landslide assessment.
Planning Needs	• None identified.
Laws, Executive Orders, and Regulations That Apply to the FRV, and NPS Policy-level Guidance	**Laws, Executive Orders, and Regulations That Apply to the FRV** • Paleontological Resources Preservation Act 2009 **NPS Policy-level Guidance (NPS *Management Policies 2006* and Director's Orders)** • NPS *Management Policies 2006* (1.6) "Cooperative Conservation Beyond Park Boundaries" • NPS *Management Policies 2006* (4.1) "General Management Concepts" • NPS *Management Policies 2006* (4.1.4) "Partnerships" • NPS *Management Policies 2006* (4.7.2) "Weather and Climate"

Analysis of Other Important Resources and Values

Other Important Resource or Value	The Oregon Trail
Current Conditions and Trends	**Conditions** • The Oregon Trail is segmented within the park. Large portions of it are paved over. • Fuel loads (invasives) are high in certain areas along the Oregon Trail and along fence lines and obscure views. • The white stakes marking the Oregon Trail burned in the last fire. • The condition is fair to good for the trail segments. • The park limits access and protection measures are focused on addressing invasive, nonnative species and impacts from fire. The Oregon Trail is fenced to help reduce off-road vehicle use. • The Oregon Trail is interpreted through various means, and there are opportunities for more interpretation of the trail. • Vegetation both stabilizes and threatens trail ruts. **Trends** • Fire frequency may be increasing due to increased fuel loads (primarily invasives). • Fire has burned over the segments; fire agencies are aware of the location of the segments and have avoided them in fighting fires. Also, fires within the park are left to burn unless there are safety and structure issues. • Idaho Power is also aware of the locations, and avoids the segments in their work.
Threats and Opportunities	**Threats** • Some visitors are interested in walking along the Oregon Trail, which can erode the trail and disturb any surface artifacts. • Based on climate model projections, mean annual temperature is projected to increase with fire frequencies increasing up to 25% by 2100 and the number of heavy rain events could double for the region that includes the park. This could increase flooding and erosion impacts on the Oregon Trail. **Opportunities** • Additional waysides in the park could provide information on the Oregon Trail to make visitors more aware of the existence of and the historical value of the trail segments. • Waysides also offer a medium for visitors to make the connection with people traveling the Oregon Trail and that the travelers were aware of the fossils. • Partnerships with Oregon Trail partners offer opportunities to expand and enhance interpretation of the trail segments (no reenactments on portions of the Oregon Trail within the park).
Existing Data and Plans Related to the OIRV	• Fire management plan. • Climate change scenario planning.
Data and/or GIS Needs	• A National Register of Historic Places nomination needs to be completed for these segments and submitted to the Idaho state historic preservation officer for evaluation of national register significance and possible inclusion in the national register.
Planning Needs	• Fire management plan for the park needs updating.

Other Important Resource or Value	The Oregon Trail
Laws, Executive Orders, and Regulations That Apply to the OIRV, and NPS Policy-level Guidance	**Laws, Executive Orders, and Regulations That Apply to the OIRV** • Antiquities Act of 1906 • Historic Sites, Buildings, and Antiquities Act of 1935 • National Historic Preservation Act of 1966, as amended • Archeological and Historic Preservation Act of 1974 • American Indian Religious Freedom Act of 1978 • Archaeological Resources Protection Act of 1979 • Museum Act of 1955, as amended (54 U.S.C. §102501-102504, 16 USC 18f-1) • Executive Order 11593, "Protection and Enhancement of the Cultural Environment" • "Protection of Historic Properties" (36 CFR 800) • Secretarial Order 3289, "Addressing the Impacts of Climate Change on America's Water, Land, and Other Natural and Cultural Resources **NPS Policy-level Guidance (NPS *Management Policies 2006* and Director's Orders)** • NPS *Management Policies 2006* (chapter 5) "Cultural Resource Management" • NPS *Management Policies 2006* (4.7.2) "Weather and Climate" • Director's Order 24: *NPS Museum Collections Management* • Director's Order 28: *Cultural Resource Management* (1998) • Director's Order 28A: *Archeology* (2004) • NPS *Museum Handbook*, parts I, II, and III • *The Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation*



Other Important Resource or Value	Scenic Geologic Landscape
Current Conditions and Trends	**Conditions** • Visitors are able to see the resources from afar. • Panoramic views allow visitors to see the park and the surrounding geologic landscape. • Wind turbines are very noticeable along the western boundary. • Evidence of erosion can be seen, particularly in areas associated with steep slopes. **Trends** • Potential for increased development of transmission lines that would run near the park. • Increased fire potential resulting from fuel loading (primarily from invasives) and climate change. • River levels are now fluctuating due to a change in how the power company manages the dam. These changes are in response to the requirement to use power generated from wind turbines installed nearby.
Threats and Opportunities	**Threats** • Switching between turbines and hydropower generation leads to greater (~2 feet) reservoir level fluctuations (increasing the potential for shoreline erosion). • Unauthorized recreational use (i.e., off-highway vehicles, motorcycles, and unauthorized social trails) degrades the landscape by damaging vegetation and the scenic viewshed. • Based on climate model projections, mean annual temperature is projected to increase with fire frequencies increasing up to 25% by 2100 and the number of heavy rain events could double for the region that includes the park. This could impact landscape's natural hydrologic regimes, geomorphic processes, and biotic processes, including increases in nonnative species. • Air quality is diminished due to nearby animal feed operations and other surrounding agricultural activity that contributes to dust and air pollutants. **Opportunities** • Interpretation of climate change would enhance visitor understanding of altered fire regime, loss of species, and increase of invasive species. • The scenic geologic landscape provides a setting for birding and wildflower viewing. • The scenic geologic landscape offers an environment for boating activities and associated views of the park. • The low light pollution at the park contributes to excellent night sky viewing opportunities. • Expand interpretative and educational tools to communicate the connections between climate change, scenic views, natural sounds, night skies, park resources, air quality, and human health. • Improve park sustainability and environmental leadership by continuing the focus on becoming a Climate Friendly Park. Address related needs in the Environmental Management System (Director's Order 13A).
Existing Data and Plans Related to the OIRV	• Inventory and monitoring sagebrush steppe monitoring plan. • Water resource management plan. • Soils resource inventory completed.
Data and/or GIS Needs	• Scenic inventory.

Other Important Resource or Value	Scenic Geologic Landscape
Planning Needs	• Resource stewardship strategy. • Fire management plan. • Updated long-range interpretive plan. • Scenic resources management plan.
Laws, Executive Orders, and Regulations That Apply to the OIRV, and NPS Policy-level Guidance	**Laws, Executive Orders, and Regulations That Apply to the OIRV** • The Clean Air Act (42 USC 7401 et seq.) gives federal land managers the responsibility for protecting air quality and related values, including visibility, plants, animals, soils, water quality, cultural resources, and public health, from adverse air pollution impacts **NPS Policy-level Guidance (NPS *Management Policies 2006* and Director's Orders)** • NPS *Management Policies 2006* (1.4) "Park Management" • NPS *Management Policies 2006* (1.6) "Cooperative Conservation Beyond Park Boundaries" • NPS *Management Policies 2006* (3.1) "General" • NPS *Management Policies 2006* (4.7) "Air Resource Management" • NPS *Management Policies 2006* (4.7.2) "Weather and Climate" • NPS *Natural Resource Management Reference Manual 77* • Director's Order 13A: *Environmental Management Systems*

Other Important Resource or Value	Modern Flora and Fauna Communities
Current Conditions and Trends	**Conditions** • The condition of the sagebrush steppe is poor. The sagebrush steppe is a recovering area from previous agricultural use. Additionally, fire has impacted (reduced) the sagebrush steppe ecosystem. • The park currently is targeting the management of invasive species such as Russian olive, thistle, etc., through possibly conducting controlled burning and mastication. • The park contains very small sections of riparian and wetland areas, which are in relatively good condition. • Unknown impacts on habitat, soils, and fire frequency from nonnative plant species. **Trends** • Riparian and wetland areas are generally stable; however, tamarisk, Russian olive, and other nonnative species threaten to displace native vegetation.
Threats and Opportunities	**Threats** • Fire is a threat to the sagebrush steppe and riparian and wetland areas. Riparian and wetland areas recover much faster after a fire than sagebrush steppe. • Invasive species displace (outcompete) native vegetation. • Water drawdown may contribute to shoreline erosion, reducing shoreline habitat. • Fluctuating temperatures and precipitation resulting from climate change can potentially influence species composition. • Increased rates of erosion; disturbed soils. • Based on climate model projections, mean annual temperature is projected to increase, with fire frequencies increasing up to 25% by 2100, and the number of heavy rain events could double for the region that includes the park. This could impact the landscape's natural hydrologic regimes, geomorphic processes, and biotic processes, including increases in nonnative species. **Opportunities** • Rehabilitate the pumping station area back to sagebrush steppe wetland area (transitional area) and reduce manmade hazards from past developments. • Work with local schools to reintroduce native species in a small area in order to establish native seed islands, along with educating the public to the importance of native plants. The park has entered into a cooperative agreement through a grant for this project (Haven's project). • Provide opportunities for the public to assist with data collection. • Encourage public recreation and enjoyment of park trails to enhance the visitor experience.
Existing Data and Plans Related to the OIRV	• The Inventory and Monitoring Program has completed their inventories. They have initiated monitoring of the sagebrush steppe. They revisit the vegetation plots every four years to understand trends. • The Intermountain Exotic Plant Management Team provides yearly data report on increases or decreases of nonnative plants within the park.
Data and/or GIS Needs	• Conduct baseline inventory of natural resources and monitoring to support future management decisions.
Planning Needs	• Climate change scenario planning.

Other Important Resource or Value	Modern Flora and Fauna Communities
Laws, Executive Orders, and Regulations That Apply to the OIRV, and NPS Policy-level Guidance	**Laws, Executive Orders, and Regulations That Apply to the OIRV** • Endangered Species Act of 1973, as amended • National Invasive Species Act • Migratory Bird Treaty Act; 16 USC 703-712 • Eagle Protection Act; 16 USC 668 • National Environmental Policy Act of 1969; 42 USC 4321 • Federal Noxious Weed Act of 1974, as amended • Clean Water Act • The Clean Air Act (42 USC 7401 et seq.) gives federal land managers the responsibility for protecting air quality and related values, including visibility, plants, animals, soils, water quality, cultural resources, and public health, from adverse air pollution impacts • Paleontological Resources Preservation Act (pending, Senate Bill S.263), USC Title 9, chapter 79, 5937 • Executive Order 13112, "Invasive Species" • Secretarial Order 3289, "Addressing the Impacts of Climate Change on America's Water, Land, and Other Natural and Cultural Resources" **NPS Policy-level Guidance (NPS *Management Policies 2006* and Director's Orders)** • NPS *Management Policies 2006* (1.6) "Cooperative Conservation Beyond Park Boundaries" • NPS *Management Policies 2006* (4.1) "General Management Concepts" • NPS *Management Policies 2006* (4.1.4) "Partnerships" • NPS *Management Policies 2006* (4.4.1) "General Principles for Managing Biological Resources" • NPS *Management Policies 2006* (4.7.2) "Weather and Climate" • NPS Director's Order 18: *Wildland Fire Management* • NPS *Natural Resource Management Reference Manual 77* • NPS *Wildland Fire Management Reference Manual 18* • Director's Order 13A: *Environmental Management Systems*

Appendix D: Recent and Ongoing Park Planning and Data Collection Efforts

Document or Data Collection Effort	Date
Hagerman Fossil Beds National Monument: Museum Management Plan	2000
Historical Overview: Upper Salmon Falls to Lower Salmon Falls, Hagerman Fossil Beds National Monument	2000
Hagerman Fossil Beds National Monument: Wildland Fire Management Plan	2001
Sagebrush Steppe Ecosystem of Southwest Idaho – A Preliminary Conservation Strategy	2002
Water Resources Management Plan: Hagerman Fossil Beds National Monument Idaho	2003
Report for Subagreement No. 20 to Cooperative Agreement No. CA9000-95-018 2003 Vertebrate Inventory, Hagerman Fossil Beds National Monument	2003
Hagerman Fossil Beds National Monument: Bell Rapids Documentation Study	2004
Hagerman Fossil Beds National Monument Geologic Resources Evaluation Scoping Summary	2004
Oregon Museum of Science and Industry. Bat Research Team Summary of Findings	2004
Inventory of Upper Columbia Basin Network Fire Information	2005
Hagerman Fossil Beds: Museum Collection Emergency Operation Plan	2005
Paleontological Resource Inventory and Monitoring: Upper Columbia Basin Network	2005
Weather and Climate Inventory National Park Service Upper Columbia Basin Network	2006
Upper Columbia Basin Network Vital Signs Monitoring Plan	2007
Museum Management Plan: City of Rocks National Reserve, Minidoka Internment National Monument, Hagerman Fossil Beds National Monument, Craters of the Moon National Monument and Preserve	2008
Classification of the Plant Communities of Hagerman Fossil Beds National Monument, Idaho	2008
Upper Columbia Basin Network Resource Brief: Climate Change in the UCBN	2008
Upper Columbia Basin Network Resource Brief: Monitoring Sagebrush-Steppe Vegetation in the UCBN	2008
Integrated Pest Management Plan: Museum Collections. City of Rocks National Reserve, Craters of the Moon National Monument and Preserve, Hagerman Fossil Beds National Monument, Minidoka National Historic Site	2009
Monitoring Sagebrush-steppe Vegetation in the Upper Columbia Basin Network: 2008 Annual Monitoring Report. City of Rocks National Reserve, Hagerman Fossil Beds National Monument, John Day Fossil Beds National Monument	2009
Vegetation Classification and Mapping: Hagerman Fossil Beds National Monument. Moscow, ID and Galena, IL	2009
Hagerman Fossil Beds National Monument: GMP Implementation Plan Meeting	2009
Upper Columbia Basin Network Resource Brief: Monitoring Sagebrush-Steppe Vegetation in the UCBN	2009

Document or Data Collection Effort	Date
Upper Columbia Basin Network Climate Change Resource Brief	2009
Hagerman Fossil Beds National Monument: Geologic Resources Inventory Report	2009
Sagebrush Steppe Vegetation Monitoring in Craters of the Moon National Monument and Preserve, Hagerman Fossil Beds National Monument, John Day Fossil Beds National Monument, and Lake Roosevelt National Recreation Area. 2009 Annual Report	2010
Vertebrate Inventory of Hagerman Fossil Beds National Monument 2003, Upper Columbia Basin Network	2010
Upper Columbia Basin Network Resource Brief: Monitoring Sagebrush-Steppe Vegetation in the UCBN	2010
Northern Rocky Mountains: Invasive Plant Management Plan. Intermountain Region	2011
Upper Columbia Basin Network Resource Brief: Rare Plants and Climate Change	2011
Evaluation of the Sensitivity of Inventory and Monitoring National Parks to Nutrient Enrichment Effects from Atmospheric Nitrogen Deposition: Upper Columbia Basin Network (UCBN)	2011
Evaluation of the Sensitivity of Inventory and Monitoring National Parks to Acidification Effects from Atmospheric Sulfur and Nitrogen Deposition: Main Report	2011
Evaluation of the Sensitivity of Inventory and Monitoring National Parks to Acidification Effects from Atmospheric Sulfur and Nitrogen Deposition: Upper Columbia Basin Network (UCBN)	2011
Upper Columbia Basin Network Resource Brief: Climate Change at Hagerman Fossil Beds	2011
Upper Columbia Basin Network Resource Brief: Wildland Fire and Climate Change	2011
Upper Columbia Basin Network Inventory and Monitoring Sagebrush Steppe Monitoring: Hagerman Fossil Beds National Monument	2012
Sagebrush Steppe Vegetation Monitoring in Hagerman Fossil Beds National Monument 2012 Annual Report	2012
Natural Resource Condition Assessment: Hagerman Fossil Beds National Monument	2012
Hagerman Fossil Beds National Monument: Value Analysis - Mini Va. Replace Obsolete Maintenance Facility	2013
Long-Range Interpretive Plan	2015
Archeological Overview	2015

Appendix E: Administrative Commitments

Name	Start Date	Expiration Date	Stakeholders	Purpose
Memorandums of Agreement (MOA)				
Structural fire suppression agreement between National Park Service, Hagerman Fossil Beds National Monument, and Hagerman Fire Protection District, Hagerman, Idaho	06/03/13	06/03/18	Safety representative	Structural fire response
Bliss Fire Department	05/27/13	05/27/18	Safety representative	Structural fire response
General Agreements				
Lease agreement for visitor center and administrative building complex	01/04/12	01/04/22 (early termination available in 2017)	Superintendent	Lease of buildings in the town of Hagerman
Southern Idaho Tourism Board	08/27/14	09/02/18	Superintendent	For Twin Falls Welcome Center collaboration; agreement between all four southern Idaho national park system units
Interagency Agreements				
Southern Idaho Regional Communications Center (BLM wildfire agreement)	04/29/15 Updated annually	04/29/16	Superintendent	Allows BLM and its partners to address wildland fire and fuel loads at the park, along with aviation and other non-fire logistical matters; authority noted in the plan
USFWS Interagency agreement for interpretation	06/16/14	05/23/16	Superintendent of Hagerman Fossil Beds National Monument and Minidoka Internment National Monument, with concurrence from superintendents of Craters of the Moon National Monument and Preserve and City of Rocks National Reserve	Twin Falls Welcome Center support

Name	Start Date	Expiration Date	Stakeholders	Purpose
Cooperative Agreements				
Discover Your Northwest	N/A – this agreement is held by the Pacific West Regional Office	N/A	Chief of Interpretation	Cooperative agreement for education, interpretation, and research
Hagerman IDEA	09/23/10	09/23/15	Chief of Interpretation	Assistance with education and interpretation
Sister park agreement with Sibiloi National Park, Kenya	06/27/14	08/27/19	Superintendent	Kenya Wildlife Services and National Museums of Kenya
Rights-of-Way				
Idaho Power: • Bell Rapids power line • Bell Rapids transfer station • Upper Salmon Falls/Bell Rapids Road power line • County Highway Division • Bell Rapids Road	04/28/71	In perpetuity	Local and state citizens	The Idaho Power transmission line that supplied electricity to the Bell Rapids irrigation facility; that power line sits within an easement granted in 1970 by the State of Idaho (who owned the land at that time) to Idaho Power; it is, essentially, a permanent easement
Special Use Permits				
Research – as needed	As indicated on special use permit	As indicated on SUP	Chief of integrated resources and park paleontologist	Research approved by the NPS (park)

Pacific West Region Foundation Document Recommendation

Hagerman Fossil Beds National Monument

September 2015

This Foundation Document has been prepared as a collaborative effort between park and regional staff and is recommended for approval by the Pacific West Regional Director.

09/08/2015

RECOMMENDED
Judy Geniac, Superintendent, Hagerman Fossil Beds National Monument **Date**

10/7/2015

APPROVED
Martha J. Lee, Acting Regional Director, Pacific West Region **Date**

As the nation's principal conservation agency, the Department of the Interior has responsibility for most of our nationally owned public lands and natural resources. This includes fostering sound use of our land and water resources; protecting our fish, wildlife, and biological diversity; preserving the environmental and cultural values of our national parks and historic places; and providing for the enjoyment of life through outdoor recreation. The department assesses our energy and mineral resources and works to ensure that their development is in the best interests of all our people by encouraging stewardship and citizen participation in their care. The department also has a major responsibility for American Indian reservation communities and for people who live in island territories under U.S. administration.

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October 2015

Foundation Document • Hagerman Fossil Beds National Monument

NATIONAL PARK SERVICE • U.S. DEPARTMENT OF THE INTERIOR