National Park Service
U.S. Department of the Interior
Grand Teton National Park and John D. Rockefeller, Jr. Memorial Parkway
Moose, Wyoming

Historic Properties Management Plan
Environmental Assessment

January 2016

Historic Properties Management Plan

Environmental Assessment

Summary

The park and parkway contain 695 cultural resources listed, or eligible for listing, in the National Register of Historic Places. Individual resources may be historic sites, buildings, structures, or objects. As these resources are found in 44 discrete locations they are referred to in the plan as "historic properties." The purpose of the Historic Properties Management Plan/Environmental Assessment (HPMP/EA) is to define management direction for these historic properties. Its proposals would improve cultural resource preservation; initiate appropriate uses that support park operations; protect human health and safety; improve visitor enjoyment and access; and emphasize proactive rather than reactive stewardship.

The HPMP/EA evaluates three alternatives: a no-action and two action alternatives. The no-action alternative describes existing management. The action alternatives focus on the future of 11 properties that are currently unused or underused. Properties currently in use—such as the lodges at Jenny Lake and Jackson Lake and the cabins at Highlands and Lupine Meadows—were reassessed and will continue to be used as they are today. Modifications to previously approved plans for Mormon Row and White Grass Dude Ranch are also presented.

Alternative B (the NPS preferred alternative) proposes to focus funding on rehabilitating up to four properties for adaptive reuse, while improving care for most of the other properties. The properties for adaptive reuse are 4 Lazy F Dude Ranch, the former Snake River Land Company Office, the historic park headquarters at Beaver Creek, and Mormon Row. Alternative B also recommends removal of three properties that have low cultural significance, poor access in terms of proximity to a park operations base or visitor services area, and limited potential for use. Those properties are Aspen Ridge Ranch, the McCollister Residence, and Sky Ranch.

Alternative C would continue to care for most properties as well or better than they are now but, in order to retain all historic properties, the park would spread its future preservation efforts more thinly across the underused properties.

The HPMP/EA can be found at http://parkplanning.nps.gov/hpmp.

Public Comment

Comments can be made on the above website, hand delivered to park headquarters in Moose, Wyoming, or mailed to: HPMP Planning Team, Grand Teton National Park, PO Box 170, Moose, WY 83012. Comments by fax, email, and bulk comments in any format submitted on behalf of others will not be accepted. Anyone choosing to submit a comment is advised that their name, hometown, and the content of their comments could be made public at any time in accordance with the Freedom of Information Act.

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ABAAS	Architectural Barriers Act Accessibility Standards
ABA	Architectural Barriers Act
ADA	Americans with Disabilities Act
BMP	Best Management Practice
CCC	Civilian Conservation Corps
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
DO	Director's Order
EA	Environmental Assessment
EIS	Environmental Impact Statement
EO	Executive Order
EPA	Environmental Protection Agency
ESA	Endangered Species Act
FM	Facilities Management
GRTE	Grand Teton National Park
JODR	John D. Rockefeller, Jr. Memorial Parkway
LCS	List of Classified Structures
LE	Law Enforcement
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NPS	National Park Service
NRHP	National Register of Historic Places
SHPO	State Historic Preservation Office(r)
USDOI	U.S. Department of the Interior
USFWS	U.S. Fish and Wildlife Service
USGS	U. S. Geological Survey
WYDEQ	Wyoming Department of Environmental Quality

CHAPTER 1: PURPOSE AND NEED

Introduction

This Historic Properties Management Plan / Environmental Assessment (EA) presents three alternatives for managing historic properties within Grand Teton National Park. A comprehensive, strategic plan is needed to provide overall management guidance. Site-specific planning for a subset of properties is also needed. This EA was prepared in accordance with the National Environmental Policy Act (NEPA) of 1969, regulations of the Council on Environmental Quality (CEQ) (40 CFR §1508.9), and the National Park Service Director's Order (DO) 12: *Conservation Planning, Environmental Impact Analysis, and Decision-Making*.

Brief Description of the Planning Area

Grand Teton National Park (GRTE) and the John D. Rockefeller Jr. Memorial Parkway (JODR) are located in the northwest corner of Wyoming, south of Yellowstone National Park and north of the town of Jackson within Teton County (**Figure 1**). Both are units of federal land administered by the National Park Service (NPS) and managed by the Grand Teton National Park superintendent.

Grand Teton National Park was established in 1929 and was united with Jackson Hole National Monument in 1950 through Public Law 81-787 to create the present park of approximately 310,000 acres. The park contains spectacular scenery that includes majestic mountains and surrounding lakes, rivers, forests, and sagebrush flats. Its visitation consistently ranks among the top 10% in the national park system, and in 2012 the park hosted about 4 million visitors, 2.7 million of which were recreational visits in GRTE and 1.2 million in JODR (NPS 2013). Approximately 90% of annual GRTE visitation (99% of JODR visitation) occurs between May and October.

The John D. Rockefeller, Jr. Memorial Parkway comprises about 23,700 acres of land between the northern boundary of Grand Teton National Park and the southern boundary of Yellowstone National Park. It was authorized by Public Law 92-404 in 1972 to commemorate John D. Rockefeller, Jr.'s many significant contributions to the cause of conservation in the United States and to provide connection between Yellowstone and Grand Teton national parks.

The park and parkway currently contain 695 resources that are listed, or eligible for listing, in the National Register of Historic Places. Individual resources may be historic sites, buildings, structures, or objects. These resources are found in 44 locations, where there may be one resource or multiple resources with the same context and historical significance. For greater clarity within this plan, the resources will be discussed by location and referred to as "historic properties" throughout the document. References in this plan to "the park's historic properties" include historic landscapes as well as the sole historic property located in the JODR, Snake River Bridge #2. **Figure 1** illustrates the locations of all 44 historic properties discussed in this plan. **Appendix A** provides detail regarding each of these properties and the distribution of the 695

resources within those properties. This plan does not include resources owned by private parties or by other agencies (e.g., Bureau of Reclamation).

Although Beaver Creek #10 is part of the Old Administrative District (Beaver Creek) historic property, the building is discussed as a separate historic property due to its current lack of use and significant history as the original U.S. Forest Service as well as NPS park headquarters building.

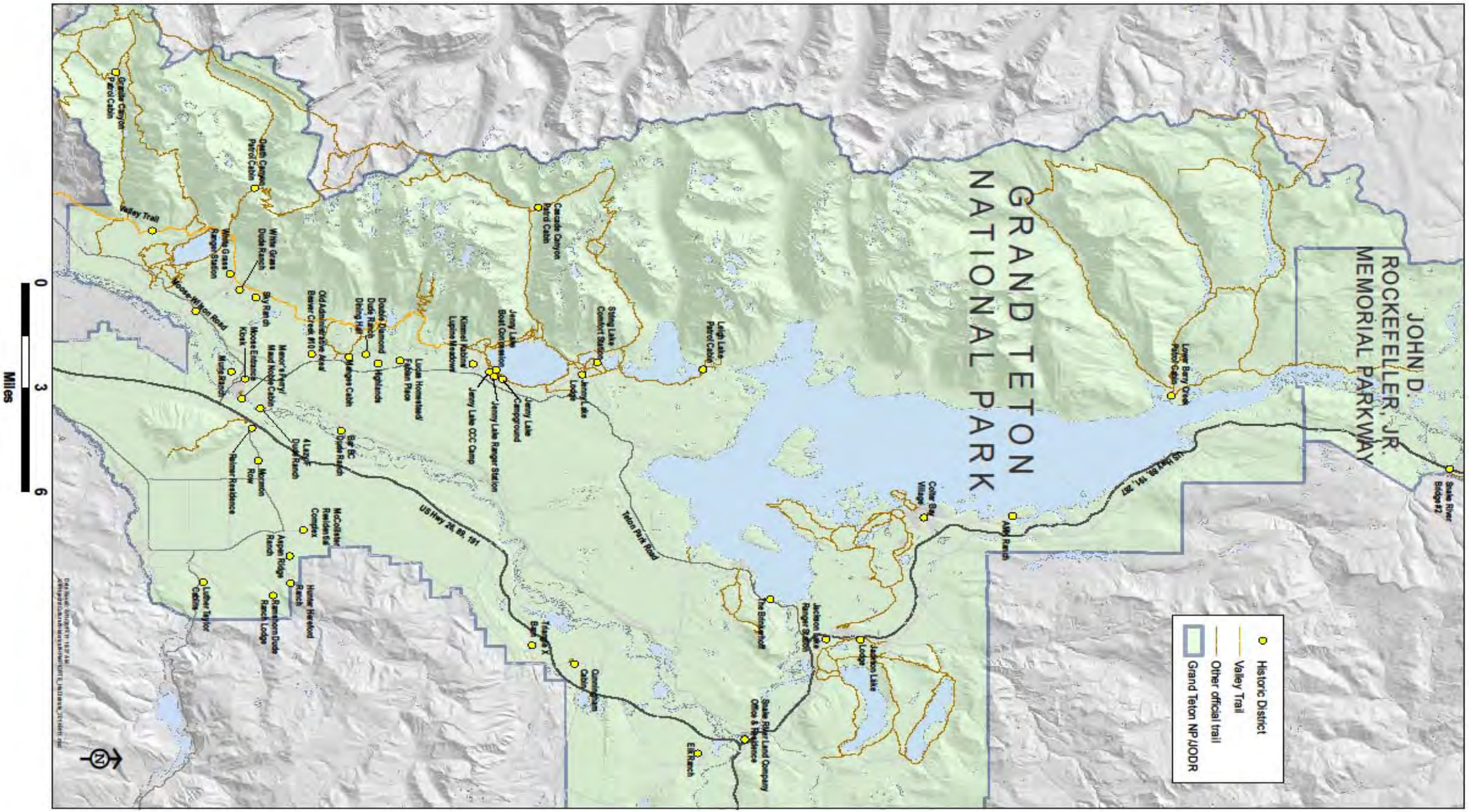

Figure 1. Historic Properties in Grand Teton National Park and John D. Rockefeller, Jr. Memorial Parkway

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Planning Direction and Guidance

Park Purpose

The park purpose is the specific reason for establishing a particular park. Statements of the park's purpose are grounded in a thorough analysis of park legislation (or executive order) and legislative history.

The purposes of Grand Teton National Park are to:

- Preserve and protect the spectacular scenery of the Teton Range and the valley of Jackson Hole.
- Protect a unique geological landscape that supports abundant diverse native plants and animals and associated cultural resources.
- Protect wildlands and wildlife habitat within the Greater Yellowstone Area, including the migration route of the Jackson elk herd.
- Provide recreational, educational, and scientific opportunities compatible with these resources for enjoyment and inspiration.

The purposes of John D. Rockefeller, Jr., Memorial Parkway are to:

- Commemorate the many significant contributions of John D. Rockefeller, Jr., to the cause of conservation.
- Provide both symbolic and desirable physical connection between Grand Teton National Park and Yellowstone National Park.

Park Significance

Park significance statements express why the park's resources and values are important enough to warrant national park designation. Statements of the park's significance describe why an area is important within a global, national, regional, and system-wide context and are directly linked to the purposes of the park.

The cultural history and resource-specific reasons cited for why Grand Teton National Park and John D. Rockefeller, Jr. Memorial Parkway are significant consist of the following:

- The park and parkway represent one of the most notable conservation stories of the 20th century which continues to inspire present and future generations.
- The formation of Grand Teton National Park, a process that took more than half a century, was a struggle between private economic interests and a concern for preserving the Teton Range and valley floor.
- The numerous diverse cultures, cultural trends, and values influenced the Teton Range and the Jackson Hole valley from prehistoric times to present day.

Fundamental Resources and Values

Fundamental resources and values are the most important systems, processes, features, visitor experiences, stories, scenes, sounds, scents, or other resources and values to be communicated to the public about a park. They warrant primary consideration during planning and management because they contribute to the significance and are critical to achieving the park's purpose (NPS 2006a). Grand Teton National Park's fundamental resources and values are scenery, geologic processes, ecological communities, aquatic resources, cultural history and resources, and visitor experiences in an outstanding natural environment.

GRTE and JODR cultural resources include National Historic Landmarks, National Register-nominated and listed properties, cultural landscapes, archeological resources, American Indian items (Vernon Collection), and objects in the park museum collection.

Grand Teton National Park is dedicated to the preservation and protection of the Teton Range and its surrounding landscapes, ecosystems, cultural, and historic resources. One of the park's mission goals is that natural and cultural resources and associated values at Grand Teton are protected, restored, and maintained in good condition and managed within their broader ecosystem and cultural context.

Plan Purpose and Need

The purpose of this plan is to provide programmatic guidance for managing the park's historic properties as well as some site-specific proposals for the near future. It would provide an overall future management direction for all properties, with site-specific treatment planning for some properties that are currently unused or underused. Priorities for management of historic structures would be established in order to better manage existing park historic structures and to provide guidance for project-specific and park-wide planning efforts.

A plan is needed because, although more than half of park historic properties are in good condition, and three-quarters have an assigned use or purpose and are actively used, many properties are not optimally cared for or used. There are extensive maintenance needs and a deferred maintenance backlog of $24 million. A comprehensive management plan would allow projects to be prioritized and funds for historic properties to be allocated more efficiently.

Potential management actions range from rehabilitation for adaptive reuse, maintenance or stabilization, to removal of properties.

The plan is needed to accomplish the following objectives:

1. Create a comprehensive analysis of GRTE historic properties and identify needed management actions for the near future.
2. Provide strategic direction in a programmatic way for park historic preservation work and funding.
3. Identify and retain significant historic properties for adaptive uses such as visitor use and enjoyment and/or other purposes consistent with the park mission.

4. Be consistent with other park planning needs and priorities, including sustainability objectives, while preserving historic character.
5. Ensure utilized properties meet current health and safety standards and structural requirements.

This plan would guide management decisions for the park's National Register-eligible or -listed historic districts as whole entities, as well as for sites, buildings, structures, and objects considered individually. While it evaluates management of all of the historic properties, the plan does not propose changes to those currently used by the park or its partners for visitor services or for work space and housing. Should the status of any park property change, this plan would provide programmatic guidance for reevaluation and decisions about future management. See **Appendix D** for a table of historic and current uses and related decisions.

The analysis also evaluates in detail 11 historic properties that do not currently have an identified use, are in poor condition, and/or are of high park, partner, or public interest (**Figure 2**). Condition was the condition found in the List of Classified Structures (LCS), a digital inventory of all historic and prehistoric structures in the national parks. These properties are referred to in this plan as focus properties and they are:

4 Lazy F Dude Ranch

Aspen Ridge Ranch Residence and Barn

Bar BC Dude Ranch

Beaver Creek #10

Hunter Hereford Ranch

Geraldine Lucas Homestead/Harold Fabian Place

Luther Taylor Cabins (which includes the "Shane" cabin)

Manges Cabin

McCollister Residential Complex

Sky Ranch

Snake River Land Company Office and Residence (the "Buffalo Dorm")

The plan will also focus on Mormon Row and White Grass Dude Ranch because the park has slightly modified its implementation of the Mormon Row approved plan and is also proposing minor modifications to the previously approved plan for rehabilitating White Grass Dude Ranch. These changes better support visitor use, address accessibility and parking needs, or prevent resource impacts and do not significantly differ from the what was originally analyzed and

decided at the time. The existing decision documents are the *Mormon Row Historic District Management Finding of No Significant Impact* (NPS 2000) and the *White Grass Ranch Rehabilitation and Adaptive Use Finding of No Significant Impact* (NPS 2005).

Where possible and appropriate to enhance visitor enjoyment, knowledge, and appreciation of park historic properties, an increased emphasis on interpretation may be considered for properties, including those already being used and maintained. The plan would guide appropriate means of interpreting the properties given their history, location, condition, and use.

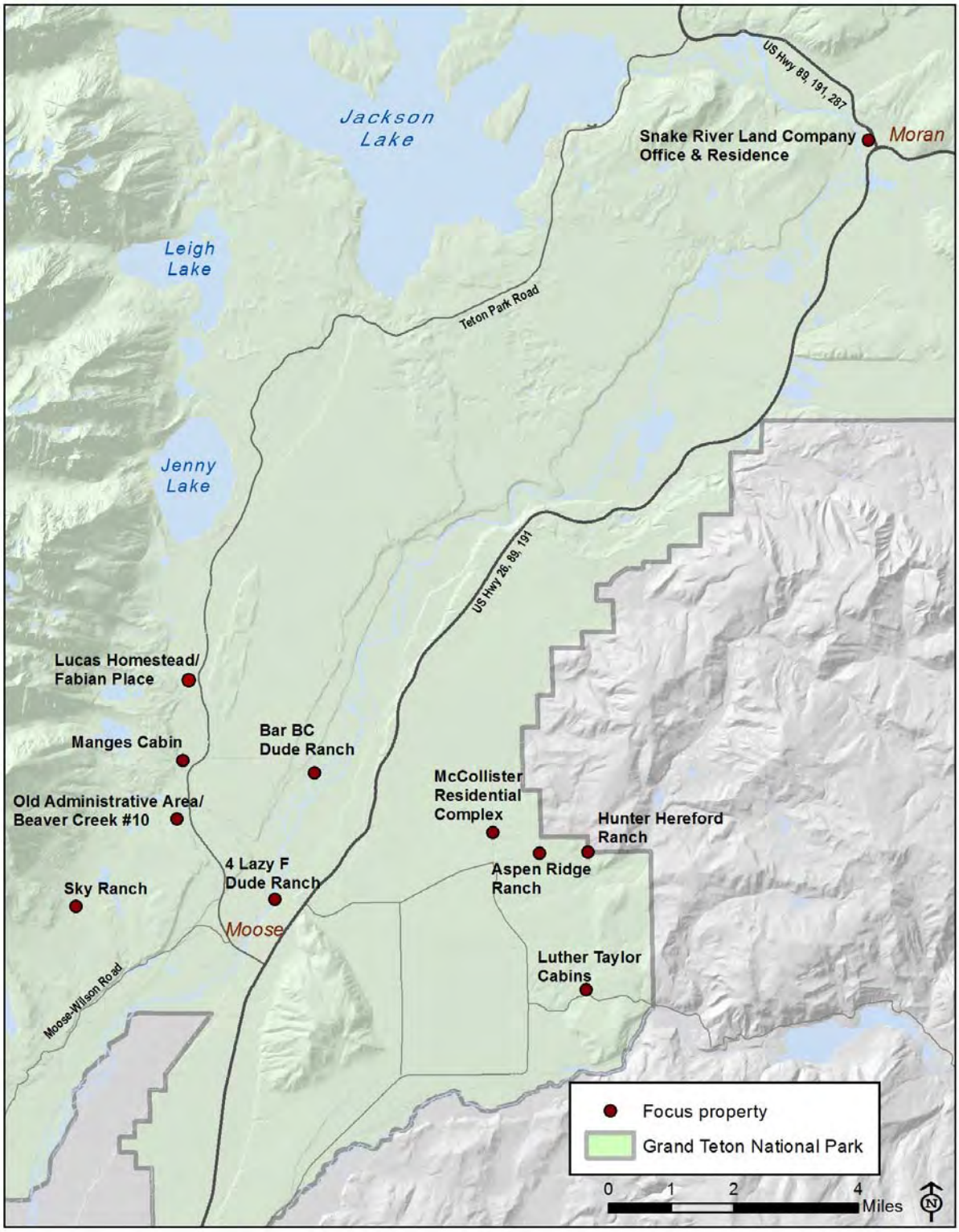

Figure 2. Currently Unused or Underused "Focus Properties"

Relationship to Laws, Policies, and Other Plans

Laws and executive orders which guide NPS management of facilities, visitor services, and natural and cultural resources include the National Park Service Organic Act of 1916; Migratory Bird Treaty Act of 1918; National Historic Preservation Act (NHPA) of 1966; National Environmental Policy Act (NEPA) of 1969; Clean Water Act of 1972; Endangered Species Act of 1973, as amended; Clean Air Act of 1977; Stewart B. McKinney Homeless Assistance Act of 1987 (Title V: Identification and Use of Surplus Federal Property; Americans with Disabilities Act of 1990, as amended in 2008; Executive Order 13006: Locating Federal Facilities on Historic Properties in Our Nation's Central Cities; Executive Order 11593: Protection and Enhancement of the Cultural Environment; Executive Order 11988: Floodplain Management; and Executive Order 11990: Protection of Wetlands; and Executive Order 13186 for the protection of migratory birds.

Policies are guiding principles or procedures that help managers make day-to-day decisions. Relevant policy topics include cultural resource management; interpretation and education; and park facilities including visitor services. Director's Orders, contained in the NPS Directives System, are an important source of National Park Service policies. They are posted online at http://home.nps.gov/applications/npspolicy/DOrders.cfm. Director's Orders relevant to this plan are: DO 2: Park Planning; DO 6: Interpretation and Education; DO 12: Environmental Impact Analysis; DO 36: NPS Housing Management; DO 28: Cultural Resources Management Guideline; and DO 77: Natural Resource Protection.

The NPS has established policies for all National Park System units under its stewardship in its guidance manual, *NPS Management Policies 2006* (NPS 2006c). The primary source of management guidance, these policies provide more specific direction on natural and cultural resource protection, facility planning, and design. They demonstrate the commitment to protect cultural resources against theft, fire, vandalism, overuse, deterioration, environmental impacts, and other threats without compromising the integrity of the resources. The proposed actions considered in this EA are consistent with *NPS Management Policies 2006*.

Relevant standards, agreements, and park-specific plans include:

- *Grand Teton National Park Master Plan* (NPS 1976). The master plan is the overall guiding document for planning in the park. This is the conceptual document that established guidelines for park management and use within the bounds of existing legislative commitments. It addresses the park's purposes, its resource values, its relationship to the regional environment, and the means by which its resources may best be managed. The master plan states that the park should provide new modes of visitor access to park experiences, with less impact upon park resources. This plan is consistent with the objective of the master plan which states the park should "perpetuate the natural and historic environmental values, while simultaneously providing for the visitor in a manner that brings appreciation, as well as enlightenment." Preservation of the natural setting should be considered in areas managed to provide for visitor needs.

- *Wilderness Recommendation* (NPS 1978). In 1972, Grand Teton National Park completed a wilderness study in accordance with the Wilderness Act that subsequently was transmitted to Congress (NPS 1972). In 1978, the NPS recommended that Congress include approximately 143,454 acres of the park's backcountry in the National Wilderness Preservation System. Approximately 122,604 acres of the park have been identified as recommended wilderness and another 20,850 acres have been identified as potential wilderness (NPS 1978). The planning area contains lands identified as recommended wilderness. To date, Congress has not enacted legislation to include the recommended wilderness in the National Wilderness Preservation System. However, NPS policy requires that the recommended, potential, and suitable wilderness land in the park be managed as wilderness (so as not to preclude eventual designation) until such time as Congress either officially designates the land as wilderness or rejects the designation. Historic properties in these park areas are five backcountry patrol cabins (Lower Berry, Leigh Lake, Upper Granite Canyon, Cascade Canyon Barn, and Death Canyon Barn cabins) and the Valley Trail System. These properties will continue to be maintained in ways that are consistent with wilderness policies.

- *Backcountry Management Plan, Grand Teton National Park* (NPS 1990a). This plan defines 'backcountry' as any undeveloped area at least 250 yards from a road, assigns zones for management within different areas of the park, and describes trail and historic property patrol cabin care and use. It notes that many unique cultural and historical resources are within the backcountry and that all of the artifacts and historical structures are protected by law (16 U.S.C. 470aa-ll) and regulations (36 CFR 2.20) and may not be disturbed, collected, or in any way damaged by park visitors. Several elements of the plan pertain to historic property management. The plan states that the backcountry patrol cabins will be maintained in good condition by the Maintenance Division. Five of the backcountry cabins are historic and these, as well as White Grass Ranger Station, which is used as a park backcountry patrol cabin, would fall under this management requirement. Management of the historic Valley Trail System is also relevant in that the plan states that established and approved trails will be maintained according to established park trail standards, with an emphasis on erosion control, obliteration of spur trails and detours, and safe bridges in Zones I (Gateway Trails, heavily used and within two miles of trailheads) and II (Trail Corridors and Designated Lakeshore Campsites, which includes all regularly maintained trails in the Teton Range south of Leigh Canyon not in Zone I, and the designated campsites on Leigh and Jackson Lakes).

- *Teton Corridor Moose to North Jenny Lake Development Concept Plan/Environmental Assessment* (NPS 1990b). This development concept plan detailed specific actions for implementing broad management strategies for the Teton Corridor, including the Jenny Lake area. The plan called for upgraded visitor facilities, expanded facilities for interpretation and improvements in interpretive services, relocation of some facilities (including historic structures), and consolidation or streamlining of concessioner operations.

- *Secretary of the Interior's Standards for the Treatment of Historic Properties* (36 CFR 68, U.S. Department of the Interior 1992, revised 1995, and online 2001). The Secretary of the Interior's Standards for Treatment of Historic Properties (Standards for Treatment of Historic Properties) are prepared under the authority of NHPA Sections 101(f) (g), and (h), and NHPA Section 110 and are intended to promote responsible preservation practices that help protect irreplaceable cultural resources. They address archeology and historic preservation,

treatment of historic properties and cultural landscapes. The standards are not intended to make decisions about which features of a historic building should be saved and those features that may be changed; rather, when a treatment is selected, they provide guidance for consistency in the proposed work.

- *Foundation for Planning and Management, Grand Teton National Park and John D. Rockefeller, Jr. Memorial Parkway* (NPS 2006a). The proposed actions considered in this EA are consistent with desired conditions in the 2006 Foundation for Planning and Management document. The document states that visitors of all ages and physical abilities have opportunities to understand, appreciate, and enjoy the wonders of the park in many different ways and seasons in a manner that does not diminish the fundamental resources and values of the park. Visitors forge their own emotional and intellectual connections with the meaning and significance inherent in the park and its resources and its vital role in the National Park System. It further states that the park also provides visitors an opportunity to understand, enjoy and be inspired by the wonders of the park in many different ways in a manner that does not diminish its fundamental resources and values. Objectives of the Historic Properties Management Plan are consistent with the mission statements for Grand Teton National Park.

- *Grand Teton National Park Housing Management Plan* (NPS 2006d; revised edition expected 2015). A park housing management plan identifies and justifies the number of housing units necessary to support the mission of the park while being compliant with NPS housing policy, cost effectiveness and proper use of funds. The housing management plan describes the local community profile, including characteristics that influence housing. It notes that Jackson, Wyoming, the nearest local community, is a popular resort town, home to many of the country's wealthiest individuals. Local real estate is financially out of reach for many park employees, and severe winter weather that makes long winter commutes from farther communities difficult. In 2012, 40 permanent staff had positions that require them to live in the park to meet operational needs. After these employees are assigned to housing units, other staff, volunteers, researchers, essential cooperators, or others needing housing based on the needs assessment are assigned to the remaining units (184 in 2012). The park and parkway housing needs assessment, updated in 2012, identified a need for 11 additional permanent units and 20 additional seasonal bedrooms despite the construction of additional housing units in 2012.

  Among the strategies to meet the park's continual housing needs was to pursue the conversion of in-holdings and life estates as they become available for park housing, and to continue to adapt and use the park's historic structures for housing because this use is the best method to retain their historic fabric and ensure that these structures are well maintained. Director's Order #36, National Park Service Housing Management, cites provisions in *NPS Management Policies 2006* that specifically govern housing management. Section 9.4.3.3, Historic Structures, states: "The use of historic structures for housing is encouraged when NPS managers determine that this use contributes to the preservation of these structures, and after feasible cost-effective alternatives have been considered."

- *Grand Teton National Park and John D. Rockefeller, Jr. Memorial Parkway. Asset Management Plan* (NPS 2008). The Department of Interior (DOI) is required, as part of Executive Order 13327: Federal Real Property Asset Management, to create a department asset management plan that includes life cycle costs, prioritized operation and maintenance costs, establishment of bureau performance measures related to asset management, and a single database for federal real property reporting, The approach outlined in the DOI Asset Management Plan is to have all bureaus, including the National Park Service (NPS), create site-specific asset business plans.

  The NPS is addressing this requirement through the creation of Park Asset Management Plans, or PAMPs, that meet all Federal Real Property Asset Management requirements for a park unit. The PAMPs provide a ten-year asset management strategy for park units, allowing for annual updates that coincide with the budget and planning processes already occurring in park units. As this approach includes life cycle total cost of ownership, analysis, processing, and calculations, it also helps park units and the Service as a whole manage the gap between what should be spent on facilities and what is actually being spent.

  For successful implementation of the PAMP process, all park management staff should have a clear understanding of the afore-mentioned information and its significance to the NPS. A critical factor for the success of this new process is park buy-in, as the park will be responsible for the management and implementation of the program.

- *Programmatic Memorandum of Agreement among the NPS, Advisory Council on Historic Preservation, and National Council of State Historic Preservation Officers* (National Park Service, Advisory Council on Historic Preservation, and National Council of State Historic Preservation Officers 2008). The service-wide 2008 programmatic agreement provides coordination between the NPS, the Advisory Council on Historic Preservation (ACHP), and National Conference of State Historic Preservation Officers (SHPOs) for the NHPA Section 106 compliance process. The NHPA, 36 CFR 800, and the 2008 programmatic agreement provide the NPS with a roadmap to plan for and carry out undertakings to minimize harm to cultural resources.

- *National Park Service Capital Investment Strategy* (NPS 2012d). The National Park Service Capital Investment Strategy (CIS) is a customized strategy for evaluating and prioritizing capital investment projects. At its foundation is an ability to support financial sustainability goals. It aligns with current Department of the Interior criteria for facility investment and remains consistent with existing Office of Management and Budget (OMB) guidance. The strategy leverages the full power of the Facility Management Software System (FMSS)—the NPS asset management database developed over the past decade—and other related systems to ensure the financial sustainability of assets and to link project funding eligibility with a commitment to life-cycle maintenance.

  The CIS is designed to promote the following mission goals:

  • **Mission Goal I. Financial Sustainability:** Repair and improvement of assets that parks commit to maintain in good condition, typically those that are considered mission critical

as indicated by the Asset Priority Index (API); disposition of nonessential facilities in order to reduce operations and maintenance (O&M) requirements, as well as deferred maintenance (DM) and code compliance liabilities; reduction of resource consumption to conserve operational funds and promote sustainability; focus on core resources.
• **Mission Goal II: Resource Protection**: Preservation and repair of historic and iconic assets, cultural landscapes and natural resources; environmental and cultural restoration.
• **Mission Goal III. Visitor Use:** Investment in facilities that directly enable outdoor recreation; investment in facilities that are primary touch points for park visitors, including interpretive media.
• **Mission Goal IV. Health and Safety:** Correction of existing and identified unsafe and hazardous conditions at NPS facilities.

Goal I, derived from the NPS Facility Management Strategic Plan, is the hallmark of the CIS. Goals II and III directly reflect the dual mission of the NPS: to protect resources while ensuring that they are available for visitor enjoyment. Goals II – IV reflect mission goals articulated in the DOI Five-Year Deferred Maintenance and Capital Improvement Guidance.

The concept of financial sustainability drives the new business practice that is the foundation of the strategy: the NPS should only make investments in assets that it is committed to maintaining in acceptable condition through appropriate O&M. To the greatest extent possible, the NPS will also seek to dispose of nonessential assets. By refining the NPS asset inventory using the financial sustainability criterion, parks will be better able to use limited facility funds to sustain those assets that are truly critical to achieving the NPS mission.

Impact Topics Retained For Detailed Analysis

Impact topics for this plan were identified on the basis of federal laws, regulations, and orders, *Management Policies 2006,* and NPS knowledge of park resources. Impact topics that are carried forward for further analysis in this EA include:

- Cultural Resources
  - Historic Structures and Cultural Landscapes
- Natural Resources
  - Vegetation
  - Wildlife
- Park Operations
- Visitor Use and Experience

Impact Topics Dismissed From Further Analysis

The NPS closely evaluates all potential impacts by considering the direct, indirect, and cumulative effects of the proposed action on the environment, along with connected and cumulative actions. Impacts are described in terms of context and duration. The context or extent of the impact is described as localized or widespread. The duration of impacts is described as short-term, ranging from days to three years in duration, or long-term, extending up to 20 years

or longer. The intensity and type of impact is described as negligible, minor, moderate, or major, and as beneficial or adverse. The NPS equates major effects as significant effects. The identification of "major" effects would trigger the need for an environmental impact statement (EIS). Where the intensity of an impact could be described quantitatively, the numerical data is presented; however, most impact analyses are qualitative and use best professional judgment in making the assessment.

The NPS defines "measurable" impacts as moderate or greater effects. It equates "no measurable effects" as minor or less effects. The use of "no measurable effects" in this EA pertains to whether the NPS dismisses an impact topic from further detailed evaluation in the EA. The reason the NPS uses "no measurable effects" to determine whether impact topics are dismissed from further evaluation is to concentrate on the issues that are truly significant to the action in question, rather than amassing needless detail in accordance with CEQ regulations at 1500.1(b).

In this section of the EA, the NPS lists impact topics that do not need to be analyzed in detail based on an initial evaluation. Impact topics may have been dismissed from further analysis if the environmental impacts associated with the issue or impact topic are unlikely to occur, are not potentially significant, or do not differ among alternatives in any meaningful way.

Because there would be negligible or minor effects on the dismissed impact topics, the contribution from an alternative to cumulative effects for dismissed topics would be low or none. For each issue or topic presented below, if the resource is found in the analysis area or the issue is applicable to the proposal, then a limited analysis of effects is presented.

Air Quality

The Clean Air Act of 1963 (42 U.S.C. 7401 *et seq.*) was established to promote public health and welfare by protecting and enhancing the nation's air quality. The act establishes specific programs that provide special protection for air resources and air quality related values associated with NPS units. Section 118 of the Clean Air Act requires a park unit to meet all federal, state, and local air pollution standards.

Grand Teton National Park is designated as a Class I air quality area under the Clean Air Act (CAA). Class I areas essentially have the cleanest air and receive the highest degree of protection, with only a small amount of certain kinds of additional air pollution allowed. Section 169A of the CAA sets forth a national goal for visibility which is the ''prevention of any future, and the remedying of any existing, impairment of visibility in Class I areas which impairment results from manmade air pollution.''

Best management practices during construction-type maintenance would minimize air pollution. Maintenance activities at some properties, such as replacing foundations, installing vault toilets and modifying footpaths to be accessible trails, or repairing or upgrading utilities, would temporarily increase vehicle exhaust, emissions, and fugitive dust in the immediate area. Any of these effects would be temporary and localized. With mitigation such as the application of water or other approved dust palliatives when needed, and prevailing winds, which provide good air circulation and would likely rapidly disperse pollutants, impacts on air quality would be minor.

Hence, there could be local, short-term, negligible, adverse impacts on air quality during construction-type maintenance activities, but no measurable effects outside the work vicinity. Because impacts on air quality would be negligible at most, this topic was dismissed from further analysis.

Archeological Resources

In addition to the National Historic Preservation Act and *NPS Management Policies 2006*, DO 28B *Archeology* affirms a long-term commitment to the appropriate investigation, documentation, preservation, interpretation, and protection of archeological resources inside units of the National Park System. As one of the principal stewards of America's heritage, the NPS is charged with the preservation of the commemorative, educational, scientific, and traditional cultural values of archeological resources for the benefit and enjoyment of present and future generations. Archeological resources are nonrenewable and irreplaceable, so it is important that all management decisions and activities throughout the National Park System reflect a commitment to the conservation of archeological resources as elements of our national heritage.

Grand Teton National Park and the John D. Rockefeller, Jr., Memorial Parkway are known to contain a variety of archeological resources. Prior to initiating any project work that would disturb ground, archeological surveys would be performed if they have not already been done, and all cultural compliance would be completed. Appropriate steps, outlined in an Inadvertent Discovery Plan that park staff are drafting fiscal year 2015, would be taken to protect any archeological resources that are inadvertently discovered during preservation maintenance activities. Due to these safeguards, project work would not disturb any known archeological sites if at all possible, and the potential effects of any project on archeological resources that are unavoidable would be mitigated. Because of this process, potential effects would be minor or less in degree and this topic is dismissed from further analysis.

Climate Change and Sustainability

Although climatologists are unsure about the long-term results of global climate change, the planet is experiencing a warming trend that affects ocean currents, sea levels, polar sea ice, and global weather patterns. It is anticipated that these changes would affect winter precipitation patterns and amounts in the park. Specific changes in Grand Teton National Park could include reduced snowpack, earlier snow melt, loss of glaciers, decreased snow-related winter recreation, greater aridity, fewer opportunities for boating and rafting, increased mortality among all tree species, loss of habitat for grizzly bears and mountain sheep, increased fish kills, and reduced trout habitat (Saunders et al. 2009). Some of these changes may occur, but the full extent of climate change impacts to resources and visitor experience is not known, nor do managers and policy makers yet agree on the most effective response mechanisms for minimizing impacts and adapting to change. It is not possible to link the greenhouse gas emissions from individual projects to effects on regional or global climatic patterns.

Using existing buildings to meet park needs is more sustainable and beneficial to the environment than constructing new buildings. The park would also attempt to increase the

sustainability of historic structures whenever this is possible without adversely affecting historic character. Compliance with section 106 of the NHPA would be completed for any sustainability action that could affect historic properties.

While vehicles and some types of equipment associated with maintaining and utilizing historic properties would emit greenhouse gases, these emissions would be negligible under all alternatives and would not be discernible at a regional scale. This topic is dismissed from further analysis in this document.

Environmental Justice

EO 12898, *General Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*, requires all federal agencies to incorporate environmental justice into their missions by identifying and addressing disproportionately high and adverse human health or environmental effects of their programs and policies on minorities and low-income populations and communities.

None of the alternatives would have disproportionate health or environmental effects on minorities or low-income populations or communities, as defined in the EPA's Final Guidance for Incorporating Environmental Justice Concerns (EPA 1998). Because there would be no disproportionate effects, this topic is dismissed from further analysis in this document.

Ethnographic Resources

DO 28 *Cultural Resource Management* defines ethnographic resources as "any site, structure, object, landscape, or natural resource feature assigned traditional legendary, religious, subsistence, or other significance in the cultural system of a group traditionally associated with it." According to DO 28 and EO 13007 on sacred sites, the National Park Service should try to preserve and protect ethnographic resources.

In historic times the Grand Teton area was used by ranchers, particularly dude ranchers, and other early settlers such as those that settled Mormon Row. It is also known that American Indian people utilized the area over thousands of years for hunting and gathering subsistence and occupation. Grand Teton National Park holds many resources important to these tribes including, but not limited to, wildlife, plants, and water. These resources do not always have a defined boundary and may occur.

A number of tribes traditionally, and currently, value Jackson Hole for hunting, gathering, ceremonial, and other practices. These tribes include the Apache, Northern Arapaho, Blackfeet, Northern Cheyenne, Coeur d'Alene, Comanche, Crow, Gros Ventre, Kiowa, Nez Perce, Northern Paiute, Salish-Kootenai Group, Eastern Shoshone, Shoshone-Bannock, Assiniboine Sioux, Teton Sioux, Umatilla Group, and Yakama Group. Others may be identified (Walker and Graves 2007). The above tribes were apprised by letter of the developing plan on March 11, 2011. The park did not receive any comments indicating interest and one tribe noted that there were no properties of religious and cultural significance to that tribe in the proposed construction

area. As of 2014, several additional tribes were identified, increasing the total to 24; see the full list under Chapter 4: Consultation and Coordination.

The NPS would continue to consult with the tribes about potential concerns associated with ethnographic resources on a project by project basis. If tribes subsequently identify the presence of ethnographic resources, appropriate mitigation measures would be undertaken in consultation with the tribes. The locations of ethnographic sites would not be made public. In the unlikely event that human remains, funerary objects, sacred objects, or objects of cultural patrimony are discovered, provisions outlined in the Native American Graves Protection and Repatriation Act of 1990 (25 USCUSC 3001) will be followed. For these reasons, this topic was dismissed from further consideration.

Floodplains

The NPS manages floodplains in accordance with EO 11988, Floodplain Management, and NPS DO 77-2, Floodplain Management. EO 11988 requires all federal agencies to avoid construction within the 100-year floodplain unless no other practicable alternative exists. DO 77-2 states that certain construction within a 100-year floodplain requires preparation of a statement of findings for floodplains. In accordance with these orders as well as the *NPS Management Policies 2006*, the NPS strives to preserve floodplain values and minimize hazardous floodplain conditions. Natural floodplain values and functions must be protected and risks to life and property must be minimized by avoiding the use of the regulatory floodplain wherever there is a feasible alternative location. Director's Order 77-2: *Floodplain Management* does not apply to historic or archaeological structures, sites, or artifacts whose location is integral to their significance.

The park has completed a floodplain statement of findings (see **Appendix I**) and established mitigations to limit the potential for adverse effects and to ensure the safety of people and irreplaceable artifacts. This topic is dismissed from additional analysis in this document.

Indian Trust Resources

Secretarial Order 3175 requires that any anticipated impacts to Indian trust resources from a proposed project or action by the Department of Interior agencies be explicitly addressed in environmental documents. The federal Indian trust responsibility is a legally enforceable fiduciary obligation on the part of the United States to protect tribal lands, assets, resources, and treaty rights, and it represents a duty to carry out the mandates of federal law with respect to American Indian and Alaska Native tribes. The park's lands and resources related to this project are not held in trust by the Secretary of the Interior for the benefit of Americans Indians. Because there are no American Indian trust resources in the park, this topic is dismissed from further analysis in this document.

Lightscape Management

In accordance with *NPS Management Policies 2006*, the NPS strives to preserve natural ambient lightscapes, which are natural resources and values that exist in the absence of human-caused light (NPS 2006c). The park strives to limit the use of artificial outdoor lighting to that which is

necessary for basic safety requirements. Furthermore, the park strives to ensure that all outdoor lighting is shielded to the maximum extent possible, to keep light on the intended subject and out of the night sky.

Any construction at historic properties would occur during the day and would not affect the visibility of night skies. Also, if minimal exterior lighting is considered appropriate and approved for individual historic structures, lightscape management techniques such as directing the lighting toward the intended subject with appropriate shielding and placing lights only where needed for safety reasons would be incorporated whenever possible. The amount and extent of exterior lighting would have negligible effects on existing outside lighting or natural night sky of the area. Because these effects are minor or less in degree, this topic is dismissed from further analysis in this document.

Museum Collections

According to DO 24, *Museum Collections*, the NPS requires the consideration of impacts on museum collections (historic artifacts, natural specimens, and archival and manuscript material), and provides further policy guidance, standards, and requirements for preserving, protecting, documenting, and providing access to, and use of, the NPS museum collections. Museum objects are located in a number of historic structures, including the White Grass Dude Ranch caretakers cabin; Crandall Studio, which is being adaptively used as the Jenny Lake Visitor Center; the Colter Bay Village Visitor Center; the Maud Noble Cabins and Menor's Ferry Store and Transportation Shed; the Brinkerhoff; Beaver Creek Bally Building, which houses an insulated "Bally" building with the herbarium and other objects; and numerous housing units at Lupine Meadows. Because none of the alternatives would change the location or conservancy of museum collections, alter conservancy demands or requirements, or alter the risk of damage (such as by flooding), there would be no effects to museum collections and this topic was dismissed from further analysis in this document.

Paleontological Resources

According to *NPS Management Policies 2006*, paleontological resources (fossils), including both organic and mineralized remains in body or trace form, will be protected, preserved, and managed for public education, interpretation, and scientific research (NPS 2006c). There are known paleontological resources within the planning area (Tweet et al. 2013); however, those in situ are located in geologic formations located in remote backcountry locations, none of which are associated with historic properties addressed in this plan. Therefore, this topic is dismissed from further analysis in this document.

Prime and Unique Farmlands

The Farmland Protection Policy Act of 1981, as amended, requires federal agencies to consider adverse effects to prime and unique farmlands that would result in the conversion of these lands to non-agricultural uses. Prime or unique farmland is classified by the U.S. Department of Agriculture's Natural Resources Conservation Service (NRCS), and is defined as soil that particularly produces general crops such as common foods, forage, fiber, and oil seed; unique

farmland produces specialty crops such as fruits, vegetables, and nuts. The park and parkway contain no prime or unique farmlands (Young 1982). Because there would be no effects on prime or unique farmlands, this topic is dismissed from further analysis in this document.

Socioeconomics

The proposed actions would neither change local and regional land use nor appreciably impact local businesses or other agencies. Implementation of the proposed actions could provide a negligible beneficial impact to the economies of nearby counties due to minimal increases in employment opportunities for the construction workforce and revenues for local businesses and governments generated from these additional construction activities and workers. Any increase in workforce and revenue, however, would be temporary and negligible, lasting only as long as the work. Because the impacts to the socioeconomic environment would be negligible, this topic is dismissed.

Soundscape Management

In accordance with 2006 *Management Policies* and DO 47 *Sound Preservation and Noise Management*, an important component of the NPS mission is the preservation of natural soundscapes associated with national park units (NPS 2006c). Natural soundscapes exist in the absence of human-caused sound. The natural ambient soundscape is the aggregate of all the natural sounds that occur in park units, together with the physical capacity for transmitting natural sounds. Natural sounds occur within and beyond the range of sounds that humans can perceive and can be transmitted through air, water, or solid materials. The frequencies, magnitudes, and durations of human-caused sound considered acceptable vary among NPS units as well as potentially throughout each park unit, being generally greater in developed areas and less in undeveloped areas.

Many of the 44 historic properties evaluated in this plan are in developed areas where people are present and where sounds generated by short-term preservation maintenance activities would not appreciably affect the natural soundscape. The best practices of noise mitigation would continue to be followed, and any additional human-caused sounds would be temporary and have a negligible to minor adverse impact on visitors and employees. Because these effects are minor or less in degree, this topic is dismissed from further analysis in this document.

Potential impacts to wildlife are analyzed fully in the document in the Wildlife section and in **Appendix K: Biological Assessment**.

Topography, Geology, and Soils

According to *NPS Management Policies 2006*, the NPS will preserve and protect geologic resources and features from adverse effects of human activity, while allowing natural processes to continue (NPS 2006c). These management policies also state that the NPS will strive to understand and preserve the soil resources of park units and to prevent, to the extent possible, the unnatural erosion, physical removal, or contamination of the soil, or its contamination of other resources.

The Teton Range within GRTE is one of the most impressive examples of fault-block mountains in the world. Mountains within the Teton Range are approximately 9 million years old and, although they include some of the oldest rocks on Earth, are among the youngest mountains in the Rocky Mountain chain. Actions proposed in this document would occur in areas of the park that do not contain significant topographic or geologic features. The plan stipulates mitigation measures to conserve topsoil and minimize soil excavation, and erosion during and after any construction-type maintenance activities. Decompaction and revegetation of ground compacted and disturbed by previous construction/maintenance work or long-term, non-formalized access are also included. Given that there are no significant topographic or geologic features in the historic property areas, these areas have been previously disturbed, and new ground disturbance would be limited, adverse effects to topography, geology, and soils from the proposed actions would be minor or less. Because these effects are minor or less in degree, this topic is dismissed from further analysis in this document.

Water Resources

The Clean Water Act establishes the basic structure for regulating discharges of pollutants into the waters of the United States and for regulating water quality standards for surface waters. The purpose of the Clean Water Act is to "restore and maintain the chemical, physical, and biological integrity of the Nation's waters." *NPS Management Policies 2006* require protection of water quality consistent with the Clean Water Act and state that the NPS will perpetuate surface waters and ground waters as integral components of park aquatic and terrestrial ecosystems (NPS 2006c).

Many of the park's historic properties are located on dry land but near surface waters. For example, historic backcountry cabins are located near creeks such as Cascade Creek and Granite Creek. Buildings that are part of the Geraldine Lucas Homestead/ Harold Fabian Place are near Cottonwood Creek as are several of the Kimmel Kabins/Lupine Meadows structures. Several historic properties such as Jackson Lake Lodge, Colter Bay Village Developed Area, AMK Ranch, and the Brinkerhoff are located along Jackson Lake. Menor's Ferry, Snake River Bridge #2, and 4 Lazy F Dude Ranch are near the Snake River. Structure sites are dry but runoff periodically occurs during storm events.

Any proposed actions in this plan would be implemented according to best management practices so that surface water quality and quantity would not be affected. The amount of impervious surface in the park would not increase and erosion potential would not change. Infrastructure design and other mitigations would follow WYDEQ requirements.

Where there is the potential for ground disturbance to cause erosion or affect water quality, disturbed areas would be revegetated and recontoured following construction-type maintenance work. If the work requires a National Pollutant Discharge Elimination System (NPDES) permit for stormwater discharges, then a Stormwater Pollution Prevention Plan (SWPPP) would be prepared. The proposed action alternatives would result in negligible effects to water resources. Because these effects are minor or less in degree, this topic is dismissed from further analysis in this document.

Wetlands

For regulatory purposes under the Clean Water Act, the term wetlands means "those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs and similar areas."

Executive Order 11990 *Protection of Wetlands* requires federal agencies to avoid, where possible, adversely impacting wetlands. Further, §404 of the Clean Water Act authorizes the U.S. Army Corps of Engineers to prohibit or regulate, through a permitting process, discharge or dredged or fill material or excavation within waters of the United States. NPS policies for wetlands as stated in 2006 *Management Policies* and Director's Order 77-1 *Wetlands Protection* strive to prevent the loss or degradation of wetlands and to preserve and enhance the natural and beneficial values of wetlands. In accordance with DO 77-1 *Wetlands Protection*, proposed actions that have the potential to adversely impact wetlands must be addressed in a statement of findings for wetlands.

Surveys to determine the presence or absence of wetlands would be conducted at properties where disturbance near wetland habitats would occur. If any wetlands are identified at properties, they would be avoided through project design. Because impacts to wetlands would be avoided, this topic is dismissed from further analysis in this document.

Wild and Scenic Rivers

On March 30, 2009, President Barack Obama signed into law the Craig Thomas Snake Headwaters Legacy Act as part of the Omnibus Public Land Management Act of 2009, designating 86 new wild and scenic rivers, including the Snake River Headwaters in Wyoming. Designated *wild* river segments under the new law include the 47-mile segment of the Snake River from its source in the Bridger-Teton National Forest, crossing through Yellowstone National Park and the John D. Rockefeller, Jr. Memorial Parkway to Jackson Lake in Grand Teton National Park.

Designated *scenic* river segments under the new law within Grand Teton National Park include a 3.3-mile segment of the Gros Ventre River flowing across the southern boundary of Grand Teton National Park; a 7.7-mile segment of the Buffalo Fork of the Snake River; approximately four miles of Pacific Creek from the Bridger-Teton National Forest boundary to the Snake River; and the 24.8-mile segment of the Snake River from 1 mile downstream of Jackson Lake Dam to 1 mile downstream of Moose, Wyoming—the latter segment being the one that passes by the planning area.

Because of the Snake River's inclusion into the National Wild and Scenic Rivers System, the NPS is required to protect the river's outstanding resources and free flow and completed a comprehensive river management plan in May 2013. Seven historic properties, Snake River Bridge #2, 4 Lazy F Dude Ranch, Bar BC Dude Ranch, Elk Ranch, Menors Ferry, Murie Ranch, and the Snake River Land Company Office and Residence, are located within the Wild and

Scenic River Corridor and the NPS received concurrence from the Wyoming State Historic Preservation Office (SHPO) that the selected action would have no adverse effect on historic properties. The management plan prescribed increasing interpretive and educational messaging concerning the protection of cultural river values, and developing with partner agencies a prehistoric and historic resources study specific to the history of the human occupation and use of the Snake River Headwaters.

The park would ensure that proposed management of historic properties would not affect the designated river or the values for which it was designated. Any preservation maintenance at these properties would occur with the awareness of the nearby designated river and the need to protect its values. Where historic properties are adjacent to the Snake River, no ground disturbance would be allowed to occur on the river banks. Best management practices (BMPs) would be implemented to minimize the potential for erosion or sedimentation of the river channel. All maintenance, preservation, or stabilization activities would be done so that they did not increase erosion potential or affect water quality. Although visual or sound impacts from construction or rehabilitation activities would occur, these would be short-term, negligible to minor adverse effects. Visual impacts in the long term would remain unchanged. There would be no measurable long-term effects to those resources for which the river was designated. Preservation maintenance that would occur at times in the long term would also not affect wild and scenic river resources.

The proposed actions are consistent with §1.4.7.1 of the NPS *Management Policies 2006* (NPS 2006). There would be no long-term measurable effects on wild and scenic rivers or river users. The proposed actions would not result in any unacceptable impacts. Therefore, this topic is dismissed from further analysis.

Wilderness

In 1972, Grand Teton National Park completed a wilderness study in accordance with the Wilderness Act (NPS 1972) that subsequently was transmitted to Congress. In 1978, the NPS recommended that Congress include approximately 143,454 acres of the park's backcountry in the national wilderness preservation system. Approximately 122,604 acres of the park have been identified as recommended wilderness and another 20,850 acres have been identified as potential wilderness (NPS 1978). The planning area contains lands identified as recommended wilderness. To date, Congress has not enacted legislation to include the recommended wilderness in the National Wilderness Preservation System. However, NPS policy requires that the recommended and potential wilderness land in the park be managed as wilderness (so as not to preclude eventual designation) until such time as Congress either formally designates the land as wilderness or rejects the designation. The recommended wilderness area includes most of the Teton Range in the park and several of the lakes at its base and the Two Ocean Lake area of the park. Potential wilderness includes the northern half of Phelps Lake and the Potholes area of the park.

Although most (91%; 21,500 of 23,700 acres) of John D. Rockefeller, Jr., Memorial Parkway was determined eligible for wilderness designation in November 2013, approximately 2,200 acres (9% of total JODR acreage) was determined ineligible because of developed roadways.

The ineligible portions included Flagg Ranch developed area, the Rockefeller Parkway, and the Grassy Lake Road, with a100-foot buffer on both sides of the roads and developed campgrounds. The one historic property in the parkway, Snake River Bridge #2, is located on the Rockefeller Parkway and its maintenance would be done in a way that would not affect wilderness.

Although some historic properties, such as backcountry patrol cabins and the Valley Trail System, which includes the Teton Crest Trail and nearly all the trails accessing the canyons of the Teton Range, are located within recommended wilderness, they would be maintained to appropriate preservation standards. Wilderness guidelines would be followed whenever maintenance activities occurred. Continuing to maintain these historic properties would not affect future designation of wilderness or wilderness character in the park or parkway nor would being in wilderness adversely affect historic properties. Cultural resources can exist in wilderness without detriment to either. Therefore, this impact topic was dismissed from further analysis.

CHAPTER 2: ALTERNATIVES CONSIDERED

This chapter presents three alternatives for future management of the historic properties in Grand Teton National Park and the John D. Rockefeller Jr., Memorial Parkway. It also notes which alternative the NPS prefers for implementation and which alternative would be considered environmentally preferable. Alternative A, the no-action alternative, presents a continuation of current management direction and provides a baseline for comparing the consequences of implementing the action alternatives. The proposed action alternatives, B and C, were developed to fit the purpose and need for the project as discussed in Chapter 1. Mitigation measures that would be used to reduce or avoid adverse impacts on natural, cultural, and social resources are listed after the descriptions of the alternatives (see the Mitigation Measures section later in this chapter). This chapter also includes a section on potential alternatives or specific actions that were dismissed from detailed analysis. At the end of the chapter there are two summary tables: a comparison of the alternatives and a comparison of the predicted impacts of the alternatives.

Developing the Alternatives

The National Environmental Policy Act (NEPA) requires federal agencies to rigorously explore a range of reasonable alternatives when planning for a major federal action. Using a full complement of park personnel, including experts in park operations, facilities, and cultural and natural resources, the Historic Properties Management Plan interdisciplinary planning team devoted significant effort to develop the three alternatives for managing the historic properties of Grand Teton National Park. Several steps were taken to develop the alternatives, including extensive internal review and public input, which affected the process and occasioned several revisions to the alternatives.

From June – October 2011, the interdisciplinary team of NPS employees met to discuss and develop project alternatives. These meetings resulted in the definition of project objectives as described in the *Purpose and Need*, and a list of alternatives that could potentially meet these objectives. A total of five action alternatives and the no-action alternative were originally identified for this project. Of these, two of the action alternatives were dismissed from further consideration for various reasons, as described later in this chapter. The no-action alternative and two action alternatives were carried forward for further evaluation in this environmental assessment. A summary table comparing alternative components is presented at the end of this chapter.

Structuring the Management Alternatives

The initial challenge the planning team faced in the alternative development process was to determine how to structure the management alternatives, and how to prioritize the properties and determine which properties needed to be analyzed in more detail because of a current lack of use or prescription for future management.

As previously stated, the park and parkway currently contain 695 resources that are listed, or eligible for listing, in the National Register of Historic Places. Individual resources may be historic sites, buildings, structures, or objects. These resources are found in 44 locations, where there may be one resource or multiple resources with the same context and historical significance in what is commonly called a "historic district." For the purposes of the plan, these resources were considered by their locations (and referred to in this plan as "historic properties"). Although Beaver Creek #10 is part of the Old Administrative District (Beaver Creek) historic property, the building is discussed as a separate historic property due to its current lack of use and significant history. Beaver Creek #10 was the original U.S. Forest Service as well as NPS park headquarters building.

Because many of the 44 historic properties were in use, the planning team began the planning effort by reviewing the existing uses and conditions to determine 1) the basis for the existing use; and 2) the relationship between use and property condition.

Use was defined as an active and productive purpose for the property. The planning team determined that there was a basis for use for properties where the historic use was continued (for example, auto-courts being used for lodging), and for properties where previous environmental assessments that analyzed the impacts of a new use existed (for example, the Murie Ranch being used as "The Murie Center" and White Grass Dude Ranch being rehabilitated for use as a historic preservation training center). Of the 44 historic properties, 34 have an existing use and a basis for that use. Ten, excluding Beaver Creek #10, were determined to be underused with no basis for their use or lack of use. The inclusion of Beaver Creek #10 raised the number of underused properties to eleven.

Condition was defined using the List of Classified Structures (LCS) condition. The LCS is a digital inventory of all historic and prehistoric structures in the national parks. The LCS tracks 100 data fields, which include identification data, historical information, management data, and condition information. Condition in the LCS is assessed every five years, and is defined in a manner that allows consideration of condition in relation to ideal use rather than to habitable use For example, a historic property does not need to be fully habitable to be in good condition as an interpretive site. Keeping in mind that definitions depend upon ideal use or condition, the LCS conditions are defined as:

Good: The structure and significant features are intact, structurally sound, and performing their intended purpose. The structure and significant features need no repair or rehabilitation, but only routine preventative maintenance.

Fair: The structure is in fair condition if either of the following condition is present:

a) There are early signs of wear, failure, or deterioration through the structure and its features are generally structurally sound and performing their intended purpose; or
b) There is deterioration of significant features of the structure.

Poor: The structure is in poor condition if any of the following conditions is present:

a) The significant features are no longer performing their intended purpose; or
b) Significant features are missing; or
c) Deterioration or damage affects more than 25% of the structure; or
d) The structure or significant features show signs of imminent failure or breakdown.

See **Appendix A** for a table highlighting individual properties, their historic and current use, and LCS condition. Based on this information, the interdisciplinary planning team came up with the following property groupings.

Those structures with active and productive uses and in fair to good condition were:

1. AMK Ranch
2. The Brinkerhoff
3. Cascade Canyon Barn Patrol Cabin
4. Colter Bay Village
5. Cunningham Cabin
6. Death Canyon Barn Patrol Cabin
7. Double Diamond Dude Ranch Lodge
8. Elk Ranch
9. The Highlands
10. Jackson Lake Lodge
11. Jackson Lake Ranger Station
12. Jenny Lake Boat Concession
13. Jenny Lake Campground
14. Jenny Lake CCC Camp
15. Jenny Lake Lodge
16. Jenny Lake Ranger Station
17. Kimmel Kabins/Lupine Meadows
18. Leigh Lake Patrol Cabin
19. Lower Berry Creek Patrol Cabin
20. Menor’s Ferry/Maud Noble Cabins
21. Moose Entrance Kiosk
22. Moose-Wilson Road
23. Mormon Row
24. Murie Ranch
25. Old Administrative Area/Beaver Creek
26. Ramshorn Dude Ranch Lodge
27. Reimer Residence
28. Snake River Bridge #2
29. String Lake Comfort Station
30. Triangle X Barn
31. Upper Granite Canyon Patrol Cabin
32. Valley Trail System
33. White Grass Dude Ranch
34. White Grass Ranger Station

Two of the above properties, Mormon Row and White Grass Dude Ranch, were the subjects of previous individual planning efforts. In each case, the plans had been completed but work had not been implemented or finished at the time this management plan was beginning to be developed. A review indicated that minor changes to the decisions about infrastructure improvements would be beneficial. These properties will be presented in more detail than the other "in-use" properties above. Because the minor modifications proposed by the park would not significant change the analyzed proposal or impacts, the slightly modified work was approved. This work was begun at Mormon Row in summer 2015 and is expected to be completed by the end of 2015. It has been described as part of Alternative A, the no-action alternative. Rehabilitation at White Grass Dude Ranch is ongoing and the proposed modifications to the approved work at this property are described under the action alternatives (Alternatives B and C) along with more detailed discussions about the 11 underused properties listed below.

The underused properties were determined to be:

1. 4 Lazy F Dude Ranch
2. Aspen Ridge Ranch Residence and Barn
3. Bar BC Dude Ranch
4. Hunter Hereford Ranch
5. Lucas Homestead/Fabian Place
6. Luther Taylor Cabins
7. Manges Cabin
8. McCollister Residential Complex
9. Sky Ranch
10. Snake River Land Company Office and Residence
11. Beaver Creek #10

Although Beaver Creek #10 is a single building in the Old Administrative District/Beaver Creek, the planning team determined that it should be singled out as an underused property due to its significance as the first park headquarters. Beaver Creek #10 served a park administrative use until 2005, and has been unoccupied since then.

The Brinkerhoff

An Example: History of an In-Use Property

The Brinkerhoff lodge was designed by architect Jan Wilding of Casper, Wyoming, and constructed in 1947 by the Brinkerhoff family, owners of an oil exploration company that operated out of Texas and Wyoming. The property was a former Forest Service lease, and a previous structure on the site had collapsed to its foundations when the Brinkerhoffs purchased the land. The Brinkerhoffs used the home as a seasonal retreat and sold it to the National Park Service in 1955, when the company headquarters were relocated from Casper to Denver.

The Brinkerhoff lodge was added to the National Register of Historic Places in 1990 and is considered to be of exceptional significance as the only extant local example of a vacation home on a former United States Forest Service lease in what is now Grand Teton National Park. At one time, there were 111 such leases that dotted Jackson Hole.

The main house contains one of the most intact collections of furnishings by Thomas Molesworth, who designed and built log furniture for western ranches and other structures. In 1955, the property was transferred to Grand Teton National Park and hosted guests on official government travel, including Presidents Kennedy and Nixon. The presidential press generated by Kennedy and Nixon further stimulated public interest in Grand Teton National Park.

In more recent decades, the lodge has been used seasonally for small groups of official park visitors and occasional meetings and training sessions among park staff. The seasonal, short-term residential use of the property has remained unchanged since 1955, and the lodge and furnishings remain largely intact. The continued use of the property has facilitated preventive maintenance and care of the structure and protection of the Molesworth furnishings. A small adjacent caretaker's cabin houses seasonal volunteers who greet visitors, ensure daily care and cleaning of the facility, and work with the park curator on protection of the Molesworth collection.

The existing use of the Brinkerhoff Lodge is consistent with its historical use, and as a result the park proposes to continue using the Brinkerhoff for official administrative uses from May to October.

Prioritizing the Historic Properties

In order to prioritize the historic properties, the planning team created the Historic Property Evaluation Tool (HPET) to rank properties based on visitor access, current use, potential for use, and cultural significance. Weights were assigned to each category; 15%, 35%, 35%, and 50%, respectively; see **Appendix H** for detailed category descriptions. Cultural significance was given the most weight. In order to ensure accuracy, the team ran all 44 properties through the HPET. This evaluation tool also scored each property high, medium, low, or none for the visitor access, current use, and potential for use. Each property received a total score on a scale of 1 to 100.

The team decided that properties that scored above 50, were in good or fair condition, and had a demonstrated beneficial use, or an existing plan for such a use, should not be considered for a change from current management or use. All of these "in-use" properties (34 of the total 44) were considered high priority. Examples are properties like the Jackson Lake Lodge, Murie Ranch, The Highlands, and The Brinkerhoff (see sidebar at left). These have a basis for how they are being used and are being maintained in a way compliant with guidelines for caring for historic properties.

Thus, a subset of 11 underused properties became the focus for site-specific, proposed actions developed and considered in the alternatives. The planning team found that these properties fell into two categories when they were evaluated for the HPET parameters, described above. The first category

included properties that scored above 50 using the HPET and did not have a demonstrated good use. Regardless of their condition, these properties were highlighted for further discussion as high priority, focus properties. These properties were 4 Lazy F Dude Ranch, Bar BC Dude Ranch, Beaver Creek #10, Lucas Homestead/Fabian Place and Snake River Land Company Office and Residence. The second category was comprised of properties that scored 50 or below using the HPET, and which were carried forward for further discussion as low priority, focus properties. These six properties were Aspen Ridge Ranch Residence and Barn, Hunter Hereford Ranch, Luther Taylor Cabins, Manges Cabin, McCollister Residential Complex, and Sky Ranch.

For all 11 focus properties, the planning team also charted the HPET score against LCS condition in order to help inform future management and treatment decisions (see **Figure 3**, below).

HPET Score	Good	Fair / Poor
100	**4 Lazy F Dude Ranch**	**Bar BC Dude Ranch** **Beaver Creek #10** **Lucas Homestead/Fabian Place** **Snake River Land Company Office and Residence**
50	**Hunter Hereford Ranch** **Manges Cabin** **McCollister Residential Complex** **Sky Ranch**	**Aspen Ridge Ranch Residence and Barn** **Luther Taylor Cabins**
0		

Good **Fair** **Poor**
LCS Condition

Figure 3. The 11 Focus Properties: Condition and HPET Ranking

As noted earlier, HPET score is based on cultural significance, visitor access, and potential for use. In **Figure 3** the focus properties are shown in the category they fell into in alphabetical order, not ranking order. The rankings were only used to group "like" properties, not to prioritize those properties within their category.

The above rankings represent the current prioritization of these properties, but the potential for adaptive management is part of this plan. If in the future, the status of a historic property changes or a new property is determined eligible for listing in the National Register, then the park would evaluate that property through the HPET criteria and make decisions regarding management strategy, future treatment, and use.

Proposed Treatments

The HPET (see **Appendix H**) gave the planning team a baseline for how to prioritize the eleven focus properties for preservation treatment. The next step was to define treatments for the action alternatives. The group took a broad view of treatments, looking at both Section 110 of the National Historic Preservation Act (16 U.S.C. 470h-2a – 16 U.S.C. 470h-2l) and the *Secretary of the Interior Standards* (36 CFR 68, 1995; http://www.nps.gov/tps/standards.htm, 2001). The terms considered were: preservation, including the subcategories of hazard mitigation, stabilization, and preservation maintenance; rehabilitation; restoration; reconstruction; and removal. Ultimately, the team dropped reconstruction as it were never found to be applicable in the plan. Restoration was never applicable on the district level although restoration of elements within a historic district could occur.

The final treatments defined by the team for consideration in this plan are:

Rehabilitation: Proactive work; apply measures, such as installing fire detection and suppression systems, or upgrading utilities to allow new or renewed use.

Preservation Maintenance: Proactive work; replace deteriorated features in-kind and complete occasional, larger projects and modifications to adapt to building users. Maintaining buildings slightly improves their condition in the long term. Often referred to simply as "maintenance."

Stabilization: Proactive work; weatherproof building envelopes to prevent further deterioration. Discontinuation of interior use. Often referred to as "mothball stabilization."

Hazard mitigation: Reactive work; respond to health and safety concerns with infrequent to intermittent preservation attention.

Removal: Demolish or move buildings; alter properties so significantly they are no longer eligible for listing in the National Register of Historic Places.

Restoration: Retain materials from the most significant time in a property's history, while permitting the removal of materials from other periods.

Reconstruction: Recreate vanished or non-surviving portions of a property in all new materials for interpretive purposes.

The planning team discussed at length whether removal was an appropriate treatment option for historic properties. The removal and neglect of historic resources would constitute an adverse effect according to Section 106 of the National Historic Preservation Act of 1966, as amended (16 USC 470f). While removal is not a preferred treatment method, Section 110 of the National Historic Preservation Act (16 U.S.C. 470-2a – 16 U.S.C. 470-2l) states, "where it is not feasible to maintain a historic property, or to rehabilitate it for contemporary use, the agency may elect to modify it in ways that are inconsistent with the Secretary's "Standards for Rehabilitation" (36 CFR 68, 1995), allow it to deteriorate, or to demolish it. However, the decision to act or not act to preserve and maintain historic properties should be an explicit one, reached following

appropriate consultation within the section 106 review process and in relation to other management needs." (Standard 6 in http://www.nps.gov/fpi/Section110.html).

The planning team ultimately decided to include removal as a treatment option with the understanding that the decision to remove a historic property would be an explicit one, and that consultation would be required with the Wyoming State Historic Preservation Office, the Advisory Council for Historic Preservation, and consulting parties to determine appropriate ways to mitigate or otherwise address the adverse action(s). In addition, the team agreed that removal should only be considered for those properties that were in fair or poor condition and that scored below 50 on the HPET—those that scored low on access (location and accessibility in terms of proximity to visitor services areas and/or park operations bases), potential for use, and cultural significance. The lowest-scoring properties were Aspen Ridge Ranch Residence and Barn, Hunter Hereford Ranch, Luther Taylor Cabins, Manges Cabin, McCollister Residential Complex, and Sky Ranch (see **Figure 3**).

Public comment played an important role in helping determine the focus properties and in shaping the treatment categories. Public comment also played a significant role in determining which treatments should be applied to the focus properties. In addition to the no-action alternative, the team developed a preferred alternative and one action alternative.

The concept of leasing the underused historic properties to partners was considered beyond the scope of this plan because the park is not considering additional concessioner or partner agreements at this time. Proposals that are in line with the management decisions resulting from this plan could be considered on a case by case basis in the future.

Consistent with the park asset management plan and DOI capital investment strategy, the park is focusing its existing staff and dollars on historic properties already in use and on some currently underused properties. It is also trying to avoid increasing use in outlying areas far from park administrative or visitor areas due to greater potential for adversely impacting environmental resources and park operations.

Summary of the Historic Property Management Evaluation Process

The following flowchart (**Figure 4**) illustrates the process the park followed, or would follow, to determine a management direction for historic properties. A small interdisciplanary team, including a cultural resource specialist, would be convened in the future to evaluate any property that is newly determined eligible for the National Register of Historic Places, or a listed or eligible property that is vacated or its condition changes.

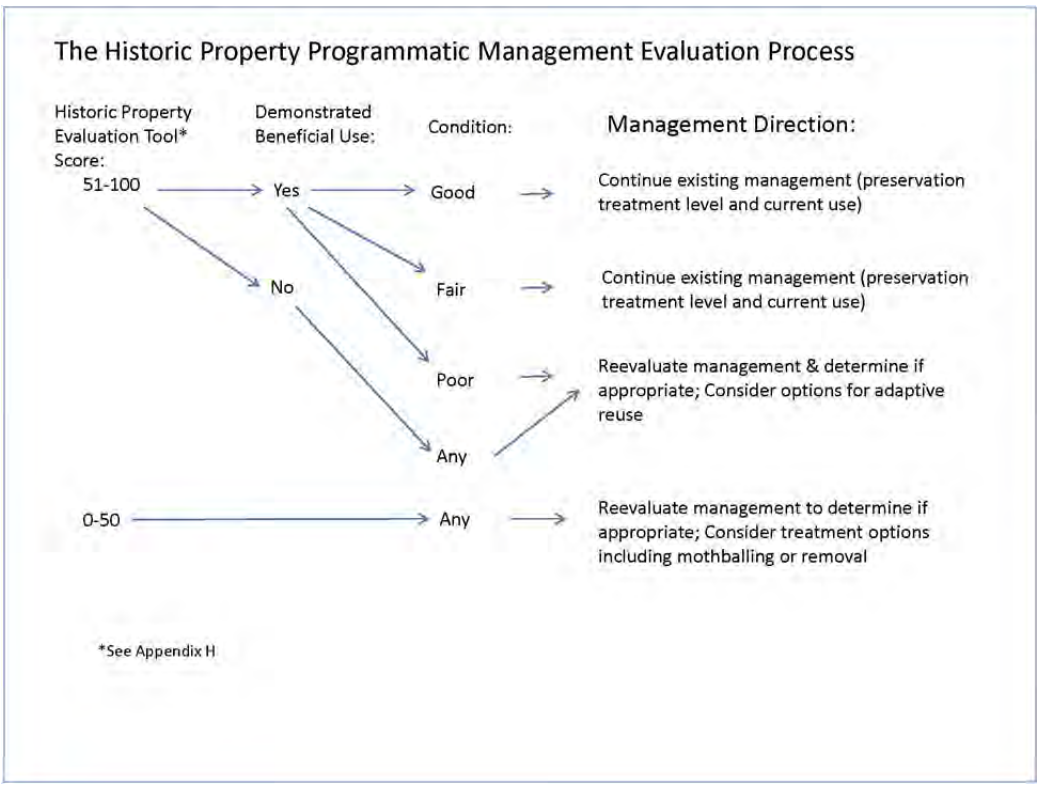

Figure 4. The Programmatic Management Evaluation Process

Elements Common to all Alternatives

Under all three alternatives, 32 of the 44 historic properties analyzed in this plan are not being considered for a change in management. These 32 are those that are currently in-use and in good condition. They receive appropriate levels of preservation maintenance and would continue to be used and maintained as they are currently. Their management is analyzed under all alternatives.

The historic properties management plan is not considering the idea of moving structures out of floodplains but would incorporate mitigations to ameliorate potential impacts.

All work on park historic properties would be performed in accordance with the *Secretary of the Interior's Standards for the Treatment of Historic Properties* (36 CFR 68, 1995) and the *Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for the Treatment of Cultural Landscapes* (http://www.nps.gov/tps/standards.htm, USDOI 2001). Following these standards and guidelines, the park would continue to develop cultural resources maintenance guides, cultural landscape and historic structures reports, collection management plans, and historic furnishings reports.

Alternatives Carried Forward

The alternatives vary in their approach to implementing improvements at White Grass Dude Ranch, to managing the 11 unused and underused historic properties, and in the levels of interpretation implemented for all 44 historic properties. **Table 1** lists all historic properties and their current and proposed management under the three alternatives. The focus properties are separated by how they scored under the historic property evaluation tool (HPET). The alternatives are summarized on the following pages.

References to personal interpretive media mean that a person, such as an interpretive ranger or trained volunteer, is physically present to provide interpretive information to the public and answer questions. Non-personal interpretive media would include media read by or listened to by members of the public, such as brochures, podcasts, interpretive panels, electronic applications (“apps”), or wayside exhibits.

Table 1: Historic Properties, Current Uses, and Proposed Treatments by Alternative

Historic Properties with an Identified Use or Plan for Use	Alt A - No Action - Retain All Properties and Maintain on An As-Needed Basis			Alt B - Retain and Improve Maintenance at Most Properties, Maximize Use of High Priority Properties, and Remove Several Low Priority Properties			Alt C - Retain All Properties through Proactive Stabilization and Maintenance		
	Treatment	Use	Increased Interpretation	Treatment	Use	Increased Interpretation	Treatment	Use	Increased Interpretation
In-Use Historic Properties									
Administrative Area Historic District/Beaver Creek	Maintain	Park housing and storage		Same as Alternative A	Same as Alternative A		Same as Alternative A	Same as Alternative A	
AMK Ranch	Maintain	Scientific research station							
The Brinkerhoff	Maintain	Administrative							
Cascade Canyon Barn Patrol Cabin	Maintain	Park backcountry patrol use							
Colter Bay Village	Maintain	Visitor lodging and services							
Cunningham Cabin	Maintain	Interpretive historic district							
Death Canyon Barn/Patrol Cabin	Maintain	Park backcountry patrol use							
Double Diamond Dude Ranch Dining Hall	Maintain	Visitor lodging							
Elk Ranch	Maintain	Park resource management							
Highlands	Maintain	Park housing							
Jackson Lake Lodge	Maintain	Visitor lodging							
Jackson Lake Ranger Station	Maintain	Park housing							
Jenny Lake Boat Concessions Facilities	Maintain	Concessions facility							
Jenny Lake CCC Camp #NP-4	Maintain	Concessions facility							
Jenny Lake Campground	Maintain	Visitor campground							
Jenny Lake Lodge	Maintain	Visitor lodging							
Jenny Lake Ranger Station	Maintain	Visitor services							
Kimmel Kabins/Lupine Meadows	Maintain	Park housing							
Leigh Lake Ranger Patrol Cabin	Maintain	Park backcountry patrol use							
Lower Berry Creek Patrol Cabin	Maintain	Park backcountry patrol use							
Menor's Ferry/Maud Noble Cabins	Maintain	Interpretive historic district							
Moose Entrance Kiosk	Stabilize	Move to S. Jenny Lake; interpretive							
Moose-Wilson Road	Maintain	Park road							
Mormon Row	Stabilize; improve infrastructure	Interpretive historic district		Same as A and possibly rehabilitate select buildings	Same as A and possibly park housing		Same as Alternative A	Same as Alternative A	
Murie Ranch	Maintain	Conservation education center							
Ramshorn Dude Ranch Lodge	Maintain	Educational facility							
Reamer Residence	Maintain	Park housing							
Snake River Bridge #2	Maintain	Park road							
String Lake Comfort Station	Maintain	Visitor services							
Triangle X Barn	Maintain	Visitor lodging							
Upper Granite Canyon Patrol Cabin	Maintain	Park backcountry patrol use							
Valley Trail System	Maintain	Backcountry trails							
White Grass Dude Ranch	Rehabilitate	Preservation training center							
White Grass Ranger Station Historic District	Maintain	Park backcountry patrol use							
Historic Properties with Minimal or No Use (Focus Properties)	*Alternative A*			*Alternative B*			*Alternative C*		
	Treatment	*Use*		*Treatment*	*Use*		*Treatment*	*Use*	
Higher Park Priority Focus Properties (HPET Score > 50)									
4 Lazy F Dude Ranch	Maintain	None		Rehabilitate (adaptive reuse)	Seasonal housing	✓	Maintain	Park storage	✓
Bar BC Dude Ranch	Hazard Mitigation	None		Stabilize 27 cabins and allow 7 to decay	Outdoor laboratory for architectural conservation students (seasonal, day-use only)		Stabilize	None	
Beaver Creek #10 (in Administrative Area Historic District/Beaver Creek)	Hazard Mitigation	None		Rehabilitate (adaptive reuse)	Park administrative use	✓	Maintain	Park storage	
Hunter Hereford Ranch	Maintain	Park Storage		Improve maintenance	Park storage		Same as Alternative B		
Geraldine Lucas Homestead/Harold Fabian Place	Hazard Mitigation	None		Maintain	Interpretive historic district	✓	Stabilize	Interpretive historic district	✓
Snake River Land Co. Office and Residence	Hazard Mitigation	None		Rehabilitate (adaptive reuse)	Ranger station		Stabilize	Park storage	
Aspen Ridge Ranch Residence and Barn	Hazard Mitigation	Park storage		Remove	None		Stabilize	Park storage	
Luther Taylor Cabins	Hazard Mitigation	None		Stabilize	Interpretive historic district	✓	Stabilize	Interpretive historic district	✓
Manges Cabin	Maintain	Park storage		Improve maintenance	Park storage		Same as Alternative B		
McCollister Residential Complex	Hazard Mitigation	None		Remove	None		Stabilize	Park Storage	
Sky Ranch	Hazard Mitigation	None		Remove	None		Maintain	Park storage	

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Alternative A - NO ACTION - *Retain All Properties and Maintain on an As-Needed Basis*

Under Alternative A, the park would continue to maintain and use the historic properties with identified uses and to monitor historic properties not in use and pursue funding to perform hazard mitigation measures when safety or building security becomes a concern. The park's interpretive program would continue to be limited to a ranger-led tour at one historic property and non-personal interpretation at eight historic properties.

Under Alternative A,

- 32 historic properties in good condition with identified uses would receive preservation maintenance and continue to be used as they are currently.
- One historic property would continue to be interpreted with on-site personal media (Menor's Ferry/Maud Noble Cabins) and 8 districts would continue to be interpreted with non-personal media (AMK Ranch, Bar BC Dude Ranch, Cunningham Cabin, Elk Ranch, Jenny Lake CCC Camp #4, Lucas Homestead/Fabian Place, and Mormon Row). The park would continue to present cultural information on the park website. Non-personal interpretation could be developed for additional properties.

Proposed management for Mormon Row, White Grass Dude Ranch, and the 11 focus properties:

- Mormon Row would undergo infrastructure improvements in 2015 to improve its use as an interpretive site in accordance with, but slightly modified from, the 1999 *Mormon Row Historic District Management Alternatives and EA.*
- White Grass Dude Ranch would be rehabilitated and used in accordance with the 2005 *White Grass Dude Ranch Rehabilitation and Adaptive Use Environmental Assessment/ Assessment of Effect.*
- Eight of the 11unused or underused focus properties would be monitored and hazard mitigation would occur when safety or building security becomes a concern. They would continue to be unoccupied or underused.
- Two (Hunter Hereford Ranch and Manges Cabin) would continue to be maintained and used for park storage.
- 4 Lazy F Dude Ranch, the remaining focus property, would continue to be maintained pending a management decision about future use.

Alternative B – *Retain and Improve Maintenance at Most Properties, Maximize Use of High Priority Properties, and Remove Several Low Priority Properties* (NPS-Preferred)

Under Alternative B, the park would direct its efforts to fully utilize the highest priority of the 11 focus properties. Several low priority focus properties would be removed. Non-personal interpretive media for key historic properties would increase.

Under Alternative B:

- 32 historic properties in good condition with identified uses would receive preservation maintenance and continue to be used as they are currently. The park would develop district-specific preservation treatment handbooks for key historic properties to improve level of preventative maintenance.

- One historic property would continue to be interpreted with on-site personal media (Menor's Ferry/Maud Noble Cabins) and 10 properties (4 Lazy F Dude Ranch, Beaver Creek #10, Cunningham Cabin, Jackson Lake Lodge, Jenny Lake Ranger District, Lucas Homestead/Fabian Place, Luther Taylor Cabins, Mormon Row, Murie Ranch, and White Grass Dude Ranch) would receive increased non-personal interpretation as time and funding allowed. The park would increase information on cultural resources on the park website and opportunities to use non-personal digital media. Non-personal interpretation could be developed for additional properties.

Proposed management for Mormon Row, White Grass Dude Ranch, and the 11 focus properties:

- Mormon Row would undergo infrastructure improvements in 2015 to improve its use as an interpretive site, with minor modifications to the 1999 *Mormon Row Historic District Management Alternatives and EA*. Potential rehabilitation of up to four buildings (~ 9-12 potential occupants) for adaptive reuse as seasonal housing is also included.
- White Grass Dude Ranch would be rehabilitated and used with minor modifications to the 2005 *White Grass Dude Ranch Rehabilitation and Adaptive Use Environmental Assessment/ Assessment of Effect.* Day use would be increased from 30 to 40 people (occasionally) and overnight occupancy from 15 to 26.
- Three (4 Lazy F Dude Ranch, Beaver Creek #10, Snake River Land Company Office and Residence) of the 11 focus properties would be rehabilitated and adaptively reused, with ~ 15-17 seasonal occupants at 4 Lazy F.
- Two focus properties (Lucas Homestead/Fabian Place and Luther Taylor Cabins) would be preserved to enhance visitor appreciation. The former would also receive infrastructure improvements.
- Select buildings at the Bar BC Dude Ranch would be stabilized and used as a seasonal, day-use-only outdoor laboratory for architectural conservation science students to better preserve the district.
- Two focus properties (Manges Cabin and Hunter Hereford Ranch) would receive preservation treatment to improve their condition and would be used for park operations.
- Three focus properties (Aspen Ridge Ranch Residence and Barn, McCollister Residential Complex, and Sky Ranch) would be removed by sale or demolition.

Alternative C - *Retain All Properties through Proactive Stabilization and Maintenance*

This action alternative proposes a minimal level of treatment, mothball stabilization, for most of the focus properties. While none of the focus properties would be fully used, this alternative would ensure that all properties would remain on the landscape.

Under Alternative C, the park would proactively maintain and/or stabilize all historic properties not currently in-use (not just those posing a health or security risk). Only minimal park administrative use would be considered. Adaptive reuse would not be considered, and unused structures would remain unoccupied. Interpretive efforts would increase non-personal interpretive media at key historic properties, as staff and funding allowed.

Under Alternative C:

- 32 historic properties in good condition with identified uses would receive preservation maintenance and continue to be used as they are currently. The park would develop district-specific preservation treatment handbooks for key historic properties to improve level of preventative maintenance.
- One historic property would continue to be interpreted with on-site personal media (Menor's Ferry/Maud Noble Cabins) and 9 historic properties would receive increased non-personal interpretation (4 Lazy F Dude Ranch, Cunningham Cabin, Jackson Lake Lodge, Jenny Lake Ranger District, Lucas Homestead/Fabian Place, Luther Taylor Cabins, Mormon Row, Murie Ranch, and White Grass Dude Ranch), as time and funding allowed. The park would increase information on cultural resources on the park websites and opportunities to use non-personal digital media. Non-personal interpretation could be developed for additional properties.

Proposed management for Mormon Row, White Grass Dude Ranch, and the 11 focus properties:

- Mormon Row would undergo infrastructure improvements in 2015 to improve its use as an interpretive site with some infrastructure minor modifications to the 1999 *Mormon Row Historic District Management Alternatives and EA* to facilitate visitor use.
- White Grass Dude Ranch would be rehabilitated and used with minor modifications to the 2005 *White Grass Dude Ranch Rehabilitation and Adaptive Use Environmental Assessment/ Assessment of Effect.* Day use would be increased from 30 to 40 people (occasionally) and overnight occupancy from 15 to 26.
- Four (4 Lazy F Dude Ranch, Beaver Creek #10, Hunter Hereford Ranch, and Manges Cabin) of the 11 focus properties would be maintained in current condition for minimal park operations.
- Two focus properties (Lucas Homestead/Fabian Place and Luther Taylor Cabins) would be stabilized for visitor appreciation.
- Five focus properties (Aspen Ridge Ranch Residence and Barn, Bar BC Dude Ranch, McCollister Residential Complex, Snake River Land Company Office and Residence, and Sky Ranch) would be stabilized but not occupied. Bar BC Dude Ranch would not be actively used. The others would be used as park storage.

Alternative Scenarios for the 11 Focus Properties, Mormon Row, and White Grass Dude Ranch.

The following pages offer more detail about the alternatives proposed for managing the focus properties in the future. These properties are 4 Lazy F Dude Ranch, Aspen Ridge Ranch Residence and Barn, Bar BC Dude Ranch, Beaver Creek #10, Geraldine Lucas Homestead/ Harold Fabian Place, Luther Taylor Cabins, Hunter Hereford Ranch, Manges Cabin, McCollister Residential Complex, Sky Ranch, and Snake River Land Company Office and Residence. Figures with conceptual designs to illustrate site changes proposed for five of the 11 focus properties supplement the text. Mormon Row and White Grass Dude Ranch are also included in this section to present minor modifications to previously approved plans for these properties. Potential rehabilitation of several Mormon Row buildings for adaptive reuse is also included as an option under an alternative.

4 Lazy F Dude Ranch

The 4 Lazy F Dude Ranch was listed in the National Register of Historic Places in 1990. It is significant as a representation of the later period of dude ranches and their evolution as vacation destinations, and as an example of a ranch built specifically as a dude ranch, rather than having evolved from a working ranch. The period of significance was originally 1927 to 1938 but was expanded to 1914 to 1967 with SHPO concurrence after a cultural landscape inventory was completed. The district consists of eighteen historic cabins, including a large barn and main cabin, and two non-historic buildings. The NPS has managed the site since 2006. The property is currently vacant, and the buildings are in fair condition.

Alternative A (No Action)

Under Alternative A, no change would be made to the current management of the 4 Lazy F Dude Ranch. The property would continue to be maintained as project funding is available and the decisions regarding the use of the property would be left for future generations. No formal parking would be constructed, and the road would remain unimproved. Visitor access and interpretation would not change. Efforts would be taken to seal the buildings from the elements in order to ensure they do not deteriorate further. These efforts would include constructing and installing shutters for all the windows; installing snow supports the help the buildings withstand snow load; and removing vegetation from against the cabins. In addition, some minor repairs and improvements would be made on an as-needed basis, and a new water line would be installed to the Main Lodge as part of the Moose water system replacement project. This would allow maximum flexibility for future decisions regarding the use of the property.

Alternative B (NPS-Preferred)

Under Alternative B, the 4 Lazy F Dude Ranch would be rehabilitated for use as seasonal housing from approximately May to October annually. This property was considered for adaptive reuse due to its location near the Moose developed area, high cultural significance, and high potential for reuse. The buildings were well maintained and used by the private owners until the life lease terminated in 2006. Actions would include formalizing existing parking spaces near the barn, the caretaker's house, and at the main lodge. Parking would be limited to these three areas, and would not be allowed at the individual cabins in the main lodge area. These sleeping cabins would retain their singular historic function and the occupants would share kitchens in the main lodge and the former caretaker's house. Two rooms in the main lodge would be outfitted to comply with the Architectural Barriers Act accessibility standards (ABAAS). Fire detection and suppression systems would be considered and reviewed and could be provided. When fully rehabilitated, an estimated 15 – 17 people could be housed seasonally at this property.

Utilities, including power, communications, sewer, and water, would be updated and maintained. The water distribution lines would be connected to a new centralized distribution system in Moose. Because use would be seasonal, required road maintenance would be minimal. No snow plowing would be required except possibly to open up the buildings each spring; snow supports would continue to be installed and removed annually. For safety, pullouts would be constructed along the narrow access road to allow vehicles coming from the opposite direction to pass. The historic landscape would be retained and disturbed areas would be revegetated. Because this property is located in rich, riparian habitat and next to a wild and scenic-designated river, careful attention would be paid to ensure that residents are being sensitive to natural and cultural resources in the area and the values for which the river and ranch were designated. Non-personal interpretive media would be increased as time and funding allow.

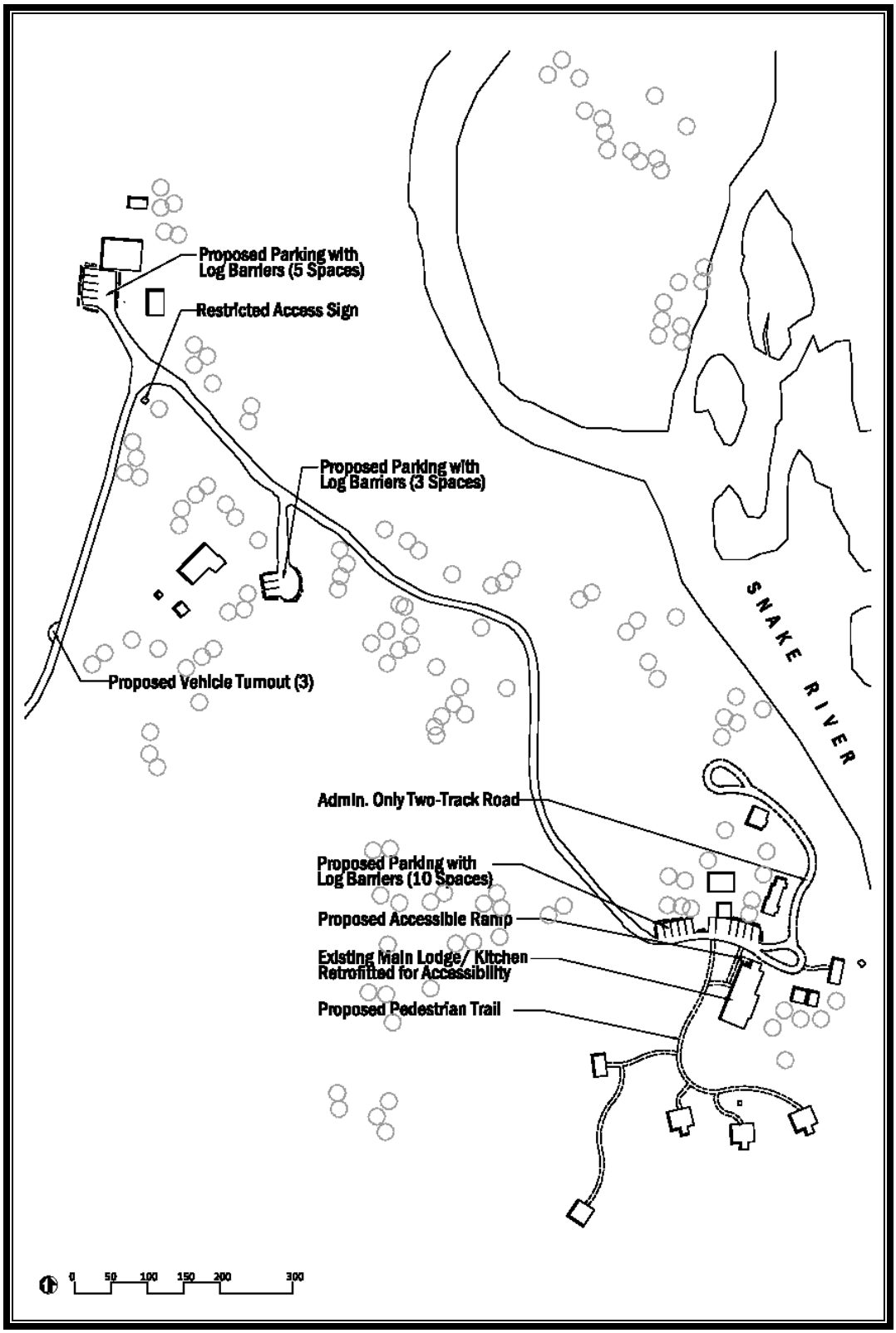

Figure 5. 4 Lazy F Dude Ranch, with proposed Alternative B changes

Alternative C

Under Alternative C, 4 Lazy F Dude Ranch would be maintained for minimal park operations. The informal parking areas and road would be unimproved. Visitor access would continue to occur at low levels, with off-site, non-personal interpretation available to the public. Efforts to seal the buildings from the elements in order to ensure they do not deteriorate further would continue. This work would include constructing and installing shutters for all the windows; and removing vegetation growing too near the cabins. Minor repairs and improvements would be made on an as-needed basis, and a new water line could be installed to the Main Lodge as part of the Moose water system replacement project. This would allow maximum flexibility for future decisions regarding the use of the property. Non-personal interpretive media would be increased.

Aspen Ridge Ranch Residence and Barn

The two remaining buildings at the Aspen Ridge Ranch were listed in the National Register of Historic Places in 1998. The ranch was constructed in 1946 and is significant as an ornate example of late period of vernacular architecture within GRTE with high physical integrity. The buildings are in fair condition. The property is currently vacant.

Alternative A (No Action)

Under Alternative A, the Aspen Ridge Ranch Residence and Barn would continue to be used for park storage. Infrequent hazard mitigation would occur on a reactive basis, although no improvements would be made to the property. The unimproved access road would remain in its current rough condition, and no parking would be established. Public vehicular access would continue to be limited by a gate near the intersection of Antelope Flats Road and Shadow Mountain Road but visitors could access the district on foot. No interpretation would occur. Minimal fire mitigation would continue to occur around the property; however no fire suppression and/or detection system would be installed in the buildings.

Alternative B (NPS-Preferred)

Under Alternative B, the Aspen Ridge Ranch Residence and Barn and all associated infrastructure would be removed from the landscape. This property scored poorly when assessed for its potential for reuse, cultural significance and access. Although the barn has been used for park storage, the residence has been vacant for many years. Removal would require the building sites, access road and small parking area to be revegetated to native species, in keeping with surrounding efforts to restore formerly cultivated lands in the former Kelly Hayfields-Antelope Flats area, to benefit wildlife. Removal would eliminate fire mitigation, road maintenance, and other maintenance responsibilities currently being overseen by the park at this property.

Alternative C

Under Alternative C, Aspen Ridge Ranch Residence and Barn would be stabilized for use as park storage. Maintenance would be proactive, with minimal in-kind preservation work performed to ensure the buildings were safe to access for use as storage. Fire mitigation efforts would continue. No effort would be made to exclude bison and elk from entering the district and damaging the buildings. Visitor access would remain limited and no on-site interpretation would occur.

Bar BC Dude Ranch

The Bar BC Dude Ranch was listed in the National Register of Historic Places in 1990. It is nationally significant as one of first dude ranches in the valley, and as the leading ranch among celebrities. It is also significant for its association with founder Struthers Burt, who wrote extensively on dude ranching in the west. The ranch consists of 34 contributing cabins, and three non-contributing resources. The original period of significance, 1912 to 1937, was subsequently expanded to 1912 to 1941. The buildings are in poor condition. Currently, the ranch is vacant, although some interpretive signs were recently installed.

Alternative A (No Action)

Under Alternative A, the Bar BC Dude Ranch cabins would remain vacant. Stabilization and hazard mitigation measures would occur, however work to the buildings and landscape would be infrequent and reactive. The Bar BC road, which extends from the Teton Park Road to the bench above the historic ranch, would continue to be maintained in its current state, with a small, informal parking area on the bench. An administrative gate at the bench would continue to prevent general (non-administrative) vehicular access to the ranch itself. Some visitors would continue to walk or ride on horseback to the site, and some may arrive by boat via the Snake River. Existing non-personal interpretive media would continue to be provided and interpretive signs would be maintained. Hazard tree removal would continue to occur around the property, primarily on a reactive basis.

Alternative B (NPS-Preferred)

Under Alternative B, of the 34 contributing buildings, 24 would be stabilized using in-kind replacements; 3 would be more extensively stabilized to retain their form, which would require wholesale replacement of original materials; and 7, those in the poorest condition and with lowest integrity and significance (shaded in **Figure 5** below), would be allowed to decay, with some useable materials recycled for preservation work on other Bar BC structures. In addition, some elements of the historic landscape would be restored. The property would continue to be used as a seasonal, day-use only, architectural conservation science outdoor laboratory, with some visitation by members of the general public arriving on foot or horseback or by boat. The small parking area on the bench above the district would be formalized, and the district itself would remain vehicle free except for occasional administrative access. Occasional maintenance would continue to occur on the Bar BC road. No utilities would be installed. Hazard tree removal would continue. The existing interpretive signs would be maintained and additional off-site non-personal interpretation could be provided to better highlight the dude ranch legacy.

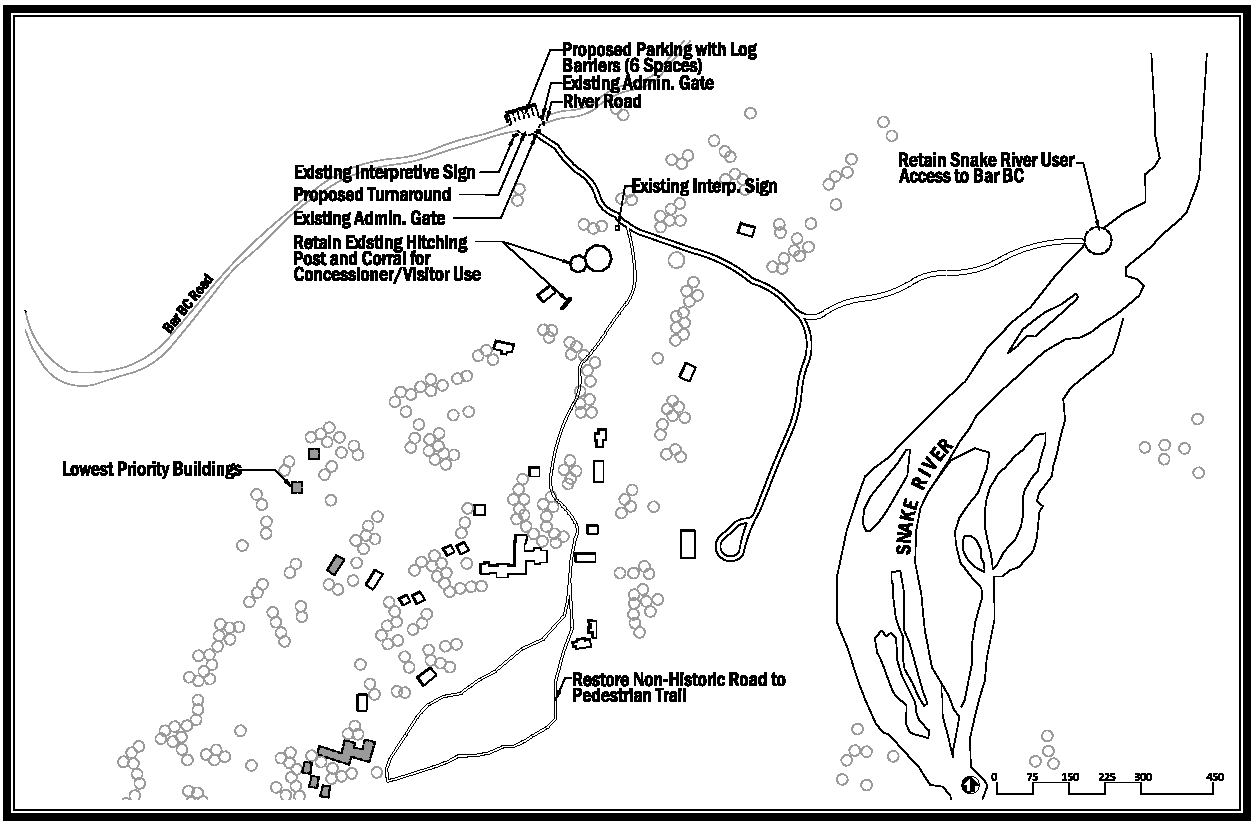

Figure 6. Bar BC Dude Ranch, with proposed Alternative B changes

Alternative C

Under Alternative C, the Bar BC Dude Ranch would be fully stabilized. Work on the buildings would include constructing and installing shutters for all the windows, covering roofs with tarps, and removing vegetation from against the cabins. The Bar BC road would continue to be minimally maintained in its current state, with a small, informal parking area, interpretive signs, and gate on the bench above the property. Vehicle access from the bench down to the district would be administrative only but some visitors would continue to walk or ride on horseback to the site, and some may arrive by boat via the Snake River. Off-site non-personal interpretation would also be available. Hazard tree removal would continue to occur around the property, primarily on a reactive basis.

Beaver Creek #10

Beaver Creek #10 is part of the larger Old Administrative Area/Beaver Creek Historic District. It was listed in the National Register in 1990, and is significant as the first headquarters of Grand Teton National Park. The structure was built sometime prior to 1908 and originally served as the Stewart Ranger Station for the U.S. Forest Service. It predates the majority of the buildings in the district, which were constructed by the Civilian Conservation Corps (CCC) in the 1930s and currently used for housing and other administrative uses. Beaver Creek #10 is currently vacant and in fair condition.

Alternative A (No Action)

Under Alternative A, no change would be made to the current management of Beaver Creek #10. The building would remain vacant, with infrequent hazard mitigation work occurring on a reactive basis. The building would not be regularly maintained or repaired. No improvements would be made to the parking, and the historic landscape would not be restored. There would continue to be no visitor access or interpretation. Fire mitigation would continue to occur around the property; however no fire suppression and/or detection system would be installed in the buildings.

Alternative B (NPS-Preferred)

Under Alternative B, Beaver Creek #10 would be rehabilitated and adaptively reused for an administrative park use such as storage, office space or housing. This property was considered for adaptive reuse due to its location within a park developed area, high cultural significance, and high potential for reuse. Most recently used as office space, the structure has been vacant since about 2005. Depending on the use chosen, utilities could be updated. Regardless of the chosen use, the historic exterior would be rehabilitated by reducing the existing parking area and restoring several spaces to native vegetation, and restoring elements of the historic landscape. Several non-historic trees would be removed to aid fire mitigation efforts and reduce potential risk to the structure. Fire detection and suppression systems would be considered and reviewed and could be provided depending on the selected use. The building may also be made ABAAS accessible depending on the selected use. Non-personal interpretive media would be provided as time and funding allow.

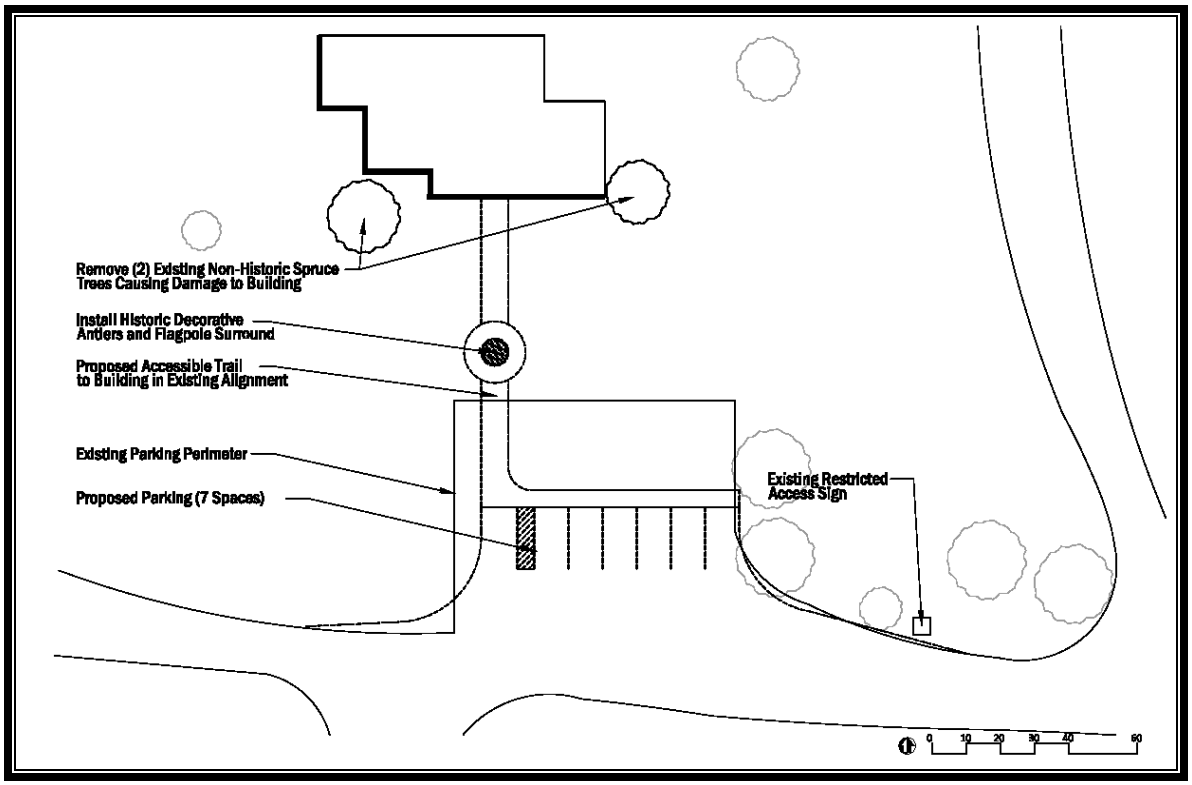

Figure 7. Beaver Creek #10, with proposed Alternative B changes

Alternative C

Under Alternative C, Beaver Creek #10 would be maintained and used for park storage. Maintenance would include frequent in-kind preservation work. The existing large parking area would remain. There would be no visitor access or on-site interpretation. Off-site non-personal interpretation could be available for visitors to experience the property remotely. Fire mitigation would continue to occur around the property but no fire suppression and/or detection system would be installed in the buildings. The interior would not be improved.

Hunter Hereford Ranch

The Hunter Hereford Ranch was listed in the National Register in 1998. It is significant for its association with growth of "hobby ranches" in the valley, and for its association with vernacular architecture and with architect-designed rustic architecture. The district is made up of eight contributing resources, including a grand barn, and one non-contributing resource. The buildings are in poor to fair condition and currently vacant.

Alternative A (No Action)

Under Alternative A, the Hunter Hereford Ranch would be maintained for use as park storage. Occasional in-kind preservation efforts would continue to occur in order to maintain the current condition of the buildings. The road would continue to be maintained. Public vehicular access would continue to be limited by an administrative gate near the intersection of Antelope Flats Road and Shadow Mountain Road but visitors could continue to access the district on foot. No on-site interpretive exhibits would be provided. Fire mitigation would continue to occur around the property; however no fire suppression and/or detection system would be installed in the buildings. The interior would not be improved.

Alternative B (NPS-Preferred)

Similar to Alternative A, but maintenance would be improved. Under Alternative B, the Hunter Hereford Ranch would continue to be maintained for use as park storage. Proactive in-kind preservation maintenance efforts would occur and a more regular cyclic maintenance schedule would be kept. Non-personal interpretation of the property could be provided. Other management elements would be the same as Alternative A.

Alternative C

Same as Alternative B.

Lucas Homestead / Fabian Place

The Lucas/Fabian Property was listed in the National Register of Historic Places in 1998 and is significant on several levels. It was the homestead of Geraldine Lucas, a single woman who retained ownership of her property despite the pressure to sell to the Snake River Land Company and, ironically, as the home of Harold Fabian, who spearheaded Rockefeller's efforts to purchase land in the park under the Snake River Land Company's auspices. It is also significant as an example of rustic vernacular architecture. The district is made up of eleven contributing buildings and structures. The buildings are in good condition, although the utilities are out of date. The property is currently vacant.

Alternative A (No Action)

Under Alternative A, no changes would be made to the current management of the Lucas Homestead/Fabian Place. The buildings would remain vacant, with infrequent health and safety-related repairs occurring on a reactive basis. The building and landscape would not be regularly maintained or repaired. Access and on-site interpretation would be limited to the existing trails and wayside signs, and fire mitigation would continue to occur around the property.

Alternative B (NPS-Preferred)

Under Alternative B, the Lucas Homestead/Fabian Place would be interpreted through non-personal interpretation. Preservation maintenance would occur on the buildings, the small parking area would be formalized, though not expanded, and signs would be installed at the nearby Glacier View turnout off the Teton Park Road, directing visitors to the district. Additionally, a bike rack and signs would be installed at the parking area adjacent to the multi-use pathway, and benches would be placed on the porches of the buildings. This location would be added as a visitor destination in the park and included in visitor orientation information along with other destinations. Additional on- and off-site interpretive information could be available.

In order to best accommodate pedestrian access and make the site ABAAS accessible, the footbridge over Cottonwood Creek would be widened from 3' to 5' and hand rails would be installed. To the west, the asphalt remains of a footbridge that crossed over an unnamed tributary of Cottonwood Creek would be removed and the footbridge would be replaced. Appropriately surfaced ABAAS trails to the primary buildings would also be installed. Utilities would not be installed or upgraded, and visitor use would remain pedestrian and occasional. A fire plan would be established based on the proximity to Cottonwood Creek. With the exception of trail improvement, this plan would require little to no ground disturbance and revegetation.

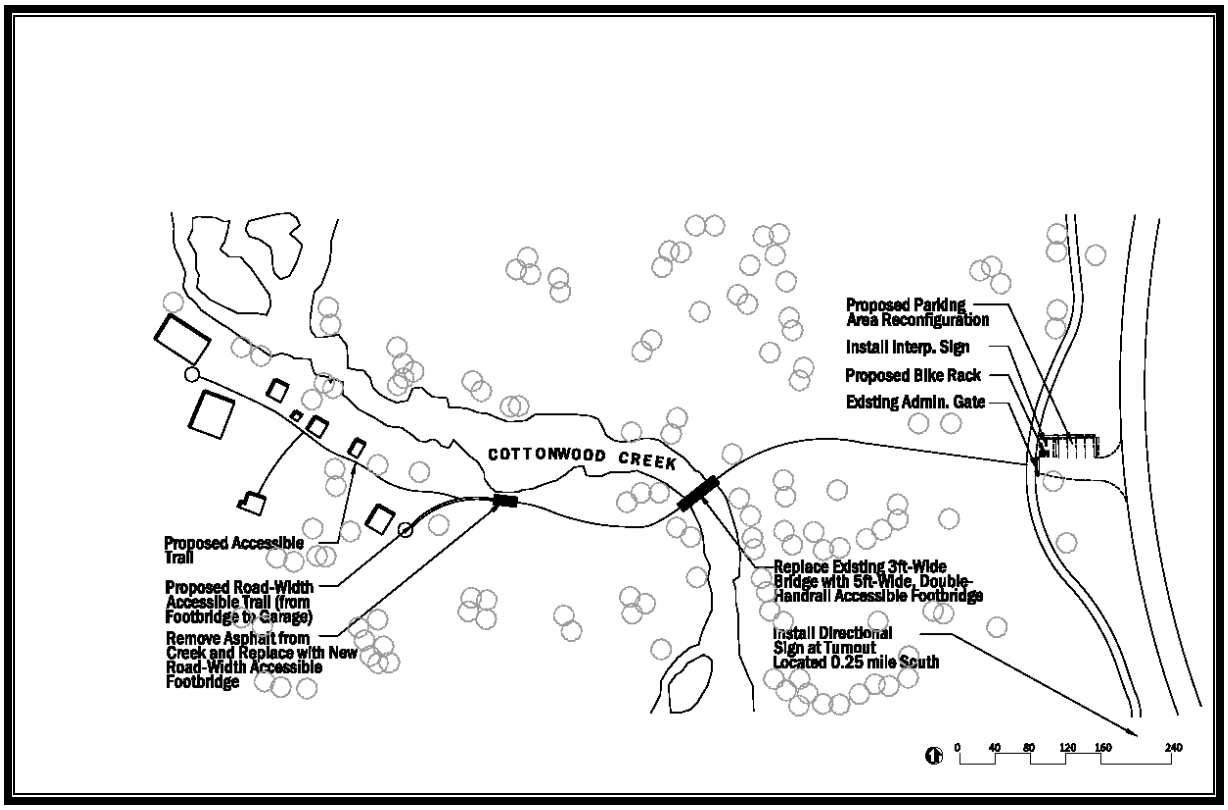

Figure 8. Lucas Homestead/Fabian Place, with proposed Alternative B changes

Alternative C

Under Alternative C, the Lucas Homestead/Fabian Place would be stabilized and mothballed, though the condition of the property would not be improved and no use would be assigned. Work would include securing the doors and installing snow supports to help the buildings accommodate the winter snow load. Visitor access would be available to those who enter the area on foot or ski/snowshoe in winter. Interpretive opportunities could be maintained or expanded. Hazard tree removal would continue to occur around the property, primarily on a reactive basis.

Luther Taylor Cabins

The Luther Taylor property is significant as the only complete example of an early homestead in the park, with the primary living quarters and outbuildings on the site. The district consists of four deteriorated cabins that were determined eligible for listing in the National Register of Historic Places in 2010. The cabins are in poor condition and the property is currently vacant. They are of special interest to the public because the site was a set location for the 1953 film, "Shane."

Alternative A (No Action)

Under Alternative A, no changes would be made to the current management of the Luther Taylor Cabins. The current small roadside parking area and access would be maintained, although work on the buildings would be limited to infrequent, hazard mitigation and safety-related projects. Fire mitigation, including vegetation management, would occur. No additional interpretation would occur.

Alternative B (NPS-Preferred)

Under Alternative B, the Luther Taylor Cabins would be maintained in order to stabilize the property in its current condition and the district would be interpreted as both a home site and film location. Although this property scored poorly when assessed for its potential for reuse, cultural significance and access (being relatively far from park visitor use areas), high visitor interest due to its history as a classic film location continues and warrants future stabilization and use as an interpretive site. Interpretation could occur on-site and/or off-site via nonpersonal media. This location would be added as a visitor destination in the park and included in visitor orientation information along with other destinations. Stabilization would be subtle in order to maintain the rustic appearance of the cabins. No changes would be made to the existing parking or access, plowing, vegetation, or other maintenance workloads.

Alternative C

Under Alternative C, the Luther Taylor Cabins would be mothballed and the district interpreted as both a home site and film location. Stabilization would include visible beams, shutters, and tarps in order to protect the buildings from further deterioration. No changes would be made to the existing parking or access, plowing, vegetation, or other maintenance workloads. Non-personal interpretation would be increased as time and funding allowed.

Manges Cabin

The Manges Cabin was listed in the National Register of Historic Places in 1998. It is significant as an unusually constructed vernacular building. Architecturally rare among rustic vernacular buildings, Manges Cabin has a steep pitched roof, wide overhanging eaves, and a second story. The cabin is also significant for its association with the early homesteading settlement in the valley. The building is in fair condition and is currently used as park storage.

Alternative A (No Action)

Under Alternative A, the Manges Cabin would be stabilized and would continue to be used for park storage. Maintenance of the building would be infrequent and reactive. No changes would be made to the current snow plowing requirements, maintenance schedule, or interpretation. Public access and interpretation would continue to be limited. The cabin would remain visible from the Teton Park Road and current interpretive signage near the road that interprets the building would continue to be maintained. Fire mitigation would continue to occur around the cabin. The interior would not be improved.

Alternative B (NPS-Preferred)

Under Alternative B, the cabin would be maintained for use as park storage. This property also scored poorly when assessed for its potential for reuse, cultural significance and access but it would be retained because it is relatively accessible due to its location near the Taggart corrals, visitors can appreciate it from the seasonally-open Teton Park Road, and it can function as park storage to support park operations. Frequent in-kind preservation efforts would occur in order to maintain the current condition of the building and prevent deterioration. Public access would continue to be limited. The cabin would remain visible from the Teton Park Road and current signage near the road that interprets the building would continue to be maintained. Fire mitigation would continue to occur around the cabin. The interior would not be improved.

Alternative C

Same as Alternative B.

McCollister Residential Complex

The McCollister Residential Complex was determined eligible for listing in the National Register of Historic Places in 2001. The property is significant for its association with Paul W. McCollister who helped transform the economy of the valley during an era of dwindling dude ranches and long winters by envisioning and developing the resort at Teton Village. The district consists of six cabins. The buildings are in good condition, but are currently vacant.

Alternative A (No Action)

Under Alternative A, no changes would be made to the current management of the McCollister Residential Complex. The complex would remain vacant, with no assigned use. Maintenance would continue to occur on a reactive, hazard mitigation basis. Fire mitigation efforts would continue. No effort would be made to prevent bison and elk from entering the district and damaging the buildings. The informal parking areas would remain overgrown, visitor access would remain limited, and no interpretive exhibits would be installed.

Alternative B (NPS-Preferred)

Under Alternative B, the McCollister Residential Complex would be removed from the landscape. This property scored poorly when assessed for its potential for reuse, cultural significance and access (being relatively far from park visitor use areas). This evaluation, in combination with its location in important seasonal wildlife habitat (woodland adjacent to shrub-steppe), helped lead to the proposal for removal. Removal would be followed by revegetation of building sites, the access road, and small parking area to benefit wildlife. Removal would eliminate all fire mitigation, road maintenance, and other maintenance responsibilities currently being overseen by the park.

Alternative C

Under Alternative C, the McCollister Residential Complex would be stabilized for use as park storage. Maintenance would be proactive, with minimal in-kind preservation work performed to ensure the buildings were safe to access for use as storage. Fire mitigation efforts would continue. No effort would be made to exclude bison and elk from entering the district and damaging the buildings. The parking would remain overgrown, visitor access would remain limited, and no on-site interpretation would occur.

Sky Ranch

The Sky Ranch was determined eligible for listing in the National Register of Historic Places in 2007. It is significant as the only architect-designed example in what is now Grand Teton National Park of the vacation home/hobby ranch property type that became popular in the valley post-World War II. The ranch consists of seven contributing cabins and one non-contributing resource. The period of significance is 1952, the year the ranch was constructed, through 2005, the year the NPS took over its management. Between 2005 and 2012 the ranch was used for NPS seasonal housing, but in 2013 it was vacated due to concerns about the lack of a safe domestic water supply, the extensive maintenance needs of the access road, a short potential occupancy period due to poor access and utility systems vulnerable to freezing, and its location in diverse wildlife habitat area. The buildings are in good condition, although the utility systems are original from 1952, which are inadequate and need to be upgraded.

Alternative A (No Action)

Under Alternative A, Sky Ranch would be left vacant with no assigned use. Vehicular access would continue to be limited by the gate off Death Canyon Rd., and no interpretation exhibits would be installed. Utilities would not be upgraded, and only reactive, health and safety related preservation work would occur.

Alternative B (NPS-Preferred)

Under Alternative B, Sky Ranch and associated infrastructure would be removed from the landscape. This property scored poorly when assessed for its potential for reuse, cultural significance and, particularly, access. This evaluation and the reasons it was vacated in 2013, led to the proposal for removal. Removal would be followed by revegetation of building sites, parking areas, and the access road to benefit wildlife. Removal would eliminate all fire mitigation, road maintenance, and other maintenance responsibilities related to the district that currently being overseen by the park. It would also reduce the amount of human development, the potential for disturbance to wildlife, and concerns about potential wildlife/human conflicts in this part of the park as well as increase the ability of a variety of species to use this habitat.

Alternative C

Under Alternative C, Sky Ranch would be maintained and used for park storage. The road would continue to receive light maintenance; however, seasonal snow plowing would not occur and the road would be left to melt out, unless there is an urgent need to access the stored materials earlier. Vehicular access would continue to be limited to administrative traffic by the gate off Death Canyon Road, and no on-site interpretation would occur. Park employees would access the property infrequently. Utilities would not be upgraded.

Snake River Land Company Office and Residence

The Snake River Land Company Office and Residence was listed in the National Register of Historic Places in 2006. It was originally a homestead, and is nationally significant because of its role as the Snake River Land Company local office headquarters for its association with consolidation of private lands in Jackson Hole. It is the primary in-park, administrative area associated with John D. Rockefeller, Jr. and his work to expand the park. The district consists of three contributing buildings and one non-contributing storage shed. The buildings are in fair condition. Two are vacant and the garage is currently used as a gear cache and workshop by the Grand Teton National Park river rangers. A small, non-contributing building would be removed from the district under all alternatives.

Alternative A (No Action)

Under Alternative A, no changes would be made to the current park management of the Snake River Land Company Office and Residence. The garage would continue to be maintained with frequent in-kind preservation efforts as a ranger cache, and the main building would continue to be treated with infrequent, reactive maintenance projects. Parking would not be improved, the road would not be plowed in the winter, and utilities would not be upgraded. Although fire mitigation around the buildings would continue, no fire suppression and/or detection system would be installed in the buildings. No interpretation would occur on site, and while public access would remain, visitation would continue to be limited by the lack of signage directing visitors to the district.

Alternative B (NPS-Preferred)

Under Alternative B, the Snake River Land Company Office and Residence would be rehabilitated for use as the Buffalo Fork Ranger Station. This property was considered for adaptive reuse due to its location near the Moran developed area, high cultural significance, and high potential for reuse. This use is proposed as potentially year-round. An estimated 6-space parking area would be formalized. The existing dirt drive and turnaround would be maintained and possibly widened somewhat to accommodate snow plows and to better enable river rangers to maneuver vehicles with trailers on this site. An interpretive exhibit would be installed in or outside the office to accommodate interested visitors and provide an opportunity to understand and appreciate the historic events and the importance of philanthropy in the creation of Grand Teton National Park. Visitor and employee access would be ABAAS compliant. Utilities would be updated, including power, telecommunications, and water and wastewater systems. A fire suppression and/or detection system would be considered and reviewed, and could be installed in the building. A fire escape would be constructed on the north side of the building to facilitate emergency egress from the second floor. A small, non-contributing shed would be removed from the district.

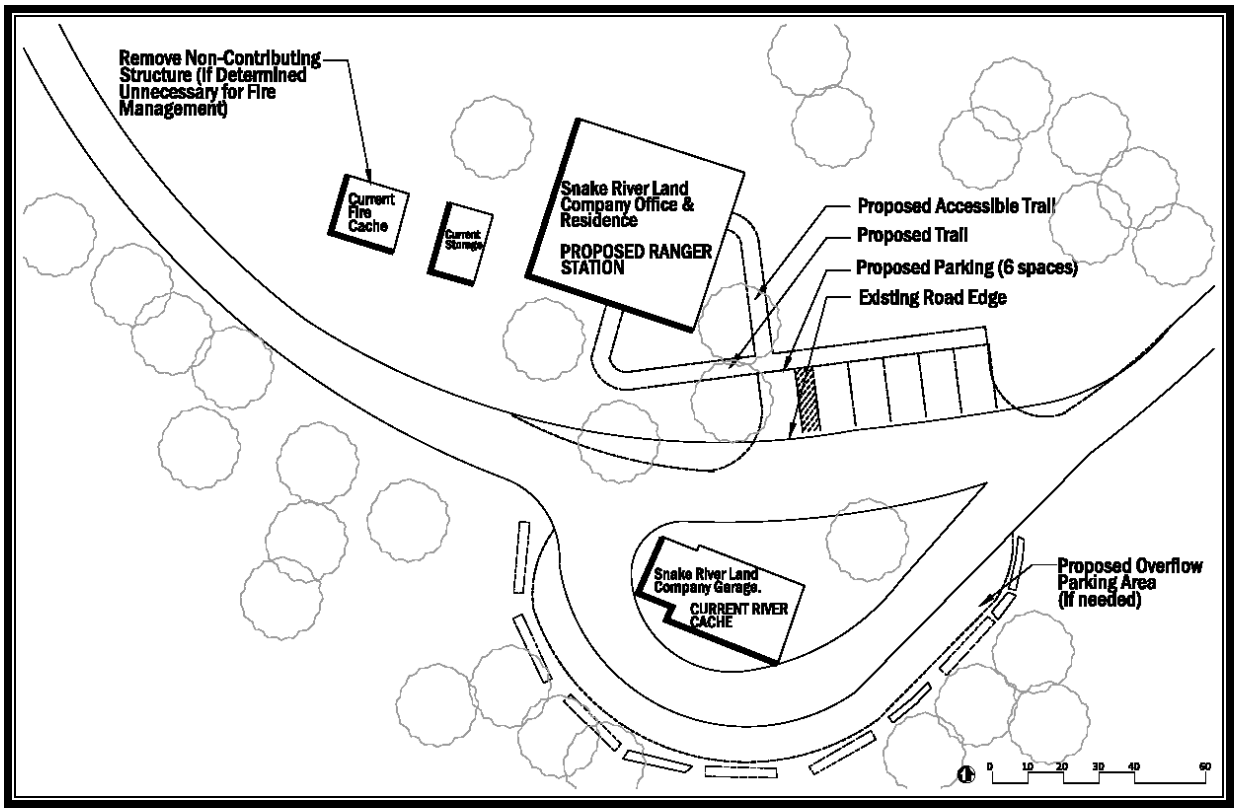

Figure 9. Snake River Land Company Office and Residence, with proposed Alternative B changes

Alternative C

Under Alternative C, the Snake River Land Company Office and Residence would be minimally stabilized for use as park storage. The garage would continue to be maintained with frequent in-kind preservation efforts as a ranger cache, and the main building would continue to be treated with infrequent, in-kind maintenance projects. Parking would not be improved, the road would not be plowed in the winter, and utilities would not be upgraded. Although fire mitigation around the buildings would continue, no fire suppression and/or detection system would be installed in the buildings. No interpretation would occur on site, and, while the area is not closed to public access, visitation would likely continue to be low.

Mormon Row

The Mormon Row Historic District was listed in the National Register of Historic Places in 1997 at the state level of significance. The district is an important reflection of Mormon settlement efforts in the 20th century and of early homesteading efforts in the Jackson valley. The district is also architecturally significant as an example of local vernacular architecture and early community structuring in the American west. The period of significance for the district is 1908 to 1950. Mormon Row is currently used as an interpretive district. The buildings are in fair condition.

Alternative A (No Action)

Mormon Row is currently being stabilized. Several wayside exhibits interpret the history of the area and key buildings. In addition, infrastructure improvements approved in the *Mormon Row Historic District Management Finding of No Significant Impact* (NPS 2000) are being implemented with minor design changes under Alternative A. Work begun during summer 2015 is expected to be completed by the end of the calendar year.

The plan included formalizing the district as an interpretive district, with a small, 5-7 car parking area at the northern end of the district, construction of an 18-car parking area, bus parking and turnaround, and a vault toilet across from the T. A. Moulton Barn, and improved interpretation of the exterior of the entire district, including the construction of an ABAAS compliant trail from the southern parking area to the Andy Chambers residence.

The modifications, based on how visitors have been using the area, include constructing similarly sized northern and southern parking areas (each ~14 spaces); installing a vault toilet at the southern parking area and potentially adding a second in the future if needed; creating a longer interpretive trail that would extend from the Mormon Row Road/Antelope Flats Road junction to the Andy Chambers homestead; and expanding interpretation to permit occasional access to the interior of one or two buildings. A separate parking area for two buses and a bus turnaround east of the Mormon Row Road/Antelope Flats Road junction would also be constructed. Non-personal interpretive media, as approved in previous planning, would be implemented as time and funding allow.

Alternative B (NPS-Preferred)

Under Alternative B, the *Mormon Row Historic District Management Finding of No Significant Impact* (NPS 2000) would be implemented with minor design improvements in 2015 as described above under Alternative A.

In addition, potential rehabilitation of several (up to four) Mormon Row houses (from north to south, the Thomas Murphy/Joe Heninger (Reed Moulton), John Moulton ("pink house"), Andy Chambers, and Thomas Perry/Roy Chambers houses), for adaptive reuse as seasonal park housing is included as an option under Alternative B. These buildings were considered for adaptive reuse due to their location near the Moose developed area, high cultural significance, and high potential for reuse. Rehabilitation would include upgrading the utilities as well as the structures. Two of the houses proposed for rehabilitation are not illustrated in **Figure 10** on the following page. The Thomas Murphy/Joe Heninger (Reed Moulton) house is located north of the John Moulton homestead and the Thomas Perry/Roy Chambers house is located south of the Andy Chambers homestead.

Alternative C

Same as Alternative A.

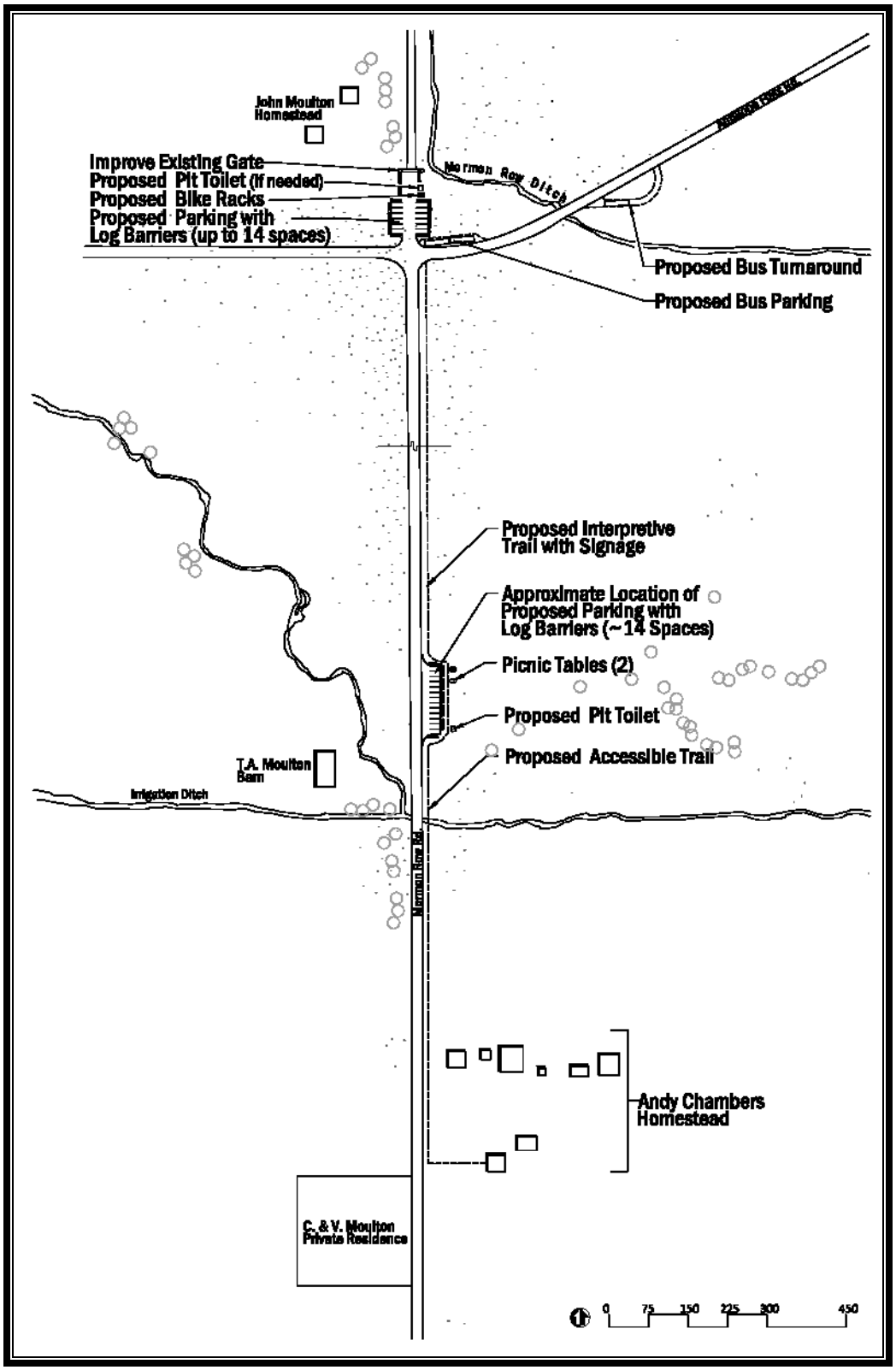

Figure 10. Mormon Row, conceptual design of planned infrastructure improvements.

White Grass Dude Ranch

The White Grass Dude Ranch was listed in the National Register of Historic Places in 1990. Constructed in the early twentieth century, it is significant as one of the earliest dude ranches in the valley, and as one of the longest operating dude ranches in the park. The ranch helped set the standard for the dude ranching industry, exemplifying the typical shift ranches made from cattle to dude. The White Grass Dude Ranch is made up of thirteen contributing buildings, and two-non-contributing buildings. It is currently being rehabilitated and used by the NPS for use as the Western Center for Historic Preservation.

Alternative A (No Action)

Under Alternative A, the 2004 *White Grass Ranch Rehabilitation and Adaptive Use Environmental Assessment/Assessment of Effect* and 2005 *White Grass Ranch Rehabilitation and Adaptive Use Finding of No Significant Impact* would be implemented with no changes. The district is currently being rehabilitated and seasonally used as a preservation training center. The 2004 EA included the construction of a short new access road from the Death Canyon Road, and limited parking to six spots outside of the building cluster.

Alternative B (NPS-Preferred)

Under Alternative B, the 2004 *White Grass Ranch Rehabilitation and Adaptive Use Environmental Assessment/Assessment of Effect* and 2005 *White Grass Ranch Rehabilitation and Adaptive Use Finding of No Significant Impact* would be implemented with minor parking changes, and higher day use and overnight occupancy. To make efficient use of the rehabilitated buildings, seasonal day use could occasionally be increased to 40 people, from 25 on average; and maximum seasonal overnight occupancy would be increased from 15 to 26. Access to the district would continue to be via the historic utility road. The spur road approved in the 2004 plan would not be constructed because it does not seem needed in addition to the current access and the disturbance it would cause can be avoided. Parking changes include increasing the number of spaces from six to eight at the main parking area away from the cabins. Driving within the district would continue to be restricted but, to provide accessible parking and drop-off areas, two accessible parking spaces would be formalized next to the Hammond Cabin, two next to the laundry/maintenance cabin, and there would be a drop-off area west of the Main Cabin. These areas would be used on a very limited basis, for loading and unloading and by individuals who need improved access. No changes to public access, expected maintenance, plowing schedules, seasonality, or type of use are proposed. Non-personal interpretive media, as approved in previous planning, would be implemented as time and funding allow.

Alternative C

Same as Alternative B.

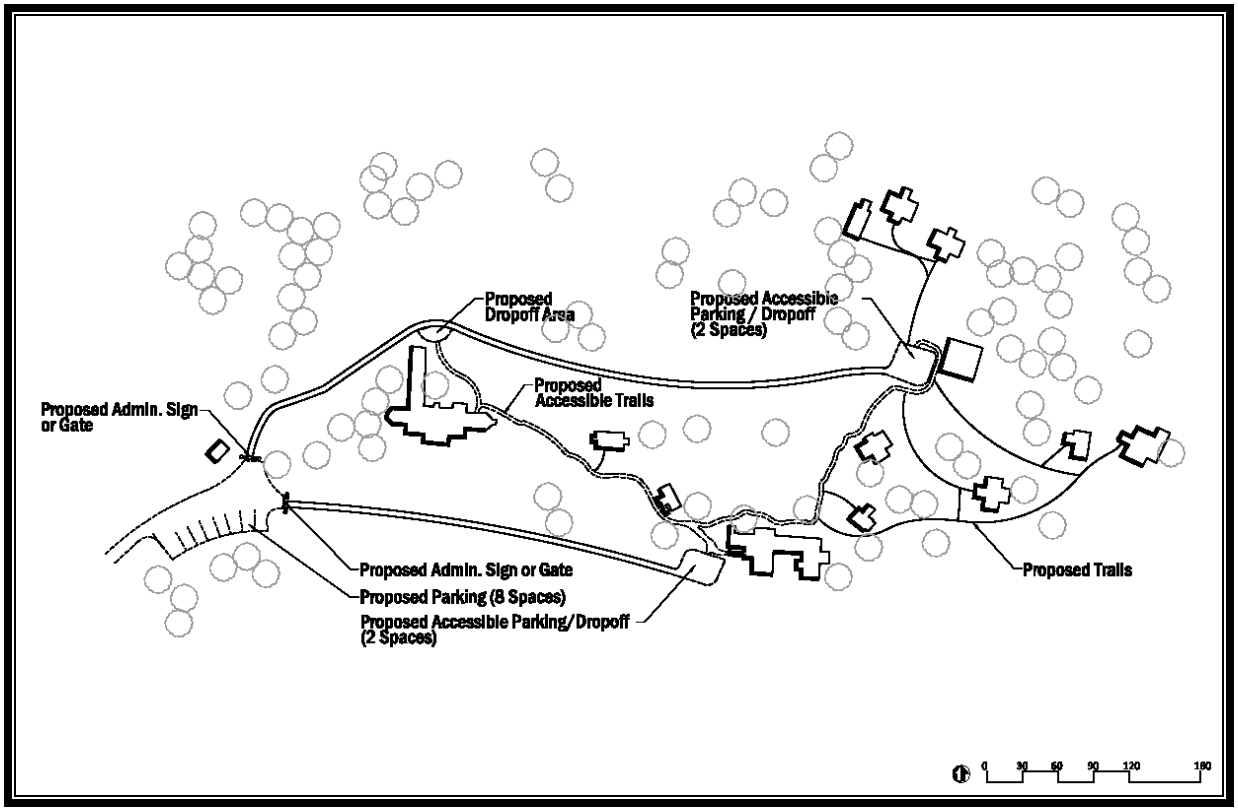

Figure 11. White Grass Dude Ranch, with proposed Alternative B and C changes

Mitigation Measures

Congress charged the NPS with managing the lands under its stewardship "in such manner and by such means as would leave them unimpaired for the enjoyment of future generations" (NPS Organic Act, 16 USC 1). As a result, NPS staff routinely evaluates and implements mitigation measures whenever conditions occur that could adversely affect the sustainability of national park resources.

Mitigation is defined in the Code of Federal Regulations (40 CFR 1508.20) as:

- Avoiding the impact altogether by not taking a certain action or parts of an action.
- Minimizing impacts by limiting the degree or magnitude of the action and its implementation.
- Rectifying the impact by repairing, rehabilitating, or restoring the affected environment.
- Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action.
- Compensating for the impact by replacing or providing substitute resources or environments.

The following mitigation measures were developed to minimize the degree and/or severity of adverse effects and would be implemented under each of the action alternatives. The NPS may need to obtain federal and state environmental permits and, as part of that process, additional mitigation measures could be required by other agencies. The NPS commits to the mitigation measures identified in this section as a part of implementing the proposed projects. The environmental impacts for the action alternatives were determined with these measures in place. Improved management practices and mitigations identified in this plan would also serve to educate park staff and contractors in methods for minimizing resource damage during maintenance activities throughout the park.

General Construction Best Management Practices

Construction best management practices (BMPs) would be implemented, as appropriate, before, during, and/or after preservation work or construction of proposed improvements at some properties. The practices below may be modified depending on the proposed actions at specific sites.

- Inform construction workers and supervisors about the special sensitivity of park values, regulations, and appropriate housekeeping. Require good housekeeping practices such as placing construction (non-food) debris in refuse containers daily, emptying containers regularly, and prohibiting the burning or burying of refuse in the park.
- Clearly state all protection measures in the construction specifications.
- Minimize the amount of ground disturbance for activities not directly related to construction, such as staging and stockpiling areas. Return all staging and stockpiling areas to pre-construction conditions following construction. Limit parking of construction vehicles to designated staging areas or existing roads and parking lots.

- Identify and define construction zones with construction tape, snow fencing, or other material prior to any construction activity. Use the zone to confine activity to the minimum area required for construction. Stipulate that construction activities, including material staging and storage, cannot occur beyond the construction zone fencing.
- Comply with federal and state regulations for the storage, handling, and disposal of all hazardous material and waste. If hazardous materials will be used on site, make provisions for storage, containment, and disposal.
- To minimize possible petrochemical leaks from construction equipment, the contractor would regularly monitor and check construction equipment to identify and repair any leaks.
- Ensure that construction equipment uses the best available technology for sound dampening muffler and exhaust systems.
- Keep in mind the value of natural soundscapes and attempt to reduce noise production and impacts.
- To minimize air and sound pollution associated with construction activities, limit warm up, cool down, and idling of construction equipment to the minimum durations recommended in the equipment owner's manual, taking into consideration ambient temperatures and other factors.
- All construction equipment that has the potential to leave paved areas will be pressure washed before entering the park. See the mitigation under Soils and Vegetation re: mobilizing equipment to the site.

Construction - General

- The park requires that all outdoor dumpsters and trash cans used, regularly or casually, for disposal of food or other potential bear attractants, be bear resistant.
- All construction generated debris will be removed from the park to an approved landfill or to an approved location.
- Hours of work may be determined by the park to avoid construction disturbance to visitors, park residents, or wildlife.
- Any park infrastructure impacted during construction, including but not limited to paved and unpaved roadways, walkways, and turf, shall be restored to pre-construction conditions upon completion of the project.
- The disturbance corridor shall follow existing trails and openings, where possible, including roadway shoulders.
- Disturbed areas will be restored to original grade and reseeded according to the park's current seeding specifications.
- The location of all potential utility lines shall be field located and marked prior to work to avoid disturbance conflict.
- Maintain a safe construction zone. Fence around open holes and staging area when personnel are not present.

- Control dust during construction by minimizing soil exposure, watering, and using other dust prevention methods.
- All demolition debris (e.g., old water lines, appurtenances, water tanks, valves, packaging materials, trash) would be disposed of at appropriate areas designated by the park. When possible, debris would be disposed of at a materials recycling facility.

Cultural Resources

- Conduct detailed cultural resource inventories for all un-inventoried sites. If archeological resources that are eligible for listing in the National Register of Historic Places are determined to be present, alter the project design to avoid them if at all possible.
- Consult with NPS cultural resource specialists or archaeologists well in advance of any ground disturbing activities.
- If previously unknown archeological resources are discovered during construction, halt all work in the immediate vicinity of the discovery until the resources can be identified and documented. If the project component cannot be rerouted and the resources preserved *in situ*, prepare an appropriate mitigation strategy in consultation with the Wyoming State Historic Preservation Office and American Indian tribes traditionally associated with park lands.
- In the unlikely event that human remains, funerary objects, sacred objects, or objects of cultural patrimony are discovered during construction, follow the provisions outlined in the Native American Graves Protection and Repatriation Act.
- Inform all contractors and subcontractors of the penalties for illegally collecting artifacts or intentionally damaging archeological sites or historic properties. Instruct contractors and subcontractors regarding procedures to follow in case previously unknown archeological resources are uncovered during construction.
- Minimize equipment traffic and materials staging in the area of known archeological sites.
- Removal of non-hazard trees within cultural landscapes and historic properties shall be reviewed and approved by Section 106 specialists as well as by vegetation specialists.
- Schedule brush removal in cultural/historic areas outside of peak visitor use periods and conduct the work in stages to lesson visual impacts.
- Prior to implementing any proposed action that would have the potential to adversely affect historic structures and cultural landscapes, an appropriate mitigation strategy would be developed in consultation with the Wyoming State Historic Preservation Office (SHPO) and, if necessary, the Advisory Council on Historic Preservation. Mitigation agreed upon would be outlined in a memorandum of agreement negotiated among the NPS, SHPO, and Advisory Council on Historic Preservation, and consulting parties as necessary.

Natural Resources

Soils and Vegetation

- Coordinate work with park vegetation specialists regarding potential exotic plant control, weed treatments, and revegetation needs, costs, and scheduling. Contact Dan Reinhart (739-3678, dan_reinhart@nps.gov), Jon Drake-Vladimirtsev (739-3484, jon_vladimirtsev@nps.gov), or Michele Williams (739-3679, Michele_williams@nps.gov).
- Provide the SRM Vegetation Branch (Dan Reinhart, 739-3678, dan_reinhart@nps.gov) with an estimate of potential ground disturbance at least 4 weeks prior to work and with the exact dimensions of the disturbed area after the work is complete to facilitate revegetation and invasive plant management.
- To reduce the threat of invasive vegetation with this project to the extent possible all imported material source (i.e., sand, gravel, rock, rip-rap, etc. must be obtain from a park approved or county weed and pest approved. Teton County Weed and Pest has approved as weed-free the various Evans Construction pits in Teton County. If a new material source pit is requested, contact Grand Teton N.P. vegetation staff to perform an invasive plant inspection.
- All vehicles and equipment shall be mobilized to the job site in a condition free of mud, dirt, and plant material. A method such as pressure washing prior to transport will be needed to comply with this requirement. Prior to offloading of any equipment, inspection and verbal approval must be obtained from the park resource management representative. The spread of exotic invasive plant species in the park is a serious concern, and no equipment will be allowed to offload or remain within the park if dirt or other contaminants with the potential to harbor seeds or other plant material is apparent.
- Limit ground disturbance to the smallest area possible to reduce disturbance to native plants and reduce the potential for the introduction or spread of invasive non-native plant species.
- Take care to avoid any rutting or excessive soil compaction caused by vehicles or equipment. Construction activities shall be restricted during saturated soil conditions or severe weather conditions to avoid damage to soils and vegetation.
- Consider boring or other alternatives to trenching that would minimize ground disturbance.
- Use wooden mats for vehicle and equipment access to the site to limit damage to existing vegetation.
- To minimize the amount of ground disturbance, locate staging and stockpiling areas in previously disturbed sites or paved areas to the extent possible. Return all staging and stockpiling areas to pre-construction conditions following construction.
- Place excavated soils on asphalt, pavement, tarpaulins, or on plywood to reduce ground and vegetation disturbance.
- Topsoil should be collected as trenching is done, using planks or tarps, and prevented from mixing with subsoil. Soil and cobble should be placed in the trench in the proper order, cobble lowest, then subsoil, then topsoil. Topsoil should be screened to remove rocks >3 inches in diameter. Use a trench box if one is needed to reduce disturbance. Topsoil is soil

on the surface layer of the ground; depth is assumed to vary between 2 to 6 inches; 4 inches will be the average depth conserved.

- Remove topsoil and store separately from other soils (topsoil depth is assumed to vary between 2 to 6 inches, 4 inches will be average depth conserved).
- Re-spread topsoil as near to the original location as possible, and supplement with scarification, mulching, seeding, and/or planting with species native to the immediate area. Conserving topsoil will minimize vegetation impacts and potential compaction and erosion of bare soils. The use of conserved topsoil will help preserve micro-organisms and seeds of native plants.
- No vegetation shall be damaged or removed without prior approval via the project documents or by park vegetation management staff.
- Soil excavated on-site may be re-used in the project; excess soil will be stored in approved areas.
- Control dust during construction by minimizing soil exposure, watering, and using other dust prevention methods.
- If construction is not complete prior to a winter season, protect all disturbed areas and soil stockpiles from snowmelt impacts by using erosion control BMPs and covering dirt piles with impermeable materials.
- Preserve existing trees to the extent possible.
- During trenching operations, avoid damaging the roots of nearby trees.
- Construction workers and supervisors will be provided with tree pruning guidelines to minimize damage to trees during project implementation.
- All disturbed ground shall be reclaimed using appropriate best management practices, which may include planting or seeding with native vegetation, or, in the case of small treatment areas, allowing native vegetation to reclaim the area naturally. The project leader shall consult with the SRM Vegetation Branch to determine the best methods for restoration.
- Disturbance to existing native vegetation shall primarily be contained in previously disturbed areas or within narrow construction limits. Whenever practicable, soils and plants affected by construction shall be salvaged for reuse in site restoration.
- All areas disturbed by rehabilitation activities will be revegetated and re-contoured as nearly as possible to the style of the native landscape shortly after activities are completed.
- Revegetation efforts will include reconstruction of the natural spacing, abundance, and diversity of native plant species.
- When determined necessary by park staff, disturbance zones and construction and staging areas will be fenced or clearly marked to prevent impacts to resources outside the approved construction limits.
- Work limits, travel paths, and staging areas will be designated and enforced to mitigate impacts to park vegetation. Fencing and barriers shall be used as necessary to restrict contractor operations to these areas. (similar to the one above)

- Pre- and post-project exotic plant monitoring, if determined necessary by SRM vegetation management staff, will be conducted in the project area. Noxious weed control measures will be implemented and a management plan for continual maintenance will be drafted to monitor and mitigate impacts within the first 3 years of construction.
- Existing populations of exotic vegetation at the site will be treated prior to the beginning of activities.
- In an effort to avoid introduction of exotic plant species, only certified weed-free materials will be used for erosion control. Any proposed materials will be reviewed on a case-by-case basis; allowable materials for erosion control may include: rice straw, straw or hay determined by NPS to be weed-free purchased from a certified source (e.g., Coors barley straw or Arizona winter wheat straw), cereal grain straw that has been fumigated to kill weed seed, and wood excelsior bales.
- To minimize soil erosion at the project site, erosion control best management practices (BMPs) including protection measures such as sediment traps, silt fences, erosion check screens/filters, jute mesh, and hydro mulch, will be used if necessary to prevent the loss of soil.
- Natural groupings of vegetation, rocks, or other natural features will be used for screening, as appropriate. Local native species will be used and there will be no irrigation needs beyond establishment.
- Compacted soils will be scarified and original contours reestablished. Decompact to a minimum depth of 12 inches. Decompacting (ripping) will be done with equipment with ripping teeth placed a maximum of 12 inches apart and will be executed in 2 passes, in perpendicular direction if space is available.

Water Resources

- Plan and maintain vegetated buffers between areas of soil disturbance and waterways.
- Use soil erosion best management practices such as sediment traps, erosion check screen filters, and hydro mulch to prevent the entry of sediment into waterways.
- Promptly remove any hazardous waste generated in project areas.
- Inspect equipment for leaks of oil, fuels, or hydraulic fluids before and during use to prevent soil and water contamination. Require contractors to implement a plan to promptly clean up any leaks or spills from equipment, such as hydraulic fluid, oil, fuel, or antifreeze.
- Minimize onsite fueling and maintenance. If these activities cannot be avoided, store fuels and other fluids, and perform fueling and maintenance, in designated areas that are bermed and lined to contain spills. Require provisions for the containment of spills and the removal and safe disposal contaminated materials, including soil.
- Delineate wetlands and clearly mark them prior to construction work. Avoid wetlands unless wetland disturbance is specified in the contract documents. Apply protection measures during construction in areas where wetland disturbances is required. Perform construction carefully to prevent wetland damage by equipment, erosion, and siltation.

Wildlife

- In accordance with the Endangered Species Act, complete Section 7 consultation with the U.S. Fish and Wildlife Service (USFWS) prior to implementation of actions proposed in this EA. The park would implement all mitigations/conservation measures that result from consultation.
- Inform construction supervisors and workers about the potential for special status species in or near the work area. Contract provisions will require stopping construction activities if a special status species is discovered in the project area, until park staffs re-evaluate the project. Modification of the contract could occur to include protective measures deemed necessary to protect species or habitats.

- All project activities must comply with GRTE's Superintendent's Compendium (2015 and as updated) regulations related to food storage and park recommended best management practices for living and working in bear country. Bear "attractants" include food, drinks, garbage, cooking utensils, dirty / soiled pots/pans/plates, stoves, grills (charcoal or gas), empty or full coolers, storage containers with food or previously holding food (except approved bear resistant canisters), beverage containers, pet food/bowls, and any odorous item that may attract a bear such as toiletries.

    - All staff (NPS, Volunteers-in-Parks (VIPs), contractors, etc.) working or occupying historic properties must ensure that all bear attractants are attended at all times. All unattended attractants must be stored securely inside a building, a bear resistant food storage locker (if available), or in a hard sided vehicle with doors locked and windows closed; or disposed of properly in a bear-resistant garbage receptacle.
    - At backcountry historic properties all unattended attractants must be stored in an Interagency Grizzly Bear Committee (IGBC) approved portable bear resistant food storage canisters. Backpacks and/or daypacks containing unsecured attractants (i.e. not in a canister) may not be left unattended.
    - All personnel working on any of the historic properties must attend a briefing on proper food/attractant storage and bear safety presented by a qualified member of the park's bear management team. Contact the park's Bear Management Office (307-739-3673) at least one week prior to the desired start date to schedule a briefing.
    - All human-bear conflicts must be reported to Teton Interagency Dispatch Center immediately (307-739-3301). All bear sightings must be reported to the park's Bear Management Office within 24 hours.
    - Provide for proper storage and disposal of materials that may be toxic to bears. All potentially toxic attractants, including petroleum products, must be stored or disposed of in such a way that they are not available to bears.
    - Construction debris must be separated from human food garbage and disposed of in dumpsters that can be closed at night. No open dumpsters are allowed. (A request for an exception to the open dumpster stipulation can be made to the project manager who will consult with the parks wildlife branch to determine if such use will be authorized. The

use of open dumpsters will only be considered if the following conditions can be met: the open dumpster must be stored behind a locked fence out of view and inaccessible to the public and will be labeled construction debris only).

- All project activities occurring within the Grizzly Bear Primary Conservation Area (PCA) must comply with habitat standards in the Final Conservation Strategy for the Grizzly Bear in the Greater Yellowstone Area (USFWS 2007). To the extent practicable, projects occurring in occupied grizzly bear habitat outside of the PCA will adhere to the spirit of standards in the Final Conservation Strategy (USFWS 2007).
  - Manage developed sites and open road density at 1998 levels within each Bear Management Unit (BMU) subunit.
- To minimize the potential for human-grizzly bear interactions during the elk calving season and/or fall elk harvest season the following closures/timing restrictions will be implemented:
  - Seasonal park housing on Mormon Row will not be occupied during the Elk Reduction Program; and
  - Closure of the Snake River/Cottonwood Creek riparian area north of the 4 Lazy F developed area will be adaptively implemented, as needed, during the elk calving season (generally 15 May – 15 July) of each year. Park biologists will monitor elk and human use to determine appropriate dates and boundaries for this use restriction.
- All project activities will adhere to all relevant conservation measures outlined in the Lynx Conservation Assessment and Strategy (USFWS revised 2013)
  - Harvest of trees on site for preservation or maintenance activities at historic property within Lynx Analysis Units and/or in Critical Lynx Habitat will not be authorized without further review and analysis in consultation with USFWS. (See **Appendix K: Biological Assessment, Figures 13 and 18** for affected properties)
- All project activities will comply with GRTE's Superintendent's Compendium (2015 and as updated) closures implemented around wolf den/rendezvous sites. Should a den or rendezvous site not previously known be found within 1 mile of a historic property a seasonal area closure would be implemented as needed, typically between 15 April and 15 August.
- All project activities must comply with the Migratory Bird Treaty Act of 1918 (MBTA; 16 U.S.C. 703) and Executive Oder 13186. Under the MBTA, it is illegal to "take" migratory birds, their eggs, feathers or nests. "Take" is defined (50 CFR 10.12) to include "pursuing, hunting, shooting, wounding, killing, trapping, capturing, or collecting." The MBTA does not distinguish between "intentional" and "unintentional" take. Migratory birds include songbirds, waterfowl, shorebirds, and raptors. All project activities must also comply with GRTE's Superintendent's Compendium (2015 and as updated) seasonal closure regulations for raptors, trumpeter swans, and great blue herons.
  - In general, park biologists recommend that to prevent impacts to nesting migratory birds and to avoid project delays, schedule work involving vegetation clearing, tree felling, fill placement, excavation, or other construction activities for outside of the nesting season. The breeding season is generally as follows for migratory songbirds (1 May to 1 August), or as dictated by nesting chronology.

- Before commencement of any activities that involve removal or manipulation of vegetation during the breeding season (see above) contact park biologists to schedule a survey for nesting birds. Surveys must be conducted by qualified personnel before tree removal and/or ground disturbing activities begin. To the extent possible, schedule surveys prior to 1 March the year of the proposed work.
- Before commencement of any activities that involve removal of large trees during the breeding season contact park biologists to schedule a survey for nesting birds. Surveys must be conducted by qualified personnel before tree removal and/or ground disturbing activities begin. To the extent possible, schedule surveys prior to 1 March the year of the proposed work.
- Before commencement of any activities that involve removal of large trees during the breeding season contact park biologists to schedule a survey for nesting birds. Surveys must be conducted by qualified personnel before tree removal and/or ground disturbing activities begin. To the extent possible, schedule surveys prior to 1 March the year of the proposed work.
- Work must be completed within two weeks of the nesting bird survey. If this is not possible, another survey must be scheduled with park biologists.
- Active bird nests located during surveys will be protected until nestlings fledge or the nest fails. Park biologists will monitor nests, determine mitigations, and provide updates to the project leader on nesting status.
- Continue to implement seasonal closures (typically April 1 to September 1, as guided by biologists monitoring site use and occupancy) within ¼ mile (USFWS 2007) of any raptor, trumpeter swan, or great blue heron nests and prohibit work on or occupancy of historic properties within the closures while they are in effect.
- It is the responsibility of the cultural resources staff/project manager to report any nesting bird activity in the vicinity of historic properties undergoing work to park biologists in a timely way so that they may assess whether additional mitigation measures are needed to comply with the MBTA.

- Eagles are protected under the Bald and Golden Eagle Protection Act of 1940 (16 U.S.C. 668-668c) and the MBTA. Project activities must not lead to the take of bald or golden eagles. The Bald and Golden Eagle Protection Act defines “take” to include disturbing birds.

  - Continue to implement seasonal closures (typically February 1 to August 15) of ½ mile (GYBEMP 1989, USFWS 2007) (or as otherwise posted) around occupied bald eagle nests and prohibit work on or occupancy of historic properties within the closures while they are in effect.
  - It is the responsibility of the cultural resources staff to report any eagle activity in the vicinity of historic properties undergoing work to park biologists in a timely way so that they may assess whether additional mitigation measures are needed to comply with the BGEPA and MBTA.

- All project activities must comply with GRTE's Superintendent's Compendium (2015 and as updated) closure regulations for sage-grouse leks and to the extent practicable all project activities occurring within occupied sage-grouse habitat within the core sage-grouse area will apply the management direction and conservation measures outlined in the Wyoming Governor's Executive Order 2015-4 and the Upper Snake River Basin Sage-Grouse Conservation Plan (2014).
    - Continue to implement a seasonal closure (generally15 March – 15 May) around the Moulton sage-grouse lek.
    - Prohibit removal of shrub-steppe habitat within 4 miles of an occupied sage-grouse lek to protect breeding, nesting, and brood rearing habitat for sage-grouse in the park (generally between March 15 and June 30, or as recommended by park biologists monitoring sage-grouse). Exceptions may be made on a limited and case-by-case basis.
    - Limit new permanent facilities (including, but not limited to roads, buildings, well pads, pipelines, leach fields, and vegetation treatments) within 0.6 miles of active sage-grouse lek areas.
    - Restrict maintenance and rehabilitation activities between the hours of 6:00 p.m. and 8 a.m. at historic structures within 4 miles of active leks/nesting complexes (generally from March 15 – June 30, or as recommended by park biologists).
    - Limit noise to less than 10 decibels above ambient measures from 6:00 p.m. to 8:00 a.m. at the perimeter of leks (generally from March 1 – May 15, or as recommended by park biologists).
    - Efforts will be made to minimize disturbance to mature sagebrush cover in identified winter concentration areas.
    - Power or other utility lines should be buried when possible. If such lines cannot be buried, lines should be raptor proofed and located at least 0.6 miles from the perimeter of occupied sage-grouse leks. New transmission lines should be authorized or conducted only when it can be demonstrated that the activity will not cause declines in sage-grouse populations. Construction of new transmission lines should occur July 1 and March 14. Power lines should be placed along or adjacent to existing long-term linear disturbance features whenever possible.
    - Park biologists will use the Wyoming Density and Disturbance Calculation Tool (DDCT) to assess activities that involve vegetation or ground disturbance within the sage-grouse core area that correspond with recommended mitigations for sage-grouse and their habitat.

- Prohibit construction activities before 8 a.m. and after 6 p.m. during the elk rutting and migration period (typically from September 1 to December 1, or as recommended by the park biologists).
- A bat mitigation plan must be developed prior to initiating preservation, maintenance, or other activities at any historic property that could negatively affect bats, their roosts, or hibernacula

and/or if bat sign (bat vocalizations, smell of a bat roost, bat droppings on floors or walls, bat carcasses or skeletons, oily marks (from fur) around possible access points and roost areas, lack of cobwebs along beams, feeding remains such as moth wings or other insect parts, or other sign) is observed at any site. Activities that could negatively affect bats could include, but are not limited to, building reconstruction and re-roofing. Buildings with any of the following characteristics (unused or little used - largely undisturbed; large roof void with unobstructed flying spaces; large dimension roof timbers with cracks, joints and holes; uneven roof covering with gaps; entrances that bats can fly in through; hanging tiles or wood cladding, especially on south-facing walls; setting close to woodland and/or water; pre-20th century or early 20th century construction; or roof warmed by the sun) may have a high probability of being used by bats.

- It is the responsibility of the cultural resources staff/project manager to ensure that park biologists are apprised of the timing of proposed work activities, building conditions that indicate a high probability of bat occurrence, any bat sign evident in a building scheduled for work, and to schedule surveys with enough lead time to minimize project implementation delays.
- Contact NPS biologists to schedule a survey of any property scheduled for project work that could affect bats within the building. Qualified personnel must perform a survey within the appropriate timeframe (i.e., spring surveys for maternity roosts, summer surveys for summer roosts, winter surveys for hibernacula) prior to initiating work and, if bats are found, develop a mitigation plan.

Natural Soundscapes

- Minimize chainsaw use in backcountry by precutting and prefabricating at front country locations.
- Keep in mind the value of natural soundscapes and attempt to reduce noise production and impacts.

Operations of the National Park Service and Partners

- Coordinate activities of contractors and park staff to minimize disruption of normal park activities. Inform construction workers and supervisors about the special sensitivity of park values, regulations, and appropriate housekeeping.
- To minimize potential impacts on concessioners and visitors, consider stipulations on construction timing. For example, operate heavy construction equipment in noise-sensitive areas between 7 a.m. and 7 p.m. to minimize noise impacts.
- During construction periods, share information regarding implementation of this project with the public using methods such as a flyer distributed at the gate, postings on the park's website, posters on bulletin boards, and press releases. Steer activities away from project areas to minimize the potential for negative impacts on the visitor experience.

- Prior to construction, conduct a meeting with concessioners, project managers, and business resources staff to provide information on anticipated issues that may occur.

Visitor Use and Experience

- When proposed work could affect visitor use and experience, visitors would be informed of construction activities via press releases, visitor center postings, and educational contacts.

Alternatives Considered and Dismissed

The following alternatives were considered for project implementation, but were ultimately dismissed from further analysis. Reasons for dismissal are provided in the following alternative descriptions.

Retain and Rehabilitate All Properties – This alternative was considered but was evaluated as technically and economically infeasible. Although the park, along with some concessioners, has been able to maintain more than half of its historic properties to meet preservation standards, it has been addressing the structural deficiencies of many of its other historic properties on an ad hoc, emergency-type basis due to limited staffing, diminished available funding, and a large deferred maintenance backlog of approximately $24 million as of November 2014. Expected long-term NPS budget limitations, and increasingly severe constraints on staffing levels, make retaining and rehabilitating all GRTE historic properties unrealistic. Therefore, this alternative was dismissed because it only partially meets the purpose and need for the project and the project objectives.

Reevaluate Preservation Treatments and Uses of All Properties. This alternative concept was dismissed because putting a new use in historic properties with existing, desirable uses would cause undue turmoil and financial strain on partners and the NPS. The adverse impacts on cultural resources would outweigh benefits of such an exercise. This plan does evaluate potential changes in preservation and uses for the underused properties. It also provides a tool to evaluate all properties if changes in use or preservation level should occur in the future.

Remove All Currently Unused or Underused Properties – This alternative was considered but was evaluated as having an unnecessarily adverse impact on cultural resources. While the alternative would achieve plan objectives to prioritize management and focus financial resources and staff efforts on specific historic properties, the adverse effect on the park's cultural resources would be excessive and avoidable.

Lease All Currently Unused or Underused Properties to Concessioners, Partners, and Stakeholders – Although future leasing partnerships for individual properties could be considered on a case by case basis, the park has dismissed the idea of trying to analyze an alternative that proposes to lease all of the unused or underused historic properties. This concept was not considered feasible as many of the currently unused or underused properties are not in good enough condition to expect a partner or concessioner to be able to reasonably run any

operations out of these facilities. It would be impossible for the park to find the number of partners required that were willing to invest the enormous resources needed to use all of these historic properties and then to operate under short-term agreement periods with no guarantee of continuing after their agreements expire.

Alternative Summaries

Table 2 summarizes the major components of Alternatives A, B, and C.

Table 2: Summary of Alternative Actions

Alternative Elements	**Alternative A – No Action –** ***Retain All Properties and Maintain on an As-Needed Basis***	**Alternative B (NPS-Preferred) –** ***Retain and Improve Maintenance at Most Properties, Maximize Use of High Priority Properties, and Remove Several Low Priority Properties***	**Alternative C –** ***Retain All through Proactive Stabilization & Maintenance***
New Buildings and Building Removal	*In-Use Historic Properties and White Grass Dude Ranch:* None. *Mormon Row:* A vault toilet (possibly 2 if needed in the future) is being installed in 2015 as part of the approved infrastructure improvements. *Focus Properties:* None.	*In-Use Historic Properties and White Grass Dude Ranch:* Same as Alternative A. *Mormon Row* Same as Alternative A. *Focus Properties:* All buildings at Aspen Ridge Ranch Residence and Barn, Sky Ranch, and McCollister Residential Complex would be removed. Seven buildings at Bar BC Dude Ranch would be allowed to decay.	*In-Use Historic Properties, White Grass Dude Ranch, and the Focus Properties:* Same as Alternative A. *Mormon Row:* Same as Alternative A.
Access/ Parking	*In-Use Historic Properties:* No change. *Mormon Row:* Designated parking areas, bus turnaround, and interpretive trail, slightly modified from the approved 1999 plan, are being formalized (summer – end 2015). The bus turnaround will be in a new location near the junction of Mormon Row and Antelope Flats roads. The accessible interpretive trail for pedestrians has been extended to the junction with Antelope Flats Road to connect the north and south parts of the district. *White Grass Dude Ranch:* Parking and informal trails would be formalized during	*In-Use Historic Properties:* Same as Alternative A. *Mormon Row:* Same as Alternative A. *White Grass Dude Ranch:* Primary parking would increase from 6 spaces to 8. Spaces for accessible parking and drop-off areas would be formalized at the Hammond Cabin, the Main Cabin, and the laundry/maintenance cabin for use when needed. *Focus Properties:* Existing parking areas and trails at Beaver Creek #10, Bar BC Dude Ranch, Lucas Homestead/Fabian Place, 4 Lazy F Dude Ranch, and Snake River Land Company	*In-Use and Focus Historic Properties:* Same as Alternative A. *Mormon Row:* Same as Alternative A. *White Grass Dude Ranch:* Same as Alternative B.

Alternative Elements	Alternative A – No Action – *Retain All Properties and Maintain on an As-Needed Basis*	Alternative B (NPS-Preferred) – *Retain and Improve Maintenance at Most Properties, Maximize Use of High Priority Properties, and Remove Several Low Priority Properties*	Alternative C – *Retain All through Proactive Stabilization & Maintenance*
	ongoing rehabilitation. *Focus Properties:* No change.	Office and Residence would be formalized, possibly with minor redesigns. Access roads, parking areas, and disturbed areas resulting from the removal of Aspen Ridge Ranch Residence and Barn, Sky Ranch (the spur access road), and McCollister Residential Complex would be removed and the areas revegetated to benefit wildlife.	
Utilities/ Construction Staging	*In-Use Historic Properties:* No change. Planned repairs and rehabilitation would occur at some properties. *Mormon Row:* Staging of construction materials for infrastructure improvements would occur. *White Grass Dude Ranch:* Construction staging would continue during ongoing rehabilitation. *Focus Properties:* No change at most properties. At 4 Lazy F Dude Ranch, secondary water distribution lines would be installed, connecting to a main line installed per the Moose water/wastewater system replacement plan (NPS 2012b).	*In-Use Historic Properties and White Grass Dude Ranch:* Same as Alternative A. *Mormon Row:* Staging for infrastructure improvement work would be the same as under Alternative A. If houses (up to four) were rehabilitated for use as seasonal park housing, utilities would need to be upgraded or installed to each structure. Construction staging would occur. *Focus Properties:* Utilities at 4 Lazy F Dude Ranch, Beaver Creek #10, Snake River Land Company Office and Residence would be upgraded and/or installed. Staging of materials would occur as needed.	*In-Use Historic Properties and White Grass Dude Ranch:* Same as Alternative A. *Mormon Row:* Same as Alternative A. *Focus Properties:* Same as Alternative A.

Table 3 summarizes the estimated costs to manage the 11 focus properties under the alternatives. Costs were estimated in April 2012 and then revised to reflect inflation rates of 0.04/year. Current deferred maintenance costs to manage all historic properties are approximately $24 million. If the option to potentially rehabilitate up to four houses at Mormon Row is approved under Alternative B, estimated costs to update utilities ($559,556) could increase the total cost of the alternative to $4,571,229 (if all four are rehabilitated). No estimate is currently available for rehabilitating the structures because they first need to be assessed.

Table 3. Comparison of Estimated Costs under the Alternatives to Manage the 11 Focus Properties over a 10-Year Period

	Alternative A	Alternative B	Alternative C
Upfront	---	$ 3,705,016	$ 903,713
Maintenance	$ 172,836	$ 194,085	$ 179,131
Operations	$ 42,943	$ 146,535	$ 42,943
Subtotal	$ 215,779	$ 4,011,673	$1,125,787
Additional Costs for Unmet Needs:			
Ranger Station	$ 6,082		$ 317,535
Archives	$ 84,664		$ 1,186,750
Town Housing	$ 45,696		$ 480,000
Subtotal	$ 136,442		$ 2,222,399
TOTAL	**$ 309,278**	**$ 4,011,673**	**$ 3,348,186**

Table 4 compares the ability of these alternatives to meet the project objectives, which were identified in Chapter 1: *Purpose and Need*.

Table 4. How Each Alternative Meets Plan Objectives

Project Objectives	Meets Project Objectives?	Meets Project Objectives?	Meets Project Objectives?
Create a comprehensive analysis of GRTE historic properties, and identify needed management actions.	No. No plan would exist for long-term historic property management.	Yes. Alternative B strongly meets the objective of assessing properties and identifying management priorities.	Yes, but to a lesser extent than Alternative B because priorities for managing properties are not established.
Provide strategic direction for park historic preservation work and funding.	No. No plan would be created to guide preservation priorities.	Yes. Alternative B strongly meets the objective of guiding preservation work and funding by identifying preservation priorities.	No. Although a low level of preservation treatment is directed for all properties, no priorities are established to help direct preservation funding or staff time.
Identify and retain significant historic properties for adaptive uses such as visitor use and enjoyment and/or other purposes consistent with the park mission.	No. While some of the identified, significant properties are retained and used, structural deficiencies and pest infestation of other properties would continue and likely increase, expediting deterioration and the eventual loss of these properties.	Yes. The identified, significant properties are retained and plans are proposed for their use. Several properties are better interpreted and opened to the public.	No. Although all properties, including the focus properties, are retained, the potential for adaptive reuse of significant properties is not pursued. Visitor access and enjoyment are mainly limited to exterior viewing and some interpretive signing.
Be consistent with other park planning needs and priorities, including sustainability objectives, while preserving historic character.	No. While some historic properties are being fully utilized, others with the potential for adaptive reuse (a sustainable option) would not be actively used.	Yes. Alternative B is more consistent with park planning needs, including greater sustainability through adaptive reuse, than Alternative A.	No. While historic character is retained and all properties would remain on the landscape, uses would not be identified or integrated with park planning needs and priorities. Sustainability objectives would not be considered.
Ensure utilized properties meet current health and safety standards and structural requirements.	No. Some focus properties have structural deficiencies and pest issues.	Yes. Rehabilitating and maintaining, and using most historic properties, and removing a few properties that would deteriorate, would ensure that that properties meet current structural and health and safety requirements.	Yes and No. Historic properties are proactively maintained but a number would continue to be unused. Health and safety issues would continue at several properties.

Table 5 summarizes the anticipated environmental impacts for Alternatives A, B, and C. Only those impact topics that have been carried forward for further analysis are included in this table. The *Environmental Consequences* chapter provides a more detailed explanation of these impacts. See **Appendix G** for more detailed disturbance estimates for proposed actions under Alternative B.

Table 5. Environmental Impact Summary by Alternative

Impact Topic	Alternative A – No Action – *Retain All Properties and Maintain on an As-Needed Basis*	Alternative B (NPS-Preferred) – *Retain and Improve Maintenance at Most Properties, Maximize Use of High Priority Properties, and Remove Several Low Priority Properties*	Alternative C – *Retain All Properties through Proactive Stabilization and Maintenance*
Cultural Resources	*In-Use Properties:* Negligible impacts due to continuation of current management which includes scheduled preservation maintenance. *Mormon Row:* No change to previous finding of minor short-term (ST) adverse and minor to moderate long-term (LT) beneficial impacts. *White Grass Dude Ranch:* No change to previous finding of ST minor adverse impacts and LT minor to moderate beneficial impacts. *Focus Properties:* LT minor to moderate adverse impacts due to continued deterioration of these properties. Overall, a total of 33 of the 44 historic properties would be maintained and in use under Alternative A.	*In-Use Properties:* Same as Alternative A. *Mormon Row:* The infrastructure improvements and impacts would be the same as Alternative A. If up to four Mormon Row houses were rehabilitated for use as seasonal park housing, ST minor adverse impacts during construction activities and LT moderate beneficial impacts due to improved preservation and adaptive reuse would result. *White Grass Dude Ranch:* Similar to Alternative A. Implementing modified improvements would cause ST minor adverse impacts and LT minor to moderate beneficial impacts. *Focus Properties:* ST negligible to minor adverse impacts; LT moderate adverse and LT beneficial impacts. Adverse impacts would be due to the removal of three properties, and seven cabins at Bar BC Dude Ranch though natural decay. Beneficial impacts would be due to rehabilitation and adaptive reuse of three properties, and the improved preservation and	*In-Use Properties:* Same as Alternative A. *Mormon Row:* Same as Alternative A. No rehabilitation for adaptive reuse would occur. *White Grass Dude Ranch:* Same as Alternative B. *Focus Properties:* Primarily ST and LT negligible with some ST and LT minor adverse impacts. All would receive preservation treatment but none would be improved substantially. All 44 historic properties would be maintained or stabilized to a minimum extent, although only 36 of the 44 would be in use.

Impact Topic	Alternative A – No Action – *Retain All Properties and Maintain on an As-Needed Basis*	Alternative B (NPS-Preferred) – *Retain and Improve Maintenance at Most Properties, Maximize Use of High Priority Properties, and Remove Several Low Priority Properties*	Alternative C – *Retain All Properties through Proactive Stabilization and Maintenance*
		maintenance at others. 41 historic properties, including all those of national and state significance, would be maintained and in use under Alternative B.	
Natural Resources: Vegetation (Detailed ground disturbance estimates for Alternative B are provided in Appendix G, p.266.)	*In-Use Properties, Focus Properties:* Continued ST, Mid-term, and LT minor adverse impacts to vegetation due to periodic maintenance activities and heavy human and vehicular traffic at some properties, and continuing need for revegetation of disturbed areas and management of invasive plant species. Emergency repairs would likely increase localized impacts. *Mormon Row and White Grass Dude Ranch:* Generally the same as analyzed during previous planning efforts. - ST and mid-term minor adverse impacts due to maintenance activities and visitor use. - Minor LT adverse impacts due to permanent vegetation removal to formalize and/or improve parking and pedestrian access. - Minor LT beneficial impacts due to formalizing parking and foot traffic. - Minor increase in LT adverse impacts due to permanent vegetation removal on 0.34 acres to improve parking, pedestrian access, and installing 1-2 vault toilets. The interpretive trail would be	*In-Use Properties:* Similar to Alternative A but improved by established best management practices and more proactive scheduling. *White Grass Dude Ranch:* ST and mid-term minor adverse impacts to vegetation due to infrastructure improvements and ongoing rehabilitation. Previous plans would be implemented with proposed changes. The proposed spur road would not be constructed, reducing disturbance by 0.14 acre. *Mormon Row* – Implementing the modified infrastructure improvements would be the same as under Alternative A. Plus, if up to four houses were rehabilitated for use as seasonal park housing, there would be additional ST minor ground and vegetation disturbance during building rehabilitation and utility upgrades (20,120sf total for water/wastewater/propane; 40,000sf for underground electric installed in the roadway) and LT disturbance (6516sf total). Moderate beneficial impacts would result from improved preservation, adaptive reuse, and directed	*In-Use Properties:* Same as Alternative B. *Mormon Row:* Same as Alternative A. *White Grass Dude Ranch:* Same as Alternative B. *Focus Properties:* Negligible to minor ST adverse impacts to negligible LT impacts due to limited preservation activities at all properties.

Impact Topic	Alternative A – No Action – *Retain All Properties and Maintain on an As-Needed Basis*	Alternative B (NPS-Preferred) – *Retain and Improve Maintenance at Most Properties, Maximize Use of High Priority Properties, and Remove Several Low Priority Properties*	Alternative C – *Retain All Properties through Proactive Stabilization and Maintenance*
	longer by 0.32 mile; new total length would be 0.47 mile, expanded from 0.15 mile in the approved plan.	vegetation restoration efforts. White Grass Dude Ranch - The ongoing rehabilitation would be implemented with slight changes, with an end result of 0.09 acres restored in the long term. The planned spur road would not be built, decreasing potential vegetation and ground disturbance by 0.14 acres. At both properties, minor LT beneficial impacts due to formalizing parking and foot traffic and preventing future disturbance would occur. *Focus Properties:* Minor ST adverse impacts due to construction or building removal at some properties; Minor LT beneficial impacts from formalizing parking areas and foot traffic at some properties and revegetating disturbed areas (LT, 0.42 – 0.43 acres restored at focus properties, not including removals) and from minor to moderate benefits from restoring native vegetation on an estimated total of 2.65 acres at three properties proposed for removal.	
Natural Resources: Wildlife **(**As defined for the EA under NEPA; None of the	*In-Use Properties and Focus Properties:* Occasional ST negligible to minor adverse impacts due to human and vehicular traffic and increased human activity during scheduled and unscheduled emergency maintenance that would potentially disturb and	*In-Use Properties:* Similar to Alternative A for the in-use properties but improved by established best management practices and more proactive scheduling. *Mormon Row:* Same as	*In-Use Properties and Focus Properties:* ST negligible to minor adverse to LT negligible impacts due to preservation activities at all properties, including initial and continual periodic work to stabilize or maintain focus properties, and visitation.

Impact Topic	Alternative A – No Action – *Retain All Properties and Maintain on an As-Needed Basis*	Alternative B (NPS-Preferred) – *Retain and Improve Maintenance at Most Properties, Maximize Use of High Priority Properties, and Remove Several Low Priority Properties*	Alternative C – *Retain All Properties through Proactive Stabilization and Maintenance*
alternatives would adversely affect threatened and endangered species as defined under the ESA.)	displace wildlife or decrease habitat quality. *Mormon Row:* Minor ST adverse impacts to wildlife from construction to improve infrastructure and from more people on site. Minor LT adverse impacts due to visitor use and potential for displacing wildlife. More people on site (ST, and LT with higher visitation) increase the LT potential for more wildlife human conflicts. *White Grass Dude Ranch:* On-going minor adverse impacts due to construction (ST) and people on site (ST and LT). LT potential for more wildlife human conflicts with higher visitation.	Alternative A. Minor ST adverse impacts from construction to improve infrastructure and from more people on site. Minor ST and LT adverse impacts due to the potential for displacing wildlife. LT potential for more wildlife human conflicts with higher visitation. These impacts, both ST and LT, would be increased somewhat if the option of rehabilitation occurred and more people lived at the property, but not to a great extent, especially in the long term. *White Grass Dude Ranch:* Same as Alternative A *Focus Properties:* ST negligible to minor adverse impacts from construction and maintenance. LT impacts are minor adverse at some properties due to potential increases in human use and minor or moderate beneficial at others. Approximately 3 acres of habitat would be restored at the focus properties. The 3 removals would account for 2.65 acres restored. The NPS determination for Alternative B, the NPS-Preferred Alternative, is “may affect, likely to adversely affect” species listed as threatened and endangered under the ESA (See Appendix K).	Potential LT minor adverse impacts at some properties if more people visit due to increased interpretation. *Mormon Row:* Same as Alternative A. *White Grass Dude Ranch:* Same as Alternative A.

Impact Topic	Alternative A – No Action – *Retain All Properties and Maintain on an As-Needed Basis*	Alternative B (NPS-Preferred) – *Retain and Improve Maintenance at Most Properties, Maximize Use of High Priority Properties, and Remove Several Low Priority Properties*	Alternative C – *Retain All Properties through Proactive Stabilization and Maintenance*
Park Operations	*In-Use Properties:* Negligible change from current maintenance needs; LT negligible to minor beneficial impacts on park operations due to proactive maintenance and fewer reactive repairs; LT minor beneficial impact due to increased capacity to preserve historic structures when the preservation training center is operational. *Mormon Row:* Same as previously analyzed with minor ST and LT impacts. Some additional ST minor adverse impacts to park operations and work load would occur due to constructing a longer accessible trail and constructing a second vault toilet in the future if one is needed. LT minor adverse impacts at Mormon Row due to higher maintenance needs for a longer interpretive trail and if a second toilet is installed in the future and maintained. *White Grass Dude Ranch:* Same as previously analyzed, ST minor adverse and beneficial impacts due to formalizing parking areas and accessible trails. LT decrease in potential impacts of social trailing and informal parking and the need to rehabilitate these areas. LT moderate benefit to park operations due to increased park capacity to preserve its historic structures.	*In-Use Properties:* Same as Alternative A. *Mormon Row:* Impacts to park operations due to implementing infrastructure improvements would be the same as under Alternative A. If up to four houses were rehabilitated for use as seasonal park housing, ST minor adverse impacts would result from supervising or performing construction activities and LT moderate beneficial impacts due to improved structure maintenance, addressing deferred maintenance needs, increasing the amount of seasonal housing in support of park operations, and increasing preservation training opportunities. *White Grass Dude Ranch:* Same as Alternative A except that no spur road would be constructed and maintained, a ST and LT minor beneficial impact. *Focus Properties:* ST minor adverse impacts from additional work to formalize parking areas and construct accessible trails. LT minor adverse impacts due to improved maintenance at 4 focus properties. ST minor to moderate adverse impacts due to rehabilitating and adaptively reusing 3	*In-Use Properties:* Same as Alternative A. *Mormon Row:* Same as Alternative A. *White Grass Dude Ranch:* Same as Alternative B. *Focus Properties:* ST negligible to minor adverse impact due to increases in facilities maintenance to stabilize or maintain the 11 focus properties (50,715 building square footage (sf), including 11,287sf at Bar BC stabilized by preservation groups). LT minor beneficial impacts from improved environments that meet health and safety standards at 5 focus properties. Potential LT negligible to minor adverse impacts due to increased LT maintenance needs.

Impact Topic	Alternative A – No Action – *Retain All Properties and Maintain on an As-Needed Basis*	Alternative B (NPS-Preferred) – *Retain and Improve Maintenance at Most Properties, Maximize Use of High Priority Properties, and Remove Several Low Priority Properties*	Alternative C – *Retain All Properties through Proactive Stabilization and Maintenance*
	Focus Properties: LT minor adverse impacts due to continued presence of unhealthy environments or unsafe structures and need for occasional, emergency-based work.	properties (additional 17,129sf to maintain). LT minor to moderate beneficial impacts from removing 3 properties (9,728sf) and decreasing maintenance needs; LT minor benefits from decreasing risks to employee health and safety at structurally deficient and pest infested buildings through removals and rehabilitation. LT moderate benefits to park operations from adaptively using structures at up to four) properties as office space, storage, or park housing.	
Visitor Use and Experience	*In-Use Properties, Focus Properties:* LT negligible to minor adverse impacts to visitor use from continuing current management. ST minor impacts would occur due to occasional maintenance at the in-use properties and little would be done at the focus properties to improve condition and visitor experience. Hazard mitigation would continue to occur The potential for unsafe environments would remain. *Mormon Row and White Grass Dude Ranch:* As analyzed in previous plans, ST minor or minor to moderate (respectively) adverse impacts due to construction noise, dust and potentially limited visitor access to parts of the property during work; LT minor beneficial impact due to infrastructure improvements,	*In-Use Properties:* Same as Alternative A, plus LT minor beneficial impact due to increased interpretation at Cunningham Cabin, Jackson Lake Lodge, Jenny Lake Ranger District, Menors Ferry/ Maud Noble Cabins, and Murie Ranch. *Mormon Row:* ST and LT minor adverse and beneficial impacts to visitors from improving infrastructure would be the same as under Alternative A. If up to four houses were rehabilitated for use as seasonal park housing, ST minor to moderate adverse impacts during construction activities and LT moderate beneficial impacts due to improved levels of preservation due to adaptive reuse would result. Some	*In-Use Properties and White Grass Dude Ranch:* Same as Alternative B. *Mormon Row:* Same as Alternative A. *Focus Properties:* ST minor adverse impacts from construction noise/dust/limited access; LT negligible to minor beneficial impact at 3 properties where interpretive signs would be installed and maintained; LT negligible impacts to visitor use and experience at the other 8 focus properties due to no changes in interpretation or expected visitation.

Impact Topic	Alternative A – No Action – *Retain All Properties and Maintain on an As-Needed Basis*	Alternative B (NPS-Preferred) – *Retain and Improve Maintenance at Most Properties, Maximize Use of High Priority Properties, and Remove Several Low Priority Properties*	Alternative C – *Retain All Properties through Proactive Stabilization and Maintenance*
	clearer circulation, and better interpretation for visitors.	visitors would perceive the improvements and occupation as negative while others would think they were positive. *White Grass Dude Ranch:* As stated in the previous plan, ST minor adverse impacts due to construction; LT minor beneficial impact due to increased interpretation and improved access, circulation, and safety. *Focus Properties:* ST minor adverse impacts due to construction noise, dust, and limited access at some properties during preservation treatments ranging from stabilization to rehabilitation. LT minor to moderate beneficial impacts due to enhanced interpretation and increased visitor access, as well as improved parking and trails at some historic properties.	

Environmentally Preferable Alternative

According to the CEQ regulations implementing NEPA (43 CFR 46.30), the environmentally preferable alternative is the alternative "that causes the least damage to the biological and physical environment and best protects, preserves, and enhances historical, cultural, and natural resources. In order to identify the environmentally preferable alternative, the responsible official considers and weighs long-term environmental impacts against short-term impacts in evaluating what is the best protection of these resources. In some situations, such as when different alternatives impact different resources to different degrees, there may be more than one environmentally preferable alternative."

Alternative B, *Retain and Improve Maintenance at Most Properties, Maximize Use of High Priority Properties, and Remove Several Low Priority Properties,* is the NPS environmentally preferable alternative for several reasons:

1) Alternative B would provide better care for cultural resources because it would improve levels of preservation for a greater number of cultural resources, compared to both Alternatives A and C. Alternative B also proposes to rehabilitate several historic properties that are currently unused or underused and would ensure an appropriate adaptive use for them in the future. Better preserved and utilized facilities would also increase the long-term sustainability of these park features.
2) Although some ground disturbance would occur in the short term where properties would be rehabilitated, Alternative B would better preserve important natural resources by providing protection for hydrologic, soil, and vegetative resources at all historic properties, reducing the creation of unplanned social-use trails and informal parking areas, and by restoring previously disturbed areas where the three properties proposed for removal are located. Restoring natural vegetation to these areas would increase the amount of usable habitat for wildlife species by 2.65 acres and provide future generations of visitors with more areas of esthetically pleasing natural surroundings for visitors.

Alternative A, No Action, *Retain All Properties and Maintain on an As-Needed Basis,* is not the environmentally preferred alternative because there would continue to be degradation of natural resources (damaged or destroyed vegetation due to social trailing and parking) and cultural resources because of current as-needed maintenance strategy. Some underused properties would continue to be cared for rarely and at minimal levels.

Alternative C, *Retain All Properties through Proactive Stabilization and Maintenance,* is not the environmentally preferred alternative because it would not improve levels of maintenance or adaptively reuse the underused historic properties. These properties would all be retained but most would receive only limited stabilization.

Preferred Alternative

No new information came forward from public scoping or consultation with other agencies to necessitate the development of any new alternatives, other than those described and evaluated in

this document (see Scoping under Chapter 4: Consultation and Coordination). Because it best accomplishes the project objectives, Alternative B is recommended as the National Park Service preferred alternative. This alternative was shaped by public comment and consideration of historic property evaluation tool (HPET) scores to help determine an appropriate future management direction given the need to make choices to optimize management efforts. With thoughtful best management practices in place, Alternative B achieves a balance between visitor use and enjoyment and conservation of natural resources. It provides a programmatic way to evaluate management options for any historic property whose status changes, or a new property that becomes eligible for listing on the National Register, and the greatest opportunity among the alternatives to improve preservation maintenance and the function of park historic properties.

CHAPTER 3: AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

This chapter describes the affected environment (existing setting or baseline conditions) and analyzes the potential environmental consequences (impacts or effects) that would occur as a result of implementing the proposed project. Topics analyzed in this chapter include cultural resources; natural resources: vegetation and wildlife, park operations, and visitor use and experience. Species designated as Candidate, Threatened, or Endangered under the ESA are described and analyzed in a separate biological assessment (**Appendix J**).

Methods for Analyzing Impacts

The impact analysis and conclusions contained in this chapter were based on park staff knowledge of the resources and site conditions; review of existing literature and park studies; information provided by resource specialists within the NPS and other agencies; and professional judgment. Direct, indirect, and cumulative effects are analyzed for each resource topic carried forward. Potential impacts of the alternatives are described in terms of type, context, duration, and intensity. General definitions of these criteria are defined as follows, while more specific impact thresholds are given for each resource at the beginning of each resource section.

- **Type** describes the classification of the impact as either beneficial or adverse, direct or indirect:

  - *Beneficial*: A positive change in the condition or appearance of the resource or a change that moves the resource toward a desired condition.
  - *Adverse*: A change that moves the resource away from a desired condition or detracts from its appearance or condition.
  - *Direct*: An effect that is caused by an action and occurs in the same time and place.
  - *Indirect*: An effect that is caused by an action but is later in time or farther removed in distance, but is still reasonably foreseeable.

- **Context** describes the area or location in which the impact would occur. Effects may be site-specific, local, regional, or even broader.

- **Duration** describes the length of time an effect would occur, either short-term or long-term:
  - *Short-term* impacts generally last only during construction, and the resources resume their pre-construction conditions following construction.
  - *Long-term* impacts last beyond the construction period, and the resources may not resume their pre-construction conditions for a longer period of time following construction.

Intensity describes the degree, level, or strength of an impact. For this analysis, intensity has been categorized into negligible, minor, moderate, and major. Because definitions of intensity vary by resource topic, intensity definitions are provided separately for each impact topic analyzed in this EA.

Mitigation measures, described in Chapter 2, would be in place to mitigate or avoid potential impacts on resources. Impacts have been assessed assuming that these mitigation measures would be implemented. If these measures were not applied, the potential for resource impacts and the magnitude of those impacts would increase.

Cumulative Impact Scenario

The Council on Environmental Quality, which ensures that federal agencies meet their obligations under NEPA, requires an assessment of cumulative impacts in the decision-making process for federal projects. Cumulative impacts are defined as "the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions" (40 CFR 1508.7). Cumulative impacts are considered for both the no action and proposed action alternatives. Cumulative impacts can result from individually minor, but collectively significant actions, taking place over a period of time

Cumulative impacts are analyzed by identifying other ongoing or foreseeable future actions within the vicinity of the impact area that have the potential to contribute to the effects to a resource. Cumulative impacts were determined by combining the impacts of the preferred alternative with other past, present, and reasonably foreseeable future actions. Therefore, it was necessary to identify other ongoing or reasonably foreseeable future projects in the park and parkway and, if applicable, the surrounding region. Unless otherwise noted NEPA compliance has been completed for the following actions and they have occurred or would occur regardless of the alternative selected in this EA.

The geographic scope for this analysis includes actions within the park and parkway boundaries although effects related to particular historic properties may be limited in geographic scope. The temporal scope includes projects within a range of approximately twenty years. Given this, the following projects were identified for the purpose of conducting the cumulative effects analysis, listed from past to future:

Park plans that pertain to this proposal include:

Jenny Lake Development Concept Plan (NPS 1977). The 1977 Development Concept Plan defined major issues in the Jenny Lake area and identified measures to alleviate them in order to ensure that uses of the Jenny Lake area did not degrade the natural environment. The plan moved development away from the prime resource areas and enhanced visitor experience by expanding interpretive services, upgrading concessioner facilities, and de-emphasizing facilities and types of use that adversely affect the environment.

Teton Corridor Moose to North Jenny Lake Development Concept Plan/Environmental Assessment (NPS 1990). The Development Concept Plan detailed specific actions for implementing broad management strategies for developments between Moose and the North Jenny Lake area. The plan called for upgraded visitor facilities, expanded facilities for interpretation and improvements in interpretive services, and consolidation or streamlining of concessioner operations. It also proposed construction of additional seasonal and permanent

housing units in the Beaver Creek and Moose residential areas, respectively. Seven 4-plex buildings (28 units total) were constructed within the developed footprint of the Moose residential area, and two 4-plex buildings (12 bedrooms) were added to Beaver Creek. The additional housing was completed in 2012.

Although the plan called for moving development away from prime resource areas, including relocating or removing historic structures in some areas, not all of the actions were implemented. For example, removal and/or of the historic Kimmel Kabins in Lupine Meadows and removal of 4 Lazy F Dude Ranch did not occur. These historic properties would remain in their current locations, The historic properties management plan is not revisiting the idea of moving structures out of floodplains but would incorporate mitigations to ameliorate potential impacts.

Mormon Row Historic District Management Alternatives and Environmental Assessment (NPS 1999) and **Mormon Row Historic District Management Finding of No Significant Impact (NPS 2000).** The plan analyzed ways to formalize and improve visitor use and experience at this historic property. Because years have passed since the plan was approved, the approved infrastructure improvements were reevaluated and slightly modified to reflect current visitor use. The impacts described in the 1999 EA and 2000 FONSI would not change significantly. The work is expected to begin during summer 2015. Details are presented in this plan under the Alternative Scenarios section and under Alternative A, the no-action alternative.

Management Plan for Buildings Listed on the National Register of Historic Places in Grand Teton National Park (NPS 2000). This was an internal park document, not a decision document with accompanying environmental assessment. Rather, it presented options for using and interpreting historic buildings. Building on previous work to evaluate buildings in the park for eligibility for the National Register, park staff worked with local, state and national historic preservationists to discuss and rank important historic themes within Grand Teton National Park. The team prioritized the themes in terms of their relative importance and then ranked sites within each theme and within sub themes that further defined historic site uses. Factors such as the condition of the resource, its accessibility, the need for additional visitor facilities, and potential environmental concerns were included in the evaluation. The ranking process was a means to develop a park/community consensus of the historic sites most worthy of preservation. The plan provided informed ranking of properties and was used to help inform this more specific planning process.

Fire Management Plan (NPS 2004b, updated 2009). Among the goals of this plan is to provide structural protection to historic structures. The plan modified previous Fire Management Unit boundaries to include developed areas near Jenny Lake. An overlay map would be used as part of a “pre-attack” plan to delineate special resource areas, including historic structures, which need protection and/or mitigation. All mechanical treatment or prescribed fire projects would undergo National Historic Preservation Act Section 106 compliance before any activity is initiated in the field. In the event of a wildland fire, measures would be taken to avert damages to archaeological resources, historic structures and cultural resources.

White Grass Ranch Rehabilitation and Adaptive Use Environmental Assessment/ Assessment of Effect, September 2004 (NPS 2004a) and **White Grass Ranch Rehabilitation**

and Adaptive Use Finding of No Significant Impact (NPS 2005). This planning effort analyzed rehabilitation of the White Grass Dude Ranch and potential adaptive reuse as the Western Center for Historic Preservation. A phased development approach was approved. Slight modifications to the plan, including parking area design and reconsideration of the idea to construct a spur road to the center from Death Canyon Road, are analyzed in this historic properties management plan.

Bison and Elk Management Plan EIS (NPS 2007). This plan called for long-term multi-year adaptive management of bison and elk habitat, including restoring native vegetation and improving plant species diversity in formerly cultivated areas near Mormon Row, Hunter Hereford Ranch, and Aspen Ridge Ranch Residence and Barn. Restoration efforts are underway and native species are being planted to replace cultivated non-native species such as smooth brome (*Bromus inermis*) and Canada bluegrass (*Poa compressa*) that were dominant in the area. Up to approximately 760 acres at Mormon Row would be planted with native grasses would be planted to retain the look of the cultural landscape of the historic district. A mixture of native plant species, which would include grasses, forbs, and shrubs, would be restored near Aspen Ridge Ranch and Hunter Hereford Ranch.

Moose Headquarters Rehabilitation – Site Work Environmental Assessment (NPS 2010). Implementation of this plan is currently underway. The analysis addressed visitor circulation at Moose as well as rehabilitation and site work that included establishing an ABAAS-compliant trail to Menor's Ferry/Maud Noble Cabins Historic District, limiting social trail development in the future by defining visitor and staff circulation and rehabilitating existing redundant trails near Moose launch.

Colter Bay Visitor Services EA (NPS 2012a). The purpose of the plan was to guide decision making for redevelopment and restoration in the vicinity of the Colter Bay Visitor Center, a primary destination on the east shore of Jackson Lake in Grand Teton National Park. The plan was needed because it had become increasingly difficult to sustainably operate and maintain the visitor center due to its age, condition, and numerous critical system deficiencies. The selected alternative will remove the existing visitor center and construct a new visitor center nearby as well as implement parking and vehicular and pedestrian circulation changes. Proposed changes would mitigate safety concerns, protect natural and cultural resources and improve visitors' experience of the area. A Memorandum of Agreement with WY SHPO was completed in 2012.

The visitor center is a contributing historic structure in the Colter Bay Village Developed Area Historic District but it was determined that removal of this structure (one of 188 in the district) would not compromise the overall integrity of the historic district or its eligibility for listing in the National Register.

Replace Moose Wastewater System and Address Critical Water System Deficiencies (NPS 2012b). Developed to address the need for rehabilitating the water and wastewater systems servicing Moose and Beaver Creek developed areas, the approved plan included upgrading the water system main lines between Moose and 4 Lazy F Dude Ranch. Under this water and wastewater rehabilitation plan, a water line will be installed to the 4 Lazy F Dude Ranch Main Lodge, though not beyond to the sleeping cabins.

Snake River Headwaters Comprehensive River Management Plan EA (NPS 2014). This plan/EA analyzed proposed management and types of human use on the designated portions of Snake River Headwaters. Whether to continue to maintain and allow seasonal use of the River Road was a topic being evaluated and traffic counters were put in place to collect information about the number of vehicles driving on the River Road and Bar BC road. These data indicated that traffic was low and that the parking area on the bench above Bar BC Dude Ranch did not need to be expanded at this time. Access to the ranch via the river would continue to be allowed. Commercial boat tour operators would be allowed to stop at the historic ranch. River Road will remain open to vehicles as road conditions warrant. Grand Teton National Park will only close the road to public vehicle use in the future if portions of the road fail due to the natural migration of the Snake River and road repairs cannot be accomplished without impact to adjacent sagebrush and other sensitive habitats. Pedestrians will continue to be able to use the road even if it is closed to vehicular traffic. Public vehicular access will also continue to be allowed on RKO and Bar BC roads, which provide access to the north and south ends of River Road.

University of Wyoming - NPS Research Center Campus Improvements (estimated in 2014). This developing plan evaluates upgrading water and wastewater systems, improving a breakwater barrier wall, and the construction of a dorm and parking lot. Improvements, if approved, would support continued use of the historic district as a research center as well as make the Berol Lodge more accessible for disabled visitors and researchers.

Jenny Lake Renewal EA (NPS 2014b). The primary purpose of this plan was to renovate trails and facilities in four key use areas in the Jenny Lake area. It included upgrading the water and wastewater systems within the Jenny Lake developed area as well as restoring backcountry areas of the Jenny Lake trail system, which includes parts of the historic Valley Trail System. Some of these improvements would affect the in-use historic properties in the area such as the Jenny Lake Boat Concessions Facilities, the Jenny Lake CCC Camp #NP-4, Jenny Lake Lodge, Jenny Lake Ranger Station, and the Kimmel Kabins/ Lupine Meadows. The plan also included relocating the historic Moose Entrance Kiosk to Jenny Lake and continuing to maintain for an interpretive use.

Moose-Wilson Corridor Comprehensive Management Plan (estimated in late 2015). The park is currently developing a comprehensive management plan and environmental impact statement (EIS) for the Moose-Wilson corridor in the southwest corner of Grand Teton National Park. Central to the area is the 7.7 mile Moose-Wilson Road, a historic resource determined eligible for National Register listing in 2005 (see **Appendix A** for more detail). Other historic properties in the corridor include Murie Ranch, White Grass Dude Ranch, Sky Ranch, and White Grass Ranger Station.

The purpose of the plan/EIS is to determine how best to provide appropriate opportunities for visitors to use, experience, and enjoy the historic road and the Moose-Wilson area while protecting park resources and values. Preliminary proposals in the developing Moose-Wilson Corridor plan that could impact the historic road include potentially realigning up to two portions of the Moose-Wilson Road, paving the unpaved section, and constructing a multi-use pathway along the entire length of the road. In addition, preliminary proposals for managing the Death Canyon Road and trailhead parking could directly affect the White Grass Dude Ranch and use of the White Grass Ranger Station.

The plan is evaluating access routes in this area and the close, parallel alignment of the Death Canyon Road and the White Grass Dude Ranch/preservation center access road. One of the draft preliminary alternatives proposes to construct the spur access road to connect the Death Canyon Road and the White Grass Dude Ranch, an action that was approved through earlier compliance but is no longer proposed as a desirable action under Alternatives B and C in this historic properties management plan. To eliminate parts of the Death Canyon Road, including the redundant, parallel portion, this alternative proposes to use the White Grass historic district access road as the primary route to both the ranch/preservation center and a new Death Canyon Trailhead relocated close to the ranch.

The decisions made in the Moose-Wilson Corridor Comprehensive Management Plan would supersede those made in this historic properties management plan.

Cultural Resources

Affected Environment

Background

Historic properties in Grand Teton National Park fall into four historic contexts, which are defined by Hubber and Caywood in the 1997 *Grand Teton National Park Multiple Property Documentation Form Submission* (Hubber and Caywood 1998) as Settlement, Conservation of the Teton's and Jackson Hole, Park Administration and Development, and Dude Ranching and Tourism.

The settlement context addresses multiple facets of settlement of Jackson Hole, from the first homestead claims to the established ranches and ranching communities, to the vacation homes and "gentlemen ranches" that defined the last period of area settlement. The period of significance is 1884 when the first settler arrived in the valley, to the end of the historic period. Property types associated with this context include homesteads, hobby ranches, and vacation homes.

The Conservation of the Tetons and Jackson Hole context addresses park-making efforts in the valley. To a unique degree, the Teton Range and Jackson Hole served as a testing ground for America's wilderness preservation forces, and the park's creation and expansion represented a triumph and a coming-of-age for the wilderness movement. The period of significance for this context extends from 1897, when Teton National Forest was established, to 1950, the expansion of Grand Teton National Park. Property types associated with this context include those associated with the common theme of conservation.

The Park Administration and Development context addresses federal (NPS) administration of Grand Teton National Park. The period of significance ranges from 1929, when the park was established, to 1950, when the park was expanded. Sub-themes include the efforts of the Civilian Conservation Corps (CCC) and the growth of NPS rustic architecture. Property types associated with this context include administrative and residential complexes, backcountry patrol cabins, and CCC camps. Since the completion of the Hubber and Caywood report, those structures

associated with Mission 66 have gained significance and are also now included under this context.

The Dude Ranching and Tourism context addresses the booming tourist industry that has shaped the Jackson Hole valley since the early twentieth century. The period of significance for dude ranches extends from 1908, when Louis Joy opened the first area ranch (the JY), until the end of the historic period, 1948. The period of significance for auto camps and other tourist accommodations extends from 1927-1948. Property types associated with this context include commercial dude ranches, auto camps, and concessioner's facilities.

Properties Analyzed in this Plan

For the purposes of cultural resource management, historic structures and cultural landscapes are not treated as resources independent of each other. Instead historic structures and cultural landscapes are seen as components of a larger entity such as a historic site or district. The term "historic properties" is defined as any site, district, building, structure, or object eligible for or listed in the National Register of Historic Places, the nation's inventory of historic places and the national repository of documentation on property types and their significance. The term "cultural landscape" refers to the reflections of human adaptation and use of natural resources, and is often expressed in the way land is organized and divided, patterns of settlement, land use, systems of circulation, and the types of structures that are built (Director's Order-28 *Cultural Resource Management Guideline*).

Grand Teton National Park contains 540 National Register eligible or listed buildings and an additional 155 National Register eligible or listed objects, structures, and sites. The park's 695 historic properties are found in 44 locations throughout the park ranging from the southern to the northern park boundaries, from the valley floor to the tops of the remote canyons. While several historic properties are individually eligible or listed resources, the vast majority belongs to historic districts containing multiple resources. Properties range from locally significant to nationally significant and the park contains two National Historic Landmarks: the Jackson Lake Lodge and the Murie Ranch. The park has completed cultural landscape inventories for seven historic districts and anticipates completing at least seven additional cultural landscape inventories for properties known to have intact cultural landscapes.

In **Appendix A**, the 44 historic properties are listed by district, with the number of individual resources that have been determined to be historic and that "contribute to the historic district", and those that are not considered historic and are not "contributing" to the historic character of the district.

Environmental Consequences
Methodology

In order for a structure, building, site, or landscape to be listed in or determined eligible for the National Register of Historic Places, it must meet one or more of the following criteria of significance: A) associated with events that have made a significant contribution to the broad patterns of our history; B) associated with the lives of persons significant in our past; C) embody

the distinctive characteristics of a type, period, or method of construction, or represent the work of a master, or possess high artistic value, or represent a significant and distinguishable entity whose components may lack individual distinction; D) have yielded, or may be likely to yield, information important in prehistory or history. In addition, the structure, building, site, or landscape must possess integrity of location, design, setting, materials, workmanship, feeling, and association (*National Register Bulletin #15, How to Apply the National Register Criteria for Evaluation*, NPS 2002c). A landscape must also have integrity of those patterns and features, land uses and activities, patterns of special organization, response to the natural environment, cultural traditions, circulation networks, boundary demarcations, vegetation related to land use, clusters, small scale elements, and buildings, structures, and objects necessary to convey its significance (*National Register Bulletin #30, Guidelines for Evaluating and Documenting Rural Historic Landscapes*, NPS 1999).

An adverse effect is found when an undertaking may alter, directly or indirectly, any of the characteristics of a historic property that qualify the property for inclusion in the National Register in a manner that would diminish the integrity of the property's location, design, setting, materials, workmanship, feeling, or association. Adverse effects are detailed in CFR 800.5 (a)(2)(i-vii), and include physical destruction or damage, alterations inconsistent with the Standards for the Treatment of Historic Properties (36 CFR 68, 1995), relocation of the property, change in character of use, or neglect resulting in deterioration.

For the purpose of evaluating the impacts of the three alternatives on the 44 historic properties, the properties have been divided into three general groups: properties with current uses, properties with existing plans analyzed in previous EAs, and properties that are currently underused. The properties broken out into these groups were listed above, on pages 35-36.

For purposes of analyzing potential impacts to historic structures and cultural landscape features, the thresholds of change for the intensity of an impact are defined as follows:

Intensity Level Definitions – Cultural Resources

Negligible: The impact(s) is at the lowest level of detection; barely measureable with hardly any perceptible consequences, either adverse or beneficial. For the purposes of §106 of the National Historic Preservation Act, the determination of effect would be “no adverse effect.”

Minor: **Adverse:** Impact is perceptible and measurable. Alteration of a feature(s) of the historic structures or alteration of a pattern(s) or feature(s) of the landscape would not diminish the overall integrity of the resource and the National Register eligibility of the resource would not be affected. For the purposes of §106 under NHPA, the determination of effect would be “no adverse effect”.

Beneficial: Maintenance of features of historic structures in accordance with the *Secretary of the Interior’s Standards for the Treatment of Historic Properties* (36 CFR 68, 1995) and rehabilitation of a landscape or its patterns and features in accordance with the *Secretary of the Interior’s Standards for the Treatment of*

Historic Properties with Guidelines for the Treatment of Cultural Landscapes (USDOI 2001). Includes preventative measures, in-kind replacement, and minor improvements to sustain the existing form, integrity and material. For the purposes of §106 under NHPA, the determination of effect would be "no adverse effect".

Moderate: **Adverse:** Impact results in clearly detectible changes to a character-defining feature of a historic resource and could have an appreciable effect on the resource. Alteration of a feature(s) or landscape pattern(s) would diminish the overall integrity of the resource and could result in the delisting of the district. For the purposes of §106 under NHPA, the determination of effect would be "adverse effect." A memorandum of agreement (MOA) would be executed among the NPS, and applicable state or tribal preservation officer, consulting parties, and, if necessary, the Advisory Council on Historic Preservation in accordance with 36 CFR Part 800.6(b). During the MOA process, parties would agree on measures to minimize or mitigate adverse impacts. These measures would reduce the intensity of impact under NEPA from major to moderate.

Beneficial: Substantially improve the condition and integrity of the resource. Rehabilitation of a property in accordance with the *Secretary of the Interior's Standards for the Treatment of Historic Properties* (36 CFR 68, 1995) and rehabilitation of a landscape or its patterns and features in accordance with the *Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for the Treatment of Cultural Landscapes* (USDOI 2001). For the purposes of §106 under the National Historic Preservation Act, the determination of effect would be "no adverse effect."

Major: **Adverse:** Impact results in a substantial and highly noticeable change in character defining features, permanently altering the historic resource and diminishing the overall integrity. For the purposes of §106 under the National Historic Preservation Act, the determination of effect would be "adverse effect." Measures to minimize or mitigate adverse impacts cannot be agreed upon and the NPS, consulting parties, and applicable state or tribal historic preservation officer and/or Advisory Council on Historic Preservation are unable to negotiate and execute a memorandum of agreement in accordance with 36 CFR Part 800.6(b).

Beneficial: Drastically improve the condition of a historic property or landscape or its patterns and features in accordance with the *Secretary of the Interior's Standards for the Treatment of Historic Properties* (36 CFR 68, 1995) and rehabilitation of a landscape or its patterns and features in accordance with the *Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for the Treatment of Cultural Landscapes* (USDOI 2001). Includes restoration of properties where significant amounts of work are required. For the purposes of §106 under NHPA, the determination of effect would be "no adverse effect."

Duration

Short-term Impacts. Impacts would be limited to those that temporarily introduced non-historic visual, audible, or atmospheric elements lasting only as long as construction into the setting of the cultural resources.

Long-term Impacts. Effects lasting longer than the duration of construction.

Context: Unless otherwise noted, the context of the impacts is limited to the district boundaries.

In addition, the following treatment definitions were applied: Hazard mitigation, stabilization, preservation maintenance, rehabilitation and removal. For definitions of these terms, see pages 39. This plan analyzes the levels, methods, and potential impacts of interpretation in the Visitor Use and Experience section.

Impacts of Alternative A (No-action Alternative) on Cultural Resources

All work would continue to be completed in accordance with the *Secretary of the Interior's Standards for the Treatment of Historic Properties* (36 CFR 68, 1995) and the *Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for the Treatment of Cultural Landscapes* (USDOI 2001). Separate Section 106 consultation and documentation would occur prior to work being undertaken.

The combined effects of Alternative A actions would be the continued deterioration of historic structures and cultural landscape features in Grand Teton National Park. Although implementation of the plans for White Grass Dude Ranch and Mormon Row would be beneficial, most of the underused properties would suffer. The park would continue to preserve historic structures and cultural landscape features at the same rate it currently does, which means that these structures would deteriorate; some, like Bar BC Dude Ranch and Luther Taylor Cabins, becoming ruins by the end of this plan's timeframe. Although the intensity of the impact varies depending on the current condition of the resource, the overall impact of the no-action alternative on historic structures and cultural landscape features would be adverse and minor to moderate in intensity. Overall, a total of 35 of the 44 historic properties would be maintained and in use under Alternative A.

The 32 In-Use Properties

Impacts to those properties with active and beneficial uses are common across all three alternatives as no changes are proposed to their current use and care. In all alternatives, these properties would continue to be proactively maintained. Maintenance would range from replacement in-kind to occasional, larger projects to ensure the buildings remain in use. The impact of continued maintenance on these historic buildings and landscapes is negligible, beneficial, direct and long-term for each district. Potential indirect impacts to these properties resulting from proposed actions in Alternatives B and C are discussed separately.

Mormon Row, White Grass Dude Ranch

Mormon Row:

Under the no-action alternative, the approved infrastructure improvements to facilitate Mormon Row interpretive opportunities would be implemented with slight changes. The configuration of parking and circulation at the property were modified based on how visitors are currently using the area. These minor redesigns do not change the previously analyzed impact conclusions found in the *Mormon Row Historic District Management Alternatives and Environmental Assessment*, 1999; and *Mormon Row Historic District Management Preferred Alternative Finding of No Significant Impact (FONSI),* April 2000 (NPS 2000). The FONSI conclusion that the selected alternative would have "no unmitigated adverse impacts on…sites or districts listed in, or eligible for listing in, the National Register of Historic Places; known ethnographic resources; or other unique characteristics of the region" (*Mormon Row Historic District Management Finding of No Significant Impact,* NPS 2000). Improving infrastructure at Mormon Row and its function as an interpretive historic district would have a beneficial, minor to moderate impact on the property.

The approved work is occurring summer – end calendar year 2015. It includes constructing similarly sized northern and southern parking areas (each ~14 spaces rather than 6-8 and 18, respectively), bus parking and a turnaround near the Mormon Row/Antelope Flats roads junction, installing a vault toilet first at the southern parking area and potentially adding a second if needed, extending the accessible interpretive trail, which was approved from the southern parking area south to the Andy Chambers homestead, to connect to the Mormon Row Road/Antelope Flats Road junction (total new length would be 0.47 mile, longer by 0.32 mile), and expanding interpretation to permit occasional access to the interior of one or two buildings. A separate parking area for buses and a bus turnaround east of the Mormon Row Road/Antelope Flats Road junction would also be constructed.

White Grass Dude Ranch:

Rehabilitation of the White Grass Dude Ranch was analyzed in the *White Grass Ranch Rehabilitation and Adaptive Use Environmental Assessment/Assessment of Effect* (NPS 2004). The overall impact of the selected alternative in the *White Grass Ranch Rehabilitation and Adaptive Use Finding of No Significant Impact* (NPS 2005, p. 55) was determined to be beneficial and minor to moderate in intensity in the long term because of improved preservation of the structures and function as a historic preservation training center. Implementation of these plans would therefore have beneficial, minor to moderate impacts on the respective historic districts.

Aspen Ridge Ranch Residence and Barn, Bar BC Dude Ranch, Beaver Creek #10, Lucas Homestead/Fabian Place, Luther Taylor Cabins, McCollister Residential Complex, Snake River Land Company Office and Residence, Sky Ranch

The no-action alternative would result in minor to moderate, long-term adverse impacts to these eight of the 11 underused properties as they would deteriorate and lose historic integrity due to a

lack of adequate maintenance. The continuation of reactive hazard mitigation would directly impact each district, and would indirectly impact the cultural integrity of the entire park.

Of the 11 focus properties, those with at least a minimal visitor or operational use would be least affected under Alternative A as hazard mitigation (such as preventing roof leaks from occurring or performing bat exclusion) would occasionally occur. Those properties already in poor condition with no assigned use would be most affected by the no-action alternative. These properties—Bar BC Dude Ranch and Luther Taylor Cabins—would continue to deteriorate to ruins by benign neglect. Properties in fair or good condition with no assigned use—Aspen Ridge Ranch Residence and Barn, Beaver Creek #10, Lucas Homestead/Fabian Place, McCollister Residential Complex, Sky Ranch, and Snake River Land Company Office and Residence—would still retain enough historic integrity to maintain their eligibility for inclusion in the National Register, however, they would continue to deteriorate without regular preservation maintenance.

Hunter Hereford Ranch, Manges Cabin, and 4 Lazy F Dude Ranch

Under the no-action alternative, Hunter Hereford Ranch and Manges Cabin would be maintained for use as park storage and 4 Lazy F Dude Ranch would be maintained as funds for maintenance are available. Preservation maintenance activities would occur proactively and would have a direct, minor, beneficial impact on each of these properties in the long term.

Table 6. Summary of Alternative A Cultural Resource Impacts at the Focus Properties, Mormon Row, and White Grass Dude Ranch

Property	*Treatment*	*Types of Actions and Impacts*	*Overall Impact NEPA*	*Overall Impact NHPA*
4 Lazy F Dude Ranch	Maintain	Preservation maintenance work.	Beneficial, Direct, Minor, Long-term	No Adverse Effect
Aspen Ridge Ranch Residence and Barn	Hazard Mitigation	Infrequent, reactive health and safety activities: Deterioration over time.	Adverse, Direct, Minor, Long-term	No Adverse Effect
Bar BC Dude Ranch	Hazard Mitigation	Infrequent, reactive health and safety activities: Deterioration over time.	Adverse, Direct, Moderate, Long-term	Adverse Effect
Beaver Creek #10	Hazard Mitigation	Infrequent, reactive health and safety activities: Deterioration over time.	Adverse, Direct, Minor, Long-term	No Adverse Effect
Hunter Hereford Ranch	Maintain	Proactive preservation maintenance work.	Beneficial, Direct, Minor, Long-term	No Adverse Effect

Lucas Homestead/Fabian Place	Hazard Mitigation	Infrequent, reactive health and safety activities: Deterioration over time.	Adverse, Direct, Minor, Long-term	No Adverse Effect
Luther Taylor Cabins	Hazard Mitigation	Infrequent, reactive health and safety activities: Deterioration over time.	Adverse, Direct, Moderate, Long-term	Adverse Effect
Manges Cabin	Maintain	Proactive preservation maintenance.	Beneficial, Direct, Minor, Long-term	No Adverse Effect
McCollister Residential Complex	Hazard Mitigation	Infrequent, reactive health and safety activities: Deterioration over time.	Adverse, Direct, Minor, Long-term	No Adverse Effect
Mormon Row	Implement 2000 FONSI with minor design changes	Formalize circulation, install interpretive signs and trail, install vault toilet (1 initially, perhaps 2 in LT), stabilize buildings	Beneficial, Direct, Minor to Moderate, Long-term	No Adverse Effect
Sky Ranch	Hazard Mitigation	Infrequent, reactive health and safety activities: Deterioration over time.	Adverse, Direct, Minor, Long-term	No Adverse Effect
Snake River Land Company Office and Residence	Hazard Mitigation	Infrequent, reactive health and safety activities: Deterioration over time.	Adverse, Direct, Minor, Long-term	No Adverse Effect
White Grass Dude Ranch	Implement 2005 FONSI	Cumulative, long-term impact of rehabilitating and using historic property	Beneficial, Direct, Minor to Moderate, Long-term	No Adverse Effect

Cumulative Effects

Development and maintenance of park facilities can affect cultural resources. Projects with the potential to impact cultural resources in the vicinity of park and parkway developed areas include road construction, construction of the multi-use pathway system, trail maintenance, and rehabilitation of aging water and wastewater systems in the park. For the most part, the actions in the cumulative impact scenario have avoided or would avoid cultural resources. Consultation with associated tribal groups, the Wyoming SHPO, and other consulting parties on projects helps to control the extent of potential effects and ensures that any adverse effects on cultural resources would be negligible to minor at most.

Because Alternative A would result in minor to moderate adverse impacts to historic structures and cultural landscape features in the long term, it would contribute to the cumulative

disturbance when considered with other past, present, and reasonably foreseeable future actions, and would result in a minor, adverse cumulative impact.

Impacts of Alternative B (NPS Preferred Alternative) on Cultural Resources

Where changes are proposed to the current management of historic properties, stewardship guidelines outlined in DO-28 would be followed. This includes incorporating the highest feasible level of physical access for disabled persons to historic properties (*2006 Management Policies*, 5:14; *NPS 2006c*); executing design sensitive to the cultural and natural environment, including sustainability considerations; working with facility managers to ensure historic properties are inventoried and condition assessments are completed; following safety requirements outlined in *2006 Management Policies* (8:5); complying with structural fire plan prevention, detection, and suppression guidelines (*2006 Management Policies* chapters 5 and 13); and better integrating appropriate pest management policies. These management policies inform park managers, ensuring the best response to competing pressures and needs for good resource management. Additionally, all proposed work would be completed in accordance with the *Secretary of the Interior's Standards for the Treatment of Historic Properties* (36 CFR 68, 1995) and the *Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for the Treatment of Cultural Landscapes* (USDOI 2001). Separate Section 106 consultation and documentation would occur prior to work being undertaken.

Some of the management actions proposed for Alternative B would have adverse effects on known historic resources through demolition or relocation. Removal would have long-term, moderate, adverse effects on individual historic buildings and sites under NEPA, and adverse effects under NHPA. The removals proposed would be explicit, and the appropriate section 106 review would occur prior to any demolition. This alternative allows for the consideration of demolition because it allows for available time and resources to be focused more beneficially towards the remaining historic properties.

Alternative B would result in a long-term beneficial impact to the seven focus properties that would receive unchanged or increased preservation treatments and/or increased interpretation (4 Lazy F Dude Ranch, Beaver Creek #10, Bar BC Dude Ranch, Snake River Land Company Office and Residence, Hunter Hereford Ranch, Lucas Homestead/Fabian Place, and Manges Cabin). The increased preservation treatments would improve the condition of these resources and the increased interpretation would likely result in a decrease in vandalism. Designating sustainable uses is also critical in ensuring the long-term care of these buildings.

Although this alternative would have the most adverse impacts, it would also have the most beneficial impacts. The proposed treatments for 4 Lazy F Dude Ranch, Bar BC Dude Ranch, Beaver Creek #10, and Snake River Land Company Office and Residence would ensure they are preserved and maintained on a reliable basis beyond the terms of this plan.

All of the 41 historic properties remaining after the removals would be maintained and in-use under Alternative B. Compared to Alternative A, in which 35 properties would be maintained and in-use, more of the park's historic properties would be maintained and have a useful function.

The 32 In-Use Properties

Impacts to those properties with active and beneficial uses are common across all three alternatives as no changes are proposed to their current use and care. In all alternatives, these properties would continue to be proactively maintained. Maintenance would range from replacement in-kind to occasional, larger projects to ensure the buildings remain in-use. The impact of continued maintenance on these historic buildings and landscapes is negligible, beneficial, direct and long-term for each district. Potential indirect impacts to these properties resulting from proposed actions in Alternatives B and C are discussed separately.

Mormon Row, White Grass Dude Ranch

Mormon Row:

The previously planned infrastructure improvements, slightly modified to reflect current visitor use, would occur as described above in Alternative A. Briefly, the infrastructure improvements approved in the *Mormon Row Historic District Management Preferred Alternative Finding of No Significant Impact (FONSI),* April 2000 and analyzed in the *Mormon Row Historic District Management Alternatives and Environmental Assessment* (NPS 1999) would be implemented summer 2015. The plans for parking and an interpretive trail were reevaluated and modified to reflect current visitor use patterns. The changes are minor and do not alter the types or overall level of impacts in the environmental assessment and decision document..

The planned work includes constructing similarly sized northern and southern parking areas (each ~14 spaces rather than 6-8 and 18, respectively), bus parking and a turnaround near the Mormon Row/Antelope Flats roads junction, installing a vault toilet first at the southern parking area and potentially adding a second if needed, extending the accessible interpretive trail to the Mormon Row/Antelope Flats roads junction to connect the north and south ends of the district, and expanding interpretation to permit occasional access to the interior of one or two buildings. A separate parking area for buses and a bus turnaround east of the Mormon Row Road/Antelope Flats Road junction would also be constructed.

Alternative B also includes the option of potential rehabilitation of several (up to four) Mormon Row houses (from north to south, the Thomas Murphy/Joe Heninger (Reed Moulton), John Moulton (“pink house”), Andy Chambers, and Thomas Perry/Roy Chambers houses), for adaptive reuse as seasonal park housing. Rehabilitation would include upgrading the utilities as well as the structures. Two of the houses proposed for rehabilitation are not illustrated in **Figure 10** (p. 70). The Thomas Murphy/Joe Heninger (Reed Moulton) house is located north of the John Moulton homestead and the Thomas Perry/Roy Chambers house is located south of the Andy Chambers homestead.

Rehabilitation of the four houses would include installation and upgrade of utilities and associated infrastructure, and preservation work to each building. The modified, previously approved infrastructure improvements, such as formalizing parking areas, would not be expanded from what has already been described. Construction activities associated with

rehabilitation would have a direct, minor, adverse, short-term impact on the district, ranging from ground disturbance to increased noise and traffic levels.

The lasting effects of the rehabilitation, however, would be directly beneficial. Rehabilitation, including roof replacement and wall work, would seal the buildings from weather, preventing further deterioration. The proposed work would increase the overall condition of the buildings and landscape, enhancing their ability to communicate significance and integrity. By assigning the property a specific use, the buildings would receive consistent maintenance and attention. In addition, rehabilitation in the near future, while the buildings are still in relatively good condition, would require less intervention and allow for the preservation of more original material.

The proposed use would also require some interior changes to meet code requirements for occupancy. These changes are minimal, however, and would therefore have a negligible, adverse impact in the long term. There would also be some direct adverse impacts to the cultural landscape and historic district due to the visual impact of small water treatment (well) houses, transformer boxes, propane tanks, and seasonal occupancy.

The long-term benefits of the preservation attention and introduction of sustainable use outweigh the short-term impacts caused by construction. The long-term impact of the proposed rehabilitation would be moderate, direct, and beneficial to the historic buildings and landscape.

White Grass Dude Ranch:

Under Alternative B, the 2004 *White Grass Ranch Rehabilitation and Adaptive Use Environmental Assessment/Assessment of Effect* and 2005 *White Grass Ranch Rehabilitation and Adaptive Use Finding of No Significant Impact* would be implemented with minor parking changes, somewhat higher day use and overnight occupancy, and not constructing the approved spur road from Death Canyon Road to the historic district.

The size of the approved parking area was reassessed after the start of the rehabilitation work because the informal parking area size did not appear to be adequately meeting parking needs despite carpooling by student trainees and the workers involved in the on-going rehabilitation at the property. Establishing sufficient parking away from the cabins would benefit the district by preserving the auto-free view of the cabins and minimizing impacts to the cultural landscape. Parking changes include increasing the number of spaces from six to eight at the main parking area away from the cabins. Driving within the district would continue to be restricted but, to provide accessible parking and drop-off areas, two accessible parking spaces would be formalized next to the Hammond Cabin, two next to the laundry/maintenance cabin, and there would be a drop-off area west of the Main Cabin. These areas would be used on a very limited basis, for loading and unloading and by individuals who need improved access.

To make efficient use of the rehabilitated buildings, day use could occasionally be increased to 40 people, from 25 on average; and maximum overnight occupancy would be increased from 15 to 26. This increase would not alter the existing buildings, proposed parking needs, or other character defining features of the district.

The spur road approved in the 2004 plan would not be constructed because it does not seem needed in addition to the current access and the disturbance it would cause can be avoided. Not constructing it would reduce overall ground disturbance and alterations to the cultural landscape. Access to the district would continue to be via the historic utility road.

Overall, these changes would not alter the previous finding that the impacts are beneficial, direct and minor to moderate in intensity in the long term (*White Grass Ranch Rehabilitation and Adaptive Use EA*, NPS 2004a, p. 55).

4 Lazy F Dude Ranch, Bar BC Dude Ranch, Beaver Creek #10, Snake River Land Company Office and Residence

4 Lazy F Dude Ranch:

Rehabilitation of the 4 Lazy F Dude Ranch for use as seasonal housing would include the construction of parking and circulation, installation and upgrade of utilities and infrastructure, and preservation work to each building. Construction activities associated with rehabilitation would have a direct, minor, adverse, short-term impact on the district, ranging from ground disturbance to increased noise and traffic levels.

Construction activities would also indirectly impact the Menor's Ferry/Maud Noble Cabins historic district, which would see minor adverse impacts from increased traffic noises during construction, and negligible impacts of increased traffic after construction.

Despite these primarily short-term adverse impacts, however, the long-term impact of the rehabilitation would be directly beneficial. Rehabilitation, including roof replacement and log work, would seal the buildings from weather, preventing further deterioration. The proposed work would also increase the overall condition of the buildings and landscape, enhancing their ability to communicate significance and integrity. By assigning the property a specific use, the buildings would receive consistent maintenance and attention. In addition, rehabilitation in the near future, while the buildings are still in relatively good condition, would require less intervention and allow for the preservation of more original material.

The long-term benefits of the preservation attention and introduction of sustainable use outweigh the short-term impacts caused by construction. The long-term impact of the proposed rehabilitation would be moderate, direct, and beneficial to the historic buildings and landscape.

Bar BC Dude Ranch:

Prioritizing the stabilization of structures at the Bar BC Dude Ranch and restoring elements of the cultural landscape would include work on 27 of the 34 contributing buildings, formalizing off-site parking on the bench above the historic district, and work on select landscape features, including the historic roads, trails, and vegetation. Twenty-four buildings would be stabilized using minimal in-kind replacements, three would be more significantly stabilized with more substantial material replacements, and seven cabins, those with the lowest significance, integrity, and condition, would be left to naturally deteriorate or their materials recycled if funds are not

available for their preservation. The preservation work would prioritize preserving those purpose-built structures and representative cabins required to best highlight the historic use.

Implementation of this alternative would require limited ground disturbance next to the 24 cabins while work is completed but revegetation would mitigate these effects. Some additional ground disturbance would occur in the short term due to work to restore elements of the cultural landscape by removing part of the western loop road and retaining part as a pedestrian trail. Restoration of the cultural landscape would also include removal of non-historic vegetation. The construction activities would have direct, minor, adverse impacts to the site in the short term while traffic and noise levels are increased. Given the limited availability of financial resources, letting the seven cabins with the lowest significance, integrity, and condition to naturally deteriorate would have a direct, moderate, adverse impact to those cabins but could have a minor, beneficial impact to the district as a whole by allowing the park to focus funds on preserving the greatest number of representative structures and guest cabins.

These adverse impacts are both short-term and long-term. The completion of stabilization work on 27 buildings would ultimately have long-term, direct, beneficial impacts to the individual structures and to the historic district as a whole. Limited stabilization of 24 cabins, including roof replacement, log replacement, and interior bracing, would ensure the cabins' continued presence on the landscape, while more intensive stabilization of three cabins would seal the buildings from weather, preventing further deterioration. The proposed work would increase the overall condition of 27 of the 34 buildings and the cultural landscape, increasing their ability to communicate significance and integrity.

In addition, the district would receive more consistent maintenance and attention over the course of this plan. The long-term impact of the proposed rehabilitation would be moderate, direct, and beneficial on the Bar BC Dude Ranch historic district.

Beaver Creek #10:

Rehabilitating Beaver Creek #10 for an administrative park use such as storage, office space or housing would involve in-kind work to the exterior of the building, including log replacement and window rehabilitation, as well as the construction of formalized parking and potentially ABAAS-compliant circulation and interior remodeling. Because the interior does not retain integrity to the period of significance, interior alterations would not be considered adverse. The construction activities associated with the Alternative B would have a minor adverse impact in the short term, but would be outweighed by the moderate beneficial impacts in the long term.

Rehabilitation, including pest mitigation and log care, would seal the building, preventing further deterioration. The proposed work would also increase the overall condition of the building, increasing its ability to communicate significance and integrity. Additionally, assigning an administrative use to the building would meet an identified need for the park while ensuring the building would receive consistent maintenance and attention. Rehabilitation in the near future, while the building is still in relatively good condition, would require less intervention, cost, and would allow for the preservation of more original material. The impact of the proposed action in the long term is moderate, direct, and beneficial.

Snake River Land Company Office and Residence:

Rehabilitating the Snake River Land Company Office and Residence for use as a ranger station and office would include the formalization of designated parking, installation of ABAAS-compliant circulation and building access, and installation and upgrading of utilities, as well as preservation related work to both the interior and exterior of the building. These construction activities would have a negligible, direct, adverse impact to the district in the short term while increased noise and ground disturbance are present. The proposed use would also require some interior changes to convert the residence to an office and allow for ABAAS-compliant access. These changes are minimal and reversible, however, and would therefore have a negligible, adverse impact in the long term.

The lasting effects of the rehabilitation, however, would be directly beneficial. Rehabilitation, including guano mitigation and log care, would seal the building from weather and pest infestation, preventing further deterioration. The proposed work would also increase the overall condition of the building, increasing its ability to communicate significance and integrity.

Additionally, assigning rangers to the building would meet an identified administrative need for the park while ensuring the building would receive consistent maintenance and attention. Rehabilitation in the near future, while the building is still in relatively good condition, would require less intervention, cost, and would allow for the preservation of more original material. Overall, the impact of the proposed action in the long term would be moderate, direct, and beneficial.

Aspen Ridge Ranch Residence and Barn, McCollister Residential Complex, Sky Ranch

Under Alternative B, Aspen Ridge Ranch Residence and Barn, McCollister Residential Complex, and Sky Ranch would all be removed. Demolition of these properties—both the physical act of demolition as well as the long-term effect of demolition—would result in a direct, moderate, adverse impact to the historic districts, as well as indirect, moderate impact to the cultural resources of Grand Teton National Park. Removal of these properties would permanently alter their historic setting and character and eliminate their interpretive value, significance, and integrity from the cultural landscape of the park in a long-term, irreversible manner.

While the action would be completed in a way that is consistent with guidance established through a Memorandum of Agreement with the State Historic Preservation Office, consulting parties, and interested tribal consultants, and, if necessary, the Advisory Council on Historic Preservation (standard 36 CFR Part 800 consultation), the proposed action would result in a moderate, long-term, adverse impact on the districts under NEPA and an adverse effect under NHPA, and would result in the delisting or determination of ineligibility of the properties.

Removal of the three properties would have an indirect, negligible, beneficial impact on the remaining historic districts in the park, as it would allow for more funding to be directed to those properties. Removal of Aspen Ridge Ranch Residence and Barn would also have a negligible adverse impact on the Hunter Hereford Ranch, which would lose integrity of setting and

association without the Aspen Ridge Ranch in view. Similarly, White Grass Dude Ranch would be indirectly impacted in an adverse manner with the demolition or removal of the Sky Ranch. In the short term, the removal would cause noise and potentially visual disturbance at the White Grass Dude Ranch. In the long term, the White Grass Dude Ranch would lose the association with Sky Ranch. Since Sky Ranch was constructed by former White Grass dudes (guests), the properties are closely associated. Removal of Sky Ranch would indirectly affect the context of White Grass Dude Ranch in the long term, but would have no visual or audible impacts.

Hunter Hereford Ranch, Lucas Homestead/Fabian Place, Manges Cabin

Under Alternative B, Hunter Hereford Ranch, the Lucas Homestead/Fabian Place, and Manges Cabin would be maintained, receiving frequent, in-kind preservation to ensure the buildings remain sealed from the elements. Maintenance would range from replacement in-kind to sporadic, larger projects. Because the current condition of the buildings is “fair,” maintenance would only slightly improve the current condition. Additionally, increased interpretation of the Lucas Homestead/Fabian Place could result in decreased vandalism. Overall, continued maintenance of Hunter Hereford, Lucas/Fabian, and Manges Cabin would result in minor, direct, beneficial impacts to the districts in the long term.

Luther Taylor Cabins

Alternative B proposes to maintain the Luther Taylor Cabins in their current condition through continued hazard mitigation and subtle stabilization. The properties would receive attention in reaction to health and safety concerns, but would otherwise receive little to no preservation funding. This treatment strategy would result in a minor, adverse, direct impact to the properties over the course of this plan.

Table 7. Summary of Alternative B Cultural Resource Impacts at the Focus Properties, Mormon Row, and White Grass Dude Ranch

Property	*Treatment*	*Types of Actions and Impacts*	*Overall Impact NEPA*	*Overall Impact NHPA*
4 Lazy F Dude Ranch	Rehabilitate	Formalization of parking, upgrade of utilities, in-kind replacements and landscape restoration	Beneficial, Direct, Moderate, Long-term	No Adverse Effect
Aspen Ridge Ranch Residence and Barn	Remove	Removal of National Register eligible buildings	Adverse, Direct, Moderate, Long-term	Adverse
Bar BC Dude Ranch	Mix of Stabilize and Rehabilitate	Formalization of off-site parking, restoration of elements of the cultural landscape, in-kind preservation	Beneficial, Direct, Moderate, Long-term	No Adverse Effect

Beaver Creek #10	Rehabilitate	Construction of parking and possibly ABAAS circulation, exterior preservation in-kind	Beneficial, Direct, Moderate, Long-term	No Adverse Effect
Hunter Hereford Ranch	Maintain	Frequent, in-kind preservation	Beneficial, Direct, Minor, Long-term	No Adverse Effect
Lucas Homestead/Fabian Place	Maintain	Frequent, in-kind preservation	Beneficial, Direct, Minor, Long-term	No Adverse Effect
Luther Taylor Cabins	Maintain	Intermittent health and safety activities; subtle stabilization work	Adverse, Direct, Minor, Long-term	No Adverse Effect
Manges Cabin	Maintain	Frequent, in-kind preservation	Beneficial, Direct, Minor, Long-term	No Adverse Effect
McCollister Residential Complex	Remove	Removal of National Register eligible buildings	Adverse, Direct, Moderate, Long-term	Adverse
Mormon Row	Implement 2000 FONSI with minor parking and interpretive trail changes (Same as under Alternative A) ******** Potential to Rehabilitate	Formalize circulation, install interpretive signs and trail, stabilize buildings. ********** Potential for rehabilitation of four houses for adaptive reuse as seasonal park housing.	Beneficial, Direct, Minor to Moderate, Long-term ********** Beneficial, Direct, Moderate, Long-term; some Adverse, Direct, Minor, Long-Term due to installation of well houses, propane tanks, and transformer boxes.	No Adverse Effect
Sky Ranch	Remove	Removal of National Register eligible buildings	Adverse, Direct, Moderate, Long-term	Adverse
Snake River Land Company Office and Residence	Rehabilitate	Construction of ABAAS parking and circulation, preservation in-kind	Beneficial, Direct, Moderate, Long-term	No Adverse Effect
White Grass Dude Ranch	Implement 2005 FONSI with parking changes	Expansion of original parking area, construction of ABA parking and drop-off areas	Beneficial, Direct, Minor to Moderate, Long-term	No Adverse Effect

Cumulative Effects

Development and maintenance of park facilities can affect cultural resources. Projects with the potential to impact cultural resources in the vicinity of park and parkway developed areas include road construction, construction of the multi-use pathway system, trail maintenance, and rehabilitation of aging water and wastewater systems in the park. For the most part, the actions in the cumulative impact scenario have avoided or would avoid cultural resources. Consultation with associated tribal groups, the Wyoming SHPO, and other consulting parties on projects helps to control the extent of potential effects and ensures that any adverse effects on cultural resources would be negligible to minor at most. Continued consultation under Alternative B would ensure that impacts to archeological resources would not contribute measurably to impacts from other past, present, and reasonably foreseeable future actions, and cumulative impacts would remain negligible to minor.

Alternative B would have the most adverse impacts due to removal of three properties but it would also have the most beneficial impacts through the adaptive use of four properties. Consultation with SHPO would occur for projects that would result in adverse effects and, in some cases, agreements are developed to address the impacts. Taken into consideration with other past, present, and reasonably foreseeable future actions, this action alternative would result in the most substantial improvements to historic districts in the long term. Alternative B would contribute both beneficial and adverse minor to moderate impacts to cultural resources but the overall effect to the cumulative impact of park projects on cultural structures and landscapes would be beneficial. When considered with other past, present, and reasonably foreseeable future actions, it would reduce cumulative impacts from minor adverse to negligible.

Impacts of Alternative C on Cultural Resources

Where changes are proposed to the current management of historic properties, stewardship guidelines outlined in DO-28 will be followed. This includes incorporating the highest feasible level of physical access for disabled persons to historic properties (NPS Management Policies (5:14)); executing design sensitive to the cultural and natural environment, including sustainability considerations; working with facility managers to ensure historic properties are inventoried and condition assessments are completed; following safety requirements outlined in Management Policies (8:5); complying with structural fire plan prevention, detection, and suppression guidelines (Management Policies chapters 5 and 13); and better integrating appropriate pest management policies. These management policies inform park managers, ensuring the best response to competing pressures and needs for good resource management. Additionally, all proposed work would be completed in accordance with the *Secretary of the Interior's Standards for the Treatment of Historic Properties* (36 CFR 68, 1995) and the *Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for the Treatment of Cultural Landscapes* (USDOI 2001). Separate Section 106 consultation and documentation would occur prior to work being undertaken.

Alternative C proposes the fewest adverse effects to historic properties. The beneficial impacts, however, are primarily negligible and would not result in any major improvements. Additionally, the primary treatment proposed is mothball stabilization, which, as stated, is not a long-term solution to the preservation of historic properties. Mothball stabilization merely defers the decisions to the next generation. This alternative would result in long term, negligible beneficial impacts to historic properties. All properties would receive improved preservation treatment from their current levels, but none would be substantially improved.

Overall, a total of 37 of the 44 historic properties would be maintained to at least a minimum extent and in-use under Alternative C. Compared to Alternative A, in which 35 properties would be maintained and in-use, a few more of the park's historic properties would be maintained and have a useful function.

The 32 In-Use Properties

Impacts to those properties with active and beneficial uses are common across all three alternatives as no changes are proposed to their current use and care. In all three alternatives, these properties would continue to be proactively maintained. Maintenance would range from replacement in-kind to occasional, larger projects to ensure the buildings remain in-use. The impact of continued maintenance on these historic buildings and landscapes is negligible, beneficial, direct and long-term for each district. Potential indirect impacts to these properties resulting from proposed actions in Alternatives B and C are discussed separately.

Mormon Row, White Grass Dude Ranch

Mormon Row:

Under Alternative C, only the modified infrastructure improvements would be implemented. The impacts would be the same as those described for Alternative B. The option to rehabilitate and adaptively use up to four Mormon Row houses would not be included.

White Grass Dude Ranch:

Same as Alternative B.

Aspen Ridge Ranch Residence and Barn, Bar BC Dude Ranch, Lucas Homestead/Fabian Place, Luther Taylor Cabins, McCollister Residential Complex, Snake River Land Company Office and Residence, Sky Ranch

Under Alternative C, seven of the 11 underused properties would be stabilized for the duration of this plan. Mothball stabilization would occur at Aspen Ridge Ranch Residence and Barn, Bar BC Dude Ranch, Luther Taylor Cabins, Lucas Homestead/Fabian Place, McCollister Residential Complex, Snake River Land Company Office and Residence, and Sky Ranch. Mothball stabilization would include proactively weatherproofing the building envelope to prevent further deterioration. Stabilization efforts such as putting tarps over roofs and installing interior bracing would be reversible, but may not be in-kind preservation. These efforts could have short-term, adverse visual impacts to the integrity of these districts, particularly in districts that are already in poor condition, such as Luther Taylor Cabins. Mothball stabilization would also result in discontinued interior use. This treatment would ensure that the buildings remain on the landscape, but it is not a long-term solution. As stated in *Preservation Brief 31: Mothballing Historic Buildings*, mothballing is an "effective means of protecting the building while planning the property's future." (http://www.nps.gov/tps/how-to-preserve/briefs/31-mothballing.htm#mothballing) (NPS 1993). In the long term, mothball stabilization would have a negligible, direct, beneficial impact on these ten properties.

4 Lazy F Dude Ranch, Beaver Creek #10, Hunter Hereford Ranch, Manges Cabin

Under Alternative C, 4 Lazy F Dude Ranch, Beaver Creek #10, Hunter Hereford Ranch, and Manges Cabin would continue to be maintained, receiving frequent, in-kind preservation to ensure the buildings remain sealed to the elements. Maintenance would range from replacement in-kind to occasional, larger projects, including utility upgrades, to ensure the buildings remain minimally in-use. Because the current condition of the buildings is "fair," maintenance would only slightly improve the current condition. Overall, continued maintenance of 4 Lazy F Dude Ranch, Beaver Creek #10, Hunter Hereford, and Manges Cabin would result in minor, direct, beneficial impacts to the districts in the long term.

Table 8. Summary of Alternative C Cultural Resource Impacts at the Focus Properties, Mormon Row, and White Grass Dude Ranch

Property	*Treatment*	*Types of Actions and Impacts*	*Overall Impact NEPA*	*Overall Impact NHPA*
4 Lazy F Dude Ranch	Maintain	Frequent in-kind preservation maintenance	Beneficial, Direct, Minor, Long-term	No Adverse Effect
Aspen Ridge Ranch Residence and Barn	Stabilize	Measures to make buildings weather tight, some replacements in-kind	Direct, Negligible, Long-term	No Adverse Effect
Bar BC Dude Ranch	Stabilize	Measures to make buildings weather tight, some replacements in-kind	Direct, Negligible, Long-term	No Adverse Effect
Beaver Creek #10	Maintain	Frequent in-kind preservation maintenance	Beneficial, Direct, Minor, Long-term	No Adverse Effect
Hunter Hereford Ranch	Maintain	Frequent in-kind preservation maintenance	Beneficial, Direct, Minor, Long-term	No Adverse Effect
Lucas Homestead/ Fabian Place	Stabilize	Measures to make buildings weather tight, some replacements in-kind	Direct, Negligible, Long-term	No Adverse Effect
Luther Taylor Cabins	Stabilize	Measures to make buildings weather tight, some replacements in-kind	Direct, Negligible, Long-term	No Adverse Effect
Manges Cabin	Maintain	Frequent in-kind preservation maintenance	Beneficial, Direct, Minor, Long-term	No Adverse Effect
McCollister Residential Complex	Stabilize	Measures to make buildings weather tight, some replacements in-kind	Direct, Negligible, Long-term	No Adverse Effect
Mormon Row	Implement 2000 FONSI with minor parking and interpretive trail changes (Same as Alternative A)	Formalize circulation, install interpretive signs and trail, install vault toilet (1 initially, perhaps 2 in LT), stabilize buildings. (Same as Alternative A)	Beneficial, Direct, Minor to Moderate, Long-term (Same as Alternative A)	No Adverse Effect (Same as Alternative A)

Sky Ranch	Stabilize	Measures to make buildings weather tight, some replacements in-kind	Direct, Negligible, Long-term	No Adverse Effect
Snake River Land Company Office and Residence	Stabilize	Measures to make buildings weather tight, some replacements in-kind	Direct, Negligible, Long-term	No Adverse Effect
White Grass Dude Ranch	Implement 2004 EA with parking changes	Cumulative, long-term impact of rehabilitating and using historic property	Beneficial, Direct, Minor to Moderate, Long-term	No Adverse Effect

Cumulative Effects

Development and maintenance of park facilities can affect cultural resources. Projects with the potential to impact cultural resources in the vicinity of park and parkway developed areas include road construction, construction of the multi-use pathway system, trail maintenance, and rehabilitation of aging water and wastewater systems in the park. For the most part, the actions in the cumulative impact scenario have avoided or would avoid cultural resources. Consultation with associated tribal groups, the Wyoming SHPO, and other consulting parties on projects helps to control the extent of potential effects and ensures that any adverse effects on cultural resources would be negligible to minor at most. Continued consultation under Alternative C would ensure that impacts to archeological resources would not contribute measurably to the impacts from other past, present, and reasonably foreseeable future actions, and cumulative impacts would remain negligible to minor.

Although Alternative C would result in some minor to moderate impacts to historic structures and cultural landscape features in the long term, it would mainly have negligible beneficial impacts. It would only slightly contribute to the cumulative disturbance when considered with other past, present, and reasonably foreseeable future actions, and cumulative impacts from all actions would continue to be minor and adverse.

Natural Resources: Vegetation & Wildlife
Vegetation

Affected Environment

The NPS is directed by the Organic Act to conserve the scenery and the natural objects unimpaired for future generations. *NPS Management Policies 2006* define the general principles for managing biological resources as maintaining all the components and processes of naturally evolving park ecosystems, including the natural abundance, diversity and ecological integrity of plant communities (NPS 2006c). When NPS management actions cause native vegetation to be damaged or removed, the NPS will seek to ensure that such removals will not cause unacceptable impacts to native resources, natural processes, or other park resources.

Specifically, *NPS Management Policies 2006* Section 4.4.2.4, Management of Natural Landscapes, states "Landscape revegetation efforts will use seeds, cuttings, or transplants representing species and gene pools native to the ecological portion of the park in which the restoration project is occurring." Section 4.4.1.1, Plant and Animal Population Management Principles, states that the National Park Service will "prevent the introduction of exotic species into units of the national park system, and remove, when possible, or otherwise contain individuals or populations of these species that have already become established in parks."

Non-native species, also referred to as exotic or invasive, are not a natural component of the ecosystem. Management of populations of exotic plant and animal species, up to and including eradication, will be undertaken wherever such species threaten park resources or public health and when control is prudent and feasible. EO 13122 states that federal agencies are to prevent the introduction of invasive species, provide for their control, provide for restoration of native species and habitat conditions in ecosystems that have been invaded, and minimize the economic, ecological, and human health impacts that invasive species cause. The spread of non-native invasive species is an on-going problem throughout the highly visited and occupied portions of the park.

Exotic plant infestations represent a long-term management issue in the park. A noxious weed is a category of non-native invasive plant defined as a species designated by federal, state or county government as injurious to public health, agriculture, recreation, wildlife or property (Sheley, Petroff, and Borman 1999). The NPS defines exotic plants as species that are not native to this county or to the area where they are growing; this definition includes the subset of exotic plants designated as noxious.

Treatment of non-native plants, with the goal of reducing or eliminating their impact on native ecosystems requires a substantial commitment of resources and person-hours annually. Treated species include those prioritized by the National Park Service and designated by the state or county as noxious weeds. Most of these species thrive in newly or highly disturbed areas. Numerous noxious weed species are present at park properties, historic properties included. In most cases noxious weed invasion has occurred following ground disturbance; in some cases these species were planted on-site as ornamentals. Ground disturbance and increases in light availability, through the removal of over-story vegetation, are factors that increase the probability of invasion by exotic plants.

The low-lying valley of Jackson Hole consists of a glacial outwash plain that supports mainly sagebrush-dominated communities. Pockets of historical agricultural lands consisting mostly of non-native pasture grasses are also present on the valley floor. The Snake River bisects the valley and riparian communities associated with the river and its tributaries support blue spruce (*Picea pungen*), narrowleaf cottonwood (*Populus augustifolia*), silver buffaloberry (*Shepherdia argentea*), and various willow (*Salix*) species. Hydrology associated with Jackson Lake sustains a large and diverse willow community (Willow Flats) and smaller ones along its perimeter. Aspen (*Populus tremuloides*) communities are located in moist upland areas at lower elevations in the park and are often intermixed with sagebrush steppe and Douglas-fir woodlands. Lower and mid-elevation forests are dominated by lodgepole pine (*Pinus contorta*), Douglas-fir (*Pseudotsuga menziesii*), subalpine fir (*Abies lasiocarpa*), and Engelmann spruce (*Picea*

engelmannii). Mountain shrub communities (common chokecherry (*Prunus virginiana* var. *melanocarpa*), western serviceberry (*Amelanchier alnifolia*), Scouler's willow (*Salix scouleriana*), etc.) are also common on the foothill slopes of the Teton Range. Where vegetated, the higher elevations of the Tetons consist of timberline forests (subalpine fir, Engelmann spruce, and whitebark pine (*Pinus albicaulis*)) and graminoid-, forb-, and shrub-dominated alpine communities.

The integrity of the park's plant communities remains largely intact. However, some communities have been affected by human activities such as homesteading, agricultural use, introduction of exotic species, resource utilization and extraction, (i.e., gravel pits, grazing, and browsing) land development, and fire exclusion.

Vegetation types present at historic properties are typical of their respective elevations and aspects in the park and parkway. Types include, but are not limited to:

Shrub-steppe – generally dominated by big sagebrush (*Artemisia tridentata)* with a mixed native grass and forb understory. This type within the park contains one Wyoming state sensitive species, largeflower triteleia (*Triteleia grandiflora);* however the species is not known to occur at any of the historic properties.

Native grasslands – containing two to five co-dominant native grasses. This type occurs in patches near many of the historic properties.

Agricultural grasslands – dominated by non-native agronomic grasses including *Bromus inermis, Poa pratensis, Poa compressa* and *Phleum pretense.* These areas include irrigated and previously cultivated fields that occupy large expanses in the vicinity of several of the properties.

Woodland – consists of either a mix of deciduous trees including aspen and cottonwood and conifers such as lodgepole, or can be exclusively coniferous or deciduous. The woodland title specifies that the tree canopy is sparse with less than 30% canopy cover of trees, often with deciduous shrubs or sagebrush as well as grasses and forbs in the understory.

Riparian – consists of graminoids, forbs, and shrubs, often willows, which typically occur near a waterway. Tree species occurring in the riparian zone are primarily cottonwood and blue spruce.

Montane forest – mixed coniferous forest, usually with a canopy cover of >30% to <70% with relatively dry conditions. Species often include lodgepole, douglas fir, and occasionally limber pine (*Pinus flexilis*), juniper (*Juniperus communis*), and/or aspen.

Sub-alpine forest – mixed coniferous forest usually with a canopy cover of >40 to <70% and comprised of sub-alpine fir, douglas fir, Engelmann spruce, occasional aspen, lodgepole, and whitebark pine.

These vegetation types vary in their susceptibility to invasive plants but disturbances that result in bare ground, disturbed ground, or vegetation removal of any type can result in exotic plant invasion in any of the types.

Appendix A notes the predominant vegetation types that occur near each historic property.

Additional information about whitebark pine, which is a candidate for listing under the Endangered Species Act is provided in **Appendix B**. Because whitebark pine does not exist near any of the historic properties and would not be affected by any management activities, this species will not be discussed further in this plan. Also provided in **Appendix B** is a list of plant species of concern that could potentially be found in the park or parkway. Surveys for vulnerable plants would occur before any ground disturbing work near historic properties to prevent potential harm to these species. Work would be delayed or modified to protect any sensitive plant species present.

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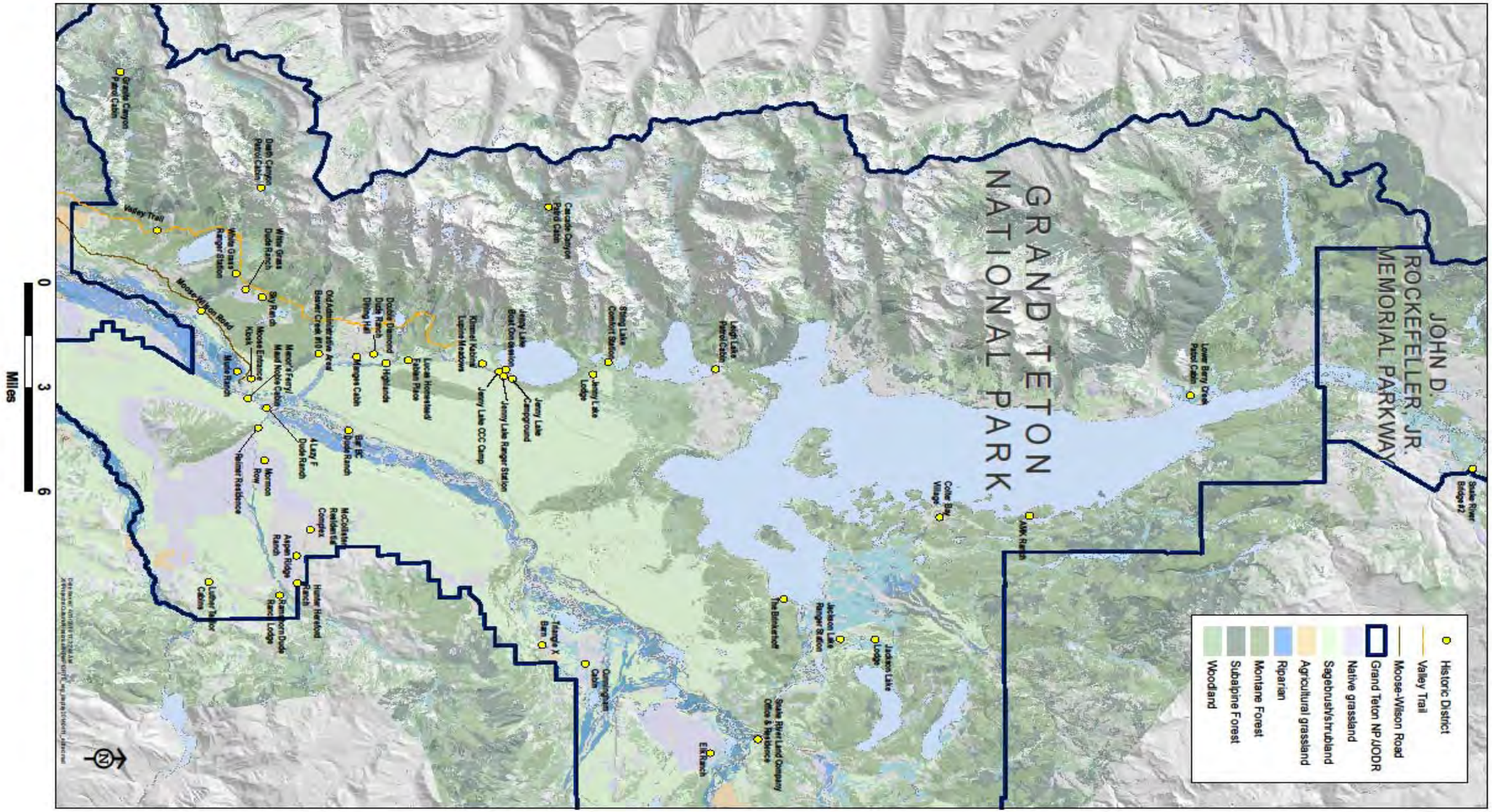

Figure 12. Historic Properties and Vegetation Types in Grand Teton National Park and John D. Rockefeller, Jr. Memorial Parkway

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Environmental Consequences
Methodology

Impacts on vegetation were evaluated using the process described in the "Methods for Analyzing Impacts" section at the beginning of this chapter.

Impact threshold definitions for vegetation are as follows. The mitigation measures in Chapter 2 would be implemented as appropriate during any project action and were considered in the analysis of the alternatives.

Intensity Level Definitions—Vegetation

Negligible: The impact to vegetation is at the lowest level of detection; barely measureable with hardly any perceptible consequences, either adverse or beneficial.

Minor: The impact to vegetation is detectable and measurable. The change is to a small portion of park-wide vegetation resources and does not include sensitive, rare, threatened, or endangered plant species or communities.

Moderate: The impact to local vegetation resources is readily apparent and considerably measurable. The change could have permanent consequences for local vegetative resources, or small portions of sensitive or rare plant species populations.

Major: The impact to vegetation is highly noticeable and substantial. This large and/or widespread change could have permanent consequences for vegetation resources, species or communities, through a substantial portion of their range within the park or regional landscape.

Duration

Short-term impacts. Effects generally last only during construction, and the resources resume their pre-construction conditions following construction.

Mid-term impacts. Effects lasting from the time construction is completed to the time that vegetation recovers from the construction/repair impacts. Mid-term impacts are common when ground disturbance occurs but native vegetation is planted or seeded in afterwards. Mid-term refers to impacts that will take longer than the period of construction to recover their values, but are not lost in perpetuity.

Long-term impacts. Effects lasting beyond the construction period, and the resources may not resume their pre-construction conditions for a longer period of time following construction. In some areas loss of certain resources, such as vegetation, is intended for the duration – for instance construction of a parking lot would include vegetation removal with a low likelihood that it would ever be returned to that site and may be lost in perpetuity.

Impacts of Alternative A (No-action Alternative) on Vegetation

Overall, Alternative A, the no-action alternative, would result in negligible to minor adverse impacts to wildlife associated with continuing current management at historic properties. These impacts would occur in the short term, mid-term, and long term. Ongoing impacts would continue due to the presence of humans, although at varying levels at the properties depending on maintenance, uses, and visitation levels; and vegetation removal for access and parking, vegetation modification and removal for structural fire protection, vegetation trampling from foot and vehicle traffic, and the on-going introduction and spread of noxious weeds despite efforts to treat weeds and revegetate disturbed areas with native plant species.

At many of the in-use properties, formalized circulation patterns reduce the additional vegetation impacts that would continue with informal use. At the focus properties, vegetation trampling from humans and vehicles occasionally accessing the sites, and ground and vegetation disturbance when stabilization or maintenance of structures occurs would also continue. Repairs to address unplanned emergencies would increase localized impacts.

The 32 In-Use Properties and the 11 Focus Properties

The no-action alternative would result in minor adverse impacts to vegetation associated with continuing current management at historic properties. These impacts would occur in the short term, mid-term, and long term. Because human and vehicular traffic serve as vectors for noxious weeds which readily colonize any recently disturbed or denuded area, visitor and staff access at properties currently in-use would continue to result in vegetation trampling and the introduction and spread of noxious weeds would continue at properties currently in use would continue to occur. Human and vehicular traffic serve as vectors for noxious weeds which readily colonize any recently disturbed or denuded area. At properties that are currently not in-use or underused, some vegetation trampling and the spread of noxious weed would occur but to a lesser extent. Access to these properties would occur less often, rarely in some cases. Localized ground and vegetation disturbance when stabilization or maintenance of structures occurs would also continue. Repairs to address unplanned emergencies would increase localized impacts.

Although there would be mitigation measures to minimize vegetation loss and the spread of exotic species during and after construction, Alternative A would at times cause new ground disturbance and have the potential to impact vegetation. Because these historic properties with current uses and the 11 under-used focus properties would be maintained or stabilized to the degree that they are currently cared for, vegetation would at times be disturbed or compacted by workers and the staging of materials. Types of activities that would impact vegetation include construction work to provide new utilities or fire detection and suppression systems; maintenance of existing utilities, parking, and site access; staging materials; grading to establish positive drainage away from structures; and stabilization and maintenance of structures and their foundations. Pre- and post-construction treatment of exotic plants and noxious weeds would occur where needed. The no-action alternative would result in minor, adverse, short-term, mid-term, and long-term effects on park vegetation resources.

For example, some types of work, such as digging up and replacing a broken water line to a structure, would destroy local vegetation and require seeding or planting to revegetate the area. The

continued maintenance of the in-use properties and occasional entry onto focus property sites in order to stabilize structures, often in the form of emergency stabilization, would result in continued access and periodic ground disturbance. Continued access to sites provides a vector for the spread of noxious weeds.

Fire management efforts to create defensible space around park properties, would continue to occur and affect vegetation within 30 – 90 feet of structures depending on fuel loading and fire risk conditions. Actual fire treatment specifications for historic properties vary by building and setting. Activities, as approved under the Fire Management Plan (NPS 2004b, updated 2009) range from mowing grass fuels up to twice annually at nine properties (Cunningham Cabin, 4 Lazy F Dude Ranch, Mormon Row, Aspen Ridge Ranch, Bar BC Dude Ranch, Hunter Hereford Ranch, Lucas Homestead/ Fabian Place, Luther Taylor Cabins, and McCollister Residential Complex) to periodically trimming limbs to 6 feet and removing accumulations of woody fuels to 10 tons/acre as needed.

At some properties, continued use and maintenance of informal access roads, driveways, and parking areas precludes the re-establishment of native vegetation and allows the non-formalized shapes and boundaries of these affected areas to shift and non-native plant species to invade and spread. The effects of this use and periodic ground disturbance for the purpose of stabilization and maintenance can, in part, be mitigated through an active invasive species management program. Current funding and staffing levels provide minimal control of the highest priority noxious weeds at these sites. Any increase in operational workload would not be supportable at current funding and staffing levels.

Mormon Row, White Grass Dude Ranch

Mormon Row:

The actions analyzed in the *Mormon Row Historic District Management Alternatives and Environmental Assessment* (NPS 1999) and approved in the *Mormon Row Historic District Management Preferred Alternative FONSI* (NPS 2000) are being implemented in 2015 (summer – end calendar year) with slight modifications based on current visitor use. The work includes constructing similarly sized northern and southern parking areas (each ~14 spaces rather than 6-8 and 18, respectively), bus parking and a turnaround near the Mormon Row/Antelope Flats roads junction, installing a vault toilet first at the southern parking area and potentially adding a second if needed, extending the accessible interpretive trail, which was previously approved for the southern parking area south to the Andy Chambers homestead, to connect to the Mormon Row Road/Antelope Flats Road junction (total new length would be 0.47 mile, longer by 0.32 mile). A separate parking area for buses and a bus turnaround east of the Mormon Row Road/Antelope Flats Road junction would also be constructed.

These slight changes do not significantly alter the conclusions of the plan analysis that impacts from the selected alternative on vegetation would be minor and temporary (NPS 2000). The plan noted that the interpretive trail would disturb soils and vegetation but it would prevent numerous social trails that would likely develop and cause a greater net disturbance. This is still true of the longer trail although it would increase the amount of permanently lost vegetation by approximately 5070 sf (1690 feet by 3 feet). All areas disturbed by the work or previously disturbed by informal visitor use

would be replanted with native species and efforts to control invasive non-native plant species and noxious weeds would also be part of vegetation management. Restoration of native plant species in some parts of the historic district would be adjusted in order to retain cultural landscape values. The restored species would be native grasses where these would be appropriate, rather than a mixture of native grasses, forbs, and shrubs.

White Grass Dude Ranch:

Under Alternative A the ongoing rehabilitation plan would continue to be implemented as approved in 2005. The impacts were detailed in the *White Grass Ranch Rehabilitation and Adaptive Use Environmental Assessment/Assessment of Effect*, September 2004; and *White Grass Ranch Rehabilitation and Adaptive Use Finding of No Significant Impact (FONSI)*, February 2005. Impacts to vegetation due to rehabilitation of White Grass Dude Ranch were determined to be minor to moderate, long-term, and adverse due to ground disturbance associated with utilities installation, grading around buildings, and installation of the spur road, parking area, hay shed, and well house. Mitigation measures incorporated into the plan to offset impacts included topsoil conservation, vegetation with native plant materials, and control of noxious weeds (NPS 2005). Similar to what would occur at Mormon Row, restoration of native plant species in some parts of the historic district would be adjusted in order to retain cultural landscape values. Native grasses would be restored rather than a mixture of native grasses, forbs, and shrubs where appropriate.

At both properties, ongoing efforts to replace nonnative vegetation with native species on formerly cultivated areas, and to treat noxious weeds and invasive nonnative plants, would continue to benefit vegetation. These efforts would result in long-term, moderate beneficial effects to vegetation resources under all alternatives.

Although some level of increased use at both of these sites could occur, formalizing pedestrian circulation with trails between the buildings would eliminate user-created paths and protect vegetation in the long term.

Cumulative Effects

Many types of construction and infrastructure maintenance projects that occur in the park and parkway affect vegetation resources. Such projects can directly damage or remove plants and they also increase the potential for introducing and spreading non-native plants that could displace less aggressive native species. Impacts due to construction typically affect vegetation during the work period but also extend several or more years into the future.

Past development and maintenance projects that have affected vegetation include the construction of a new Moose visitor center and additional housing at Moose and Beaver Creek, rehabilitation of the Moose headquarters complex, small-scale maintenance projects at park developed areas and roads, widening of Highway 89/191/287 from Jackson Lake Lodge north to Sargent’s Bay Picnic Area, water and wastewater line repairs (including first phases of replacement at Colter Bay Campground), and several phases of the construction of a multi-use pathway from the southern park boundary to South Jenny Lake.

The on-going implementation of Moose Headquarters Rehabilitation Site Work Plan includes limiting social trail development by defining visitor and staff circulation and rehabilitating existing redundant trails near Moose launch. Also on-going is the restoration of up to 760 acres of formerly cultivated land in the Mormon Row historic district that was prescribed under the Bison and Elk Management Plan (NPS 2007). When complete, this restoration work would represent a long-term, direct, moderate, beneficial impact to vegetation.

Examples of future work that will impact vegetation are water and wastewater system replacement and/or rehabilitation at Moose, Jenny Lake, Colter Bay Village, Jackson Lake Lodge, and Flagg Ranch, changes to Colter Bay visitor services infrastructure, Snake River boat launch improvements, construction of a multi-use pathway from Moose Junction to Antelope Flats Road Junction, and various types of construction proposed in the developing Jenny Lake Renewal Plan. The Moose water and wastewater system replacement will include a main water line from Moose to the 4 Lazy F Dude Ranch. If Wild and Scenic River designation of the Snake River Headwaters increases river access and visitation, the potential for trampling and vegetation loss through the establishment of additional trails and/or road access at some historic properties near the river would also be greater.

The effects of the ongoing rehabilitation at White Grass Ranch and improving infrastructure at Mormon Row, which were evaluated as short-term and minor, would not appreciably affect the cumulative impact of past, present, and reasonably foreseeable future actions.

Standard erosion and sediment control measures and revegetation practices are included as part of all actions considered in this cumulative impact analysis. Therefore, the cumulative impact on vegetation from other actions would be short- and long-term, direct, localized, negligible to minor, and adverse. The impacts of Alternative A, in combination with the impacts from other past, present, and reasonably foreseeable future actions, would result in short-, mid- and long-term, direct and indirect, localized, negligible to minor, adverse cumulative impacts. The effects of Alternative A would contribute minimally to the cumulative impact on vegetation resources.

Impacts of Alternative B (NPS Preferred Alternative) on Vegetation

Under Alternative B, there would continue to be ongoing minor vegetation impacts due to human activity at many of the historic properties although maintenance would be improved, compared to the no-action alternative by having best management practices in place and by maintaining properties more proactively instead of reactively. Because more work would initially be done at more of the properties, additional minor impacts would occur in the short term from continuing to rehabilitate White Grass Dude Ranch (with slight changes), rehabilitating up to four properties for adaptive reuse, deconstructing and removing three properties, and performing planned, proactive maintenance on the remainder. Exotic vegetation management and modification of vegetation to reduce fire fuels near some historic structures would continue.

In the long term, because the eight remaining focus properties would be better maintained and have assigned uses compared to the no-action alternative, more people on site could increase the potential for damaging vegetation. On the other hand vegetation outside formalized circulation routes would more secure because informal foot traffic and vehicle access would be reduced. Localized, minor to

moderate benefits to vegetation would occur at the three focus properties proposed for removal and restoration of 2.65 acres (total) to native plant species.

The 32 In-Use Properties, the 11 Focus Properties, Mormon Row and White Grass Dude Ranch

As under Alternative A, Alternative B would result in continued vegetation disturbance at the in-use properties from foot traffic and vehicle access by visitors and by staff performing periodic maintenance but, in general, management practices and efforts to minimize vegetation damage during maintenance activities would be improved throughout the park. Emergency-based reactive management, and associated impacts, would be greatly reduced by having a comprehensive management plan in place. At all properties where vegetation trampling or removal would occur due to construction, removal, or repair operations, the use of best management practices (BMPs) would serve to mitigate impacts that would be much more severe if these practices were not used. These BMPs include minimizing disturbance to vegetation, maintaining soils and vegetation by protecting them where possible with construction mats, and taking precautions against the spread of noxious weeds. These management practices must be used by NPS employees as well as contractors at each of the properties in order to avoid more severe impacts.

At the 32 in-use properties and two of the focus properties (Hunter Hereford Ranch, and Manges Cabin), where uses and preservation efforts would not change substantially, vegetation impacts would be negligible in the long term. Occasional maintenance would at times, depending on the work, disturb ground close to structures (generally within 10 feet) but these adverse impacts would be negligible to minor and occur in the short- and mid-term, until the vegetation grows back naturally or through revegetation efforts. Stabilization efforts, such as placing supports for the walls, at Luther Taylor Cabins would also cause very limited ground disturbance and negligible impacts in the long term.

Formalizing parking areas and walking trails at Mormon Row, White Grass Dude Ranch, Bar BC Dude Ranch, and other properties would be beneficial in the long term because designated areas and trails would deter the development of user-created trails and amorphous, potentially spreading parking areas and restore areas currently damaged by visitor use.

Vegetation would be affected at eight focus properties and at White Grass Dude Ranch due to the planned infrastructure improvements and some permanent removal of vegetation. Continuing maintenance at Hunter Hereford Ranch and Manges Cabin, and stabilization at Luther Taylor Cabins would negligibly affect vegetation. See **Table 9**, below, for a summary of vegetation disturbance and restoration estimates at the focus properties, Mormon Row, and White Grass Ranch, or **Appendix G** at the end of this document for more detailed estimates. A factor that has been considered is that, except where new trails or turnarounds would be constructed in previously undisturbed (or less disturbed) parts of the properties, repeated, informal use has already extensively damaged or removed vegetation in many places. All disturbed areas that can be revegetated with native plant species would be restored in the long-term. The long-term effects on vegetation from formalizing these uses would be minor. Where possible, Google Earth images from August 2013 were used to measure existing areas of ground disturbance at the historic properties and used in calculating the areas that would remain disturbed or that would be restored to native vegetation in the long term.

At Mormon Row and White Grass Dude Ranch, restoration of native plant species in disturbed or formerly cultivated areas and efforts to treat invasive noxious weeds and invasive non-native plants would result in moderate beneficial effects to vegetation resources under all of the alternatives.

If the option to potentially rehabilitate up to four Mormon Row houses (from north to south, the Thomas Murphy/Joe Heninger (Reed Moulton), John Moulton ("pink house"), Andy Chambers, and Thomas Perry/Roy Chambers houses) for adaptive reuse as park seasonal housing, disturbance to vegetation would be increased to a moderate extent in the short term and to a minor extent in the long term. Short-term disturbance would be due upgrading utilities, including drilling wells and installing water supply lines, septic tanks and absorption fields, and underground electric and communication lines. Short term disturbance is estimated at 20,120sf total (5030sf/house), with an additional 40,000sf to install underground electric and communication lines. All short-term disturbances would be alleviated in the long term by a separately approved, ongoing effort to restore native grass species to formerly cultivated areas within the district. Long-term disturbance of an estimated 6516sf total (1629sf/house) would occur as a result of the installation of small well (water treatment) houses and propane tank support pads.

The proposed minor modifications to the approved rehabilitation plan for White Grass Dude Ranch include not constructing a spur road to connect Death Canyon Road with the ranch building complex. Park management determined that this road is unnecessary. There is an informal trail at this location, which pedestrians would continue to use to access the ranch; vehicles could continue to use the White Grass Dude Ranch access road. Not creating a new access road, which would require permanently removing vegetation and which introduce a new vector for noxious weed introduction, would reduce the potential ground disturbance by an estimated 0.14 acres, a minor, localized, beneficial effect on vegetation.

At the three properties proposed for removal – McCollister Residential Complex, Aspen Ridge Ranch Residence and Barn, and Sky Ranch – deconstruction would cause short-term and mid-term ground and vegetation disturbance but removing several structures and access roads at each of these sites and restoring native plant communities would increase the amount of native species and natural ecosystem function in these areas in the long term and would result in moderate beneficial impacts in the long term.

Ultimately, Alternative B would result in the restoration of approximately three acres in the long term. A large part of this long-term benefit is the revegetation of an estimated total of 2.65 acres at three properties (Aspen Ridge Ranch, 0.31 acres; McCollister Residential Complex, 0.76 acres; and Sky Ranch, 1.59 acres) where structures, parking areas, and access roads would be removed.

Table 9. Summary of Alternative B Vegetation Impacts at the Focus Properties, Mormon Row, and White Grass Dude Ranch

Property	*Treatment*	*Types of Actions and Impacts*	*Total Estimated Ground Disturbance or Restoration in the Long Term*
4 Lazy F Dude Ranch	Rehabilitate	Addition of parking and circulation improvements, upgrade of utilities, in-kind replacements, and landscape restoration	3595sf (0.08 acres) restored. Updating the sewer system and water distribution lines would cause additional ST disturbance (sewer: 118,000sf or 2.72 acres; water: 32,700sf or 0.75 acres). Disturbed areas, except for maintenance access points, would be revegetated.
Aspen Ridge Ranch Residence and Barn	Remove	Removal of National Register listed buildings and site restoration, including access road	13,380sf (0.31acres) restored.
Bar BC Dude Ranch	Mix of Stabilize and Rehabilitate	Construction of off-site parking, restoration of cultural landscape elements; Staff, student, and preservation workers, visitor presence.	7200sf (0.17 acres) restored.
Beaver Creek #10	Rehabilitate	Located in a park developed area. Construction of parking and ABAAS circulation, exterior preservation in-kind; Higher staff presence in short term, low levels of staff and visitor presence in long term.	4208sf (0.10 acres) restored. Estimate of maximum ST disturbance to upgrade utilities = 2 x 2248' (building square footage) = 4496sf (0.10 acres).
Hunter Hereford Ranch	Maintain	Same as A. Proactive preservation maintenance; Storage use, occasional staff and visitor presence.	Negligible impact. Occasional ground disturbance within 10’ of building foundations.
Lucas Homestead/ Fabian Place	Maintain	Frequent, in-kind preservation; Improved interpretive site, occasional staff and visitor presence; occasional group gatherings.	3237sf (0.07 acres) restored.
Luther Taylor Cabins	Hazard Mitigation	Intermittent health and safety activities; subtle stabilization work. Infrequent staff presence, occasional visitor presence.	No new ground disturbance other than occasional short-term disturbance within 10’ of building foundation.
Manges Cabin	Maintain	Frequent, in-kind preservation; Storage use, occasional staff and visitor presence.	Occasional short-term ground disturbance within 10’ of building foundation.
McCollister Residential Complex	Remove	Removal of National Register listed buildings and site restoration, including access road.	33,011sf (0.76 acres) restored.
Mormon Row	Implement 2000 FONSI with minor design changes (Same as Alternative A)	Formalize circulation, install interpretive signs and trail, stabilize buildings; Higher staff presence short-term, improved interpretive site in long term, continuing visitor presence. (Same as Alternative A)	14,869sf (0.34 acres) LT disturbance more than the existing disturbed area. This total includes a longer interpretive trail (longer by 0.32 mile; new total length would be 0.47 mile, expanded from 0.15 mile in the

		********** Potential for rehabilitation of four houses for adaptive reuse as seasonal park housing. (Alternative B only)	approved plan; total additional area of the extended trail is 5069 sf (1690' x 3'). (Same as Alternative A) ********** Potential additional LT disturbance: 6516sf total (1629sf/house). (Alternative B only)
Sky Ranch	Remove	Removal of National Register listed buildings and site restoration, including access road (western spur road from junction with main access road that runs north of Death Canyon Road). The main access road would be administrative use only and rarely travelled.	69,220sf (1.59 acres) restored.
Snake River Land Company Office and Residence	Rehabilitate	Construction of ABAAS parking and circulation, upgrade of utilities, preservation in-kind; High staff presence short-term, Frequent, moderate staff and occasional visitor presence in long term.	1035sf (0.02 acres) additional LT disturbed area. Possibly 765sf (0.02 acres) restored if no overflow parking is formalized.
White Grass Dude Ranch	Implement 2005 FONSI with parking changes and do not construct the spur road.	On-going long-term phased rehabilitation; Staff, student, and occasional visitor presence. No spur road.	3248sf (0.09 acres) restored. Plus, no spur road of 400' x 15' = 6000sf (0.14 acre) would be constructed and vegetation would not be removed.
Alternative B Overall Result of LT Disturbance and Restoration			RESULT: Approximately 3.0 acres would be restored in the long term

Cumulative Effects

As described under Alternative A, many types of construction and infrastructure maintenance projects that occur in the park and parkway have the potential to affect vegetation resources. Such projects can directly damage or remove plants and they also increase the potential for introducing and spreading non-native plants that could displace less aggressive native species. Impacts due to construction typically do not affect vegetation only during the work period but extend several or more years into the future.

See the cumulative effects discussion for Alternative A, above, for examples of past, current and future development and maintenance of park facilities and effects on vegetation. Best management practices to mitigate impacts on vegetation, erosion and sediment control measure, and revegetation practices would also be implemented under all alternatives and included as part of all actions considered in this cumulative impact analysis.

Therefore, the cumulative impact on vegetation from other actions would be short- and long-term, direct, localized, negligible to minor, and adverse. The impacts of Alternative B, in combination with the impacts from other past, present, and reasonably foreseeable future actions, would result in short-, mid- and long-term, direct and indirect, localized, negligible to minor, adverse cumulative impacts. The effects of Alternative B would contribute minimally to the cumulative impact on vegetation resources.

Impacts of Alternative C on Vegetation

Alternative C would result in negligible to minor impacts to vegetation at historic properties in both the short term and long term. Impacts would be similar to those from Alternative A, the no-action alternative, but they would be reduced by having improved best management practices in place and by maintaining properties proactively instead of in response to emergencies. Foot traffic and vehicle access by visitors and by staff performing periodic maintenance would continue to damage vegetation near historic properties. Exotic vegetation management and modification of vegetation to reduce fire fuels near some historic structures would also continue. Limited stabilization and uses at the 11 focus properties would have little effect on vegetation.

The 32 In-Use Properties and the 11 Focus Properties

On the whole, Alternative C would result in negligible to minor effects to the park's vegetation resources. As under Alternative A, Alternative C would result in continued vegetation disturbance at historic properties from foot traffic and vehicle access by visitors and by staff performing periodic maintenance. However, emergency-based reactive management, and associated impacts, would be greatly reduced by having a comprehensive management plan in place. As periodic maintenance and stabilization activities would be planned rather than occurring in an emergency fashion, as in Alternative A, appropriate best management practices would be better incorporated to minimize or prevent damage to existing vegetation during maintenance activities. There would be limited, planned ground disturbance and revegetation of disturbed areas with native plants. No additional infrastructure or visitor support facilities would be installed at the 11 focus properties, and any ground disturbance caused by the proposed limited stabilization activities would be negligible to minor in the short term and negligible in the long term.

Mormon Row, White Grass Dude Ranch

The slightly modified infrastructure improvements at Mormon Row and the minor, mainly temporary impacts to vegetation would occur as described under Alternative A. On-going rehabilitation of White Grass Dude Ranch would continue as described under Alternative B, with no spur road constructed from Death Canyon Road to the main cabin. Work at both properties would result in localized, minor, adverse impacts because of localized ground and vegetation disturbance in the short term and minor beneficial impacts in the long term because use areas would be formalized and informal use impacts, such as social trail development, would not occur.

<u>Cumulative Effects</u>

As described under Alternative A, many types of construction and infrastructure maintenance projects that occur in the park and parkway have the potential to affect vegetation resources. Such

projects can directly damage or remove plants and they also increase the potential for introducing and spreading non-native plants that could displace less aggressive native species. Impacts due to construction typically do not affect vegetation only during the work period but extend several or more years into the future.

See the cumulative effects discussion for Alternative A, above, for examples of past, current and future development and maintenance of park facilities and effects on vegetation. Best management practices to mitigate impacts on vegetation, erosion and sediment control measure, and revegetation practices would also be implemented under all alternatives and included as part of all actions considered in this cumulative impact analysis. Therefore, the cumulative impact on vegetation from other actions would be short- and long-term, direct, localized, negligible to minor, and adverse. The negligible impacts of Alternative C on vegetation, in combination with the impacts from other past, present, and reasonably foreseeable future actions, would result in short-, mid- and long-term, direct and indirect, localized, negligible to minor, adverse cumulative impacts. The effects of Alternative C would contribute very minimally to the cumulative impact on vegetation resources.

Wildlife

Affected Environment

Grand Teton National Park and the John D. Rockefeller, Jr. Memorial Parkway provide habitat for a variety of wildlife species, including ungulates, carnivores, rodents, other small mammals, fish, amphibians, reptiles, and numerous bird species. Although many of the park's historic properties are located in or near park developed areas, and the presence of humans, human-related activities, and facilities have altered much of the native wildlife habitat, wildlife still use these areas. Many species occur near the historic properties due to the diverse types of habitat around them. This is especially true of some properties that are located in or near mixed habitat types, such as mixed woodland, shrub-steppe communities, and those bordering riparian areas. The park's properties are mainly located on the valley floor, in or near developed areas or primary roads. This is also true of the one property in John D. Rockefeller, Jr. Memorial Parkway, Snake River Bridge #2. The exceptions are a few backcountry cabins in the Teton Range or its foothills.

Wooded habitat at the base of the mountains and along creeks and the Snake River serves as important travel corridors for a variety of species. These areas facilitate connectivity between and within populations, allowing wildlife to migrate between seasonal ranges and to move between patches of suitable habitat. In Cottonwood Creek, for example, animals move between the west and east sides of the park as well as to the north and south because the creek riparian corridor connects to the Snake River north-south corridor.

The parkway provides habitat for a variety of bird and mammal species, many of which are concentrated along the Snake River corridor. Bison (*Bison bison*), elk (*Cervus elaphus*), mule deer (*Odocoileus hemionus)*, and moose (*Alces alces*) are all common summer residents. Small numbers of moose, and perhaps a few elk, winter in forested areas of the parkway due to deep and persistent snow cover. Black bears (*Ursus americanus*) and grizzly bears (*Ursus arctos horribilis*) are common, as are coyotes (*Canis latrans*), river otters (*Lontra canadensis*), and numbers of smaller mammals. In addition wolverine (*Gulo gulo luscus*) and mountain lion (*Felis concolor*) or their sign are seen occasionally. Notable bird life includes bald eagles (*Haliaeetus leucocephalus*), trumpeter

swans (*Cygnus buccinator*), peregrine falcons (*Falco peregrinus*), great blue herons (*Ardea herodias*), sandhill cranes (*Grus canadensis*), and a variety of other raptors, waterfowl, and passerine species which nest in or immediately adjacent to the parkway.

The NPS strives to maintain all components and processes of naturally evolving park unit ecosystems, including the natural abundance, diversity, and ecological integrity of animals (NPS 2006c). However, potential habitat near historic properties has been modified. These are human structures that have been in place for decades, most for more than 50 years. Habitat in close proximity to these human structures would be of poorer quality because human use has damaged or removed nearby vegetation. Nearby habitat would not provide important habitat components such as food, cover shelter, or areas for breeding and reproduction, or for movement/connectivity to other areas as well as unmodified, natural habitat farther from the historic properties would.

See **Appendix A** for additional information about the historic properties, including the types of vegetation and predominant wildlife species that may use nearby habitat, and photos if these are available. More detailed information about wildlife species and their use of park areas is also provided in **Appendix C**. Species federally listed as threatened or endangered are discussed separately in **Appendix K**, the biological assessment.

Threatened and Endangered Species

The USFWS has identified the following listed, candidate, or proposed threatened and endangered species as potentially occurring in Teton County, Wyoming, where Grand Teton National Park and John D. Rockefeller, Jr. Memorial Parkway are located. (Table 6; USFWS 2015). This list is from the USFWS's March 2015 species list, which fulfills the Service's requirement, under section 7(c) of the ESA of 1973, as amended, 16 U.S.C. 1531 *et seq.*, to provide a list of endangered and threatened species upon request for federal actions and NEPA compliance. See **Appendix C** for detailed information about each of these species as well as for the bald eagle, listed by the USFWS as species of special concern in Teton County. See **Appendix J** for the biological assessment of potential impacts to these threatened and endangered species under the NPS-preferred alternative, Alternative B.

Table 10. USFWS Threatened and Endangered Species List for Teton County, Wyoming

Species/Critical Habitat	Scientific Name	Status	Habitat
Canada Lynx	*Lynx canadensis*	Threatened	Montane forests
Canada Lynx Critical Habitat Designated areas include boreal forest landscapes within Fremont, Lincoln, Park, Sublette, and Teton Counties of Wyoming (see 50 CFR 17.95(a))			
Gray Wolf	*Canis lupus*	Experimental population, Non-essential	Forests, woodlands, shrublands, grasslands
Greater Sage-grouse	*Centrocercus urophasianus*	Candidate	Shrub-steppe (sagebrush) communities
Grizzly Bear	*Ursus arctos horribilis*	Threatened	Montane forests, woodlands, alpine meadows, prairies,

Species/Critical Habitat	Scientific Name	Status	Habitat
			riparian areas.
Yellow-billed Cuckoo (Western)	*Coccyzus americanus*	Threatened	Riparian areas west of Continental Divide. Likely not present in GRTE or JODR. See below.

The yellow-billed cuckoo is very unlikely to be found in the park or parkway. Park wildlife records contain only one confirmed observation, from 2000, which occurred near the southeastern boundary. Despite this observation, the historical record and breeding biology of the yellow-billed cuckoo suggest that the riparian habitat within the park, which is all above 6,300 feet, does not constitute suitable breeding habitat for the species. There is no designated critical habitat in the park or parkway.

Wyoming Species of Greatest Conservation Need

The *Wyoming State Wildlife Action Plan* (WGFD 2010) and the Atlas of Birds, Mammals, Amphibians, and Reptiles in Wyoming (Orobana et al. 2012) identify wildlife species of greatest conservation need in Wyoming. Many of these are also identified by the USFWS as priority species for conservation or monitoring. Table 11 lists the species of greatest conservation need that could use habitat near historic properties, along with their WGFD native species status (NSS) designation, and the habitat types they might be found in. Additional information about these species is provided in **Appendix C**, by habitat type.

Table 11. Species of Greatest Conservation Need with Potential Habitat near Historic Properties

Common Name, *Scientific Name*	WGFD Status[a]	Preferred Habitat, from WGFD 2010 and Orabona et al 2012, or as otherwise noted
Amphibians and Reptiles		
Boreal Toad, *Anaxyrus boreas boreas*	NSS1	Riparian
Columbia Spotted Frog, *Rana luteiventris*	NSS3	Riparian, aquatic
Northern Leopard Frog	NSSU	Historically present but believed extirpated. None confirmed in nearly 40 years.
Northern Rubber Boa, *Charina bottae*	NSS3	Foothills & lower montane zones, near water
Valley Gartersnake, *Thamnophis sirtalis fitchi*	NSSU	Plains, foothills, montane zones, usually near permanent water sources
Birds		
American Bittern, *Botaurus lentiginosus*	NSS3	Marshes
American Three-Toed Woodpecker, *Picoides dorsalis*	NSSU	Coniferous forests, especially those that have burned

Common Name, *Scientific Name*	WGFD Status[a]	Preferred Habitat, from WGFD 2010 and Orabona et al 2012, or as otherwise noted
Bald eagle, *Haliaeetus leucocephalus*	NSS2	Coniferous forests, or mixed cottonwood-riparian near large lakes and rivers.
Barrow's Goldeneye, *Bucephala islandica*	NSS3	Aspen; cottonwood-riparian; marshes; lakes and rivers associated with coniferous or mixed forests
Black Rosy-Finch, *Leucosticte atrata*	NSSU	Alpine grasslands, alpine moss-lichen-forb, barren ground, fallow agricultural areas.
Black Tern, *Chlidonias niger*	NSS3	Marshes, aquatic areas
Black-backed Woodpecker, *Picoides arcticus*	NSSU	Coniferous forests, especially those that have burned
Boreal owl, *Aegolius funereus*	NSS3	Mature coniferous and mixed coniferous/deciduous forests with scattered openings
Canvasback, *Aythya valisineria*	NSS3	Marshes, lakes, rivers
Caspian Tern, *Hydroprogne caspia*	NSS3	Marshes, aquatic areas
Clark's Grebe, *Aechmophorus clarkia*	NSSU	Marshes, lakes
Common Loon, *Gavia immer*	NSSI	Lakes above 6,000. Lower elevations during migration
Ferruginous Hawk, *Buteo regalis*	NSSU	Cottonwood-riparian, mountain-foothills grasslands, rock outcrops
Forster's Tern, *Sterna forsteri*	NSS3	Marshes, aquatic areas
Franklin's Gull, *Larus pipixcan*	NSS3	Marshes, lakes, scavenges in most open habitats below 8,000 feet
Great Gray Owl, *Strix nebulosa*	NSSU	Coniferous forests, aspen, mountain-foothills grasslands
Greater Sage-grouse, *Centrocercus urophasianus*	NSS2*	Shrub-steppe (sagebrush) communities
Harlequin Duck, *Histrionicus histrionicus*	NSS3	Rivers and lakes in mountainous areas
Lesser Scaup, *Aythya affinis*	NSS3	Marshes, lakes, rivers
Lewis's Woodpecker, *Melanerpes lewis*	NSSU	Pine-juniper, other conifersous forests, aspen,cottonwood-riparian, below 8,500 feet
Long-billed Curlew, *Numenius americanus*	NSS3	Sagebrush-grasslands, mountain foothills, and wet-moist meadow grasslands; irrigated native meadows; with aquatic areas nearby
Merlin, *Falco columbarius*	NSS3	Most habitats below 8,500 feet. (Rare, occasional visitor to the park in spring and fall.)

Common Name, *Scientific Name*	**WGFD Status[a]**	**Preferred Habitat, from WGFD 2010 and Orabona et al 2012, or as otherwise noted**
Northern Goshawk, *Accipiter gentilis*	NSSU	Coniferous and mixed-conifer/ aspen forest
Northern Pintail, *Anas acuta*	NSS3	Marshes and lakes in association with most habitats below 8,000 feet
Northern Pygmy-Owl, *Glaucidium californicum*	NSSU	Coniferous forests, aspen
Peregrine Falcon, *Falco peregrinus*	NSS3	Nests on cliffs often located near water, usually near a variety of open habitats with abundant prey
Redhead, *Aythya americana*	NSS3	Marshes, lakes, rivers
Swainson's Hawk, *Buteo swainsoni*	NSSU	Semi-open and open areas below 9000 feet; shrub-steppe, cultivated lands with scattered trees
Trumpeter Swan, *Cygnus buccinator*	NSS2	Marshes, lakes, rivers
Virginia Rail, *Rallus limicola*	NSS3	Marshes
White-faced Ibis	NSS3	Marshes, wet-moist meadows, lakes, irrigated meadows
Yellow-billed Cuckoo (Western), *Ciccyzus americanus*	NSSU*	Riparian areas west of Continental Divide; Unlikely to be present due to lack of lower elevation breeding and nesting habitat. See the biological assessment (**Appendix J**).
Fish		
Bluehead Sucker, *Catostomus discobolus*	NSS1	Mainstem and tributaries of large rivers
Northern Leatherside Chub, *Lepidomeda copei*	NSSU	Upper Snake River drainages. Distribution in the Snake/Salt River basin is believed limited to a small portion of Pacific Creek (WGFD 2010).
Yellowstone Cutthroat Trout, *Oncorhynchus clarkia bouvieri*	NSS2	Coldwater habitats in the Yellowstone River drainage to the Tongue River and upper Snake River tributaries, including Pacific Creek
Invertebrates		
Western Pearlshell, *Margaritifera falcata*	NSSU	Upper Snake and Bear rivers
Mammals		
American Pika, *Ochotona princeps*	NSSU	Talus field and outcrops of shattered rock near grass or forb meadiws in alpine grasslands, Engelmann spruce-subalpine fir, Douglas fir

Common Name, *Scientific Name*	WGFD Status[a]	Preferred Habitat, from WGFD 2010 and Orabona et al 2012, or as otherwise noted
Canada Lynx, *Lynx canadensis*	NSS1*	Dense coniferous forests, especially Engelmann spruce-subalpine fir, at high elevations. See the biological assessment (**Appendix J**).
Dwarf Shrew, *Sorex nanus*	NSS3	Coniferous forests, aspen, alpine grasslands, mixed alpine meadows, rock outcrops, talus fields
Fringed Myotis, *Myotis thysanodes*	NSS3	Coniferous forests, woodland-chaparral, basin-prairie shrublands; Low occurrence in GRTE; rare throughout Greater Yellowstone Network area, occurs where dry grass or shrub habitat and mature forest coexist (Keinath, 2007)
Long-eared Myotis, *Myotis evotis*	NSS2	Coniferous forests, cottonwood-riparian, basin-prairie shrublands, sagebrush-grasslands, buildings; Medium occurrence in GRTE (Keinath 2007)
Long-legged Myotis, *Myotis volans*	NSS3	Coniferous and deciduous forests, basin-prairie and mountain-foothills shrublands, riparian areas, buildings; Medium occurrence in GRTE (Keinath 2007)
Northern River Otter, *Lontra canadensis*	NSSU	Lakes, streams, and aquatic habitats in aspen, cottonwood-riparian, riparian shrub, willow, most meadow grasslands, and marsh-swamp wetlands
Preble's Shrew, *Sorex preblei*	NSS3	Marsh grass, creeks and bogs bordered by willow or riparian shrub, occasionally wetter areas of open conifer stands, in association with mountain-foothills grasslands, bordering association with mountain-foothills grasslands
Townsend's big-eared bat, *Corynorhinus townsendii*	NSS2	Deciduous forests, dry coniferous forests, basin-prairie and mountain-foothills shrublands buildings; Low occurrence in GRTE (Keinath 2007)
Water vole, *Microtus richardsoni*	NSS3	Subalpine and alpine meadow watercourses with overhanging banks, occasionally willow. Dry alpine meadows and mountain-foothills grasslands adjacent to streams
Wolverine, *Gulo gulo luscus*	NSS3	Coniferous forests, especially dense continuous stands in remote areas

Common Name, *Scientific Name*	WGFD Status[a]	Preferred Habitat, from WGFD 2010 and Orabona et al 2012, or as otherwise noted

[a] WGFD native species status (NSS) categories (WGFD 2010) are:
NSS1 = Populations imperiled due to greatly reduced numbers; extirpation in Wyoming is possible.
NSS2 = Populations restricted or declining in numbers and/or distribution; extirpation in Wyoming is not imminent AND ongoing significant loss of habitat.
NSS3 = Population size is restricted but extirpation is not imminent. AND habitat is restricted or vulnerable but no recent or on-going loss; species is sensitive to human disturbance.
NSSU = Population status and trends are unknown; species-specific surveys are needed due to current monitoring techniques that are not adequate to determine population status and trends..
*Indicates a federally listed species (including candidates for listing)

Migratory Birds

The Migratory Bird Treaty Act, 16 U.S.C. 703, enacted in 1918, prohibits the taking of any migratory birds, their parts, nests, or eggs. EO 13186 defines the responsibilities of federal agencies to protect migratory birds and directs them to minimize adverse effects and promote their conservation. Neotropical migratory birds are of particular concern to wildlife managers because they have been experiencing severe population declines throughout their North American range (Askins et al. 1990). Habitat fragmentation and loss of winter range are among factors believed responsible for these declines (Hutto 1988; Robbins et al. 1989). Neotropical migratory birds include raptors, passerines, and shorebirds that breed in North America, but migrate to Mexico, Central and South America for the winter. In Wyoming, more than 160 bird species are considered neotropical migrants (Cerovski et al. 2001) with peak migration periods occurring in May and September through early October. Nesting is typically initiated from mid-May to mid-June and most young fledge nests sometime in June to late-July; however these dates vary by species and annually due to snow melt and when deciduous trees and shrubs begin producing leaves in the spring. Due to the mixture of habitats present, a variety of migratory bird species may occur in habitat adjacent to historic properties.

Environmental Consequences
Methodology

Impacts on wildlife, including state-designated species of greatest conservation need, and their habitats were evaluated using the process described in the “Methods for Analyzing Impacts” section at the beginning of this chapter and the intensity level definitions described below.

Section 7(a)(2) of the ESA, requires federal agencies to consult with the USFWS to ensure that they are not undertaking, funding, permitting, or authorizing actions likely to jeopardize the continued existence of listed species or destroy or adversely modify designated critical habitat. Potential impacts on threatened and endangered species from Alternative B, the NPS-Preferred Alternative, were assessed in a separate biological assessment (**Appendix J)** for consultation purposes. The potential impacts to threatened and endangered species under Alternatives A and C were evaluated as described above for general wildlife species and the state-designated species of greatest conservation need.

Impact threshold definitions for wildlife and their habitats are as follows. The mitigation measures in Chapter 2 would be implemented as appropriate during any project action and were considered in the analysis of the alternatives.

Intensity Level Definitions – Wildlife

Negligible: The action might result in a change in wildlife, but the change would not be measurable or would be at the lowest level of detection and so slight that they would not be of any measurable consequence to the population.

Minor: The action might result in a detectable change, but the change would be slight and have a local effect on a population. This could include changes in the abundance or distribution of individuals in a local area, but not changes that would affect the viability of local populations.

Moderate: The action would result in a clearly detectable change in a population. This could include changes in the abundance or distribution of local populations, but not changes that would affect the viability of regional populations.

Major: The action would be severely adverse or exceptionally beneficial to a population. The effects would be substantial and highly noticeable, and they could result in widespread change. This could include changes in the abundance or distribution of a local or regional population to the extent that the population would not be likely to recover (adverse) or return to a sustainable level (beneficial).

Duration

Short-term Impacts. Effects lasting for the duration of construction plus one additional year post-construction.

Long-term Impacts. Effects lasting longer than one year post-construction.

Impacts of Alternative A (No-action Alternative) on Wildlife

Overall, Alternative A, the no-action alternative, would result in negligible to minor adverse impacts to wildlife in both the short term and long term. These impacts, associated with continuing current management at historic properties, would continue because humans would continue to be present at the historic properties (although at varying levels at the properties depending on maintenance, uses, and visitation levels); and local habitat would be of lower quality due to vegetation removal for access and parking, vegetation modification and removal for structural fire protection, vegetation trampling from foot and vehicle traffic, and the on-going introduction and spread of noxious weeds.

At many of the in-use properties, circulation patterns formalized in the past would continue to reduce potential habitat impacts and the likelihood that wildlife would be displaced from the immediate area. Some wildlife become more tolerant of the presence of humans at these locations

and would be less disturbed by people at properties than would other less tolerant species. At the focus properties, vegetation trampling from humans and vehicles occasionally accessing the sites, and ground and vegetation disturbance when stabilization or maintenance of structures occurs would also continue. Repairs to address unplanned emergencies would increase localized impacts.

Threatened and endangered species would primarily be negligibly affected by Alternative A management. There would be low potential for human activity at the properties to disturb and displace wildlife that are listed as threatened or endangered partly because there would be a low likelihood that individual Canada lynx or gray wolf, for example, would travel near historic properties. Greater sage-grouse could be present near Mormon Row but an area closure is, and would continue to be, instituted to protect them from disturbance. Mitigations (see Chapter 2) would be in place to protect habitat, including sagebrush and lynx habitat where it might be present. The park would continue to educate staff and visitors, and enforce regulations, about proper food storage to prevent bears from becoming conditioned to seek human foods and the wildlife conflicts that would result.

Because of changed conditions since the time of the *White Grass Ranch Rehabilitation and Adaptive Use Environmental Assessment/Assessment of Effect*, September 2004; and *White Grass Ranch Rehabilitation and Adaptive Use Finding of No Significant Impact (FONSI),* February 2005 (NPS 2005), with grizzly bears likely to be present, see the biological assessment (**Appendix K**) for a determination of potential effect. Although specifically written to analyze the preferred alternative, the analysis in the biological analysis for White Grass Dude Ranch would be true of all three alternatives because the actions and potential impacts are nearly the same under all three.

The 32 In-Use Properties

General Wildlife

Continuing current management of these historic properties with established uses (common to all alternatives) would result in negligible to minor adverse impacts to wildlife using habitat near individual historic properties. Important wildlife uses of intact natural habitat, such as for food, cover, shelter, breeding/reproduction, overwintering, and movement/connectivity, are reduced in developed areas where there are structures, associated infrastructure, maintenance of buildings and landscapes, and residential or visitor use. The presence of humans, structures, and pavement in some cases, have removed or degraded wildlife habitat, and limited the number and variety of species that may use areas near historic properties, particularly those near or in larger developments such as Jackson Lake Lodge (see photo, below) or Colter Bay Village. At properties in less developed areas, wildlife may use adjacent habitat. Because property uses, maintenance, and security needs would not change, the existing potential for some disturbance or displacement of wildlife near historic properties would not change and would continue to occur into the future. Maintenance-related ground disturbance and the potential for killing individual,

small animals such as rodents, reptiles or amphibians, or eliminating their habitat would continue. Occasional maintenance would cause construction noise, which could displace wildlife from the area in the short and long term. Disturbed ground would be revegetated and rehabilitated following maintenance, which would reduce levels of disturbance and habitat loss in the long term to negligible to minor.

Under all alternatives, fire management efforts to create defensible space around some park properties would continue to occur as needed and could affect vegetation within 30 – 90 feet of structures (Cunningham Cabin, see photo below) depending on fuel loading and fire risk conditions. Actual vegetation treatment specifications vary by building and setting. Activities, as approved under the Fire Management Plan (NPS 2004b, updated 2009) range from mowing grass fuels up to twice annually to periodically trimming limbs to 6 feet and removing accumulations of woody fuels to 10 tons/acre. These efforts would cause short-term disturbance and long-term decreases in habitat quality and usability near structures.

Under Alternative A, maintenance staff would at times need to respond to emergencies due to aging and deteriorating infrastructure. Such work, under less than ideally planned conditions, could cause larger areas of ground disturbance than planned work would. Potential displacement of wildlife from construction activities and noise would also be increased during these short-term activities.

Whenever possible, work would be scheduled when neotropical migratory birds would not be nesting. If this cannot be done and work would occur between May 1 and August 1, bird surveys would be performed to identify if any are present and protections would be put in place to prevent impacts (see Mitigation Measures).

Exotic vegetation management at identified problem areas would at a minimum continue at existing levels but could increase due to continued introduction and spread of exotic plants within the park. This work is often done pre- and post-construction and would extend the period during which the presence of park staff could potentially disturb some wildlife species and cause them to avoid the area while the work is occurring. Beneficial effects would occur when treatment of nonnative plants and replacement with native species is successful.

Human activity can cause a buffer of unused habitat around the developed area, the size depending on species and individual levels of tolerance for human activities.

Wyoming Species of Greatest Conservation Need

Under Alternative A, use of nearby habitat by special status species such as migratory birds, mammals, bats, and amphibians would generally remain as it is currently, particularly when preservation work occurs at properties located well within a park development. Continuing current property uses, human presence, and maintenance activities would continue to have the potential to displace sensitive species in the future.

Foot traffic and maintenance activities could trample and kill individual reptiles, amphibians, and shrews. Burrows and nests could be damaged or destroyed, although impacts on nesting birds would be prevented by pre-work surveys (see Mitigation Measures). Fire management efforts to create defensible space around park structures would continue to have the potential to cause short-term disturbance and long-term decreases in habitat quality and usability near structures.

Screening to prevent bat species from occupying structures for roosting, nesting, and hibernating has been installed on park buildings and would continue to be installed when necessary. Screening on historic structures would be done in a way that does not adversely affect historic character. Prior to maintenance or preservation work, surveys to determine if bats were present and mitigations such as rescheduling the work to occur after bats have left the area would be put in place. If bats had been using historic structures prior to being excluded, they could experience minor adverse impacts due to losing access to this roosting habitat. Natural roosting habitat may be available in nearby forests.

None of the work involved in continuing current management under Alternative A would occur in water bodies and would not directly affect any of the fish species or the western pearlshell. Mitigation measures (see Chapter 2) include proper disposal of construction-related debris and control and prevention of leaks and dust, which could indirectly affect these species.

Some species, such as bald eagles, other raptors, and trumpeter swans, may continue to be displaced from using habitats near park developed areas and/or heavily visited historic properties because of high levels of human activity and/or habitat alteration. Human activity can cause a buffer of unused habitat around these developed areas, the size depending on species and individual levels of tolerance for human activities. Individuals of these sensitive species could be affected by the presence of people and facilities, but no population level impacts on these species would occur from this alternative. No actions that could lead to the “take” of a migratory bird, their young, eggs, or nests, as defined under the Migratory Bird Treaty Act, would occur under the no-action alternative. Alternative A would continue to have the potential for long-term, indirect, localized, negligible, adverse impacts.

Threatened and Endangered Species

Canada Lynx:

For Canada lynx, most individuals would avoid developed areas and adjacent habitats. Transient individual animals may occasionally move through developed areas, although this would be uncommon. The presence of people and facilities could displace these individuals and cause them to move away from usable habitat near the property, but the potential for affecting lynx would be insignificant and discountable. These actions would not impede or affect connectivity or movement of lynx through the action area. No population level impacts on this species would occur.

The Upper Granite Canyon, Death Canyon, and Lower Berry patrol cabins, White Grass and Jackson Lake ranger stations, Murie Ranch, The Brinkerhoff, Jackson Lake Lodge, and AMK Ranch, are within lynx analysis units (LAUs) in the park. Snake River Bridge #2 is in a small portion of an LAU that juts into the parkway. The bridge is at the southern end of the Headwaters at

Flagg Ranch development and part of Highway 89/191/287 where the road crosses the Snake River. These units contain a mix of suitable and unsuitable habitat for lynx. Habitat immediately surrounding these historic properties is likely to be unsuitable. It would be of lower quality due seasonal human occupation, ground and vegetation disturbance from the occupants, and some vegetation clearing for structural fire protection. Occasional preservation work at historic properties located in these units in the park and parkway would have a similar insignificant potential to affect lynx.

Greater Sage-grouse:

The analysis includes the greater sage-grouse here with federally listed species since it is a candidate species (75 FR 13910, March 23, 2010) and a listing decision is expected later in 2015. Shrub-steppe habitat for greater sage-grouse is present near eleven of the 32 in-use historic properties. Cunningham Cabin, Menor's Ferry/Maud Noble Cabins, Moose Entrance Kiosk in its current location at the Moose Entrance Station, and the Reimer Residence are located in the sage-grouse core area. The Double Diamond Dude Ranch Dining Hall, The Highlands, Kimmel Kabins, Murie Ranch, Ramshorn Dude Ranch Lodge, and Triangle X Barn are all outside the core area but within the occupied habitat area identified by the local working group (see Appendix C). Habitat east of the Moose-Wilson Road from the Death Canyon Road north is within occupied habitat. As described above, vegetation and potential habitat adjacent to structures at most of the historic properties has been affected by human activity, with reduced quality that would be less suitable for use by many wildlife species.

Occasional maintenance, including unscheduled emergency repairs, and the continuation of current uses of historic properties would continue to negligibly affect this species. Maintenance work would occur in previously disturbed areas surrounding historic properties. The park would follow habitat conservation strategies and the core area management guidelines (State of Wyoming EO 2011-5) that have been developed to prevent sagebrush habitat removal and fragmentation and disturbance to grouse during breeding, nesting, and brood-rearing as much as possible. Mitigations would be in place to protect shrub-steppe sagebrush habitat in the park (see Mitigations).

Individual birds could be disturbed when people are present, but the potential for affecting sage-grouse would be very low and at insignificant and discountable levels. No population level impacts on these species would occur due to actions at the in-use properties.

Grizzly Bear:

The degree of human activity, both visitor and staff, that currently occurs would continue under the no-action alternative. This activity would continue to deter some grizzly bears from using habitat near some historic properties. The quality of habitat at park developed areas, where some properties are located, would remain low due to existing development and levels of human use. Grizzly bears may pass through nearby areas, particularly those with wooded riparian vegetation that would provide cover. To prevent wildlife conflicts due to bears becoming conditioned to seek human food, the park has rules regarding proper food storage, regularly provides information to visitors and concessioners about its importance, monitors compliance, and enforces these regulations (see

Mitigations). The park would continue to maintain the 'no net loss of grizzly habitat' in the recovery zone/primary conservation area (USFWS 2007).

Some individual grizzly bears may avoid some historic properties due to the presence of people and facilities, but no population level impacts on this species would occur due to this alternative. Therefore, the occasional short-term localized maintenance and repair projects at in-use properties under Alternative A would continue to have a low potential to affect individual grizzly bears near historic properties.

Mormon Row, White Grass Dude Ranch

General Wildlife

Mormon Row:

The actions analyzed in the *Mormon Row Historic District Management Alternatives and Environmental Assessment* (NPS 1999) and approved in the *Mormon Row Historic District Management Preferred Alternative FONSI* (NPS 2000) are being implemented in 2015 (summer – end of calendar year 2015) with slight modifications based on current visitor use. The work (see **Figure 10**, p. 70) includes constructing similarly sized northern and southern parking areas (each ~14 spaces rather than 6-8 and 18, respectively), bus parking and a turnaround near the Mormon Row/Antelope Flats roads junction; installing a vault toilet first at the southern parking area and potentially adding a second if needed; and extending the accessible interpretive trail, which was approved from the southern parking area south to the Andy Chambers homestead, to connect to the Mormon Row Road/Antelope Flats Road junction (total new length would be 0.47 mile, longer by 0.32 mile). A separate parking area for buses and a bus turnaround east of the Mormon Row Road/Antelope Flats Road junction would also be constructed. Both short- and long-term ground disturbance, described below, would result but the work was considered beneficial in the long term because it as focuses and prevents the expansion of visitor-disturbed areas in the long term. Where possible, ground-disturbing work occurred on already impacted areas, see **Figure 13**.

Figure 13. Ground disturbance at the north Mormon Row parking area, 8/2/2013.

These minor changes do not alter the conclusions of the EA and FONSI that impacts from the selected alternative would be minor and that in the long term the potential for human-wildlife contact and conflicts could increase with higher numbers of visitors (NPS 2000). Mormon Row is popular with summer visitors and easily accessed, resulting in a higher probability for interaction and conflict. Workers on site would also add to this potential for conflicts.

The potential for human-wildlife (bison) conflicts exists under current conditions and could increase in the long term if higher visitation occurs in the future. There could also be a higher potential for some wildlife, such as birds, squirrels, chipmunks, and coyotes, to become food-conditioned after picnic tables are installed and more visitors are likely to linger in the district with food that could become available to the animals despite regulations regarding food storage and not feeding wildlife.

The plan noted that while the interpretive trail would disturb soils and vegetation, it would prevent numerous social trails that would likely develop and cause a greater net disturbance. This is still true of the longer trail although it would increase the amount of permanently lost vegetation by approximately 5070 sf (1690 feet by 3 feet). All areas disturbed by the work or previously disturbed by informal visitor use would be replanted with native species and efforts to control invasive non-native plant species and noxious weeds would also be part of vegetation management.

For Mormon Row, some species are less likely to be affected than others by the presence of humans. For example, bison often use Antelope Flats and the Mormon Row area during summer and do not appear to be displaced by visitors at Mormon Row or the other properties on the east side of the valley, such as Hunter Hereford Ranch and the Luther Taylor Cabins.

Fire management efforts to create defensible space around park structures would continue to have the potential to cause short-term disturbance and long-term decreases in habitat quality and usability near structures. Staff periodically mow the grasses around the Mormon Row structures, as approved under the Fire Management Plan (NPS 2004b, updated in 2009).

Ongoing efforts to replace nonnative vegetation with native species on formerly cultivated areas, and to treat noxious weeds and invasive nonnative plants, would continue to benefit vegetation at Mormon Row. These efforts would result in long-term, moderate beneficial effects to vegetation resources under all alternatives.

White Grass Dude Ranch:

Under Alternative A the ongoing rehabilitation plan would continue to be implemented as approved in 2005. The impacts were detailed in the *White Grass Ranch Rehabilitation and Adaptive Use Environmental Assessment/Assessment of Effect*, September 2004; and *White Grass Ranch Rehabilitation and Adaptive Use Finding of No Significant Impact (FONSI)*, February 2005.

Impacts to vegetation due to rehabilitation of White Grass Dude Ranch were determined to be minor to moderate, long-term, and adverse due to ground disturbance associated with utilities installation, grading around buildings, and installation of the spur road, parking area, hay shed, and well house. Mitigation measures incorporated into the plan to offset impacts included topsoil conservation, vegetation with native plant materials, and control of noxious weeds (NPS 2005). The

restored species would be native grasses where these would be appropriate, rather than a mixture of native grasses, forbs, and shrubs.

Under Alternative A, there would be no change to the effects outlined under the above previously approved plan for White Grass Dude Ranch. The on-going rehabilitation at White Grass Dude Ranch would continue to have the potential for wildlife disturbance during construction periods, when visitors are present, and when there is overnight occupancy. Effects would include localized habitat degradation on site due to infrastructure such as parking and road access, increased disturbance and potential displacement from the area due to the presence of people, vehicles or equipment, and noise during construction and when people are visiting or resident at the properties. The possibility that visitation may increase at these properties in the long term after rehabilitation or infrastructure improvements are complete could also increase the degree that wildlife species avoid the area and nearby habitat. Formalizing pedestrian circulation with trails between the buildings would eliminate user-created paths and protect vegetation in the long term.

Ongoing efforts to replace nonnative vegetation with native species on formerly cultivated areas, and to treat noxious weeds and invasive nonnative plants, would continue to benefit vegetation at White Grass Dude Ranch. These efforts would result in long-term, moderate beneficial effects to vegetation resources under all alternatives.

Wyoming Species of Greatest Conservation Need

Potential impacts to these species at Mormon Row and White Grass Dude Ranch under Alternative A would be the same as described above for general wildlife species. These impacts range from the potential trampling of individual reptiles, amphibians and shrew, damage or destruction of burrows, to short-term displacement from the area of individuals that are sensitive to the presence of humans. The potential for human-wildlife contact and conflicts could be somewhat higher if visitation increases after the Mormon Row infrastructure improvements are implemented during summer 2015.

The White Grass FONSI (NPS 2005) noted that long-term, negligible to minor adverse impacts to species of management concern would occur due to greater human occupancy, overnight users, and associated non-natural sound that could increase the potential for disturbance and displacement of sensitive species. The document also noted that there would be no effect on bald eagles. On rare, special occasions, larger gatherings of people at the Western Center for Historic Preservation (the rehabilitated White Grass Dude Ranch) would occur, with the potential to temporarily increase disturbance to wildlife and cause them to avoid the area while people are present. The plan also stated that disturbance during construction activities could displace species and there would be long-term loss of some habitat due to wildlife continuing to avoid the immediate area. Effects were considered negligible to minor.

Threatened and Endangered Species

As described above for general wildlife species, the effects under Alternative A would not be significantly different from those analyzed in the previously approved plans. The *Mormon Row Historic District Management Preferred Alternative FONSI* concluded that impacts from the selected alternative during construction would be minor and temporary (insignificant and/or

discountable, in today's terms) and that in the long term the potential for human-wildlife contact and conflicts could increase with higher numbers of visitors (NPS 2000). The plan (NPS 1999) said that there would be no effect on threatened and endangered species although it did note a potential increase in wildlife conflicts with improved site access. The site improvements mainly formalize existing use and circulation. Updated information on management efforts to protect these species is provided below.

Canada lynx, gray wolf, and grizzly bear:

Work to implement improvements at Mormon Row may affect but would not be likely to adversely affect Canada lynx, gray wolf, and grizzly bear if individuals moved into the area. Some displacement of individual animals could occur due to increased human presence and the potential for social trails and dispersed human use outside of the footprint of the project area. White Grass Dude Ranch is located in the Granite Lynx Analysis Unit. The USFWS concurred with the NPS determination of "*may affect, not likely to adversely affect"* for grizzly bear, Canada lynx, and gray wolf. But, because of changed conditions since the time of the *White Grass Ranch Rehabilitation and Adaptive Use Environmental Assessment/Assessment of Effect*, September 2004; and *White Grass Ranch Rehabilitation and Adaptive Use Finding of No Significant Impact (FONSI),* February 2005 (NPS 2005), with grizzly bears likely to be present, see the biological assessment (**Appendix K**) for a determination of potential effect. Although specifically written to analyze the preferred alternative, the analysis in the biological analysis for White Grass Dude Ranch would be true of all three alternatives because the actions and potential impacts are nearly the same under all three.

Greater sage-grouse:

Mormon Row is within the state-designated greater sage-grouse core area. The park would follow habitat conservation strategies and the core area management guidelines (State of Wyoming EO 2011-5) that have been developed to prevent sagebrush habitat removal and fragmentation as much as possible. Mitigations would be in place to protect shrub-steppe sagebrush habitat in the park and prevent disturbance to sage-grouse during breeding, nesting, and brood rearing (see Mitigation Measures). Also, since 2004 a seasonal wildlife closure (March 15 – May 15) has been implemented to prevent people from approaching and potential affecting the birds on a nearby active lek. The high count of grouse actively using the lek during 2014 was 81, which represents the highest attendance at any known lek within the park. Ongoing restoration of native vegetation would continue to benefit sage-grouse.

White Grass Dude Ranch is outside both the state-designated sage-grouse core area and occupied habitat identified by the park. Therefore, no effects on sage-grouse would be expected.

4 Lazy F Dude Ranch, Aspen Ridge Ranch Residence and Barn, Bar BC Dude Ranch, Beaver Creek #10, Hunter Hereford Ranch, Lucas Homestead/Fabian Place, Luther Taylor Cabins, Manges Cabin, McCollister Residential Complex, Snake River Land Company Office and Residence, Sky Ranch

General Wildlife

Aspen Ridge Ranch Residence and Barn, Bar BC Dude Ranch, Beaver Creek #10, Lucas Homestead/Fabian Place, Luther Taylor Cabins, McCollister Residential Complex, Snake River Land Company Office and Residence, Sky Ranch:

Under Alternative A, the no-action alternative, the low levels of visitation and rare as-needed maintenance at eight of the 11 underused focus properties would continue to negligibly affect wildlife by causing occasional disturbance and potential avoidance of the area when people are present. Rare, unplanned emergency repairs to fix serious structural deficiencies would increase the potential for disturbance while work activities occur.

As in the past, very little work at most of these properties would occur under Alternative A. Occasional work would result in short-term, negligible to minor localized effects on wildlife species of special concern that may use habitat near individual properties. As described for the historic properties with current uses, maintenance staff may need to respond to emergencies due to aging and deteriorating infrastructure. These unplanned activities would add to ground disturbance and potential displacement of wildlife from construction activities, human activity, and noise. Whenever possible, work would be scheduled when neotropical migratory birds would not be nesting. If this cannot be done and work would occur between May 1 and August 1, bird surveys would be performed to identify if any are present and put in place protection to prevent impacts.

Fire management efforts to create defensible space around some park properties, would continue to occur and affect vegetation within 30 – 90 feet of structures depending on fuel loading and fire risk conditions. Actual fire treatment specifications for historic properties vary by building and setting. Activities, as approved under the Fire Management Plan (NPS 2004b, updated 2009) range from mowing grass fuels up to twice annually at seven of the 11 properties (Aspen Ridge Ranch, Bar BC Dude Ranch, Lucas Homestead/ Fabian Place, Luther Taylor Cabins, and McCollister Residential Complex, plus 4 Lazy F Dude Ranch and Hunter Hereford Ranch, below) to periodically trimming limbs to 6 feet and removing accumulations of woody fuels to 10 tons/acre.

Exotic vegetation management at identified problem areas would at a minimum continue at existing levels but could increase due to continued introduction and spread of exotic plants within the park. This work is often done pre- and post-construction, may include mechanical (pulling by hand) and or chemical treatments, and would extend the period during which the presence of park staff could potentially disturb some wildlife species and cause them to avoid the area while the work is occurring. Once completed, the successful removal of nonnatives and replacement with native plants would benefit wildlife species by improving the native quality and potential use as natural habitat.

4 Lazy F Dude Ranch, Hunter Hereford Ranch, and Manges Cabin:

At these three focus properties, higher levels of maintenance activity, human activity, and associated noise would have the potential to disturb wildlife and displace them from the immediate area. Effects would be at a negligible to minor level at Manges Cabin and Hunter Hereford Ranch, and minor at 4 Lazy F Dude Ranch.

Exotic vegetation management and potential benefits to wildlife by improving habitat, as described above, would occur at all three properties as needed. Fire management efforts to create defensible space would continue to occur at the 4 Lazy F Dude Ranch and Hunter Hereford Ranch and affect vegetation within 30 – 90 feet of structures depending on fuel loading and fire risk conditions. Activities, as approved under the Fire Management Plan (NPS 2004b, updated 2009) include mowing grass fuels up to twice annually, periodically trimming limbs up to 6 feet, and removing accumulations of woody fuels to 10 tons/acre.

Potential impacts to wildlife would be somewhat higher at 4 Lazy F Dude Ranch because of its location within the Snake River riparian corridor. As shown by wildlife travel routes, this area has high value for facilitating wildlife movements for several species. The riparian corridors of the Snake River, Cottonwood Creek, and Ditch Creek all converge in this area. Each is very important for wildlife movement because they represent areas of cover surrounded by sagebrush. As such, they facilitate movement of cover-preferring species north and south, and most importantly east and west connecting forested areas of the Teton and Gros Ventre mountains. The only relatively intact north-south wildlife movement route along the Snake River runs just west of the 4 Lazy F Dude Ranch and skirts the Moose developed area to the west. Combinations of terrain, vegetation patterns, and developments at Dornan's and NPS headquarters at Moose force most wildlife into this area. Grizzly and black bears, cougars, moose, deer, elk, and several other species have been documented using this corridor. Its riparian areas and nearby shrub-steppe are also well known elk and moose calving areas.

Disturbance to elk, in particular, would likely be greater at 4 Lazy F Dude Ranch because they use the area and surrounding habitat for calving in late May-June, and cows and calves remain in the area from June through the summer. Elk classification flights, which occur in late July or early August, have counted an average of approximately 50 elk (cows and calves) in the immediate area over the past 5 years. There is visitor use, particularly by horseback riders, in the area Cottonwood Creek and 4 Lazy F Dude Ranch areas during the summer but numbers are unknown.

Wyoming Species of Greatest Conservation Need

The continuation of the current low levels of use and low human presence at the nine of the 11 focus properties would continue to negligibly affect special concern species. It is possible that occasional foot traffic and maintenance activities could trample and kill individual reptiles, amphibians, and shrews. Burrows and nests could be destroyed, although impacts on nesting birds would be less likely due to pre-work surveys (see Mitigation Measures).

Because 4 Lazy F Dude Ranch and Hunter Hereford Ranch would be maintained, people would be on site more often than at the other underused properties. Some maintenance activities would disturb ground and vegetation. The effectiveness of adjacent habitat for special concern species is

likely reduced compared to undisturbed habitats, although less than at regularly maintained properties with higher levels of human use. A bald eagle nest, actively used as of 2014, is very close to 4 Lazy F Dude Ranch. It is approximately 0.55 miles from the barn and road at the northernmost part of the property. An area closure to reduce disturbance to eagles within this territory, an area closure of 0.5 mile radius from the nest would be enforced between February 15 and August 15. Hence, recreational users would continue to be restricted from this area to mitigate potential effects.

The underused historic properties are more likely to be used by bats for roosting, nesting, and hibernating than properties that are occupied or often visited because of their uses. Although stabilization maintenance work would rarely occur, if it is needed and bats are discovered, the work would be postponed until after the bats are no longer present and sealing and/or screening would be used to prevent future occupation. If bats had been using historic structures prior to being excluded, they could experience minor adverse impacts due to losing access to this roosting habitat. There may be other suitable or available natural habitat for them to move to and use, but this is unknown and not assured. Some loss of individuals may occur.

The minimal maintenance and hazard mitigation at the focus properties would not occur in water bodies and would not directly affect any of the fish species or the western pearlshell. Mitigation measures (see Chapter 2) include proper disposal of construction-related debris and control and prevention of leaks and dust, which could indirectly affect these species.

Overall, occasional short-term effects to wildlife from the no-action alternative would be localized and minor adverse due to higher human presence and noise during construction. Long-term effects are unlikely due to the presence of already previously disturbed ground adjacent to structures. In almost all cases, there would be negligible effects in the long term. If vegetation was removed which required years to regrow enough to provide usable habitat, the temporary loss of habitat would be a minor adverse effect.

Threatened and Endangered Species

Continuing current management at the 11 focus properties would likely have no effect on candidate, threatened, or endangered species and designated critical habitat for Canada Lynx, but there is a low chance that individuals of some of these species could be displaced if they visited the area when humans were present. Two of the 11 focus properties, Sky Ranch and Snake River Land Company Office and Residence, are within LAUs and individual lynx could move through these areas. Because work would occur on structures and immediately adjacent to them on previously disturbed ground, important primary constituent elements of designated critical lynx habitat would not be altered or affected. The vegetation in close proximity to these human structures would not be allowed to develop these elements and would not be considered suitable habitat.

Table 12. Summary of Alternative A Wildlife Impacts at the Focus Properties, Mormon Row, and White Grass Dude Ranch

Property	*Treatment*	*Types of Actions and Impacts*	*Overall Impact NEPA (not in terms of ESA protections; see Appendix J for the NPS biological assessment)*
4 Lazy F Dude Ranch	Maintain	Infrequent, reactive health and safety activities; beginning proactive preservation maintenance. Occasional to frequent seasonal volunteer and staff presence; rare visitor presence.	Adverse, Direct, Minor, Short-term and Long-term
Aspen Ridge Ranch Residence and Barn	Hazard Mitigation	Infrequent, reactive health and safety activities; Storage use; infrequent staff and visitor presence.	Adverse, Direct, Negligible to Minor, Short-term and Long-term
Bar BC Dude Ranch	Hazard Mitigation	Infrequent, reactive health and safety activities; Occasional staff, preservation workers, and visitor presence.	Adverse, Direct, Negligible to Minor, Short-term and Long-term
Beaver Creek #10	Hazard Mitigation	Infrequent, reactive health and safety activities; Unused, unoccupied.	Direct, Negligible, Short-term and Long-term
Hunter Hereford Ranch	Maintain	Proactive preservation maintenance; Storage use; Infrequent staff and visitor presence.	Adverse, Direct, Negligible to Minor, Short-term and Long-term
Lucas Homestead/ Fabian Place	Hazard Mitigation	Infrequent, reactive health and safety activities; Use as interpretive site; Infrequent staff and occasional visitor presence.	Adverse, Direct, Negligible to Minor, Short-term and Long-term
Luther Taylor Cabins	Hazard Mitigation	Infrequent, reactive health and safety activities; subtle stabilization work. Infrequent staff and visitor presence.	Direct, Negligible, Short-term and Long-term
Manges Cabin	Hazard Mitigation	Infrequent, reactive health and safety activities; Storage use; Infrequent staff and visitor presence.	Direct, Negligible, Short-term and Long-term
McCollister Residential Complex	Hazard Mitigation	Infrequent, reactive health and safety activities; Storage use; Infrequent staff and visitor presence.	Direct, Negligible, Short-term and Long-term
Mormon Row	Implement 2000 FONSI with slight modifications	Formalize circulation and parking, install interpretive signs and trail, stabilize buildings; Unimproved interpretive site; Frequent visitor presence.	Previously analyzed and approved - Adverse, Direct, Negligible to Minor, Short-term and Long-Term; Beneficial, Indirect, Minor to Moderate Long-term
Sky Ranch	Hazard Mitigation	Infrequent, reactive health and safety activities; Unused, unoccupied.	Direct, Negligible, Short-term and Long-term

Snake River Land Company Office and Residence	Hazard Mitigation	Infrequent, reactive health and safety activities; Office unused and unoccupied, outbuilding storage use; Occasional staff presence.	Adverse, Direct, Negligible to Minor, Short-term and Long-term.
White Grass Dude Ranch	Implement 2005 FONSI	On-going long-term phased rehabilitation; Frequent staff and student presence, and occasional visitor presence.	Adverse, Direct, Negligible to Minor, Short-term and Long-term.

Cumulative Effects

Wildlife species and their habitats in many areas of the park have been altered in the past by NPS development and continue to be affected by the presence of people travelling on park roads, pathways, and waterways; hiking on trails; and working and visiting parts of the part, especially park developed areas. Many species avoid developed areas and other places where humans congregate.

Any project that includes construction or development in the park may have an effect on wildlife if appropriate types of habitat are in the project area or nearby; therefore, most of the actions listed in the cumulative effects scenario in the introduction of this chapter have had or would have some effect on wildlife. Developments, including park roads, visitor centers, administrative and housing complexes affect wildlife by disturbing and potentially displacing individual animals from these areas. Maintenance of building exteriors, parking, and walkways also has the potential to disturb individual animals that may be nearby during short-term work periods. People in the park developed areas cause wildlife to move from areas that they could use to other areas away from people.

Examples of future work are water and wastewater system replacement and/or rehabilitation at Moose, Jenny Lake, Colter Bay Village, Jackson Lake Lodge, and Flagg Ranch, changes to Colter Bay visitor services infrastructure, Snake River launch improvements, and various types of construction proposed in the developing Jenny Lake Renewal Plan that may be approved. The Moose water and wastewater system replacement will include a main water line from Moose to the 4 Lazy F Dude Ranch. In addition, construction of the Moose Junction to Antelope Flats Junction multi-use pathway in the future, potentially by 2016, would likely increase bicyclist visitation at Mormon Row as well as at other historic properties such as Hunter Hereford Ranch and the Luther Taylor Cabins.

Under Alternative A, a negligible to minor adverse effect on wildlife associated with continuing current management of park historic properties would occur. There would be a negligible to minor adverse effect on wildlife when considered with other past, present, and reasonably foreseeable future actions.

Impacts of Alternative B (NPS Preferred Alternative) on Wildlife

Under Alternative B, there would continue to be ongoing impacts due to human activity at many of the historic properties but impacts to wildlife would likely increase in the short term because more work would initially be done at more of the properties. This work would result in localized, negligible to minor adverse impacts on wildlife and wildlife habitat in the short term. Management

and maintenance of the 32 in-use properties would continue much as under Alternative A but would be improved by having best management practices in place (see Mitigation Measures described in Chapter 2) and by maintaining properties proactively instead of in response to emergencies. Additional minor impacts would occur in the short term from implementing modified infrastructure improvements at Mormon Row, continuing to rehabilitate White Grass Dude Ranch, and rehabilitating up to four properties for adaptive reuse, deconstructing and removing three properties, and performing planned, proactive maintenance on the remainder.

In the long term, because the eight remaining focus properties would be better maintained and have assigned uses compared to the no-action alternative, more people on site could increase the potential for disturbing wildlife and displacing sensitive individuals. Also, habitat quality would improve at several of the focus properties because informal foot traffic and vehicle access would be reduced and restoration of disturbed areas with native plant species. Localized, minor to moderate benefits to wildlife would occur at the three focus properties proposed for removal and restoration of 2.65 acres (total) to native vegetation. The remaining eight focus properties would all have uses, whether as park seasonal housing, storage locations, or as interpretive historic sites. Visitation could increase because interpretation and access would be improved at some sites.

Threatened and Endangered Species Conclusion

See **Appendix K: Biological Assessment** for the NPS determination regarding threatened and endangered species. Determinations varied. Alternative B would have no effect on whitebark pine, designated critical Canada Lynx habitat, or the four fish species, bonytail chub, Colorado pikeminnow, humpback chub, and Kendall Warm Springs dace. This alternative *"may affect, but is not likely to adversely affect"* Canada lynx and gray wolf, and is *"not likely to jeopardize the continued existence"* of greater sage-grouse. Alternative B is "likely to adversely affect" grizzly bear. Mitigations (see Chapter 2 and Appendix K) would be in place to protect habitat, including sagebrush and lynx habitat where it might be present. The park would continue to educate staff and visitors, and enforce regulations, about proper food storage to prevent bears from becoming conditioned to seek human foods and the wildlife conflicts that would result. Given that the park is outside of the elevational distribution of suitable breeding habitat for the species and they are unlikely to occur, this species is dismissed from further analysis in this document.

The 32 In-Use Properties

General Wildlife

Under Alternative B, the negligible to minor impacts to wildlife associated with the 32 in-use historic properties would be similar to what would occur under Alternative A, with the exception that reactive, emergency-based maintenance and increased disturbance associated with unplanned activities would be reduced.

Impacts at the in-use properties are similar across all three alternatives as no changes are proposed to their current use and care and they would all continue to be proactively maintained. Potential habitat near these human structures would continue to be modified by human use and would be of poorer quality due to damaged or removed vegetation and would not provide important habitat components such as food, cover shelter, or areas for breeding and reproduction, or for

movement/connectivity to other areas as well as unmodified, natural habitat farther from the historic properties would.

Maintenance would range from replacement in-kind to occasional, larger projects to ensure the buildings remain in-use. The presence of visitors or staff could disturb some animals and cause them to move away from properties. As periodic maintenance and stabilization activities would be planned rather than occurring in an emergency fashion, as in Alternative A, appropriate best management practices would be better incorporated to minimize or prevent damage to existing vegetation during maintenance activities and reduce habitat impacts.

The impacts of continued maintenance on these historic buildings and landscapes would be continue to be negligible to minor adverse, direct and short-term for each district due to the potential for construction noise to displace wildlife and for ground disturbance in the immediate area. Exotic vegetation management and modification of vegetation near historic structures to protect against fire would continue.

Wyoming Species of Greatest Conservation Need

Impacts to the Wyoming-designated species of greatest conservation need at the 32 in-use properties would be similar to what would occur under Alternative A at these properties. Use of nearby habitat by special status species such as migratory birds, mammals, bats, and amphibians would generally remain as it is currently, particularly when preservation work occurs at properties located well within a park development. Continuing current property uses, human presence, and maintenance activities would continue to have the potential to displace sensitive species in the future.

Foot traffic and maintenance activities could trample and kill individual reptiles, amphibians, and shrews. Burrows and nests could be damaged, although impacts on nesting birds would be prevented by pre-work surveys (see Mitigation Measures). Fire management efforts to create defensible space around park structures would continue to have the potential to cause short-term disturbance and long-term decreases in habitat quality and usability near structures.

Screening to prevent bat species from occupying structures for roosting, nesting, and hibernating has been installed on park buildings and would continue to be installed when necessary. Screening on historic structures would be done in a way that does not adversely affect historic character. Prior to maintenance or preservation work, surveys to determine if bats were present and mitigations such as rescheduling the work to occur after bats have left the area would be put in place. If bats had been using historic structures prior to being excluded, they could experience minor adverse impacts due to losing access to this roosting habitat. Natural roosting habitat may be available in nearby forests.

None of the work involved in continuing current management of the 32 in-use properties under Alternative B would occur in water bodies and would not directly affect any of the fish species or the western pearlshell. Mitigation measures (see Chapter 2) include proper disposal of construction-related debris and control and prevention of leaks and dust, which could indirectly affect these species.

Some species, such as bald eagles, other raptors, and trumpeter swans, may continue to be displaced from using habitats near park developed areas and/or heavily visited historic properties because of high levels of human activity and/or habitat alteration. Human activity can cause a buffer of unused habitat around these developed areas, the size depending on species and individual levels of tolerance for human activities. Individuals of these sensitive species could be affected by the presence of people and facilities, but no population level impacts on these species would occur from this alternative. No actions that could lead to the "take" of a migratory bird, their young, eggs, or nests, as defined under the Migratory Bird Treaty Act, would occur under the no-action alternative. Alternative A would continue to have the potential for long-term, indirect, localized, negligible, adverse impacts.

Threatened and Endangered Species – See **Appendix K** for the detailed biological assessment of Alternative B impacts to threatened and endangered species.

Mormon Row, White Grass Dude Ranch

General Wildlife

Mormon Row:

As under Alternative A, infrastructure improvements at Mormon Row, slightly modified from the previous planning effort (NPS 1999, 2000), are being implemented in 2015 (summer through end of calendar year). The park determined that the associated short- and long-term disturbance to wildlife, described below, would not significantly differ from the earlier conclusions. Although the work would cause both short- and long-term disturbance as described below, it would be beneficial in the long term because it would focus and prevent the expansion of visitor-disturbed areas in the long term. Ground disturbance and some loss of vegetation and potential habitat would occur but mainly on already impacted areas, see **Figure 13**, p. 151.

Short-term and long-term impacts to wildlife would be as described for Alternative A. Construction of the accessible trail and formalizing the parking areas could injure or kill individual small animals or destroy their burrows and could displace other wildlife from the immediate area while these activities take place. Some wildlife may not be able to use disturbed areas until vegetation has regrown. Seasonal visitation would continue to have the potential to disturb wildlife and cause them to avoid the area.

The potential for human-wildlife (bison) conflicts exists under current conditions and could increase in the long term if higher visitation occurs and if the potential for rehabilitating and occupying several of the buildings is implemented in the future. There could also be increased potential for some wildlife, such as birds, squirrels, chipmunks, and coyotes, to become food-conditioned after picnic tables are installed and more visitors are likely to linger in the district with food that could become available to the animals despite regulations regarding food storage and not feeding wildlife.

In addition, Alternative B includes the option to potentially rehabilitate and use up to four Mormon Row houses as park seasonal housing, if it occurred, would also cause some long-term habitat loss (6516sf total; 1629sf/house) due to the installation of utility infrastructure such as small well

houses, propane tanks and pads, and transformer boxes. The long-term impact to wildlife that could result from potential rehabilitation and use of four Mormon Row houses as park seasonal housing would be minor. Compared to only improving infrastructure, short-term disturbance from construction noise, staging, .and the increased presence of people would be greater and occur for longer periods of time. The potential rehabilitation and future use of the houses as seasonal park housing would likely displace coyotes that have denned under one of the structures to locations in undeveloped native habitat nearby.

White Grass Dude Ranch:

The effects to wildlife under Alternative B are similar to Alternative A, except that ground disturbance would be less by 0.14 acre because the spur road would not be constructed. As described under Alternative A, the on-going rehabilitation at White Grass Dude Ranch would continue to have the potential for wildlife disturbance during construction periods, when visitors, staff, and historic preservation students are present, and when there is overnight occupancy. Effects would include localized habitat degradation on site, increased disturbance and potential displacement from the area due to the presence of people, vehicles or equipment, and noise during construction and when people are visiting or resident at the properties. The possibility that visitation may increase at these properties in the long term after rehabilitation or infrastructure improvements are complete could also increase the degree that wildlife species avoid the area and nearby habitat. The proposed parking and access would be negligibly different from those described in previous planning. Increasing day use from about 25 on average to approximately 40 people at times, and increasing overnight occupancy from 15 to 26 people, would add to the potential for disturbing and displacing wildlife from the immediate area.

Ongoing efforts to replace nonnative vegetation with native species on formerly cultivated areas and to treat noxious weeds and invasive nonnative plant species would continue to benefit wildlife at White Grass Dude Ranch. These efforts would result in long-term, moderate beneficial effects to vegetation resources and wildlife habitat under all alternatives.

Wyoming Species of Greatest Conservation Need

Potential impacts to these species at Mormon Row and White Grass Dude Ranch under Alternative B would be the similar to the potential impacts to general wildlife species from Alternative A, described above. These impacts range for the potential trampling of individual reptiles, amphibians and shrew, damage or destruction of burrows, to short-term displacement from the area of individuals that are sensitive to the presence of humans. There would be a higher potential for some wildlife species, such as squirrels, chipmunks, and coyotes, to become food-conditioned if people linger on site with food, and food is not properly stored and unavailable to wildlife. Implementation of infrastructure improvements at Mormon Row would improve visitor access to the site and increase the potential for human-wildlife contact and conflict to a slight extent.

If the option to rehabilitate and use four Mormon Row structures as seasonal park housing is implemented, both short and long-term impacts would increase to a minor degree. The amount of ground and vegetation disturbance would be higher in the short term due to the upgrading and installing utilities. Compared to only improving infrastructure, short-term disturbance due to construction noise, staging, and the increased presence of people would be greater and occur for

longer periods of time. The long-term impact to wildlife that could result from potential rehabilitation and use of up to four Mormon Row houses as park seasonal housing would be minor due to the installation of utility infrastructure such as small well houses, propane tanks and pads, and transformer boxes. Having seasonal residents would increase the number of people on site overnight above the number that currently stay overnight at the private bed-and-breakfast that operates seasonally.

The White Grass FONSI (NPS 2005) noted that long-term, negligible to minor adverse impacts to species of management concern would occur due to greater human occupancy, overnight users, and associated non-natural sound that could increase the potential for disturbance and displacement of sensitive species. The document also noted that there would be no effect on bald eagles. On rare, special occasions, larger gatherings of people at the Western Center for Historic Preservation (the rehabilitated White Grass Dude Ranch) would occur, with the potential to temporarily increase disturbance to wildlife and cause them to avoid the area while people are present. The plan also stated that disturbance during construction activities could displace species and there would be long-term loss of some habitat due to wildlife continuing to avoid the immediate area. Effects were considered negligible to minor. Under Alternative B, foregoing construction of a spur road to the Main Lodge from Death Canyon road could benefit wildlife species, including those Wyoming has designated as species of greatest conservation need. Ground and vegetation disturbance would be not occur on the 0.14 acre where the spur road would have been. Increasing day use from about 25 on average to approximately 40 people at times, and increasing overnight occupancy from 15 to 26 people, would add to the potential for disturbing and displacing wildlife that are “Species of Greatest Conservation Need” from the immediate area.

Threatened and Endangered Species – See **Appendix K** for the detailed biological assessment.

4 Lazy F Dude Ranch, Beaver Creek #10, Snake River Land Company Office and Residence

These three focus properties would be rehabilitated for adaptive reuse under Alternative B. Impacts of specific actions are described below by property.

4 Lazy F Dude Ranch:

Rehabilitation of the ranch for proposed adaptive reuse as seasonal housing would likely have minor adverse impacts to wildlife in the short term and long term. Impacts are characterized as minor because the ranch was occupied seasonally in the recent past before it became park property, people occasionally walk, ski or ride horses in the area, and occasional preservation maintenance has been occurring. Rehabilitating and seasonally occupying the ranch could change the numbers or distribution of wildlife in the local area, but the viability of local populations would not be affected. Because this property is located in rich, riparian habitat and next to a wild and scenic-designated river, careful attention would be paid to ensure that residents are being sensitive to natural and cultural resources in the area and the values for which the river and ranch were designated.

In the short term, work to rehabilitate the ranch buildings and utility systems would have the potential to displace wildlife from the immediate area. Effects would be direct and localized, with best construction practices and various mitigations in place to reduce potential disturbance. The

work would entail road repair, including the construction of several turnouts; replacing the water systems lines to the buildings, and the wastewater (septic) system; and formalizing informally-created parking areas at three buildings. These construction activities would cause localized ground and vegetation disturbance, which could kill individual small animals or destroy their burrows. Higher human presence, and associated noise and traffic, could displace some wildlife, particularly sensitive species, from the immediate area.

In the long term, the presence of humans at the ranch, whether performing occasional maintenance or occupying the cabins seasonally, would continue to have the potential to displace some animals that might use habitat in the area. Seasonal residents, potentially 15-17 if all the potential rooms are singly occupied (small rooms and the limitation of shared kitchen space make doubling unlikely), would increase human sounds compared to current levels when maintenance work is not occurring at the property. The residents would also walk or hike from the cabins and have a broader effect by increasing human presence beyond the immediate area within the ranch. Traffic on the road would also increase when seasonal residents are using the property. Although the ranch was occupied in the recent past as a private family retreat and it is relatively close to the Moose development, it has not been occupied since 2006 and more wildlife have been using vacant ranch since then. In the long term, regular road and building maintenance would continue to occur but work would be proactive and infrequent after the rehabilitation is complete. Allowing a winter caretaker to remain on the ranch is an also option under Alternative B. Doing this would require more maintenance work to keep the road open and cabin utilities functioning, and would increase to year-round the potential for human presence to displace sensitive wildlife species and decrease the areas' effectiveness as winter habitat, particularly for ungulates such as moose.

Beaver Creek #10:

Rehabilitating Beaver Creek #10 for an administrative park use such as storage, office space or housing would have negligible to minor impacts on wildlife that may use nearby habitat. Effects would be small because the structure is located in the Old Administrative Area/Beaver Creek, a park development which is primarily used for housing, and wildlife are already displaced from the area to some degree. There would be a slight increase in human presence because it is currently without a use and unoccupied. In the short term, there would be more people and vehicles present while the property is being rehabilitated, and more noise due to construction and machinery. The parking area would be reduced in size and formalized, and utilities would be upgraded. Two non-historic trees close to the building would be removed, which could affect some individual birds or small mammals that may be using these trees. Work would also include revegetating all disturbed ground, which would have a long-term, minor beneficial impact on wildlife that may use this area. Outdoor maintenance activities would continue to occur. This work would be negligibly reduced in the long term because the parking area would be smaller after the rehabilitation.

Snake River Land Company Office and Residence:

Rehabilitating Snake River Land Company buildings and using the complex for ranger operations would cause minor, short-term impacts to wildlife that may use nearby habitat. Rangers already use this site seasonally and likely cause some level of disturbance to wildlife and avoidance of the area. In the short term, minor localized impacts would result from preservation work on the building, improvements to the access road, and site work to create the designated parking area and accessible

building access. Installing and upgrading utilities would cause noise and increase general disturbance from vehicles, people, and machinery in the short term, which could increase stress levels and displace some wildlife from habitat in the immediate area. In the long term, levels of human activity, and the coincident potential for disturbing wildlife, would increase somewhat because the office would be in regular use and visitors would be welcome to come to the office. There would also be some benefit to wildlife in the more general area in consolidating ranger operations currently in two areas to one area. Potentially removing one small building that has been determined to be "non-contributing" to the historic district and rehabilitating this area would decrease the developed parts of the property and, after being rehabilitated, would increase the amount of usable bird and small mammal habitat slightly.

Bar BC Dude Ranch

Stabilization of 24 cabins and extensive stabilization of three cabins at Bar BC Dude Ranch would cause negligible to minor adverse impacts to wildlife. Allowing the seven cabins in the poorest condition to molder would be a long-term, minor beneficial impact to bats, small mammals, or other species that could use the gradually decaying buildings as habitat. Preservation groups would continue to work at the property seasonally until the stabilization work is completed and their presence at the site and along the access road could disturb species sensitive to humans. Occasional ranger patrols and occasional work on the Bar BC road, which extends from the Teton Park Road to the bench above the Bar BC Dude Ranch, and the parking area would continue. More people and noise would be present during short-term work such as formalizing the parking area on the bench above the historic district and restoring part of the two-track road near the ranch buildings to a pedestrian trail. Visitation and NPS staff or volunteer presence would not be expected to increase in the long term from current low levels.

Hunter Hereford Ranch, Lucas Homestead/Fabian Place, Manges Cabin

Hunter Hereford Ranch, Manges Cabin:

Continuing to perform frequent, in-kind preservation maintenance at these two properties and using them for park storage could occasionally displace wildlife that are using nearby habitat. At times vehicles or people would be on site. People would access the properties to maintain the structures or the landscape immediately around them, and to store or remove materials. Potential impacts to wildlife would be negligible to minor, short-term, and adverse.

Geraldine Lucas Homestead/Fabian Place:

Maintaining the Geraldine Lucas Homestead/Fabian Place as an interpretive historic district would result in negligible to minor adverse impacts on wildlife. Short-term construction to formalize the parking area and repair the bridges would cause minor adverse impacts to wildlife during the construction period because of higher human presence and noise. In the long term, a small increase in visitor use could result but the change would likely be negligible. Occasional park staff maintenance of the access road and parking area would not change.

Aspen Ridge Ranch Residence and Barn, McCollister Residential Complex, Sky Ranch

Under Alternative B, Aspen Ridge Ranch Residence and Barn, McCollister Residential Complex, and Sky Ranch are proposed for removal. All above-ground structures, and associated objects such as fences, would be removed and the building sites and access roads would be restored with native vegetation. During short-term periods of deconstruction and site restoration, wildlife would have the potential to be displaced from these areas because of the presence of people, vehicles, and machinery and associated noise. Removing the structures and access roads, and rehabilitating the sites with native plants would restore 2.65 acres of usable habitat to a variety of wildlife species, both large and small.

The benefit to wildlife from removal of these three focus properties would be minor to moderate in the long term despite the relatively small amount of area restored compared to the park as a whole. The effect of removing Aspen Ridge Ranch Residence and Barn would restore 0.31 acres of habitat, a minor beneficial impact. The benefit would be muted to some extent because the property is adjacent to Hunter Hereford Ranch, another of the underused focus properties but which would continue to be maintained, used for park storage, and occasionally visited.

McCollister Residential Complex is located near the junction of the Antelope Flats and Shadow Mountain roads. It is in a wooded area adjacent to shrub-steppe habitat and bison and pronghorn are often seen nearby. Removing this property and restoring native plant species to the building area and access road (a total of 0.76 acres) would provide a minor benefit to wildlife because it would return usable habitat to wildlife such as deer, elk and bison.

In the case of Sky Ranch, a factor in the decision to remove it was its location in important wildlife habitat and the ability to reduce the cumulative effect on wildlife from other human activities in the area, including the nearby White Grass Dude Ranch as well as high visitor use of Death Canyon Road and Trail. Because of its location, removal of Sky Ranch would be particularly beneficial to wildlife in the long term. Although not a large area, the restoration would return approximately 1.59 acres of habitat, which includes a 0.76 acre access road (3318 feet long), to usable wildlife habitat in a Teton Range foothill area known to be frequented by elk, bears, gray wolves, owls, and many other species. The surrounding area is high-quality habitat in the Moose-Wilson corridor, a transition habitat zone between the Teton Range and the Snake River. Removing the structures, fences, and access road (the westward spur road) would reduce the amount of development and human presence in this part of the park compared to what would occur if this property were maintained and seasonally occupied in addition to the relatively near, on-going rehabilitation and future seasonal occupancy of White Grass Dude Ranch. The narrow two-track that travels north from where the White Grass Dude Ranch Road meets Death Canyon Road would continue to exist but it would not be routinely maintained and would only be used for rare administrative reasons. Some hiking and horse use would likely continue to occur in this area.

Luther Taylor Cabins

Maintaining Luther Taylor Cabins in its current condition, using subtle stabilization work and intermittent health and safety activities would have the potential to occasionally disturb wildlife and displace them from the area. The property would function as an interpretive historic district and visitors would visit it occasionally. Some animals could be displaced from the immediate area and

not use potential habitat because of the presence of people. There would continue to be negligible to minor, adverse effects on wildlife from the presence of people.

Wyoming Species of Greatest Conservation Need

Under Alternative B, maintenance activities would increase at the some of the focus properties and there would be a higher potential for direct impacts to some of these species, primarily in the short term. The effectiveness of habitat for special concern species near the properties is likely reduced compared to undisturbed habitats, although less than at regularly maintained properties with higher levels of human use.

Infrastructure improvements to formalize access and circulation, rehabilitation of several properties, and the removal of several other properties would cause short-term ground and vegetation disturbance and could displace sensitive wildlife species from the immediate area. Foot and vehicle traffic, and maintenance activities could trample and kill individual reptiles, amphibians, and shrews. Burrows and nests could be destroyed, although impacts on nesting birds would be prevented by pre-work surveys (see Mitigation Measures). After site improvements, including revegetation of disturbed areas, have been completed, the potential for adverse impacts would be low. Parking, site access, and circulation would be formalized at many of these properties, and maintenance needs would be planned and limited to use areas, thereby reducing potential impacts to wildlife.

At three of the focus properties, Manges Cabin, Luther Taylor Cabins, and Hunter Hereford Ranch, management, and the effects of occasional maintenance or stabilization and low levels of use, would change negligibly because maintenance or stabilization efforts would be improved somewhat under Alternative B and could take longer than under the no-action alternative (Alternative A). The potential for affecting special concern species would be low.

After Aspen Ridge Ranch Residence and Barn, McCollister Residential Complex, and Sky Ranch are removed and the sites are restored, the amount of available, undisturbed habitat (0.31, 0.76, and 1.59 acres, respectively) would increase. Although none of the species of greatest conservation need are known to occur near Aspen Ridge Ranch Residence and Barn and the McCollister Residential Complex, restoring these areas to native species would create additional usable habitat. Some special concern species that might use these areas could benefit in the long term. Great gray owls are known to occur near Sky Ranch.

The underused historic properties are more likely to be used by bats for roosting, nesting, and hibernating than properties that are occupied or often visited because of their uses. If bats are discovered during pre-work surveys (see Mitigation Measures) in buildings where maintenance is needed, the work would be postponed until after the bats are no longer present and sealing and/or screening would be used to prevent future occupation. If bats had been using historic structures prior to being excluded, they could experience minor adverse impacts due to losing access to this roosting habitat. There may be other suitable or available natural habitat for them to move to and use, but this is unknown and not assured. Some loss of individuals may occur.

Overall, there could be minor, adverse, short-term effects to these special concern species from Alternative B. Although all work would be temporary and localized at the properties, it would have

the potential to affect wildife due to higher human presence and noise during construction. Effects would be reduced as much as possible by mitigations and by following construction best management practices. The potential for adverse long-term effects is greatly reduced because ground near the structures is previously disturbed, extensively at some properties (see the photographs provided earlier in the wildlife impact analysis). Revegetation would counter habitat lost during construction although regrowth would take time.

Threatened and Endangered Species – The NPS determination is that actions under Alternative B, the NPS-Preferred Alternative, "*may affect but are not likely to adversely affect"* any threatened or endangered species. See **Appendix J** for the detailed biological assessment.

Table 13. Summary of Alternative B Wildlife Impacts at the Focus Properties, Mormon Row, and White Grass Dude Ranch

Property	*Treatment*	*Types of Actions and Impacts*	*Overall Impact NEPA (not in terms of ESA protections; see Appendix J for the NPS biological assessment)*
4 Lazy F Dude Ranch	Rehabilitate	Addition of parking and circulation improvements, upgrade of utilities, in-kind replacements, and landscape restoration; seasonally occupied by an estimated 15-17 people.	Adverse, Direct, Minor, Short-term and Long-term; 3595sf (0.08 acres) restored in the long term.
Aspen Ridge Ranch Residence and Barn	Remove	Building and access road removal and restoration.	Adverse, Direct, Minor, Short-term; Beneficial, Direct, Minor, Long-term; 12,380sf (0.31 acre) restored.
Bar BC Dude Ranch	Mix of Stabilize and Rehabilitate	Construction of off-site parking, restoration of cultural landscape elements. Staff, student, and preservation workers presence during preservation work; visitor presence.	Adverse, Direct, Minor, Short-term; Adverse, Direct, Negligible to Minor, Long-term; 7200sf (0.17 acres) restored in the long term.
Beaver Creek #10	Rehabilitate	Located in a park developed area. Construction of parking and ABAAS circulation, exterior preservation in-kind; Higher staff presence short-term, low levels of staff and visitor presence long-term.	Negligible, Short-term and Long-term; 4208sf (0.10 acres) restored in the long term.
Hunter Hereford Ranch	Maintain	Same as A. Proactive preservation maintenance; Storage use, occasional staff and visitor presence.	Negligible, Short-term and Long-term; Occasional ground disturbance within 10' of the building foundations.
Lucas Homestead/ Fabian Place	Maintain	Frequent, in-kind preservation; Improved interpretive site, occasional staff and visitor presence; occasional group gatherings.	Adverse, Direct, Negligible to Minor, Short-term and Long-term; 3237sf (0.07 acres) restored in the long term.

Luther Taylor Cabins	Maintain	Intermittent health and safety activities; subtle stabilization work. Infrequent staff presence, occasional visitor presence.	Negligible, Short-term and Long-term; Occasional short-term disturbance within 10' of building foundation.
Manges Cabin	Maintain	Frequent, in-kind preservation; Storage use, occasional staff and visitor presence.	Negligible, Short-term and Long-term; Occasional short-term ground disturbance within 10' of building foundation.
McCollister Residential Complex	Remove	Building and access road removal and site restoration.	Adverse, Direct, Minor, Short-term; Beneficial, Minor, Direct, Long-term; 33,011sf (0.76 acres) restored in the long term.
Mormon Row	Implement 2000 FONSI with parking changes and longer interpretive trail.	Modified infrastructure improvements same as Alternative A. Formalize circulation, install interpretive signs and trail, stabilize buildings; Higher staff presence short-term, improved interpretive site in long-term, continuing visitor presence. ********** Potential for rehabilitation of four houses for adaptive reuse as seasonal park housing.	Adverse, Direct, Minor, Short-term; Adverse, Negligible to Minor, Direct, Long-term; Beneficial, Direct, Minor Long-term; 14,869sf (0.34 acres) LT disturbance more than the existing disturbed area due to the longer interpretive trail (longer by 0.32 mile; total is 0.47 mile instead of 0.15 mile). ********** Adverse, Direct, Minor, Short-term and Long-Term; Potential additional LT disturbance/ loss of habitat: 6516sf total (1629sf/house).
Sky Ranch	Remove	Building and access road removal and site restoration.	Adverse, Direct, Minor, Short-term; Beneficial, Direct, Moderate, Long-term; 69,220sf (1.59 acres) restored in the long term.
Snake River Land Company Office and Residence	Rehabilitate	Construction of parking and ADA circulation, upgrade of utilities, preservation in-kind; Removal of a non-contributing building and site restoration; High staff presence short-term, Frequent, moderate staff and occasional visitor presence long-term.	Adverse, Direct, Minor, Short-term; Adverse, Direct, Negligible to minor, Long-term; 1035sf (0.02 acres) additional LT disturbed area. Possibly 765sf (0.02 acres) restored if no overflow parking is formalized.

White Grass Dude Ranch	Implement 2005 FONSI with parking and capacity changes	On-going long-term phased rehabilitation; staff, student, and occasional visitor presence; seasonally occupied. Also increase average seasonal day use capacity of about 25 people to about 40 occasionally; increase seasonal overnight use from 15 to 26.	Same as A. Adverse Direct, Negligible to Minor, Short-term and Long-term; 3245sf (0.09 acres) restored in the long term.

Cumulative Effects

Wildlife species and their habitats in many areas of the park have been altered in the past by NPS development and continue to be affected by the presence of people travelling on park roads, pathways, and waterways; hiking on trails; and working and visiting parts of the part, especially park developed areas. Many species avoid developed areas and other places where humans congregate.

Any project that includes construction or development in the park may have an effect on wildlife if appropriate types of habitat are in the project area or nearby; therefore, most of the actions listed in the cumulative effects scenario in the introduction of this chapter have had or would have some effect on wildlife. Developments, including park roads, visitor centers, administrative and housing complexes affect wildlife by disturbing and potentially displacing individual animals from these areas. Maintenance of building exteriors, parking, and walkways also has the potential to disturb individual animals that may be nearby during short-term work periods.

Examples of future work are water and wastewater system replacement and/or rehabilitation at Moose, Jenny Lake, Colter Bay Village, Jackson Lake Lodge, and Flagg Ranch, changes to Colter Bay visitor services infrastructure, Snake River launch improvements, and various types of construction proposed in the developing Jenny Lake Renewal Plan that may be approved. In addition, construction of the Moose Junction to Antelope Flats Junction multi-use pathway in the future, potentially by 2016, would likely increase bicyclist visitation at Mormon Row as well as at other historic properties such as Hunter Hereford Ranch and the Luther Taylor Cabins.

Although Alternative B would have short-term, direct, localized, minor to moderate, adverse impacts on wildlife at some properties, there would be minor, beneficial impacts to wildlife overall. These benefits would come from preventing additional habitat degradation in the future by formalizing circulation, parking, and other aspects of visitor use at five focus properties and, at three other property locations, removing structures, revegetating sites and access routes, and restoring habitat. Overall, Alternative B would be a minor beneficial impact to some wildlife species in the long term when added to other past, present, and reasonably foreseeable future actions.

Impacts of Alternative C on Wildlife

Alternative C would result in localized, negligible to minor adverse impacts on wildlife and wildlife habitat. Impacts would be similar to those from Alternative A, the no-action alternative, but they

would be reduced by having improved best management practices in place and by maintaining properties proactively instead of in response to emergencies. Foot traffic and vehicle access by visitors and by staff performing periodic maintenance would continue to damage vegetation and lower habitat quality near historic properties. Exotic vegetation management and modification of vegetation to reduce fire fuels near some historic structures would also continue.

Threatened and endangered species would be negligibly affected by Alternative C management, except at White Grass Dude Ranch because of potential effects on grizzly bears, see below. There would be low likelihood that individual Canada lynx, gray wolf, would travel near historic properties, and low potential for human activity at the properties to disturb and displace these individuals. Greater sage-grouse could be present near Mormon Row but an area closure is instituted to protect them from disturbance. Mitigations would be in place to protect habitat, including sagebrush and lynx habitat where it might be present. The park would continue to educate staff and visitors, and enforce regulations, about proper food storage to prevent bears from becoming conditioned to seek human foods and the wildlife conflicts that would result.

The 32 In-Use Properties, Mormon Row, and White Grass Dude Ranch

Similar to Alternative A, General Wildlife, Wyoming Species of Greatest Conservation Need, and Threatened and Endangered species. Formalized circulation patterns would continue to reduce potential habitat impacts and perhaps the likelihood that wildlife would be displaced from the immediate area. Some wildlife would become more tolerant of humans if the people are seen in reliably consistent areas.

Planned infrastructure improvements at Mormon Row would be completed in 2015 and rehabilitation of White Grass Dude Ranch would continue, both with slight modifications to the previously approved plans that would not change the assessment of impacts. Impacts would be essentially the same under all alternatives. Some vegetation would be removed to formalize parking and pedestrian access but, because informal use had already impacted these areas, the short-term adverse impact would be minor and, in the long term, would be beneficial by reducing the disturbance caused by informal activities. Increased use and an increased potential for human-wildlife conflict was also anticipated at both of these sites, although formalizing pedestrian circulation with trails between the buildings would eliminate user-created foot trails and decrease the potential for displacing wildlife and damaging habitat in the long term. Increasing seasonal day use at White Grass Dude Ranch (operating as the Western Center for Historic Preservation) from about 25 on average to approximately 40 people at times, and increasing overnight occupancy from 15 to 26 people, would add to the potential for disturbing and displacing wildlife from the immediate area.

Because of changed conditions since the time of the *White Grass Ranch Rehabilitation and Adaptive Use Environmental Assessment/Assessment of Effect*, September 2004; and *White Grass Ranch Rehabilitation and Adaptive Use Finding of No Significant Impact (FONSI),* February 2005 (NPS 2005), with grizzly bears likely to be present, see the biological assessment (**Appendix K**) for a determination of potential effect. Although specifically written to analyze the preferred alternative, the analysis in the biological analysis for White Grass Dude Ranch would be true of all three alternatives because the actions and potential impacts are nearly the same under all three.

4 Lazy F Dude Ranch, Aspen Ridge Ranch Residence and Barn, Bar BC Dude Ranch, Beaver Creek #10, Hunter Hereford Ranch, Lucas Homestead/Fabian Place, Luther Taylor Cabins, Manges Cabin, McCollister Residential Complex, Snake River Land Company Office and Residence, Sky Ranch

General Wildlife

The focus properties would be proactively stabilized and/or maintained to allow safe use as park storage or interpretive historic districts. At most of the focus properties, stabilization and maintenance at some properties would cause very limited ground and vegetation disturbance, particularly in the short term. The exception is 4 Lazy F Dude Ranch, where maintenance work in the short term would include replacing utilities and would cause larger disturbance areas in the short and mid-term until vegetation recovers through reseeding and plantings. Native plant revegetation would occur at all sites where maintenance activities impact vegetation.

Eight of the 11 focus properties would be stabilized or maintained for use as park storage. These properties are 4 Lazy F Dude Ranch, Aspen Ridge Ranch Residence and Barn, Beaver Creek #10, Hunter Hereford Ranch, Manges Cabin, McCollister Residential Complex, Snake River Land Company Office and Residence, and Sky Ranch would be stabilized or maintained and then maintained for use as park storage under Alternative C (as they are currently under Alternative A).

Maintenance would be planned and would occur according to a long-term schedule. Some species of wildlife could be displaced from the immediate area during work periods but ground disturbance would be minimal and within 10 feet of structures. Staff would occasionally be on site to deposit, retrieve, and access stored materials and visitation would be low.

Two focus properties, 4 Lazy F Dude Ranch, Geraldine Lucas Homestead/Harold Fabian Place, and Luther Taylor Cabins, would be stabilized, with increased interpretation. Bar BC Dude Ranch would be stabilized; on-site interpretation would not increase and the property would continue to be interpreted with existing signs. Slight increases in visitor use are possible that may increase disturbance and avoidance of the immediate area by wildlife to some extent.

During the initial stabilization or maintenance activities that would occur in the short term, there would be associated increases in disturbance to habitat, number of people on site, and the potential for construction noise for displacing individual animals from the immediate area. These impacts would likely be at negligible to minor levels depending on the property and type of work required. After these initial periods of work, the structures and access areas would be in better condition and would require shorter periods of less extensive work in the future. In the long term, maintenance of these properties under Alternative C would negligibly affect wildlife.

Compared to rare work and few visitors under current management, almost all of the focus properties would have uses under Alternative C. There would be a somewhat higher potential for disturbing wildlife because more people would be present at these properties in the long term. Two of the 11, Lucas Homestead/Fabian Place and Luther Taylor Cabins, would be used as interpretive historic districts. Most, eight of the 11, would be used as park storage locations and accessed infrequently. These uses would increase human presence at times but not to a great extent. Some properties such as Beaver Creek #10 and Manges Cabin are within or near developed areas, and the

number of people and potential for displacing wildlife would not change over what is currently occurring. In the long term, because of the potential for more people at some properties at times and for their presence to displace wildlife, there would be the potential for a negligible to minor adverse effect on wildlife.

Wyoming Species of Greatest Conservation Need

The short-term efforts to stabilize or maintain the focus properties and the long-term effects of maintaining preservation levels and using these properties for park storage or as interpretive historic sites under Alternative C would have a negligible to minor adverse effect on Wyoming Species of Greatest Conservation Need. As described above for general wildlife species, planned maintenance with limited ground and vegetation disturbance and the presence of humans doing work or visiting the historic properties, would continue to have the potential for some low level of impact to some species.

Threatened and Endangered Species

Canada Lynx, gray wolf, and grizzly bear:
Under Alternative C, the potential effects on short-term efforts to stabilize or maintain the focus properties and the long-term effects of maintaining preservation levels and using these properties for park storage or as interpretive historic sites would negligibly affect Canada lynx, gray wolf, and grizzly bear. There is a low chance that individuals of these species could be displaced if they visited the area when humans were present.

Greater sage-grouse:

Shrub-steppe habitat for greater sage-grouse is present near four of the 11 underused historic properties. The Bar BC and 4 Lazy F dude ranches are within the state-designated sage-grouse core area. Lucas Homestead/Fabian Place is outside the core area but on the boundary of occupied habitat. Luther Taylor Cabins is outside the core area but in occupied habitat.

Preservation maintenance to stabilize these structures would occur on a planned basis with a minimum amount of ground disturbance. Due to increased interpretation, visitation could increase to some extent at some currently little visited properties. Limited work on building exteriors would occur in previously disturbed areas. The park would follow habitat conservation strategies and the core area management guidelines (State of Wyoming EO 2011-5) that have been developed to prevent sagebrush habitat removal and fragmentation as much as possible. Although more preservation work would be performed at these properties and visitation could increase to some extent in the long term, sage-grouse would be affected negligibly.

It is possible that the behavior of individual animals could be altered due to the presence of people and facilities, but no population level impacts on these species would occur due to this alternative.

Table 14. Summary of Alternative C Wildlife Impacts at the Focus Properties, Mormon Row, and White Grass Dude Ranch

Property	*Treatment*	*Types of Actions and Impacts*	*Overall Impact NEPA (not in terms of ESA protections; see Appendix J for the NPS biological assessment)*
4 Lazy F Dude Ranch	Maintain	Infrequent, reactive health and safety activities; beginning proactive preservation maintenance. Occasional to frequent seasonal volunteer and staff presence; rare visitor presence; Improved interpretation.	Adverse, Direct, Minor, Short-term and Long-term
Aspen Ridge Ranch Residence and Barn	Stabilize	Measures to make buildings weather tight, some replacements in-kind; Continue use as park storage; Occasional staff and visitor presence.	Adverse, Direct, Negligible to Minor, Short-term and Long-term
Bar BC Dude Ranch	Stabilize	Measures to make buildings weather tight, some replacements in-kind; Occasional student, staff, and preservation workers during preservation work; occasional visitor presence.	Adverse, Direct, Negligible to Minor, Short-term and Long-term
Beaver Creek #10	Maintain	Frequent in-kind preservation maintenance; Use as park storage. Occasional staff presence.	Adverse, Direct, Negligible to Minor, Short-term and Long-term
Hunter Hereford Ranch	Maintain	Proactive preservation maintenance; Storage use, occasional staff and visitor presence.	Adverse, Direct, Negligible to Minor, Short-term and Long-term
Lucas Homestead/ Fabian Place	Stabilize	Same as B. Measures to make buildings weather tight, some replacements in-kind; Improved interpretation; infrequent staff and occasional visitor presence.	Adverse, Direct, Negligible to Minor, Short-term and Long-term
Luther Taylor Cabins	Stabilize	Measures to make buildings weather tight, some replacements in-kind; Infrequent staff presence, occasional visitor presence.	Adverse, Direct, Negligible, Short-term and Long-term
Manges Cabin	Maintain	Frequent in-kind preservation maintenance; Storage use, occasional staff and visitor presence.	Adverse, Direct, Negligible to Minor, Short-term and Long-term
McCollister Residential Complex	Stabilize	Measures to make buildings weather tight, some replacements in-kind; Storage use, occasional staff and visitor presence.	Adverse, Direct, Negligible to Minor, Short-term and Long-term

Mormon Row	Implement 1999 EA with parking changes	Modified infrastructure improvements same as A. Formalize circulation and parking; install interpretive signs and accessible trail; stabilize buildings; Higher staff presence short-term, improved interpretive site in long-term, continuing visitor presence.	Adverse, Direct, Negligible to Minor, Short-term; Beneficial, Indirect, Minor Long-term; Adverse, Negligible to Minor, Indirect, Long-term
Sky Ranch	Stabilize	Measures to make buildings weather tight, some replacements in-kind; Use as park storage; Occasional staff presence.	Adverse, Direct, Negligible to Minor, Short-term and Long-term
Snake River Land Company Office and Residence	Stabilize	Measures to make buildings weather tight, some replacements in-kind; Use as park storage; Occasional staff presence.	Adverse, Direct, Negligible to Minor, Short-term and Long-term
White Grass Dude Ranch	Implement 2004 EA with parking and capacity changes	Same as B. On-going long-term phased rehabilitation; Staff, student, and occasional visitor presence. Also increase average seasonal day use capacity of about 25 people to about 40 occasionally; increase seasonal overnight use from 15 to 26.	Same as B. Adverse Direct, Negligible to Minor, Short-term and Long-term

Cumulative Effects

Wildlife species and their habitats in many areas of the park have been altered in the past by NPS development and continue to be affected by the presence of people travelling on park roads, pathways, and waterways; hiking on trails; and working and visiting parts of the part, especially park developed areas. Many species avoid developed areas and other places where humans congregate.

Any project that includes construction or development in the park may have an effect on wildlife if appropriate types of habitat are in the project area or nearby; therefore, most of the actions listed in the cumulative effects scenario in the introduction of this chapter have had or would have some effect on wildlife. Developments, including park roads, visitor centers, administrative and housing complexes affect wildlife by disturbing and potentially displacing individual animals from these areas. Maintenance of building exteriors, parking, and walkways also has the potential to disturb individual animals that may be nearby during short-term work periods.

Examples of future work are water and wastewater system replacement and/or rehabilitation at Moose, Jenny Lake, Colter Bay Village, Jackson Lake Lodge, and Flagg Ranch, changes to Colter Bay visitor services infrastructure, Snake River launch improvements, and various types of construction proposed in the developing Jenny Lake Renewal Plan that may be approved. In addition, construction of the Moose Junction to Antelope Flats Junction multi-use pathway in the

future, potentially by 2016, would likely increase bicyclist visitation at Mormon Row as well as at other historic properties such as Hunter Hereford Ranch and the Luther Taylor Cabins.

Under Alternative C, a negligible impact to wildlife associated with continuing current management of park historic properties would occur. There would be a negligible adverse impact on wildlife when considered with other past, present, and reasonably foreseeable future actions.

Park Operations

Affected Environment

Park operations refer to the adequacy of staffing levels and the quality and effectiveness of park infrastructure in protecting and preserving vital resources and providing for an effective visitor experience. Infrastructure facilities include the roads that provide access to and within the park (both administrative and visitor use), staff housing, visitor orientation facilities (visitor centers, developed and interpreted sites, and other interpretive features), administrative buildings (office and workspace for park staff), management support facilities (garages, shops, storage buildings, and yards used to house and store maintenance equipment, tools, and materials), and utilities such as phones, sewer, water and electric. In addition, a variety of concessioners operate out of areas of the park that provide visitor services and amenities.

The planning and scheduling of resources, routine operation and maintenance activities for facilities are performed in accordance with established schedules and integrated with operations at other sites throughout the park. While staffing levels are adequate to maintain operations, there is little or no surplus to meet needs beyond the normally planned and scheduled activities. Implementation of a new project can affect the operations of a park such as the number of employees needed; the type of duties that need to be conducted; when/who would conduct these duties; how activities should be conducted; and administrative procedures.

Grand Teton National Park and the John D. Rockefeller, Jr., Memorial Parkway (JODR) are both managed by the GRTE superintendent and staff. The superintendent oversees the deputy superintendent, and, indirectly, the five primary divisions of the park: facility management, ranger activities, interpretation, science and resource management, and business resources and administration.

The Facility Management (FM) Division is the largest operational unit in the park. This division is responsible for planning, design, construction, operation, and maintenance of all roads, trails, buildings, and utility systems in the park. FM staff are responsible for routine maintenance of infrastructure, facilities, and site conditions. Activities include snow removal (snowplowing access roads or parking areas, shoveling roofs), access road and utility maintenance, and trash removal.

The Ranger Activities Division, the second-largest operational division in the park, provides services and resource protection, including the management of programs such as law enforcement, wild land and structural fire, search and rescue, fee collection, emergency medical services, and a joint fire/law enforcement/dispatch center with United States Forest Service. The division operates 24-hours per day during the busy summer season; however, hours of operation are reduced at other

times of the year, when park activities have decreased. Law enforcement (LE) rangers patrol all park roads, facilities, the Snake River, and backcountry areas.

Within the Ranger Activities Division, fire management staff perform vegetation management by removing hazard trees and reducing mechanical fuels, and suppress fires to ensure human safety and protect structures on properties in area of human occupation and visitation. The NPS has adopted the International WUI code that calls for creating defensible space around all agency-owned structures in the park. Typically this work focuses on the first 30 feet of perimeter to thin canopy, remove overhanging branches and break-up the fuel continuity in the first zone of defense around the structure. Actual treatment specifications vary by building and setting. Actual treatment specifications vary by building and setting. Fire management efforts to create defensible space around some park properties, occur 30 – 90 feet of structures depending on fuel loading and fire risk conditions. Activities, as approved under the Fire Management Plan (NPS 2004b, updated 2009) range from mowing grass fuels up to twice annually at 9 properties (Cunningham Cabin, 4 Lazy F Dude Ranch, Mormon Row, Aspen Ridge Ranch, Bar BC Dude Ranch, Hunter Hereford Ranch, Lucas Homestead/ Fabian Place, Luther Taylor Cabins, and McCollister Residential Complex) to periodically trimming limbs to 6 feet and removing accumulations of woody fuels to 10 tons/acre as needed

The Interpretation Division is responsible for operating park visitor centers and providing a wide variety of informational and educational programs to park visitors. These programs include guided walks, campfire programs, roving interpretation, and other services. The division also manages the planning and design of media-based interpretation such as brochures, site bulletins, wayside exhibits, and other materials.

The Science and Resource Management Division (SRM) performs a wide variety of duties associated with stewardship of the park's natural and cultural resources. These duties include research, natural and cultural resource monitoring and management activities, and programmatic duties related to ensuring compliance with applicable laws, policies, and regulations.

Lastly, the Business Resources and Administrative Division is responsible for contracting, procurement, and property; human resources; financial resources; information technology; management of park concession contracts; commercial use authorizations; and special use permits.

Budget and Staffing

Grand Teton National Park's operational budget for fiscal year 2014 was approximately $12.5 million, including funds for staff salaries, supplies and materials, and other operational needs. This amount does not include other funds, such as those for construction or special projects, which are allocated on a year-by-year, project-by-project basis. Seasonal employees primarily work during the summer season. The park had approximately 160 permanent and 140 seasonal employees in 2014.

Environmental Consequences
Methodology

Management Policies do not contain a specific chapter on park operations, however virtually every action or proposal that is evaluated in this NEPA process has either a direct or indirect effect on park

operations. There are also a number of director's orders that pertain to park operations as well. NPS Management Policies 2006 states: The NPS will provide visitor and administrative facilities that are necessary, appropriate, and consistent with the conservation of park resources and values. Facilities will be harmonious with park resources, compatible with natural processes, esthetically pleasing, function, and energy and water efficient, cost effective, universally designed, and as welcoming as possible to all segments of the population. NPS facilities and operation will demonstrate environmental leadership by incorporating sustainable practices to the maximum extent practicable in planning, design, siting, construction, and maintenance. Park staff knowledge was used to evaluate the impacts of each alternative on park operations.

Impacts on park operations were evaluated using the process described in the "Methods for Analyzing Impacts" section at the beginning of this chapter.

Impact threshold definitions for park operations are as follows. The mitigation measures in Chapter 2 would be implemented as appropriate during any project action and were considered in the analysis of the alternatives.

Intensity Level Definitions – Park Operations

Negligible: Impacts would not occur or would not be detectable.

Minor: Impacts would be slight, short-term, and localized, but would not have a measurable effect on park operations.

Moderate: Impacts would be measurable, potentially long-term, and would measurably improve or degrade park operations in a manner noticeable to staff and the public.

Major: Impacts would be long-term, readily apparent, and significantly improve or degrade park operations in a manner noticeable to staff and the public.

Duration

Short-term Impacts. Effects lasting for the duration of construction.

Long-term Impacts. Effects lasting longer than the duration of construction.

Impacts of Alternative A (No-action alternative) on Park Operations

Alternative A, the no-action alternative, would result in negligible to minor adverse, short-term and long-term effects on park operations. Continuing current management of the park's historic properties would in general negligibly affect operations. At the same time, hazards caused by structural deficiencies or by the continuing presence of bats and mice in some historic buildings, particularly the unused or underused "focus" properties, would need to be addressed. More structures could develop hazardous conditions in the future without proactive maintenance. Correcting these conditions could have a minor to moderate adverse effect on park operations at least during short periods of work. Ongoing rehabilitation at White Grass Dude Ranch in the short

term, and potential increases in visitation and the need for additional park LE operational support in the long term, could cause a minor increase in park operations at this property, although a moderate benefit to park operations would occur when the training center is operational because the park capacity to preserve its historic structures would increase. Infrastructure and interpretive improvements at Mormon Row could also increase visitation and park operations to a minor extent.

The 32 In-Use Properties

Under the no-action alternative, the park would continue existing types and levels of park operations at its historic properties, as well as those identified in *Elements Common to All Alternatives*.

Continuing current management of these historic properties with established uses would negligibly affect park operations. Because property uses and needs would not change, park operations also would not change. Law enforcement, EMS, and structural fire protection would continue. Maintenance of buildings and utilities, including snow plowing, winterizing to close buildings for the winter months, reopening and preparing utilities for operation in the spring, and cyclic repair of historic and nonhistoric buildings and roads would also continue. Maintenance staff would likely experience an increasing need to respond to emergency actions resulting from aging and deteriorating infrastructure without existing uses. Resource management projects such as exotic vegetation management at identified problem areas would at a minimum continue at existing levels but could increase due to continued introduction and spread of exotic plants within the park.

Mormon Row, White Grass Dude Ranch

Mormon Row:

Under Alternative A, the no-action alternative, the infrastructure improvements analyzed in the *Mormon Row Historic District Management Alternatives and Environmental Assessment* (NPS 1999) and approved in the *Mormon Row Historic District Management Preferred Alternative FONSI* (NPS 2000) are being implemented in 2015 (summer – end of calendar year 2015) with slight modifications based on current visitor use. The work (see **Figure 10**, p. 70) includes constructing similarly sized northern and southern parking areas (each ~14 spaces rather than 6-8 and 18, respectively), bus parking and a turnaround near the Mormon Row/Antelope Flats roads junction; installing a vault toilet first at the southern parking area and potentially adding a second if needed; and extending the accessible interpretive trail, which was approved from the southern parking area south to the Andy Chambers homestead, to connect to the Mormon Row Road/Antelope Flats Road junction (total new length would be 0.47 mile, longer by 0.32 mile). A separate parking area for buses and a bus turnaround east of the Mormon Row Road/Antelope Flats Road junction would also be constructed.

The improvements at Mormon Row could increase various types of park operations, particularly if visitation rises. In the short term, resource management would conduct pre- and post-construction vegetation, monitoring and treatment work to control the spread of invasive plant species. In the long term, the vault toilet (or toilets if another is added in the future) would need to be maintained and the unpaved Mormon Row Road could need to be graded more frequently. If current low to

moderate levels of visitation do not increase, routine law enforcement patrols and a low level of EMS responses would continue at existing levels but could increase with higher visitation.

Because Mormon Row would continue to be managed as a low-key interpretive district, visitor contact, interpretation, and safety activities usually conducted by rangers and interpretive specialists would initially continue at existing low levels. All of these impacts, combined, would likely have a minor to moderate adverse impact on park operations.

White Grass Ranch:

Under Alternative A the rehabilitation plan would continue to be implemented as approved in 2005. The impacts were detailed in the *White Grass Ranch Rehabilitation and Adaptive Use Environmental Assessment/Assessment of Effect*, September 2004; and *White Grass Ranch Rehabilitation and Adaptive Use Finding of No Significant Impact (FONSI)*, February 2005. The rehabilitation work is expected to be completed in 2016 and the ranch would become fully operational as a historic preservation training center in 2017. The on-going rehabilitation at White Grass Dude Ranch could increase LE, SRM, and FM park operations to a minor extent. Visitor contact, interpretation, and safety activities usually conducted by rangers and interpretive specialists would continue at existing levels although these also could increase to some extent if visitation increased.

The training center would provide the park an increased capacity to preserve the park's historic structures, which would be a moderate, long-term beneficial impact to park operations. The park would continue to support maintenance and operation of the center after rehabilitation is complete. In the long term, a small rise in visitor use is possible that may increase EMS and LE incidents. Additional patrols may be warranted if visitor and employee use increase due to greater efforts to promote visitation and provide interpretive information. Additional LE support would likely be needed during planned special events at the center.

FM and SRM activities could also increase in the long term when the center is fully operational, depending on how responsibilities are defined in future MOAs. Currently, water and wastewater systems are operated and maintained by the park's Utilities Branch. Minimal work on the roads and parking area is done currently. If park staff open the road prior to natural snow melt, installing poles along the road side and occasional grading would be needed. Trash removal by park staff could increase somewhat in the future. Monitoring for and control of invasive plant species and building pests would continue and could slightly increase. The additional work could result in a minor adverse impact to park operations at this property.

4 Lazy F Dude Ranch, Aspen Ridge Ranch Residence and Barn, Bar BC Dude Ranch, Beaver Creek #10, Hunter Hereford Ranch, Lucas Homestead/Fabian Place, Luther Taylor Cabins, Manges Cabin, McCollister Residential Complex, Snake River Land Company Office and Residence, Sky Ranch

Under the no-action alternative, park operations would not change at the 11 focus properties. These properties generally have low visitation with limited access or facilities. The park currently does

little to promote visitation by the general public to these properties. All 11 contribute negligibly to park operations in terms of law enforcement or interpretation needs.

Stabilization or maintenance activities for the focus properties would continue to occur on an as-needed basis. Proactive maintenance is performed at Hunter Hereford Ranch and, at 4 Lazy F Dude Ranch, the work has shifted from the infrequent, reactive repairs to address health and safety concerns to proactive preservation maintenance. However, as time passes, some marginally-stabilized buildings at many of the focus properties could develop more serious structural deficiencies, potentially endangering employees or visitors if they entered these structures. Potentially expensive, unplanned emergency repairs could be necessary, which would increase the FM workload and hinder these employees from performing other planned maintenance activities on schedule. Unplanned emergency work could constitute a minor adverse effect on park operations.

In addition, potential threats to employee health and safety currently exist at buildings at 4 Lazy F Dude Ranch, Beaver Creek #10, Aspen Ridge Ranch Residence and Barn, McCollister Residential Complex, and Snake River Land Company Office and Residence. Although staff rarely enter these buildings, deer mouse and bat infestations pose a serious potential health threat to exposed employees. These health and safety problems would continue. All employees are educated in effective practices to mitigate this threat but some risk would remain.

Overall, effects to park operations from Alternative A, the no-action alternative, would be long-term, indirect, localized, minor to moderate, and adverse.

Cumulative Effects

Any project that occurs in the park has an effect on park operations; therefore, most of the actions listed in the cumulative scenario in the introduction of this chapter would have some effect on employees and park operations. Planning projects require many park staff in a variety of disciplines to contribute their expertise and assistance. Efforts such as exotic vegetation and wildlife management involve resource management staff; past actions such as the Moose Headquarters rehabilitation have primarily involved maintenance staff. Operations such as visitor contact, interpretation, and safety activities occupy rangers and interpretive specialists.

Construction of the Moose Junction to Antelope Flats Junction multi-use pathway in the future, potentially by 2016, would likely increase bicyclist visitation and possibly the need for EMS or LE patrols at Mormon Row as well as at other historic properties such as Hunter Hereford Ranch and the Luther Taylor Cabins.

Under Alternative A, a negligible to minor adverse effect on park operations associated with continuing current management of park historic properties would occur. There would be a negligible to minor adverse effect on park operations when considered with other past, present, and reasonably foreseeable future actions.

Impacts of Alternative B (NPS Preferred Alternative) on Park Operations

Although Alternative B would add to the park operations work load in the short term, it would have the greatest benefits to park operations among the alternatives in the long term. Alternative B would use historic properties more effectively, improve health and safety conditions, and ensure better long-term maintenance of properties. In the short term, adverse impacts to park operations would also increase because there would be more work due to increases in maintenance, visitor protection, and resource management responsibilities The typical workload for employees would increase due to the need to finalize project plans for maintenance, rehabilitations, and removals; perform the work or hire contractors, and monitor construction or deconstruction activities. After rehabilitations are completed, normal workloads and patterns should return although there would be a slight increase due to the need to service additional vault toilets. Construction noise and dust may also adversely affect park employees, but these inconveniences would be temporary, lasting only as long as construction.

Under Alternative B, the negligible to minor impacts to park operations associated with the 32 in-use properties would be the same as under Alternative A. Infrastructure improvements at Mormon Row would increase park operations slightly compared to Alternative A. Park operations at White Grass Dude Ranch would be similar to what would occur under Alternative A except that minor beneficial impacts would occur in the short term and the long term from decreasing park operations by not constructing and maintaining the spur road.

The 32 In-Use Properties

Under Alternative B, the negligible to minor impacts to park operations associated with the in-use historic properties.

Mormon Row, White Grass Dude Ranch

Mormon Row:

Under Alternative B implementation of the slightly modified infrastructure improvements at Mormon Row and impacts on park operations would be the same as described for Alternative A. The improvements could increase various types of park operations, particularly if visitation rises. In the short term, resource management staff would conduct pre- and post-construction vegetation, monitoring and treatment work to control the spread of invasive plant species. In the long term, roads and utilities staff would need to maintain the vault toilet (or toilets if another is added in the future) and could need to grade the unpaved Mormon Row Road more frequently. If current low to moderate levels of visitation do not increase, routine law enforcement patrols and a low level of EMS responses would continue at existing levels but could increase with higher visitation.

Because Mormon Row would continue to be managed as a low-key interpretive district, visitor contact, interpretation, and safety activities usually conducted by rangers and interpretive specialists would initially continue at existing low levels. All of these impacts, combined, would likely have a minor to moderate adverse impact on park operations.

In addition, if the option to potentially rehabilitate four Mormon Row houses (from north to south, the Thomas Murphy/Joe Heninger (Reed Moulton), John Moulton ("pink house"), Andy Chambers, and Thomas Perry/Roy Chambers houses) for adaptive reuse as seasonal park housing is implemented, there would be moderate adverse impacts to park operations in the short term, and moderate adverse and beneficial impacts to park operations in the long term. The modified, previously approved infrastructure improvements, such as formalizing parking areas and installing the interpretive trail and vault toilet, would not be expanded from what has already been described.

The rehabilitation would include installing and upgrading utilities (water, sewer, power, and communication, and possibly fire detection and protections systems) and associated infrastructure, as well as upgrading and performing preservation maintenance on the buildings. Planning, contracting and overseeing contractor activities, and restoring disturbed areas would cause a minor adverse impact on park operations in the short term.

Rehabilitating the buildings and using them as housing would result in long-term, minor beneficial effects on park operations. Installing wells would provide water for structural fire response, a long-term minor benefit for structural protection operations.

In the long term, after substantial infrastructure and utility work is completed, annual operation and maintenance would add to staff work assignments, an adverse impact. If special regulations related to noise and objects that might affect scenic views and visitor enjoyment of the cultural landscape are put in place, park staff would need to monitor and enforce them. Seasonal overnight residency could increase the need for fire, EMS, and LE response.

Rehabilitating these buildings for seasonal housing under Alternative B would also result in minor to moderate beneficial impacts to park operations. The proposal would help the park meet an NPS "Preserve America's Special Places" Call to Action goal by assessing these significant resources and prioritizing their rehabilitation using modern historic preservation methods. These structures are significant structures with extensive deferred maintenance and their rehabilitation would address these needs. Rectifying existing structural deficiencies and pest infestation hazards, and preventing future ones, would improve conditions for employees and decrease existing health and safety risks. Increasing seasonal housing in the park would improve the park's ability to hire staff for all kinds of work or to offer housing to volunteers that might not otherwise offer their services. Also, it could result in shifting some employees from more outlying or poorer-condition housing units nearer to the Moose headquarters area. This would make park operations more sustainable because it would, for those employees, reduce commute times, travel miles, and greenhouse gases produced. Lastly, the park would use young-adult trainees from all around the NPS who attend the Western Center for Historic Preservation hands-on training to rehabilitate historic properties for use. This training opportunity would broaden skills which can be applied in future projects and hopefully other parks and reserves.

White Grass Dude Ranch:

Park operations at White Grass Dude Ranch under Alternative B would be similar to impacts described for Alternative A, except that the spur road would not be constructed and maintained. Adverse impacts to operations from construction in the short term and maintenance of the road in the long term would not occur. This change would constitute minor beneficial impacts to park

operations. Also, formalizing accessible parking areas at the ranch/center would improve access for a wider variety of people. Increasing seasonal day use occasionally to approximately 40 people and increasing seasonal overnight use from 15 to 26 people would not affect park operations.

4 Lazy F Dude Ranch, Bar BC Dude Ranch, Beaver Creek #10, Snake River Land Company Office and Residence

4 Lazy F Dude Ranch:

Rehabilitation of 4 Lazy F Dude Ranch for adaptive reuse as seasonal housing under Alternative B would likely have moderate adverse and beneficial impacts on park operations in both the short and long term.

In comparison to Alternative A, under which little work on the 4 Lazy F Dude Ranch roads or informal parking areas would be done and the ranch would remain unoccupied, road repair in the short term before the ranch is occupied and regular road and building maintenance in the long term would be required. The roads would need to be in good condition to enable ambulance access. The "bridge" over the old irrigation ditch would need to be removed or upgraded to facilitate annual grading and a few potholes would need to be filled. If the road is to be opened before snow melts naturally, snow poles would need to be installed.

The ranch buildings would be rehabilitated, including the electrical, telephone, mechanical, and possibly fire detection and protection systems, which would be considered and reviewed. At least one building would require historically sensitive adaptations to make it ABAAS compliant. Rehabilitating the buildings and ensuring successful pest exclusion would decrease risks to employee health and safety and result in long-term, minor beneficial effects on park operations.

Water lines to the buildings and the wastewater (septic) system, including new service lines to the buildings, and installing two septic tanks and two subsurface leach fields, would be replaced. Contracting and overseeing contractor activities would cause a minor adverse impact on park operations in the short term. A new water main from Moose to the 4 Lazy F Dude Ranch is not included here because it was previously analyzed in the *Replace Moose Wastewater System and Address Critical Water System Deficiencies EA* (NPS 2012). Because the new water system would provide adequate water for structural fire response, there would be a long-term minor benefit for structural protection operations.

In the long term, after substantial infrastructure and utility work is completed, annual operation and maintenance would add to staff work assignments. If a winter caretaker is allowed to live at the ranch, FM staff would also need to keep the water and wastewater systems functional in the winter and plow the road to the cabin to provide access.

Seasonal overnight residency could increase the need for fire, EMS, and LE response. Park regulations such as pet and campfire policies would need to be enforced. Special regulations related to noise and objects that might affect scenic views associated with the Snake River Wild and Scenic designation could also require additional LE patrols.

Rehabilitating the ranch for seasonal housing under Alternative B would also result in minor to moderate beneficial impacts to park operations. Addressing existing structural deficiencies and pest infestation hazards and preventing future ones, would improve conditions for employees and decrease existing health and safety risks. Using these buildings as seasonal housing would improve the park's ability to hire staff for all kinds of work or to offer housing to volunteers that might not otherwise offer their services. Also, it could result in shifting some employees from more outlying or poorer-condition housing units to the Moose area where park headquarters is located, offsetting the increased operations cost at 4 Lazy F by reducing funds/work spent in other sites. It would make park operations more sustainable because it would, for those employees, reduce commute times, travel miles, and greenhouse gases produced. Lastly, the park would use preservation volunteers and young-adult trainees from all around the NPS who attend the Western Center for Historic Preservation hands-on training to rehabilitate historic properties for use. This training opportunity would broaden skills which can be applied in future projects and hopefully other parks and reserves.

Bar BC Dude Ranch:

Stabilizing most (27 of 34) buildings at the Bar BC Dude Ranch under Alternative B would cause negligible to minor impacts to park operations. The effect on park operations would be limited because much of the stabilization work would be done by preservation group volunteers. The formalized parking area would be the same size and shape as the existing informal configuration and would not affect the likelihood of visitors stopping to learn about or walk down to the historic district. A small increase in visitor use could occur because of the increased stabilization of the buildings, which could slightly increase EMS and law enforcement incidents and the need for additional patrols.

Beaver Creek #10:

Rehabilitating Beaver Creek #10 for an administrative park use such as storage, office space or housing under Alternative B would result in a minor adverse impact to park operations in both the short term and the long term. Once the building is upgraded and renovated, FM staff would need to maintain the building and utilities. The need for LE patrols would not be expected to change because this property is located in the Old Administrative Area/Beaver Creek historic district where park housing, storage, and an office already exists. FM duties to maintain the parking area would be negligibly affected as staff already clear the parking area of snow and maintain the parking area surface. Work would be decreased in the long term because the parking area would be smaller. Ensuring an adequate water supply for structural fire response was analyzed in the *Replace Moose Wastewater System and Address Critical Water System Deficiencies EA* (NPS 2012).

Long-term beneficial impacts to park operations would also result from rehabilitating Beaver Creek #10. The park would be providing better care for a historic property that is not being used and ensure that it would remain in better condition. Rehabilitating the building and successfully excluding pests would decrease risks to employee health and safety. Although the final decision regarding the type of administrative use has not been made, all uses would improve park operations. As described above for 4 Lazy F Dude Ranch, use as seasonal housing could also expand the park's ability to attract staff and/or volunteers because of the ability to provide housing in the park. The sustainability of park operations would increase if duty stations were nearby (Moose, for example) and commutes, travel times, and greenhouse gas emissions were reduced.

Snake River Land Company Office and Residence:

Rehabilitating Snake River Land Company Office and Residence buildings and using the complex for ranger operations under Alternative B would cause negligible to moderate impacts on park operations. Higher visitor use would likely occur, which could increase EMS and law enforcement incidents to some extent. Re-use of the main building as a ranger station would warrant installation of an intrusion alarm, also potentially increasing the need for LE response at the site. The need to grade the access road and parking area could increase to a moderate extent in the long term. Vehicles would need to be removed from the parking area regularly for plowing. In the short term, the existing loop road would need to be widened to accommodate a plow truck and upgrades to buildings and utilities would also need to occur. If hanging phone and IT lines on existing power poles is possible, impacts from doing this would be negligible. The wastewater system would need to be evaluated further and possibly re-engineered. After the buildings and utilities are upgraded, additional operations and maintenance would be minor in the long term. Because ranger operations at the existing Buffalo Fork Ranger Station at Moran would move to the rehabilitated Snake River Land Company main building, and the existing ranger station would be removed, changes in FM operations would at most be minor. The move from the old office location to the new would temporarily disrupt employee efficiency to a minor degree.

Relocating the Buffalo Fork LE staff offices would benefit law enforcement operations to a moderate extent. The park would be providing better care for a historic property that is not being used and ensure that it would remain in better condition. Rehabilitating the buildings and successfully excluding pests would decrease risks to employee and visitor health and safety. Relocation would improve the efficiency of river ranger operations by storing supplies and boats nearer the ranger station. Other improvements include having office space that is accessible to handicapped persons, general work areas, a break room, and storage space. Rangers would be able to better accommodate visitors than they currently can. Light, ventilation, heating, and air quality would be better in the rehabilitated office compared to the existing station. The park also would gain additional meeting space for occasional use in the Moran area.

Lucas Homestead/Fabian Place, Luther Taylor Cabins

Maintaining these two focus properties as interpretive historic districts under Alternative B would result in negligible to minor adverse impacts on park operations. At the former, short-term construction to formalize the parking area and repair the bridges would cause minor adverse impacts to park operations during construction and revegetation work periods. At both properties, a small increase in visitor use in the long term could result in more EMS and law enforcement incidents but the change would likely be negligible. The need for structural fire response and FM maintenance of the access roads and parking areas would not be affected.

Aspen Ridge Ranch Residence and Barn, McCollister Residential Complex, Sky Ranch

Removal of these three properties under Alternative B would result in long-term minor to moderate beneficial impacts on park operations, depending on the property. The removals would decrease EMS, LE and structural fire response and eliminate health and safety concerns present in some structures. Rangers would not need to patrol areas closely because the potential for vandalism or unlawful entry would no longer be present and visitation to some park areas would decrease. Fewer

structures would reduce the need for fire protection and maintenance staff work loads. Removing the buildings and revegetating the building areas and access roads would cause direct, localized, moderate adverse and beneficial impacts. Work would be increased in the short term but, after revegetation is completed, work to maintain the structures and grading and occasional tree limbing to maintain vehicular access would no longer be needed.

Hunter Hereford Ranch, Manges Cabin

Under Alternative B, improving maintenance of these two focus properties for continued use as park storage would negligibly affect park operations. No utilities would be provided or maintained although LE rangers would continue to occasionally patrol. The need for structural fire response and FM maintenance of the access roads and parking areas would not be affected.

Cumulative Effects

As described under Alternative A, any project that occurs in the park has an effect on park operations; therefore, most of the cumulative impact scenario actions in the introduction of this chapter would have some effect on employees and park operations. Planning projects require many park staff in a variety of disciplines to contribute their expertise and assistance. Efforts such as exotic vegetation and wildlife management involve resource management staff; past actions such as the Moose Headquarters rehabilitation have primarily involved maintenance staff. Operations such as visitor contact, interpretation, and safety activities occupy rangers and interpretive specialists.

Construction of the Moose Junction to Antelope Flats Junction multi-use pathway could increase bicyclist visitation and the need for EMS or LE patrols at Mormon Row as well as at other historic properties such as Hunter Hereford Ranch and the Luther Taylor Cabins.

Alternative B would have short-term, direct, localized, minor to moderate, adverse impacts on park operations when considered with other past, present, and reasonably foreseeable future actions. In the long term, negligible to minor adverse effects on park operations would occur.

Park operations associated with the current and future use of the rehabilitated, adaptively used historic properties would be more efficient and improved to a minor to moderate degree. Cumulatively, there would be a moderate beneficial impact to park operations when considered with other past, present, and reasonably foreseeable future actions.

Impacts of Alternative C on Park Operations

Alternative C would result in negligible to minor beneficial and adverse effects on park operations in the long term. At most of the historic properties, those with an established use and management protocol, park operations would not change. At other properties, park operations could increase to some degree if visitation increases due to increased public awareness of the park's cultural resources, or if a more structured schedule for repairs results from better focusing on property needs and having recently stabilizing and maintained more properties to a higher standard.

Park operations would initially increase to a moderate extent during short-term proactive stabilization or maintenance work. Impacts would be short-term, direct, localized, minor to moderate, and adverse. In some cases, operations would increase in the long term because little maintenance has been done on some properties and continued maintenance would be needed to retain improved property conditions.

Overall, Alternative C would result in negligible to minor adverse effects due to increases in maintenance, visitor protection, and resource management responsibilities in the long term. There would also be direct, localized, minor to moderate beneficial effects from rectifying structural deficiencies and pest infestation problems at some properties.

The 32 In-Use Properties

Same as Alternative A.

Mormon Row, White Grass Dude Ranch

Mormon Row:

Same as Alternative A.

White Grass Dude Ranch:

Same as Alternative B.

4 Lazy F Dude Ranch, Aspen Ridge Ranch Residence and Barn, Beaver Creek #10, Hunter Hereford Ranch, Manges Cabin, McCollister Residential Complex, Sky Ranch, Snake River Land Company Office and Residence

These eight of the 11 focus properties would be stabilized or maintained under Alternative C and then maintained to be used for park storage. This use and low visitation would negligibly impact park operations at these properties. The level of law enforcement and resource management patrols and the need for law enforcement, EMS, or structural fire responses would likely continue to be low. Addressing existing structural deficiencies and pest infestation hazards and preventing future ones, would improve conditions for visitors and employees and decrease existing health and safety risks.

Lucas Homestead/Fabian Place, Luther Taylor Cabins

Geraldine Lucas Homestead/Fabian Place and the Luther Taylor Cabins would be stabilized and/or maintained for use as interpretive historic districts. Slight increases in visitor use are possible that may slightly increase EMS and law enforcement incidents and the need for LE and resource monitoring patrols, resulting in a negligible to minor adverse impact to park operations.

Bar BC Dude Ranch

Bar BC Dude Ranch would be stabilized through the work of preservation group volunteers. Formalizing the parking area on the bench above the historic district would increase park operations in the short term but the low level of park operations would not be expected to change in the long term.

Cumulative Effects

Any project that occurs in the park has an effect on park operations; therefore, most of the actions listed in the cumulative scenario in the introduction of this chapter would have some effect on employees and park operations. Planning projects require many park staff in a variety of disciplines to contribute their expertise and assistance. Efforts such as exotic vegetation and wildlife management involve resource management staff; past actions such as the Moose Headquarters rehabilitation have primarily involved maintenance staff. Operations such as visitor contact, interpretation, and safety activities occupy rangers and interpretive specialists.

Construction of the Moose Junction to Antelope Flats Junction multi-use pathway in the future, potentially by 2016, would likely increase bicyclist visitation and possibly the need for EMS or LE patrols at Mormon Row as well as at other historic properties such as Hunter Hereford Ranch and the Luther Taylor Cabins.

Under Alternative C, continuing current management of in-use park historic properties would be the similar to effects under Alternative A. In addition, a negligible to minor adverse effect on park operations associated with proactively stabilizing and maintaining would occur during the short term. There would be a negligible to minor adverse effect on park operations when considered with other past, present, and reasonably foreseeable future actions.

Visitor Use and Experience

Affected Environment

According to 2006 *Management Policies*, the enjoyment of park resources and values by people is part of the fundamental purpose of all park units (NPS 2006c). The National Park Service is committed to providing appropriate, high quality opportunities for visitors to enjoy the parks, and will maintain within the parks an atmosphere that is open, inviting, and accessible to every segment of society. Further, the National Park Service will provide opportunities for forms of enjoyment that are uniquely suited and appropriate to the superlative natural and cultural resources found in the parks. The management policies also state that scenic views and visual resources are considered highly valued associated characteristics that the National Park Service should strive to protect (NPS 2006c).

Approximately 80 percent of all recreational visits to the park occur between June 1 and September 30, with July and August as the peak months for visitation. In 2013, Grand Teton National Park saw 2,688,794 recreational visitors and the John D. Rockefeller, Jr. Memorial Parkway 1,228,502.

There are four visitor centers in Grand Teton National Park - the Craig Thomas Discovery and Visitor Center in Moose, open spring, summer and fall; and three visitor centers open during the summer only - the Colter Bay Visitor Center, Jenny Lake Visitor Center and the Laurance S. Rockefeller Preserve Center.

There is a wide variety of visitor use and appreciation of historic properties in the park. Properties such as the Jenny Lake Ranger District, Colter Bay Village, and the historic Jackson Lake and Jenny Lake Lodges are popular destinations and attract overnight visitors, often reaching capacity during the summer months. On-site interpretation at each of these locations varies. Similarly, the Craig Thomas Discovery and Visitor Center in Moose is a well-visited destination, with over 270,000 visitors from May-November of 2011. While in the area, visitors often stop at Menor's Ferry/Maud Noble Cabins, the privately-owned Chapel of Transfiguration, and the Murie Ranch. In this plan, visitation at historic properties is defined as high if greater than 1000, moderate if between 100 and 1000, and low if less than 100.

Cunningham Cabin and Menor's Ferry/Maud Noble Cabins are both easily accessible and well interpreted historic districts, and are therefore often visited. During the summer season, the former receives more than 1000 visitors and the latter as many as 25,000. Mormon Row and White Grass Dude Ranch are also fairly accessible, although their interpretive plans have yet to be fully realized. As noted above, Mormon Row road is an increasingly popular bike road, particularly for guided tours, and is also popular with photographers seeking images of the iconic historic barns. This property has high visitation estimated as 1000-3000 visitors. White Grass Dude Ranch is estimated as having numbers in the low range.

A handful of districts, such as Beaver Creek, The Highlands, and Jackson Lake Ranger Station are used as employee housing and signed to discourage visitor access.

Of the 11 focus properties in this plan, Bar BC Dude Ranch and Lucas Homestead/Fabian Place have moderate visitation, drawing up to several hundred visitors each year. People access these sites by bike, foot, and horseback rather than by personal vehicle. Interpretive signs are located at both. Interpretive signs are also located at the Luther Taylor property. Famous for its role in the movie *Shane*, Luther Taylor Cabins often draws movie buffs and others seeking out the property. The remainder of the focus properties (4 Lazy F Dude Ranch, Beaver Creek #10, Snake River Land Company, Hunter Hereford Ranch, Aspen Ridge Ranch Residence and Barn, Manges Cabin, McCollister Residential Complex, and Sky Ranch), are unmarked and rarely visited by park visitors. People riding on horseback would continue to use trails near some of these historic properties. Gates and signs discourage access to many of these properties, though few are specifically signed like those used for park housing are.

Environmental Consequences
Methodology

NPS Management Policies 2006 (NPS 2006c) state that enjoyment of park resources and values by the people of the United States is part of the fundamental purpose of all parks and that the NPS is committed to providing appropriate, high-quality opportunities for visitors to enjoy parks. Past interpretive and administrative planning documents provided background on changes to visitor use and experience over time. Anticipated impacts on visitor use and experience were analyzed using

information from previous studies and included park staff knowledge of the resources and site; visitor surveys; review of existing literature and park studies; information provided by NPS professionals; and professional judgment. The following impact intensity levels were developed to analyze visitor experience:

Intensity Level Definitions—Visitor Use and Experience

Negligible: Visitors would not be affected or changes in visitor use and/or experience would be below or at the level of detection. Any effects would be short-term. The visitor would not likely be aware of the effects associated with the alternative.

Minor: Changes in visitor use and/or experience would be detectable, although the changes would be slight and likely short-term. The visitor would be aware of the effects associated with the alternative, but the effects would be slight.

Moderate: Changes in visitor use and/or experience would be readily apparent and likely long-term. The visitor would be aware of the effects associated with the alternative, and would likely be able to express an opinion about the changes.

Major: Changes in visitor use and/or experience would be readily apparent and have substantial long-term consequences. The visitor would be aware of the effects associated with the alternative, and would likely express a strong opinion about the changes.

Duration

Short-term Impacts. Effects lasting for the duration of construction.

Long-term Impacts. Effects lasting longer than the duration of construction.

Context: Unless otherwise noted, context refers to the average Grand Teton National Park visitor.

Impacts of Alternative A (No-action alternative) on Visitor Use and Experience

The no-action alternative would have a negligible to minor impact on current visitor use and experience in Grand Teton National Park. The 32 in-use properties, which are highly used and visited, would continue to be used and maintained. Infrastructure improvements previously planned for Mormon Row (NPS 1999) could be implemented as funds allow, with potentially minor adverse impacts in the short term due to construction noise, dust, and limited access. The on-going White Grass Dude Ranch rehabilitation would continue to have short-term, minor to moderate, adverse impacts due to limited access during construction periods. If the proposed plan is implemented at Mormon Row, the work at both Mormon Row and White Grass Dude Ranch would result in long-term, minor, beneficial impacts due to improved infrastructure, circulation, and interpretation. If the plan is not implemented at Mormon Row, these beneficial impacts would only occur at White Grass Dude Ranch. Of the 11 focus properties with minimal or no use, few receive more than several

hundred visitors each year and do not impact the average park visitor. Negligible impacts to minor adverse impacts to visitor use and experience would occur at most of the focus properties because there would be little improvement in property condition and no expected increase in visitor use in the long term The continued interpretation of several focus properties would have a minor beneficial impact on visitors to those sites.

The 32 In-Use Properties

Minor impacts to visitor use and experience of the 32 in-use historic properties would occur under all three alternatives due to the continuation of current maintenance practices at these properties. The areas around the most popular park destinations (South Jenny Lake, Jackson Lake Lodge, Colter Bay Village, and the Murie Ranch and Menor's Ferry/Maud Noble Cabins) would remain accessible to visitors but maintenance activities would continue to occur occasionally and may restrict viewing opportunities at those times. This would be true whether properties are primarily used for educational purposes as AMK Ranch and Ramshorn Lodge are, or whether they are designated as interpretive sites, that is, properties such as Menor's Ferry/Maud Noble Cabins and Cunningham Cabin. While visitors to the historic lodges and interpretive districts may experience temporary adverse impacts due to continued maintenance, the overall visitor experience would not change. Similarly, while minor interruptions at the remaining in-use properties, including the backcountry patrol cabins, could cause both direct and indirect adverse impacts to the visitor experience, these interruptions would be short-term and are outweighed by the long-term benefits of preserving these properties for visitor use and enjoyment.

In all alternatives, visitor experience at those properties that are currently used for NPS housing would continue to be limited to visitors observing the exteriors of historic districts.

Mormon Row, White Grass Dude Ranch

Mormon Row:

Under Alternative A, the no-action alternative, the infrastructure improvements analyzed in the *Mormon Row Historic District Management Alternatives and Environmental Assessment* (NPS 1999) and approved in the *Mormon Row Historic District Management Preferred Alternative FONSI* (NPS 2000) are being implemented in 2015 (summer – end of calendar year 2015) with slight modifications based on current visitor use. The proposed changes would not alter the original determination of that the improvements would cause no significant site impacts, while improving visitor services and experiences in each locale.

The work (see **Figure 10**, p. 70) includes constructing similarly sized northern and southern parking areas (each ~14 spaces rather than 6-8 and 18, respectively), bus parking and a turnaround near the Mormon Row/Antelope Flats roads junction; installing a vault toilet first at the southern parking area and potentially adding a second if needed; and extending the accessible interpretive trail, which was approved from the southern parking area south to the Andy Chambers homestead, to connect to the Mormon Row Road/Antelope Flats Road junction (total new length would be 0.47 mile, longer by 0.32 mile). A separate parking area for buses and a bus turnaround east of the Mormon Row Road/Antelope Flats Road junction would also be constructed. The improvements would have minor adverse impacts to visitor use and experience in the short term because of construction noise

and dust and reduced access to some parts of the historic district where work is being done or equipment and materials are staged. In the long term the work improvements would improve visitor experience overall and would increase public access and interpretation, resulting in a moderate, beneficial impact on park visitors.

The longer interpretive trail would connect the north and south parts of the district and enable visitors to park vehicles in one part and walk along the trail to the other areas rather than drive or walk in the road. For some visitors this type of experience would be more enjoyable than driving or experiencing the property by car. The trail is not intended for bicycle use and would be signed to inform the public that bicycles are not allowed.

Disabled visitors would have a better experience at the district because they would be better accommodated. The longer interpretive trail would be made of an aggregate to accessible standards and able to accommodate wheelchairs.

The option of potentially installing a second toilet, if visitor use increases and another toilet seems necessary, would also improve visitor experience by providing this facility. The design of the installed toilet(s) would be chosen to be as unobtrusive as possible so as not to affect the historic character of the property.

White Grass Ranch:

Under Alternative A the rehabilitation plan would continue to be implemented as approved in 2005. The impacts were detailed in the *White Grass Ranch Rehabilitation and Adaptive Use Environmental Assessment/Assessment of Effect,* September 2004; and *White Grass Ranch Rehabilitation and Adaptive Use Finding of No Significant Impact (FONSI),* February 2005. The rehabilitation work is expected to be completed in 2016 and the ranch would become fully operational as a historic preservation training center in 2017.

At both sites, the existing plans would increase public access and interpretation, resulting in a long-term moderate, beneficial impact on park visitors.

Bar BC Dude Ranch, Lucas Homestead/Fabian Place, Luther Taylor Cabins

Under the no-action alternative, the existing interpretive signs at the Bar BC Dude Ranch, Lucas Homestead/Fabian Place, and Luther Taylor Cabins would be maintained. No uses would be assigned. Although these sites draw fewer visitors, they would remain open and accessible to visitors who seek them out. Infrequent reactive (hazard mitigation) maintenance activities would have minor short- and long-term impacts on river users and visitors who are discouraged by the visible deterioration. The continued access to and interpretation of these sites would have minor, beneficial, long-term impacts on park visitors who appreciate the interpretive signage.

4 Lazy F Dude Ranch, Beaver Creek #10, McCollister Residential Complex, Sky Ranch, Snake River Land Company Office and Residence

Under Alternative A, the park would maintain the 4 Lazy F Dude Ranch, and perform minimal hazard mitigation intervention at Beaver Creek #10, McCollister Residential Complex, Sky Ranch,

and Snake River Land Company Office and Residence. No uses would be assigned to these properties. This proposal would result in negligible impacts to the Grand Teton visitor experience in both the short and long terms. Limited public access of these properties would remain unchanged, and therefore the visible deterioration caused by infrequent hazard mitigation would not likely register with most visitors.

Aspen Ridge Ranch Residence and Barn, Hunter Hereford Ranch, Manges Cabin

Maintaining Aspen Ridge Ranch Residence and Barn, Hunter Hereford Ranch, and Manges Cabin for park storage would have a negligible impact on the park visitor experience. Because these properties are currently visited infrequently, the short-term work required to ensure their continued use would have a negligible impact. Additionally, because these properties are gated and signed to discourage public visitation, the long-term impacts would be slight.

Cumulative Effects

Any construction activities have the potential to affect visitor use and experience. Projects such as road improvements, exotic vegetation management, and fence replacement have had or could have an adverse effect on visitor use and experience because of the inconvenience of construction noise, dust, and possible off-limit areas. Ultimately, however, these actions would have or had a beneficial effect on visitor use and experience because of long-term improvements to the human health and safety aspects of the park; the visual and natural environment; interpretive opportunities; and functionality of the park. The hazard mitigation efforts proposed for the historic properties with low or no current use would likely have a negligible effect on visitor use and experience because they are not in highly trafficked areas of the park. Considering these past, present, and reasonably foreseeable future actions, negligible to minor impacts of the no-action alternative would have no cumulative benefit or detriment to the overall visitor use and experience at Grand Teton National Park.

Impacts of Alternative B (Preferred) on Visitor Use and Experience

Under Alternative B, the preferred alternative, the enhancement of three districts specifically for interpretive purposes (Mormon Row, Lucas Homestead/Fabian Place, and Luther Taylor Cabins) and the rehabilitation of and increased public access to Snake River Land Company Office and Residence would have a minor to moderate beneficial effect on visitor use and experience in the long term. At all historic properties, preservation treatments or other occasionally needed maintenance would cause construction-related disturbances (noise, dust, limited areas) that would have minor, temporary adverse impacts on visitor use and experience. The previously analyzed impacts for improvements at Mormon Row (NPS 1999) would be slightly greater due to slight modifications to better address current visitor use. Impacts would continue to be at a minor level. The on-going rehabilitation of White Grass Dude Ranch and associated short-term, minor to moderate adverse impacts during the rehabilitation would continue but the impacts described in the earlier planning analysis (NPS 2005) would be reduced because the spur road would not be constructed and maintained under Alternative B (and C). Removal of three infrequently visited properties would have a negligible impact on visitor use and experience

The 32 In-Use Properties

All three alternatives would have minor effects on the current visitor use and experience of the 32 in-use historic properties, as explained under Alternative A. In addition, increased interpretation at Jackson Lake Lodge, Jenny Lake Ranger Station, Menors Ferry/Maud Noble Cabins, Murie Ranch, and Cunningham Cabin would benefit visitor experience.

Mormon Row, White Grass Dude Ranch

Mormon Row:

Under Alternative B implementation of the slightly modified infrastructure improvements at Mormon Row and impacts on visitor use and experience would be the same as described for Alternative A. In the short term there would be minor adverse impacts because of construction noise and dust and reduced access to some parts of the historic district where work is being done or equipment and materials are staged. In the long term the improvements would increase and improve public access and interpretation, resulting in a moderate, beneficial impact on park visitors.

The option of potentially installing a second toilet, if visitor use increases and another toilet seems necessary, would also improve visitor experience by providing this facility. The design of the installed toilet(s) would be chosen to be as unobtrusive as possible so as not to affect the historic character of the property.

If the option to potentially rehabilitate four Mormon Row houses (from north to south, the Thomas Murphy/Joe Heninger (Reed Moulton), John Moulton ("pink house"), Andy Chambers, and Thomas Perry/Roy Chambers houses) for adaptive reuse as seasonal park housing is implemented, there would be additional minor adverse impacts to visitor use and experience in the short term due to utility upgrades and installation, and longer periods of work to rehabilitate the houses for occupation. In the long term, the houses would be in better condition and would be better maintained in the future. Their appearance would likely retain less of the look of abandoned farmstead buildings than they do currently. For some visitors this change would detract; for others it would be a benefit. Parking areas would not need to be expanded. The park would likely institute restrictions that would require out-of-view storage of some personal possessions that could detract from visitor experience of the area.

White Grass Dude Ranch:

Under Alternative B, the park would rehabilitate White Grass Dude Ranch with slight changes from the approved plan (NPS 2005). The proposed changes would not alter the original determination of that the improvements would cause no significant site impacts, while improving visitor services and experiences in each locale.

The changes include increasing the number of parking spaces from six to ten at the White Grass Dude Ranch. Eight of the parking spots would remain in the same area away from the cabins, and driving in the district would continue to be limited. Two ABAAS-compliant spots would be formalized next to the Hammond Cabin. Additionally, the 2004 Environmental Assessment included the construction of a spur road from the Death Canyon Road. In Alternatives B and C of

this plan, that spur road would be removed, reducing the overall ground disturbance and alterations to the cultural landscape and how visitors would experience the district. Overall, the change would not alter the previous finding that the impacts are beneficial, direct and minor to moderate in intensity in the long term (White Grass Dude Ranch EA, NPS 2004, p. 55).

4 Lazy F Dude Ranch

Under Alternative B, the 4 Lazy F Dude Ranch would be rehabilitated for use as seasonal housing. This proposed treatment would re-establish a use for this historic property, a change with moderate, beneficial impacts in the long term.

Offering seasonal accommodations at 4 Lazy F could allow the park to involve more of the public in their VIP (volunteer in parks) program if, by increasing the park's ability to provide temporary housing, more seasonal, volunteer work crews could be engaged to provide preservation maintenance at more historic structures, including the 4 Lazy F Dude Ranch. Better maintenance of historic properties would indirectly benefit visitors who appreciate and seek out historic properties in the park. Construction activities associated with rehabilitating the buildings and cultural landscape, constructing parking and circulation, and installing utilities and infrastructure, could have negligible to minor adverse impacts to river users and visitors to Menor's Ferry/Maud Noble Cabins if there is increased traffic or preferred access routes are blocked. Careful attention would be paid to ensure that residents are being sensitive to natural and cultural resources in the area and the values for which the river and the ranch were designated.

Bar BC Dude Ranch

Stabilizing 27 of the 34 contributing buildings, allowing the other seven to decay naturally, and restoring elements of the cultural landscape at the Bar BC Dude Ranch would improve visitor understanding of one of the oldest dude ranches in the Jackson Valley. Formalizing the parking area would also improve visitor experience to some extent because ground and vegetation disturbance caused by less formal use would be reduced and the aesthetics of the area would be improved. Construction activities, with associated noise and the presence of workers on site, could cause some minor, short-term adverse impacts for visitors to the Bar BC as well as to river users. On the other hand, visitors might appreciate watching preservation workers stabilize structures and find the techniques interesting. The long-term beneficial impacts of the proposed work would increase visitor use and appreciation by improving the stabilization of many of the ranch buildings and by providing the uncommon opportunity for visitors to view the effects of natural decay as it occurs in some structures alongside stabilized structures in the same ranch context.

Beaver Creek #10, Snake River Land Company Office and Residence

Under Alternative B, the rehabilitation of Snake River Land Company Office and Residence would open this otherwise inaccessible historic property to a semi-public use. Pest mitigation would make access safe. Although the main building would primarily function as an office for rangers, visitors would be able to enter an enclosed porch that would be open to the public and may have contact with rangers who are in the office at the time. Interpretive information would be provided about this unique historic property to convey the story of its important place in the history of the park and the role of philanthropy in creating national parks. Visitation would be greater than existing low levels

but large numbers of visitors would not be expected. The impact to visitor use and experience would be long-term, beneficial, and minor.

Rehabilitating Beaver Creek #10 for a park administrative use such as for office space, for storage or housing would not change public access from existing conditions. Improved non-personal interpretation of the property would facilitate off-site enjoyment and education. This interpretation would have direct, minor, beneficial, long-term impacts to park visitors. While the construction work associated with the rehabilitation could cause temporary adverse impacts to visitors through increased traffic on the Teton Park Road and at the Beaver Creek intersection, these impacts would be negligible to minor.

The proposed rehabilitation of Snake River Land Company Office and Residence for use as the Buffalo Fork ranger station would similarly raise visitor use of the district from low to moderate. Construction work, including the installation of parking and ABAAS-compliant access, would have a short-term negligible to minor adverse impact on visitors, but would be limited to noise and traffic at the intersection near the Moran entrance station. The presence of a ranger station and increased ranger presence, plus available information for visitors in an accessible part of the main building, would have a long-term beneficial impact on visitors, both directly to visitors who stop for information, as well indirectly to visitors requiring ranger assistance in the area.

Aspen Ridge Ranch Residence and Barn, McCollister Residential Complex, Sky Ranch

Under Alternative B, Aspen Ridge Ranch Residence and Barn, McCollister Residential Complex, and Sky Ranch would be removed from the landscape. Removal of these properties would have a negligible to minor impact on visitors as the current visitation to these sites is infrequent. The act of removal—whether through demolition or moving the buildings out of the park—may cause minor short-term traffic inconveniences, however, these impacts would be brief. The long-term impact to visitor use would be negligible to the majority of visitors.

It is worth noting, however, that some of these properties have supporters who will be very disappointed by their removal. For these few people, removal will have a major adverse impact.

In addition, horseback riders that use trails near Sky Ranch would be aware of its removal but their perceptions of the change are likely to vary. After the area is restored with native vegetation, some riders would appreciate the area better while others would miss the buildings,

Luther Taylor Cabins, Lucas Homestead/ Fabian Place, Hunter Hereford Ranch, Manges Cabin

The impact of maintaining the Luther Taylor Cabins and Lucas Homestead/Fabian Place as interpretive sites with minor preservation intervention and continued interpretation would be negligible to minor. Improving access to the Lucas Homestead/Fabian Place would have a direct, long-term, beneficial impact. Although intermittent construction and improvements to ensure visitor safety and continued building maintenance would have minor short-term, adverse impacts to visitors to these properties, these are outweighed by the long-term benefits of maintaining the site accessibility and use.

Maintaining the Hunter Hereford Ranch and Manges Cabin for park storage would also have a negligible impact on the park visitor experience. Because these properties are currently visited infrequently, the short-term work required to ensure their continued use would have a negligible impact.

Cumulative Effects

As described under Alternative A, any construction activities have the potential to affect visitor use and experience. The rehabilitation of the 4 Lazy F Dude Ranch, Beaver Creek #10, and Snake River Land Company Office and Residence, and stabilization at Bar BC Dude Ranch would likely have an adverse effect on visitor experience as a result of noise and construction traffic. Projects such as road improvements, exotic vegetation management, and fence replacement have had or could have an adverse effect on visitor use and experience because of the inconvenience of construction noise, dust, and possible off-limit areas. Ultimately, however, these actions would have or had a beneficial effect on visitor use and experience because of long-term improvements to the human health and safety aspects of the park; the visual and natural environment; interpretive opportunities; and functionality of the park. Potential maintenance improvements to the Luther Taylor Cabins, Lucas Homestead/Fabian Place, and other historic properties would also have a beneficial effect on visitor use and experience. Considering these past, present, and reasonably foreseeable future actions, the minor to moderate beneficial effects of rehabilitating four properties, maintaining four properties, removing three properties, and implementing the proposed changes to the Mormon Row and White Grass EAs would have a cumulative minor benefit to the overall visitor use and experience in Grand Teton National Park.

Impacts of Alternative C on Visitor Use and Experience

Alternative C would have negligible to minor short-term adverse and long-term beneficial impacts on current visitor use in Grand Teton National Park. Overall, visitor use and experience would not be expected to increase and the stabilization work at the focus properties would not be readily discernable by visitors in the long term.

The 32 in-use properties, those that are highly used and visited, would continue to be used and maintained; and infrastructure improvements at Mormon Row to facilitate visitor use would be implemented. Occasional preservation maintenance and associated short-term, minor, adverse impacts to visitor use and experience such as noise, dust, and limited access to some areas would continue to occur. The previously analyzed impacts for improvements at Mormon Row (NPS 1999) would be slightly greater due to slight modifications to better address current visitor use. Impacts would continue to be at a minor level. The on-going rehabilitation of White Grass Dude Ranch and associated short-term, minor to moderate adverse impacts during the rehabilitation would continue but the impacts described in the earlier planning analysis (NPS 2005) would be reduced because the spur road would not be constructed and maintained under Alternative C (or B). Of the 11 focus properties that have minimal or no use, few receive more than a handful of visitors each year and do not impact the average park visitor. The continued and enhanced degree of interpretation at Lucas Homestead/Fabian Place and Luther Taylor Cabins would have a minor beneficial impact on visitors to those sites.

The 32 In-Use Properties

Same as Alternative B.

Mormon Row, White Grass Dude Ranch

Mormon Row:

Under Alternative C implementation of the slightly modified infrastructure improvements at Mormon Row and impacts on visitor use and experience would be the same as described for Alternative A. In the short term there would be minor adverse impacts because of construction noise and dust and reduced access to some parts of the historic district where work is being done or equipment and materials are staged. In the long term the improvements would increase and improve public access and interpretation, resulting in a moderate, beneficial impact on park visitors.

The option of potentially installing a second toilet, if visitor use increases and another toilet seems necessary, would also improve visitor experience by providing this facility. The design of the installed toilet(s) would be chosen to be as unobtrusive as possible so as not to affect the historic character of the property.

White Grass Dude Ranch:

Same as Alternative B. Rehabilitating White Grass Dude Ranch with slight changes from the approved plan (NPS 2005) would occur. The proposed changes, modifying parking slightly to improve accessibility and not constructing the spur road, would not alter the original determination of that the improvements would cause no significant site impacts, while improving visitor services and experiences in each locale.

Luther Taylor Cabins, Lucas Homestead/Fabian Place

Under Alternative C, Luther Taylor Cabins, and Lucas Homestead/Fabian Place would be mothballed and some interpretation would occur. Efforts would be made to keep these properties on the landscape; however, their overall condition would not change. Because of low visitation, the proposed treatment would have negligible impacts to visitor use while measures are taken to seal the buildings. Maintaining interpretation of these districts and ensuring the properties do not deteriorate further would have a negligible to minor beneficial impact in the long term, although this benefit would be limited in scope as efforts would not include improving access or the publication and distribution of interpretive information about these properties. Because mothball efforts at Luther Taylor Cabins would likely include structural supports that would be readily perceived as not historic, these supports could be considered unattractive distractions from the scene and detract from the enjoyment of some visitors.

4 Lazy F Dude Ranch, Aspen Ridge Ranch Residence and Barn, Bar BC Dude Ranch, Beaver Creek #10, Hunter Hereford Ranch, McCollister Residential Complex, Manges Cabin, Snake River Land Company Office and Residence, Sky Ranch

Maintaining 4 Lazy F Dude Ranch, Aspen Ridge Ranch Residence and Barn, Beaver Creek #10, Hunter Hereford Ranch, McCollister Residential Complex, Manges Cabin, Snake River Land Company Office and Residence, and Sky Ranch for park storage; and stabilizing Bar BC Dude Ranch would have a negligible impact on the park visitor experience. Because these properties are currently visited infrequently, the short-term work required to ensure their continued use and to prevent structural deterioration would have a negligible impact on visitors. Similarly, few visitors would be aware of the treatment efforts in the long term.

Cumulative Effects

Any construction activities have the potential to affect visitor use and experience. Projects such as road improvements, exotic vegetation management, dam removal, and fence replacement have had or could have an adverse effect on visitor use and experience because of the inconvenience of construction noise, dust, and possible off-limit areas. Ultimately, however, these actions would have or had a beneficial effect on visitor use and experience because of long-term improvements to the human health and safety aspects of the park; the visual and natural environment; interpretive opportunities; and functionality of the park. The preservation efforts proposed for the historic properties with low or no current use under Alternative C would likely have a negligible to minor beneficial effect on visitor use and experience because they are not in highly trafficked areas of the park and only increase visitor use and resources at the previously planned White Grass Dude Ranch and Mormon Row sites. Considering these past, present, and reasonably foreseeable future actions, negligible to minor impacts of Alternative C would have no cumulative benefit or detriment to the overall visitor use and experience at Grand Teton National Park.

CHAPTER 4: CONSULTATION AND COORDINATION

Scoping

Scoping is a process to identify the resources that may be affected by a project or planning proposal, and to explore possible alternative ways of achieving the proposal while minimizing adverse impacts. Grand Teton National Park conducted internal scoping with appropriate NPS staff. The park also conducted external scoping with the public and interested/affected groups and Native American consultation.

Internal Scoping

An interdisciplinary team of professionals at Grand Teton National Park conducted internal scoping. During plan development, interdisciplinary team members met multiple times, beginning on July 29, 2010, to discuss the purpose and need for the project; potential plan methodology; potential environmental impacts; past, present, and reasonably foreseeable projects that may have cumulative effects; and possible mitigation measures. The team also gathered background information and discussed public outreach for the project. Over the course of the project, team members conducted individual site visits to view and evaluate the focal historic properties especially examined in the plan.

External Scoping

The following actions were taken to inform the public about the intent to prepare a National Environmental Policy Act environmental assessment on efforts to develop a comprehensive plan for managing historic properties in Grand Teton National Park, and to generate input on the preparation of this environmental assessment. The scoping period was from February 4 through March 11, 2011.

- A press release was distributed to the town of Jackson and Teton County media.
- Scoping notices were sent to approximately 600 people and organizations on the NPS' core mailing list. The list included members of the general public and representatives of federal, state, and non-governmental agencies and organizations. .
- The scoping notice and supporting documents were made available electronically on the NPS Planning, Environment, and Public Comment (PEPC) website at http://parkplanning.nps.gov/GRTE and on the Grand Teton National Park official website.
- A public meeting was held on February 8, 2011 at American Legion Post 43 in Jackson, Wyoming, and attended by 24 people.

The February 2011 scoping notice announced the upcoming public meeting and described the planning approach, provided a short list of 14 underused historic properties the park particularly wanted public comment (the number was increased to 15 at the time of the mailing), and other pertinent information related to the planning process. It also directed the public to the NPS planning web site (PEPC) for additional information and/or to provide comments.

During the 36-day scoping period which ended March 11, 2011, the park received 30 responses from persons in eight states (CA, CO, ID, MT, TN, TX, UT, and WY). Seven responses came from four organizations (Alliance for Historic Wyoming, Greater Yellowstone Coalition, Jackson Hole Historical Society and Museum, and the Teton County Historic Preservation Board) and 23 were from members of the general public.

Many respondents were pleased that the park was proposing to develop a comprehensive plan and address the use and management of a number of historic properties that need greater management attention. Comments included many varied suggestions about how to manage the focus properties as well as some historic properties not on the short list. Ideas about enhancing interpretation and opportunities for visitor enjoyment were also provided. Although one commenter suggested removal of a number of properties, most of the commenters who addressed the idea of removal believed strongly in continued preservation and use and did not want any properties to be removed.

During external scoping, the park received several public comments that suggested creating a formal trail between the 4 Lazy F and Bar BC dude ranches for horseback riders and/or hikers. Park staff did not recommend including such a trail in the plan. The main reason was that the route of the suggested trail would move through areas essential to wildlife as a movement corridor and it would have a very strong potential to adversely affect wildlife. Although there is currently some hiking and horse use in this area, formalizing the use and constructing an official trail, and potentially a bridge across Cottonwood Creek where there is none, would increase the amount of human use and its impacts. The route would lie just west of the Snake River riparian corridor where Cottonwood Creek enters the river from the west and Ditch Creek enters it from the east. The Snake River riparian area is the primary north-south wildlife movement corridor in the park. Riparian habitat along Cottonwood and Ditch creeks is the only east-west wildlife migration corridor north of Moose to Jackson Lake, where animals can move from the Teton Range across the park to the Gros Ventre Range. Many types of wildlife, from bears to deer, move through these corridors to cross the park under the more dense vegetative cover riparian habitat provides. From spring through fall, elk can be seen moving twice daily through these travel corridors, from the Teton Range foothill areas of Murie Ridge and Windy Point south of the Beaver Creek area, along Cottonwood Creek to the Snake River and east to Ditch Creek and back. In addition, surveys have shown that elk use the habitat between the two ranches as calving and nursery areas.

Since the beginning of the scoping process, the short list of underused properties the park planned to analyze in detail in this management plan became somewhat shorter. Upper Granite Patrol Cabin was rehabilitated and is now in good condition and again in use as a patrol cabin. The Jenny Lake Renewal Plan and EA (NPS 2014b) proposed an interpretive use for Moose Entrance Kiosk and analyzed moving it back to the Jenny Lake visitor area. Finally, Wolff Ranch and Leek's Lodge were removed from the list. In 2013, the NPS reevaluated Wolff Ranch based on new information, and in December 2013 the State Historic Preservation Office concurred that the property was not eligible for listing in the National Register of Historic Places. In 2014, the Keeper of the National Register officially removed Leek's Lodge from the National Register, completing the process of de-listing that was begun when the lodge was removed in 1998. More information about the removal process for these two properties is provided in appendices E and F, respectively.

Agency Consultation

In accordance with the Endangered Species Act, the NPS contacted the U.S. Fish and Wildlife Service with regards to federally listed special status species, and in accordance with NPS policy, the park also contacted the Wyoming Department of Game and Fish regarding state-listed species of concern and was directed to the Wyoming State Wildlife Action Plan, which listed the Wyoming Species of Conservation Need and the status of each species (WGFD 2010). The results of consultation with the U.S. Fish and Wildlife Service regarding potential effects on threatened and endangered species will be described in the final decision document that will follow the plan/EA.

In accordance with Section 106 of the National Historic Preservation Act, the NPS will consult with and complete a Memorandum of Agreement with the SHPO, the ACHP, and consulting parties.

American Indian Tribal Consultation

A number of tribes traditionally, and currently, value Jackson Hole for hunting, gathering, ceremonial, and other practices. Traditionally associated tribes include the Apache, Arapaho, Assiniboine and Sioux, Blackfeet, Northern Cheyenne, Coeur d'Alene, Colville Group, Comanche, Crow, Gros Ventre, Kiowa, Nez Perce, Northern Paiute, Salish-Kootenai Group, Eastern Shoshone, Shoshone-Bannock, Teton (Oglala) Sioux, Umatilla Group, and Yakama Group. In March 2011, the NPS sent copies of the scoping letter and notice to these tribes to notify them of the proposed action. No Native American tribes responded to scoping information with comments about the potential plan.

The environmental assessment will be sent to all associated tribes. Any issues or concerns that are identified by the tribes during their review will be addressed by the NPS.

Environmental Assessment Review

To inform the public of the availability of the environmental assessment, the NPS publishes and distributes a press release to the media and interested members of the public and organizations. An electronic version of the document is posted on the internet at http://parkplanning.nps.gov/ and is available for review during a defined public comment period.

Public review for an environmental assessment is not required but the NPS often seeks public input during a 30-day public review and comment period. During this time, the public is encouraged to submit their written comments on the above NPS planning website. Following the close of the comment period, all public comments will be reviewed and analyzed, prior to the release of a decision document. The NPS will issue responses to substantive comments received during the public comment period, and will make appropriate changes to the environmental assessment, as needed.

List of Preparers

The following people participated in the preparation of this environmental assessment by serving on the interdisciplinary planning team and/or contributing their expert knowledge about park resources.

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APPENDICES

APPENDIX A—Additional Information about the Historic Properties in Grand Teton National Park and John D. Rockefeller, Jr. Memorial Parkway

The 695 historic resources in the park and parkway are often found clustered on the landscape in historic districts although some may consist of a single resource at a location. There are 44 locations, which are the "historic properties" presented in this plan. The properties considered in this plan are listed in alphabetical order by location, below.

The number of "contributing" (historic) versus "non-contributing" (non-historic) resources at a property is presented for each location. Condition is the overall condition of a property as in the List of Classified Structures (LCS), a digital inventory of all historic and prehistoric structures in the national parks. Visitation levels are described as high if greater than 1000 people, moderate between 100 and 1000, and low if less than 100. For more information on the National Register listed properties, visit http://www.nps.gov/nr/research/

4 LAZY F DUDE RANCH HISTORIC DISTRICT

Period/Level of significance: 1927-38/Local; Expanded to 1914-1967 after SHPO concurred with recommendations and additional information in a completed Cultural Landscape Inventory.

Contributing/non-contributing resources: 18 contributing/2 non-contributing

National Register Listing Date: 4/23/1990

Condition: Fair

Current Use: Vacant

Historic Use(s): Homestead ranch, dude ranch, private family retreat

Significance Statement: The 4 Lazy F Dude Ranch was listed in the National Register of Historic Places in 1990 for its significance as an example of a purpose-built dude ranch—as opposed to many valley dude ranches that evolved from working ranches. After nearly 80 years on the property, the Frew family terminated their life lease in 2006 at which time the NPS took physical possession of the 20 structures and the property.

Visitor Use and Interpretation: There is no interpretation at the 4 Lazy F Dude Ranch. Visitation is generally low.

Current Park Operation Responsibilities: After Emily Frew Oliver voluntarily terminated her life estate in 2006, the park assumed responsibility for the ranch. Supports were placed on the structure interior to support winter snow loads. In 2010, the WCHP performed contracted rehabilitation work at the barn (sill log replacement and minor roofing work) and roof repair at the caretaker's residence.

The 4 Lazy F Dude Ranch currently has no park use and there is low visitation. Few EMS, law enforcement or fire incidents occur in this area. Both road and river LE rangers occasionally patrol the area. During high water, patrols are made frequently. This property has a negligible impact on park operations.

Predominant Wildlife: Moose, black bear, mule deer, elk, osprey, bald eagle, river otter, beaver

Vegetation: Riparian, woodland, agricultural grassland

AMK RANCH HISTORIC DISTRICT

Period/Level of significance: 1927-37/Local

Contributing/non-contributing resources: 14 contributing/3 non-contributing

National Register Listing Date: 4/23/1990

Condition: Good

Current Use: Scientific Research Facility (UW-NPS Research Station)

Significance Statement: The AMK Ranch is significant for its architecture and craftsmanship, which represents two periods of rustic architecture in the area of twentieth century vacation home design.

Visitor Use and Interpretation: Non-personal media (wayside signs) are available near the Johnson House. UW-NPS staff are often available to answer questions, although no formal personal interpretation is offered. Visitation levels are moderate.

Current Park Operation Responsibilities: The ranch is operated seasonally as the NPS-University of Wyoming Research Center, a scientific research station under a partnership between University of Wyoming (UW) and the NPS. In summer when UW personnel and invited researchers and visitors are present, park LE rangers respond to reports of incidents, occasionally patrol the area and communicate regularly with the station manager. UW staff are responsible for building maintenance, and winterizing and de-winterizing buildings that are unoccupied in winter. The park provides water and FM staff maintain water, wastewater lines and the septic system. In winter, an on-site caretaker provides road access and building care, including roof shoveling. Park LE rangers know the caretaker's vehicles and monitor to be sure all is secure.

Predominant Wildlife: Elk, moose, black bear, grizzly bear, mule deer, osprey, bald eagle, waterfowl

Vegetation: Woodland, riparian, shrub-steppe, montane forest

ASPEN RIDGE RANCH RESIDENCE AND BARN

Period/Level of significance: 1946 / N.A.

Contributing/non-contributing resources: 2 contributing/0 non-contributing

National Register Listing Date: Determined Eligible 1998

Condition: Poor

Current Use: Vacant

Significance Statement: Aspen Ridge Ranch Residence and Barn is significant as an ornate example of late period of vernacular architecture within GRTE with high physical integrity.

Interpretation and Visitor Use: There is no interpretive media at the Aspen Ridge Ranch. Visitation levels are low.

Current Park Operation Responsibilities: Current park operations are minimal. This property is minimally stabilized. Several buildings used for park storage are maintained to a greater level. No utilities are provided and maintained. LE rangers occasionally patrol.

Predominant Wildlife: Bison, elk, moose, pronghorn, black bear, gray wolf

Vegetation: Shrub-steppe, agricultural grassland, woodland. Near montane forest.

BAR BC DUDE RANCH HISTORIC DISTRICT

Period/Level of significance: 1912-37/Local; 1912-41, expanded subsequent to the Cultural Landscape Inventory.

Contributing/non-contributing resources: 37 contributing/3 non-contributing

National Register Listing Date: 4/23/1990

Condition: Poor

Current Use: Vacant

Significance Statement: The Bar BC Dude Ranch is considered nationally significant as the second oldest dude ranch in the valley and as one of the best known dude ranches in the country during the 1920s golden age of dude ranching. It is also significant for its association with founder Struthers Burt, who wrote extensively on dude ranching in the west.

Interpretation and Visitor Use: There are wayside exhibits at both the parking area at the top of the bench and within the district. Visitation levels are moderate. The district is often accessed by alternative means of transportation (horse, bike, etc.).

Current Park Operation Responsibilities: This historic property has low to moderate visitation with limited access and facilities. Little effort is being made to promote visitation and use. Few EMS, law enforcement or fire incidents have occurred and the property negligibly impacts park operations. Occasional LE road patrols occur. The Bar BC Dude Ranch is also monitored by river rangers who boat down the Snake River.

Predominant Wildlife: Bison, moose, black bear, mule deer, elk, osprey, bald eagle, river otter

Vegetation: Shrub-steppe, woodland

BRINKERHOFF

Period/Level of significance: 1946-63/Local

Contributing/non-contributing resources: 2 contributing/1 non-contributing

National Register Listing Date: 4/23/1990

Condition: Good

Current Use: Administrative use as lodging and meeting space

Significance Statement: The Brinkerhoff is significant as the last remaining substantial vacation home built on Forest Service-leased land. It is also significant for its adaptation of rustic architecture in the post-World War II period. In addition, the building contains one of the last *in situ* collections of furniture by Thomas Molesworth, nationally recognized designer of "Cowboy High Style" furniture.

Interpretation and Visitor Use: The Brinkerhoff is closed to the public. Visitation levels are low.

Current Park Operation Responsibilities: Managed as seasonal accommodations for visitors on official park business, the Brinkerhoff has seasonal caretakers on-site from spring through fall. FM staff winterize and de-winterize for seasonal use, occasionally plow to remove snow from access road, provide water, and maintain lines for water and wastewater. Maintenance is shared; some work is performed by the Western Center for Historic Preservation (WCHP); other work falls on park FM staff. The Brinkerhoff has low visitation and use, and few EMS, law enforcement or fire incidents. Rangers stop by and talk to caretakers as part of regular Teton Park Road patrols. The road is also monitored in winter to check for tracks and incidents are investigated.

Predominant Wildlife: Elk, moose, mule deer, black bear, grizzly bear, waterfowl

Vegetation: Riparian, woodland, montane forest

CASCADE CANYON BARN PATROL CABIN

Period/Level of significance: 1935-48/Local

Contributing/non-contributing resources: 1 contributing/0 non-contributing

National Register Listing Date: 8/18/1998

Condition: Fair

Current Use: Backcountry Cabin

Significance Statement: The Cascade Canyon Barn is significant for its association with early park development and its rustic design. Like the cabins at Upper Granite and Death Canyon, it is also significant because it was constructed by the CCC from standardized plans. The differences between those three cabins suggest that the builders frequently modified standard plans according to their lumber supply or personal taste.

Interpretation and Visitor Use: There are no interpretive media at the Cascade Canyon Barn Patrol Cabin. Visitation levels are low.

Current Park Operation Responsibilities: The backcountry patrol cabins are operated as ranger patrol or trail crew cabins, or as backcountry ranger stations; some are occupied essentially full-time during the summer season but may be accessed year-round. No utilities are provided. Park FM staff, as well as volunteer preservation groups, maintain the buildings and occasionally perform non-routine repairs when necessary. Fire management activities, such as reducing vegetation around cabins to decrease the potential for wildfire damage, are performed.

Predominant Wildlife: Mule deer, moose, bighorn sheep, black bear, pika

Vegetation: Sub-alpine forest

COLTER BAY VILLAGE HISTORIC DISTRICT

Period/Level of significance: 1950-1972 / N.A.

Contributing/non-contributing resources: 200 contributing/ 69 non-contributing

National Register Listing Date: Determined Eligible 2011

Condition: Good

Current Use: Concessions lodge and campground / NPS visitor and administration services

Significance Statement: The Colter Bay Village developed area was considered for significance under criteria A, event, and criteria C, design/construction. Because the Grand Teton National Park Multiple Property Nomination (Hubber and Caywood 1998) only extends to 1950 and does not include Mission 66, a formative period in the park's development, the draft Mission 66 Multiple Property Documentation Form (Carr, Jackson-Rotondo, Werner, 2006) was used as the guiding document in determining the significance of the Colter Bay Village developed area. While the draft is a park service-wide document, the discussion of Mission 66 is especially pertinent to Grand Teton National Park where the sum of Mission 66-spurred development is substantial relative to the overall amount of development in the park. Therefore, the Colter Bay Village developed area was evaluated by Grand Teton National Park under criteria A and C within the contexts of Mission 66 development, Rockefeller family national park philanthropy, and Mission 66 architecture, landscape architecture, and planning.

Interpretation and Visitor Use: Both personal and non-personal interpretation is available at Colter Bay Village. Visitation levels are high during the summer months and low during the off-season.

Current Park Operation Responsibilities: The park and a concessioner share management responsibilities within the Colter Bay Developed Area. Certain areas are operated seasonally; of those the park is responsible for winterizing and de-winterizing the visitor center building and campgrounds, and others are year-round. The park keeps the visitor center restroom open in winter for ice fishermen so FM staff clear walkways and plow roads to maintain access.

During the summer park FM staff are responsible for supplying water and maintaining water lines to the Colter Bay Visitor Center, comfort station at the beach, the horse corrals and the park residential housing area. Park FM staff check several waste water lift stations daily. Although the concessioner operates the campgrounds, the park drains some of the lines. The concessioner performs surface work.

Much like at Jackson Lake Lodge, there are concessioner-managed security patrols supplemented by patrols by park LE rangers. Park staff also clear trees and other volatile vegetation near buildings for structural fire protection. The Colter Bay Developed Area has the highest amount of LE patrols in the park.

Predominant Wildlife: Elk, moose, mule deer, black bear, grizzly bear, osprey, bald eagle, waterfowl

Vegetation: Montane forest

CUNNINGHAM CABIN HISTORIC DISTRICT

Period/Level of significance: 1885-1928/Local

Contributing/non-contributing resources: 7 contributing/0 non-contributing

National Register Listing Date: 10/2/73

Condition: Good

Current Use: Interpretation

Significance Statement: Cunningham Cabin is significant for both its architecture—the dog-trot type was typical of the first frontier dwellings in the area and exemplifies the diffusion of frontier adaptations from the eastern sections of the United States to the montane West—and for its association with J. Pierce Cunningham, one of the first settlers in Jackson Hole.

Interpretation and Visitor Use: The Cunningham Cabin is open as an interpretive district. Non-personal media are available at both the parking area and within the district. The district is also included in the Grand Teton National Park and Jackson Hole Area iPhone app. Visitation levels are high during the summer season and low to none in winter.

Current Park Operation Responsibilities: This historic cabin is operated as an interpretive site. Located on Highway 26/89/191, visitation is moderate. In winter, FM staff snowplow the access road and parking area to maintain year-round access. They repair the building or gate when needed, maintain signage and install interpretive signs. LE rangers patrol occasionally and monitor the property when travelling the highway. Overlay of 26/89/191 from Craighead Hill to Cunningham Cabin is planned for 2014.

Predominant Wildlife: Bison, elk, moose, grizzly bear, gray wolf

Vegetation: Shrub-steppe, agricultural grassland

DEATH CANYON BARN PATROL CABIN

Period/Level of significance: 1935-48/Local

Contributing/non-contributing resources: 2 contributing/0 non-contributing

National Register Listing Date: 8/25/1998

Condition: Fair

Current Use: Backcountry Cabin

Significance Statement: The Death Canyon Barn is significant for its association with early park development and its rustic design. Like the cabins at Upper Granite and Cascade Canyon, it is also significant because it was constructed by the CCC from standardized plans. The differences between those three cabins suggest that the builders frequently modified standard plans in accordance with their lumber supply or their personal taste.

Interpretation and Visitor Use: There are no interpretive media at the Death Canyon Barn Patrol Cabin. Visitation levels are low.

Current Park Operation Responsibilities: The backcountry patrol cabins are operated as backcountry ranger stations for ranger patrol or trail crew; some are occupied essentially full-time during the summer season but may be accessed year-round. No utilities are provided. Park FM staff, as well as volunteer preservation groups, maintain the buildings and occasionally perform non-routine repairs when necessary. Fire management activities, such as reducing vegetation around cabins to decrease the potential for wildfire damage, are performed.

Predominant Wildlife: Elk, moose, mule deer, pronghorn, gray wolf

Vegetation: Sub-alpine forest

DOUBLE DIAMOND DUDE RANCH DINING HALL

Period/Level of significance: Ca. 1945/Local

Contributing/non-contributing resources: 1 contributing/0 non-contributing

National Register Listing Date: 8/18/98

Condition: Good

Current Use: Commerce/Recreation and Culture (Climbers Ranch)

Significance Statement: The Double Diamond Dude Ranch Dining Hall, a late period dude ranch, is significant for its rustic design. While a fire destroyed two-thirds of the ranch and compromised the complex, the dining hall was still added to the National Register after the fire.

Interpretation and Visitor Use: There is no formal interpretation offered at the Double Diamond Dude Ranch Dining Hall. Because the building is seasonally staffed, informal personal interpretation is sometimes available. Visitation levels are high.

Current Park Operation Responsibilities: The building is used seasonally for visitor lodging, operated by a concessioner. The park provides water and signage, responding to occasional sign requests. Jenny Lake rangers regularly patrol the area during the spring-fall operating season.

Predominant Wildlife: Elk, moose, black bear

Vegetation: Shrub-steppe

ELK RANCH HISTORIC DISTRICT

Period/Level of significance: 1909-1957 / N.A.

Contributing/non-contributing resources: 8 contributing / 1 non-contributing

National Register Listing Date: Determined Eligible 2012

Condition: Fair

Current Use: Pastures used for grazing, buildings are vacant

Significance Statement: The Elk Ranch is the sole surviving example of an irrigated cattle and hay ranch in Grand Teton National Park, and represents the history of land use in the Jackson Hole valley from early 20th century homesteading through the present, encompassing subsistence agriculture, hay raising, cattle grazing and recreation/park use. It is eligible for the National Register of Historic Places under Criterion A, with areas of significance in agriculture and conservation.

The specific features that contribute to the significance of the Elk Ranch are the system of irrigation ditches, the irrigated pastures and the building complex. The intricate system of irrigation ditches created by homesteaders and early 20th century cattle ranchers still functions today in much the same way it did 100 years ago.

Interpretation and Visitor Use: The Elk Ranch is interpreted from the Elk Ranch Turnout. Visitation to the district is low.

Current Park Operation Responsibilities: There are no FM duties assigned to Elk Ranch, which is used for park storage and as seasonal housing. The primary occupant is a seasonal park employee, an irrigator who also takes care of the building and performs occasional building repairs. LE rangers

communicate with the irrigator and check on his welfare. They monitor the area year-round, patrolling regularly during the summer and daily during the elk reduction period.

Predominant Wildlife: Bison, elk, pronghorn, grizzly bear, gray wolf

Vegetation: Agricultural grasslands

THE HIGHLANDS HISTORIC DISTRICT

Period/Level of significance: 1946-56/Local

Contributing/non-contributing resources: 19 contributing/4 non-contributing

National Register Listing Date: 8/19/1998

Condition: Good

Current Use: Domestic (NPS Employee Housing)

Significance Statement: The Highlands Historic District is significant for its association with dude ranch rustic architecture and with post World War II auto tourism. It was the last privately owned and operated auto-camp/resort complex constructed in GRTE prior to the initiation of Mission-66 concession-development schemes.

Interpretation and Visitor Use: The Highlands is closed to the public. Visitation levels are low.

Current Park Operation Responsibilities: This property is used as seasonal employee housing. Park FM duties include winterizing, de-winterizing, snow plowing access road in spring, shoveling roofs, and some repairs. Seasonal law enforcement rangers are among those living there and provide ranger presence. During winter, the road is closed but rangers continue to patrol occasionally.

Predominant Wildlife: Elk, moose, black bear

Vegetation: Shrub-steppe, woodland

HUNTER HEREFORD RANCH HISTORIC DISTRICT

Period/Level of significance: 1945-48/Local

Contributing/non-contributing resources: 8 contributing/1 non-contributing

National Register Listing Date: 8/24/1998

Condition: Poor

Current Use: Vacant

Significance Statement: The Hunter Hereford Ranch is significant for its association with the growth of "hobby ranches" in the valley and was listed in the National Register of Historic Places in 1998. The district consists of 8 structures dating from 1908 to 1947, the most notable of which is the iconic Hunter Hereford Barn.

Interpretation and Visitor Use: There are no interpretive media at the Hunter Hereford Ranch. Visitation levels are low.

Current Park Operation Responsibilities: Current park operations are minimal. This property is minimally stabilized. Several buildings used for park storage are maintained to a greater level. No utilities are provided and maintained. LE rangers occasionally patrol.

Predominant Wildlife: Bison, elk, moose, pronghorn, black bear, grizzly bear, gray wolf

Vegetation: Shrub-steppe, woodland, agricultural grassland

JACKSON LAKE LODGE HISTORIC DISTRICT NATIONAL HISTORIC LANDMARK

Period/Level of significance: 1953-55/National

Contributing/non-contributing resources: 39 contributing/23 non-contributing

National Register Listing Date: 2002

Condition: Good

Current Use: Concessions Hotel

Significance Statement: Jackson Lake Lodge is a National Historic Landmark, the highest designation for a historic property in the United States. The complex is significant because the lodge served as a precursor for the National Park Service's Mission 66 program, and because the building was one of the first modern structures in the National Park System. The design of the lodge, by successfully combining elements of NPS rustic and the increasingly popular international style, eased the transition to a new contemporary architectural vocabulary.

Interpretation and Visitor Use: The concessioner offers regular seasonal tours of the Jackson Lake Lodge. Non-personal media (brochures, waysides) are also available. Visitation levels are seasonally high.

Current Park Operation Responsibilities: Concessioner the lodge, maintains the buildings and property, and is responsible for winterizing and de-winterizing. Park FM staff provides water, maintains water lines and wastewater system, and plows snow from roads before the spring opening. Jackson Lake Lodge has high seasonal visitation and use but few EMS, law enforcement or fire incidents. Daily scheduled patrols are made during the spring through early fall operating season. Park LE rangers coordinate with concessioner-provided security services and with the medical clinic located at the lodge. The district ranger communicates weekly with lodge concessioner. Regular patrols in winter are performed to ensure that the buildings and property are secure.

Predominant Wildlife: Elk, moose, grizzly bear, mule deer, gray wolf

Vegetation: Riparian, woodland

JACKSON LAKE RANGER STATION HISTORIC DISTRICT

Period/Level of significance: 1933-38/Local

Contributing/non-contributing resources: 4 contributing/0 non-contributing

National Register Listing Date: 4/23/1990

Condition: Good

Current Use: Domestic (NPS Employee Housing)

Significance Statement: The Jackson Lake Ranger Station is significant as the last *in situ* standard plan U.S. Forest Service building in the park.

Interpretation and Visitor Use: The Jackson Lake Ranger Station is closed to the public. Visitation levels are low to none.

Current Park Operation Responsibilities: This Willow Flats property is used for seasonal housing and park storage at the barn and garage. The park maintains the buildings and the water and waste water systems, and provides power. Some winter work to remove snow cornices from the buildings may occur. There is a high ranger presence due to the closeness of the park ranger boat cache at Jackson Lake.

Predominant Wildlife: Elk, moose, grizzly bear, mule deer, gray wolf

Vegetation: Montane forest

JENNY LAKE BOAT CONCESSIONS FACILITIES HISTORIC DISTRICT

Period/Level of significance: 1929-48/Local

Contributing/non-contributing resources: 2 contributing/0 non-contributing

National Register Listing Date: 8/24/1990

Condition: Good

Current Use: Commerce/Recreation

Significance Statement: The Jenny Lake Boat Concessions Facilities are significant as an example of NPS rustic architecture. They are also significant as one of the earliest concessions efforts at Jenny Lake and in GRTE.

Interpretation and Visitor Use: There is no interpretation at the Jenny Lake Boat Concession facilities. Visitation levels are high.

Current Park Operation Responsibilities: The Reimer Residence and the Wort Boat House at Jenny Lake serve as concessioner housing and a concessioner employee break room for boating operations, respectively. The park provides water, and the concessioner is responsible for building maintenance. FM is responsible for utility systems, except for seasonal opening and closing of the buildings. This area is patrolled by LE rangers.

Predominant Wildlife: Elk, moose, black bear

Vegetation: Shrub-steppe, woodland

JENNY LAKE CCC CAMP #NP-4

Period/Level of significance: 1935-41/Local

Contributing/non-contributing resources: 2 contributing/0 non-contributing

National Register Listing Date: 7/7/2006

Condition: Fair

Current Use: Concessions/Recreation (Exum Headquarters)

Significance Statement: The Jenny Lake CCC Camp is significant because it contains rare intact examples of CCC camp buildings, most of which were moved, dismantled or salvaged once the CCC was terminated.

Interpretation and Visitor Use: Non-personal media are available within the district. Because the Jenny Lake CCC Camp is seasonally staffed, informal personal interpretation is sometimes be available. Visitation levels are high.

Current Park Operation Responsibilities: This property is operated by a concessioner as a seasonal climbing school base. The concessioner is responsible for seasonal opening and closing activities, and surface cleaning of the vault toilet. The park provides water, occasionally grades the access road, performs some sign work, and pumps the vault toilet. LE rangers patrol with infrequent unscheduled visits during the summer season.

Predominant Wildlife: Elk, moose, black bear

Vegetation: Shrub-steppe, woodland

JENNY LAKE CAMPGROUND HISTORIC DISTRICT

Period/Level of significance: 1926- 1982 / N.A.

Contributing/non-contributing resources: 8 contributing / 6 non-contributing

National Register Listing Date: Determined Eligible 2013

Condition: Good

Current Use: Concessions/Recreation (Campground)

Significance Statement: Jenny Lake Campground is locally significant as the first developed campground in Grand Teton National Park. The landscape is significant for its rustic design principles, primarily illustrated through architecture and landscape architecture, constructed by the CCC between 1933 and 1940.

More specifically, Jenny Lake Campground is eligible for the National Register of Historic Places under Criterion A for its association with the development of the Teton National Forest's (1926-1929) and Grand Teton National Park's (1929-1982) recreational facilities and for its association with the Civilian Conservation Corps (CCC). The campground is also significant under Criterion C as an excellent example of a 1930s designed landscape in the rustic style; it fits the criteria listed in the Historic Park Landscapes in National and State Parks Multiple Property Documentation form by McClelland, 1995. In addition, the rustic style comfort stations constructed by the CCC in the 1930s are also significant under Criterion C.

Interpretation and Visitor Use: There is no interpretation available at the Jenny Lake Campground. Visitation levels are seasonally high.

Current Park Operation Responsibilities: Concessioner-operated.

Predominant Wildlife: Elk, moose, black bear

Vegetation: Shrub-steppe, woodland

JENNY LAKE LODGE HISTORIC DISTRICT

Period/Level of significance: 1922-58/Not Applicable

Contributing/non-contributing resources: 41 Contributing/6 non-contributing

National Register Listing Date: DOE 2010

Condition: Good

Current Use: Concessions Hotel

Significance Statement: Jenny Lake Lodge is significant as one of the longest operating tourist establishments in Grand Teton National Park. It is also significant as a cultural landscape embodying concepts of Western-style hospitality, including rustic cabins and the grand lodge and dining room.

Interpretation and Visitor Use: Non-personal interpretive media are available in the main lodge at the Jenny Lake Lodge. Visitation levels are seasonally high.

Current Park Operation Responsibilities: The Jenny Lake Lodge is operated by a concessioner as seasonal visitor lodging. The concessioner drains building lines and maintains buildings. Park FM staff provide water and wastewater and charge main lines. LE rangers respond to calls and occasionally patrol in addition to the concessioner-provided security.

Predominant Wildlife: Elk, moose, black bear

Vegetation: Woodland, riparian

JENNY LAKE RANGER STATION HISTORIC DISTRICT

Period/Level of significance: 1930-38/Local

Contributing/non-contributing resources: 4 contributing/1 non-contributing

National Register Listing Date: 4/23/1990

Condition: Good

Current Use: Government Offices/Recreation (Ranger Station and Visitor District)

Significance Statement: The Jenny Lake Ranger Station District is significant as a well-preserved example of NPS rustic architecture. The Station is significant because it served as the main visitor's

contact area until the 1960s, and because of the improvements made there by the CCC in the 1930s. The visitor's center is also significant because it was Harrison Crandall's studio.

Interpretation and Visitor Use: Both personal and non-personal media are available at the Jenny Lake Ranger Station Historic District. The district is staffed by park rangers seasonally. Visitation is seasonally high.

Current Park Operation Responsibilities: This ranger station occupied daily in the summer by rangers. FM staff maintains water, wastewater, and power systems, and is also responsible for building maintenance including painting and repairs.

Predominant Wildlife: Elk, moose, black bear

Vegetation: Woodland, riparian

KIMMEL KABINS/LUPINE MEADOWS HISTORIC DISTRICT

Period/Level of significance: 1937-38/Local

Contributing/non-contributing resources: 13 contributing/5 non-contributing

National Register Listing Date: 4/23/1990

Condition: Good

Current Use: Domestic/Camp (NPS Employee Housing)

Significance Statement: The Kimmel Kabins are significant as the sole surviving example of a 1930s motor court property with vernacular log buildings in the park. It is one of two remaining motor courts in Grand Teton National Park (The Highlands being the other), despite the existence of more than a dozen such resorts between WWI and WWII.

Interpretation and Visitor Use: Lupine Meadows is not open to the public. Visitation levels are low.

Current Park Operation Responsibilities: The park uses this property for employee housing. FM duties include winterizing and de-winterizing buildings, maintaining utilities including all water and waste water systems, and performing building repairs. Rangers are housed there so ranger presence is high during summer.

Predominant Wildlife: Elk, moose, pronghorn, black bear

Vegetation: Riparian, woodland, shrub-steppe

LEIGH LAKE PATROL CABIN

Period/Level of significance: 1922-29/Local

Contributing/non-contributing resources: 1 contributing/0 non-contributing

National Register Listing Date: 4/23/1990

Condition: Good

Current Use: Backcountry Cabin

Significance Statement: The Leigh Lake Patrol Cabin is significant as the last remaining U.S. Forest Service patrol cabin in the park. It is architecturally significant because it was built to standard plans, making it a good example of U.S.F.S. cabins of the 1930s.

Interpretation and Visitor Use: There are no interpretive media available at Leigh Lake Patrol Cabin. The cabin is seasonally staffed, so personal interpretation is sometimes available during the summer months. Visitation levels are low.

Current Park Operation Responsibilities: The backcountry patrol cabins are operated as ranger patrol or trail crew cabins, or as backcountry ranger stations; some are occupied essentially full-time during the summer season but may be accessed year-round. No utilities are provided. Park FM staff, as well as volunteer preservation groups, maintain the buildings and occasionally perform non-routine repairs when necessary. Fire management activities, such as reducing vegetation around cabins to decrease the potential for wildfire damage, are performed.

Predominant Wildlife: Elk, moose, black bear

Vegetation: Montane forest

LOWER BERRY CREEK PATROL CABIN

Period/Level of significance: 1956-60/Local

Contributing/non-contributing resources: 1 contributing/0 non-contributing

National Register Listing Date: Determined Eligible 2010.

Condition: Good

Current Use: Backcountry Patrol Cabin

Significance Statement: The Lower Berry Creek Patrol Cabin is significant as a representation of the park administration and development expansion that took place in the 1950s. It is also the only example of a Mission-66 era patrol cabin in Grand Teton.

Interpretation and Visitor Use: There are no interpretive media available at the Lower Berry Creek Patrol Cabin. Visitation levels are low.

Current Park Operation Responsibilities: The backcountry patrol cabins are operated as backcountry ranger stations for ranger patrol or trail crew. Some are occupied essentially full-time during the summer season but may be accessed year-round. No utilities are provided. Park FM staff, as well as volunteer preservation groups, maintain the buildings and occasionally perform non-routine repairs when necessary. Fire management activities, such as reducing vegetation around cabins to decrease the potential for wildfire damage, are performed.

Predominant Wildlife: Elk, moose, black bear, grizzly bear, beaver, river otter, osprey, bald eagle, waterfowl

Vegetation: Montane forest, woodland

GERALDINE LUCAS HOMESTEAD/HAROLD FABIAN PLACE HISTORIC DISTRICT

Period/Level of significance: 1913-50/Statewide

Contributing/non-contributing resources: 11 contributing/0 non-contributing

National Register Listing Date: 8/24/1998

Condition: Fair

Current Use: Vacant

Significance Statement: The Geraldine Lucas Homestead/Fabian Place is significant as both the homestead of Geraldine Lucas, a single female homesteader, and as the summer home of Harold Fabian, a Salt Lake City-based lawyer who aided Rockefeller in purchasing land for the 1950 expansion of the park.

Interpretation and Visitor Use: Non-personal media (waysides) are available within the district. Visitation levels are moderate.

Current Park Operation Responsibilities: This historic property has low to moderate visitation with limited access and facilities. Little effort is being made to promote visitation and use. Few EMS, law enforcement or fire incidents have occurred and the property negligibly impacts park operations. Occasional LE road patrols occur.

Predominant Wildlife: Elk, moose, black bear

Vegetation: Riparian, shrub-steppe, woodland

LUTHER TAYLOR CABINS HISTORIC DISTRICT

Period/Level of significance: 1910-48/Local

Contributing/non-contributing resources: 4 contributing/0 non-contributing

National Register Listing Date: Determined Eligible 2010.

Condition: Fair

Current Use: Vacant

Significance Statement: The Luther Taylor Cabins property is significant as the only intact example of an early homestead in the park. Should the context for images of the Tetons be developed, it will also be significant for its appearance in the movie *Shane*.

Interpretation and Visitor Use: There are no interpretive media available at the Luther Taylor Cabins. Visitation levels are estimated as low moderate.

Current Park Operation Responsibilities: This historic property has low to moderate visitation with limited access and facilities. Little effort is being made to promote visitation and use. Few EMS, law enforcement or fire incidents have occurred and the property negligibly impacts park operations. Occasional LE road patrols occur.

Predominant Wildlife: Elk, moose, black bear, grizzly bear, gray wolf

Vegetation: Shrub-steppe, woodland, near montane forest

MANGES CABIN

Period/Level of significance: 1911/Local

Contributing/non-contributing resources: 1 contributing/0 non-contributing

National Register Listing Date: 8/19/1998

Condition: Poor

Current Use: Agriculture

Significance Statement: The Manges Cabin is significant as an unusually constructed vernacular building. Architecturally rare among rustic vernacular buildings, Manges Cabin has a steep pitched roof, wide overhanging eaves, and a second story. The cabin is also significant for its association with the early homesteading settlement in the valley.

Interpretation and Visitor Use: While the Manges Cabin is closed to the public, it is visible from the Teton Park Rd. and the Bradley Taggart Trail. It is interpreted on a wayside exhibit near the road. High numbers of visitors indirectly experience the cabin but do not directly visit the district.

Current Park Operation Responsibilities: Current park operations are minimal. This property is minimally stabilized. Several buildings used for park storage are maintained to a greater level. No utilities are provided and maintained. LE rangers occasionally patrol.

Predominant Wildlife: Elk, moose, black bear

Vegetation: Woodland, agricultural grassland, riparian, near montane forest

MCCOLLISTER RESIDENTIAL COMPLEX HISTORIC DISTRICT

Period/Level of significance: 1953-87/ N.A.

Contributing/non-contributing resources: 6 contributing/0 non-contributing

National Register Listing Date: Determined Eligible 1/31/2001

Condition: Poor

Current Use: Residential

Significance Statement: The McCollister Residential Complex is significant for its association with Paul W. McCollister, who helped transform the economy of the valley during an era of dwindling dude ranches and long winters by envisioning and developing the resort at Teton Village.

Interpretation and Visitor Use: There are no interpretive media at the McCollister Residential Complex. Visitation is low.

Current Park Operation Responsibilities: Current park operations are minimal. This property is minimally stabilized. Several buildings used for park storage are maintained to a greater level. No utilities are provided and maintained. LE rangers occasionally patrol.

Predominant Wildlife: Bison, elk, moose, pronghorn, black bear, grizzly bear, gray wolf

Vegetation: Shrub-steppe, agricultural grassland, woodland, near montane forest

MENOR'S FERRY / MAUD NOBLE CABINS HISTORIC DISTRICT

Period/Level of significance: 1897-1927/National

Contributing/non-contributing resources: 1 contributing

National Register Listing Date: 4/16/1969 (Menor's Ferry)

Condition: Fair

Current Use: Interpretation

Significance Statement: Menor's Ferry/Maud Noble Cabins is significant through many eras for its association with broad patterns of exploration/settlement, agriculture, transportation, conservation, and historic preservation. More specifically, it is significant for its association with Bill Menor and his ferry operation, which exemplifies this critical type of pioneer transportation. The Maud Noble cabin is significant as the meeting place of the local residents who formulated the "Jackson Hole Plan" in support of the creation of a national park. This meeting was a turning point in the establishment of Grand Teton National Park. Finally, the district is significant as the earliest preservation effort in Grand Teton because from 1942-1953 Jackson Hole Preserve, Inc. funded a major restoration of the ferry and Menor's homestead buildings, opening them to the public as a tourist attraction. Although as of May 2014 only one resource is listed in the National Register of Historic Places, the entire district is managed as a cultural site. The district has been reevaluated and a draft National Register form, to be submitted in January 2015, proposes that the district include the Bill Menor homestead and Maud Noble cabins on the west side of the Snake River and the Holiday Menor Homestead on the east side of the Snake River, totaling 25 contributing resources in all. The draft nomination also recommends that the period of significance be expanded to 1894-1927 and 1942-1953.

Interpretation and Visitor Use: The Menor's Ferry/Maud Noble Cabins Historic District is open as an interpretive district. Both non-personal and, seasonally, personal media are present within the district. The district is seasonally staffed by an NPS ranger who runs the ferry, and by Grand Teton Association staff who operate the general store. Visitation is high.

Current Park Operation Responsibilities: The interior of the main cabin is open and operated as a country store during spring – early fall operating season. Park FM staff winterize and open the building, drain and charge the water line, and perform occasional maintenance. Menor's Ferry/Maud Noble Cabins is located at the edge of the Moose developed area and has high visitation and use. Rangers respond to any EMS, law enforcement or fire incidents and occasionally patrol. Gros Ventre rangers also patrol areas along the Snake River, including historic properties.

Predominant Wildlife: Moose, black bear, mule deer, elk, osprey, bald eagle, waterfowl

Vegetation: Riparian, shrub-steppe

MOOSE ENTRANCE KIOSK

Period/Level of significance: 1934-39/Local

Contributing/non-contributing resources: 1 contributing/0 non-contributing

National Register Listing Date: 4/23/1990

Condition: Fair

Current Use: Interpretive

Significance Statement: The Moose Entrance Kiosk is significant as a "textbook example" of early NPS rustic style architecture. It is also the only extant building of its type left in the park.

Interpretation and Visitor Use: No interpretive media are offered at the Moose Entrance Kiosk. Although the kiosk is currently visible next to the Moose Entrance Station, visitors do not stop to look more closely at the building and likely do not know its significance. Visitation is low.

Current Park Operation Responsibilities: This former park entrance kiosk is used for park storage and associated park operations are minimal. No utilities are provided and maintained. LE rangers patrol the roads and nearby developed areas. It is currently located next to the Moose Entrance Station. Moving the kiosk to the Jenny Lake area was proposed and analyzed in the Jenny Lake Renewal Plan EA (NPS 2014). It would be relocated at the entrance of the Jenny Lake Visitor Center Interpretive Plaza. The kiosk would be unmanned but would remain open with interpretive information. Associated park operations would remain unchanged from low current levels.

Predominant Wildlife: Elk, moose, black bear

Vegetation: Shrub-steppe, woodland

MOOSE-WILSON ROAD

Period/Level of significance: 1890s – 1955 / N.A.

Contributing/non-contributing resources: 3 contributing / 7 non-contributing

National Register Listing Date: Determined Eligible 2005

Condition: Good

Current Use: Road

Significance Statement: The Moose-Wilson Road is significant for its

association with community and economic development of Jackson Hole. The Moose to Wilson Road first appears on the maps in 1892, and contributed to the economic development of the area by providing settlers with a means of transportation, access to routes outside of Jackson Hole, and transporting goods to and from the area. It also allowed access from Wilson to communities to the north, such as Elk and Kelly and to Menor's Ferry when the Snake River was otherwise impassable.

Interpretation and Visitor Use: While the Moose-Wilson Road is not interpreted, visitation is high.

Current Park Operation Responsibilities: During winter the Moose-Wilson Road section from Granite Canyon Trailhead to Death Canyon Trailhead is gated, closed to motor vehicles, and unplowed. FM staff snowplow to open the road in the spring. The road section from the intersection of Death Canyon Road to the junction with Teton Park Road remains open year-round and FM plows to maintain access. FM staff also grade, resurface, apply dust abatement treatments, and maintain and replace signs. LE rangers regularly patrol the Moose-Wilson Road.

Predominant Wildlife: Moose, black and grizzly bear, mule deer, elk, osprey, bald eagle, river otter, beaver

Vegetation: Shrub-steppe, woodland, montane forest, riparian

MORMON ROW HISTORIC DISTRICT

Period/Level of significance: 1908-1950/Statewide

Contributing/non-contributing resources: 44 contributing/10 non-contributing

National Register Listing Date: 6/5/1997

Condition: Fair

Current Use: Interpretation

Significance Statement: Mormon Row is an important reflection of Mormon settlement efforts in the 20th century. The district is also architecturally significant as an example of local vernacular architecture and early community structuring in the west.

Interpretation and Visitor Use: Mormon Row is open as an interpretive district. Some ranger-led programs have occurred and some non-personal services such as a brochure and an upright wayside exhibit are available. Visitation levels are high.

Current Park Operation Responsibilities: This historic property currently has limited facilities. Few EMS, law enforcement or fire incidents occur in this area. Minor maintenance by the park is sometimes needed, including occasional grading of the Mormon Row Road.

Infrastructure improvements approved in 2000 have not yet been implemented due to other park priorities and the need for additional funds. The improvements included constructing formal parking areas at two locations where informal parking has been occurring and installing a vault toilet at the

larger of the two parking areas. The plan included maintaining fences and other cultural landscape features within the immediate homestead area and Ditch Creek Bridge as a gated, one-lane bridge for bicyclists, pedestrians, and park administrative or emergency vehicles.

Predominant Wildlife: Bison, elk, mule deer, pronghorn, gray wolf

Vegetation: Shrub-steppe, agricultural grassland, riparian

MURIE RANCH HISTORIC DISTRICT NATIONAL HISTORIC LANDMARK

Period/Level of significance: 1945-1980/National

Contributing/non-contributing resources: 26 Contributing/2 non-contributing

National Register Listing Date: 2/17/2006

Condition: Good

Current Use: Conservation/Education

Significance Statement: The Murie Ranch is a National Historic Landmark, the highest designation for a historic property in the United States. It is of exceptional significance for its association with Olaus and Mardie Murie, leaders of the wilderness movement who were influential in the establishment of the National Park units and wilderness/conservation legislation.

Interpretation and Visitor Use: Both personal and non-personal media are available at the Murie Ranch. Waysides are located near the parking area, and NPS-led ranger tours visit the district from the Craig Thomas Discovery and Visitor Center. Additionally, the Murie Center offers seasonal tours of the property as well as events and center-organized activities. Because the district is staffed, some additional personal interpretation is sometimes available. Visitation levels are high. An average of 25 visitors/day during the 4-month park summer season and a total of approximately 3000 visitors visited the ranch during 2014.

Current Park Operation Responsibilities: The Murie Center (TMC) operates the ranch as a conservation center. Their staff winterizes cabins that are unoccupied in winter and de-winterizes them in the spring. TMC staff performs building maintenance although the park FM staff provides support maintenance. The park snow plows the access road and parking area, and provides water to and maintains distribution lines. TMC drains these lines. Visitation and use by the general public is low but occasional events and other center-organized activities sometimes bring larger numbers of people. Few EMS, law enforcement or fire incidents have occurred. Park LE rangers regularly visit the center on patrols, coordinate with staff, and respond to TMC reports of incidents. Park staff also provides structural and wildland fire protection to the Murie Ranch.

Predominant Wildlife: Moose, black bear, mule deer, elk, osprey, bald eagle, river otter, beaver

Vegetation: Woodland, shrub-steppe, riparian, montane forest

OLD ADMINISTRATIVE AREA/ BEAVER CREEK

Period/Level of significance: 1934-39/Local

Contributing/non-contributing resources: 15 contributing/4 non-contributing

National Register Listing Date: 4/23/1990

Condition: Good

Current Use: Domestic/Government Offices (NPS employee housing and offices)

Significance Statement: The Old Administrative Area/Beaver Creek is significant as a "clear statement" of NPS rustic architecture. The Public Works Administration (PWA) and the CCC built the district in the 1930s, to standard service plans. The Administration Building (Beaver Creek #10) is also significant as it was the original Grand Teton National Park headquarters. Built sometime prior to 1908, it originally served as the Stewart Ranger Station for the U.S. Forest Service and predates the majority of the buildings in the district, which were constructed by the Civilian Conservation Corps (CCC) in the 1930s.

Interpretation and Visitor Use: The Old Administrative Area/Beaver Creek is closed to the public. Visitation levels are low.

Current Park Operation Responsibilities: This property is used primarily as employee housing. Park FM duties include snow plowing, shoveling roofs, and building maintenance and repairs. FM duties also include maintaining all utility systems. LE rangers are among those living there and provide ranger presence. The summer trail office is also located at Beaver Creek, offering additional NPS presence.

Located at the entrance to the Beaver Creek employee housing area, this property is currently unused after it was closed due to severe pest infestation and unhealthy conditions for employees. Few EMS, law enforcement or fire incidents occur at this property, although employee use and occupation of the Beaver Creek area in general is high. Because of its proximity to park housing, FM staff maintain winter access by plowing roads of snow. WCHP has performed some stabilization work. No utilities are currently provided to the building.

Predominant Wildlife: Elk, moose, black bear

Vegetation: Montane forest, riparian, shrub-steppe, woodland

RAMSHORN DUDE RANCH LODGE

Period/Level of significance: 1935-37/Local

Contributing/non-contributing resources: 1 contributing/0 non-contributing

National Register Listing Date: 8/19/1998

Condition: Good

Current Use: Education (Teton Science School)

Significance Statement: The Ramshorn Dude Ranch Lodge is significant as an example of dude ranch rustic architecture representing the later period of dude ranches within GRTE.

Interpretation and Visitor Use: Interpretation is provided to students at Teton Science School; hence, visitation levels associated with the school are high. Visitor use not associated with the school is rare**.**

Current Park Operation Responsibilities: The lodge is used as the main lodge at Teton Science School (TSS). The park provides water and some signage, and maintains utilities. FM staff also snowplows the 1.7-mile road that leads from the Antelope Flats Road to the TSS campus. Although they do not plow the campus parking areas, they provide occasional, minimal support during heavy snow years.

Predominant Wildlife: Elk, moose, black bear, grizzly bear, gray wolf

Vegetation: Shrub-steppe, native grassland, near riparian and montane forest

DICK AND ETHEL REIMER RESIDENCE

Period/Level of significance: 1936/Local

Contributing/non-contributing resources: 1 contributing/0 non-contributing

National Register Listing Date: 5/15/1998

Condition: Good

Current Use: Domestic (NPS Employee Housing)

Significance Statement: The Reimer Residence is significant as an example of Jackson Hole vernacular architecture of the late settlement period (between WWI-WWII). Significant architectural features include the “ranch” form with low-pitched roof, the use of native stone and log, the careful craftsmanship, and the saddle notching.

Interpretation and Visitor Use: The Reimer Residence is not open to the public. Visitation is low to none.

Current Park Operation Responsibilities: Because this property is used as seasonal park housing, park FM staff winterize and de-winterize the building, and maintain utilities. LE rangers monitor the building when travelling on the nearby Antelope Flats Road. They check the status of the building and for potential incidents such as food storage violations.

Predominant Wildlife: Bison, elk, mule deer, pronghorn, gray wolf

Vegetation: Shrub-steppe, grassland, riparian

SKY RANCH HISTORIC DISTRICT

Period/Level of significance: 1952-2005/N.A.

Contributing/non-contributing resources: 7 contributing/1 non-contributing

National Register Listing Date: Determined Eligible 2007

Condition: Good

Current Use: Vacant

Significance Statement: Designed by prominent Philadelphia architect John Arnold Bower, Sky Ranch is significant as an architect-designed vacation home/hobby ranch of the type that became popular in the valley post-World War II.

Interpretation and Visitor Use: There are no interpretive media at the Sky Ranch. Visitation is low.

Current Park Operation Responsibilities: Sky Ranch was used as seasonal housing from 2005, when the park assumed ownership, through summer 2012. The buildings, utilities, and the access road were occasionally maintained. Due to budgetary limitations and the management desire to limit human presence in this area, this property was not used during summer 2013 and typical park operations did not occur. LE rangers occasionally patrol to check the status of the building.

Predominant Wildlife: Elk, moose, mule deer, black bear, gray wolf, great gray owl

Vegetation: Shrub-steppe, montane forest, woodland, agricultural grassland

SNAKE RIVER LAND COMPANY OFFICE AND RESIDENCE HISTORIC DISTRICT

Period/Level of significance: 1927-50/Local

Contributing/non-contributing resources: 3 contributing/1 non-contributing

National Register Listing Date: 7/7/2006

Condition: Poor

Current Use: Vacant

Significance Statement: The Snake River Land Company complex was originally a homestead. It is significant because of its role as the Snake River Land Company local office headquarters. It is the primary in-park, administrative area associated with John D. Rockefeller, Jr. and his work to expand the park.

Interpretation and Visitor Use: There is a small wayside exhibit at the Snake River Land Company Office and Residence. Visitor use is low.

Current Park Operation Responsibilities: Current use of the property is park storage in the garage and an outbuilding. In the past, FM staff provided water and electric and performed repairs on the garage. The office/residence main building is currently unusable due to rodent infestation and poor structural condition**.** Little maintenance has been performed on the office/residence building and on the two smaller buildings. Rehabilitation of the garage for continued use as a river cache was performed in 2013 and is again being used as a river cache/workshop and for storage.

Predominant Wildlife: Elk, mule deer, moose, black bear, grizzly bear, gray wolf, otter, beaver, bald eagle, osprey, waterfowl

Vegetation: Montane forest, woodland

SNAKE RIVER BRIDGE #2

Period/Level of significance: 1945- 1957 / N.A.

Contributing/non-contributing resources:

National Register Listing Date: Determined Eligible 2011

Condition: Fair

Current Use: Bridge for automobiles to cross the Snake River

Significance Statement: The Snake River Bridge #2 is one of the oldest bridges remaining in the JODR/GRTE and retains many of the characteristics of the parks' "modern" era of bridge construction, which include having a low profile, curved concrete piers, concrete bridge deck and abutments, and the use of metal rails. It was one of the first bridges to be reconstructed after World War II but before the Mission 66 reconstruction program began modernizing the park's structures. The bridge is significant on a local level for its contribution to the development of the transportation systems within national parks.

Interpretation and Visitor Use: There are no interpretive media at the Snake River Bridge #2. Visitation is high.

Current Park Operation Responsibilities: This bridge is part of park road system and maintained by FM. The park occasionally contracts non-routine maintenance. FM staff perform activities such as snowplowing and sweeping.

Predominant Wildlife: Elk, mule deer, moose, black bear, grizzly bear, otter, bald eagle, osprey, waterfowl

Vegetation: Nearby native grassland, shrub-steppe, riparian, and some montane forest, primarily lodgepole pine

STRING LAKE COMFORT STATION

Period/Level of significance: 1934-39/Local

Contributing/non-contributing resources: 1 contributing/0 non-contributing

National Register Listing Date: 4/23/1990

Condition: Fair

Current Use: Recreation

Significance Statement: The String Lake Comfort Station is significant as a well-preserved example of NPS rustic architecture. It is also significant as one of three 1930s examples of that particular building type in the park. It was built by the PWA or CCC.

Interpretation and Visitor Use: There is no interpretation at the String Lake Comfort Station. Visitation levels are high.

Current Park Operation Responsibilities: The "comfort station" is used as a restroom for seasonal visitors. Park FM staff maintain power, water, and sewer systems, perform building maintenance, and provide some signage. They winterize, de-winterize, and provide custodial care during operating season. LE rangers frequently visit this park area.

Predominant Wildlife: Elk, moose, black bear

Vegetation: Shrub-steppe, montane forest, woodland

TRIANGLE X BARN

Period/Level of significance: 1928/Local

Contributing/non-contributing resources: 1 contributing/0 non-contributing

National Register Listing Date: 8/19/1998

Condition: Good

Current Use: Concessioner Facility

Significance Statement: The Triangle X Barn is architecturally significant as a visual representation of the extent to which resources were reused in frontier economy (the logs were re-used from a neighbor's property), and as an example of vernacular architecture in early valley ranching.

Interpretation and Visitor Use: Concessioner-managed as a dude ranch with education provided to visiting guests. Visitation is seasonally high.

Current Park Operation Responsibilities: The barn is an out-building at Triangle X Ranch, a concessioner- run dude ranch that operates year-round and provides dude ranch activities and visitor lodging. The concessioner maintains the buildings. FM staff installed an interpretive plaque on the barn. LE rangers respond to calls, and visit the ranch occasionally to talk to the concessioner and check on park buildings.

Predominant Wildlife: Elk, moose, bison, mule deer, black bear, grizzly bear, gray wolf

Vegetation: Shrub-steppe, montane forest, woodland, agricultural grassland

UPPER GRANITE CANYON PATROL CABIN

Period/Level of significance: 1935-48/Local

Contributing/non-contributing resources: 1 contributing/0 non-contributing

National Register Listing Date: 8/19/1998

Condition: Good

Current Use: Backcountry Cabin

Significance Statement: The Upper Granite Creek Patrol Cabin is significant for its association with early park development and its rustic design. Like the cabins at Death Canyon and Cascade Canyon, it is also significant because it was constructed by the CCC from standardized plans. The differences between those three cabins suggest that the builders frequently modified standard plans in accordance with their lumber supply or their personal taste.

Interpretation and Visitor Use: There are no interpretive media available at the Upper Granite Canyon Patrol Cabin. Visitation levels are moderate.

Current Park Operation Responsibilities: The backcountry patrol cabins are operated as backcountry ranger stations for ranger patrol or trail crew; some are occupied essentially full-time during the summer season but may be accessed year-round. No utilities are provided. Park FM staff, as well as volunteer preservation groups, maintain the buildings and occasionally perform non-routine repairs when necessary. Fire management activities, such as reducing vegetation around cabins to decrease the potential for wildfire damage, are performed.

Predominant Wildlife: Elk, moose, black bear, bighorn sheep, pika

Vegetation: Sub-alpine forest

VALLEY TRAIL SYSTEM

Period/Level of significance: 1932-1945/ N.A.

Contributing/non-contributing resources: 12 Contributing Trails

National Register Listing Date: Determined Eligible 1995

Condition: Good

Current Use: Recreation (Trails)

Significance Statement: The Valley Trail System is significant for its association with the park's transportation system and the Civilian Conservation Corps. These trails were constructed or improved by the C.C.C. so that early park managers could meet the directives of the National Park Service; to make the park accessible to visitors, in particular getting visitors into the interior of the park. Contributing trails include the Bradley Lake Trail, Taggart Lake Trail, Valley Trail, String Lake Trail, Leigh Lake Trail, South Forth Cascade Canyon Trail, Cascade Canyon Trail, North Fork Cascade Canyon Trail, Death Canyon Trail, Teton Crest Trail, Jenny Lake Trail, and Paintbrush Canyon Trail.

Interpretation and Visitor Use: There are no interpretive media available on the Valley Trail System. Visitation is high.

Current Park Operation Responsibilities: The park trail crew maintains this historic property as part of park trail system. LE rangers hike it frequently. FM staff creates and maintains signs.

Predominant Wildlife: Elk, moose, black bear, bighorn sheep, marmot, pika

Vegetation: Montane forest, woodland, shrub-steppe

WHITE GRASS DUDE RANCH HISTORIC DISTRICT

Period/Level of significance: 1919-38/Local

Contributing/non-contributing resources: 13 contributing/2 non-contributing

National Register Listing Date: 4/23/1990

Condition: Poor

Current Use: WCHP Restoration Project

Significance Statement: The White Grass Dude Ranch is significant as both one of the earliest dude ranches in the valley and as the longest running dude ranch in the valley. It helped set the standard for the industry, and as a district exemplifies the local development of dude ranches from cattle ranches.

Interpretation and Visitor Use: Non-personal media are available at the White Grass Dude Ranch. Because of the construction activities, personal interpretation is sometimes available. Visitation is currently low to moderate.

Current Park Operation Responsibilities: The ranch is in the process of being rehabilitated and converted into a seasonal historic preservation training center by Western Center for Historic Preservation (WCHP) and trainees. A Memorandum of Agreement (MOA) between the WCHP and the NPS was completed in 2012 and new MOAs will be completed every 5 years. These agreements define operations and responsibilities. When the training center is fully operating, estimated in 2017, the park would be responsible for some of the buildings (including the Hammond Cabin, which will house the center caretaker and be maintained as park housing). The park currently provides and maintains water, power, and sewer systems, and would continue to do so. The other cabins are intended as seasonal housing for trainees and are not in the park housing pool. FM staff would operate and maintain the water and wastewater systems.

When complete, the center would operate between late April and September, including opening and shutting down operations. There will be a small WCHP staff of 4-5 present daily during daytime hours. A caretaker and historic preservation trainees would stay overnight.

Currently few LE patrols, EMS or structural fire incident responses are made to the White Grass area due to low visitation by the general public. Little effort is made to promote visitor visitation and use. On-site staff provide NPS presence and report incidents to the Ranger Activities Division. LE rangers occasionally patrol and additional LE support is available because the nearby White Grass Ranger Station is occupied in summer. When the center is fully operating, planned special events will occur and LE rangers could be asked to provide additional support.

Predominant Wildlife: Elk, moose, mule deer, black bear, gray wolf, great gray owl

Vegetation: Shrub-steppe, woodland, agricultural grassland, montane forest

WHITE GRASS RANGER STATION HISTORIC DISTRICT

Period/Level of significance: 1930-38/Local

Contributing/non-contributing resources: 4 contributing/0 non-contributing

National Register Listing Date: 4/23/1990

Condition: Fair

Current Use: Backcountry Cabin

Significance Statement: The White Grass Ranger Station is significant as the only extant horse patrol station in the park. Built in 1930 to standard plans, it is also significant as an example of NPS rustic architecture.

Interpretation and Visitor Use: There are currently no interpretive media at the White Grass Ranger Station Historic District. High numbers of visitors are present at the trailhead but visitation levels at the cabin are low.

Current Park Operation Responsibilities: The backcountry patrol cabins are operated as backcountry ranger stations for ranger patrol or trail crew; some are occupied essentially full-time during the summer season but may be accessed year-round. No utilities are provided. Park FM staff, as well as volunteer preservation groups, maintain the buildings and occasionally perform non-routine repairs when necessary. Fire management activities, such as reducing vegetation around cabins to decrease the potential for wildfire damage, are performed.

Predominant Wildlife: Elk, moose, mule deer, black bear, marmot

Vegetation: Shrub-steppe, montane forest, woodland, agricultural grassland

APPENDIX B—Plant Species of Concern

Threatened, Endangered, and Candidate Species

Whitebark Pine

The park and parkway contain whitebark pine (*Pinus albicaulis*). Whitebark pine is a candidate for listing under the Endangered Species Act (76 FR 42631; July 19, 2011). In Wyoming, this species usually occurs above 8000 feet on cold and windy subalpine to alpine sites. It is a five-needle pine that is typically 16 to 66 feet tall with a rounded or irregularly spreading crown shape. When located in relatively dense stands of conifers, whitebark pines tend to grow as tall, single-stemmed trees. In open, more exposed sites, trees frequently have multiple stems. Above tree line, the species grows in a krummholz form (stunted, shrub-like growth). Dark brown to purple seed cones grow at the outer ends of upper branches and are 2 to 3 inches long. The scales of the cones are thick and do not open on their own. Whitebark pine is almost exclusively dependent upon Clark's nutcracker (*Nucifraga columbiana*), a bird in the family Corvidae (whose members include ravens, crows, and jays), to open its cones and disperse the seeds.

The presence of whitebark pine promotes increased biodiversity and contributes to critical ecosystem functions. It is frequently the first conifer to establish after disturbances such as wildfires. Snow drifts form around the trees, thereby increasing soil moisture, modifying soil temperatures, and holding soil moisture longer.The shade from whitebark pine trees slows the progression of snowmelt, reducing spring flooding at lower elevations. Whitebark pine also provides highly nutritious seeds for numerous species of birds and mammals.

Major threats to whitebark pine include mortality from disease caused by the nonnative white pine blister rust, predation by the native mountain pine beetle, climate change, habitat loss from past and ongoing fire suppression activities, and the combined negative effects of these individual threats.

Special Concern Species

The following species were excerpted from the Wyoming Natural Diversity Database (WYNDD), 2012 Wyoming Plant Species of Concern (Heidel 2012). Grand Teton National Park was listed as the managed area where they occur. If the parkway (JDR Parkway) was listed or if the park was listed with a question mark, this is noted below.

WYNDD uses a standardized ranking system coordinated by NatureServe to indicate the probability of extirpation, at both the global and state scales, of each plant and animal taxon. The following letters denote the spatial scale at which a taxon's status is scored:

G = Global rank assigned by NatureServe: range-wide probability of extinction for a species
S = Subnational (state/jurisdiction) rank assigned by WYNDD biologists for Wyoming
T = Trinomial rank: refers to the range-wide probability of extinction for a subspecies or variety

These letters are each followed by a numeric, 1-5 score**:**
1 = critically imperiled
2 = imperiled
3 = vulnerable
4 = apparently secure
5 = secure

NatureServe conservation status rank categories were G1 (N1, S1), Critically imperiled; G2 (N2, S2), Imperiled; G3 (N3, S3), Vulnerable; G4 (N4, S4), Apparently secure; and G5 (N5, S5), Secure.

Adiantum aleuticum [*A. pedatum var. aleuticum*]. Aleutian maidenhair. G5?/S1
Agrostis mertensii [*A.* borealis]. Northern bentgrass. G5/S2
Agrostis oregonensis. Oregon bentgrass. G4/S1. GRTE?
Aquilegia formosa var. *formosa*. Crimson columbine. G5T5/S1.
Aspidotis densa [*Cryptogramma densa*]. Pod-fern. G5/S1.
Aspenium trichomanes-ramosum [*A. viride*]. Green spleenwort. G4/S2
Astragalus terminalis. Railhead milkvetch. G3/S2
Besseya alpine. Alpine kittentails. G4/S1 GRTE?
Botrychium minganense [*B. lunaria* var. *Onongense*]. Mingan moonwort. G4/S2.
Carex diandra. Lesser panicled sedge. G5/S2
Carex incurviformis var. danaensis [*C. maritime*]. Incurved sedge. G4G5T3/S2.
Carex laeviculmis. Smooth-stemmed sedge. G5/S1. GRTE, JDR Parkway.
Carex proposita. Smoky Mountain sedge. G4/S1.
Deschampsia danthonioides. Annual hairgrass. G5/S1.
Dodecatheon jeffreyi spp. *Jeffreyi.* Jeffrey's shootingstar. G5T3T5/S1.
Draba borealis. Boreal draba. G4/S2.
Draba fladnizensis [*D. f. var. pattersonii*]. White arctic whitlow-grass. G4/S2.
Draba globosa [*D. apiculata, D. a. var. apiculata; D. densifolia* var. *apiculata*]. Rockcress draba. G3/S3.
Dryopteris expansa [*D. assimilis; D. carthusiana* – misapplied]. Spreading woodfern. G5/S1.
Eleocharis bella. Delicate spikerush. G5/S1.
Eleocharis flavescens var. *thermalis* [Incl. in var. *flavescens* by some authors]. Warm Springs spikerush. G5T2T3Q/S2. GRTE? JDR Parkway.
Epipactis gigantean. Giant helleborine. G5/S1.
Equisetum fluviatile. Water horsetail. G5/S1. Teton County, WY. GRTE?
Erigeron lanatus. Wooly fleabane. G3G4/S1.
Eriophorum viridicarinatum. Green keeled cotton-grass. G5/S2.
Gentianopsis simplex [*Gentianella simplex, Gentiana simplex*]. Hiker's gentian. G5/S1. JDR Parkway. *Gymnocarpium dryopteris* Incl. *G. disjunctum & G. x brittonianum*]. Oak fern. G5/S2.
Huperzia haleakalae [*Lycopodium selago* var. *haleakalae, Huperzia selago* – misapplied]. Fir clubmoss. G4G5/S1.
Kelloggia galioides. Milk kelloggia. G5/S1.
Lemna valdiviana. Pale duckweed. G5/S1.
Lesquerella carinata var. *carinata* [*Physaria carinata ssp. Carinata*]. Keeled bladderpod. G3G4T3T4/S2.
Listera convallarioides. Broad-leaved twaylade. G5/S1S2.
Luzula glabrata var. *hitchcockii* [*L. hitchcockii*]. Smooth wood-rush. G5T4/S2.
Marsilea vestita var. *oligospora* [*M. oligospora*]. Pepperwort. G5/S1. GRTE, JDR Parkway.
Minuartia filiorum. [*Arenaria filiorum; A. rubella* var. *filiorum*, incl.. in *Minuartia macrantha in* FNA]. Thread-branch stitchwort. G3G4/S1.
Muhlenbergia glomerata [Incl. in *M. racemosa* by some authors]. Marsh muhly. G5/S2.
Myriophyllum verticuillatum. Whorled water-milfoil. G5/S1.
Najas guadalupensis. Southern naiad. G5/S1.
Nothocalais troximoides [*Microseris troximoides*]. False agoseris. G5/S1.
Orobanche corymbosa var. *corymbosa* [*O. california* var. *corymbosa*]. Flat-top broomrape. G4T4/S1S2.

Orobanche ludoviciana var. arenosa. [Incl. in var. *ludoviciana* by some authors]. Louisiana broomrape. G5T5/SH.
Paeonia brownii. Brown's peony. G5/S1.
Porterella carnosula. Western porterella. G4/S1.
Potamogeton friesii. Fries pondweed. G4/S1.
Potamogeton obtusifolius. Blunt-leaf pondweed. G5/S1. GRTE, JDR Parkway.
Potamogeton zosteriformis. Flatstem pondweed. G5/S1.
Senecio hydrophiloides [*S. foetidus* var. *hydrophiloides*]. Sweet-marsh butterweed. G4G5/S1.
Spirodela polyrrhiza. Common water-flaxseed. G5/S1.
Stephanomeria flumenea. Teton wire-lettuce. G2/S2.
Torreyochloa pallid var. *fernaldii.* [*Puccinellia fernaldii*]. Fernald alkali-grass. G5T4Q/S1.
Townsendia microcephala. Showy Easter-daisy. G5/SH. GRTE?
Triteleia grandiflora [*Brodiaea douglasii*]. Large flower triteleia. G4G5/S2.
Viola renifolia var. *brainerdii.* Kidney leaf white violet. G5T5/S1.
Xerophyllum tenax. Western beargrass. G5/S1. GRTE, JDR Parkway.

APPENDIX C—Additional Wildlife Information

General Wildlife

Located in northwestern Wyoming, Grand Teton National Park and the John D. Rockefeller, Jr. Memorial Parkway have a combined area of 333,700 acres within the Greater Yellowstone Ecosystem, which encompasses more than 13 million acres and is considered one of the few remaining, nearly intact, temperate ecosystems on Earth. The park ranges in elevation from 6,400 feet on the sagebrush-dominated valley floor to 13,770 feet on the windswept granite summit of the Grand Teton. Piedmont lakes rimmed by moraines from the last glaciation are adjacent to the range. These lands contain diverse habitat that supports a wide variety of species. These species include at least 61 native mammals, 4 reptiles, 6 amphibians, 12 fish, and 299 birds (NPS 2000, NPS 2014).

In addition to having many types of small animals, Grand Teton National Park is notable for its predator-prey complex of large mammals, including ungulate species (bighorn sheep, bison, elk, moose, mountain goats, mule deer, pronghorn, and white-tailed deer) and seven carnivores (black bears, Canada lynx, coyotes, grizzly bears, mountain lions, wolverines, and wolves). Some of these species are sensitive to the presence of humans and would avoid or limit their use of the park's developed areas, where high levels of human activity occur and habitat has been lost due to construction.

The parkway provides a natural link between the two national parks and contains features characteristic of both areas. In the parkway, the Teton Range ramps down a gentle slope at its northern end, while rocks born of volcanic flows from Yellowstone line the Snake River and form outcrops scattered atop hills and ridges.

The parkway provides habitat for a variety of bird and mammal species, many of which are concentrated along the Snake River corridor. Elk, mule deer, and moose are all common summer residents. Small numbers of moose, and perhaps a few elk, winter in forested areas of the parkway due to deep and persistent snow cover. Black and grizzly bears are common, as are coyotes, river otter, and numbers of smaller mammals. In addition wolverine, lynx, and mountain lion or their sign are seen occasionally. Notable bird life includes bald eagles, trumpeter swans, peregrine falcons, great blue herons, sandhill cranes, and a variety of other raptors, waterfowl, and passerine species which nest in or immediately adjacent to the parkway.

More information about prominent species is below.

Mammals:

Ungulates (Hoofed Mammals – Ungulates within the park include elk (*Cervus elaphus*), moose (*Alces alces*), bison (*Bison bison*), mule deer (*Odocoileus hemionus*), bighorn sheep (*Ovis canadensis*), and pronghorn (*Antilocapra americana).*

Elk are the most numerous ungulate in GRTE. These elk belong to the Jackson Hole Elk Herd, which currently numbers about 11,000 animals. They are versatile generalists (Houston 1982) that use a mixture of habitat types. During spring and fall movements between seasonal ranges, a substantial portion of the Jackson elk herd migrates through the Mormon Row Hayfields, Antelope Flats, Blacktail Butte, and Moose-Wilson Road areas. Many elk summer in the Snake River bottom both north and south of Moose and in Cottonwood Creek to the northwest. Elk summer throughout the park and occur at relatively high densities in low elevation open shrub-steppe, willow, and forested habitats. Most elk

migrate to winter range on the National Elk Refuge (NER) near Jackson but a small number winter in the eastern portion of the park. During spring and fall migrations between summer range (in GRTE, on Bridger Teton National Forest lands, and in Yellowstone National Park) and winter range on the refuge, large numbers move through the Mormon Row Hayfields, Antelope Flats, Blacktail Butte, and Moose-Wilson Road areas. Calving occurs in the spring in mid-elevation forested areas and portions of the Snake River riparian zone.

Moose are widely distributed in Jackson Hole, with winter range in lower elevation riparian areas and summer range both within and outside of the park. The entire Snake River drainage and low elevation portions of the Gros Ventre River drainage represent either "winter-yearlong" or "crucial moose winter range" (WGFD unpubl. data). They are commonly observed in the Snake River corridor north and south of the Moose developed area, as well as in adjacent sagebrush and bitterbrush habitats.

Although willow and spruce forest are preferred during winter, moose will use other habitat types based on snow depth (Matchett 1985). As winter progresses and snow accumulations become greater, moose use of older, denser stands of trees with a high conifer component and relatively shallow snow depths increases (Saether et al. 1989). The Snake River drainage and the lower elevations of the surrounding mountains are also considered critically important reproductive and maintenance habitat (WGFD unpubl. data). In the park, riparian areas along the Gros Ventre River, the Snake River, and Willow Flats are important calving areas. Moose thrive in seral stages of shrub and tree communities (Coady 1982), and environmental disturbances that disrupt existing vegetative patterns and promote the formation of ecotones are generally beneficial to moose (Tefler 1978). Both lowland and upland climax shrub habitats are heavily used during summer and fall (Van Ballenberghe and Miquelle 1990). Aquatic vegetation is used extensively where available, particularly in early summer.

Because the moose population in Jackson Hole has declined in recent decades, they have been categorized as a Wyoming species of greatest conservation need and will be further discussed below in that section.

Jackson Hole provides year-round habitat for mule deer, which are abundant in GRTE during non-winter months. Most of the park and its vicinity are classified as spring-summer-fall mule deer habitat. Although primary summer range is on mountain slopes surrounding the valley, mule deer also summer within the Snake River floodplain. There is little know about their movements but use of lower elevations (e.g., along the Snake River and on the slopes of buttes and foothills) increases dramatically during spring and fall migrations. Campbell (1990) noted that use of specific migration routes in Jackson Hole is not common. General movements within the park occur as the deer travel to and from crucial winter range south of the park.

Approximately 700 bison reside in Jackson Hole. Because they typically winter on the National Elk Refuge where they exploit supplemental feed provided to the elk, their use of GRTE usually occurs from spring through fall. Generally, their range within the park includes the Antelope Flats and Elk Ranch areas. Bison primarily use sagebrush-grassland ("shrub-steppe") communities in these areas as well as the Snake River bottoms and may calve anywhere in the park. Large numbers typically congregate in the Mormon Row-Kelly Hayfields and Hunter-Talbot area.

Pronghorn are seasonal park residents. Approximately 300 summer in the park (Dewey 2012). They primarily occur within the central valley portion of the park in low-lying sagebrush communities on the east and west side of the Snake River floodplain, including Baseline Flats, the Potholes, south Antelope

Flats, the Kelly Hayfields, and in the Elk Ranch area. Key fawning areas include the Kelly Hayfields and Antelope Flats area, the Potholes, Lupine Meadows, and Elk Ranch.

A small herd of bighorn sheep is present in the park but remains year-round at high elevations along the Teton Crest and in the steep canyon areas on the east and west slopes of the range.

Carnivores – Mammalian predators in the park include coyote (*Canis latrans*), bobcat (*Felis rufus*), black bear (*Ursus americanus*), mountain lion (*Felis concolor*), gray wolf (*Canis* lupus), long and short-tailed weasels (*Mustela* species), badgers (*Taxidea taxus*), pine marten (*Martes americana*), striped skunk (*Mephitis mephitis*), red fox (*Vulpes* vulpes), and raccoon (*Procyon lotor*).

Black bears inhabit montane forest habitats, using these areas for resting, feeding, and travel. They are commonly seen along the eastern base of the Teton Range, the western base of the Gros Ventre range, and on Blacktail Butte. Mixed conifer vegetation in these areas provide some of the park's best bear habitat, with irregular openings and a diverse shrub understory with *Vaccinium* species and other fruit producing plants. Black bears are common in these areas and can be expected to occur regularly. Coyotes, which are habitat generalists, are also common. These habitats are also important to bobcat, gray wolf, mountain lion, wolverine, and red fox, which occur at lower densities in the park. Coyotes are also frequently observed in the shrub-steppe communities. Pine marten, weasels, raccoons, and skunks are likely year-round residents. Gray wolves and grizzly bears are discussed in greater detail in the biological assessment (**Appendix J**).

Other Common Mammals – Porcupine (*Erethizon dorsatum*), beaver (*Castor canadensis*), Uinta ground squirrel (*Urocitellus armatus*), red squirrel (*Tamiasciurus hudsonicus*), pine marten (*Martes americana*), deer mouse (*Peromyscus maniculatus*), pocket gopher (*Thomomys talpoides*), chipmunk (*Eutamias umbrinus*), and vole (*Microtus pennsylvanicus*), are examples of other common mammals that are abundant in the park.

Common bat species in the park include the little brown bat (*Myotis lucifugus*) and big brown bat (*Eptesicus fuscus*). Both of these species roost colonially, often in buildings, and may use surrounding habitat for foraging and roosting.

Birds:

Bird species inhabiting the park are diverse, occupy widely different habitats, and may be year-round or seasonal residents. Year-round residents include common ravens (*Corus corax*), black-billed magpies (*Pica hudsonia*), Clark's nutcrackers (*Nucifraga columbiana*), mountain chickadees (*Poecile gambeli*), and red crossbills (*Loxia curvirostra*). Sandhill cranes, gulls, terns, and rough-legged hawks (*Buteo lagopus*) are seasonal residents. Greater sage-grouse (*Centrocercus urophasianus*), ruffed grouse (*Bonasa umbellus*), and blue grouse (*Dendragapus obscurus*) are all present but sage-grouse are primarily found in shrub-steppe sagebrush areas, blue grouse prefer coniferous forests, aspen stands, and adjacent sagebrush-grassland (shrub-steppe), and ruffed grouse are most common in mixed aspen-conifer forests. Sharp-tailed grouse (*Typanuchus phasianellus*) are present but uncommon.

Reptiles and Amphibians:

Several species of amphibians and reptiles are present in Jackson Hole (Baxter and Stone 1980). These include the tiger salamander (*Ambystoma mavortium*), Columbia spotted frog (*Rana luteiventris*),

western boreal toad (*Anaxyrus boreas boreas*), western chorus frog (*Pseudacris triseriata maculata*), wandering garter snake (*Thamnophis elegans vagrans*), valley garter snake (*Thamnophis sirtalis fitchi*), rubber boa (*Charina bottae*), and northern sagebrush lizard (*Sceloporus graciosus graciosus*). Although the northern leopard frog (*Rana pipiens*) was historically present in the park, it is believed to be extirpated in this area.

The majority of these species inhabit wet areas within the Snake River riparian zone and elsewhere on the valley floor and foothill regions (Koch and Peterson 1995), with the exception of rubber boas that are typically found in moderately moist forested areas with heavy ground cover (Baxter and Stone 1980). Rubber boas, northern leopard frogs, and northern sagebrush lizards are considered rare; valley garter snakes and boreal toads, uncommon; and the wandering garter snake, boreal chorus frog, Columbia spotted frog, and tiger salamander, common (NPS 2014).

Amphibian population declines have been occurring globally in both protected areas and areas where habitat has been lost; about one-third of all amphibian species are believed to be threatened with extinction. In Grand Teton and Yellowstone national parks, amphibians depend on limited suitable habitat with the shallow, quiet waters needed for egg deposition and larval development (NPS 2012c). Monitoring since 2006 of the Columbia spotted frog, boreal chorus frog, tiger salamander, and boreal toad indicated that reproduction appears stable. Research on amphibian disease indicates that the parasitic fungus causing chytridiomycosis is widespread in the GYE, but no die-offs attributed to the disease were found in 2010 or 2011 (NPS 2012c).

Western boreal toads are known to occur both within the GYA and GRTE. The northern Rocky Mountain population within the GYA, including Jackson Hole and GRTE, can be locally abundant, but appears to be less widespread than it was in the 1950s (Koch and Peterson 1995). Boreal toads breed in slow moving water along the Snake River and in mesic areas in the foothills, montane and subalpine life zones, willow marshes, and aspen or spruce fir stands (Baxter and Stone 1980). Boreal toads may move considerable distances from water while foraging and use non-riparian habitats, including forested and sagebrush dominated uplands. In addition to aquatic habitats, boreal toads may also use mesic areas in foothills, montane and subalpine life zones, willow marshes, and aspen or spruce-fir stands. When in search of food, they may move a considerable distance from permanent water (Baxter and Stone 1980).

The northern sagebrush lizard is the only lizard species known to occur in the GYA and, specifically, in GRTE. Although not often found above 6,000 feet in the northern Rocky Mountains (Baxter and Stone 1985), it has been documented as high as 8,300 ft in Yellowstone National Park in geothermally influenced areas and as high as 7,000 ft in non-geothermal areas (Koch and Peterson 1995). Sagebrush lizards have been reported in Grand Teton National Park near the Snake River floodplain, Pilgrim Creek, Bar BC Ranch, and Colter Bay. Sagebrush lizards breed in early summer and lay their eggs in loose soil sometime in June. No breeding or nesting areas have been identified in Grand Teton National Park.

Fish:

The park contains 12 native and at least 7 non-native fish species. Native species include Bluehead sucker (*Catostomus discobolus*), Bonneville redside shiner (*Richarsonius balteatus*), leatherside chub (*Snyderichthys copei*), longnose dace (*Rhinichthys cataractae*), mottled sculpin (*Cottus bairdii*), mountain sucker (*catostomus platyrhynchus*), mountain whitefish (*Prosopium williamsoni*), Utah chub (*Gila atraria*), Utah sucker (*Catostomus ardens*), Paiute sculpin (*Cottus beldingii*), speckled dace (*Rhinichthys osculus*), and Yellowstone cutthroat trout (*Oncorhynchus clarkia bouvieri*). Resident non-

natives include brook trout (*Salvelinus fontinalis*), brown trout (*Salmo trutta*), lake trout (*Salvelinus namaycush*), and rainbow trout (*Oncorhynchus mykiss*), along with several exotic species planted in Kelly Warm Springs.

Threatened and Endangered Species

Species that have been designated as Threatened, Endangered, and Candidate Species under the ESA are discussed in detail in **Appendix J**, the biological assessment.

Species of Greatest Conservation Need

In conjunction with species classification systems generated by the WGFD, Wyoming Natural Diversity Database, and USFWS, Grand Teton National Park maintains a sensitive species list for establishing monitoring priorities and evaluating project impacts. The WGFD classifies certain non-game animal species as "species of greatest conservation need" and categorizes these species into a range of priority groups according to their need for special management. This classification system evaluates species' distributions, population status and trend, habitat stability, and tolerance to human disturbance. Animals are also considered species of special concern by the Wyoming Natural Diversity Database if they are "vulnerable to extirpation at the global or state level due to inherent rarity, significant loss of habitat, or sensitivity to human-caused mortality or habitat disturbances" (Fertig and Beauvais 1999).

Bald Eagle:
After several decades of federal protection under the ESA, recovery goals were met and the bald eagle was de-listed in 2007. They remain protected under the 1918 Migratory Bird Treaty Act (16 U.S.C. 703) and the 1940 Bald Eagle Protection Act (16 U.S.C. 668). Eagles occur year-round in the park, particularly along the river corridors. As of 2012, the park contains 16 nesting bald eagle territories (J. Stephenson, personal communication) but not all nests are active and fledge young each year. All territories are monitored for activity by the NPS. Known territories are located along the shorelines of the Snake River, Jackson Lake, and adjacent riparian areas. The park establishes, and enforces a 0.5 mile seasonal area closure from February 15 to August 15 around bald eagle nests to minimize human disturbance, per USFWS recommendations in Wyoming (USFWS and NPS 2007). Many of the bald eagles that nest in the park remain on their nest territories throughout the year, occasionally leaving for short periods during the non-breeding season to exploit abundant or ephemeral food sources elsewhere. Eagles feed primarily on fish, waterfowl, and carrion.

Birds, including Neotropical Migratory Birds:
Migratory Bird Species of Management Concern in Wyoming are designated as such by the USFWS (Cerovski et al. 2000). The Wyoming Field Office of the USFWS has developed a list from the Wyoming Bird Conservation Plan compiled by state and federal agencies, non-governmental organizations, and the public. The Wyoming Bird Conservation Plan identifies "priority species" based on a number of criteria, using the best information available. In many cases, this list reflects identified threats to habitat because no information is available on species population trends. Two priority groups are designated by the USFWS: Level 1 and Level 2. Level 1 species are those that are clearly in need of conservation action. They include species which Wyoming has a high percentage of and responsibility for the breeding population, and the need for additional knowledge through monitoring and research. The focus on Level 2 species is for monitoring rather than conservation action.

Numerous bird species, such as trumpeter swan, bald eagle, northern goshawk, owls, neotropical migrants and greater sage-grouse, occur in Grand Teton National Park and the John D. Rockefeller, Jr. Memorial Parkway in appropriate habitat near historic properties.

Neotropical migratory birds include raptors, passerines, and shorebirds that breed in North America, but migrate to Mexico and Central and South America for the winter. Of particular concern to wildlife managers, they have been experiencing severe population declines throughout their North American range (Askins et al. 1990). Habitat fragmentation and loss of winter range are among factors believed responsible (Hutto 1988, Robbins et al. 1989). Bird species of special concern may be vulnerable to extirpation at the global or state level due to inherent rarity, significant loss of habitat, or sensitivity to human-caused mortality or habitat disturbances (Fertig and Beauvais 1999). These factors contribute to reduced reproductive success, increased mortality risks and reduced availability of secure habitat to bird species of special concern.

In Wyoming, 162 bird species are considered neotropical migrants (Cerovski et al. 2001) with peak migration periods in May and September through early October. Nesting is typically initiated from early May to mid-June and most young fledge sometime in June to late-July; these dates vary annually due to snow melt and leaf-out of trees and shrubs.

In addition to the species of greatest conservation need that are listed in Table 11, many neotropical migratory bird species, residents, and other migrants not designated as sensitive also occur and breed in Grand Teton National Park. These include, but are not limited to: osprey (*Pandion haliaetus*), vesper sparrow (*Pooecetes gramineus*), chipping sparrow (*Spizella passerine*), ruby-crowned kinglet (*Regulus calendula*), northern flicker (*Colaptes auratus*), downy woodpecker (*Picoides pubescens*), hairy woodpecker (*Picoides villosus*), yellow warbler (*Dendroica petechia*), yellow-rumped warbler (*Dendroica coronata*), mountain chickadee (*Poecile gambeli*), red-breasted nuthatch (*Sitta canadensis*), mountain bluebird (*Sialia currucoides*), white-crowned sparrow (*Zonotrichia leucophrys*), and western tanager (*Piranga ludoviciana*).

All migratory birds in the park are protected under the Migratory Bird Treaty Act, 16 U.S.C. 703, enacted in 1918. This act prohibits the taking of any migratory birds, their parts, nests, or eggs. Removal of nests or nest trees is prohibited, but may be allowed once young have fledged.
Some studies have been conducted to inventory the occurrence or relative abundance of migratory birds. Long-term bird projects conducted in the park indicate that riparian and wetland habitats generally contain the highest density of bird species. In addition, many bird species of special concern migrate, breed, and nest throughout the park in sagebrush-grassland plant communities. The mixture of riparian and upland sagebrush habitats near Moose and other areas where there are historic properties makes it likely that a variety of resident and neotropical migratory bird species would be found there.

Habitat within many of the park's developed areas is very limited due to its disturbed and developed nature. However, adjacent habitats such as the mixture of riparian and upland sagebrush habitats surrounding Moose, for example, make it likely that a variety of resident and neotropical migratory bird species could be found near historic properties. Species of greatest conservation need that may use nearby habitat are listed in Table 11 and are discussed here under the types of habitat where they might be found.

Shrub-Steppe Species. Shrub-steppe habitat contains big sagebrush (*Artemisia tridentata)* with a mixed native grass and forb understory. It could provide habitat for six birds among the species of greatest conservation need (Table 11). The Brewer's sparrow is a sagebrush obligates that depends on sagebrush habitats for breeding and nesting, and occurs throughout Wyoming. This and other bird species that use sagebrush shrub-steppe habitat could be found near historic properties depending on their level of tolerance for human disturbance.

Greater sage-grouse are known to occur in sagebrush habitat, a habitat type present especially in the central valley of the park where many historic properties are located. This species is discussed in greater detail in **Appendix J**, the biological assessment.

The goshawk and owls are under stress because of habitat degradation and continued habitat vulnerability. Their population status and trends in Wyoming are poorly understood and habitat needs are not well defined (WGFD 2005).

Bat Habitat within the Developed Areas. Bats have commonly been found to use buildings and older man-made structures for roosting, hibernating, and as maternal sites. Due to the age of many of the park's historic properties, these structures would potentially provide habitat for bat several species, which include *Myotis* (see Table 11). A 2003 survey documented six species of bats as occurring in Grand Teton National Park. These species were the hoary bat (*Lasiurus cinereus*), silver-haired bat (*Lasionycteris noctivagan*), big brown bat, little brown bat (myotis), long-eared myotis, and long-legged myotis. The latter two are among the state-listed species of greatest conservation need. Another of the listed species of greatest conservation need, Townsend's big-eared bat, was not observed during the 2003 survey but this bat has been documented roosting in one of the Bar BC Dude Ranch cabins. It typically roosts in caves but is also known to roost in buildings. Unless specific measures have been taken to prevent individuals from roosting within or on these structures, it is possible that they are present. Other historic structures where bats have been present include cabins at the Murie Ranch and at Kimmel Kabins (Lupine Meadows). Sealing the buildings or installing screens to prevent bats from entering is often needed. Bat species that roost in trees would find alternate natural habitat in nearby forested areas.

Forest Species. Fifteen special-concern species, including three birds and twelve mammals, primarily inhabit forest habitats (Table 11). All of these species have the potential to occur near park historic properties.

The birds, northern goshawk, great gray owl, and northern pygmy-owl, are state-designated as native species status (NSS) U (Unknown); a classification indicating that more information about population and numbers is needed to determine their conservation status. The goshawk and owls are under stress because of habitat degradation and continued habitat vulnerability. For all three bird species, their population status and trends in Wyoming are poorly understood and habitat needs are not well defined (WGFD 2005).

The small land mammal, the dwarf shrew, has been designated NSS3 by Wyoming, and the bat classifications vary from NSS2 to NSS3. Dwarf shrew populations are restricted or declining in numbers and/or distriburion but extirpation in Wyoming is not imminent. Habitat is restricted or vulnerable but there has been no recent or on-going loss. The species is sensitive to human disturbance. The same is true of the Townsend's big-eared bat. The long-eared myotis and long-legged myotis are both designated as NSS2, which means that populations are restricted or declining in numbers and/or distribution, extirpation in Wyoming is not imminent, <u>and there is ongoing significant loss of habitat.</u>

The North American wolverine (NSS3) could also occur near some park historic properties either because properties such as the park backcountry patrol cabins are located in higher elevation wooded habitat where persistent stable snow makes the habitat suitable or because the animals may roam widely. In the Yellowstone region, where wolverines occur at a density of less than one per 100 square miles, recent research has revealed that just two breeding females and two breeding male wolverines occupy the entire Teton Range. Because of such low densities, the search for a mate and breeding territory

requires covering long distances, sometimes traveling hundreds of miles, crossing low-elevation valleys between mountain ranges in the process.

In the park a few wolverine sightings are reported annually; they are most common in the Teton canyons and high elevations (J. Stephenson, personal communication), but several observations have been documented in low elevation areas. These include observations at Leigh Lake, in the Pacific Creek subdivision on the park's east border, and along the Snake River at Deadman's Bar, Pacific Creek, Oxbow Bend, and Flagg Ranch.

On August 13, 2014, the USFWS withdrew a proposal to list the North American wolverine in the contiguous United States as a threatened species under the ESA. Although the wolverine has made a steady recovery in the past half century after hunting, trapping and poisoning nearly extirpated the species from the lower 48 states in the early 1900s, there were concerns about long-term threats to the species from climate change. The USFWS determined that the effects of climate change are not likely to place the wolverine in danger of extinction now or in the foreseeable future and did not warrant not warrant protection under the ESA.

Bat species would likely use the forested habitat near some historic properties for roosting and foraging habitat. These species have experienced declines caused by habitat loss, habitat degradation, disturbances or conflicts with humans, and loss of prey (WGFD 2005). An additional concern for these species is their susceptibility to a fungus identified as white-nose syndrome, which is migrating toward the state. A strategic plan for their management with regard to this fungus has been prepared by the Wyoming Game and Fish Department (WGFD; 2011) with cooperation from the NPS and others. It outlines Wyoming's focus as gathering baseline data, detecting new occurrences of white-nose syndrome, and preventing its spread into the state.

Talus Slope Species. American pika (*Ochotona princeps*) is classified as NSSU, Tier II in Wyoming (WY State Wildlife Action Plan 2010). Pika is considered an indicator species for detecting ecological effects of climate change. Results from recent studies suggest that in some areas pika habitat at low elevation is being reduced due to increased temperatures (Beever et al. 2013). Pika inhabit talus slopes with varying densities of vegetation throughout the Teton Range. Pika could be found in areas near park backcountry patrol cabins.

Riparian, River, and Wetland Species. Two amphibian, two reptile, two bird, and two mammal species designated by the state as species of greatest conservation need could occur in wet habitats within the Snake River riparian zone and elsewhere on the valley floor and foothill regions. It is possible that they could be present near some of the historic properties in these types of areas.

Boreal toads were once common in Grand Teton and Yellowstone national parks. Their numbers have declined and they are designated by Wyoming as NSS1, Tier I, the highest priority species of concern status. Boreal toads could be present along the Snake River or along the banks and tributaries that lead to Jenny Lake or the other piedmont lakes at the base of the Teton Range. The toads are not restricted to riparian habitat and may move considerable distances from water while foraging. Columbia spotted frogs are common in the park (NPS 2014), although categorized by Wyoming as NSS3, moderate priority Tier II species. They are likely to be present, particularly along lakeshores and streams (Greater Yellowstone Science Learning Center 2013). Rubber boas (NSS3) are more typically found in moderately moist forested areas with heavy ground cover (Baxter and Stone 1980). Northern leopard

frogs were historically present but there have been no verified sightings in the park in nearly 40 years. It is assumed that this species is extremely rare or absent from the area (NPS 2010).

Trumpeter swans (NSS2) use riparian areas such as lakes, ponds, rivers, and reservoirs for nesting and foraging. They initiate nesting when these areas thaw, typically in late April or early May. Eggs hatch in early June and the young usually fledge in September. Swans use open water along rivers and lakes for foraging in the late fall and winter. There is no known nesting near any of the park historic properties (J. Stephenson, personal communication). Throughout the year, swans use the Snake River near the Teton Park Road bridge at Moose and Gros Ventre River corridor for foraging and loafing.

The water vole is designated NSS3 because populations are restricted in distribution and its habitat is vulnerable (WGFD 2005). The water vole inhabits moist, subalpine and alpine meadows within about 50 feet of narrow, low-gradient streams. No historic properties are located in this type of site and the water vole would not be present.

APPENDIX D—Historic and Current Uses of Historic Properties in Grand Teton National Park and the John D. Rockefeller, Jr. Memorial Parkway

Historic Property	Current Use	Historic Use	If current use and historic use are different, when was decision made to repurpose?
1. 4 Lazy F Dude Ranch	Mostly None; Barn is used for storage	Seasonal Dude Ranch	Evaluated in this plan
2. AMK Ranch	Seasonal Scientific Research Station	Combination of Vacation Homes and a Residence	Original Special Use Permit, 1977. *General Agreement between the National Park Service and the University of Wyoming for Operation of the UW-NPS Grand Teton Research Center*, 2010 (most recent)
3. Aspen Ridge Ranch Residence and Barn	Park Storage	Agricultural	Evaluated in this plan
4. Bar BC Dude Ranch	None	Residential	Evaluated in this plan
5. Beaver Creek #10	None	Park headquarters, former SRM office	Evaluated in this plan
6. The Brinkerhoff	Seasonal Administrative Guest and Caretaker Lodging	Seasonal Vacation Home	NA—No Change
7. Cascade Canyon Barn/Patrol Cabin	Park Backcountry Patrol Cabin	Park Backcountry Patrol Cabin	NA—No Change
8. Colter Bay Village	Visitor Lodging and Service Area	Visitor Lodging and Service Area	NA—No Change
9. Cunningham Cabin	Interpretive Site	Agricultural and Interpretive	50+ year tradition of interpretation
10. Death Canyon Barn/Patrol Cabin	Park Backcountry Patrol Cabin	Park Backcountry Patrol Cabin	NA—No Change
11. Double Diamond Dude Ranch Dining Hall	Concession Facility/Visitor Lodging	Dude Ranch	Teton Corridor Development Concept Plan, 1990
12. Elk Ranch	Agricultural/Park Resource Management	Agricultural	NA—No Change

	Facility		
13. The Highlands	Seasonal Housing	Auto Camp	Teton Corridor Development Concept Plan, 1990
14. Hunter Hereford	Park Storage	Agricultural	Evaluated in this plan
15. Jackson Lake Lodge (NHL)	Concession Facility/Visitor Lodging	Concession Facility/Visitor Lodging	NA—No Change
16. Jackson Lake Ranger Station	Seasonal Park Housing	U.S. Forest Service Ranger Station and Residence	NA—No Change
17. Jenny Lake Boat Concession Facilities	Concession Facility	Concession Facility	NA—No Change
18. Jenny Lake CCC Camp #NP-4	Concession Facility	CCC Camp/Concession Facility (The buildings have been used as concessions facilities since the 1940s).	NA—No Change
19. Jenny Lake Lodge	Concession Facility/Visitor Lodging	Visitor Lodging	NA—No Change
20. Jenny Lake Ranger Station	Visitor Services	Visitor Services	NA—No Change
21. Kimmel Kabins/Lupine Meadows	Seasonal Park Housing (employee)	Seasonal Lodging (visitor)	NA—No Change
22. Leigh Lake Ranger Patrol Cabin	Park Backcountry Patrol Cabin	Park Backcountry Patrol Cabin	NA—No Change
23. Lower Berry Creek Patrol Cabin	Park Backcountry Patrol Cabin	Park Backcountry Patrol Cabin	NA—No Change
24. Lucas Homestead/Fabian Place	None	Residential	Evaluated in this plan
25. Luther Taylor Cabins	None	Residential	Evaluated in this plan
26. Manges Cabin	Park Storage	Agricultural	Evaluated in this plan
27. McCollister Residential Complex	None	Residential	Evaluated in this plan
28. Menor's Ferry	Interpretive Site	Agricultural, Transportation, and Interpretive	50+ year tradition of interpretation

29. Moose Entrance Kiosk	Interpretation	Park Administration	Moose Entrance Station Replacement Environmental Assessment, 2002
30. Moose-Wilson Road	Park Road	Road	NA—No Change
31. Mormon Row	Interpretive Site	Agricultural, Residential	Mormon Row Historic District Management Alternatives and Environmental Assessment, 1999; also evaluated in this plan
32. Murie Ranch (NHL)	Conservation Education Center	Private Inholding-Residential/Guest Ranch	Rehabilitation and Adaptive Use of the Murie Ranch Historic District Environmental Assessment, 2002
33. Old Administrative Area/Beaver Creek	Year-round Park Housing and Storage	Park Housing	NA—No Change
34. Ramshorn Dude Ranch Lodge	Educational Facility and Meeting Space	Lodge Meeting Space	Teton Science School Environmental Assessment, 1991
35. Reimer Residence	Seasonal Park Housing	Residential	NA—No Change
36. Sky Ranch	None in 2013 and 2014	Formerly Private Seasonal Vacation Home; then Seasonal Park Housing	Evaluated in this plan
37. Snake River Bridge #2	Park Road	Park Road	NA—No Change
38. Snake River Land Company Office and Residence	Main Building: None Garage: River Ranger Cache	Company Office/Residence, then Park Seasonal Housing	Evaluated in this plan
39. String Lake Comfort Station	Visitor Services	Visitor Services	NA—No Change
40. Triangle X Barn	Concession Facility (Dude Ranch)	Dude Ranch, then Concession Facility	NA—No Change
41. Upper Granite Canyon Patrol Cabin	Park Backcountry Patrol Cabin	Park Backcountry Patrol Cabin	NA—No Change
42. Valley Trail System	Park Administrative and Visitor Use	Backcountry Trail System	NA—No Change
43. White Grass Dude Ranch	Undergoing rehabilitation. Evolving use as preservation training center	Dude Ranch	White Grass Dude Ranch Rehabilitation and Adaptive Use Environmental Assessment/ Assessment of Effect, 2004

44. White Grass Ranger Station	Park Backcountry Patrol Cabin	Park Backcountry Patrol Cabin	NA—No Change

APPENDIX E—Wolff Ranch Removal from the National Register of Historic Places, 2014

In 2013, Grand Teton National Park completed a full re-recording of the Wolff Ranch Historic District. The Wolff Ranch was originally listed in the National Register of Historic Places in 2000, and was determined eligible at that time. Its eligibility was reevaluated for two primary reasons. First, additional information regarding the history and ownership of the property had surfaced since the first evaluation was submitted to the Wyoming State Historic Preservation Office (SHPO). Second, a review of the original evaluation indicated that it lacked a thorough discussion of the integrity of the property, which, as stated in the draft Wyoming Historic Cabin Courts and Motels Multiple Property documentation form (Bradley 2010), is a critical component of evaluating tourist accommodations in Wyoming.

The original nomination evaluated two clusters of buildings as part of the Wolff Ranch. It stated:

> "The second cluster [of buildings] is located three hundred yards directly east of the first. It includes two buildings, one a residential structure and the other a smaller shed that could also be used as a dwelling. It is important to note that while this property at one time belonged to the Wolff family, and that while there is every likelihood that it has since been transferred to the National Park Service, the chain of title transfer of this parcel of land is murky at best." (Cassidy 2000, p. 4)

Later research into ownership records revealed that, in fact, at the time of the original 2000 evaluation, the second cluster of buildings had *not* been transferred to the National Park Service, nor was it part of the Wolff Ranch during the period of significance. Instead, it was still in the ownership of Irene Anna Eschelman, a Casper, Wyoming native who had purchased it with her husband in 1956 and owned it until her death in October 2000. The United States government did not purchase the property until 2003. Hence, this cluster of buildings should not have been included in the original nomination.

Also, since the original evaluation in 2000, digitization of early aerial images and the organization of Grand Teton National Park land records made available sources that were previously difficult to locate. These sources shed more light on the construction and operation of the Wolff Ranch, and significantly enhanced the park's understanding of the history of the property, particularly during the period of significance.

In 2013 Grand Teton National Park concluded that new information, as well as a careful critique of the integrity of the property, showed that the property did not meet the National Register criteria for evaluation. In December 2013 a new "determination of eligibility" document was submitted to the SHPO for review. In January 2014, the SHPO concurred with the park service that the property was not eligible for listing in the National Register of Historic Places.

APPENDIX F—Leek's Lodge Removal from the National Register of Historic Places, 2014

In January 2014 Grand Teton National Park petitioned for the removal of Leek's Lodge from the National Register of Historic Places because it no longer meets the criteria for listing. In 1998, the recreational fishing lodge was demolished after several years' effort to sell it. A Memorandum of Agreement between the National Park Service and Wyoming State Historic Preservation Officer regarding the removal of Leek's Lodge was submitted to and signed by the Advisory Council for Historic Preservation in 1996. Despite having completed the established compliance process, the final step to remove the property from the National Register was not done at that time.

Leek's Lodge was located on Jackson Lake in what is now Grand Teton National Park. It was constructed in 1926-27 and listed in the National Register in 1975 for its significance in the areas of conservation, architecture, and recreation. It was primarily significant for its association with its owner, Steven Leek. Leek's photographs of starving elk and his advocacy led to the 1912 establishment of the National Elk Refuge in Jackson Hole, the first major wildlife refuge in the United States. The lodge was also listed for its architectural significance: a log building, it measured 29' by 58' with a partial second story and prominent stone fireplace. The lodge building served as the central office, kitchen, and gathering space at larger Leek's fishing lodge.

At the time of listing in 1975, the building's condition was extremely poor. By 1995, park staff determined that given its deteriorated condition, the building was not a funding priority for scarce preservation funds and that its sale and removal was the best solution. With this decision, the park began consultation with local and state preservationists and in March 1996, a Memorandum of Agreement (MOA) was completed between the National Park Service, the Wyoming State Historic Preservation Office, and the Advisory Council on Historic Preservation. The MOA was approved with three conditions, which were met by the park:

1) The property would be advertised for sale to anyone who may be interested in restoring the property at another location outside Grand Teton National Park. In order to meet this stipulation, ads were placed in Historic Preservation News, the national publication of the National Trust for Historic Preservation, and local newspapers.
2) If a buyer was not found, the park would salvage any useable materials for use in restoring other park owned properties. The park determined that it had little use for the deteriorated logs, but salvaged the window sashes and glu-lam beams.
3) The third stipulation had to do with dispute resolution, which was never needed.

Despite attempts to sell the property between 1996 and 1998, no sale materialized and in 1998, in view of the danger that existed with the public entering the building, the building was demolished by Grand Teton National Park firefighters and the site reclaimed. Once demolished, no further action was taken with the State Historic Preservation Office or the Keeper of the National Register to ensure the property was removed from the National Register.

Although ruins of the stone fireplace remain, the park determined that what exists of the building no longer conveys its significance in the areas of conservation, architecture, or recreation. Because the building ceased to meet the criteria for listing in the National Register of Historic Places, as outlined in CFR 36, Ch. 1, Part 60.15 "Removing properties from the National Register," Grand Teton National Park asked the Keeper of the National Register to remove the property from the National Register of

Historic Places. In April 2014, the Keeper concurred that the property no longer retains integrity, and the Leek's Lodge was officially removed from the National Register of Historic Places.

Appendix G – Detailed Alternative B Vegetation Impact Summary: Estimated Ground Disturbance at Focus Properties

Property	*Treatment*	*Types of Impacts*	*Overall Impact NEPA (Short term and long term impacts)*

4 Lazy F Dude Ranch	Rehabilitate	Addition of parking and circulation improvements, upgrade of utilities, in-kind replacements, and landscape restoration	ACCESS ROAD:
			Install (3) 225sf turnouts = 675sf.
			
			BARN:
			Existing disturbed ground = 134'X106' = 14416sf;
			new parking = 50'X50' = 2500sf;
			road to parking = 900sf;
			result (old disturbance – new) = 11016sf restored.
			
			MAIN LODGE:
			Existing disturbed ground @ main lodge open area (260'X113' = 29380sf) and parking (760sf semi-circle) = 30,140sf;
			new trail = 755'X2.5' = 1888sf,
			new ABA trail & ramp = 5'(20'+30'+50') = 500sf,
			new parking = 150'X18' =2700sf;
			result (old – new) = 25,052sf restored.
			
			CARETAKER CABIN:
			Existing disturbed = 170'X45' = 7650sf;
			new parking = 60'X50' = 3000sf;
			road to new parking = 83'X10' = 830sf.
			
			RESULT: 7650sf-3830sf-675sf = 3595sf restored. ST disturbance to update sewer (118,000sf or 2.72 acres) and water (32,700sf or 0.75 acres) systems. A small number of maintenance access points would be present in the long term.

Aspen Ridge Ranch Residence and Barn	Remove	Removal of National Register listed buildings and site restoration, including access road	RESTORE ACCESS ROAD AND DISTURBED BUILDING SITE AREA: Two-track to loop = 438' X 10' = 4380sf; Building site (including road loop area) = 300' X 300' = 9000sf. RESULT: 13,380sf (0.31acres) restored.
Bar BC Dude Ranch	Mix of Stabilize and Rehabilitate	Construction of off-site parking, restoration of cultural landscape elements, in-kind preservation; Staff, student, and preservation workers during preservation work; visitor presence.	FORMALIZE BENCH PARKING: Existing parking disturbance = 30' radius, circle = 2826sf; 1/2 = 1413sf; new parking = 6X180' = 1080sf; the turnaround opposite parking will remain; Formalized area is approximately the same dimensions as existing. RESTORE TWO-TRACK TO TRAIL: Existing disturbance = 2400'x6' = 14,400sf; new trail = 2400'x3' = 7200sf; result 7200sf restored.

Property	*Treatment*	*Types of Impacts*	*Overall Impact NEPA (Short term and long term impacts)*
			RESULT: 7200 or 0.17 acres restored.
Beaver Creek #10	Rehabilitate	Located in a park developed area. Construction of parking and ABAAS circulation, exterior preservation in-kind; Higher staff presence short-term, low levels of staff and visitor presence long-term.	LANDSCAPE MAINTENANCE: Remove 2 non-historic trees = 2 X 25sf = 50sf and revegetate area; FORMALIZE and REDUCE PARKING: Existing disturbance = 65' X 83' = 5395sf; Retain 6 spaces + 1 ABA space = 1350sf; ABA TRAIL: 951sf; POLE, CIRCULAR TRAIL = 254sf; Revegetate remainder + utility disturbance to west of existing parking; RESULT: 6763' - 2555' = 4208sf (0.10 acres) restored. Estimate of maximum ST disturbance to upgrade utilities = 2 x 2248' (building sf) = 4496sf (0.10 acres), restored to native vegetation LT.
Hunter Hereford Ranch	Maintain	Same as A. Proactive preservation maintenance; Storage use, occasional staff and visitor presence.	Occasional ground disturbance within 10' of building foundations.
Lucas Homestead/ Fabian Place	Maintain	Frequent, in-kind preservation; Improved interpretive site, occasional staff and visitor presence; occasional group gatherings.	FORMALIZE PARKING: Existing disturbance = 48'x18' = 864sf; new parking = 40'x18' = 720sf, new parking plus bike rack area = 1080sf; result subtotal = 1080sf - 864sf = 216sf LT additional disturbance. ACCESSIBLE TRAILS: Existing disturbance is a two-track (886'x7'= 6202sf), an informal trail to cabins (180'x4'=720sf), & informal parking (40'x10'=400sf); total existing disturbance = 7385sf. New accessible trail= 957'x4'= 3828sf; road-width trail from bridge over Cottonwood Creek tributary to the garage = 120'x6'= 720sf. Plus, restore existing 400sf parking area and any areas beyond "new" dimensions. RESULT: 7385sf-4148sf= 3237sf (0.07 acres) restored.
Luther Taylor Cabins	Hazard Mitigation	Intermittent health and safety activities; subtle stabilization. Infrequent staff presence, occasional visitor presence.	Limited ground disturbance. No new ground disturbance proposed; occasional short-term within 10' of building foundation during hazard mitigation.

Property	*Treatment*	*Types of Impacts*	*Overall Impact NEPA (Short term and long term impacts)*
Manges Cabin	Maintain	Frequent, in-kind preservation; Storage use, occasional staff and visitor presence.	Occasional ground disturbance within 10' of building foundation.
McCollister Residential Complex	Remove	Removal of National Register listed buildings and site restoration, including access road.	<u>RESTORE ACCESS AND BUILDING AREAS:</u> Building existing disturbed areas = 29,083sf; Access road w/additional 2' disturbance on each side = 491' x 8' = 3928sf; <u>RESULT:</u> 33,011sf (0.76 acres) restored.
Mormon Row	Implement 2000 FONSI with parking changes	Formalize circulation, install interpretive signs, stabilize buildings; Higher staff presence short-term, improved interpretive site in long term, continuing visitor presence. ********** Potential for rehabilitation of up to four houses for adaptive reuse as seasonal park housing.	Existing Disturbance: North parking: 134'x50' = 6700sf + overflow on north road side = 104'X17' = 1768; South parking: 130'x24' = 3120sf; total = 11,588sf; New Disturbance: <u>NEW FORMALIZED PARKING & INSTALL TRAIL:</u> TRAIL (0.47 miles long) = 2464x3' = 7362sf; total additional area of the extended trail is 5069 sf (1690' x 3'); NEW NORTH PARKING = 75'x75' =5625sf; NEW SOUTH PARKING = 150' x 30' = 4500sf; NEW BUS PARKING (2 in line) = 140'x20' = 2800sf; NEW BUS TURNAROUND = approx. 220'x35' = 7700sf; 1 to 2 PIT TOILETS each 10'x20' = 200sf (400sf ST); TOTAL = 28,417sf LT; <u>RESULT:</u> new 28,417 - old 13,548 = 14,869sf (0.34 acre) additional LT disturbance. ********** Potential Additional Disturbance Estimates for Utility Upgrades: SHORT TERM: 2700sf well, supply line for water 2130sf for septic tank, leach field, and collection line from house 3/4mile x 10' wide trench (underground along Mormon Row Road) = 40,000sf for installation of underground electric line from C&V Moulton Homestead to Heninger House

Property	*Treatment*	*Types of Impacts*	*Overall Impact NEPA (Short term and long term impacts)*
			10'x20' = 200sf disturbance for setting propane tanks. TOTAL SHORT TERM DISTURBANCE: 20,120sf total (5030sf/ house) plus an estimated 40,000sf for underground electric lines, likely with no associated vegetation disturbance because they could be located within the roadway. LONG TERM: 100sf well, 225sf treatment house for well 32sf septic tank, 1200sf leach field 12'x6' or 72sf area for propane tanks TOTAL LONG TERM DISTURBANCE: 6516sf total (1629sf/ house).
Sky Ranch	Remove	Removal of National Register listed buildings and site restoration, including access road	REMOVE BUILDINGS & RESTORE SITES: 26,406sf (or .61 acres); RESTORE ACCESS ROAD from junction with main Sky/Trail Ranch access road: 3318' long. Road restore = 3318x10' = 33,180sf (0.76 acres); RESULT: 69,220sf (1.59 acres) restored. The 5455 foot-long main access road that runs north from Death Canyon Road would be very rarely used for administrative-use only.
Snake River Land Company Office and Residence	Rehabilitate	Construction of parking and ADA circulation, upgrade of utilities, preservation in-kind; High staff presence short-term, Frequent, moderate staff and occasional visitor presence long-term.	Some existing disturbance at office but not calculated due to limited Google Earth 2013 image. FORMALIZE OFFICE PARKING: 65'x18'= 1170sf; TRAILS: 168'x4'= 462sf. REMOVE NON-CONTRIBUTING CABIN: (20'x16' x 3 = 960sf. Restore all for LT, plus existing disturbed areas next to Current Storage Cabin (30'x16'= 480sf) and River Cache (9'x55'= 495sf). Total new parking and trail areas: 3642sf. Building site and existing disturbed areas restored: 2607sf.

Property	*Treatment*	*Types of Impacts*	*Overall Impact NEPA (Short term and long term impacts)*
			RESULT: 3642sf-2607sf = 1035sf additional LT disturbed area or, if no overflow parking is formalized = 2607sf (restored) -1842sf (new minus overflow) = 765sf (0.02 acre) restored. ST disturbance for utility upgrade (water, sewer) estimate = 3xoffice square footage = 3 x 1372sf = 4116sf (0.09 acre)
White Grass Dude Ranch	Implement 2005 FONSI with parking changes and do not construct the spur road.	On-going long-term phased rehabilitation; Staff, student, and occasional visitor presence.	Existing "parking area" disturbance visible on Google Earth 2013 image, mid-rehabilitation: 12,472sf. NO SPUR ROAD: No 400' spur road = 400'x15' = 6000sf (0.14 acre) benefit; PARKING: Install two additional spaces at main lot (2x180sf = 360sf), Two ABAAS accessible spaces and turning area at two locations, Hammond Cabin (864sf) and #1162 Laundry/Maintenance Bldg. (900sf). Existing two-track roads to the accessible parking areas would remain but would be gated at the main parking lot and infrequently used. ACCESSIBLE TRAILS: 650' at 3'wide = 1950sf; at 4' wide = 2600sf. RESULT: 12472sf - 9224sf = 3248sf (0.09 acres) restored. This estimated area does not include the beneficial impact of not building the spur road and removing 0.14 acres of vegetation and wildlife habitat.
Alternative B Disturbance /Restoration Balance			RESULT: Overall approximately 3 acres are restored in the long term under Alternative B.

APPENDIX H—Historic Properties Evaluation Tool (HPET) Criteria and Weighting

As described on page 37, this appendix provides detailed category and scoring information for the Historic Property Evaluation Tool (HPET), the first step in the Historic Property Programmatic Management Evaluation Process (see flowchart on page 40). In order to prioritize the historic properties, the planning team created this tool to rank properties based on visitor access in terms of location and proximity to visitor services areas and/or park operations bases; current use or potential for use; and cultural significance. Weights were assigned to each category; 15%, 35%, 35%, and 50%, respectively, with cultural significance given the most weight.

Historic Properties Evaluation Tool (HPET) Criteria and Weighting

Categories and Ranking Levels		Value	Weight	Weighted Value
Location and Accessibility: Proximity to visitor services areas and/ or park operations bases. *Does not reflect use.* Weight is 15% of total score.				
High	Located within a major visitor services area (multiple services offered - grocery, lodging, boat rental, etc.) and/or a major park operations base.	100	0.15	15
Medium	Located close to a minor park operations base and/or minor visitor services area. Frontcounty access, no gates or other barriers.	75	0.15	11.25
Low	Located far from a park operations base and/or visitor services area. Difficult to access or not signed to promote public access.	50	0.15	7.5
Minimal	Located far from a park operations base and/or visitor services area. Signs, barriers, and/or gates, etc., discourage access and visitor use.	0	0.15	0
Current Use: Level of use by park operations and administration, concessioners, and partners. Weight is 35% of total score.				
High	Primary - Year-round and seasonal housing; active interpretive site; frontcountry emergency services important for human safety; required concessioner service; or partner use.	100	0.35	26.5
Medium	Secondary - Backcountry park operations; volunteer housing; some interpretive media; or authorized concessioner services.	75	0.35	17.5
Low	Support - Storage OR minimal interpretive media. GO to POTENTIAL FOR USE; use higher value if different.	25	0.35	8.75
None	Not used for parks operations, concessions, or partners. No interpretive media. GO to POTENTIAL FOR USE.	0	0.35	0
Potential for Use: Feasibility of adaptive reuse, use for interpretation, or educational purposes.				
High	Existing access point/infrastructure; OR high public or partner interest.	75	0.35	26.5

Categories and Ranking Levels		Value	Weight	Weighted Value
Medium	Minimal infrastructure OR public or partner interest.	50	0.35	17.5
Low	Infrastructure exists; seasonal access (i.e., off Teton Park Road or beyond Mormon Row).	25	0.35	8.75
Minimal	No current park, concessioner, or partner plans; no public interest. *Independent of infrastructure.*	0	0.35	0
Cultural Significance: Significance level as defined by the National Register of Historic Places, uniqueness, and community support. Weight is 50% of total score.				
High	National Historic Landmark designations; national significance; any level if unique within its historic context.	100	0.50	50
Medium	State significance.	75	0.50	37.5
Low	Local significance with strong community support.	50	0.50	25
Minimal	Local significance.	10	0.50	5

GRTE/JODR Historic Property HPET Scores
(highest to lowest, focus properties shaded)

Asset	Location and Accessibility	Current Use	Potential for Use	Cultural Significance	Total Score (rounded)
Jackson Lake Lodge (NHL*)	High (15)	High (35)	Currently in Use	High (50)	100
Menor's Ferry	High (15)	High (35)	Currently in Use	High (50)	100
Murie Ranch (NHL*)	High (15)	High (35)	Currently in Use	High (50)	100
Snake River Land Company	Medium (11.25)	High (35)	High (26.5)	High (50)	88
Jenny Lake Lodge (DOE** only)	High (15)	High (35)	Currently in Use	Medium (37.5)	88
Mormon Row	Medium (11.25)	Medium (26.5)	Currently in Use	Medium (37.5)	75
Bar BC Dude Ranch	Low (7.5)	None →	Medium (17.5)	High (50)	75
Jenny Lake Ranger Station	High (15)	High (35)	Currently in Use	Low (25)	75
Moose-Wilson Road (DOE** only)	High (15)	High (35)	Currently in Use	Low (25)	75
Colter Bay Village (DOE** only)	High (15)	High (35)	Currently in Use	Low (25)	75
Old Administrative Area /Beaver Creek	Medium (11.25)	High (35)	Currently in Use	Low (25)	71

Asset	Location and Accessibility	Current Use	Potential for Use	Cultural Significance	Total Score (rounded)
AMK Ranch	Medium (11.25)	High (35)	Currently in Use	Low (25)	71
Double Diamond Dude Ranch Dining Hall	Medium (11.25)	High (35)	Currently in Use	Low (25)	71
Cunningham Cabin	Low (7.5)	High (35)	Currently in Use	Low (25)	68
White Grass Dude Ranch	Low (7.5)	High (35)	Currently in Use	Low (25)	68
4 Lazy F Dude Ranch	High (15)	Low →	High (26.5)	Low (25)	66
Valley Trail System	Medium (11.25)	Medium (26.5)	Currently in Use	Low (25)	63
Geraldine Lucas Homestead/Fabian Place	Low (7.5)	Low →	Medium (17.5)	Medium (37.5)	63
Beaver Creek #10 (in Old Administrative Area/Beaver Creek)	Medium (11.25)	None →	High (26.25)	Low (25)	63
Jenny Lake CCC Camp #NP-4	High (15)	High (35)	Currently in Use	Minimal (5)	55
Snake River Bridge #2	High (15)	High (35)	Currently in Use	Minimal (5)	55
Jenny Lake Campground (DOE** only)	High (15)	High (35)	Currently in Use	Minimal (5)	55
Dick and Ethel Reimer Residence (DOE** only)	Medium (11.25)	High (35)	Currently in Use	Minimal (5)	51
The Highlands	Medium (11.25)	High (35)	Currently in Use	Minimal (5)	51
Jackson Lake Ranger Station	Medium (11.25)	High (35)	Currently in Use	Minimal (5)	51
Kimmel Kabins/Lupine Meadows	Medium (11.25)	High (35)	Currently in Use	Minimal (5)	51
Ramshorn Dude Ranch Lodge	Medium (11.25)	High (35)	Currently in Use	Minimal (5)	51
Luther Taylor Cabins	Low (7.5)	None →	Medium (17.50)	Low (25)	50
The Brinkerhoff	Low (7.5)	High (35)	Currently in Use	Minimal (5)	48
Triangle X Barn	Low (7.5)	High (35)	Currently in Use	Minimal (5)	48
Jenny Lake Boat Concessions Facilities	High (15)	Medium (26.5)	Currently in Use	Minimal (5)	46
Elk Ranch (DOE** only)	Medium (11.25)	Medium (26.5)	Currently in Use	Minimal (5)	43

Asset	Location and Accessibility	Current Use	Potential for Use	Cultural Significance	Total Score (rounded)
String Lake Comfort Station	Medium (11.25)	Medium (26.5)	Currently in Use	Minimal (5)	43
Hunter Hereford Ranch Historic District	Minimal (0)	Low →	Medium (17.5)	Low(25)	43
Cascade Canyon Barn/Patrol Cabin	Low (7.5)	Medium (26.5)	Currently in Use	Minimal (5)	39
Death Canyon Barn/Patrol Cabin	Low (7.5)	Medium (26.5)	Currently in Use	Minimal (5)	39
Leigh Lake Ranger Patrol Cabin	Low (7.5)	Medium (26.5)	Currently in Use	Minimal (5)	39
Lower Berry Creek Patrol Cabin (DOE** only)	Low (7.5)	Medium (26.5)	Currently in Use	Minimal (5)	39
Upper Granite Canyon Patrol Cabin	Low (7.5)	Medium (26.5)	Currently in Use	Minimal (5)	39
White Grass Ranger Station	Low (7.5)	Medium (26.5)	Currently in Use	Minimal (5)	39
Moose Entrance Kiosk	High (15)	Low →	Medium (17.5)	Minimal (5)	38
McCollister Residential Complex	Low (7.5)	Low →	Medium (17.5)	Minimal (5)	30
Sky Ranch (DOE** only)	Minimal (0)	None →	Medium (17.5)	Minimal (5)	23
Manges Cabin	Low (7.5)	Low →	Low (8.75)	Minimal (5)	21
Aspen Ridge Ranch Residence and Barn (DOE** only)	Minimal (0)	Low →	Low (8.75)	Minimal (5)	14

*NHL: National Historic Landmark
**DOE: Determination of Eligibility. Eligible for listing in the National Register of Historic Places.

APPENDIX I—Detailed Comparison of Estimated Costs to Manage the 11 Focus Properties under the Alternatives.

Focus Property/ Square Footage	Alternative A	Alternative B	Alternative C
4 Lazy F Dude Ranch/ 7268sf	Maintain	Rehabilitate for Adaptive Reuse	Stabilize
Upfront	---	$ 1,571,051	$ 154,663
Maintenance	$ 20,350	$ 40,701	$ 20,350
Operations		$ 97,031	
Subtotal	$ 20,350	$ 1,708,783	$ 175,013
Aspen Ridge Ranch/ 2166sf	Hazard Mitigation	Remove	Stabilize
Upfront	---	$ 33,963	$ 46,092
Maintenance	$ 20,350	---	$ 6,065
Operations		---	---
Subtotal	$ 136,442	$ 33,963	$ 52,157
Bar BC Dude Ranch/ 20288sf	Hazard Mitigation	Stabilize 27/ Allow 7 to Decay	Stabilize
Upfront	---	$ 786,533	$ 431,729
Maintenance	$ 56,806	$ 67,536	$ 56,806
Operations	---	---	---
Subtotal	$ 56,806	$ 854,069	$ 488,535
Beaver Creek #10/ 2248sf	Hazard Mitigation	Rehabilitate for Adaptive Resue	Maintain
Upfront	$ 6,294	$ 728,892	$ 37,766
Maintenance	---	$ 12,589	$ 12,589
Operations	---	$ 25,178	---
Subtotal	$ 6,294	$ 766,658	$ 488,535
Hunter Hereford Ranch/ 6171sf	Maintain	Maintain	Maintain
Upfront	---	---	---
Maintenance	$ 34,558	$ 34,558	$ 34,558
Operations	---	---	---
Subtotal	$ 34,558	$ 34,558	$ 34,558
Geraldine Lucas Homestead/ Harold Fabian Place/ 4161sf	Hazard Mitigation	Maintain	Stabilize
Upfront	---	---	$ 88,546
Maintenance	$ 11,651	$ 23,302	$ 11,651
Operations	---	---	---
Subtotal	$ 11,651	$ 23,302	$ 100,197
Luther Taylor Cabins/ 100sf	Hazard Mitigation	Stabilize	Stabilize
Upfront	---	$ 280	$ 2,128
Maintenance	$ 280	$ 1,680	$ 280
Operations	---	$ 280	---
Subtotal	$ 280	$ 1,960	$ 2,408
Manges Cabin/ 528sf	Maintain	Improve Maintenance	Improve Maintenance
Upfront	---	---	$ 11,236

Focus Property/ Square Footage	Alternative A	Alternative B	Alternative C
Maintenance	$ 1,478	$ 2,957	$ 1,478
Operations	---	---	---
Subtotal	$ 1,478	$ 2,957	$ 12,714
McCollister Residential Complex/ 4010sf	Hazard Mitigation	Remove	Stabilize
Upfront	---	$ 62,877	$ 2,128
Maintenance	$ 11,228	$	$ 280
Operations	---	$	---
Subtotal	$ 11,228	$ 62,877	$ 2,408
Sky Ranch/ 3222sf	Maintain/Hazard Mitigation	Remove	Maintain
Upfront	---	$ 50,521	---
Maintenance	$ 18,043	---	$ 18,043
Operations	$ 42,943	---	$ 42,943
Subtotal	$ 60,986	$ 50,521	$ 60,986
Snake River Land Company Office and Residence/ 2172sf	Hazard Mitigation	Rehabilitate for Adaptive Reuse	Stabilize
Upfront	---	$ 469,499	---
Maintenance	$ 6,082	$ 12,163	$ 18,043
Operations	---	$ 24,326	$ 42,943
Subtotal	$ 6,082	$ 505,989	$ 60,986
Costs were estimated in April 2012 and then revised to reflect inflation rates of 0.04/year.			

APPENDIX J—Statement of Findings for Floodplains

STATEMENT OF FINDINGS FOR FLOODPLAINS

Grand Teton National Park and John D. Rockefeller, Jr. Memorial Parkway

Historic Properties Management Plan / Environmental Assessment

Statement of Findings for Floodplains

Introduction

Executive Order 11988, Floodplain Management, requires the National Park Service (NPS) and other federal agencies to evaluate the likely impacts of actions in floodplains. The objective of Executive Order 11988 is to avoid, to the extent possible, the long and short term adverse impacts associated with the occupancy and modification of floodplains and to avoid direct or indirect support of floodplain development wherever there is a practicable alternative. NPS DO-77-2: Floodplain Management and Procedural Manual 77-2 provide NPS policies and procedures for complying with Executive Order 11988. This director's order explicitly states that Director's Order 77-2: *Floodplain Management* does not apply to historic or archaeological structures, sites, or artifacts whose location is integral to their significance.

This Statement of Findings (SOF) documents compliance with these NPS floodplain management procedures. Its purpose is to review the actions associated with the Historic Properties Management Plan in sufficient detail to:

- Provide an accurate and complete description of the flood hazard assumed by implementation of the Selected Alternative (without mitigation).
- Provide an analysis of the comparative flood risk among alternative sites.
- Describe the effects on floodplain values associated with the Selected Alternative.
- Provide a thorough description and evaluation of mitigation measures developed to achieve compliance with Executive Order 11988 *Floodplain Management*, NPS Director's Order 77-2: *Floodplain Management,* and NPS Procedural Manual 77-2: *Floodplain Management*.

Proposed Action

The NPS has prepared a Historic Properties Management Plan Environmental Assessment (EA) for historic properties in Grand Teton National Park and John D. Rockefeller, Jr. Memorial Parkway. The plan includes: continued use and preservation maintenance of 32 historic properties that are in good condition and have a current, approved use; descriptions of slight modifications to previously planned rehabilitation or infrastructure improvements at two properties; and detailed alternative management options for 11 underused properties.

In terms of floodplain management, the historic properties would fall into groups and a corresponding floodplain action class depending on their use. These groups, and the relevant properties, are:

Group 1: Historic structures within the floodplain that are only used for interpretive purposes.

Bar BC Dude Ranch is within the Snake River 100-year floodplain, the T.A. Moulton Barn at Mormon Row is within the Ditch Creek 100-year floodplain, and Snake River Bridge #2 crosses over the Snake River near Flagg Ranch in the John D. Rockefeller Jr., Memorial Parkway. These structures are exempt from further compliance.

Group 2: Structures within the floodplain that are used, or proposed for use, as seasonal housing. Class I Action: The Base Floodplain (100-year flood) is the regulatory floodplain.

The plan proposes to rehabilitate 4 Lazy F Dude Ranch for use as seasonal housing from approximately May to October annually. Actions would include formalizing existing parking spaces near the barn, the caretaker's house, and at the main lodge. Parking would be limited to these three areas, and would not be allowed at the individual sleeping cabins. Two rooms in the main lodge would be outfitted to comply with the Architectural Barriers Act accessibility standards (ABAAS). Fire detection and suppression systems would be considered and reviewed and could be provided. Utilities, including power, communications, sewer, and water, would be updated and maintained. The water distribution lines would be connected to a new centralized distribution system in Moose. For safety, pullouts would be constructed along the narrow access road to allow vehicles coming from the opposite direction to pass.

One of the 32 in-use properties, the Reimer Residence, is within the Ditch Creek 100-year floodplain. It was historically a residence, is currently used as seasonal park housing and would continue to be routinely maintained and occupied seasonally. In addition, as part of the preferred alternative, the park proposes to rehabilitate a historic property, 4 Lazy F Dude Ranch, for adaptive reuse as seasonal housing. This property lies within the Snake River 100-year floodplain.

Group 3: Structures used to house artifacts such as curatorial items. Class II, or critical action: The 500-year floodplain is the regulatory floodplain.

An aspect of current historic property management that would continue under all alternatives in this plan is the storage and interpretation of some historic objects within the 500-year floodplain. A historic stagecoach is stored in the 4 Lazy F Dude Ranch barn and other historic objects are kept in several Menors Ferry/ Maud Noble Historic District structures and interpreted to the public.

Kimmel Kabins at the Lupine Meadows housing area is outside the Cottonwood Creek 100-year floodplain but some historic furniture is in the structures, which may be within the 500-year floodplain.

No fuels or other hazardous materials would be stored at historic properties within floodplains.

Site Description

SNAKE RIVER FLOODPLAIN

The area is characterized by alluvial soils. The Snake River bisects the valley and riparian communities associated with the river and its tributaries support blue spruce (*Picea pungen*), narrowleaf cottonwood (*Populus augustifolia*), silver buffaloberry (*Shepherdia argentea*), various willow species, and sedges. Jackson Lake Dam is about 24 miles north of Moose and controls some river flow.

COTTONWOOD CREEK FLOODPLAIN

Cottonwood Creek is a perennial tributary of the Snake River, whose source is Jenny Lake, a morainal lake at the base of the Teton Range. The free-flowing creek is characterized by alluvial soils. Riparian vegetation consists of cottonwoods, willows, and other shrubs, and is surrounded by large areas of shrub-steppe upland vegetation. Cottonwood Creek has a number of inactive (historic) and a few active diversions, but none that presently affects flow or other characteristics of the creek. Flooding along the creek is mitigated by the Jenny Lake moraine, which functions as a natural control during spring melt and other high water events.

DITCH CREEK FLOODPLAIN

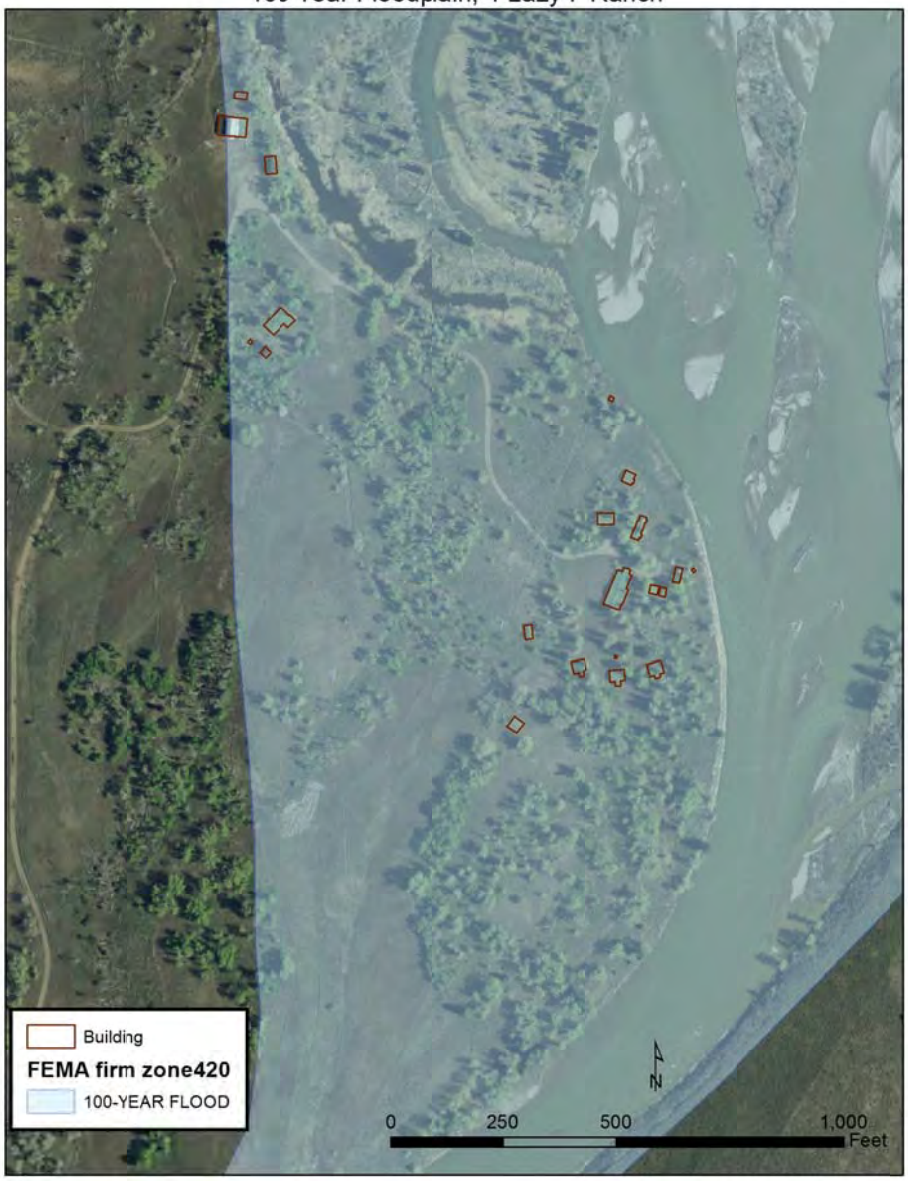
Ditch Creek is a perennial tributary of the Snake River and drains a 62 square mile watershed to the west in the property in the Gros Ventre Mountain Range. Anecdotal information suggests that this section of Ditch Creek may not have flow during dry years when upstream irrigation diversion demands exceed stream flow. The area is also characterized by alluvial soils. Riparian vegetation is minimal at streams of this type due to high vertical banks that extend beyond the rooting depths of riparian plans. Existing riparian vegetation is minimal and consists of a few willows, and a moderate number of mature cottonwoods. Upland vegetation is also present.

Floodplain Extent

The best available data were used to determine the extent of existing floodplain boundaries and water surface characteristics of the Snake River. Floodplain maps produced by the Federal Emergency Management Agency (FEMA DFirm data) were used. A FEMA map depicted a portion of the Moose area, including the former Visitor Center and maintenance area, as within the 100-year floodplain. However, a subsequent floodplain analysis of the Moose area conducted by NPS Water Resources Division (WRD), concluded the 100-year floodplain should be considered to be almost completely contained by the Snake River channel. The 500-year floodplain would exceed the channel capacity by roughly one to three feet, vertically.

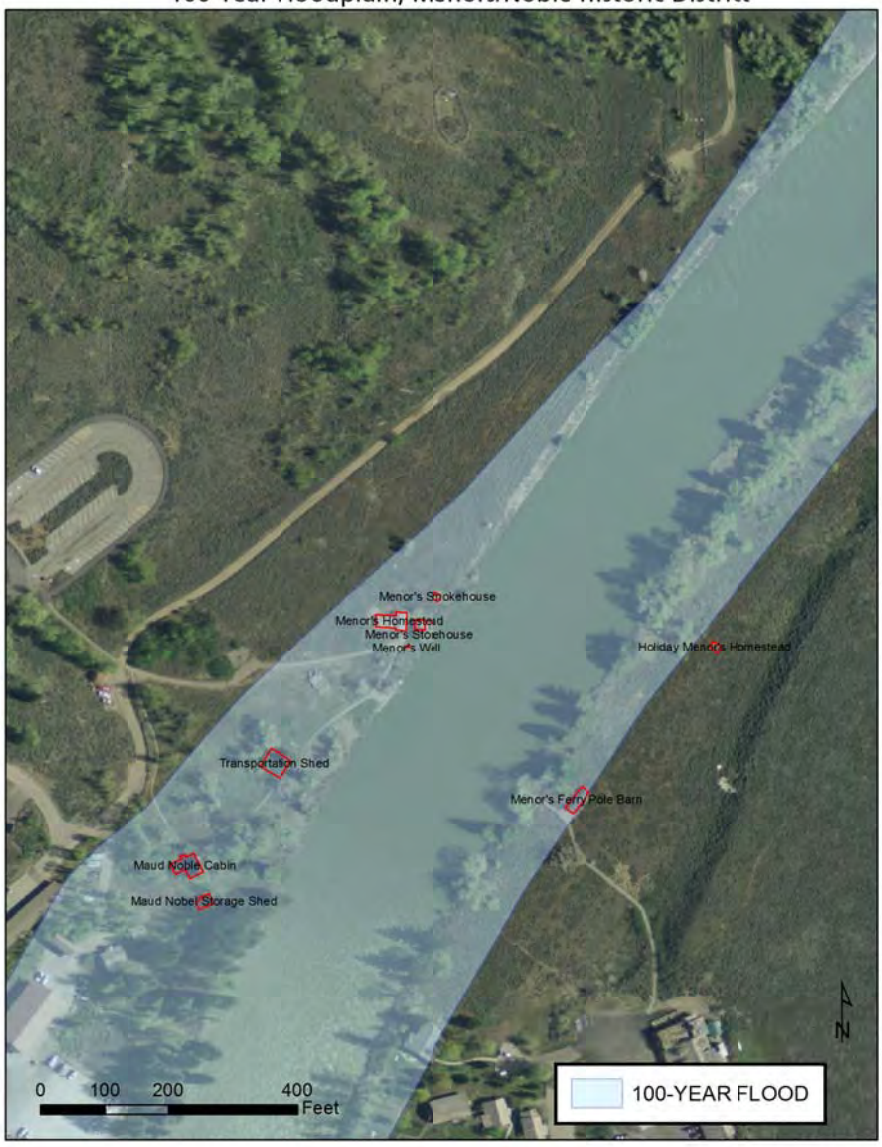
Below are three maps illustrating the historic properties and floodplain extents, 4 Lazy F Dude Ranch (Groups 2 and 3) and Reimer Residence (Group 2), where proposed or continued seasonal overnight occupancy is proposed, respectively, and Menors Ferry/ Maud Noble Cabins (Group 3).

100 Year Floodplain, 4 Lazy F Ranch



100 Year Floodplain, Reimer Residence

100 Year Floodplain, Menors/Noble Historic District



Justification for Use of the Floodplain

The buildings in the floodplain that are under discussion are historic properties. Their use in the floodplain is acceptable because they were historically located in the floodplain and relocating them to another area would affect their historic character and their integrity. These properties are exempt from the requirements for new development in regulatory floodplains and there is an accepted level of flood risk to the buildings. No alternative sites were investigated.

Description of Site-Specific Flood Risk

None of the locations are high hazard areas. There is minimal potential for flash flooding in the area. All of the structures of 4 Lazy F Dude Ranch are entirely within the 100-year floodplain, as it was determined by FEMA. The structures of Menors Ferry/ Maud Noble Cabin were determined by WRD floodplain analysis in 2001 to be outside the 100-year floodplain and within the 500-year floodplain.

The presence of Jackson Lake Dam to the north reduces flood risk to the Moose area where these properties are located. The Reimer Residence house is located within the 100-year Ditch Creek floodplain.

Flood Frequency and Hydraulic Analyses

High magnitude floods in the area of Moose may occur due to tributary floods, large releases from the dam, and a combination of both, or, in the worst-case scenario, a sudden dam failure. Flood frequency in the Moose area is difficult to predict, as the gages which measure tributary input as well as dam release, have not been in place very long. The U.S. Army Corps of Engineers developed four models and concluded (WRD 2001):

I. The 100-year flood upstream of the Gros Ventre River confluence (where Moose and the nearby historic properties are located) would be affected by dam operations and would likely be in the range of 22,900 cfs. It is estimated that the flood would be mostly contained in the river channel.

II. The 500-year flood would not likely be affected by the dam operation and, therefore, would be substantially greater estimated to be at 35,470 cfs. Modeling predicts it would subject the maintenance area to flood depths of one foot or less.

III. The probable maximum flood is estimated to discharge at 39,500 cfs. Modeling predicts probable maximum flood would subject the maintenance area to flood depths of two feet. It also predicts overtopping the Teton Park Road west as far as the entrance station and a portion of the Moose-Wilson Road. It could also threaten the Snake River Bridge.

IV. It is estimated a dam break would result in 87,000 cfs and would take approximately 5 hours to reach Moose. This would come in a flood wave that would inundate the entire Moose area with 3-6 feet of water and with 3-4 feet per second velocities. It is predicted to overtop the Snake River Bridge, isolating everything on the inside road.

Flood Conditions

Peak discharges are usually produced by snowmelt in the spring with possible summer pulses resulting from thunderstorms. Flash flooding is unlikely; however, a springtime rain on snow event could produce a large and rapid rise in the river, as it did on June 11, 1997. Moderate flood conditions in the Moose area occurred due to spring snowmelt within the tributaries and similar conditions occurred again in spring 2011. The Jackson Lake Dam stores most of the incoming runoff from the upper watershed at that time of year. Flood conditions during both occasions would have been much worse if the release at from the dam were necessary at the same time.

The 1997 peak flow (25,300 cfs, with a stage of 15.25 feet) resulted in bank full conditions in the upstream reach of the Moose area and slight over bank flooding in the area of the boat launches and just downstream of Menors Ferry. There was substantial bank loss on the west bank upstream from the bridge. The river stayed almost all contained within the channel and did not result in any hazardous or costly flooding in the Moose area. The bank loss in on the west side was the largest risk (WRD 2001). In 2005, the park installed stone barbs north of the bridge to redirect flow from the bank during large flow events. The barbs have been successful in trapping finer sediments during flow events and in stabilizing the bank.

There is no gauge or monitoring site to record flood conditions at Ditch Creek although the creek does overflow its banks occasionally during spring melt conditions.

Floodplain Mitigation

In April 2011 Grand Teton National Park completed an action plan for monitoring the potential for high water events that could affect park resources and to serve as a communications plan for the park as well as for agencies and stakeholders downstream (NPS 2011). This plan identified pre-established parameters that would trigger increased monitoring, and notes pre-established water stages identified by the National Oceanic and Atmospheric Administration (NOAA) when banks are full and the plan would be implemented, as well as the flood stage when minor low land flooding would be expected. The stated park policy is to evaluate high water potential each spring to assess the threat that is presented to the park and to implement the plan if monitoring indicates trigger points are met.

Seasonal closures of flood prone areas and warning/evacuation procedures would protect human life and property. Evacuation procedures would be in place and the park would inform potential residents about these procedures prior to moving in seasonally occupying the ranch or the Reimer Residence. Establishing positive drainage around the historic structures where possible would also reduce the potential for damage from flood waters. The use of sandbags and other water barrier methods would be used where appropriate. Action is required for extreme or dam-break flood events. However, preparation for such disasters should be considered due to the risk of human life. To guard against these potential floods, an agreement of prompt notification has been established between the Bureau of Reclamation and the park.

Irreplaceable artifacts stored in the historic structures north of Moose within the 500-year floodplain would be either moved away from the river or protected in place with sandbags or other types of water barriers.

Conclusion

Moving the structures to non-flood-prone sites was not considered because the properties under consideration are historic. The floodplain would not be affected by the replacement or upgrading of the utilities to support adaptive reuse of these historic structures. Where possible, support infrastructure would be installed as far practicable from the water body. No fuels or other hazardous materials would be stored at historic properties within floodplains.

Because strategies to protect both property and people would be in place, there would be no long-term adverse impacts would occur from the alternatives analyzed, including the preferred alternative. Park engineers believe that if flooding occurred in the future, the velocity of the overflow would not be high enough to damage of the underground utilities that were upgraded and the financial investment in the upgrade is justified. The risk to humans would be small as there would be ample warning time to implement evacuation plans or to remove objects from flood risk. Any irreplaceable historic objects would be protected from flood waters or removed from their locations.

Mitigation and compliance with regulations and policies to prevent impacts to water quality, floodplain values, and loss of property or human life would be strictly adhered to. Individual permits with other federal and cooperating state and local agencies would be obtained prior to construction activities. Any wetlands would be avoided and there would be no impacts to wetlands.

Therefore, the NPS finds the Historic Properties Management Plan and Environmental Assessment, to be acceptable under Executive Order 11988 for the protection of floodplains.

References

Executive Order 11988 *Floodplain Management*, May 24, 1977.

Water Resources Division 2001. *Floodplain Analysis for the Snake River in the Area of Moose*, conducted by NPS Water Resources Division, Michael Martin, Hydrologist, April 5, 2001.

NPS 2003. Director's Order 77-2 *Floodplain Management.*

____ 2003. NPS Procedural Manual 77-2, *Floodplain Management.*

____ 2011. *High Water Incident Action Plan. Grand Teton National Park.* April 12 2011.

APPENDIX K—Biological Assessment

Historic Properties Management Plan
Environmental Assessment
Biological Assessment

Grand Teton National Park
John D. Rockefeller, Jr. Memorial Parkway

October 2015

National Park Service – U.S. Department of Interior

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INTRODUCTION

The Endangered Species Act (ESA or Act) of 1973 (16 U.S.C. 153 *et seq*.), as amended requires federal agencies to ensure that any activities they authorize, fund, or carry do not jeopardize the continued existence of any listed species. In addition, the Act requires that federal agencies conserve and recover listed species and use their authorities in furtherance of the purposes of the Act by carrying out programs for the conservation of endangered and threatened species (50 CFR §402). Section 7 of the ESA directs all federal agencies to consult with the U.S. Fish and Wildlife Service (USFWS) when their activities "may affect" a listed species or designated critical habitat.

A scoping letter describing the NPS intention to develop a historic properties management plan and environmental assessment, and announcing the beginning of a 30-day public scoping period, was sent to the Cheyenne, Wyoming, USFWS Ecological Services office on February 4, 2011. On December 3rd 2013, Grand Teton National Park (GRTE) writer/editor Carol Cunningham called the USFWS, Ecological Services Office to request an updated species list since the one on file did not appear to be accurate. In December 2013 the Service provided a new species list in a letter to Deputy Superintendent Kevin Schneider (USFWS 2013a). Since species lists are only valid for 180 days, Carol Cunningham requested an updated list on March 26, 2015 through the USFWS online Information, Planning and Conservation System. The park received a new species list the same day (USFWS 2015). On April 1, 2015 wildlife biologist Sarah Dewey contacted USFWS biologist Ann Bellman to discuss the project and solicit input on the best way to address potential impacts to grizzly bears. In late August, Sarah Dewey had a follow-up conversation with USFWS consultation biologist Lisa Solberg-Schwab to further discuss grizzly bears and appropriate determinations as well as sage-grouse management direction. No other contacts with USFWS were made with respect to this project.

The Historic Properties Management Plan (HPMP)/Environmental Assessment (EA) provides programmatic guidance for assessing and managing the park's historic properties over the next 20 years. The EA evaluates three alternatives: a no-action and two action alternatives. Under both action alternatives, all historic properties would be assessed using the programmatic method outlined in the plan. The preferred alternative (Alternative B) proposes to rehabilitate and adaptively reuse several properties, continue to care for most other properties at current level or better, and remove several properties that have no beneficial use or have low evaluation ranking for other reasons. Modifications to two previously approved actions at Mormon Row and White Grass Dude Ranch are also presented in this plan. Conditions relative to threatened and endangered species have changed since these actions were evaluated and approved, consequently they are readdressed here.

Proposed Management Action and Preferred Alternative

GRTE and the JODR currently contain 695 resources that are listed, or eligible for listing, in the National Register of Historic Places. Individual resources (including historic sites, buildings, structures, and objects) occur in 44 locations throughout the park (Fig. 1). At any location there may be one resource or multiple resources with the same context and historical significance. Resources at the same location are referred to as "historic properties".

The NPS Preferred Alternative (Alternative B) would maximize use of high priority properties and remove low priority properties (see page 37 of Plan/EA for details on how properties are prioritized). This alternative would direct efforts toward the highest priority of the 11 focus properties in order to better use and preserve them. Improvements would range from development as an interpretive site to

adaptive reuse. The lowest priority focus properties would be removed. Non-personal interpretive media (e.g. waysides) for key historic districts would increase.

The following actions are included in Alternative B:

- The 32 historic properties in good condition with identified uses would receive preservation maintenance and continue to be used as they are currently. The park would develop district-specific preservation treatment handbooks for key historic properties to improve level of preventative maintenance.

- 1 historic property would continue to be interpreted with on-site personal media (Menor's Ferry/Maud Noble Cabins) and 10 properties (4 Lazy F Dude Ranch, Beaver Creek #10, Cunningham Cabin, Jackson Lake Lodge, Jenny Lake Ranger District, Lucas Homestead/Fabian Place, Luther Taylor Cabins, Mormon Row, Murie Ranch, and White Grass Dude Ranch) would receive increased non-personal interpretation as time and funding allowed. The park would increase information on cultural resources on the park website and opportunities to use non-personal digital media. Non-personal interpretation could be developed for additional properties.

Proposed management for Mormon Row, White Grass Dude Ranch, and the 11 focus properties (Table 1):

- Mormon Row would undergo infrastructure improvements to improve its use as an interpretive site, with some minor infrastructure modifications to the 1999 *Mormon Row Historic District Management Alternatives and EA, 1999* to facilitate visitor use. Potential rehabilitation of four buildings for adaptive reuse as seasonal housing is also included.
- White Grass Dude Ranch would continue to be rehabilitated and used with modifications to the 2004 *White Grass Dude Ranch Rehabilitation and Adaptive Use Environmental Assessment/ Assessment of Effect.* Specifically, the parking lot would be expanded from 6 to 8 spaces, two accessible spaces would be created next to the Hammond cabin, and the capacity cap established in the 2004 EA would be increased to authorize up to 26 overnight and 40 daytime participants. The season of use would not change.
- Three (4 Lazy F Dude Ranch, Beaver Creek #10, Snake River Land Company Office and Residence) of the 11 focus properties would be rehabilitated and adaptively reused. See Table 1 for information on how these properties would be reused.
- Two focus properties (Lucas Homestead/Fabian Place and Luther Taylor Cabins) would be preserved to enhance visitor appreciation. The former would also receive infrastructure improvements.
- Select buildings at the Bar BC Dude Ranch would be stabilized and used as a seasonal, day-use only outdoor laboratory for architectural conservation science students to better preserve the district.
- Two focus properties (Manges Cabin and Hunter Hereford Ranch) would receive preservation treatment to improve their condition and would be used for park operations.
- Three focus properties (Aspen Ridge Ranch Residence and Barn, McCollister Residential Complex, and Sky Ranch) would be removed by sale or demolition and the sites would be restored to natural conditions.

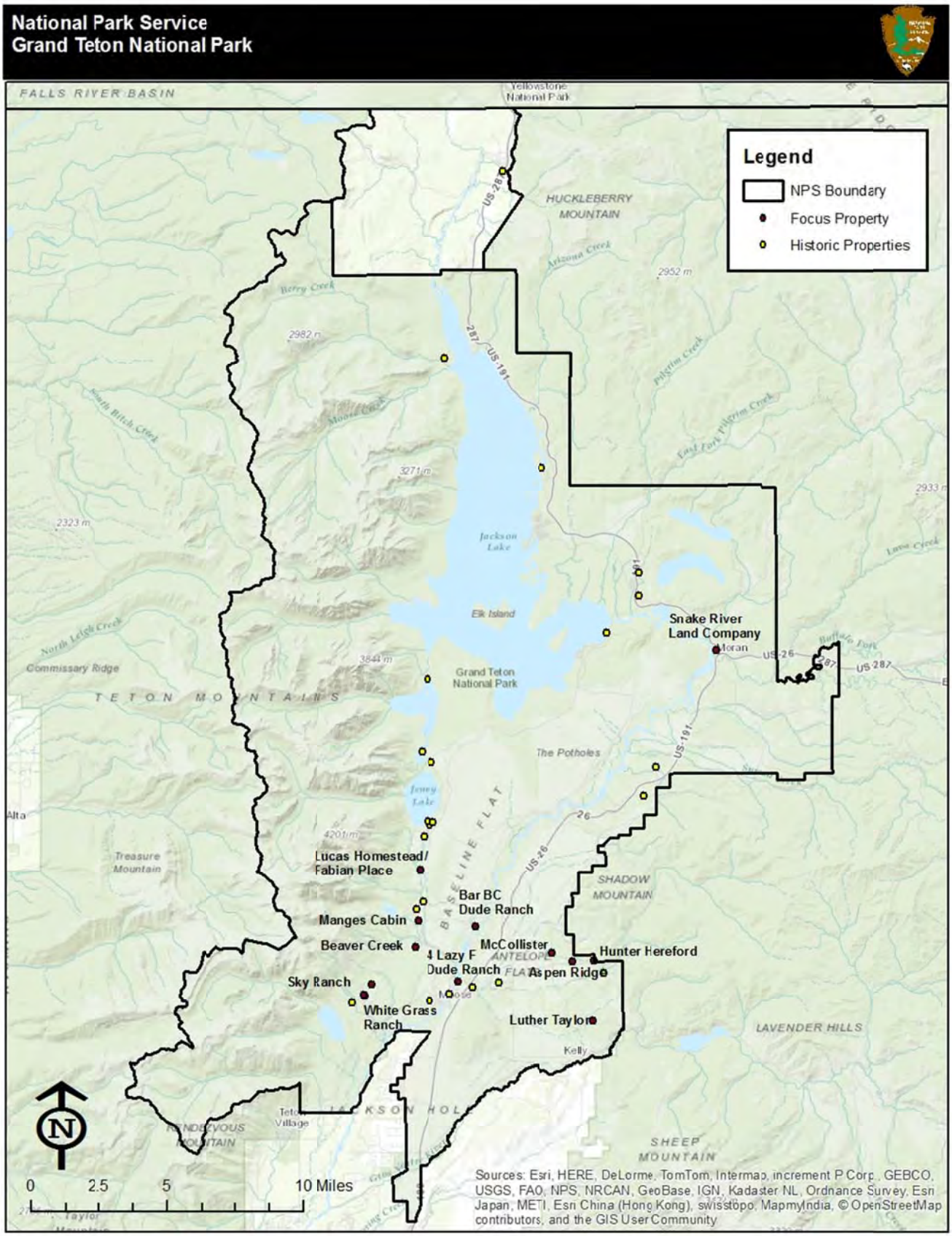


Figure 1. Location of historic properties considered in HPMP/EA.

Table 1. Summary of proposed treatments and uses for GRTE historic properties (focus properties indicated in red font).

	Alternative A: No Action		Alternative B: Maximize Use of High Priority Properties and remove Low Priority Properties		Alternative C: Retail all properties through proactive stabilization and maintenance	
Historic Property	**Treatment**	**Use**	**Treatment**	**Use**	**Treatment**	**Use**
Administrative Area Historic District/Beaver Creek	Maintain	Park housing and storage	Maintain	Park housing and storage	Maintain	Park housing and storage
AMK Ranch	Maintain	UW-NPS Research Station	Maintain	UW-NPS Research Station	Maintain	UW-NPS Research Station
The Brinkerhoff	Maintain	Administrative	Maintain	Administrative	Maintain	Administrative
Cascade Canyon Barn Patrol Cabin	Maintain	Park backcountry patrol use	Maintain	Park backcountry patrol use	Maintain	Park backcountry patrol use
Colter Bay Village	Maintain	Visitor lodging and services	Maintain	Visitor lodging and services	Maintain	Visitor lodging and services
Cunningham Cabin	Maintain	Interpretive historic district	Maintain	Interpretive historic district	Maintain	Interpretive historic district
Death Canyon Barn Patrol Cabin	Maintain	Park backcountry patrol use	Maintain	Park backcountry patrol use	Maintain	Park backcountry patrol use
Double Diamond Dude Ranch Dining Hall	Maintain	Visitor lodging	Maintain	Visitor lodging	Maintain	Visitor lodging
Elk Ranch	Maintain	Park storage	Maintain	Park storage	Maintain	Park storage
Highlands	Maintain	Park housing	Maintain	Park housing	Maintain	Park housing
Jackson Lake Lodge	Maintain	Visitor lodging	Maintain	Visitor lodging	Maintain	Visitor lodging
Jackson Lake Ranger Station	Maintain	Park housing	Maintain	Park housing	Maintain	Park housing
Jenny Lake Boat Concessions facilities	Maintain	Concessions facility	Maintain	Concessions facility	Maintain	Concessions facility
Jenny Lake CCC Camp NP-4	Maintain	Concessions facility	Maintain	Concessions facility	Maintain	Concessions facility
Jenny Lake Campground	Maintain	Visitor campground	Maintain	Visitor campground	Maintain	Visitor campground
Jenny Lake Lodge	Maintain	Visitor lodging	Maintain	Visitor lodging	Maintain	Visitor lodging
Jenny Lake Ranger Station	Maintain	Visitor services	Maintain	Visitor services	Maintain	Visitor services
Kimmel Kabins/Lupine Meadows	Maintain	Park housing	Maintain	Park housing	Maintain	Park housing
Leigh Lake Patrol Cabin	Maintain	Park backcountry patrol use	Maintain	Park backcountry patrol use	Maintain	Park backcountry patrol use
Lower Berry Creek Patrol Cabin	Maintain	Park backcountry patrol use	Maintain	Park backcountry patrol use	Maintain	Park backcountry patrol use
Menor's Ferry/Maud Noble Cabins	Maintain	Interpretive historic district	Maintain	Interpretive historic district	Maintain	Interpretive historic district
Moose Entrance Kiosk	Stabilize	Move to south Jenny Lake Interpretive	Stabilize	Move to south Jenny Lake Interpretive	Stabilize	Move to south Jenny Lake Interpretive
Moose-Wilson Road	Maintain[1]	Park road	Maintain	Park road	Maintain	Park road
Mormon Row	Stabilize[2], improve infrastructure	Interpretive historic district	Rehabilitate[3]	Seasonal park housing	Stabilize, improve infrastructure	Interpretive historic district
Murie Ranch	Maintain	Murie Center	Maintain	Murie Center	Maintain	Murie Center
Ramshorn Dude ranch Lodge	Maintain	TSS education facility	Maintain	TSS education facility	Maintain	TSS education facility

Table 1. Summary of proposed treatments and uses for GRTE historic properties (focus properties indicated in red font).

	Alternative A: No Action		Alternative B: Maximize Use of High Priority Properties and remove Low Priority Properties		Alternative C: Retail all properties through proactive stabilization and maintenance	
Historic Property	**Treatment**	**Use**	**Treatment**	**Use**	**Treatment**	**Use**
Reimer Residence	Maintain	Park housing	Maintain	Park housing	Maintain	Park housing
Snake River Bridge #2	Maintain	Park road	Maintain	Park road	Maintain	Park road
String Lake Comfort Station	Maintain	Visitor service	Maintain	Visitor service	Maintain	Visitor service
Triangle X Barn	Maintain	Visitor lodging	Maintain	Visitor lodging	Maintain	Visitor lodging
Upper Granite Canyon Patrol Cabin	Maintain	Park backcountry patrol use	Maintain	Park backcountry patrol use	Maintain	Park backcountry patrol use
Valley Trail	Maintain	Backcountry trail	Maintain	Backcountry trail	Maintain	Backcountry trail
White Grass Dude Ranch	Rehabilitate	Preservation Training Center	Rehabilitate	Preservation Training Center, expand parking, increase daytime and overnight use caps	Rehabilitate	Preservation Training Center, expand parking, increase daytime and overnight use caps
White Grass Ranger Station Historic District	Maintain	Park backcountry patrol use	Maintain	Park backcountry patrol use	Maintain	Park backcountry patrol use
4 Lazy F Dude Ranch	Maintain	None	Rehabilitate	Seasonal park housing	Maintain	Park storage
Bar BC Dude Ranch	Hazard[4] mitigation	None	Stabilize 27 cabins and allow 7 to decay	Outdoor laboratory for architectural conservation students	Stabilize	None
Beaver Creek #10 (Administrative Area Historic District/Beaver Creek)	Hazard mitigation	None	Rehabilitate	Park administrative use (possibly housing)	Maintain	Park storage
Geraldine Lucas Homestead/Fabian Place	Hazard mitigation	None	Maintain	Interpretive historic district	Stabilize	Interpretive historic district
Hunter Hereford Ranch	Maintain	Park storage	Improve maintenance	Park storage	Improve maintenance	Park storage
Snake River Land Co. Office and Residence	Hazard mitigation	None	Rehabilitate	Ranger Station	Stabilize	Park storage
Aspen Ridge Ranch Residence and Barn	Hazard mitigation	None	Remove[5]	None	Stabilize	Park storage
Luther Taylor Cabins	Hazard mitigation	None	Stabilize	Interpretive historic district	Stabilize	Interpretive historic district
Manges Cabin	Maintain	Park storage	Improve maintenance	Park storage	Improve maintenance	Park storage
McCollister Residential Complex	Hazard mitigation	None	Remove	None	Stabilize	Park storage
Sky Ranch	Hazard mitigation	None	Remove	None	Maintain	Park storage

[1]**Preservation Maintenance:** Proactive work; replace deteriorated features in-kind and complete occasional, larger projects and modifications to adapt to building users. Maintaining buildings slightly improves their condition in the long term. Often referred to simply as "maintenance."

[2]**Stabilization:** Proactive work; weatherproof building envelopes to prevent further deterioration. Discontinuation of interior use. Often referred to as "mothball stabilization."

[3]**Rehabilitation:** Proactive work; apply measures, such as installing fire suppression systems or upgrading utilities to allow new or renewed use.

[4]**Hazard mitigation:** Reactive work; respond to health and safety concerns with infrequent to intermittent preservation attention.
[5]**Removal:** Demolish or move buildings; alter properties so significantly they are no longer eligible for listing in the National Register of Historic Places.
Restoration: Retain materials from the most significant time in a property's history, while permitting the removal of materials from other periods.
Reconstruction: Recreate vanished or non-surviving portions of a property in all new materials for interpretive purposes.

BIOLOGICAL ASSESSMENT OBJECTIVES

This programmatic biological assessment (BA) presents and analyzes the potential effects of the preferred alternative (Alternative B) of the GRTE HPMP/EA on federally listed threatened, endangered, candidate wildlife and plant species, and critical habitats, pursuant to Section 7 of the ESA (16 U.S.C. 1531-1544), as amended.

Objectives of this BA include the following:

- Summarize the biology, distribution, and habitats of species listed or proposed for listing as threatened or endangered likely to occur in the project area;
- Assess effects (direct and indirect) of the proposed HPMP actions to listed species;
- Assess the cumulative effects of state and private actions on listed species;
- Document conservation measures to avoid or mitigate potential impacts to listed species;
- Make an effects determination for each species based on the actions identified in the HPMP;

PROJECT AREA DESCRIPTION

The historic properties covered in the HPMP/EA occur throughout GRTE and the John D. Rockefeller Jr. Memorial Parkway (JODR) in northwest Wyoming (Fig. 1). Grand Teton and the JODR comprise approximately 334,000 acres in the Upper Snake River drainage. The Jackson Hole valley floor is dominated by sagebrush (*Artemisia spp.)* habitats. Diverse riparian habitats composed of willows (*Salix spp.)* and cottonwood (*Populus angustifolia*) and conifers occur along the Snake River and its tributaries. Conifer forests dominate the lower and mid-elevation slopes of the Tetons and canyons.

Focus Properties

Snake River Land Company Office and Residence

The Snake River Land Company Office and Residence lie on the east side of the Snake River just north of Moran junction and the confluence of the Snake River with the Buffalo Fork (Fig. 2). The structures are currently used by the Ranger Division as their river cache where they store boating and rescue equipment. During the summer months (May – September) the property is used regularly.

The heavily used Pacific Creek boat launch is approximately 1/3 of a mile to the north and the North Park Road (Highway 89 to south entrance of Yellowstone National Park) and the Moran entrance station is 1/10 mile to the east. The historic property is within the Two Ocean Lynx Analysis Unit (LAU) and is within mapped lynx habitat (*Lynx canadensis*), but is not designated Critical Habitat for lynx. The area is outside of the grizzly bear (*Ursus arctos*) primary conservation area, but within occupied grizzly bear habitat in the proposed Demographic Monitoring Area. Three wolf (*Canis lupus*) packs have

Figure 2. Snake River Land Company Office and Residence.

territories that overlap the property. This site is not within core or occupied sage-grouse habitat. The closest sage-grouse lek is Spread Creek which is about 4 miles away to the southeast. Typical wildlife in the vicinity include: elk, mule deer, moose, black bear, grizzly bear, gray wolf, otter, beaver, bald eagle, osprey, and waterfowl. Vegetation is primarily, riparian forest, open coniferous forest and sagebrush openings.

Geraldine Lucas Homestead/Fabian Place

The Geraldine Lucas Homestead/Fabian Place lies adjacent to Cottonwood Creek south of Lupine meadows (Fig. 3). The dominant vegetation surrounding the property is sagebrush shrubsteppe, open woodland, and riparian. In summer and fall elk graze in the sage meadows area along Cottonwood Creek and moose frequent the riparian corridor. The historic property is within occupied sage-grouse habitat, but outside of the sage-grouse core area. The nearest lek is Timbered Island which is approximately 2 miles to the west. Timbered Island and the Teton Park Road sit between the lek and the Lucas Homestead/Fabian Place. The area is within occupied grizzly bear habitat, but outside of the recovery zone/primary conservation area. There is no mapped lynx habitat in the area and the site is not within a lynx analysis unit. Other wildlife that use the area include osprey, waterfowl, mule deer, wolves, coyotes, fox, black bear, and numerous migratory bird species.

Beaver Creek #10/ Manges Cabin

Beaver Creek #10 occurs within the Beaver Creek administrative area which provides housing for permanent and seasonal park residents, trail crew offices, and storage facilities for several park work groups. Beaver Creek # 10 is the structure closest to the Teton Park Road (Fig. 4). It served as the Division of Science and Resource Management offices until 2005. The administrative area itself is heavily disturbed. Surrounding vegetation is sagebrush and riparian shrubland to the east and coniferous forest to the west. Beaver Creek, a small perennial stream, is roughly ¼ mile north of the Beaver Creek #10 and flows to the east into Cottonwood Creek. The administrative area does not provide good quality habitat for wildlife, but a wide range of wildlife species use the adjacent forest areas – including black and grizzly bears, wolves, elk, moose, fox, pine marten, coyotes, and a range of raptors and migratory birds. In the fall, elk use the sagebrush/meadow areas adjacent to the administrative area during the rut and are highly visible during evening and early morning hours.

The Manges Cabin is approximately 1 mile north of the Beaver Creek administrative area and is in a developed area used by the park's trail crew for their horse operations (Fig. 4). Irrigated pasture used seasonally by the horses and mules is immediately adjacent to the cabin to the east. The historic property is bordered on the west by a vegetated glacial moraine. A hiking trail leading to Bradley and Taggart Lakes to the northwest skirts the base of the moraine. This trail receives heavy use by park visitors. The moraine burned in a wildfire in 1985. The current vegetation is primarily *Ceanothus spp.* and regenerating lodgepole pine. Because of the heavy human use and disturbed condition of the vegetation, the area immediately adjacent to the Manges Cabin does not provide good quality wildlife habitat. However, Cottonwood Creek to the east and the vegetated moraine provide good quality habitat for a range of species including moose, beaver, elk, mule deer, wolves, black and grizzly bears, fox, coyotes, and numerous bird species.

Figure 3. Geraldine Lucas Homestead/Fabian Place.

Figure 4. Beaver Creek #10/Manges Cabin.

4 Lazy F Dude Ranch and Bar BC Dude Ranch

The 4 Lazy F and Bar BC dude ranches are immediately adjacent to the Snake River (Fig. 5) north of Moose. In 1967, the 4 Lazy F owners sold the ranch to the federal government, reserving a life estate. The life estate was voluntarily terminated in 2006, and the park assumed management of the property (A & E Architects 2008). Construction of the existing 4 Lazy F ranch was begun in 1927. Prior to that the site was homestead in early part of the 20th century. The 4 Lazy F property was used as a family retreat until 1950, when the owner began taking in paying guests. The property was operated seasonally as a guest ranch into the 1990s. It is currently vacant although some rehabilitation work has been performed on the structures. The NPS gained control of the Bar BC dude ranch in 1987. The buildings are currently vacant. Since the mid-1990's there have been several efforts to stabilize ranch structures, but many of the buildings are still in poor condition. This property currently has low to moderate levels of visitation as access and facilities are limited. Interpretative wayside exhibits are present near the parking area at the top of the bench above the property and within the property itself. Dominant vegetation at both sites includes riparian woodland, sagebrush steppe, agricultural grassland, and wetlands. Because of the diversity of vegetation types, the location of these sites in a riparian corridor, and current low level of public use these historic properties provide high quality habitat for a diversity of wildlife species.

The riparian areas along Cottonwood Creek and in the Snake River corridor north of Moose and the nearby sagebrush flats provide parturition range for elk (Fig. 6) and moose. Nursery groups of elk also reside in these areas throughout the summer (GRTE unpublished data). There is historically a small group of elk that winter in this area as well. There is an active bald eagle nest near the mouth of Cottonwood Creek with a long history in the area. This has been one of the most productive nests in the park in recent years. Several well developed wetlands constructed by beavers exist between Cottonwood Creek and the Bar BC that are used for nesting by a variety of waterfowl. Moose are also active in the wetland complex.

Combinations of terrain, vegetation patterns, and existing developments at Dornan's, NPS headquarters, Craig Thomas Discovery and Visitor Center, and the Murie Center near Moose serve to funnel wildlife movements into this area (Fig. 7). Consequently, this area has high value for facilitating wildlife movements for a number of species including grizzly and black bears, cougars, moose, deer, elk, and other mid-sized carnivores. The riparian corridors of the Snake River, Cottonwood Creek, and Ditch Creek all converge in this area adding to its importance for wildlife. These riparian corridors provide areas of cover in otherwise open sagebrush habitats, and as such serve as important movement corridors for species moving north and south along the Snake River. The only relatively intact north-south wildlife movement route along the Snake River runs just west of the 4 Lazy F ranch and skirts the Moose developed area to the west. As important, the area also connects the forested areas of the Tetons with the Gros Ventre Mountains via movements along Cottonwood Creek and Ditch Creek and facilitates east-west movements. These are the only riparian corridors connecting the Snake River and the Gros Ventre mountains between the Gros Ventre River and Spread Creek.

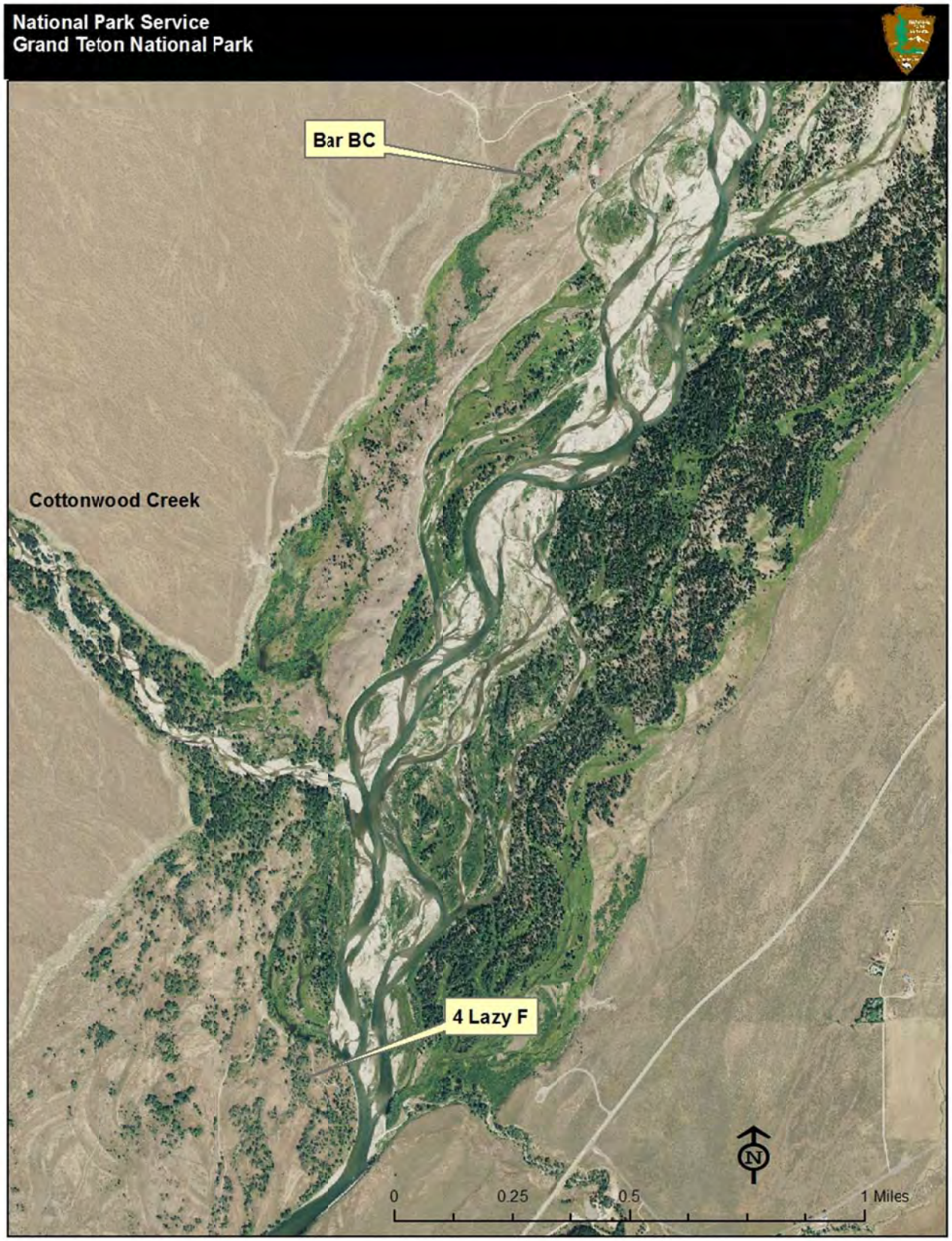


Figure 5. 4 Lazy F and Bar BC dude ranches.

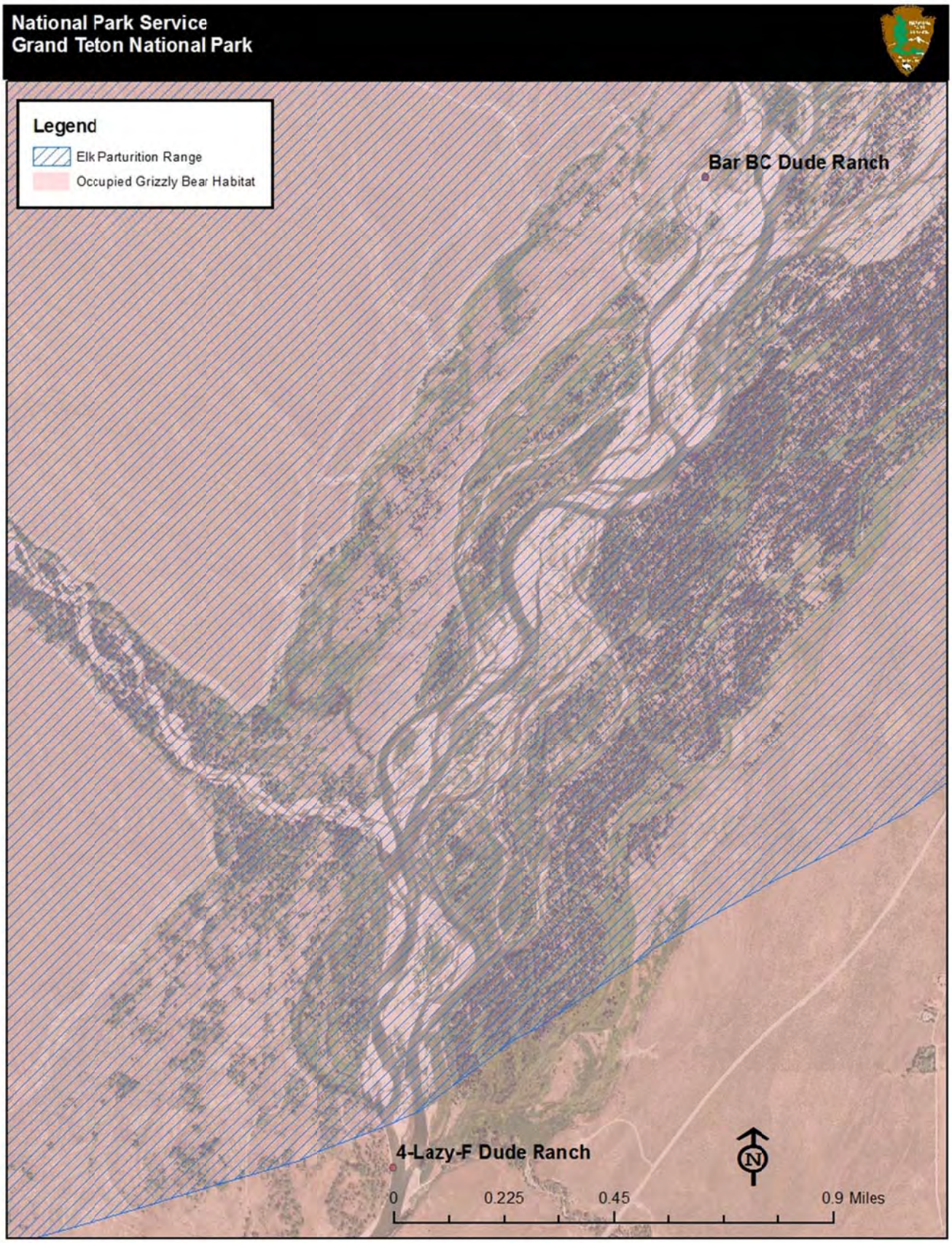


Figure 6. Elk parturition range and occupied grizzly bear habitat in relation to the Bar BC and 4 Lazy F dude ranch properties.

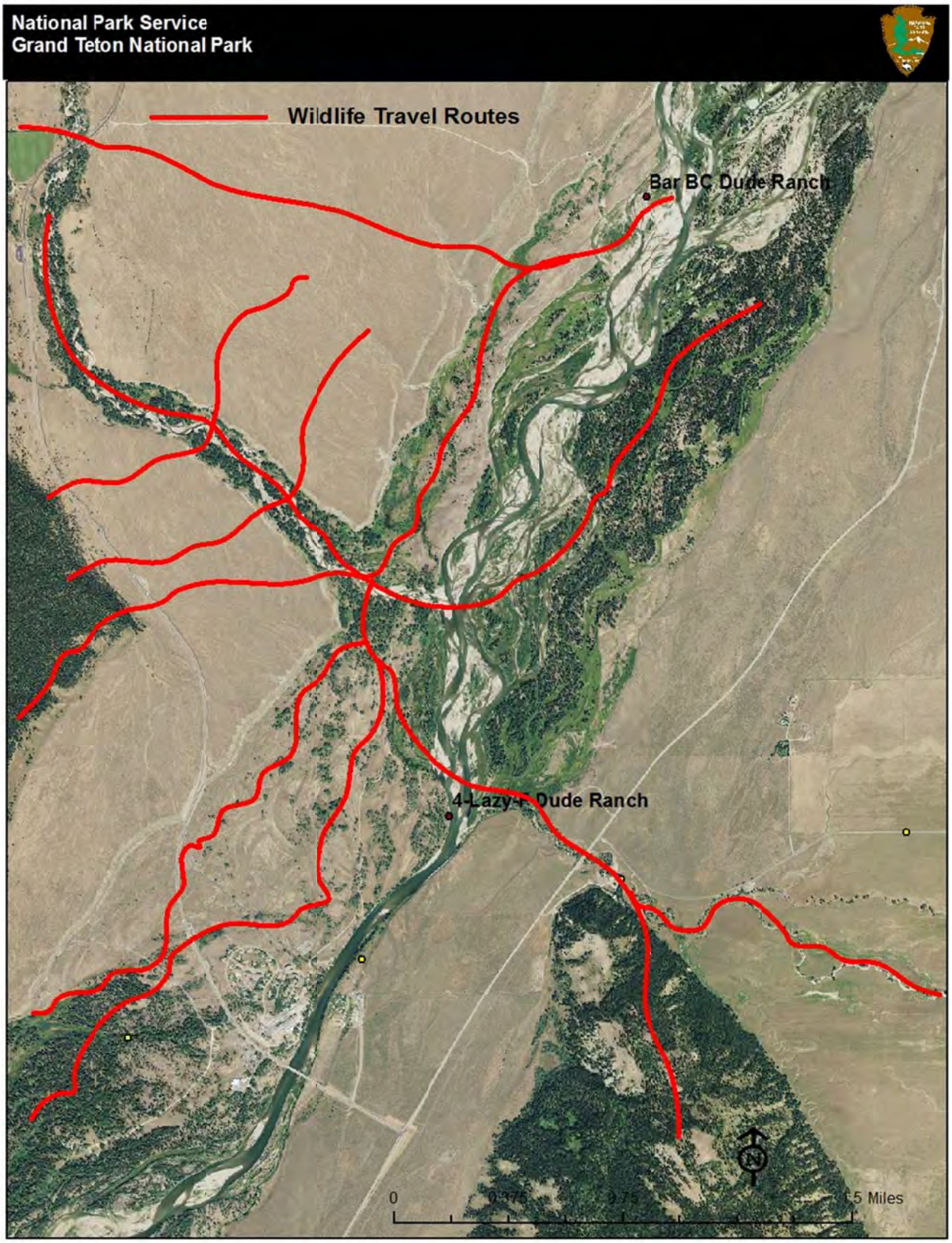


Figure 7. Wildlife travel routes in relation to Bar BC and 4 lazy F dude ranches (general wildlife movement paths shown in red).

White Grass Dude Ranch/Sky Ranch

The White Grass and Sky Ranch properties lie along the eastern base of the Teton Range (Fig. 8). The belt of mixed conifer forests found here provides some of the park's richest wildlife habitat outside of riparian areas. Vegetation includes a mix of sagebrush steppe and agricultural meadow openings and coniferous and aspen forests with diverse shrub understory that includes *Vaccinium* spp. and other fruit producing plants. Elk reside in the area in spring and summer. The forested area surrounding the White Grass meadow is considered elk parturition range. Elk also use this area in the fall during the rut and are highly visible in the evenings and early morning hours in the meadow. During the rut (mid-September – October), elk generally spend the day in the forested areas surrounding the White Grass meadow area and come into the meadow at dusk. Moose and mule deer also occur in the vicinity.

This area overlaps the home range of the Lower Gros Ventre wolf pack and they have used a den and rendezvous site within 1 mile of both sites. Black bears are common in this area and can be expected to occur regularly in and near the project area. Coyotes, which are habitat generalists, are also common. These habitats are also important to bobcat, mountain lion, wolverine, and red fox, which occur at lower densities in the park and probably only pass through the project area occasionally. Pine marten, weasels, and skunks are year-around residents, and an occasional raccoon may try to take up residence under one of the buildings. In the fall, grizzly and black bears frequent the Moose-Wilson road east of the project area where berry producing shrubs are abundant. Grizzly bears are also likely to be present in areas adjacent to the properties from spring through fall.

Figure 8. White Grass Ranger Station, White Grass Dude Ranch, and Sky Ranch

Mormon Row

Mormon Row sits at the south end of Antelope Flats and north end of the Kelly hayfields (Fig. 9). Antelope Flats is an area of gently rolling native sagebrush steppe. Prior to the establishment of Grand Teton NP, intensive homesteading and cultivation converted the native vegetation in the Kelly hayfields to nonnative irrigated hayfields and pasture. Homesteaders dug a network of irrigation ditches throughout this area and diverted water from streams to enhance hayfield and pastureland production. Several of the properties on Mormon Row were occupied seasonally until the late 1980s (NPS 2006a). One family remains in an inholding on the south end of historic district. The area is used extensively in spring, summer, and fall by bison, pronghorn and elk. Wolves also frequent this area in search of their primary prey: elk. Three wolf packs have home ranges that overlap this area. Other mid-sized carnivores such as coyotes and fox also inhabit the area. Numerous sage-dependent bird species including greater sage-grouse are also found in this area. The Moulton sage-grouse lek is located near the north end of the Mormon Row historic property. In recent years, this lek has had the highest attendance rate of any in the park. There are two activity centers associated with the lek - one is located approximately 100 meters northeast of the north end of Mormon Row and the other is within ½ mile of the historic property.

Under Alternative B the Reed Moulton/Heninger Homestead, John Moulton Homestead, Andy Chambers Homestead, and Thomas Perry Homestead could be renovated and used as NPS seasonal housing. Utilities would need to be added or upgraded at each homestead and could include water, electric, sewer, phone/internet, trash, and/or propane. Water would be provided by drilling one or more new wells for the housing units and would need to be housed in existing outbuildings or could require a separate building (approximately 15’ x 15’) for water treatment. A new septic tank and absorption system would be constructed to serve the occupied structures. Absorption field would include drain lines that would need to be free of deeper rooted vegetation (e.g. trees or sagebrush).

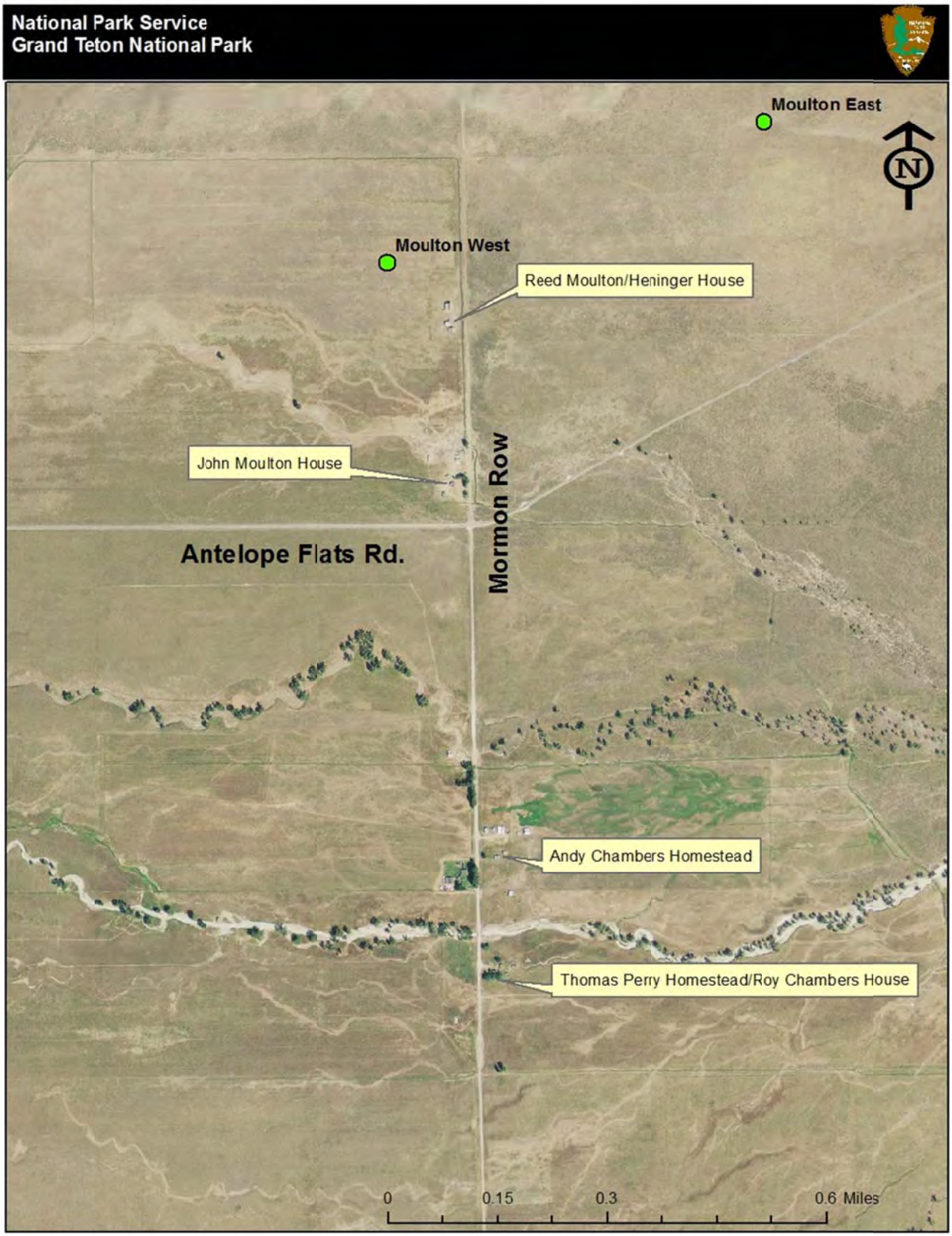


Figure 9. Mormon Row structures in relation to occupied sage-grouse leks (green circles).

McCollister Place Residential Complex/Hunter Hereford Ranch/Aspen Ridge Ranch Residence and Barn

These properties sit on the southeast side of Antelope Flats and north end of the Kelly hayfields a vast expanse of sagebrush and agricultural (grassland) fields (Fig. 10). The McCollister residential complex is located within an aspen community. The habitat surrounding the complex is a mix of vegetation that includes sagebrush grasslands, and patches of aspen and conifer. Because these types occur as a mosaic of age classes and as a mix of vegetation types, the habitat the area provides is especially rich and diverse. The Hunter Hereford and Aspen Ridge ranches lie north of Ditch Creek and east of the McCollister residential complex. Both properties occur in a highly disturbed area with sparse vegetation. The majority of the vegetation is weedy non-natives, although relatively undisturbed sagebrush-grass communities occur nearby. Ditch Creek, which serves as an important movement corridor for wildlife occurs south of the properties. The area supports a diversity of wildlife species, but is particularly important for sage-grouse, pronghorn, and bison. The area provides spring, summer, and fall range for elk, bison, and pronghorn and large numbers of these animals occur in the area during this time. Elk migrate through the area and use the sagebrush habitats as transitional range and find security in the forested patches. In addition, sage-grouse, black and grizzly bears, wolves, coyotes, fox, badgers, raptors and migratory birds can be found in or immediately adjacent to these properties.

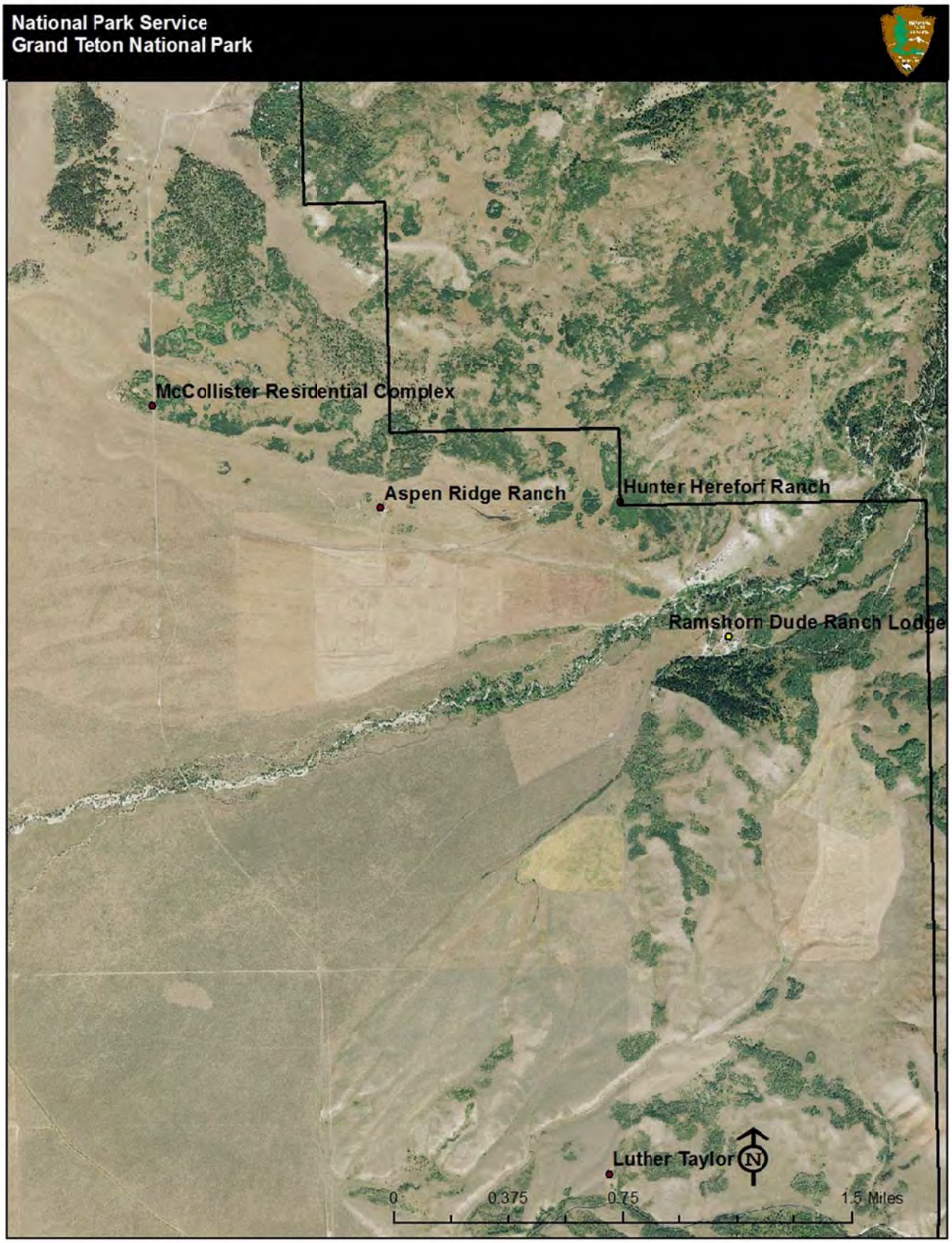


Figure 10. McCollister Place Residential Complex/Hunter Hereford Ranch/Aspen Ridge Ranch Residence and Barn.

Luther Taylor Cabins

The Luther Taylor Cabins are located on the east side of the park just off the road into the Gros Ventre drainage (Fig. 11). This property is significant as the only intact example of an early homestead in the park and is probably best known for its appearance in the movie *Shane*. Current visitation levels at the site are low to moderate and no on-site interpretive or other visitor facilities are currently provided, although offsite nonpersonal interpretation is available. Vegetation surrounding the cabins is mainly sagebrush steppe, aspen woodland, and willows. This property is just north of Kelly Hill, an area that provides winter and transition range for elk, mule deer, and bighorn sheep. Large numbers of elk move through the area during migrations in the spring and fall and frequently forage in the vicinity until they move to summer or winter ranges. Other ungulates that occur in the area include: moose and pronghorn. Three wolf packs, Lower Gros Ventre, Lower Slide Lake, and Pinnacle Peak, have home ranges that overlap this property. Wolves may be present in the area year round. Occasionally grizzly or black bears may also be present.

Figure 11. Luther Taylor Cabins.

SPECIES CONSIDERED

Special status species are defined in this document as those listed as threatened or endangered, proposed for listing, or candidates for listing under the Endangered Species Act (ESA). The US Fish and Wildlife Service (USFWS) Ecological Service office in Cheyenne, Wyoming, provided a list of threatened, endangered, proposed, and candidate species that may occur in the Analysis Area. The USFWS list dated March 26, 2015 (USFWS 2015) contained ten listed species (Table 1). Critical habitat for Canada lynx was also identified as occurring in the planning area. Species not known or with no potential to occur in the analysis area are dismissed from further analysis in this document. The rationale for dismissing the species is documented in Table 1. Excluded species have been dropped from further analysis by meeting one or more of the following conditions:

1. species does not occur or is not expected in the project area during the time period activities would occur;
2. occurs in habitats that are not present; and/or
3. is outside of the geographical or elevational range of the species.

Table 2. Federally Listed Threatened, Endangered, Candidate, and Proposed Species in the Grand Teton National Park Historic Properties Management Plan Planning Area.

Species Common and Scientific Name	Status[1]	Habitat Description and Range in Wyoming	Expected Occurrence	Rationale for Exclusion[2]
Plants				
Whitebark pine *(Pinus albicaulis)*	C	Typically grows at timberline or below timberline in the subalpine zone. In Wyoming the elevation distribution for whitebark pine is generally between 7,000- 10,500 feet.	No	HAB
Mammals				
Canada lynx *(Lynx canadensis)*	T, CH	Boreal forest types and adjacent habitats. Distribution is closely tied to that of snowshoe hares. In Wyoming lynx primarily occur in spruce-fir and lodgepole pine forests.	Yes	N/A
Designated Critical Canada Lynx Habitat	Designated	Occurs in a portion of the project area.	Yes	N/A
Gray wolf *(Canis lupus)*	Ex/N (treated as T in NPS units)	Wolves tend to be flexible in their habitat needs and are considered habitat generalists. They typically occur in areas with a sufficient year-round prey base of ungulates. They may use the following habitat types: grasslands, meadows, sagebrush, coniferous and mixed forests, and riparian communities.	Yes	N/A
Grizzly bear *(Ursus arctos)*	T	Occupies a wide variety of habitats, including areas with extensive forested cover interspersed with	Yes	N/A

		grasslands and meadows, shrublands, and riparian communities. Grizzly bears are omnivorous generalists that are highly adaptable. In Wyoming grizzly bears occur in the northwest portion of the state.		
BIRDS				
Greater sage-grouse *(Centrocercus urophasianus)*	C	Sagebrush obligate.	Yes	N/A
Yellow-billed cuckoo *(Coccyzus americanus)*	T, PCH	Yellow-billed cuckoos breed in dense willow and cottonwood stands in river floodplains.	No	HAB
FISHES				
Bonytail chub *(Gila elegans*	E	Downstream resident of Green River. Project will not lead to water depletion or water quality degradation in the Colorado River system.	No	ODR
Colorado pikeminnow *(Ptychocheilus Lucius)*	E	Downstream resident of Green River. Project will not lead to water depletion or water quality degradation in the Colorado River system.	No	ODR
Humpback chub *(Gila cypha)*	E	Downstream resident of Green River. Project will not lead to water depletion or water quality degradation in the Colorado River system.	No	ODR
Kendall warm springs dace *(Rhinichthys osculus thermalis)*	E	Restricted to Kendall Warm Springs	No	ODR

[1] **Status Codes**: **E**=federally listed endangered; **T**=federally listed threatened; **P**= federally proposed for listing; Ex/N = Experimental/Nonessential (treated as threatened in NPS units), **C**= federal candidate for listing; and CH=designated critical habitat

[2] **Exclusion Rationale Codes**: **ODR**=outside known distributional range of the species; **HAB**= no habitat present in analysis area; **ELE**= outside of elevational range of species; and **SEA**=species not expected to occur during the season of use/impact

Species Dismissed

Whitebark pine (*Pinus albicaulis*) is a major component of the forest community in areas above 8,000 feet to forest timberline and a major understory component of conifer-dominated forests from 7,000 to 10,500 feet. Seeds of the whitebark pine are important food for grizzly bears and a variety of other wildlife species. Whitebark pine populations in Grand Teton National Park and the Greater Yellowstone Area have been declining due to native mountain pine beetles (*Dendroctonus ponderosae*) and non-native blister rust, which is caused by a fungus, *Cronartium ribicola* (Schwandt 2006). In July 2011, the USFWS determined that whitebark pine warrants protection under the ESA, but that adding the species to the Federal List of Endangered and Threatened Wildlife and Plants is precluded by the need to address other listing actions of a higher priority (U.S. Fish and Wildlife Service 2011). This species is

now added to the list of candidate species eligible for ESA protection and its status will be reviewed annually.

Whitebark pine exist both as an overstory and understory component within the high elevation forest communities within Grand Teton National Park. In the areas of the historic properties evaluated in this document, the surrounding vegetation comprises primarily sagebrush-steppe, non-forest communities and mid-elevation, subalpine forest stands of lodgepole pine (*Pinus contorta*), Englemann spruce (*Picea englemanni*), subalpine fir (*Abies lasiocarpa*), quaking aspen (*Populis tremuloides*), and narrow-leaf cottonwood (*Populis angustifolia*). In the predominant mature conifer forests in this area, whitebark pine may comprise non-reproductive saplings present within the forest understory. Mature, seed producing whitebark pine also occurs in areas surrounding the higher elevation backcountry cabins as a minor component of the overstory. Because the areas of consideration for historic properties management exist primarily outside the range of whitebark pine habitats, this species is dismissed from further analysis in this document.

In western North America, the yellow-billed cuckoo *(Coccyzus americanus)* occurs in low- to moderate-elevation arid and semi-arid landscapes below 6,000 feet (USFWS 2014a). Typical nesting habitat includes riparian woodlands, greater than 50 acres in size, that support dense, tall willows (*Salix* sp.) with mature deciduous trees such as cottonwood (*Populus fremontii; P. augustifolia*), species that provide well-branched, dense canopies for foraging and nesting (USFWS 2014a). Historically, this species was rare in western Wyoming (USFWS 2014a). Historical breeding records suggest that yellow-billed cuckoos occurred in the southwestern corner of the state, but not beyond. Since 1985 three reports of yellow-billed cuckoos were documented in the parks observation database. Two reports, from June 1985 and July 1992, are unverified reports and one observation, from July 2000 provided by an avian biologist who captured the bird in a mist net, was confirmed. Despite the one confirmed yellow-billed cuckoo observation in GRTE in 2000, the historical record and breeding biology of the species suggest that the riparian habitat within our park, which is all above 6300 feet, does not constitute suitable breeding habitat for the species. Given that the park is outside of the elevational distribution of suitable breeding habitat for the species and they are unlikely to occur, this species is dismissed from further analysis in this document. None of the critical habitat identified for the yellow-billed cuckoo occurs within the park, therefore impacts to critical habitat are not considered.

The Kendall Warm Springs dace *(Rhinichthys osculus thermalis)* is not evaluated in this assessment because the range of this species is restricted to Kendall Warm Springs in the Upper Green River basin. This species does not occur in the project area.

The three Colorado River endangered fishes are not considered in this assessment because the actions proposed in the HPMP do not involve any activities that would lead to water depletion in the Colorado River system. The project area is entirely within the Upper Snake River drainage which is part of the Columbia River basin.

Canada Lynx

Status

The Canada lynx was listed as a threatened species on March 24, 2000. The USFWS determined that the lack of protections for lynx in federal land and resource management plans rendered them inadequate to protect the species (USFWS 2000). Critical habitat was designated for Canada lynx in 2006 and revised in 2009, but no Critical Habitat was designated within GRTE. However, in September 2013, the USFWS announced a proposal to revise the critical habitat designation for Canada lynx in the contiguous U.S. In September 2014, the USFWS published a final rule that revised the critical habitat designation for the lynx Distinct Population Segment (DPS) and a revised definition for what constitutes the range of the DPS (USFWS 2014). The revised Critical Habitat designation included habitat within the northeastern corner of GRTE.

Life History

The Canada lynx is a medium-sized, short-bodied cat with long legs and an overall stocky build (Clark and Stromberg 1987). Paws are large and well-furred, ears tufted, tail blunt and short, and the head has a flared facial ruff. Winter coloring is typically grizzled brownish-gray mixed with buff or pale brown on the top and grayish-white or buff-white on the underside. In summer, the pelage is more reddish to gray-brown. The tail is blacktipped all the way around. Total length is 26 to 34 inches and weight is 17.5 to 23 pounds. Males are slightly larger than females. The Canada lynx differs from the bobcat in having paws that have twice the surface area, enabling them to forage in deep snow; a black-tipped tail whereas the bobcat's tail is black only on the top surface; a less spotted coat; and a tail shorter than one-half the length of the hind foot.

The breeding season for Canada lynx lasts only for a month, ranging from March to May, depending on the local climate. Gestation lasts around 64 days, so that the young are born in May or early June. The dens are generally situated mid-slope and face south or southwest. Litters contain from one to eight kittens, and tend to be much larger when prey is abundant. Canada lynx kittens weigh from 6.2 to 8.3 ounces at birth, and initially have greyish buff fur with black markings. They are blind and helpless for the first fourteen days, and weaned at twelve weeks.

Habitat Requirements and Distribution in Project Area

The common attributes of lynx habitat across its range include dense horizontal cover, persistent snow, and moderate to high snowshoe hare densities (Lynx Bio Team 2013). Mixed conifer forest types, including spruce-fir and lodgepole pine forests are the primary vegetation types used by lynx in the Rocky Mountains (Lynx Bio Team 2013). Young conifer forests (roughly 10-40 years post-disturbance) that have high densities of regenerating stems that protrude above the snow provide foraging habitat for lynx. Mature multi-storied confer stands with well-developed understories also provide foraging habitat. Lynx den sites generally occur in mature conifer forests with abundant coarse wood debris and dense horizontal cover (Lynx Bio Team 2013).

The project area falls within the Greater Yellowstone core area identified for lynx (USFWS 2005). Lynx habitat in GRTE was mapped in accordance with the Canada Lynx Conservation and Assessment

Strategy (Ruediger et al. 2000, revised 2013). Five lynx analysis units (LAUs) were identified within the park. The amount of mapped lynx habitat and its condition within each LAU is summarized in Table 3 and depicted in Fig. 12.

Table 3. Occurrence of mapped lynx habitat and existing condition within Grand Teton LAUs.

Lynx Analysis Unit (LAU)	LAU Size (acres)	Acres Mapped Lynx habitat	Acres (%) lynx habitat in suitable condition	Acres (%) lynx habitat in unsuitable (SISS) condition	Non-lynx habitat (acres)
Berry	37,503	29,965	25,118 (84%)	4,847 (16%)	7,532
Webb	28,311	14,091	12,687 (90%)	1,404 (10%)	14,218
Steamboat	18,557	15,784	15,308 (97%)	476 (3%)	2,772
Two Ocean	30,005	20,199	18,250 (90%)	1,949 (10%)	9,803
Granite	37,481	16,131	16,022 (99%)	109 (0.6%)	21,347

Regional and Local Distribution

Lynx historically occupied (Reeve et al. 1986) and apparently still persist in Wyoming sporadically and in low numbers. The best contiguous lynx habitat in Wyoming is in the northwestern and western portion of the state. The remainder is highly fragmented, widely dispersed, and typically isolated by large expanses of arid shrubland (Ehle and Keinath 2002). The distribution of documented lynx specimens and observations in Wyoming indicate that they most consistently occupy the Salt River, Wyoming, Teton, Wind River, Gros Ventre, and Absaroka mountain ranges (Reeve et al. 1986). Lynx are recorded less frequently in the Uinta and Bighorn ranges, and very sporadically in eastern Wyoming (Beauvais et al. 2001, Murphy et al. 2004).

A query of the parks rare species observation database turned up 18 reports of lynx (GRTE unpublished data), but the reliability of these reports is unknown. No lynx observations have been reported in the last 10 years. Pyare (2005) conducted hair snag and track surveys from 2000-2002 in portions of GRTE and the Bridger-Teton National Forest. No lynx were detected at hair snags. One possible set of lynx tracks and a day bed were found in the Arizona Creek drainage in January 2002. Track densities for potential lynx prey species were also high in this area (Pyare 2005). Murphy et al. (2006) documented lynx presence and distribution in Yellowstone National Park from 2001-2004. They confirmed lynx presence at three locations in the eastern portion of the park. Holmes and Berg (2009) conducted lynx surveys in GRTE and surrounding National Forest and Yellowstone National Park in 2009. No lynx were detected within the GRTE, but lynx tracks were located on Togwotee pass east of the park on 6 separate occasions and two sets of possible lynx tracks were found in Yellowstone. Lynx from the Colorado reintroduction occasionally dispersed to Wyoming (Shenk 2007). An area of high density lynx use was documented in GRTE on the west side of Jackson Lake in north of Moran Bay.

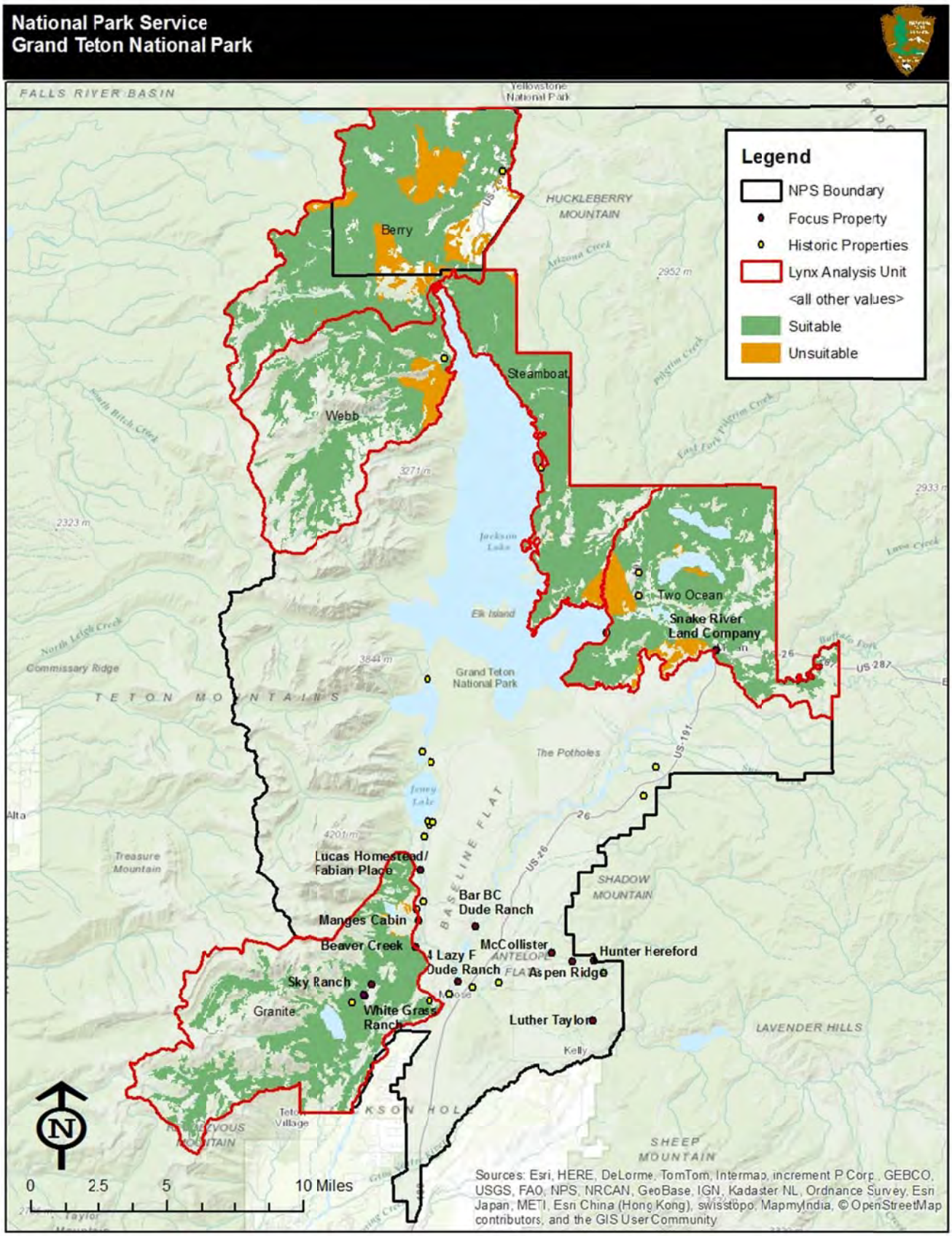


Figure 12. Lynx analysis units and mapped lynx habitat in relation to historic properties.

Threats

The updated Lynx Conservation Assessment and Strategy (2013) identified 4 anthropogenic influences that were of concern to lynx conservation including: climate change, vegetation management, wildland fire, and fragmentation. Potential effects of climate change include: 1) possible elevational or latitudinal shifts in distribution of lynx and their prey, 2) changes in periodicity of snowshoe hare cycles, 3) reductions in the amount of lynx habitat and associated lynx population size due to changes in precipitation, particularly snow suitability and persistence, and changes in the frequency and pattern of disturbance events, 4) changes in demographic rates, and 5) changes in predator-prey relationships (LCAS 2013). Vegetation management practices can have beneficial, neutral, or negative effects on lynx and snowshoe hare habitat and populations. Negative effects can result from treatments that reduce dense horizontal cover that provides habitat for snowshoe hares. Treatments that remove understory species, reduce stem densities, or remove trees in multi-stored forests can diminish the habitat value of forests for snowshoe hares and lynx. Wildland fire management may have short-term negative but long-term beneficial effects, as there is typically a reduction in cover after a burn, but as regeneration and succession progresses over the next 10 – 40 years suitable habitat conditions for snowshoe hares return. Permanent or temporary removal of forest cover, development of highways and infrastructure, and other forms of intensive development can fragment lynx habitat. Fragmentation can negatively affect lynx by reducing the total amount of lynx habitat, increasing the isolation of habitat patches, or reducing the ability of wildlife to effectively move between patches of habitat.

Gray wolf

Status

Gray wolves were historically found throughout Wyoming, but were virtually exterminated from the western United States by the 1940s. The gray wolf was first listed as an endangered species on March 11 1967 (32 FR 4001). The subspecies of the northern Rocky Mountain wolf (*Canis lupus irremotus*) was initially listed as an endangered species in 1973. Due to taxonomic concerns, the entire species was listed as endangered in the contiguous United States outside of Minnesota, where it was listed as threatened in 1978 (USFWS 1978). In 1990 Congress directed the appointment of a Wolf Management Committee to develop a plan for wolf restoration in YNP and central Idaho. The following year, Congress directed the United States Fish and Wildlife Service (USFWS) to prepare an EIS to consider the reintroduction (USFWS 1994a).

The final EIS for wolf reintroduction was completed in May 1994. The final rules for the introduction were published in November of 1994, in which the gray wolf was reclassified as experimental, non-essential (USFWS 1994b), according to section 10(j) of the ESA of 1973, as amended (16 U.S.C. 1531). However, in national parks and wildlife refuges, nonessential experimental populations are treated as threatened species, and all provisions of ESA Section 7 apply (50 CFR 17.83(b).

The recovery criterion for wolf restoration was to maintain at least 30 breeding pairs for 3 consecutive years in an area that included the GYA, central Idaho, and northwestern Montana and to develop state plans that would outline how each individual state would manage wolves after their delisting. The recovery criteria were met in 2002. State management plans for Montana and Idaho were approved

by the USFWS in 2004, but Wyoming's plan was not approved until December 2007. Wolves in the Northern Rockies were removed from the threatened species list in March of 2008, but protections were reinstated in July. With the exception of Wyoming, wolves were again delisted in April of 2009. In August of 2010, protection for wolves under ESA in Idaho and Montana were reinstated. Montana and Idaho wolves were again delisted through congressionally legislative action in August 2011. In August of 2012, wolves in Wyoming were removed from the threatened species list, but wolves in Wyoming were returned to the threatened species list when delisting was vacated by the federal court in September 2014.

Life History

Wolves breed once per year between January and March. Typically only one male and one female in a pack breed, but occasionally there may be multiple litters. After 63 days, the mother whelps 4-6 pups in a den in mid/late April or early May. Pups emerge from the den after approximately 3 weeks. The pups are weaned at about 8 weeks of age after learning to eat more solid food in the form of regurgitated meals from the female or others members of the pack. Also at this time they are frequently moved to one or more "rendezvous sites," where they spend the remainder of the summer. The pups begin to travel with the pack and join in hunts, at 6 to 8 months of age. After reaching sexual maturity, usually at 2 to 3 years, most wolves leave their pack to find territories and mates of their own, although some remain with the pack.

Wolves are opportunistic predators that feed primarily on ungulates, although they will also take beavers and other small mammals. In GRTE in winter, wolves primarily prey upon elk, but moose are also taken. In summer, elk are the main prey. The kill rates vary seasonally. In the GYA from November 15 to December 15, when elk are in good condition, the kill rate is lower than during March, when elk are in poor condition (Smith et al. 2004)

Habitat Requirements

Gray wolves are habitat generalists that occupy a broad range of habitats including coniferous forests, montane meadows, and shrub steppe. Key components of suitable habitat include sufficient year-round prey base of ungulates and alternate prey, suitable and semi-secluded denning and rendezvous sites, and sufficient space with minimal exposure to humans (USFWS 1987). Elk, moose, and deer which are all considered preferred prey species of wolves occur throughout the park. Most elk migrate to low elevation winter ranges outside the park, but a small numbers winter in the Buffalo Valley, around Kelly Hill, and in the Snake River drainage near the south end of the park. Similarly, there are very few deer present in the park in the winter.

Regional and Local Distribution

Although gray wolves are native to the GYA (Young and Goldman 1944, Hall and Kelson 1959), human persecution resulted in their extirpation by the 1930s (Reinhart 1999). The FWS published a final rule on 22 November 1994, directing the reintroduction of wolves in Yellowstone National Park (YNP). The rule contained several measures to direct the management of reintroduced wolves, including prohibitions on taking or possessing of wolves (with certain exceptions) and restrictions on human

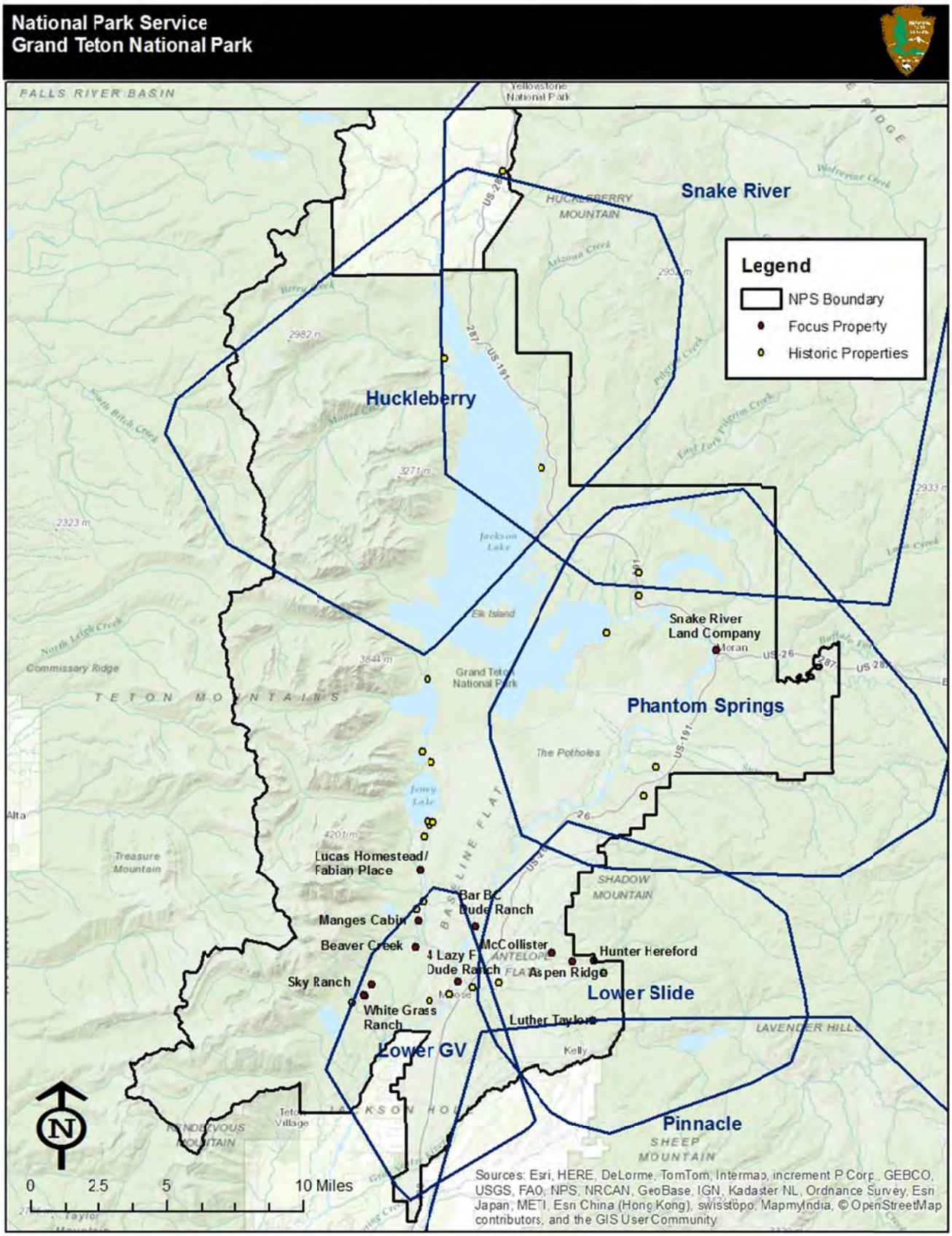


Figure 13. Wolf home ranges in 2014, as estimated by 95% minimum convex polygon, in relation to historic properties.

access to wolf facilities and wolf dens in the national parks. Reintroduction efforts in YNP began in the winter of 1994-1995, when 14 wolves were released; 17 additional wolves were released in 1996 (Phillips and Smith 1997).

At the end of 2014, at least 333 wolves in 44 packs (25 breeding pairs) inhabited Wyoming, including Yellowstone National Park (USFWS et al. 2015). Six wolf packs had home ranges that overlapped portions of GRTE in 2014 (Fig. 14). Three of these packs were counted as breeding pairs at year-end. Within GRTE, the wolf population reached a peak in 2009 – when 76 wolves in 7 packs were documented. Total numbers have declined since then, but the number of packs has remained stable.

Threats

Human-caused mortality, including legal and illegal harvest, depredation control, and vehicle collisions, is the largest source of mortality for wolves and is the only source of mortality that can extensively affect wolf populations at recovery levels. In the GYA outside of Yellowstone National Park, of 73 documented wolf mortalities in 2014, sixty-three (86%) were human-caused (thirty-seven control actions, twelve legal harvests, and fourteen attributed to other human causes), three resulted from natural causes, and seven were of unknown cause (USFWS et al. 2015).

Wolves can be sensitive to disturbance around active den or rendezvous sites (USFWS 1987). Human disturbance at or in the vicinity of active natal dens or rendezvous sites could increase pup mortality due to 1) displacement of adults (can be detrimental when pups are young and unable to thermoregulate), 2) adults spending more time guarding pups and less time hunting (could contribute to poor condition), or 3) adults relocating dens (could lead to abandonment or injury of pups if young and difficult to move) (USFWS 1987 but see Thiel et al. 1998, Frame et al. 2007, Argue et al. 2008, Person and Russell 2009, Nonaka 2011,).

Greater sage-grouse

Status

In March 2010, the greater sage-grouse (*Centrocercus urophasianus*) was listed by the USFWS as a candidate species (75 FR 13910) because of concerns about range wide declines. State and local working groups have initiated conservation planning efforts that focus on providing guidelines for conserving sage-grouse populations through application of consistent management guidelines and strategies. The Wyoming greater sage-grouse conservation plan (WGFD 2003) outlines these guidelines for Wyoming, and Wyoming Executive Order (State of Wyoming 2015) identifies core areas and core area protection guidelines for the state. In addition, the Upper Snake River Sage-Grouse Working Group has developed a conservation plan (USRBWG 2014) that outlines recommendations for grouse management and conservation in the Jackson Hole area and identifies threats specific to the local population. NPS policies direct NPS units to cooperate with other agencies, states, and private entities to promote candidate conservation agreements aimed at precluding the need to list species and prevent detrimental effects to candidate species (NPS 2006b, NPS 2007).

Life History

The greater sage-grouse is a large, rounded-winged, ground-dwelling bird, up to 30 inches long and 2 feet tall, weighing from 2 to 7 pounds. It has a long, pointed tail with legs feathered to the base of the toes. Females are a mottled brown, black, and white. Males are larger and have a large white ruff around their neck and bright yellow air sacks on their breasts, which they inflate during their mating display. The birds are found at elevations ranging from 4,000 to more than 9,000 feet and are highly dependent on sagebrush for cover and food (USFWS 2010a).

For greater sage-grouse, clutch size averages seven to eight eggs and incubation by the female lasts 25 to 29 days. Young can fly when 7 to 14 days old. Populations may be migratory or non-migratory. Leks are located on relatively open sites surrounded by sagebrush. The choice of lek sites may be determined by the quality of adjacent nesting or brood-rearing habitat. During the winter, greater sage-grouse feed on sagebrush. At other times of the year, greater sage-grouse feed on sagebrush, leaves, flowers, and insects. Insects are important food items for newly hatched broods. Early accounts suggest that this species was once widespread and abundant in many areas of the west, but populations throughout the range experienced serious declines over the last 50 years.

Habitat Requirements

The greater sage-grouse is an upland bird that is entirely dependent upon sagebrush communities for all stages of its life cycle. Sage-grouse have high fidelity to their seasonal habitats (breeding, late brood-rearing, and wintering habitats), and females commonly return to the same areas to nest each year. Seasonal habitat needs for sage-grouse are described in Table 5. Seasonally important habitats include dense stands of sagebrush and riparian meadows.

Important wintering areas in the park include: terrace of the Snake River east of the Potholes, Gros Ventre junction (north and south of GV River), between Kelly Warm Springs and Ditch Creek, around town of Kelly, between Spread Creek and Wolff Ridge, and east of Elk Ranch Reservoir (Bedrosian et al. 2010).

Table 4. Greater sage-grouse habitat requirements.

Habitat Type	Description	Season of Use
Wintering	Exposed sagebrush 25-35 cm above snow surface, canopy cover 10-30%, often windswept ridges and south to southwest aspects	early December – late March
Spring	Intermixed areas of taller (40 to 80 cm)sagebrush, with 15-25% canopy cover, and taller (>18cm) grass/forb cover > 15%	late March – May
Breeding (lek sites)	Open areas with shorter vegetation, with robust sagebrush within 100 to 200 m used for escape cover	late March – May
Nesting	Similar to spring habitat, but with clumps of tall (>50 cm), dense (about 25%) sagebrush and abundant forbs (> 10% cover); usually within 4 miles of lek	late March – May

Table 4. Greater sage-grouse habitat requirements.

Habitat Type	Description	Season of Use
Early brood rearing	Usually within 1 km of nest, abundant forbs and taller (>18 cm) grasses	June
Late brood rearing/summer	Abundant succulent forbs; taller (>40 cm), robust (10-25% canopy cover) sagebrush	July to mid-September
Fall	Tall, dense sagebrush (similar to summer habitat)	mid-September to first major snow

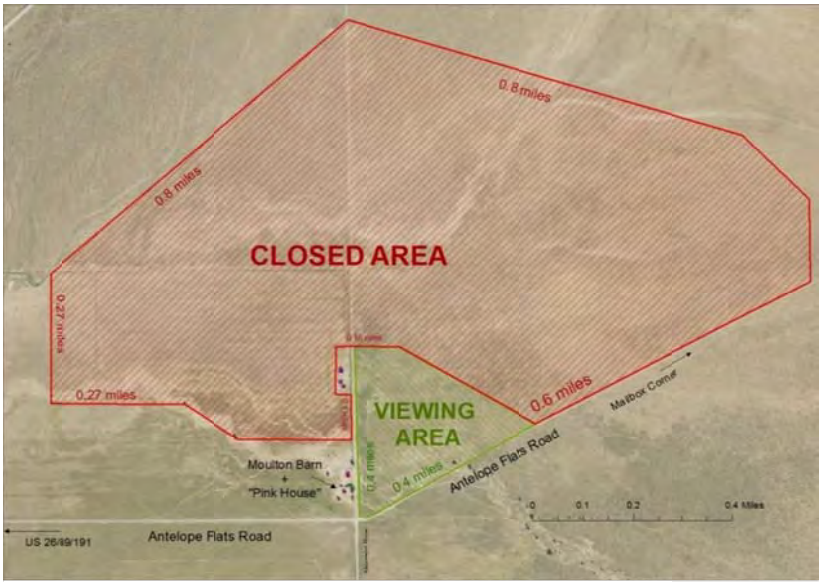
Source: *USRBSGWG 2014, Braun et al. 2005*

Regional and Local Distribution

Historically, the greater sage-grouse ranged across nearly all of Wyoming and much of the American west. However, populations have declined throughout their range over the past 50 years and sage-grouse now occupy approximately 56 percent of their historical range (USFWS 2010a). The Jackson Hole population is relatively small and isolated, and declined by an average of 2.2% from 1985-2007 (Garton et al. 2011). Greater sage-grouse are distributed in sagebrush habitat throughout the Jackson Hole valley, primarily in Grand Teton National Park and the National Elk Refuge. As of 2015, there were 6 known, active sage-grouse leks in GRTE. Two leks were inactive (no males present during breeding season) and two were unoccupied (no males present during breeding season for the past 10 years).

The reason these sites were abandoned is unknown. Peak attendance of males at the Moulton lek was 103 in spring 2015, which was more than half of all males counted at GRTE leks in 2015 (174).

In an attempt to preserve areas designated as core sage-grouse areas, habitat conservation strategies are being implemented by federal and state agencies and local governments to forestall a future listing of the species. A state-designated core sage-grouse habitat area includes valley floor land south of Moran and east of Jackson Lake and the other piedmont lakes. The sage-grouse occupied habitat is somewhat more extensive than the core area (Fig. 15).



The location of the various historic properties in relation to core sage-grouse areas, occupied sage-grouse habitat, and proximity to sage-grouse leks is summarized in Table 6 and depicted in Fig. 15. Sage-grouse congregate on display areas, or leks, during their breeding season each spring. These sites are usually open areas that provide good visibility. The north end of Mormon Row property is within 0.6 mi of the East and West activity centers of the Moulton lek. The park has monitored greater sage-grouse leks in the park since the 1940s and since 2004 has implemented a seasonal

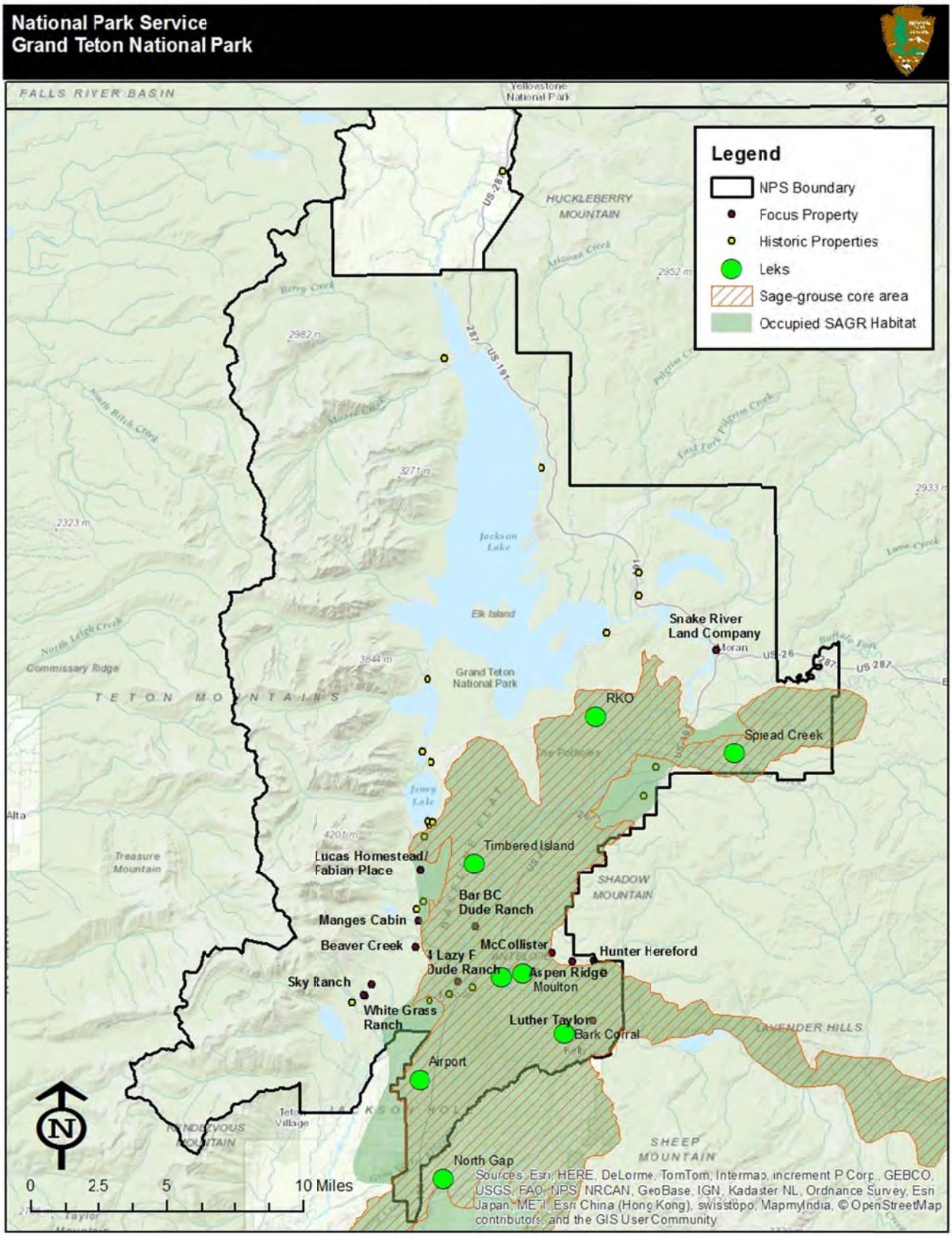


Figure 15. Occupied sage-grouse habitat and known leks in relation to historic properties.

closure around the Moulton leks from March 15 through at least 15 May. The current configuration of the closure is shown in Fig. 16. Activity at all sage-grouse leks within GRTE between 2000 and 2015 is summarized in Table 7.

Table 5. Location of historic properties in relation to sage-grouse habitat features.

Historic Property	Within SAGR Core Area	Within Occupied SAGR Habitat	Within 4 mi buffer around SAGR lek	Within 0.6 mi buffer around SAGR lek
Administrative Area Historic District/Beaver Creek			X	
AMK Ranch				
The Brinkerhoff			X	
Cascade Canyon Barn Patrol Cabin				
Colter Bay Village				
Cunningham Cabin		X	X	
Death Canyon Barn Patrol Cabin				
Double Diamond Dude Ranch Dining Hall			X	
Elk Ranch			X	
Highlands		X	X	
Jackson Lake Lodge				
Jackson Lake Ranger Station				
Jenny Lake Boat Concessions facilities			X	
Jenny Lake CCC Camp NP-4			X	
Jenny Lake Campground			X	
Jenny Lake Lodge				
Jenny Lake Ranger Station			X	
Kimmel Kabins/Lupine Meadows	X	X	X	
Leigh Lake Patrol Cabin				
Lower Berry Creek Patrol Cabin				
Menor's Ferry/Maud Noble Cabins		X	X	
Moose Entrance Kiosk		X	X	
Moose-Wilson Road		X	X	
Mormon Row	X	X	X	X
Murie Ranch		X	X	
Ramshorn Dude ranch Lodge		X	X	
Reimer Residence	X	X	X	
Snake River Bridge #2				
String Lake Comfort Station				
Triangle X Barn		X	X	
Upper Granite Canyon Patrol Cabin				
Valley Trail			X	
White Grass Dude Ranch			X	
White Grass Ranger Station Historic District			X	
4 Lazy F Dude Ranch	X	X	X	
Bar BC Dude Ranch	X	X	X	
Beaver Creek #10 (Administrative Area Historic District/Beaver Creek)			X	
Geraldine Lucas Homestead/Fabian Place		X	X	

Historic Property	Within SAGR Core Area	Within Occupied SAGR Habitat	Within 4 mi buffer around SAGR lek	Within 0.6 mi buffer around SAGR lek
Hunter Hereford Ranch			X	
Snake River Land Co. Office and Residence			X	
Aspen Ridge Ranch Residence and Barn			X	
Luther Taylor Cabins	X	X	X	
Manges Cabin			X	
McCollister Residential Complex			X	
Sky Ranch			X	

Table 6. Greater sage-grouse leks and male and female activity in Grand Teton National Park.

Lek	Peak male count 2015	Peak female count 2015	Average Peak male count 2000-2014	Average Peak female count 2000-2014
Bark Corral	11	9	5	4
Airport	12	25	17	19
Moulton East*	20	23	33	17
Moulton West*	91	52	31	10
Timbered Island	12	1	17	6
RKO	21	16	10	5
Spread Creek	15	4	8	3

*East and West locations are considered two activity centers for a single lek site.

Threats

Threats to the greater sage-grouse across its range include habitat removal and fragmentation (USFWS 2013b). Additionally, habitat (vegetation component and management), fire management, infrastructure development, and weather were identified as issues having immediate impact on the Jackson Hole population of sage-grouse (USRBWG 2014). This species is highly dependent on sagebrush for habitat and forage. Sagebrush communities (shrub-steppe vegetation type) cover approximately 56,843 acres in GRTE and are dominant on the porous, cobbly flatland of the valley floor. In addition, moist sagebrush sites can be found on moist benches, floodplains, and hillsides with north and east exposure. Of the 44 historic properties analyzed in this plan, more than half are located near sagebrush communities.

In general development in sagebrush habitats negatively affects greater sage-grouse populations (Aldridge and Boyce 2007, Aldridge 2005, Doherty et al. 2008, Holloran 2005). Recent evidence suggests that greater sage-grouse avoid anthropogenic noise independent of disturbance, associated infrastructure, and habitat fragmentation. Also, intermittent noise, such as traffic noise, has more of an effect on distribution than continuous noise (Blickley et al. 2012).

Grizzly bear

Status

Grizzly bears (*Ursus arctos horribilis*) once roamed much of the western United States, but were extirpated from much of the historic range by the middle of the twentieth century (USFWS 1993). A small population persisted in Yellowstone National Park. Grizzlies were listed as threatened under the ESA in 1975 (40 FR 31734), and a recovery zone was subsequently delineated. On March 29, 2007, the USFWS removed the Yellowstone Distinct Population Segment of grizzly bears from the threatened species list (72 FR 14866), but on September 21, 2009, the Federal District Court in Missoula, Montana issued an order enjoining and vacating the delisting of the Greater Yellowstone Area grizzly population. This was upheld by the 5th Circuit Court of Appeals in November 2011.

Grizzly bear management within GRTE is governed by the park's Human-Bear Management Plan (NPS 1989), the Interagency Grizzly Bear Guidelines (Interagency Grizzly Bear Committee 1986), the Grizzly Bear Recovery Plan (USFWS 1993), and the Final Conservation Strategy for the Grizzly Bear in the Greater Yellowstone Area (USFWS 2007). Although, with the relisting of the grizzly bear in 2009, the Strategy is not currently in effect, the NPS uses both the Recovery Plan and the tenants of the Strategy as guidance in monitoring and managing the effects of NPS activities on the bear. The Strategy is the best available science for grizzly bear conservation in the Greater Yellowstone Area.

The Interagency Grizzly Bear Study Team (IGBST) annually monitors unduplicated females with cubs of the year (COY) within the Greater Yellowstone Ecosystem (GYE); calculates a total population estimate for the entire GYE based on the model-averaged estimate of females with COY, monitors the distribution of females within each bear management unit within the Recovery Zone, and monitors all sources of mortality.

The most recent estimate of the area occupied by grizzly bears in the Yellowstone Ecosystem is approximately 19,413 sq. miles (Bjornlie et al. 2014). Grizzly bears continue to expand outward in the Yellowstone Ecosystem; grizzly bear distribution increased 8.3% from 2004 to 2010, with the greatest expansion occurring in the northern and southern regions of the range. In 2014, 18 of 18 bear management units in the Yellowstone Ecosystem were occupied by female grizzly bears with cubs-of-the year, and all 18 units had verified observations of females with young in at least 4 years of the last 6-year (2009-2014) period (Haroldson 2015). The grizzly bear population in the Conservation Management Area was estimated for 2014 at 655 individuals (95% CI 588—721) (Haroldson et al. 2015). The analogous estimate for the designated Demographic Monitoring Area was 757 bears (95% CI 674—839).

Life History

Early in the fall, grizzly bears begin looking for a location to dig a den, and may travel many miles before finding a suitable area. Generally, they seek remote areas where deep snow will serve as insulation until spring. Grizzlies often dig beneath the roots of a large tree to create their dens. Grizzly bears typically enter their dens in October or November, although in the Jackson area bears have been observed in December and early January. While in the den, the grizzly does not eat or drink. Instead they use their accumulated fat. Male grizzly bears usually emerge from the den in March or April, while females emerge in late April and May. When a grizzly comes out of its den, the first food is sometimes carrion from animals that did not survive the winter. A grizzly will usually travel to lower elevations to reach vegetated areas. Mating season is from June through July. Grizzly bear embryos do not begin to develop until the mother begins her winter hibernation, although mating may have taken

place up to 6 months before. As with other bears, if the mother has not accumulated enough fat to sustain herself as well as developing cubs, the embryos may not implant and develop. In January, usually 1 to 3 cubs, each weighing only a pound or less, are born. The cubs gain weight quickly and often reach 10 to 20 pounds by the time they come out of the den. Cubs remain dependent upon their mother's milk for almost a year and stay with their mother for up to 3 years. They reach breeding maturity at about 4 1/2 to 5 1/2 years. In some cases they may not breed until 8 1/2 years of age. When they do reach breeding age, females usually only breed every 3 years. Males compete with each other for breeding opportunities and seek females each year. Grizzlies usually live to 15 to 20 years of age, and a few survive for up to 30+ years.

Habitat Requirements

Grizzly bears occupy a variety of coniferous forest and rangeland habitats. They are a wide-ranging species that requires adequate space and isolation from humans, suitable den sites, and an adequate food base. Grizzlies are opportunistic feeders, consuming both carrion and vegetal matter (e.g. bulbs and tubers). Plant matter may be an important diet component in spring and summer and bears may forage in riparian areas, avalanche chutes and big game winter ranges. Bears also feed on ungulate calves during the spring calving seasons. In summer and fall, they may move to higher elevations and shift their diet to fruits and whitebark pine nuts (USFWS 1993). A recent synthesis of the available literature on grizzly bear diets (Gunther et al. 2014) determined that the most frequently detected items in 11,478 scats collected during 37 years between 1943 to 2009 were graminoids [grasses], 58.7%; ants, 15.8%; whitebark pine seeds, 15.4%; clover, 11.19%; and dandelion, 10.9%. Other items frequently detected were elk, 8.3%; thistle, 6.9%; horsetail, 5.6%; yampa roots, 4.9%; *Vaccinium spp*. berries, 4.9%; cutthroat trout, 4.4%; biscuitroot, 4.0%; springbeauty, 2.9%; bison, 2.8%; and fireweed, 2.7%. The review also noted the annual stability of the most frequently detected diet-items during 33 years between 1943 and 2009. The most stable items were graminoids, ants, and elk, which were found in the collected scats in all years (100% of years); clover was present during 97% of years; and elk, thistle and horsetail were found in 94% of years.

Grizzly bear use of the landscape is a function of seasonably available food and influenced by the presence of humans and levels of human activity. Grizzly bears have large home ranges (50 to 300 square miles for females; 200 to 500 square miles or more for males), encompassing diverse forests interspersed with moist meadows and grasslands in or near mountains (NPS 2006). The bears are flexible omnivores that feed on a great variety of food, depending on seasonal availability and what is available within their home range.

Regional and Local Distribution

Grizzly bears have increased from relatively uncommon to common in GRTE during the last 20 years, in conjunction with a steady trend toward increasing bear density in the southern GYA. Grizzly bear numbers have increased (Schwartz et al. 2002) and they continue to expand their range outside the recovery area. Although the grizzly bear recovery zone/primary conservation area only overlaps the northern portion of the park/project area (Fig. 17), the entire park is now considered occupied grizzly bear habitat (Bjornlie et al. 2014; Fig. 17). In the Teton Range, grizzly bears are regularly sighted north of Leigh Canyon and the Badger Creek drainage, where visitor use of the backcountry occurs at relatively low levels. Grizzly bear activity in the northeastern quarter of the park, from Jackson Lake's

eastern shores to the park boundary east of Moran has been common for many years. On the Jackson Hole valley floor, grizzly bears frequent elk calving areas in the willow flats near Jackson Lake Lodge and the Snake River bottom in the spring and early summer. Within the last five or so years, sightings of grizzly bears including those with dependent young have been increasingly reported in the southern third of the park. Grizzly bear distribution and habitat use is strongly influenced by seasonal variation in food availability. In recent years, in the fall, grizzly bears have frequented the Snake River corridor south of Moose where berry producing shrubs are abundant and the open sage-brush areas on the east side of the Snake River (Antelope Flats) and Blacktail Butte where they seek out the edible offal left behind by successful participants in the parks' elk reduction program.

Threats

Human-caused mortality and habitat loss are the primary threats to grizzly bear conservation. Maintenance of adequate habitat and associated important foods, along with management of grizzly bear/human conflicts, is key to the long-term sustainability of grizzly bear populations. In the GYE, the majority of grizzly bear mortality is attributable to conflicts with humans with a common outcome of bear removal by managers or killing by humans for other reasons. Of the grizzly bear mortalities documented in the GYE in 2014, roughly two-thirds were attributable to human causes, with about half of these due to management removal for livestock depredations or site conflicts and the other half hunting related (Haroldson and Frey 2015).

In addition to mortality concerns, providing secure habitat is important to enable bears to fully use their food sources, denning sites, and other living needs. Human presence can limit bear use of habitat, increase interaction and therefore, risk to the bears, and (or) attract bears to unnatural or unsecured food sources increasing the risk of habituation to unnatural foods and human conflict. Rural residential development in grizzly bear habitat can negatively impact bears through the direct loss of habitat and increased grizzly bear-human conflicts and bear mortalities. Developed sites in grizzly bear habitat increase the potential for conflict with humans primarily due to the potential availability of human foods. Developments also reduce the effectiveness of the natural habitat near these sites (i.e. functional habitat loss) Schwartz et al. (2010). The larger the developed site and the more people using the site, the greater the potential for conflicts and loss of functional habitat. Additionally, human presence and developments may facilitate tolerance among bears that allows for interaction at great risk to both humans and bears, or attract bears to unnatural or unsecured food sources. This increases the risks of habituation to unnatural foods and human conflict. Activities associated with human presence and developments can often result in continual management actions that adversely impact bears (USFWS et al. 2007). Food storage regulations and information and education efforts can mitigate much of the potential for conflict.

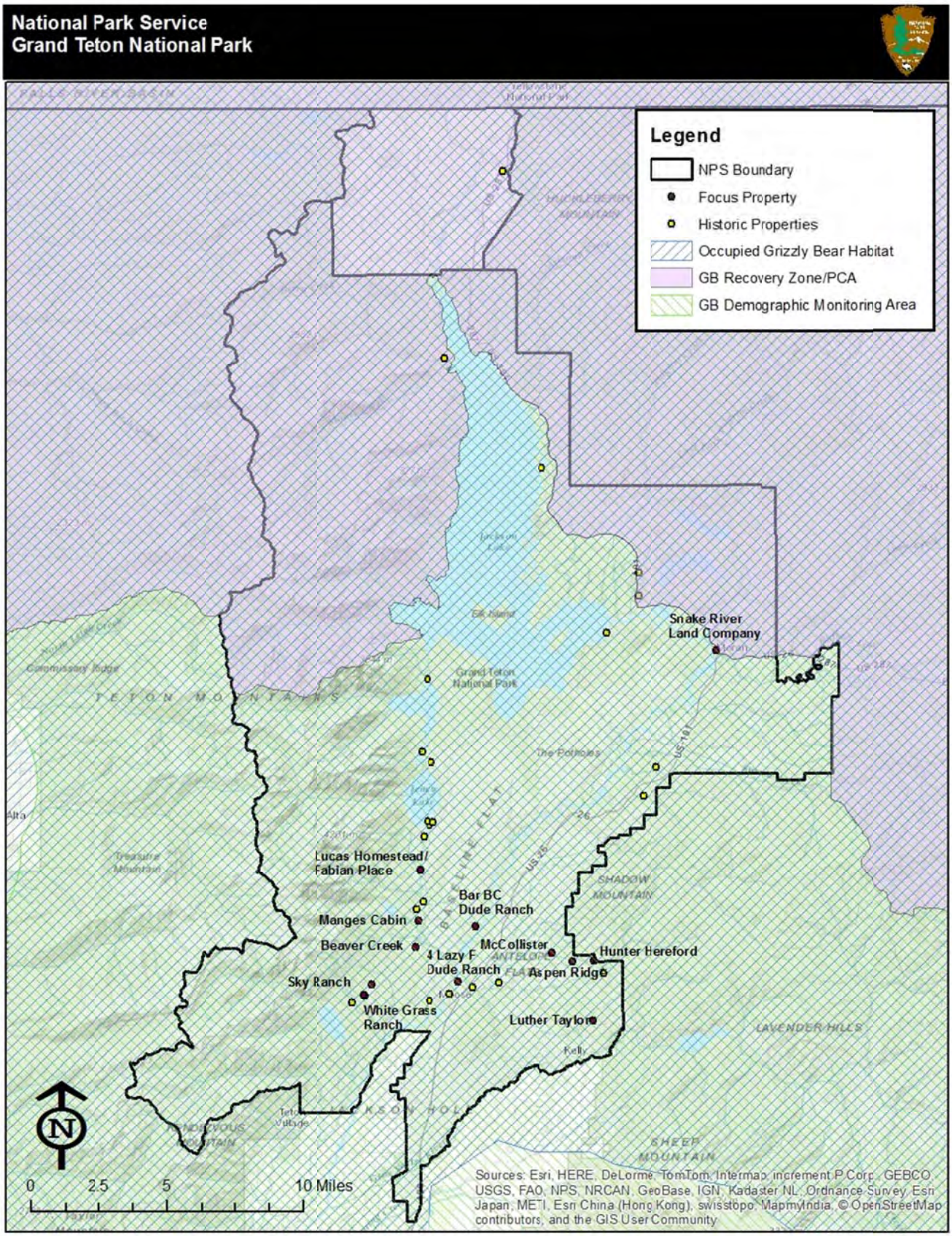


Figure 16. Grizzly bear management units in relation to historic properties.

Developments can also reduce the effectiveness of the natural habitat near these sites. Dominant bears sometimes displace subordinate bears into less desirable habitat, resulting in increased conflicts compared to bears using habitats further away from developed sites. The larger the developed site and the more people using the site, the greater the potential for conflicts and reduction in the effectiveness of the adjacent habitat for bears (Mattson et al. 1987).

The frequency of grizzly bear-human conflicts is inversely associated with the abundance of natural bear foods (Gunther et al. 2004). When native bear foods are abundant, there tend to be few grizzly bear-human conflicts involving property damage and anthropogenic foods (Gunther et al. 2012). When native bear foods are scarce, incidents of grizzly bears damaging property and obtaining anthropogenic foods increase, especially during late summer and fall when bears are hyperphagic (Gunther et al. 2004). The types and numbers of conflicts that occur on average within the GYE on an annual basis are summarized in Table 8. Historically, numbers of grizzly bear-human conflicts and management actions tend to decrease during years with good white bark pine cone production (IGBST 2010). Bears tend to eat more meat, when whitebark pine seeds are not available (Gunther et al. 2012). There is an increase in hunter-grizzly bear conflicts and mortalities in poor seed years.

Table 7. GYE Grizzly bear/human conflicts (Source: Gunther et al. 2012)

Type of conflict	1992-2010 Average ± SD	2011
Human injury	5 ± 3	14
Property damage	22 ± 12	24
Anthropogenic foods	59 ± 38	85
Garden/orchards	7 ± 6	20
Livestock depredations	56 ± 22	86
Total conflicts	150 ± 62	229

Although the number of human-habituated (but not food-conditioned) grizzlies in the GRTE has increased in recent years, park staff have been successful in promoting grizzly bear recovery and minimizing bear-human conflicts (e.g., property damage, incidents of bears obtaining human food, and bear-inflicted injuries to humans) as well as human-caused bear mortalities. Recreational and administrative facilities, human activities, and human waste (garbage and sewage) in the park are managed in a manner that results in few human-bear incidents (see Table 9).

Table 8. GRTE grizzly bear/human conflicts 1999 - 2014 (Source: GRTE unpublished data)

	Conflict Type					
Year	Human injury	Property damage	Anthropogenic foods	Garden/ orchards	Livestock depredations	Total conflicts
1999						
2000						
2001	1					1
2002						
2003						
2004						
2005			1			2
2006						
2007	1	1				2

2008		1				
2009			1			2
2010		2	1			3
2011	1		1			2
2012			1			1
2013		1				1
2014						

Management relocations and lethal removal are tools used by wildlife managers to reduce human-grizzly bear conflicts. Recently, the USFWS recently began considering management relocations a form of "take" even if the bear is not killed (pers. comm., A. Belleman, February 2015). Since 1989, 5 grizzly bears have been captured within GRTE or the JODR and relocated to other locations either within or outside the park. One bear was relocated for frequenting a developed area and obtaining garbage and another for cattle depredations. Both of these bears were later removed in management actions outside of GRTE. The other three translocations were intended to be preventative in nature as bears were either in close proximity to or frequented developed areas or roadsides. One of these bears was later removed outside of GRTE for nuisance behavior. One other grizzly bear was lethally removed after obtaining garbage at a park developed site. This bear had a nuisance history and was previously relocated for similar behavior.

Critical Habitat

Canada Lynx Critical Habitat

On September 12, 2014, the USFWS finalized a revised critical habitat designation for the contiguous United States distinct population segment (DPS) of Canada lynx and a revised definition for what constitutes the range of the DPS (USFWS 2014b). A portion of the park area occurs within the 9,500-square mile Greater Yellowstone Unit #5 of designated Critical Habitat (Fig. 17). A total of 48,562 acres of designated Critical Habitat for lynx occur within the park. The following historic properties are located in Designated Critical Habitat for lynx: AMK Ranch, Jackson Lake Lodge, Jackson Lake Ranger Station, the Brinkerhoff, and the Snake River Land Company Office and Residence. Three of these properties — Jackson Lake Lodge, Jackson Lake Ranger Station and the Brinkerhoff — are within matrix habitat (e.g., hardwood forest, dry forest, non-forest, or other habitat types that do not support snowshoe hares).

The primary constituent elements (PCE) of Critical Lynx Habitat, as defined by the USFWS include (1) the presence of snowshoe hares and their preferred habitat (boreal forest) conditions, (2) winter snow conditions that are generally deep and fluffy for extended periods of time; (3) sites for denning that have abundant coarse woody debris, such as downed trees and root wads; and (4) matrix habitat that occurs between patches of boreal forest and that support lynx travel. Federal actions negatively affect Critical Habitat if they reduce the ability of the components to support lynx. These components interact to provide prey in environments that supports vital activities of persistent lynx populations: successful lynx foraging (horizontal cover and forest structure), sites for denning in and near foraging habitat, relief from competition by other predators such as coyotes, secure and connected habitat use for travel between patches of prime habitat.

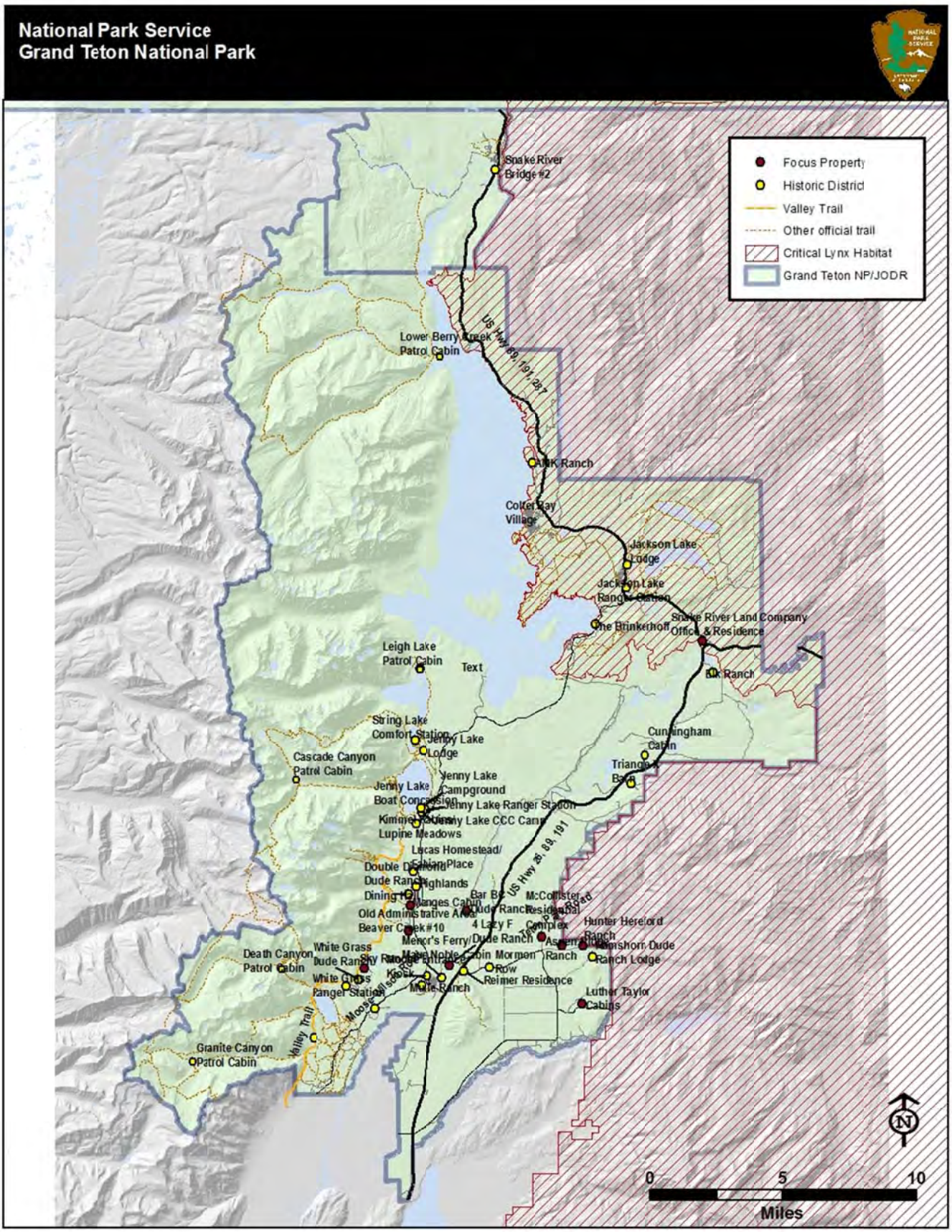


Figure 17. Critical Lynx Habitat in relation to historic properties.

Effects Analysis

This BA analyzes the effects of implementation of the GRTE Historic Properties Management Plan. Direct impacts are effects on the species or its habitats caused by an action and occur at the same time and place as the action. Indirect impacts are effects on the species or its habitat caused by an action occurring later in time or farther removed in distance than direct impacts, but which are still reasonably foreseeable. The analysis of all impacts includes the effects of interrelated and interdependent actions. For the purposes of effects analysis under the ESA, cumulative effects are defined as impacts of future state, tribal, and private actions reasonably certain to occur. Future federal actions will be subject to the consultation requirements established in ESA Section 7 and, therefore, are not considered cumulative to the proposed action. Factors considered when analyzing effects include proximity of the action to the species or habitat of concern, geographic distribution of the action disturbance, timing of the action, nature of the action effect, action disturbance frequency, duration of the affecting action, action disturbance intensity, and action disturbance severity. The BA process is focused primarily on adverse impacts to the species of concern. Although effects to the subject species may be beneficial or detrimental in the long- or short-term, the effects determination of the assessment is based on and controlled by the likelihood of adversely affecting the species. In other words, for a BA, the impacts analysis is not an averaging process.

Effects Determinations

Determinations are based on the impacts of the proposed management actions, implementation of recommended protections for these actions, and conservation measures committed to by the NPS.

Threatened and Endangered Species and Critical Habitat Determinations - Determination categories for this BA for federally listed threatened and endangered species are defined below.

No effect (NE) – The appropriate conclusion when the proposed action will not affect listed species or critical habitats. The primary argument for this determination is that "suitable habitat" or the species does not exist in the analysis area, or the very nature of the action will not have any effect on an individual or its habitat. In this situation, no further contact with the USFWS is required.

May affect, but is not likely to adversely affect (NLAA) – The appropriate conclusion when effects on listed species or its critical habitats are expected to be completely beneficial, or insignificant, or discountable. *Beneficial effects* have an immediate positive effect without adverse effects to the species or its critical habitat. The conclusion is not made on the "net" effects of the action. *Insignificant effects* relate to the size of the impact and should not reach the scale where take occurs. *Discountable effects* are extremely unlikely to occur. Based on best judgment, a person would not be able to meaningfully measure, detect, or evaluate insignificant effects, or expect discountable effects (USFWS 1998). This type of effect requires informal Section 7 consultation with the USFWS and their concurrence with the determination.

May affect, is likely to adversely affect (LAA) – The appropriate conclusion if any adverse effect to the listed species or its critical habitats may occur as a direct or indirect result of the proposed action or its interrelated or interdependent actions, and the effect is not discountable, insignificant, or beneficial. In the event the overall effect of the proposed action is beneficial to the listed species, but

also is likely to cause some adverse effects to even just one individual plant or animal, then the proper effect determination for the proposed action "is likely to adversely affect" the listed species. An "is likely to adversely affect" determination requires formal Section 7 consultation with the USFWS.

Nonessential Experimental Populations - Species with Nonessential Experimental Populations status are treated as threatened within national park units (NPS 2002). Consequently, the determinations described above for threatened and endangered species will be used for the gray wolf.

Candidate Species - NPS management policies (NPS 2006b) direct the agency to proactively conserve and prevent detrimental effects to species listed under ESA, including candidate species. The NPS Reference Manual RM 77-8 (NPS 2002) further details that the NPS will pursue recovery of listed species (including candidate species) in conformance with recovery plans and other pertinent documents. In 2008, the state of Wyoming implemented a policy to conserve sage-grouse and balance development with conservation. The Greater sage-grouse core area protection policy was established by executive order and updated most recently in 2015 (Wyoming Executive Order 2015-4). The heart of the policy is protection of core sage-grouse population areas (the regions with the largest numbers of communal breeding grounds, or leks, and grouse) and restricting habitat alterations, while allowing current land uses to continue. In addition to the WY EO, the interagency Upper Snake River Basin greater sage-grouse working group developed a conservation plan in 2008 and revised it in 2014. The plan identified strategies and commitments to support the conservation of sage-grouse in the Jackson Hole area. In May of 2015 the Bureau of Land Management and US Forest Service released Environmental Impact Statements that incorporate greater sage-grouse conservation measures into the land use plans for the lands they manage. Although the NPS was not part of this effort and to date has not developed management direction specific for the greater sage-grouse, the management direction and conservation measures outlined in the land management plan amendments and the WY EO represents the best science available for conserving sage-grouse. Although the USFWS does not require that candidate species be analyzed in a BA for proposed actions, NPS policies require that they are considered. Because the greater sage-grouse has been identified as candidate species, it may eventually become proposed or listed, and there are advantages to addressing candidate species as though they were already proposed for listing. If the sage-grouse is not listed as a threatened species, it will be in part because the USFWS believes that are adequate regulatory mechanisms in the form of mitigations, stipulations, or conservation measures to ensure the birds' conservation. For these reasons, the greater sage-grouse is included in this BA and will be analyzed as appropriate. Determination categories for this BA for federal candidate species are defined below.

For the purposes of requesting technical assistance from the USFWS for the proposed action, the following language for candidate species effects determinations will apply:

Not likely to jeopardize the continued existence (NLJCE) — The appropriate determination for proposed and candidate species when the action is not expected, directly or indirectly, to appreciably reduce the likelihood of survival and recovery of the species by reducing reproduction, numbers, or distribution.

Likely to jeopardize the continued existence (LJCE) —The appropriate determination for proposed and candidate species when the action is expected, directly or indirectly, to appreciably reduce the likelihood of survival and recovery of the species by reducing reproduction, numbers, or distribution. A jeopardy call is made at the species level.

Conservation Measures

Implementation of the following conservation measures or best management practices are aimed at avoiding or minimizing impacts to threatened, endangered, proposed, and candidate species. In addition, application of these measures will provide regulatory certainty and address conservation concerns related to greater sage-grouse. Mitigation measures for other resources areas are listed on pages 71-82 in the EA.

- In accordance with the ESA, Section 7 consultation with the USFWS will occur prior to implementation of actions proposed in this EA. The park will implement all additional conservation measures that result from consultation.
- Inform construction supervisors and workers about the potential for special status species in or near the work area. Contract provisions will require stopping construction activities if a special status species is discovered in the project area, until park staffs reevaluate the project. Modification of the contract could occur to include protective measures deemed necessary to protect species or habitats.

- All project activities will comply with GRTE's Superintendent's Compendium (2015 and as updated) regulations related to food storage and park recommended best management practices for living and working in bear country. Bear "attractants" include food, drinks, garbage, cooking utensils, dirty / soiled pots/pans/plates, stoves, grills (charcoal or gas), empty or full coolers, storage containers with food or previously holding food (except approved bear resistant canisters), beverage containers, pet food/bowls, and any odorous item that may attract a bear such as toiletries.

    - All staff (NPS, VIPs, Contractors, etc.) working or occupying historic properties must ensure that all bear attractants are attended at all times. All unattended attractants must be stored securely inside a building, a bear resistant food storage locker (if available), or in a hard sided vehicle with doors locked and windows closed or disposed of properly in a bear-resistant garbage receptacle.
    - At backcountry historic properties all unattended attractants must be secured inside the historic structures or stored in an Interagency Grizzly Bear Committee (IGBC) approved portable bear resistant food storage canisters. Backpacks and/or daypacks containing unsecured attractants (i.e. not in a canister) may not be left unattended.
    - All personnel working on any of the historic properties must attend a briefing on proper food/attractant storage and bear safety presented by a qualified member of the park's bear management team. Contact the park's Bear Management Office at least one week prior to the desired start date to schedule a briefing.
    - All human-bear conflicts must be reported to Teton Interagency Dispatch Center immediately (307 739-3301). All bear sightings must be reported to the park's bear management office within 24 hours.
    - Provide for proper storage and disposal of materials that may be toxic to bears. All potentially toxic attractants, including petroleum products, must be stored or disposed

of in such a way that they are not available to bears (see Best Practices for petroleum products below).

    - Construction debris must be separated from human food garbage and disposed of in dumpsters that can be closed at night. No open dumpsters are allowed. (A request for an exception to the open dumpster stipulation can be made to the project manager who will consult with the park's wildlife branch to determine if such use will be authorized. The use of open dumpsters will only be considered if the following conditions can be met: the open dumpster must be stored behind a locked fence out of view and inaccessible to the public and will be labeled construction debris only).

- All project activities occurring within the Grizzly Bear Primary Conservation Area (PCA) will comply with habitat standards in the Final Conservation Strategy for the Grizzly Bear in the Greater Yellowstone Area (2007). To the extent practicable, projects occurring in occupied grizzly bear habitat outside of the PCA will conform to standards outlined in the Final Conservation Strategy (2007).
    - Manage developed sites and open road density at 1998 levels within each Bear Management Unit (BMU) subunit.
- To minimize the potential for human-grizzly bear interactions during the elk calving season and/or fall elk harvest season the following closures/timing restrictions will be implemented:
    - Seasonal park housing on Mormon Row will not be occupied during the Elk Reduction Program; and
    - Closure of the Snake River/Cottonwood Creek riparian area north of the 4 Lazy F developed area will be adaptively implemented, as needed, during the elk calving season (generally 15 May – 15 July) of each year. Park biologists will monitor elk and human use to determine appropriate dates and boundaries for this use restriction.
- All project activities will adhere to all relevant conservation measures outlined in the Lynx Conservation Assessment and Strategy (revised 2013)
    - Harvest of trees on-site for preservation or maintenance activities at historic properties within Lynx Analysis Units and/or in Critical Lynx Habitat will not be authorized without further review and analysis in consultation with USFWS. (See Figures 13 and 18 for affected properties)
- All project activities will comply with GRTE's Superintendent's Compendium (2015 and as updated) closures implemented around wolf den/rendezvous sites. Should a den or rendezvous site not previously known be found within 1 mile of a historic property a seasonal area closure would be implemented as needed, typically between 15 April and 15 August.
- All project activities will comply with the Migratory Bird Treaty Act of 1918 (MBTA; 16 U.S.C. 703) and Executive Order 13186. Under the MBTA, it is illegal to "take" migratory birds, their eggs, feathers or nests. "Take" is defined (50 CFR 10.12) to include "pursuing, hunting, shooting, wounding, killing, trapping, capturing, or collecting." The MBTA does not distinguish between "intentional" and "unintentional" take. Migratory birds include songbirds, waterfowl, shorebirds, and raptors. All project activities must also comply with GRTE's Superintendent's

Compendium (2015 and as updated) seasonal closure regulations for raptors, trumpeter swans, and great blue herons.

1. In general, park biologists recommend that to prevent impacts to nesting migratory birds and to avoid project delays, schedule work involving vegetation clearing, tree felling, fill placement, excavation, or other construction activities for outside of the nesting season. The breeding season is generally as follows for migratory songbirds (1 May to 1 August), or as dictated by nesting chronology.
2. Before commencement of any activities that involve removal or manipulation of vegetation during the breeding season (see above) contact park biologists to schedule a survey for nesting birds. Surveys must be conducted by qualified personnel before tree removal and/or ground disturbing activities begin. To the extent possible, schedule surveys prior to 1 March the year of the proposed work.
3. Before commencement of any activities that involve removal of large trees during the breeding season contact park biologists to schedule a survey for nesting birds. Surveys must be conducted by qualified personnel before tree removal and/or ground disturbing activities begin. To the extent possible, schedule surveys prior to 1 March the year of the proposed work.
4. Work must be completed within two weeks of the nesting bird survey. If this is not possible, another survey must be scheduled with park biologists.
5. Active bird nests located during surveys will be protected until nestlings fledge or the nest fails. Park biologists will monitor nests, determine mitigations, and provide updates to the project manager on nesting status.
6. Continue to implement seasonal closures (typically April 1 to September 1, as guided by biologists monitoring site use and occupancy) within ¼ mile of any raptor (Whittington and Allen 2008), trumpeter swan, or great blue heron nests and prohibit work on or occupancy or occupancy of historic properties historic properties within the closures while they are in effect.
7. It is the responsibility of the cultural resources staff/project manager to report any nesting bird activity in the vicinity of historic properties undergoing work to park biologists in a timely way so that they may assess whether additional mitigation measures are needed to comply with the MBTA.

- Eagles are protected under the Bald and Golden Eagle Protection Act of 1940 (16 U.S.C. 668-668c) and the MBTA. Project activities must not lead to the take of bald or golden eagles. The Bald and Golden Eagle Protection Act defines “take” to include disturbing birds.

    - Continue to implement seasonal closures (typically February 1 to August 15) of ½ mile (GYBEMP 1996, Whittington and Allen 2008) or as otherwise posted around occupied bald eagle nests and prohibit work on or occupancy of historic properties within the closures while they are in effect.
    - It is the responsibility of the cultural resources staff/project managers to report any eagle activity in the vicinity of historic properties undergoing work to park biologists in a

timely way so that they may assess whether additional mitigation measures are needed to comply with the BGEPA and MBTA.

- All project activities must comply with GRTE's Superintendent's Compendium (2015 and as updated) closure regulations for sage-grouse leks, and to the extent practicable all project activities occurring within occupied sage-grouse habitat within the sage-grouse core area will apply the management direction and conservation measures outlined in Wyoming Governor's Executive Order 2015-4 and the Upper Snake River Basin Sage-Grouse Conservation Plan (2014).

    1. Continue to implement a seasonal closure (generally March 15–June 1) around the Moulton sage-grouse lek.
    2. Prohibit removal of shrub-steppe habitat within 4 miles of an occupied sage-grouse lek to protect breeding, nesting, and brood rearing habitat for sage-grouse in the park (generally between March 15 and June 30, or as recommended by park biologists monitoring sage grouse). Exceptions may be made on a limited and case–by-case basis.
    3. Limit new permanent facilities (including, but not limited to roads, buildings, well pads, pipelines, leach fields, and vegetation treatments) within 0.6 miles of active sage-grouse lek areas.
    4. Restrict maintenance and rehabilitation activities between the hours of 6:00 p.m. and 8:00 a.m. at historic structures within 4 miles of active leks/nesting complexes (generally from March 15–June 30, or as recommended by park biologists).
    5. Limit noise to less than 10 decibels above ambient measures from 6:00 p.m. to 8:00 a.m. at the perimeter of leks (generally between March 1-May 15, or as recommended by park biologists.)
    6. Efforts will be made to minimize disturbance to mature sagebrush cover in identified winter concentration areas.
    7. Power or other utility lines should be buried when possible. If such lines cannot be buried, lines should be raptor proofed and located at least 0.6 miles from the perimeter of occupied sage-grouse leks. New transmission lines should be authorized or conducted only when it can be demonstrated that the activity will not cause declines in sage-grouse populations. Construction of new transmission lines should occur July 1-March 14. Power lines should be placed along or adjacent to existing long-term linear disturbance features whenever possible.
    8. Park biologists will use the Wyoming Density and Disturbance Calculation Tool (DDCT) to assess activities that involve vegetation or ground disturbance within the sage-grouse core area that correspond with recommended mitigations for sage-grouse and their habitat.

- Prohibit construction activities before 8 a.m. and after 6 p.m. during the elk rutting and migration period (typically from September 1 to December 1, or as recommended by park biologists).

Analysis of Proposed Actions and Effects

Snake River Land Company Office and Residence

The preferred alternative proposes the following actions at the Snake River Land Company Office and Residence (see information starting on page 64 of the EA for more details):

- The Snake River Land Company Office and Residence would be rehabilitated for use as the Buffalo Fork Ranger Station. This use could be year-round. An estimated 6-space parking area would be formalized. The existing dirt drive and turnaround would be maintained and possibly widened somewhat to accommodate snow plows and to better enable river rangers to maneuver vehicles with trailers on this site. An interpretive exhibit would be installed in or outside the office to accommodate interested visitors and provide an opportunity to understand and appreciate the historic events and the importance of philanthropy in the creation of Grand Teton National Park. Visitor and employee access would meet Architectural Barriers Act accessibility standards (ABAAS). Utilities would be updated, including power, telecommunications, and water and wastewater systems. Ground and vegetation disturbance would affect an estimated 2000 to 4000 sf (0.09 acre) to replace the existing well house with one ~25'x25'(625sf), replace piping, and, likely, move the existing turnaround and part of the two-track leading to the well house farther away from the riverbank and floodplain, and restore the abandoned disturbed areas. A fire suppression and/or detection system would be considered and reviewed and could be installed in the building. A fire escape would be constructed on the north side of the building to facilitate emergency egress from the second floor. A small, non-contributing shed would be removed from the district.

Impact Analysis and Effects Determination

Canada Lynx – The Snake River Land Company Office and Residence falls within the Two Ocean LAU. The vegetation surrounding the buildings is classified as lowland riparian and is mapped as suitable lynx habitat; however, the area is not within designated Critical Habitat for lynx. Few, if any, lynx are thought to occur in the project area. Lynx prefer upper elevation coniferous forests in cool, moist vegetation types, particularly those that support snowshoe hares. Lynx presence has been documented east of the project area near Togwotee Pass and a dispersing lynx from the Colorado reintroduction spent time along the west shore of Jackson Lake, but there have been no reports of lynx in the project area.

Potential direct effects of the proposal include mortality or disturbance of lynx due to activity associated with renovation and use of the structures. The project area is directly adjacent to a low speed, high volume segment of highway 89 just south of the park's Moran entrance and its intersection with a moderate speed, high volume segment of highway 26/287. The speed limit along highway 89 (also called the North Park Road) in this location is 25 mph. Since vehicles are either exiting or entering the entrance station they are generally traveling at a slow rate of speed, consequently, the potential for a vehicle strike with a lynx is very low. Few, if any, wildlife-vehicle collisions for any species have been recorded along this stretch of road.

Lynx may be temporarily displaced from the project area by rehabilitation and construction activity. Since the proposed actions would occur in an area with high levels of high human use, movements of lynx near the project site are not anticipated. While there is always the potential

that there could be some direct or indirect impacts to lynx, these impacts are expected to be short-term and insignificant.

The actions proposed under the preferred alternative at the Snake River Land Company Office and Residence ***may affect*** Canada lynx because:

- The project area occurs within the Two Ocean Lynx Analysis Unit and the vegetation in the vicinity is mapped as suitable lynx.

The project ***is not likely to adversely affect*** Canada lynx because:

- The proposed action would not increase the footprint of the developed site or remove mapped lynx habitat, except potentially within 200 feet of the existing structures (within the wildland urban interface) as needed for renovation, maintenance, removal of hazard trees, or for fire protection;
- The project site is less than ¼ mile from a busy roadway with significant human activity, especially May - October. Lynx may travel north-south along the Snake River corridor west of the project area, but given human activity levels, the lack of understory attributes that would support snowshoe hares, and the lack of large downed woody debris that would provide denning habitat it is unlikely they would spend a great deal of time there;
- Mortality risk to lynx is not expected to increase as a result of the proposed activities at the Snake River Land Company Office and Residence;
- The project will meet the standards and guidelines identified in the revised Lynx Conservation Assessment and Strategy (Lynx Bio Team 2013).

Gray Wolf – The project area falls within the home ranges of 3 wolf packs. These packs regularly use the area surrounding the administrative site for travel and foraging. Implementation of conservation measures would minimize disturbance around den and rendezvous sites, minimizing stress to adult wolves and reducing the chances that wolf pups would be prematurely relocated or abandoned. Potential direct effects of the proposal include disturbance of wolves due to activity associated with renovation and use of the structures or injury or mortality resulting from vehicle strikes with construction vehicles. Vehicle strike loses are highly unlikely because the project area occurs close to the intersection of highway 26/287 and 191 just south of the Moran entrance station. Speed limits in this area are 25 mph and because vehicles are exiting or entering the entrance station they are generally traveling at a slow rate of speed.

The actions proposed under the preferred alternative at the Snake River Land Company Office and Residence ***may affect*** gray wolves because:

- The project overlaps the home ranges of the Snake River, Phantom Springs and Huckleberry wolf packs; and
- Activities would occur at a time when wolves could be using the area.

The project ***is not likely to adversely affect*** gray wolves because:

- The proposed action would meet recovery plan direction for protection of den and rendezvous sites, given implementation of wolf related mitigations/conservation measures;
- Impacts to elk, the primary prey of wolves, are not anticipated as a result of this action; and
- Mortality risk to wolves is not expected to increase as a result of the proposed activities at the Snake River Land Company Office and Residence.

Greater Sage-Grouse- Two sage-grouse leks (RKO and Spread Creek) occur within 5 miles of the project area, although the historic property itself does not occur within sagebrush habitat and sage-grouse are unlikely to occur in the project area. Nevertheless, noise associated with renovation activities could disrupt sage-grouse breeding activities if noise levels reach 10 dBA above ambient levels as measured at the perimeter of the lek during the breeding season. The RKO lek is approximately 5 miles southwest of the project area and the Spread Creek lek is roughly 4 miles to the southeast. Given the distance and the fact that that there is terrain and forested vegetation between the project area and the leks, it is unlikely that noise from the project would be 10 dBA above ambient levels at the lek perimeter.

The actions proposed under the preferred alternative at the Snake River Land Company Office and Residence could negatively affect greater sage-grouse because:

- The project occurs within 5 miles of the two sage-grouse leks.

The project ***is not likely to jeopardize the continued existence of*** the greater sage-grouse because:

- Given implementation of mitigation/conservation measures for sage-grouse, the project would apply best practices such as guidance outlined in the State of Wyoming Executive Order and ensure adequate protections for sage-grouse;
- The project does not occur within the sage-grouse core area or occupied sage-grouse habitat, and sage-grouse are unlikely to occur in the project area because vegetation types they prefer are not present;
- The project does not involve removal or alteration of sagebrush habitat;
- Any noise associated with renovation activities would be dampened by the terrain, forested vegetation, and distance between the project area and the nearest leks (forested ridges sit between the property and the leks);
- The actions proposed would not directly or indirectly reduce reproduction, numbers, or distribution of sage-grouse and therefore would not reduce appreciably the likelihood of survival or recovery of the species.

Grizzly Bear – The project area is outside of the grizzly bear recovery zone/primary conservation area, but is within occupied grizzly bear habitat. Grizzly bears are regularly observed in areas adjacent to the existing administrative site (e.g. in the Snake River and Buffalo Fork river corridors and adjacent areas), but they are unlikely to occur within the existing development because of existing human use levels. The facility currently serves as an

administrative site that sees low to moderate use in the summer by river rangers and limited to no use in the winter.

All personnel (employees, contractors, volunteers groups, etc.) working on the building renovation would be required to attend a grizzly bear briefing session and abide by food storage regulations. The briefing session focuses on proper food and garbage storage, how to avoid disturbing or encountering bears, and how to minimize unavoidable effects or encounters. Food storage and disposal procedures at the construction site and completed ranger station would be strictly enforced to minimize the potential for bears to obtain food. Construction activities would occur within the existing development footprint and would not result in loss of grizzly bear habitat. By providing grizzly bear briefing sessions for construction personnel and strictly enforcing food storage regulations during and after renovation, the potential direct and indirect effects on grizzly bears and would be minimized. During construction/renovation activities there could be short-term displacement of bears using the Snake River as a travel corridor. Any displacement impacts are expected to be insignificant as bears readily travel through/around the area under current conditions and no additional loss of habitat is anticipated. During construction/renovation, increased risk of mortality due to collisions with construction related vehicles is not expected because the project area occurs close to the intersection of highway 26/287 and 191 just south of the Moran entrance station. Speed limits in this area are 25 mph and because vehicles are exiting or entering the entrance station they are generally traveling at a slow rate of speed.

An increase in human use levels is expected once the buildings are renovated as the site will serve as the Buffalo Fork Ranger Station and will be an interpretive destination. This could result in increased bear-human conflicts, but with strict enforcement of food storage regulations the likelihood is low. If grizzly bears began frequenting and remaining within the project area, they would be hazed off the site. To date, there have been no grizzly-bear human conflicts related to park developments (housing area, entrance station, boat landing, river cache) in the greater Moran area and an increase in conflicts is not anticipated as a result of implementing this project.

The actions proposed under the preferred alternative at the Snake River Land Company Office and Residence ***may affect*** the grizzly bear because:

- The project occurs within occupied grizzly bear habitat and grizzly bears regularly travel through or forage in areas adjacent to the project area;
- The project occurs within a riparian corridor, a habitat type that is important to grizzly bears as linkage habitat facilitating travel from one area to another;
- Renovation activities would occur at a time when grizzly bears could be present;
- Use of the renovated ranger station would occur year-round and grizzly bears could be present during the non-winter months.

The project ***is not likely to adversely affect*** the grizzly bear because:

- The risk of human-grizzly bear conflicts is not expected to increase, given implementation of food storage related mitigations/conservation measures;

- Given the existing development and human presence, the project area is not considered an important foraging area for grizzly bears and renovation and use of the existing structures will not degrade or destroy key grizzly bear food sources;
- Renovation and use of the existing buildings is not likely to impede grizzly bear use of the Snake River bottom as a travel corridor; and
- The project area is outside of the recovery zone/primary conservation area and would not increase road/trail densities or developments above the 1998 baseline.

Canada Lynx Critical Habitat- The actions proposed under the preferred alternative at the Snake River Land Company Office and Residence ***will not destroy or adversely modify*** designated Critical Habitat for Canada lynx because:

- No designated Critical Habitat for lynx occurs in this area.

Lucas Homestead/Fabian Place

The preferred alternative proposes the following actions at the Lucas Homestead/Fabian Place (see information starting on page 58 of the EA for more details):

- The Lucas Homestead/Fabian Place would be interpreted primarily through non-personal interpretation.
- Preservation maintenance would occur on the buildings, the small parking area would be formalized, though not expanded, and signs would be installed at the nearby Glacier View turnout off the Teton Park Road, directing visitors to the district.
- Additionally, a bike rack and signs would be installed at the parking area adjacent to the multi-use pathway, and benches would be placed on the porches of the buildings.
- This location would be added as a visitor destination in the park and included in visitor orientation information along with other destinations.
- Additional on- and off-site interpretive information could be available.
- In order to best accommodate pedestrian access and make the site ABAAS accessible, the footbridge over Cottonwood Creek would be widened from 3’ to 5’ and hand rails would be installed. To the west, the asphalt remains of a footbridge that crossed over an unnamed tributary of Cottonwood Creek would be removed and the footbridge would be replaced. Appropriately surfaced ABAAS trails to the primary buildings would also be installed. Utilities would not be installed or upgraded, and visitor use would remain pedestrian and occasional. A fire plan would be established based on the proximity to Cottonwood Creek. With the exception of trail improvement, this plan would require little to no ground disturbance and revegetation.

Impact Analysis and Effects Determination

Canada Lynx- The actions proposed under the preferred alternative at the Lucas Homestead/Fabian Place will have ***no effect*** on the Canada lynx because:

- The project area is <u>not</u> within a Lynx Analysis Unit, mapped lynx habitat, or within an important linkage zone.

Gray Wolf – The project area falls within the home ranges of 1 wolf pack. This pack occasionally traverses the area around the Lucas Homestead/Fabian Place while in search of prey. There is no known den or rendezvous site within 1 mile of the project area. However, should a den/rendezvous site be found nearby, implementation of conservation measures would minimize disturbance thereby minimizing stress to adult wolves and reducing the chances that wolf pups would be prematurely relocated or abandoned. The project area serves as summer range for elk, the primary prey of wolves. Preservation activities could displace the elk that forage in the adjacent meadows affecting elk predation opportunities for wolves. Similarly wolves may avoid the area while work on the buildings is ongoing. However, summer range is not limiting for elk and they would likely move to adjacent areas where wolves could also hunt. Any displacement of wolves or their prey would be limited to the immediate vicinity of the site and would be of negligible concern. Proposals at Lucas Homestead/Fabian Place to improve parking and access and highlight the area as a visitor destination would likely lead to increased visitation of the area. Currently use levels are low. Wolves and their prey may be temporarily displaced from the area when people are present, but again this should not affect wolves' ability to hunt or travel.

The actions proposed under the preferred alternative at the Lucas Homestead and Fabian Place ***may affect*** gray wolves because:

- The project overlaps the home range of the Lower Gros Ventre wolf pack; and
- Activities would occur at a time when wolves could be using the area.

The project ***is not likely to adversely affect*** gray wolves because:

- The proposed action would meet recovery plan direction for protection of den and rendezvous sites, given implementation of wolf related mitigations/conservation measures as necessary;
- Impacts to elk, the primary prey of wolves, are anticipated to be negligible as a result of this action; and
- Mortality risk to wolves is not expected to increase as a result of the proposed activities at the Lucas Homestead/Fabian Place.

Greater Sage-Grouse- One sage-grouse lek (Timbered Island) occurs within 4 miles of the project area. Noise associated with renovation activities could disrupt sage-grouse breeding activities if noise levels reach 10 dBA above ambient levels as measured at the perimeter of the lek during the breeding season. The Timbered Island lek is approximately 2 miles northwest of the project area. Given the distance and the fact that that there is terrain and forested vegetation between the project area and the lek, it is unlikely that noise from the project would be 10 dBA above ambient levels at the lek perimeter.

The actions proposed under the preferred alternative at the Lucas Homestead/Fabian Place could negatively affect the greater sage-grouse because:

- The project occurs within occupied sage-grouse habitat and within 4 miles of the Timbered Island sage-grouse lek.

The project ***is not likely to jeopardize the continued existence of*** the greater sage-grouse because:

- The project would apply best practices such as guidance outlined in the State of Wyoming Executive Order and ensure adequate protections for sage-grouse;
- The preservation work on the structures does not involve removal or alteration of sagebrush habitat;
- Any removal or alteration of sage-brush habitat for delineation of trails would be reviewed using the Wyoming Density and Disturbance Calculation Tool;
- Any noise associated with renovation activities would be dampened by the terrain, forested vegetation, and distance between the project area and the lek (Timbered Island sits between the project area and the Timbered Island lek); and
- The actions proposed would not directly or indirectly reduce reproduction, numbers, or distribution of sage-grouse and therefore would not reduce appreciably the likelihood of survival or recovery of the species.

Grizzly Bear – The project area is outside of the grizzly bear recovery zone/primary conservation area, but is within occupied grizzly bear habitat. Grizzly bears are occasionally observed along Cottonwood Creek and in the forested areas adjacent to the Lucas Homestead/Fabian Place. The site is currently unoccupied and receives low levels of visitation year-round. Proposed actions to improve parking and access and highlight the area as a visitor destination would likely lead to increased visitation of the area.

All personnel (employees, contractors, volunteers groups, etc.) working on the building preservation maintenance would be required to attend a grizzly bear briefing session and abide by food storage regulations. The briefing session focuses on proper food and garbage storage, how to avoid disturbing or encountering bears, and how to minimize unavoidable effects or encounters. Food storage and disposal procedures at the construction site and completed ranger station would be strictly enforced to minimize the potential for bears to obtain food. Preservation activities would occur within the existing homestead footprint and would not result in loss of grizzly bear habitat. By providing grizzly bear briefing sessions for construction personnel and strictly enforcing food storage regulations during and after renovation, the potential direct and indirect effects on grizzly bears and would be minimized. While construction related activities (preservation and maintenance on the existing buildings, bridge construction, access road and parking lot delineation and hardening) are being performed there could be short-term displacement of bears traveling or foraging in the area. Any displacement impacts are expected to be minor as bears can readily travel through/around the area under current conditions and no additional loss of habitat is anticipated. An increased risk of mortality due to collisions with construction related vehicles is not expected because the project area occurs along a stretch of the Teton Park Road where the speed limit is 45 mph. Visibility along the road in this area is good to very good because the habitat is adjacent to the road is mainly sagebrush or sagebrush with scattered trees.

An increase in human use levels is expected, once the buildings are preserved as the site will be listed in park educational materials as an interpretive destination. This could result in

increased bear-human conflicts, but with strict enforcement of food storage regulations the likelihood is low. If grizzly bears began frequenting and remaining within the project area, they would be hazed off the site or the site would be closed until bears have left the area. To date, there have been no grizzly-bear human conflicts in this area.

The actions proposed under the preferred alternative at the Lucas Homestead/Fabian Place ***may affect*** the grizzly bear because:

- The project occurs within occupied grizzly bear habitat and grizzly bears are occasionally travel through or forage in areas adjacent to the project area;
- Preservation, maintenance or construction activities would occur at a time when grizzly bears could be present; and
- Visitor use of the site would occur year-round and grizzly bears could be present during the non-winter months.

The project ***is not likely to adversely affect*** the grizzly bear because:

- The risk of human-grizzly bear conflicts is not expected to increase, given that no new picnic or trash facilities are included in the proposal and there would be implementation and strict enforcement of food storage related mitigations/conservation measures;
- Given the existing development and human presence, the project area is not considered an important foraging area for grizzly bears and renovation and use of the existing structures will not degrade or destroy key grizzly bear food sources;
- Preservation of the existing buildings is not likely to impede grizzly bear use of the Cottonwood Creek as a travel corridor, although they may be temporarily displaced while work is ongoing;
- The project area is outside of the recovery zone/primary conservation area and would not increase road/trail densities or developments above the 1998 baseline.

Canada Lynx Critical Habitat - The actions proposed under the preferred alternative at the Lucas Homestead/Fabian Place ***will not destroy or adversely modify*** designated Critical Habitat for Canada lynx because:

- No designated Critical Habitat for lynx occurs in this area.

Beaver Creek #10 and Manges Cabin

The preferred alternative proposes the following actions at Beaver Creek #10 within the Beaver Creek Administrative site (see information starting on page 55 of the EA for more details):

- Beaver Creek #10 would be rehabilitated and adaptively reused for an administrative park use such as storage, office space or housing.
- Depending on the use chosen, utilities could be updated. Regardless of the chosen use, the historic exterior would be rehabilitated by reducing the existing parking area and restoring several spaces to native vegetation, and restoring elements of the historic landscape.

- Several non-historic trees would be removed to aid fire mitigation efforts and reduce potential risk to the structure.
- Fire detection and suppression systems would be considered and reviewed and could be provided depending on the selected use.
- The building may also be made ABAAS accessible depending on the selected use.
- Non-personal interpretive media would be provided as time and funding allow.

The preferred alternative proposes the following actions at the Manges Cabin (see information starting on page 61 of the EA for more details):

- The cabin would be maintained for use as park storage.
- Frequent in-kind preservation efforts would occur in order to maintain the current condition of the building and prevent deterioration. Public access would continue to be limited.
- The cabin would remain visible from the Teton Park Road and current signage near the road that interprets the building would continue to be maintained.
- Fire mitigation would continue to occur around the cabin. The interior would not be improved.

Impact Analysis and Effects Determination

Canada Lynx- The actions proposed under the preferred alternative at Beaver Creek #10 and the Manges Cabin will have ***no effect*** on the Canada lynx because:

- The project area is <u>not</u> within a Lynx Analysis Unit, mapped lynx habitat, or within an important linkage zone.

Gray Wolf – The project area falls within the home ranges of 1 wolf pack. This pack traverses the area near Beaver Creek and Manges Cabin (especially the Cottonwood Creek corridor and adjacent habitats) while in search of prey, but given the high levels of human activity associated with the sites they generally avoid the project areas themselves. There is no known den or rendezvous site within 1 mile of the project area. However, should a den/rendezvous site be found nearby, implementation of conservation measures would minimize disturbance thereby minimizing stress to adult wolves and reducing the chances that wolf pups would be prematurely relocated or abandoned. The project area serves as summer and fall range for elk, the primary prey of wolves. Rehabilitation and maintenance activities could displace the elk that forage in the area affecting elk predation opportunities for wolves. Similarly wolves may avoid the area while work on the buildings is ongoing. However, summer and fall range is not limiting for elk and they would likely move to adjacent areas where wolves could also hunt. Any displacement of wolves or their prey would be limited to the immediate vicinity of the site and would be of negligible concern.

The actions proposed under the preferred alternative at Beaver Creek #10 and the Manges Cabin ***may affect*** gray wolves because:

- The project overlaps the home range of the Lower Gros Ventre wolf pack; and
- Activities would occur at a time when wolves could be using the area.

The project ***is not likely to adversely affect*** gray wolves because:

- The proposed action would meet recovery plan direction for protection of den and rendezvous sites, given implementation of wolf related mitigations/conservation measures as necessary;
- Impacts to elk, the primary prey of wolves, are anticipated to be negligible as a result of this action; and
- Mortality risk to wolves is not expected to increase as a result of the proposed activities at Beaver Creek #10 or the Manges Cabin.

Greater Sage-Grouse- One sage-grouse lek (Timbered Island) occurs within 4 miles of the project area. Noise associated with renovation activities could disrupt sage-grouse breeding activities if noise levels reach 10 dBA above ambient levels as measured at the perimeter of the lek during the breeding season. The Timbered Island lek is approximately 3 miles northwest of the project area. Given the distance and the fact that that there is terrain and forested vegetation between the project area and the lek, it is unlikely that noise from rehabilitation and maintenance activities in the project areas would be 10 dBA above ambient levels at the lek perimeter.

The actions proposed under the preferred alternative at Beaver Creek #10 and the Manges Cabin could negatively affect the greater sage-grouse because:

- The project occurs within occupied sage-grouse habitat and within 4 miles of the Timbered Island sage-grouse lek.

The project ***is not likely to jeopardize the continued existence of*** the greater sage-grouse because:

- The project would apply best practices such as guidance outlined in the State of Wyoming Executive Order (State of Wyoming 2015) and ensure adequate protections for sage-grouse;
- The project does not involve removal or alteration of sagebrush habitat;
- Any noise associated with renovation activities would be dampened by the terrain, forested vegetation, and distance between the project area and the lek (Timbered Island sits between the project area and the Timbered Island lek); and
- The actions proposed would not directly or indirectly reduce reproduction, numbers, or distribution of sage-grouse and therefore would not reduce appreciably the likelihood of survival or recovery of the species.

Grizzly Bear – The project area is outside of the grizzly bear recovery zone/primary conservation area, but is within occupied grizzly bear habitat. Grizzly bears have been observed in the vicinity of both properties and are known to use Cottonwood Creek just to the east as a movement corridor. Beaver Creek #10 has been vacant since 2005 when it was abandoned as the offices for the Division of Science and Resource Management. The building occurs with the existing development footprint of the Beaver Creek housing and storage area.

This area provides housing for permanent and seasonal NPS employees' year-round, office space for the trail crew, and storage facilities for a wide range of park work groups. The Manges Cabin is used for storage as part of the trail crew's horse operation. Human use levels at the cabin are not expected to change as a result of the proposed project.

All personnel (employees, contractors, volunteers groups, etc.) working on rehabilitation and maintenance activities at both sites would be required to attend a grizzly bear briefing session and abide by food storage regulations. The briefing session focuses on proper food and garbage storage, how to avoid disturbing or encountering bears, and how to minimize unavoidable effects or encounters. Food storage and disposal procedures at the construction site and completed ranger station would be strictly enforced to minimize the potential for bears to obtain food. Construction activities would occur within the existing development footprint and would not result in loss of grizzly bear habitat. By providing grizzly bear briefing sessions for construction personnel and strictly enforcing food storage regulations during and after renovation, the potential direct and indirect effects on grizzly bears and would be minimized. During construction/rehabilitation activities there could be short-term displacement of bears of any bears in the vicinity. Any displacement impacts are expected to be insignificant as bears readily travel through/around the area under current conditions and no additional loss of habitat is anticipated. During construction/renovation, increased risk of mortality due to collisions with construction related vehicles is not expected because the project is just off of the Teton Park Road (TPR) close to where the speed limit is reduced for a high congestion area. The speed limit along the TPR in this area is 45 mph, but vehicles are slowed to 30 mph just north of the Beaver Creek entrance. Because vehicles are either entering or just exiting the reduced speed area, they are generally traveling at a slow rate of speed.

Depending on the final use of Beaver Creek #10, human use levels of the area could increase. However, use levels are already considered high as the developed site contains housing for park employees, offices and park storage that are accessed on a daily basis. The risk of conflicts with grizzly bears is not expected to increase as a result of this action.

The actions proposed under the preferred alternative at Beaver Creek #10 and the Manges Cabin ***may affect*** the grizzly bear because:

- The project occurs within occupied grizzly bear habitat and grizzly bears are known to travel through or forage in areas adjacent to the project area;
- The proposed activities would occur at a time when grizzly bears could be present; and
- Use of the facilities would occur seasonally or year-round and grizzly bears could be present during the non-winter months.

The project ***is not likely to adversely affect*** the grizzly bear because:

- The risk of human-grizzly bear conflicts is not expected to increase, given implementation of and strict enforcement of food storage related mitigations/conservation measures;

- Given the existing development and human presence, the project area is not considered an important foraging area for grizzly bears and renovation and use of the existing structures will not degrade or destroy key grizzly bear food sources;
- Preservation and rehabilitation of the existing buildings is not likely to impede grizzly bear use of the area including the use of Cottonwood Creek as a travel corridor, although they may be temporarily displaced while work is ongoing;
- The project area is outside of the recovery zone/primary conservation area and would not increase road/trail densities or developments above the 1998 baseline.

Canada Lynx Critical Habitat - The actions proposed under the preferred alternative at Beaver Creek #10 or the Manges Cabin ***will not destroy or adversely modify*** designated Critical Habitat for Canada lynx because:

- No designated Critical Habitat for lynx occurs in this area.

4 Lazy F Dude and Bar BC Dude Ranches

The preferred alternative proposes the following action at the 4 Lazy F Dude Ranch (see information starting on page 48 of the EA for more details):

- Rehabilitate existing sleeping cabins for use as seasonal housing from approximately May to October annually. Occupants would share kitchens in the main lodge and the former caretaker's house. The cabins would accommodate an estimated 15-17 seasonal employees.
- Upgrade two rooms in the main lodge to comply with the Architectural Barriers Act accessibility standards (ABAAS).
- Formalize existing parking spaces near the barn, the caretaker's house, and at the main lodge. Parking would be limited to these three areas, and would not be allowed at the individual cabins in the main lodge area.
- Fire detection and suppression systems would be considered and reviewed and could be provided.
- Utilities, including power, communications, sewer, and water, would be updated and maintained. The water distribution lines would be connected to a new centralized distribution system in Moose. Because use would be seasonal, required road maintenance would be minimal. No snow plowing would be required except possibly to open up the buildings each spring; snow supports would continue to be installed and removed annually. For safety, pullouts would be constructed along the narrow access road to allow vehicles coming from the opposite direction to pass. The historic landscape would be retained and disturbed areas would be revegetated. Because this property is located in rich, riparian habitat and next to a wild and scenic-designated river, careful attention would be paid to ensure that residents are being sensitive to natural and cultural resources in the area and the values for which the river and the ranch were designated.
- Non-personal interpretive media would be increased as time and funding allow.

The preferred alternative proposes the following actions at the Bar BC Dude Ranch (see information starting on page 53 of the EA for more details).

- Of the 34 contributing buildings
    - 24 would be stabilized using in-kind replacements;
    - 3 would be more extensively stabilized to retain their form, which would require wholesale replacement of original materials; and
    - 7, those in the poorest condition and with lowest integrity and significance (shaded in Figure 5 below), would be allowed to decay, with some useable materials recycled for preservation work on other Bar BC structures. In addition, some elements of the historic landscape would be restored.
- Property would continue to be used as an architectural conservation science outdoor laboratory, with some visitation by members of the general public arriving on foot or horseback or by boat.
- The small parking area on the bench above the district would be formalized, and the district itself would remain vehicle free except for occasional administrative access.
- Occasional maintenance would continue to occur on the Bar BC road.
- No utilities would be installed. Hazard tree removal would continue.
- The existing interpretive signs would be maintained and additional off-site non-personal interpretation could be provided to better highlight the dude ranch legacy.

Impact Analysis and Effects Determination

Canada Lynx – Although the actions proposed under the preferred alternative at the 4 Lazy F Dude and Bar BC Dude Ranches would not occur within a lynx analysis unit, mapped lynx habitat, or designated Critical Habitat for lynx, the area does serve as an important travel corridor for many wide-ranging wildlife species. To date, linkage areas for lynx have not been identified within Grand Teton National Park, but this area could facilitate east –west movements of lynx between the Tetons to the Mount Leidy Highlands and Gros Ventre area. The activity associated with rehabilitating and stabilizing the historic structures could disturb any lynx traveling through the area. Reoccupying the structures at 4 Lazy F could result in additional and longer term disturbance if residents recreate in the adjacent riparian corridors.

The actions proposed under the preferred alternative at 4 Lazy F and Bar BC dude ranches ***may affect*** Canada lynx because:

- The project occurs within an important wildlife movement corridor, although it is not within a lynx analysis unit or mapped lynx habitat; and
- Lynx could be present although the probability is low.

The project ***is not likely to adversely affect*** Canada lynx because:

- The project will meet the standards and guidelines identified in the revised Lynx Conservation Assessment and Strategy (Lynx Bio Team 2013).

Gray Wolf – The 4 Lazy F and Bar BC dude ranches are within the home range of the Lower Gros Ventre pack. This pack regularly uses the area within and surrounding the 4 Lazy F and Bar BC Dudes Ranches for travel and hunting. Because elk use of the riparian area within and adjacent

to these properties is high, the likelihood that wolves may be present is also high. Potential effects to wolves resulting directly from proposed activities could include: 1) injury or mortality resulting from vehicle strikes with work-related vehicles; 2) control actions to remove wolves that are food conditioned due to poor food storage or deliberate feeding; 3) displacement of wolf families from natal dens or traditional rendezvous sites associated with construction-related disturbance; and 4) temporary displacement or barriers to movement of adult wolves in the project area and disruption of predator-prey interactions due to noise, vehicles, and related human activity.

Mortality due to strikes with work related vehicles is not anticipated. Access to both properties is on gravel roads where conditions dictate that speeds are slow. In addition, visibility is generally good as the roads traverse relatively open habitats. Consequently, vehicle-strike deaths are highly unlikely (discountable). To date, no food-conditioned wolves have been removed or hazed within the park. Given implementation of and strict adherence to food storage regulations, no removals of wolves because of activities at Bar BC or 4 Lazy F is anticipated.

Wolves and/or elk could be displaced from the project area because of human presence and noise associated with rehabilitation and stabilization activities. Although construction activities may cause wolves to avoid the project area, they are unlikely to be displaced entirely from their territories or to significantly change their travel patterns. Although, wolves in Grand Teton appear to be generally tolerant of routine visitor traffic along roads, intensive activity could cause wolves to avoid the project areas or if activities take place near active natal dens or rendezvous sites could increase pup mortality due to displacement of adults or trigger relocation of dens. However, should a den/rendezvous site be found near the project sites, implementation of conservation measures would minimize disturbance thereby minimizing stress to adult wolves and reducing the chances that wolf pups would be prematurely relocated or abandoned.

The actions proposed under the preferred alternative at 4 Lazy F and Bar BC dude ranches ***may affect*** gray wolves because:

- The project overlaps the home range of the Lower Gros Ventre wolf pack and there is documented use of the area for hunting and traveling; and
- Activities would occur at a time when wolves could be using the area.

The project ***is not likely to adversely affect*** the gray wolf because:

- The proposed action would meet recovery plan direction for protection of den and rendezvous sites, given implementation of wolf related mitigations/conservation measures as necessary;
- Impacts to elk, the primary prey of wolves, are anticipated to be negligible as a result of this action; and
- Mortality risk to wolves is not expected to increase as a result of the proposed activities at the Bar BC or 4 Lazy F.

Greater Sage-Grouse – The project areas occur within the sage-grouse core area and within occupied sage-grouse habitat. Two sage-grouse leks occur within 4 miles of the project areas. Noise associated with stabilization and rehabilitation activities could disrupt sage-grouse breeding activities if noise levels reach 10 dBA above ambient levels as measured at the perimeter of the lek during the breeding season. The Timbered Island lek is approximately 2.5 miles northwest of Bar BC and the west activity center of the Moulton lek is roughly 2 miles from both Bar BC and 4 Lazy F. Given implementation of noise related mitigations, it is unlikely that noise from rehabilitation and maintenance activities in the project areas would be 10 dBA above ambient levels at the lek perimeters.

The actions proposed under the preferred alternative at 4 Lazy F and Bar BC dude ranches could negatively affect greater sage-grouse because:

- The project occurs within the sage-grouse core area and occupied sage-grouse habitat;
- The project occurs within 4 miles of two sage-grouse leks; and
- Activities will occur when sage-grouse could be present.

The project ***is not likely to jeopardize the continued existence of*** the greater sage-grouse because:

- The project would apply best practices such as guidance outlined in the State of Wyoming Executive Order (State of Wyoming 2015) and ensure adequate protections for sage-grouse;
- The preservation work on the existing buildings does not involve removal or alteration of sagebrush habitat;
- Any removal or alteration of sagebrush habitat related to utility work would be reviewed using the Wyoming Density and Disturbance Calculation Tool;
- Any noise associated with renovation activities would be dampened by the terrain, forested vegetation, and distance between the project area and the leks (forested ridges sit between the property and the leks);
- The actions proposed would not directly or indirectly reduce reproduction, numbers, or distribution of sage-grouse and therefore would not reduce appreciably the likelihood of survival or recovery of the species.

Grizzly Bear – The project area is outside of the grizzly bear recovery zone/primary conservation area, but is within occupied grizzly bear habitat. Bears have been documented in the south end of the park since 2007 and are known to occur in the immediate vicinity of these properties seasonally. GPS collar data indicate that bears spend time in the riparian corridors near the confluence of the Snake River and Cottonwood Creek and use the area as a travel corridor to points north and south. Three different grizzly bears were trapped during black bear research in 2009 less than ½ mile from the 4 Lazy F. One of these bears was pre-emptively relocated to the north end of the park based on prior history and proximity to developments.

Potential effects to grizzly bears resulting directly from proposed activities could include: 1) injury or mortality resulting from vehicle strikes with work-related vehicles; 2) management

actions to relocate or remove bears that are habituated or that become food conditioned due to poor food storage; 3) displacement of grizzlies in the project area and disruption of predator-prey interactions due to noise, vehicles, and related human activity, and 4) loss of habitat effectiveness in an important movement corridor.

Mortality due to strikes with work related vehicles is not anticipated. Access to both properties is on gravel roads where conditions dictate that speeds are slow. In addition, visibility is generally good as the roads traverse relatively open habitats. Consequently, vehicle-strike deaths are highly unlikely (discountable).

Grizzly bears can be attracted to human developments in search of food. When attractants are secured this is not an issue, but in general, developed sites in grizzly bear habitat increase the potential for conflict with humans primarily due to the potential availability of human foods. Both properties are within or immediately adjacent to an elk calving area. Seasonal habitat use by grizzly bears is influenced by food distribution and abundance. Throughout the GYE and in other parts of the Grand Teton, grizzly bears are known to prey upon elk calves from late May through early July (Gunther and Renkin 1990). The presence of elk calves or other important food sources in the area may draw bears into close proximity to these properties. Given that Cottonwood Creek and the Snake River are areas of vegetative cover in otherwise open habitats through which bears are known to move, it is likely that they will continue to use this area as a movement corridor as long as the habitat remains secure placing them close to these properties. To minimize the potential for interactions between humans and grizzly bears during the elk calving season, activity at Bar BC would be restricted to during the elk parturition. In addition, an area closure (closed to all human entry) would be delineated and implemented in the Snake River/ Cottonwood Creek riparian area immediately adjacent to the 4 Lazy F developed area (to the north).

All volunteer groups and contractor employees' working at these historic properties would be required to attend a grizzly bear briefing session presented by a park bear management specialist and abide by food storage regulations. Likewise seasonal employees are required to attend an orientation session, in which "Living in Bear Country" is covered. These sessions focus on proper food and garbage storage, how to avoid disturbing or encountering bears, and how to minimize unavoidable effects or encounters. Food storage and disposal procedures at the construction sites and completed housing area would be strictly enforced to minimize the potential for bears to obtain food. Even with strict adherence to food storage regulations, there is still a possibility that grizzly bears could frequent the area and display nuisance behavior that warrants a management response. Current park procedures are to haze grizzly and black bears out of developed areas to minimize the potential for human-bear conflicts and reduce the opportunity for bears to become food conditioned. If nuisance behavior were to escalate, then grizzlies may either be relocated in an attempt to break the behavior pattern or removed from the population (if nuisance history warrants). Both relocation and lethal removal are considered forms of "take".

Developments can also reduce the effectiveness of the natural habitat near them. The larger the developed site and the more people using the site, the greater the potential for conflicts and reduction in the effectiveness of the adjacent habitat for bears. Reoccupying the 4 Lazy F

property could result in increased dispersed use of the habitats adjacent to the property, as a result of occupants recreating and creating social trails adjacent to their residences, but outside of the developed footprint. Depending on the timing and level of human activity this could reduce the effectiveness of the adjacent habitats for bears. Loss of habitat in valley bottoms and riparian areas can be particularly detrimental to grizzlies because they use these linkage habitats to travel from one area to another when they are searching for food.

The actions proposed under the preferred alternative at 4 Lazy F and Bar BC Dude Ranches ***may affect*** grizzly bears because:

- The project area falls within occupied grizzly bear habitat and use of the area by grizzly bears has been documented;
- The project occurs within a riparian corridor, a habitat type that is disproportionately important to grizzly bears (relative to its availability on the landscape) as linkage habitat facilitating travel from one area to another and as an area where seasonally important bear foods occur;
- Rehabilitation and stabilization activities at the properties could occur when bears may be present; and
- Seasonal housing at the 4 Lazy F Dude Ranch could be occupied when bears may be drawn to seasonably available food sources (e.g. elk calves from late May – early July).

The project ***is likely to adversely affect*** grizzly bears because:

- The likelihood that grizzly bears could be present in the immediate vicinity of these properties is high at certain times of year because seasonally important food sources may be present and these properties occur in a riparian corridor that is an important travel corridor for bears;
- Increased human use of the Cottonwood Creek/Snake River riparian corridor adjacent to these properties could reduce the effectiveness of these habitats for bears;
- Per the park's hazing protocol (GRTE 2013), grizzly bears frequenting the housing area at 4 Lazy F would be hazed out of the area. If bears continued to frequent the area or received a food reward they may be relocated to a site within or outside the park or removed from the population; and
- Given the location of the site (within a riparian corridor) and the availability of seasonally important food sources within or adjacent to the property the likelihood that bears may occur in the vicinity is higher than for most other park housing areas.

Canada Lynx Critical Habitat – The actions proposed under the preferred alternative at 4 Lazy F and Bar BC dude ranches ***will not destroy or adversely modify*** designated Critical Habitat for Canada lynx because:

- No designated Critical Habitat for lynx occurs in this area.

White Grass Dude Ranch and Sky Ranch

There have been two significant changes within the White Grass Dude Ranch project area since the 2005 FONSI was signed: (1) grizzly bears have expanded their range and now frequent the Moose-Wilson corridor and the general area around the White Grass Ranch, and (2) the USFWS now considers management relocations as well as management removals of grizzly bears a form of take.

The preferred alternative proposes the following actions at the White Grass Dude Ranch (see information starting on page 69 of the EA for more details):

- Under Alternative B, the 2004 *White Grass Ranch Rehabilitation and Adaptive Use Environmental Assessment/Assessment of Effect* and 2005 *White Grass Ranch Rehabilitation and Adaptive Use Finding of No Significant Impact* (FONSI) would be implemented with minor changes to vehicle circulation. Access to the district would continue to be via the historic utility road, which is the route currently used. The spur road approved in the 2004 plan would not be constructed because it does not seem needed in addition to the current access and the disturbance it would cause can be avoided. Other changes include increasing the number of spaces from six to eight at the main parking area away from the cabins. Driving within the district would continue to be restricted but, to provide accessible parking and drop-off areas, two accessible parking spaces would be formalized next to the Hammond Cabin, two next to the laundry/maintenance cabin, and a drop-off area west of the Main Cabin. These areas would be used on a very limited basis, for loading and unloading and by individuals who need improved access. No changes to public access, expected maintenance, plowing schedules, seasonality, or use are proposed. Non-personal interpretive media, as approved in previous planning, would be implemented as time and funding allow.

The preferred alternative proposes the following actions at the Sky Ranch (see information starting on page 63 of the EA for more details):

- Sky Ranch and associated infrastructure would be removed from the landscape.
- Removal would be followed by revegetation of building sites, parking areas, and the access road to benefit wildlife.
- Removal would eliminate all fire mitigation, road maintenance, and other maintenance responsibilities related to the district that currently being overseen by the park.
- It would also reduce the amount of human development, the potential for disturbance to wildlife, and concerns about potential wildlife/human conflicts in this part of the park as well as increase the ability of a variety of species to use this habitat.
- A cap of 15 overnight participants and 30 daytime participants was identified in the 2004 White Grass Ranch Environmental Assessment. This was based on minimizing potential impacts to other resources. Under the preferred alternative the overnight capacity will increase to 26 (the number of pillows based on double-person occupancy/bedroom) and the daytime capacity to 40 (the number that the main cabin can comfortably hold for a meeting).

Impact Analysis and Effects Determination

Canada Lynx – The White Grass Ranch and Sky Ranch properties fall within the Granite LAU. The vegetation at both sites is classified as mixed herbaceous grassland and dry sagebrush and is not mapped as suitable lynx habitat; however, mixed conifer forest occurs adjacent to both

sites and is considered lynx habitat. Few, if any, lynx are thought to occur in the project area as they generally prefer upper elevation coniferous forests in cool, moist vegetation types, particularly those that support snowshoe hares. There is one report of a lynx in the LAU from 1997 east of the project area in the Snake River bottom, but there have been no reports in the project area.

Potential direct effects of the proposal include mortality or disturbance of lynx due to activity associated with renovation and use of the structures. Mortality due to strikes with work related vehicles is not anticipated. Access to both properties is by way of the Moose-Wilson road, Death Canyon access road, and gravel roads where conditions dictate that speeds are slow. Consequently, vehicle-strike deaths are highly unlikely (discountable).

Lynx may be displaced from the project areas by rehabilitation activities at White Grass Ranch, removal of Sky Ranch buildings or by activity of residents at the White Grass Ranch. Impacts would be confined to the immediate project vicinity. Given that suitable habitat is well distributed throughout the LAU any displacement is likely to be insignificant.

The actions proposed under the preferred alternative at the White Grass Ranch and Sky Ranch properties ***may affect*** Canada lynx because:

- The project occurs within the Granite LAU, although both properties occur in habitats that are not considered suitable for lynx; and
- The proposed activities would occur when lynx could be using the area;

The project ***is not likely to adversely affect*** Canada lynx because:

- Both properties occur in habitats that are not mapped as suitable for lynx and the proposal would not alter or remove any mapped lynx habitat; and
- Displacement of lynx is unlikely because few, if any are likely to be present, and insignificant given that suitable habitat is readily available.

Gray Wolf – The project area falls within the home range of 1 wolf pack. This pack regularly uses the area surrounding the White Grass Dude Ranch and Sky Ranch properties for travel and hunting. Elk use the meadows and forest areas adjacent to these properties and are especially visible in the area in the fall during the rut. Consequently, the likelihood that wolves may be present is also high. In past years, the Lower Gros Ventre wolf pack had a den and rendezvous site within 1 mile of the properties. However, in 2015 the pack used sites more than a mile from the properties.

Potential effects to wolves resulting directly from proposed activities could include: 1) injury or mortality resulting from vehicle strikes with work-related vehicles; 2) control actions to remove wolves that are food conditioned due to poor food storage or deliberate feeding; 3) displacement of wolf families from natal dens or traditional rendezvous sites associated with construction-related disturbance; and 4) temporary displacement or barriers to movement of adult wolves in the project area and disruption of predator-prey interactions due to noise, vehicles, and related human activity.

Mortality due to strikes with work related vehicles is not anticipated. Access to both properties is by way of the Moose-Wilson road, Death Canyon access road, and gravel roads where conditions dictate that speeds are slow. Consequently, vehicle-strike deaths are highly unlikely (discountable). To date, no food-conditioned wolves have been removed or hazed within the park. Given implementation and strict enforcement of food storage regulations, no removals of wolves because of ongoing activities at White Grass Ranch or removal of the buildings at Sky Ranch are anticipated.

In the short-term, the removal of buildings at Sky Ranch could displace any wolves that are present at the time the removals occur, but in the long-term removal of the human footprint and associated human activities in proximity to a known breeding site would be beneficial for wolves. Implementation of conservation measures restricting the timing of activities near den and rendezvous sites would minimize disturbance, minimizing stress to adult wolves and reducing the chances that wolf pups would be prematurely relocated or abandoned.

The actions proposed under the preferred alternative at the White Grass Dude Ranch and Sky Ranch ***may affect*** the gray wolf because:

- The project area occurs within the home range of the Lower Gros Ventre wolf pack;
- A rendezvous site used by the pack in past years is near the Sky Ranch property; and
- The White Grass meadow and the adjacent forested areas provide summer and fall habitat for elk, the primary prey of wolves

The project ***is not likely to adversely affect*** the gray wolf because:

- Removal of the Sky Ranch property would be beneficial to wolves in the long-term as the human footprint would be reduced; although the timing of the removal may need to be altered if the traditional rendezvous site is in use;
- The proposed action would meet recovery plan direction for protection of den and rendezvous sites, given implementation of wolf related mitigations/conservation measures as necessary;
- Impacts to elk, the primary prey of wolves, are anticipated to be negligible as a result of this action; and
- Mortality risk to wolves is not expected to increase as a result of the proposed activities at the Sky Ranch and White Grass Dude Ranch.

Greater Sage-Grouse - The Airport lek is within 4 miles of the project area, although the historic properties do not occur within sagebrush habitat and sage-grouse are unlikely to occur in the project area. Nevertheless, noise associated with removal activities at Sky Ranch and ongoing renovation at the White Grass Dude Ranch could disrupt sage-grouse breeding activities if noise levels reach 10 dBA above ambient levels as measured at the perimeter of the lek during the breeding season. The Airport lek is approximately 3.55 miles southwest of the project. Given the distance and the fact that that there is terrain and forested vegetation between the project area and the leks, it is unlikely that noise from the project would be 10 dBA above ambient levels at the lek perimeter.

The actions proposed under the preferred alternative at the White Grass Dude Ranch and Sky Ranch could negatively affect greater sage-grouse because:

- The project occurs within 4 miles of the Airport sage-grouse lek.

The actions proposed under the preferred alternative at the White Grass Dude Ranch and Sky Ranch ***are not likely to jeopardize the continued existence*** of the greater sage-grouse because:

- The project would apply best practices such as guidance outlined in the State of Wyoming Executive Order (State of Wyoming 2015) and ensure adequate protections for sage-grouse;
- The project does not occur within the sage-grouse core area or occupied sage-grouse habitat, and sage-grouse are unlikely to occur in the project area because vegetation types they prefer are not present;
- The project does not involve removal or alteration of sagebrush habitat;
- Any noise associated with renovation activities would be dampened by the terrain, forested vegetation, and distance between the project area and the lek;
- The actions proposed would not directly or indirectly reduce reproduction, numbers, or distribution of sage-grouse and therefore would not reduce appreciably the likelihood of survival or recovery of the species.

Grizzly Bear – The project area is outside of the grizzly bear recovery zone/primary conservation area, but is within occupied grizzly bear habitat and the Demographic Monitoring Area. Grizzly bears are known to frequent the Moose-Wilson road corridor, approximately 1 mile east of the project area, to access seasonally available fruit in the fall. They have also been documented using the area around the White Grass Dude Ranch and Sky Ranch throughout the year, including denning within several miles of the properties. The White Grass Dude Ranch is currently used as a preservation training center from April through October. Currently there is a cap of 15 overnight residents and 30 daytime users. The proposed action would increase overnight capacity by 73% and daytime capacity by 33% at White Grass, to 26 and 40 users, respectively. Sky Ranch is currently vacant.

All personnel (employees, contractors, volunteers groups, etc.) working on the building preservation, maintenance, or removal would be required to attend a grizzly bear briefing session and abide by food storage regulations. The briefing session focuses on proper food and garbage storage, how to avoid disturbing or encountering bears, and how to minimize unavoidable effects or encounters. Food storage and disposal procedures at the construction site and completed ranger station would be strictly enforced to minimize the potential for bears to obtain food. Preservation activities would occur within the existing homestead footprint and would not result in loss of grizzly bear habitat. By providing grizzly bear briefing sessions for construction personnel and strictly enforcing food storage regulations during and after renovation, the potential direct and indirect effects on grizzly bears and would be minimized.

While construction related activities (preservation and maintenance on the existing buildings, or removal of Sky Ranch buildings) are being performed there could be short-term displacement of bears traveling or foraging in the area. Any displacement impacts are expected

to be minor as bears can readily travel through/around the area under current conditions and no additional loss of habitat is anticipated. An increased risk of mortality due to collisions with construction related vehicles is not expected. Access to both properties is by way of the Moose-Wilson road, Death Canyon access road, and gravel roads where conditions dictate that speeds are slow. Consequently, vehicle-strike deaths are highly unlikely (discountable).

Human use levels at the site would increase by 33% for daytime users and 73% for overnight residents. This could result in increased bear-human conflicts, but with strict enforcement of food storage regulations the likelihood is low. To date, there have been no conflicts with grizzly bears at the White Grass facility. However, grizzly bear activity in the southern portion of the park is expected to continue to increase over time and this could result in an increased risk for conflicts. If grizzly bears began frequenting and remaining within the project area, they would be hazed off the site or the site would be closed until bears have left the area. If nuisance behavior were to escalate, then grizzlies may either be relocated in an attempt to break the behavior pattern or removed from the population (if nuisance history warrants). Both relocation and lethal removal are considered forms of "take".

The actions proposed under the preferred alternative at the White Grass Dude Ranch and Sky Ranch ***may affect*** the grizzly bear because:

- The project occurs within occupied grizzly bear habitat and grizzly bears are known to frequent areas adjacent to the project area during certain times of year;
- Grizzly bear activity in the south end of the park, including the area immediately adjacent to the property, is likely to increase as grizzly bears continue to reoccupy portions of their former range;
- Preservation, maintenance or building removal activities would occur at a time when grizzly bears could be present;
- Removal of buildings from the Sky Ranch property would be beneficial to grizzly bears in the long-term; and
- Use of White Grass Dude Ranch would occur for seasonally (Apr.–Oct.) when grizzly bears could be present.

The project ***is likely to adversely affect*** the grizzly bear because:

- Given the proximity of the White Grass facility to seasonally important food sources along the Moose-Wilson road corridor and in the habitats adjacent to the property the likelihood that bears may occur in the vicinity of the facility when it is in operation is moderate to high.
- Per the park's hazing protocol (GRTE 2013), grizzly bears frequenting the White Grass developed area would be hazed out of the area. If bears continued to frequent the area or received a food reward they may be relocated to a site within or outside the park or removed from the population; and

Canada Lynx Critical Habitat - The actions proposed under the preferred alternative at White Grass Ranch ***will not destroy or adversely modify*** designated Critical Habitat for Canada lynx because:

- No designated Critical Habitat for lynx occurs in this area.

Mormon Row

The preferred alternative proposes the following actions at the Mormon Row (see information starting on page 66 of the EA for more details):

- Under Alternative B, the *Mormon Row Historic District Management Finding of No Significant Impact* (NPS 2000) would be implemented design improvements. The modifications, based on how visitors are using the area, include constructing similarly sized northern and southern parking areas (each ~14 spaces rather than 6-8 and 18 plus bus parking and a turnaround, respectively), installing a vault toilet first at the northern parking area and potentially adding another at the southern parking area if needed, extending the length of the interpretive path approved for the southern parking area south to the Andy Chambers homestead and constructing it to span from the Mormon Row Road/Antelope Flats Road junction, and expanding interpretation to permit occasional access to the interior of one or two buildings. A separate parking area for buses and a bus turnaround east of the Mormon Row Road/Antelope Flats Road junction would also be constructed. Non-personal interpretive media, as approved in previous planning, would be implemented as time and funding allow.
- Potential rehabilitation of several Mormon Row houses (from north to south, the Thomas Murphy/Joe Heninger (Reed Moulton), John Moulton ("pink house"), Andy Chambers, and Thomas Perry/Roy Chambers houses), for adaptive reuse as seasonal park housing is also included as an option under Alternative B. Rehabilitation would include upgrading the utilities as well as the structures. The Thomas Murphy/Joe Heninger (Reed Moulton) house is located north of the John Moulton homestead and the Thomas Perry/Roy Chambers house is located south of the Andy Chambers homestead. An estimated 9-12 seasonal occupants could be accommodated if all 4 buildings are rehabilitated and utilities upgraded.

Impact Analysis and Effects Determination

Canada Lynx – The actions proposed under the preferred alternative at Mormon Row will have no effect on the Canada lynx because:

- The project area is <u>not</u> within a Lynx Analysis Unit, mapped lynx habitat, or within an important linkage zone.

Gray Wolf – The project area falls within the home ranges of 2 wolf packs. These packs regularly traverse the area around Mormon Row, Antelope Flats, and the Kelly Hayfields in search of prey. There are no known den or rendezvous sites within a mile of the project areas. However, should a den/rendezvous site be found within a mile of any of the sites, implementation of conservation measures would minimize disturbance thereby minimizing stress to adult wolves and reducing the chances that wolf pups would be prematurely relocated or abandoned. The project area serves as

spring, summer, and fall range for elk, the primary prey of wolves. Depending on the timing of rehabilitation activities they could displace the elk that forage in the vicinity affecting elk predation opportunities for wolves. Similarly wolves may avoid the area while work on the buildings is ongoing. Any displacement of wolves or their prey would be limited to the immediate vicinity of the site and would be of negligible concern.

Formalizing visitor parking, creating a bus parking area and turnaround, installing toilets and a trail connecting the northern and southern portions of Mormon Row would likely serve to increase visitation and human activity. However, use levels in the summer are already high and wolf use of adjacent areas is not currently impeded by human use levels. Wolves and their prey may be temporarily displaced from the area when people are present, but this should not affect wolves ability to hunt or travel.

Although, wolves have been hit and killed on park roads, no mortalities have occurred on the Antelope Flats road. Mortality risk is not expected to increase as a result of implementing this action. Speed limits on the Antelope Flats road are 35 mph and the road traverses open habitats with good visibility.

The actions proposed under the preferred alternative at Mormon Row ***may affect*** gray wolves because:

- The project overlaps the home range of the Lower Gros Ventre and Lower Slide Lake wolf packs; and
- Activities would occur at a time when wolves could be using the area.

The project ***is not likely to adversely affect*** gray wolves because:

- The proposed action would meet recovery plan direction for protection of den and rendezvous sites, given implementation of wolf related mitigations/conservation measures as necessary;
- Impacts to elk, the primary prey of wolves, are anticipated to be negligible as a result of this action; and
- Mortality risk to wolves is not expected to increase as a result of the proposed activities at Mormon Row.

Greater Sage-Grouse – The north end of Mormon Row is within ½ mile of two activity centers of the Moulton lek. This lek has the highest rate of attendance by males and females in the Jackson Hole population. The south end of Mormon Row (Thomas Perry/Roy Chambers house) is approximately 2 miles northwest of the Bark Corral lek. The properties are within the sage-grouse core area and are considered occupied sage-grouse habitat. Proposed actions at the Mormon Row historic site include maintenance/rehabilitation and reuse of several existing structures as seasonal housing. Upgrades of existing utilities and construction of new utility infrastructure would be necessary for the existing buildings to function as seasonal housing. Potential impacts to greater sage-grouse from rehabilitation of existing buildings and construction of new infrastructure (e.g. wells, water treatment, sewer, and phone/internet, trash, and/or propane) could include 1) direct and indirect loss of nesting and brood rearing habitat, 2) collisions with work-related vehicles, 3)

displacement of sage-grouse breeding or nesting grouse due to noise, associated infrastructure, and increased human activity; and 4) increased raptor, corvid, and mammalian predation. Loss of sagebrush habitat would result from the permanent removal of existing habitat during project construction. Collisions with construction vehicles could result in injury or death. Displacement from noise, infrastructure, and human activities could cause the flushing of birds which would cause expenditure of energy that otherwise would not have occurred and depending of the frequency with which flushing occurs could decrease reproductive success of incubating birds. Flushed birds could alert predators to the presence of a nest, and utility lines can provide perching areas for predators, thereby increasing the rate of predation. Also, flushing could contribute to nest failure if the incubating bird is flushed enough times or is kept away for longer periods causing the eggs or nestlings to freeze. Strict implementation and enforcement of sage-grouse conservation measures would minimize the potential for adverse impacts to sage-grouse.

Visitor infrastructure improvements and interpretation could potentially draw more visitors to the area. This in combination with dispersed recreation from residents who live in the structures could lead to increased human activity around the structures. Impacts to greater sage-grouse from increased human activity could include direct disturbance, displacement, or mortality of grouse. Given implementation of conservation measures the risks to sage-grouse should be minimized.

Implementing conservation measures would be necessary to minimize threats to the sage-grouse and ensure that proposed actions are ***not likely to jeopardize the continued existence*** of the species. Conservation measures include:

1. Continue to implement a seasonal closure (generally March 15–June 1) around the Moulton sage-grouse lek.
2. Prohibit removal of shrub-steppe habitat within 4 miles of an occupied sage-grouse lek to protect breeding, nesting, and brood rearing habitat for sage-grouse in the park (generally between March 15 and June 30, or as recommended by park biologists monitoring sage grouse). Exceptions may be made on a limited and case–by-case basis.
3. Limit new permanent facilities (including, but not limited to roads, buildings, well pads, pipelines, leach fields, and vegetation treatments) within 0.6 miles of active sage-grouse lek areas.
4. Restrict maintenance and rehabilitation activities between the hours of 6:00 p.m. and 8:00 a.m. at historic structures within 4 miles of active leks/nesting complexes (generally from March 15–June 30, or as recommended by park biologists).
5. Limit noise to less than 10 decibels above ambient measures from 6:00 p.m. to 8:00 a.m. at the perimeter of leks (generally between March 1-May 15, or as recommended by park biologists.)
6. Efforts will be made to minimize disturbance to mature sagebrush cover in identified winter concentration areas.
7. Power or other utility lines should be buried when possible. If such lines cannot be buried, lines should be raptor proofed and located at least 0.6 miles from the perimeter of occupied sage-grouse leks. New transmission lines should be authorized or conducted

only when it can be demonstrated that the activity will not cause declines in sage-grouse populations. Construction of new transmission lines should occur July 1-March 14. Power lines should be placed along or adjacent to existing long-term linear disturbance features whenever possible.

8. Park biologists will use the Wyoming Density and Disturbance Calculation Tool (DDCT) to assess activities that involve vegetation or ground disturbance within the sage-grouse core area that correspond with recommended mitigations for sage-grouse and their habitat.

Grizzly Bear –The project area occurs within occupied grizzly bear habitat, but outside of the grizzly bear recovery zone/primary conservation area. This site sits on the east side of Jackson Hole north of the Gros Ventre River and is adjacent to Shadow Mountain and the Mt. Leidy Highlands, an area where grizzly bears have a high potential to occur. Ditch Creek runs through the south end of Mormon Row. This waterway serves as an important linkage area facilitating east -west movements for bears. Bears are known to travel this watercourse (an area of cover in an otherwise open landscape) to move between the Snake River drainage and Teton Range and the Gros Ventre drainage and Mt. Leidy Highlands. Grizzly bears could be present in the project area spring through fall, but are most apt to frequent the area in the fall during elk harvest seasons. Mormon Row is a popular visitor destination and use levels are high during the non-winter months.

All personnel (employees, contractors, volunteers groups, etc.) working on the building maintenance or removal would be required to attend a grizzly bear briefing session and abide by food storage regulations. The briefing session focuses on proper food and garbage storage, how to avoid disturbing or encountering bears, and how to minimize unavoidable effects or encounters. Food storage and disposal procedures at the construction site and completed ranger station would be strictly enforced to minimize the potential for bears to obtain food. Preservation activities would occur within the existing homestead footprint and would not result in loss of grizzly bear habitat. By providing grizzly bear briefing sessions for construction personnel and strictly enforcing food storage regulations, the potential direct and indirect effects on grizzly bears and would be minimized. While work on the existing buildings is done there could be short-term (for the length the project) displacement of bears traveling or foraging in the area. Any displacement impacts are expected to be insignificant as bears can readily travel through/around the area under current conditions and no additional loss of habitat is anticipated. In addition, work would be performed in the summer when the site is accessible, which is a timeframe when bears are least likely to be present.

The proposal to highlight the Mormon Row properties as a destination for park visitors could lead to increased visitation, although the area is currently experiences high use, particularly in the summer. This could result in increased bear-human conflicts and increased mortality risk for grizzly bears, but with strict enforcement of food storage regulations the likelihood is low. Bears are most likely to be present in the general vicinity of Mormon Row during fall hunting season. Visitation to the area during this time is reduced. With no new visitor facilities provided that would introduce potential attractants (i.e. picnic areas), the risk of conflicts is also reduced. If grizzly bears began frequenting and remaining within the project area, they would

be hazed off the site or the sites would be closed until bears have left the area. To date, there have been no grizzly-bear human conflicts in this area.

The actions proposed under the preferred alternative at Mormon Row ***may affect*** the grizzly bear because:

- The project occurs within occupied grizzly bear habitat and grizzly bears can be present especially in the fall;
- An important movement corridor for grizzly bears traverses a portion of the project area;
- Rehabilitation and occupancy of the structures would occur at a time when grizzly bears could be present; and
- Visitor use of the site would occur when grizzly bears could be present.

The project ***is not likely to adversely affect*** the grizzly bear because:

- Rehabilitation of the existing buildings is not likely to impede grizzly bear use of the area, although they may be temporarily displaced while work is ongoing;
- Given the existing development and human presence, the project area is not considered an important foraging area for grizzly bears and renovation and use of the existing structures will not degrade or destroy key grizzly bear food sources; and
- The project area is outside of the recovery zone/primary conservation area and would not increase road/trail densities or developments above the 1998 baseline.

Canada Lynx Critical Habitat **-** The actions proposed under the preferred alternative at the Mormon Row historic properties ***will not destroy or adversely modify*** designated Critical Habitat for Canada lynx because:

- No designated Critical Habitat for lynx occurs in this area.

McCollister Residential Complex, Hunter Hereford Ranch, Aspen Ridge Residence and Barn

The preferred alternative proposes the following actions at the McCollister residential complex (see information starting on page 62 of the EA for more details):

- The McCollister residential structures would be removed from the landscape.
- Removal would be followed by revegetation of building sites, the access road, and small parking area to benefit wildlife.
- Removal would eliminate all fire mitigation, road maintenance, and other maintenance responsibilities currently being overseen by the park.

The preferred alternative proposes the following actions at the Hunter Hereford Ranch (see information starting on page 57 of the EA for more details):

- Continue to maintain the property for park storage. The level and frequency of maintenance efforts would increase and include proactive in-kind preservation maintenance efforts would occur and a more regular cyclic maintenance schedule would be kept.
- Non-personal interpretation of the property could be provided.

The preferred alternative proposes the following action at the Aspen Ridge Residence and Barn (see information starting on page 52 of the EA for more details).

- The Aspen Ridge Ranch Residence and Barn and all associated infrastructure would be removed from the landscape.
- Building sites, access road and small parking area would be revegetated to native species in keeping with surrounding efforts to restore formerly cultivated lands in the former Kelly Hayfields-Antelope Flats area, to benefit wildlife. Removal would eliminate fire mitigation, road maintenance, and other maintenance responsibilities currently being overseen by the park at this property.

Impact Analysis and Effects Determination

Canada Lynx – The actions proposed under the preferred alternative at the McCollister, Hunter Hereford or Aspen Ridge historic properties will have ***no effect*** on the Canada lynx because:

- The project area is <u>not</u> within a Lynx Analysis Unit or mapped lynx habitat or within an important linkage zone.

Gray Wolf - The project areas fall within the home ranges of 2 wolf packs. These packs regularly traverse the area around Antelope Flats and the Kelly Hayfields in search of prey. The McCollister Residential Complex is within a mile of a rendezvous site used by the now defunct Antelope pack in 2009. There are no known den or rendezvous sites within a mile of the other project areas. However, should a den/ rendezvous site be found within a mile of any of the sites, implementation of conservation measures would minimize disturbance thereby minimizing stress to adult wolves and reducing the chances that wolf pups would be prematurely relocated or abandoned.

The project area serves as spring, summer, and fall range for elk the primary prey of wolves. Bison and pronghorn also occur here and occasionally are preyed upon by wolves. In the long-term removal of structures from the McCollister Residential Complex and Aspen Ridge Ranch would be beneficial to wolves as it would reduce the human footprint and may also reduce human activity in these areas as the buildings would no longer draw curious visitors. In the short-term, disturbance and human activity associated with building removal could disturb wolves and their prey if present. Elk are present in higher numbers in this area during spring and fall. If activities occurred in the summer when elk are less likely to be present in high numbers, potential impacts would be reduced.

Depending on the timing of preservation maintenance activities at the Hunter Hereford ranch activity could displace the ungulates that forage in the vicinity affecting predation opportunities for wolves. Similarly wolves may avoid the area while work on the buildings is ongoing. However, summer range is not limiting for elk and they would likely move to adjacent areas where wolves

could also hunt. Any displacement of wolves or their prey would be limited to the immediate vicinity of the site and would be of negligible concern.

Although, wolves have been hit and killed on park roads, no mortalities have occurred on roads that access the project areas. The potential for direct mortality from strikes with work related vehicles is not expected to increase. Access to the project areas is via the Antelope Flats and Shadow Mountain roads. Both roads are narrow with speed limits of 35 mph and vehicles generally travel at a slow rate of speed. Given that and the fact that the roads traverse open habitats with good visibility, collisions with wolves are not anticipated.

The actions proposed under the preferred alternative at McCollister, Hunter Hereford or Aspen Ridge historic properties ***may affect*** gray wolves because:

- The project overlaps the home range of the Lower Gros Ventre and Lower Slide Lake wolf packs; and
- Activities would occur at a time when wolves could be using the area.

The project ***is not likely to adversely affect*** gray wolves because:

- The proposed action would meet recovery plan direction for protection of den and rendezvous sites, given implementation of wolf related mitigations/conservation measures as necessary;
- Removal of buildings at the McCollister Residential Complex and Aspen Ridge Ranch would likely be beneficial to wolves;
- Impacts to elk, the primary prey of wolves, are anticipated to be negligible as a result of this action; and
- Mortality risk to wolves is not expected to increase as a result of the proposed activities at the McCollister, Hunter Hereford or Aspen Ridge historic properties.

Greater Sage-Grouse – The three properties are located outside of the sage-grouse core area and occupied sage-grouse. However, these properties all occur within 2 ½ miles of the Moulton lek, with the McCollister Place being the closest at approximately 1 ¼ miles. Human activities and noise associated with removing structures at the McCollister Place and Aspen Ridge ranch could disturb breeding or nesting sage-grouse depending on the timing of the operations. Any disturbance impacts would be short-term (limited to the time it takes to complete the removal). Such impacts would be minimized by implementing the mitigation/conservation measures. Recommend timing removal after 30 June. In the long-term, removing the McCollister residential complex and Aspen Ridge Ranch residence and barn would benefit wildlife, including sage-grouse, by reducing the human development footprint and may also reduce human activity in these areas as the buildings would no longer draw curious visitors.

The actions proposed under the preferred alternative at the McCollister, Hunter Hereford or Aspen Ridge historic properties could negatively affect greater sage-grouse because:

- The projects occur within 2.5 miles of a sage-grouse lek; and

- Although the properties are outside of the sage-grouse core area and occupied sage-grouse habitat, they are adjacent to both areas and sage-grouse could be in close enough proximity where they could be affected.

The actions proposed under the preferred alternative at the McCollister, Hunter Hereford, or Aspen Ridge historic properties ***are not likely to jeopardize the continued existence*** of the greater sage-grouse because:

- The project would apply best practices such as guidance outlined in the State of Wyoming Executive Order and ensure adequate protections for sage-grouse;
- The project does not involve removal or alteration of sagebrush habitat;
- The actions proposed would not directly or indirectly reduce reproduction, numbers, or distribution of sage-grouse and therefore would not reduce appreciably the likelihood of survival or recovery of the species.

Grizzly Bear – The three properties are located outside of the grizzly bear recovery zone/primary conservation area, but within occupied grizzly bear habitat. The sites sit on the east side of Jackson Hole north of the Gros Ventre River and adjacent to Shadow Mountain and the Mt. Leidy Highlands, an area where grizzly bears have a high potential to occur. Ditch Creek, and important travel corridor used by bears to cross the open sagebrush habitats, occurs just south of the Aspen Ridge Ranch and Hunter Hereford properties. Grizzly bears could be present in the project areas spring through fall, but are most apt to frequent the area in the fall during elk harvest seasons. The Aspen Ridge Ranch and Hunter Hereford properties occur behind a lock gate. Although the area is open to park visitors on foot, visitation is relatively low. Similarly, the access to the McCollister Residential Complex off the Shadow Mountain road is not well marked and is usually blocked which discourages visitor access. Grizzly bear activity has been documented in the vicinity of these properties. Bears are most likely to be present in the fall

The project area serves as spring, summer, and fall range for elk, bison, and pronghorn. Bison and pronghorn also occur here and occasionally are preyed upon by wolves. In the long-term removal of structures from the McCollister Residential Complex and Aspen Ridge Ranch would be beneficial to grizzlies as it would reduce the human footprint in this area and may also reduce human activity in the area as the buildings would no longer draw curious visitors. In the short-term, disturbance and human activity associated with building removal could disturb bears if present. Bears occur most frequently in these areas during the fall big game seasons. If removal activities occurred in the summer when bears are less likely to be present, potential impacts would be reduced.

Depending on the timing of preservation maintenance activities at the Hunter Hereford ranch activity could displace any grizzly bears in the vicinity. Any displacement of bears would be limited to the immediate vicinity of the site and would be of negligible concern. It is unlikely that activity at any of the project sites would preclude bears' ability to use the Ditch creek riparian corridor.

Although, grizzly bears have been hit and killed on park roads, no mortalities have occurred on roads that access the project areas. The potential for direct mortality from strikes with work related vehicles is low. Access to the project areas is via the Antelope Flats and Shadow Mountain roads. Both roads are narrow with speed limits of 35 mph and vehicles generally travel at a slow rate of speed. Given that and the fact that the roads traverse open habitats with good visibility, collisions with grizzly bears are not anticipated.

The actions proposed under the preferred alternative at McCollister, Hunter Hereford, or Aspen Ridge historic properties ***may affect*** the grizzly bear because:

- The project occurs within occupied grizzly bear habitat; and
- Preservation maintenance or removal of the structures would occur at a time when grizzly bears could be present; and

The project ***is not likely to adversely affect*** the grizzly bear because:

- Maintenance and removal activities are not likely to impede grizzly bear use of the area, although they may be temporarily displaced while work is ongoing;
- Maintenance and removal activities are not likely to preclude grizzly bear use of the Ditch Creek riparian corridor;
- Removal of buildings at the McCollister Residential Complex and Aspen Ridge Ranch would likely be beneficial to grizzly bears;
- Mortality risk to bears is not expected to increase as a result of the proposed activities at the McCollister, Hunter Hereford or Aspen Ridge historic properties.
- The project area is outside of the recovery zone/primary conservation area and would not increase road/trail densities or developments above the 1998 baseline.

Canada Lynx Critical Habitat **-** The actions proposed under the preferred alternative at the McCollister, Hunter Hereford or Aspen Ridge historic properties ***will not destroy or adversely modify*** designated Critical Habitat for Canada lynx because:

- No designated Critical Habitat for lynx occurs in this area.

Luther Taylor Cabins

The preferred alternative proposes the following actions at Luther Taylor Cabins (see information starting on page 60 of the EA for more details):

- The Luther Taylor Cabins would be maintained in order to stabilize the property in its current condition and the district would be interpreted as both a home site and film location. Interpretation could occur both on-site, or off-site via nonpersonal media.
- This location would be added as a visitor destination in the park and included in visitor orientation information along with other destinations. Stabilization would be subtle in order to maintain the rustic appearance of the cabins.

- No changes would be made to the existing parking or access, plowing, vegetation, or other maintenance workloads.

Impact Analysis and Effects Determination

Canada Lynx- The actions proposed under the preferred alternative at Luther Taylor Cabins will have ***no effect*** on the Canada lynx because:

- The project area is not within a Lynx Analysis Unit, mapped lynx habitat, or within an important linkage zone.

Gray Wolf – The project area falls within the home ranges of 3 wolf packs. Wolves regularly traverse the area around the Luther Taylor cabins while in search of prey. There are no known den or rendezvous sites within a mile of the project area. However, should a den/rendezvous site be found nearby, implementation of conservation measures would minimize disturbance thereby minimizing stress to adult wolves and reducing the chances that wolf pups would be prematurely relocated or abandoned.

The project area serves as spring, summer, and fall range for elk the primary prey of wolves. Bison and pronghorn also occur here and occasionally are preyed upon by wolves. Stabilization activities could displace the elk that forage in the adjacent meadows affecting elk predation opportunities for wolves. Any displacement of wolves or their prey would be limited to the immediate vicinity of the site and would be of negligible concern.

Highlighting the area as a visitor destination would likely lead to increased visitation of the area. Currently use levels are low. Wolves and their prey may be temporarily displaced from the area when people are present, but again this should not affect wolves' ability to hunt or travel.

Although, wolves have been hit and killed on park roads, no mortalities have occurred on roads that access the project areas. The potential for direct mortality from strikes with work related vehicles is not expected to increase. Access to the project areas is via the Antelope Flats and Shadow Mountain roads. Both roads are narrow with speed limits of 35 mph and vehicles generally travel at a slow rate of speed. Given that and the fact that the roads traverse open habitats with good visibility, collisions with wolves are not anticipated.

The actions proposed under the preferred alternative at Luther Taylor Cabins ***may affect*** gray wolves because:

- The project overlaps the home ranges of the Lower Slide Lake, Lower Gros Ventre, and Pinnacle Peak wolf packs; and
- Activities would occur at a time when wolves could be using the area.

The project ***is not likely to adversely affect*** gray wolves because:

- The proposed action would meet recovery plan direction for protection of den and rendezvous sites, given implementation of wolf related mitigations/conservation measures as necessary;
- Impacts to elk, the primary prey of wolves, are anticipated to be negligible as a result of this action; and
- Mortality risk to wolves is not expected to increase as a result of the proposed activities at Luther Taylor Cabins.

Greater Sage-Grouse- The project area occurs within the sage-grouse core area and occupied sage-grouse habitat and is within 4 miles of the Bark Corral sage-grouse lek. Noise associated with renovation activities could disrupt sage-grouse breeding activities if noise levels reach 10 dBA above ambient levels as measured at the perimeter of the lek during the breeding season. The Bark Corral lek is approximately 1.5 miles west-southwest of the project area. Given the distance and the fact that that there is terrain and forested vegetation between the project area and the lek, it is unlikely that noise from the project would be 10 dBA above ambient levels at the lek perimeter. Nevertheless, it is recommended that project activities begin after 1 July to minimize the potential for disturbance.

The actions proposed under the preferred alternative at the Luther Taylor cabins could negatively affect the greater sage-grouse because:

- The project occurs within occupied sage-grouse habitat and within 1.5 miles of the Bark Corral sage-grouse lek.

The project ***is not likely to jeopardize the continued existence of*** the greater sage-grouse because:

- The project would apply best practices such as guidance outlined in the State of Wyoming Executive Order and ensure adequate protections for sage-grouse;
- The project does not involve removal or alteration of sagebrush habitat;
- Any noise associated with renovation activities would be dampened by the terrain, forested vegetation, and distance between the project area and the lek; and
- The actions proposed would not directly or indirectly reduce reproduction, numbers, or distribution of sage-grouse and therefore would not reduce appreciably the likelihood of survival or recovery of the species.

Grizzly Bear – The project area occurs within occupied grizzly bear habitat, but outside of the grizzly bear recovery zone/primary conservation area. This site sits on the east side of Jackson Hole north of the Gros Ventre River and is adjacent to the Mt. Leidy Highlands, an area where grizzly bears have a high potential to occur. Grizzly bears could be present in the project area spring through fall, but are most apt to frequent the area in the fall during elk harvest seasons. The Luther Taylor site is currently unmarked and has limited parking, consequently existing visitation is low.

All personnel (employees, contractors, volunteers groups, etc.) working on the building preservation maintenance would be required to attend a grizzly bear briefing session and abide by food storage regulations. The briefing session focuses on proper food and garbage storage, how to avoid disturbing or encountering bears, and how to minimize unavoidable effects or encounters. Food storage and disposal procedures at the construction site and completed ranger station would be strictly enforced to minimize the potential for bears to obtain food. Preservation activities would occur within the existing homestead footprint and would not result in loss of grizzly bear habitat. By providing grizzly bear briefing sessions for construction personnel and strictly enforcing food storage regulations during and after renovation, the potential direct and indirect effects on grizzly bears and would be minimized. While stabilization of the existing buildings is done there could be short-term (for the length the project) displacement of bears traveling or foraging in the area. Any displacement impacts are expected to be insignificant as bears can readily travel through/around the area under current conditions and no additional loss of habitat is anticipated. In addition, work would be performed in the summer when the site is accessible, which is a timeframe when bears are least likely to be present.

The proposal to highlight this property as a destination for park visitors would likely lead to increased visitation. This could result in increased bear-human conflicts and increased mortality risk for grizzly bears, but with strict enforcement of food storage regulations the likelihood is low. With no new visitor facilities provided that would introduce potential attractants, the risk of conflicts is also reduced. If grizzly bears began frequenting and remaining within the project area, they would be hazed off the site or the site would be closed until bears have left the area. To date, there have been no grizzly-bear human conflicts in this area.

The actions proposed under the preferred alternative at the Luther Taylor cabins ***may affect*** the grizzly bear because:

- The project occurs within occupied grizzly bear habitat and grizzly bears are occasionally travel through or forage in areas adjacent to the project area;
- Stabilization activities would occur at a time when grizzly bears could be present; and
- Visitor use of the site would occur year-round and grizzly bears could be present during the non-winter months.

The project ***is not likely to adversely affect*** the grizzly bear because:

- The risk of human-grizzly bear conflicts is not expected to increase, given implementation of food storage related mitigations/conservation measures and no new visitor support infrastructure (e.g. picnic tables, trash receptacles);
- Stabilization of the existing buildings is not likely to impede grizzly bear use of the area, although they may be temporarily displaced while work is ongoing;
- The project area is outside of the recovery zone/primary conservation area and would not increase road/trail densities or developments above the 1998 baseline.

Canada Lynx Critical Habitat - The actions proposed under the preferred alternative at Luther Taylor historic cabins ***will not destroy or adversely modify*** designated Critical Habitat for Canada lynx because:

- No designated Critical Habitat for lynx occurs in this area.

Cumulative Effects

Cumulative effects under ESA include the effects of future State, tribal, local or private actions that are reasonably certain to occur. Future Federal actions that are unrelated to the proposed action are not considered in this section because they require separate consultation pursuant to section 7 of the ESA. Past and present impacts of non-Federal actions are part of the *environmental baseline* as are the impacts of Federal activities that have undergone section 7 consultation.

The major issues facing the long-term persistence of grizzly bears, gray wolves, and Canada lynx include 1) the need for large tracts of habitat with limited human disturbance, 2) maintenance of adequate prey base, 3) maintenance of population linkages, 4) minimizing human-caused mortality, and 5) conservation of suitable habitat.

The private lands of Teton County are primarily located in the valley bottom and along the Snake River floodplain. The lower elevation areas of Jackson Hole tend to have a longer growing season and higher plant productivity. Such areas are disproportionately important for wildlife relative to their availability on the landscape. Approximately, 97% of Teton County is comprised of federal lands, including Yellowstone and Grand Teton National Parks and the Bridger-Teton National Forest. However, the communities of Moran, Jackson, and Wilson are private lands adjacent to GRTE. Residential and commercial development in the county is ongoing and is likely to continue into the future.

In Teton County, WY new private housing units authorized by building permits averaged of 208 annually over the last 15 years (Censtat, US Census Bureau 2015). Since 1990, the number of housing units in the county has increased 181% (Censtat, US Census Bureau http://censtats.census.gov/). The population has increased by just over 200% over that same time period (Censtat, US Census Bureau http://censtats.census.gov/). Continued residential and commercial development in areas adjacent to the park could negatively affect wolves, grizzly bears, and lynx through further fragmenting habitats, increasing road densities, and increasing the potential for conflicts.

Other activities on private lands that may contribute to effects on wolves, bears, and lynx include access (increasing road density), recreation, fuel reductions, and developments. These actions on private or State lands may also affect connectivity and linkage within the action area. Climate change could have varied impacts on these threatened species and their habitats, especially when combined with fire (or fire suppression), insects, and disease effects on habitat. However, recent research suggests that the presence of wolves in the ecosystem may serve to mitigate the effects of climate change. Shorter, warmer winters brought on by global warming increase the survival rate of elk, causing a food shortage for the scavengers (including bears

emerging from dens) at a time when other resources are scarce. Wolves provide carrion on the landscape year-round, buffering the effect of climate change in mild winters (Wilmers 2005).

In summary, residential and commercial development, fuels reduction, recreational use, and roads on state and private lands in the action have the potential to result in cumulative effects on threatened species in the action area.

Interrelated and Interdependent Actions and Their Effects

Interrelated activities are part of the proposed action that depends on the action for their justification, and interdependent activities have no independent utility apart from the action. The water and wastewater system that serves the Moran developed area is planned for replacement in the future. This action would be connected to the action at the Snake River Land Company Office and residence. However, the Moran water and wastewater system will go through the NEPA process in the future once details are known and will go through the Section 7 consultation process then.

Overall Effect Determination Summary

Table 9. Summary of overall effect determinations for species addressed.

Common Name	Scientific Name	Status[1]	Determination	Rationale
Plants				
Whitebark pine	*Pinus albicaulis*	C	NE	Species unlikely to be present or affected by activities in the action area.
Mammals				
Grizzly bear	*Ursus arctos*	T	LAA	This determination is based on the potential need to address management issues with grizzly bears at one or more of the historic properties, particularly 4 Lazy F which will be renovated and converted to a seasonal housing area. If grizzly bears were exhibiting nuisance behavior in the area, there is a possibility that they would be trapped and relocated or trapped and removed permanently from the population.
Canada lynx	*Lynx canadensis*	T	NLAA	Actions would be in compliance with the LCAS and ensure adequate protection for Canada lynx.
Designated Critical Canada Lynx Habitat		Designated	NE	No actions are proposed within Critical lynx habitat; therefore, there will be no effect on these habitats.
Gray wolf	*Canis lupus*	Ex/N	NLAA	Implementation of conservation measures would ensure adequate protection of den and rendezvous sites. The projects are not likely to impose any long-term negative impacts to ungulate prey populations, or

				reduce habitat security for elk or wolves.
BIRDS				
Greater sage-grouse	*Centrocercus urophasianus*	C	NLJCE	Not expected, directly or indirectly, to appreciably reduce the likelihood of survival and recovery of the species by reducing reproduction, numbers, or distribution.
FISHES				
Bonytail chub	*Gila elegans*	E	NE	Outside known distributional range of species
Colorado pikeminnow	*Ptychocheilus Lucius*	E	NE	Outside known distributional range of species
Humpback chub	*Gila cypha*	E	NE	Outside known distributional range of species
Kendall warm springs dace	*Rhinichthys osculus thermalis*	E	NE	Outside known distributional range of species

[1] **NE**=no effect; **NLAA**=may affect, not likely to adversely affect; **LAA**=may affect, likely to adversely affect; **BI**=beneficial impact; **NLJCE** = not likely to jeopardize the continued existence

Need for Re-Assessment Based on Changed Conditions

This BA and findings above are based on the best current data and scientific information available. A new analysis and revised BA must be prepared if one or more of the following occurs: (1) new information emerges for species currently considered in this assessment (including but not limited to a change in species distribution, newly discovered activity area, newly designated Critical Habitat, or other species information) reveals effects to threatened, endangered, proposed species, or designated/proposed critical habitat in a manner or to an extent not considered in this assessment; (2) the action is subsequently modified or it is not fully implemented as described herein which causes an effect that was not considered in this assessment; or (3) a new species is listed or critical habitat is designated which may be affected by the action that was not previously analyzed herein.

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Appendix A. Consistency with Canada lynx conservation assessment and strategy management direction (Interagency Lynx Biology Team 2013)	
Conservation Measure	**Compliance with guidance**
APPLICABLE TO CORE AREAS	
Delineate LAUS within core areas	LAUs were delineated in 2003 per direction in LCAS.
VEGETATION MANAGEMENT PROJECTS	
Provide a mosaic that includes dense early-successional coniferous and mixed-coniferous-deciduous stands, along with a component of mature multi-story coniferous stands to produce the desired snowshoe hare density within each LAU	Not applicable. The HPMP does not include any vegetation management projects.
Use fire and mechanical vegetation treatments as tools to maintain a mosaic of lynx habitat, in varying successional stages, distributed across the LAU in a landscape pattern that is consistent with historical disturbance processes.	Not applicable. The HPMP does not include any vegetation management projects.
Design vegetation management to develop and retain dense horizontal cover. Focus treatments in areas that have the potential to improve snowshoe hare habitat by developing dense horizontal cover in areas where it is presently lacking. In areas of young, dense conifers resulting from fire, timber harvest or other disturbance, do not reduce stem density through thinning until the stand no longer provides low, live limbs within the reach of hares during winter (e.g., self-pruning processes in the stem exclusion structural stage have eliminated snowshoe hare cover and forage availability during winter conditions with average snowpack). If studies are completed that demonstrate that thinning can be used to extend the duration of time that snowshoe hare habitat is available (e.g., by maintaining low limbs), then earlier thinning could be considered.	Not applicable. The HPMP does not include any vegetation management projects.
Retain mature multi-story conifer stands that have the capability to provide dense horizontal cover. If portions of these stands currently lack dense horizontal cover, focus vegetation management practices (such as group selection harvest) in those areas to increase understory density and improve snowshoe hare habitat.	Not applicable. The HPMP does not include any vegetation management projects.
To maintain the amount and distribution of lynx foraging habitat over time, manage so that no more than 30% of the lynx habitat in an LAU is in an early stand initiation structural stage or has been silviculturally treated to remove horizontal cover (i.e., does not provide winter snowshoe hare habitat). Emphasize sustaining snowshoe hare habitat in an LAU. If more than 30% of the lynx habitat in an LAU is in early stand initiation structural stage or has been silviculturally treated to remove horizontal cover (e.g., clearcuts, seed tree harvest, precommercial thinning, or understory removal), no further increase as a result of vegetation management projects should occur on federal lands.	Not applicable. The HPMP does not include any vegetation management projects.

Appendix A. Consistency with Canada lynx conservation assessment and strategy management direction (Interagency Lynx Biology Team 2013)	
Conservation Measure	**Compliance with guidance**
Recognizing that natural disturbances and forest management of private lands also will occur, management-induced change of lynx habitat on federal lands that creates the early stand initiation structural stage or silviculturally treated to remove horizontal cover should not exceed 15% of lynx habitat on federal lands within a LAU over a 10-year period.	Not applicable. The HPMP does not include any vegetation management projects.
Conduct a landscape evaluation to identify needs or opportunities for adaptation to climate change. Consider potential changes in forest vegetation that could occur as a result of climate change (e.g., Gärtner et al. 2008). Identify reference conditions relative to the landscape's ecological setting and the range of future climate scenarios. For example, the historical range of variability could be derived from landscape reconstructions (e.g., Hessburg et al. 1999, Blackwell et al. 2003, Gray and Daniels 2006).	Not applicable. The HPMP does not include any vegetation management projects.
Design harvest units to mimic the pattern and scale of natural disturbances and retain natural connectivity across the landscape.	Not applicable. The HPMP does not include any vegetation management projects.
In aspen stands, maintain native plant species diversity including conifers.	Not applicable. The HPMP does not include any vegetation management projects.
Recruit a high density of stems, generally greater than 4,600/ha (1,862/ac), of conifers, hardwoods, and shrubs, including species that are preferred by hares.	Not applicable. The HPMP does not include any vegetation management projects.
Provide for continuing availability of lynx foraging habitat in proximity to denning habitat.	Not applicable. The HPMP does not include any vegetation management projects.
When designing fuels reduction projects, where possible retain patches of untreated areas of dense horizontal cover within treated areas.	Not applicable. The HPMP does not include any vegetation management projects.
WILDLAND FIRE MANAGEMENT	
Maintain fire as an ecological process in lynx habitat, where small populations are not at risk of extirpation due to habitat loss. Evaluate whether fire suppression, forest type conversions, and other management practices have altered fire regimes and the functioning of ecosystems.	Not applicable.
Consider the use of mechanical pre-treatment and management ignitions if needed to restore fire as an ecological process or to maintain specific lynx and/or prey species habitat components.	Not applicable. The HPMP does not include any prescribed fire treatments.
As federal fire management plans are developed or revised, integrate lynx habitat management objectives into the plans. Prepare plans for areas that are large enough to encompass large historical fire events. Collaborate across management boundaries	Not applicable.

Appendix A. Consistency with Canada lynx conservation assessment and strategy management direction (Interagency Lynx Biology Team 2013)	
Conservation Measure	**Compliance with guidance**
to develop approaches that are complementary and that simulate natural disturbance patterns where possible.	
Design burn prescriptions to promote response by shrub and tree species that are favored by snowshoe hare.	Not applicable. The proposal does not include any prescribed fire treatments.
FRAGMENTATION OF HABITAT	
Emphasize land uses that promote or retain conservation of contiguous blocks of lynx habitat.	No activities are proposed that would affect any large blocks of lynx habitat. This guidance will be met.
Maintain a mosaic of vegetation and features such as riparian areas, forest stringers, unburned inclusions or forested ridges to provide habitat connectivity within and between LAUs.	
Identify linkage areas where needed to maintain connectivity of lynx populations and habitat. Factors such as topographic and vegetation features and local knowledge of lynx movement patterns should be considered. Retain lynx habitat and linkage areas in public ownership and acquire land to secure linkage areas where needed and possible. On private lands in proximity to federal lands, agencies should strive to work with landowners to develop conservation easements, explore potential for land exchanges or acquisitions, or identify other opportunities to maintain or facilitate lynx movement.	To date, no linkage zones have been identified within GRTE.
Minimize large-scale developments that would substantially increase habitat fragmentation, reduce snowshoe hare populations, or introduce new sources of mortality.	
Give special attention to the design of highway improvements such as new road alignments, adding traffic lanes, installing Jersey or Texas barriers, or other modifications that increase highway capacity or speed. Upgrading unpaved roads should be avoided in lynx habitat, if the result would be increased traffic speeds and volumes or a substantial increase in associated human activity or development. Crossing structures or other techniques could be used to minimize or offset impacts	Not applicable. The HPMP does not include a proposal for highway improvements.
RECREATION MANAGEMENT	
Manage winter recreation activities within LAUs such that lynx habitat connectivity is maintained or improved where needed.	Not applicable. The HPMP does not include a proposal for winter recreation activities.
To minimize habitat loss, concentrate recreational activities within existing developed and high winter use areas, rather than developing new sites and facilities in lynx	Not applicable. The HPMP does not include a proposal for winter recreation activities.

Appendix A. Consistency with Canada lynx conservation assessment and strategy management direction (Interagency Lynx Biology Team 2013)	
Conservation Measure	**Compliance with guidance**
habitat. On federal lands in areas with low levels of recreation currently, consider limiting the future development or expansion of developed winter recreation sites or concentrated winter use areas.	
Direct recreational activities and facilities away from identified linkage areas.	New facilities that will support visitor use of historic properties are not within any identified linkage areas.
Consider not expanding designated over-the-snow routes or designated play areas in lynx habitat, unless the designation serves to consolidate use.	Not applicable. The HPMP does not include a proposal for designating or expanding over-the-snow routes or play areas.
MINERALS AND ENERGY EXPLORATION AND DEVELOPMENT	
To minimize loss of lynx habitat resulting from minerals and energy development, locate facilities and roads outside of lynx habitat and linkage areas where possible. Minimize the footprint of developments within lynx habitat.	Not applicable. The HPMP does not include any proposals actions related to mineral and energy exploration or development.
Use existing roads and utility corridors to the fullest extent possible for all activities involving exploration and development.	Not applicable. The HPMP does not include any proposals actions related to mineral and energy exploration or development.
If upgrading existing access roads, design the roads to the minimum standard needed.	Not applicable. The HPMP does not include any proposals actions related to mineral and energy exploration or development.
To the extent possible, restrict public access on roads that were built or used for mineral and energy exploration and development in lynx habitat.	Not applicable. The HPMP does not include any proposals actions related to mineral and energy exploration or development.
Encourage remote monitoring to reduce need for and frequency of site visits in lynx habitat. Develop reclamation plans for abandoned mine lands to fully rehabilitate and restore as nearly as possible to original contours and native vegetation as habitat for lynx.	Not applicable. The HPMP does not include any proposals actions related to mineral and energy exploration or development.
Develop reclamation plans for abandoned mine lands to fully rehabilitate and restore as nearly as possible to original contours and native vegetation as habitat for lynx.	Not applicable. The HPMP does not include any proposals actions related to mineral and energy exploration or development.
FOREST/BACKOUNTRY ROADS AND TRAILS	
Avoid forest/backcountry road reconstruction or upgrades that substantially increase traffic volume and speed. If traffic volume and speed are of concern, incorporate appropriate mitigation such as traffic calming measures in the project design.	Not applicable. The HPMP does not include any proposals to create new roads or upgrade existing roads

Appendix A. Consistency with Canada lynx conservation assessment and strategy management direction (Interagency Lynx Biology Team 2013)	
Conservation Measure	**Compliance with guidance**
LIVESTOCK GRAZING	
Manage livestock grazing within riparian areas and willow cars in lynx habitat to maintain conditions that support snowshoe hares by maintaining a preponderance of mid or late-seral stages.	Not applicable. The HPMP does not include any actions related to livestock grazing.