Appendix P: Draft Impairment Analysis for the Northern Rocky Mountains Invasive Plant Management Plan Environmental Assessment Preferred Alternative

Alternative 2: Implement Comprehensive Invasive Plant Management Program (Preferred)

New NPS guidelines require this draft analysis for the preferred alternative.

The following impact topics are considered in the Northern Rocky Mountains Invasive Plant Management Plan Environmental Assessment (EA).

Step 1: Resource Impact Topics Considered in the Northern Rocky Mountains Invasive Plant Management Plan Environmental Assessment

Physical Resources
- Air Quality
- Geology
- Soils
- Paleontological Resources
- Water Resources (including water quantity, water quality, and wetlands)

Biological Resources
- Vegetation
- Wildlife
- Special Status Species

Cultural Resources
- Prehistoric and Historic Archeological Resources
- Historic Structures/Cultural Landscapes

Recreational / Social Resources
- Wilderness

Impairment analyses are not provided for the following topics also considered in the Carbon River Access Management EA because these are not required:
- Grazing and Livestock Trailing
- Visitor Experience
- Human Health and Safety
- Park Operations

Impairment findings relate to park resources and values and these impact topics are not generally considered to be park resources or values according to the Organic Act, and therefore cannot be impaired the same way that an action can impair park resources and values (NPS 2010:4).

Step 2: Brief Description of Condition of Resource

See descriptions combined under d) below.

Step 3: Analysis of Impairment

a) Whether the resource is necessary to fulfill the purposes for which the park was established;
b) Whether the resource is key to the natural or cultural integrity of the park or to the opportunity for enjoyment of the park;
c) Whether the resource is identified as a significant resource in the park's planning documents; and
d) A "because statement" as to why the action will or will not result in impairment of the resource. This "because statement" should include a discussion of the context, severity, duration and timing of any impacts and also discussion of any mitigation measures, if applicable.

a) Whether the resource is necessary to fulfill the purposes for which the park was established
b) Whether the resource is key to the natural or cultural integrity of the park or to the opportunity for enjoyment of the park

All of the following park resources analyzed in the EA are necessary to fulfill the purposes for which the 10 parks were established or are important to the natural or cultural integrity of the 10 parks or to the opportunity for enjoyment of the 10 parks:

- Air Quality
- Geology
- Soils
- Paleontological Resources (where applicable)
- Water Resources (including water quantity, water quality, and wetlands)
- Vegetation
- Wildlife
- Special Status Species
- Prehistoric and Historic Archeological Resources
- Historic Structures/Cultural Landscapes

In addition, Craters of the Moon park values were enhanced by the designation of wilderness.

These resources contribute to the purpose and significance identified in the enabling legislation for the park, including the purposes and significance of the park as identified in the General Management Plan (NPS CRMO 2002) and as noted in the EA.

c) Whether the resource is identified as a significant resource in the park's planning documents

As noted above, the following resources are recognized as significant (named) in the park planning documents, notably the applicable General Management Plan (GMP) or Comprehensive Management Plan (CMP) (City of Rocks) or Monument Management Plan (MMP) (Craters of the Moon):

City of Rocks National Reserve

The final Comprehensive Management Plan (CMP) (NPS 1994) for City of Rocks (Figure 2) recognizes the three principal resource values of the reserve as the California Trail, the exceptional rock outcrops and the habitats associated with them, and the historic rural setting reminiscent of the American West. Among the key resources noted in the comprehensive plan include:

- City of Rocks is one of four national reserves in the U.S., including one of two in the national park system. A National Reserve differs from many traditional National Park System units in its unusual management arrangement and because traditional ranching uses are allowed to continue provided they are consistent with the obligation to protect the area.
- City of Rocks is a National Historic Landmark because of its importance in the history of American westward migration during the mid-1800s on the California Trail. It is considered one of the most intact settings and significant landmarks on the California Trail.
- City of Rocks is a national natural landmark because it is a geologically unique area that exhibits nationally significant features, including the dominance of bornhardt formations, the scarcity of

tors, a wide range of elevations over which the landforms are distributed, and evidence that the landforms have been carved from the upper parts of a pluton.
- It contains some of the oldest rocks in North America juxtaposed with others that are more recent.
- A portion of the reserve that has remained relatively undisturbed was designated a research natural area by the USFS and BLM prior to the establishment of the reserve.
- City of Rocks contains segments of the California National Historic Trail (PL 102-328, 1992). The National Trails System Act (PL 90-543, 1968) defined the purpose of the trails as "the identification and protection of the historic route and its historic remnants and artifacts for public use and enjoyment."
- City of Rocks has a long tradition of recreational use by local residents and is an outstanding rock climbing area.

The following are the Draft Significance Statements crafted for the in-process GMP (NPS CIRO (Teague) 2009)

- As part of the largest overland emigration in American history, City of Rocks National Reserve preserves the most intact and authentic setting of the California Trail. City of Rocks served as a landmark and critical refuge that inspired numerous written accounts of the landscape.
- The Reserve has a timeless natural quality and protects and preserves outstanding scenery set among sculpted granite monoliths framed by the Albion and surrounding mountains.
- The Reserve embraces the western rural setting by preserving remnants of traditional occupation, transportation, and land use of prehistoric and historic peoples.
- The Reserve is a dramatic geologic landscape with naturally sculptured spires and domes that evoked emotional responses as recorded in emigrant diaries and from visitors of today.
- The Reserve preserves an uplifted and eroded landscape that reveals geologic structures, igneous intrusions, and a rare exposure of some of the oldest and deepest crustal metamorphic rocks in the western United States.
- The Reserve provides one of the highest quality granite face-climbing areas in the United States.

Craters of the Moon National Monument and Preserve

According to the Monument Management Plan (NPS CRMO 2005: 7-11), Craters of the Moon National Monument and Preserve is significant because:

- It contains a remarkable and unusual diversity of exquisitely preserved volcanic features, including nearly all of the familiar features of purely basaltic volcanism – craters, cones, lava flows, caves, and fissures.
- It contains most of the Great Rift area, the deepest known land-based open volcanic rift, and the longest volcanic rift in the continental United States.
- Many of the more than 400 kipukas contain representative vegetative communities that have been largely undisturbed by human activity. These communities serve as key benchmarks for scientific study of long-term ecological changes to the plants and animals of sagebrush steppe communities throughout the Snake River Plain.
- It contains the largest remaining land area within the Snake River Plain still retaining its wilderness character. The Craters of the Moon Wilderness Area and Wilderness Study Areas within the Monument encompass over 500,000 acres of undeveloped federal lands.
- It is a valued western landscape of over 750,000 acres that are characterized by a variety of scenery, broad open vistas, and pristine air quality.
- It contains abundant sagebrush steppe communities that provide some of the best remaining sage-grouse habitat and healthiest rangelands on the Snake River Plain.
- It contains many diverse habitats for plants and animals as a result of a long history of volcanic deposition.

Fossil Butte National Monument

Some of the world's best preserved fossils are found in the flat-topped ridges of southwestern Wyoming's cold sagebrush desert. Fossilized fish, insects, plants, reptiles, birds, and mammals are exceptional for their abundance, variety, and detail of preservation. Most remarkable is the story they tell of ancient life in a sub-tropical landscape.

- The fossil record preserved within the Eocene Green River Formation of Fossil Basin is world-renowned. Over 100 years of intensive collecting has revealed a wide diversity of fossil fish, reptiles, birds, mammals, insects, and plants. Discoveries of new fossil species from the ancient lake sediments continue to expand understanding of the paleoecosystem.
- Most notably, the quality of fossil preservation is extraordinary, nearly unparalleled in the fossil record. The quiet-water, fine-grained lake sediments, and water conditions that excluded scavengers combined to preserve articulated skeletons (all bones are in place rather than scattered). Delicate fossils rarely preserved elsewhere, yield valuable scientific data.
- Fossils from Fossil Basin are located in museums around the world. Intensive commercial fossil collecting from areas surrounding the national monument yields tens-of-thousands to hundreds-of-thousands of fossil fish each year. These fossil fish represent perhaps the most common articulated fossil vertebrates for sale anywhere in the world.
- Today less than 1.5 percent of Fossil Lake is protected and managed by the NPS. Fossil Butte National Monument is a site that promotes the protection of this world-class paleontological heritage.

Golden Spike National Historic Site

The desire to link the east and west coasts grew out of a belief in American ingenuity and Manifest Destiny. Dreams of expanding America's world influence culminated at Promontory Summit on May 10, 1869, with the completion of the first transcontinental railroad. A nation anxious to heal from the Civil War celebrated the "Golden Spike" as the symbol of a unified continent. The transcontinental rails propelled the industrial revolution across the West, transforming the United States forever. People and products could safely cross the country in five days rather than five months. The railroad rushed passengers and goods westward, and fed eastern appetites for raw material. The Union Pacific and Central Pacific were the harbingers of both the "Gilded Age," where money not birthright drove social standing, and the class conflict of later decades.

Grant-Kohrs Ranch National Historic Site

- Grant-Kohrs Ranch joined the NPS as one of the few remaining places in the United States created and sustained by the open range ranching era.
- The stories of the ranch include the classic saga of immigrants pursuing the American dream, one that defines the cattle baron and cowboy heyday of 1865-1890.
- The lives of Johnny Grant and Conrad Kohrs embodied the dual aspects of self sufficiency and community loyalty necessary for survival on the frontier... and survive they did, and prosper.
- The open range era, influenced greatly by these men and their families shaped our western lands, opened eastern markets and created a culture whose principles of integrity and wisdom anchor deep in our knowledge of ourselves as Americans.
- The ranch has 93 historic structures, over 27,000 historical artifacts, 802 acres of maintained landscape, 30 miles of fences, 12 miles of historic irrigation ditches, a herd of Hereford, Shorthorn and Longhorn cattle, and draft and quarter horses. The park is unique, in part, because the buildings and ranch records were meticulously preserved by Conrad and Nell Warren, the previous owner of the ranch and the grandchildren of Conrad Kohrs. These records and artifacts provide a thorough and accurate picture of ranching operations through the years beginning in the 1860s through the 1960s (NPS GRKO 2008b).

Hagerman Fossil Beds National Monument

- The monument contains world-class paleontological resources. This includes the world's richest (in terms of quality, quantity and diversity) known deposits of fossils from the late Pliocene (Blancan) time period. Many of the monument's fossil specimens represent the last vestiges of species that existed before the Ice Age or Pleistocene, and the earliest appearances of species of modern flora and fauna.
- The monument's paleontological resources are contained in a continuous, undisturbed stratigraphic record spanning at least 500,000 years. In addition, the monument's fossil deposits represent what appears to be an entire paleontological ecosystem with a variety of habitats such as wetland, riparian, and grassland savanna. The quantity and quality of information in the monument's sediments and fossils permit scientific analyses that allow comparisons with modern ecosystems and permit studies of environmental changes and biodiversity. In light of the monument's mandate to provide a center for paleontological research, its resources also afford opportunities to contribute new approaches (including applying ecological principles) and to adapt technologies from other fields to the science of paleontology.
- The monument contains the Hagerman Horse Quarry, a National Natural Landmark (NNL) recognized as one of the six most important sites in the world regarding the fossil history of the horse (MacFadden 1992).
- The large number of high quality specimens at the Hagerman Horse Quarry facilitates studies of the ecology and population structure of the earliest known representative of the modern horse genus *Equus*.
- The history of paleontological research at Hagerman Fossil Beds in many ways parallels the history of the science of paleontology, providing opportunities for education and interpretation about the science as well as the resource.
- The monument is one of only three units in the National Park System that contain parts of the Oregon National Historic Trail.
- The monument contains cultural resources potentially eligible for inclusion on the National Register of Historic Places, and it has cultural significance to American Indians.
- The monument contains evidence of many aspects of the geologic history of southern Idaho, including cycles of sedimentation and erosion; the history of ancient Lake Idaho, which is linked to long-term climatic change; the cataclysmic and geologically instantaneous Bonneville Flood; and basalt flows that affected the course of the Snake River, which borders the monument (NPS 1996:7-8).

Little Bighorn Battlefield National Monument

The following are the Draft Significance Statements crafted for the in-process Long Range Interpretive Management Plan (NPS LIBI 2010).

- Battlefield as spiritual/sacred ground: The battlefield has spiritual significance, a special power of place that encourages reflection and triggers emotional connection to landscapes that still evoke the 19th century tension between tribal lands and westward expansion. As sacred ground, it honors sacrifices made during real life struggles for survival.
- Battlefield's iconic significance: The battlefield has iconic and representational significance that transform it into a symbol of cultural conflict. It possesses the elements of an American epic—larger than life personalities, conflicting views of nature and the world, racism, debates over policies and strategies, promises made and broken, revenge, greed, defense of homeland, tragedy, triumph, and more.
- Battlefield's historic/cultural significance: While the outcome of the battle seemed to validate Indian resistance, it shocked the rest of the nation, quieted debate on how to approach Indian policy, and unleashed a harsh, forceful military response that changed the West and Indian communities in ways that are still unfolding.
- Significance of the battlefield's memorial landscape: The monuments and particularly the markers across the battlefield, placed where soldiers and warriors fell in battle, are a distinctive, even

unique, approach to memorialization, simple, somber recognition of battlefield actions (24 soldiers received the Medal of Honor, for example) by all sides.

Minidoka National Historic Site

Civil and Constitutional Rights

- The national monument is a compelling venue for engaging in a dialogue concerning the violation of civil and constitutional rights, the injustice of forced removal and incarceration, the history of racism and discrimination in the United States, and the fragility of democracy in times of crisis.
- The national monument offers a unique setting to reflect on the internment and incarceration experience and the relationship of this experience to contemporary and future political and social events.
- The national monument provides a forum for understanding how internees expressed citizenship and patriotism through individual choices. Choices reflected a range of responses, including serving valiantly in the military and draft resistance. Both choices affected families and communities, as well as the individuals who made them.

People

- Minidoka Relocation Center dramatically changed the lives of those incarcerated and had a dramatic and lasting impact on the Nikkei community.
- The establishment of the Minidoka Relocation Center during WWII had a profound effect on the social and economic fabric of neighboring southern Idaho communities.

Place

- The setting and location of Minidoka, with its isolation, openness, and distance from the Pacific Coast, are characteristic of the [War Relocation Authority's] (WRA) site selection criteria. The camp was a hastily constructed, large-scale temporary facility that became densely populated with over 9,000 people at one time. It was typical of WRA camps constructed during World War II.
- The national monument contains unique historic and archeological resources, many of which are listed on the National Register of Historic Places.

World War II

- The Minidoka Relocation Center represents a significant part of World War II and American history.

Nez Perce National Historical Park:

The 1997 GMP for Nez Perce National Historical Park and Big Hole National Battlefield identified the following significance statements for the park:

- The park preserves a continuum of at least 11,000 years of Nez Perce culture. Its archeological record, museum collection, cultural landscapes and structures are of national significance. The park contains historical and cultural landmarks that are of legendary significance to the Nez Perce people. The Nez Perce (Nee-Me-Poo) National Historic Trail commemorates a significant event in the history of the Nez Perce people.
- Nez Perce National Historical Park offers a unique opportunity for visitors to gain an understanding of present-day Nez Perce culture within and outside the Nez Perce homeland and to learn about important events of the past.
- Past and present Nez Perce culture was shaped by the geography and the rich and varied resources of the Nez Perce homeland.
- The park includes parts of the Lewis and Clark National Historic Trail and the Lolo Trail, both of which were used by other cultures. The Nez Perce country, Nez Perce National Historical Park sites, and other Native American cultures overlap but also differ in many ways.
- The park contains burial sites and sacred sites; it is also a focal point for current Nez Perce culture and allows for the continued traditional use of resources. The park honors the rights retained in

the 1855 and 1863 treaties and will fully apply all applicable laws, executive orders, policies, and treaties related to the protection of cultural properties and sacred sites.

Nez Perce National Historical Park: Bear Paw Battlefield:
The Bear Paw Battlefield, a National Historic Landmark, is the site of the attack upon, siege and eventual surrender of the non-treaty Nez Perce at the end of their 1877 flight. The Battlefield "is a place of mourning, not just for memorializing a past, but as a place for letting go of what might have been" (NPS BEPA n.d.). The White Bird Band succeeded in escaping to Canada, but after Chief Joseph's surrender, the remainder of the non-treaty Nez Perce were exiled first to Kansas and later to Oklahoma, before eventually returning to the northwest.

Nez Perce National Historical Park: Big Hole National Battlefield
The Battle of the Big Hole was fought on August 9 and 10 of 1877 between U.S. soldiers and citizen forces under the command of Lieutenant Colonel John Gibbon and the "non-treaty" bands of the Nez Perce people. Prior to the battle, bands of Nez Perce used the valley as a summer hunting ground and as a route between their homeland west of the Bitterroot Mountains and the buffalo hunting grounds east of the Rocky Mountain Divide. After a pre-dawn surprise attack by the Army, the Nez Perce were able to force Colonel Gibbon into a retreat and into defensive position. The Nez Perce, having suffered heavy losses during the battle, withdrew from the site after burying their dead.

The Big Hole was established as a national monument in 1910 and originally administered by the War Department and later the U.S. Forest Service. Jurisdiction over the site was transferred to the NPS in July of 1933 by President Franklin D. Roosevelt. The historic and sacred site memorializes the bravery of the Nez Perce and U.S. soldiers who died during one of the nation's most famous Indian War battles.

d) A "because statement" as to why the action will or will not result in impairment of the resource. This "because statement" should include a discussion of the context, severity, duration and timing of any impacts and also discussion of any mitigation measures, if applicable.

- **Air Quality**

For air quality information in the parks, please see Chapter IV: A. 1. Air Quality in the EA.

Good air quality is necessary to fulfill the purposes for which the 10 parks were established and is key to the natural integrity and enjoyment of the 10 parks. In the preferred alternative, there would be short-term impacts from implementation of the plan. These impacts would be localized and would not be detectable over ambient conditions. There would be no impairment of air quality or air quality related values from the actions in the preferred alternative.

- **Geology / Soils**

For geology information in the parks, please see Chapter IV: A. 2. Geology in the EA.
For soils information in the parks, please see Chapter IV: A. 3. Soils in the EA.

Geological resources and healthy soils are necessary to fulfill the purposes for which the 10 parks were established, are identified in park planning documents as significant, and are key to the natural integrity and enjoyment of the park. The preferred alternative would have short- and long-term impacts from treatment of nonnative invasive plants. Beneficial effects would occur from removal of nonnative invasive plants and restoration. As a result, there would be no impairment of geological resources or values.

- Paleontological Resources

For paleontological resources information in the parks, please see Chapter IV: Section 4. Paleontological Resources in the EA.

Paleontological resources are necessary to fulfill the purposes for which two of the 10 parks were established (Fossil Butte and Hagerman Fossil Beds), are identified in park planning documents as significant, and are key to the natural integrity and enjoyment of the parks. The preferred alternative would have minimal short- and long-term impacts from treatment of nonnative invasive plants. Mitigation measures would avoid or limit impacts. As a result, there would be no impairment of paleontological resources or values.

- **Water Resources (including water quality, wetlands and floodplains)**

For water resources information in the parks, please see Chapter IV: A. 5. Water Resources (including Hydrology and Water Quantity, Water Quality and Wetlands) in the EA.

Water resources are necessary to fulfill the purposes for which the 10 parks were established, are identified in park planning documents as significant, and are key to the natural integrity and enjoyment of the parks. The preferred alternative would have short-term adverse impacts on physical hydrology, water quantity, water quality and wetlands. Because impacts would be localized and short-term, there would be no impairment of water resources or water resources values.

- **Vegetation**

For vegetation information in the parks, please see Chapter IV: B. 1. Vegetation in the EA.

Vegetation resources are necessary to fulfill the purposes for which the 10 parks were established, are identified in park planning documents as significant, and are key to the natural integrity and enjoyment of the parks. The preferred alternative would have short-term adverse and long-term beneficial effects on native plant resources. Restoration would provide additional beneficial effects. Because adverse impacts would affect individual plants and nonnative invasive species, rather than native plant populations or communities, impacts would primarily be beneficial and there would be no impairment of vegetation or the values associated with it.

- **Wildlife**

For wildlife information in the parks, please see Chapter IV: B. 3. in the EA.

Healthy wildlife populations are necessary to fulfill the purposes for which the 10 parks were established, are identified in park planning documents as significant, and are key to the natural integrity and enjoyment of the parks. There would be a variety of short-term adverse impacts to wildlife combined with some long-term beneficial impacts associated with removal of nonnative invasive species. Restoration would have long-term beneficial effects. Because individual animals, rather than wildlife populations and communities would be affected, there would be no impairment of wildlife or wildlife values.

- **Special Status Species**

For special status species information in the parks, please see Chapter IV: B. 4. in the EA.

Viable populations of special status species are necessary to fulfill the purposes for which the 10 parks were established and are key to the natural integrity of the parks. Because effects to special status wildlife species would result primarily from noise and disturbance; because a wide range of mitigation measures would be applied to limit impacts; and because the actions would not result in the loss of individuals or in jeopardy to species, there would be no impairment of special status species or values associated with them.

- **Prehistoric and Historic Archeological Resources**

For prehistoric and historic archeological resources information in the parks, please see Chapter IV: C. 1. Prehistoric and Historic Archeological Resources in the EA.

Intact prehistoric and historic archeological resources are necessary to fulfill the purposes for which the 10 parks were established and are key to the cultural integrity and enjoyment of the parks. Because there would be limited effects from nonnative invasive plant treatment and because a wide range of mitigation measures would be used to avoid or reduce impacts, there would be no impairment of archeological resources or the values associated with them.

- **Historic Structures/Cultural Landscapes**

For historic structures / cultural landscapes information in the parks, please see Chapter IV: C. 3. Historic Structures / Cultural Landscapes in the EA.

Intact historic structures and cultural landscapes are necessary to fulfill the purposes for which the 10 parks were established, are identified in park planning documents as significant, and are key to the cultural integrity and enjoyment of the parks. Because there would be no impacts to historic structures and long-term beneficial impacts to cultural landscapes, there would be no impairment of historic structures or cultural landscapes or their values.

- **Wilderness**

For wilderness information in Craters of the Moon National Monument and Preserve, please see Chapter IV: D. 2. Wilderness in the EA.

Wilderness values and experiences are necessary to fulfill the purposes for which Craters of the Moon was established, are identified in park planning documents as significant, and are key to the natural and cultural integrity of the monument and preserve. Because the preferred alternative would generally have short-term adverse impacts on wilderness and wilderness values, there would be no impairment of wilderness or wilderness values.

Conclusion

Because there would be no significant adverse impacts to a resource or value whose conservation is (1) necessary to fulfill specific purposes identified in the 10 parks establishing legislation, (2) key to the natural or cultural integrity of the 10 parks or to opportunities for the enjoyment of the 10 parks, or (3) identified as a goal in one of the 10 park's GMPs, CMP or MMP or other relevant National Park Service planning documents, there would be no impairment of resources and values in the 10 parks.