



National Park Service  
U.S. Department of the Interior  
Yellowstone National Park  
Wyoming, Montana, Idaho

## **Finding of No Significant Impact**

### **Yellowstone National Park Wildland Fire Management Plan**

#### **Background**

In compliance with the National Environmental Policy Act (NEPA), the National Park Service (NPS) prepared an Environmental Assessment (EA) to examine various alternatives and environmental impacts associated with the proposal to revise the Park's Fire Management Plan (FMP) as recent fire program management guidance and policy has changed. Fire management policy has evolved since the last FMP Environmental Assessment (FMPEA), which was prepared in 1992; the most recent FMP was updated in 2004. The 2012 document supersedes the earlier versions of Yellowstone's Fire Management Plan/EA. It should be noted that the FMPEA and FMP are independent documents, and the revised Yellowstone FMP (an operational document) will be finalized in the near future. It describes the alternatives and their consequences to the Park's natural and cultural resources for implementing a comprehensive fire program which includes wildland fire response, fire prevention and fuels management utilizing prescribed fire, and non-fire treatments. The scope of the FMP is confined to areas within the authorized boundaries of Yellowstone. Therefore, the FMP addresses the approximately 2,221,772 acres (3,472 square miles) of federal land. The EA considers impacts outside of the Park that could reasonably be impacted by Yellowstone National Park fire management actions. The scoping process contributed to the development of mitigation measures (i.e., aquatic invasive species considerations), specific issues addressed in the impact analyses (i.e., fire management in whitebark pine stands), and explanation of management approach (i.e., use of a 300-foot buffer for retardant around water bodies).

#### **Selected Action**

Two alternatives were evaluated in the EA, including Alternative 1: No Action, which is the continued implementation of 2004 FMP and Alternative 2: Proposed Action (referred from this point forward as "The Selected Action"). The same fire management tools would be available under both alternatives and include management of wildfires for resource benefit and suppression. Fuels management options include manual and mechanical treatments, and prescribed fire, under both alternatives. The Preferred Alternative (Alternative 2) differs from the No Action alternative in the following areas:

The Park would be divided into fire suppression strategy zones to assist managers in quickly determining the correct management strategy to use for an unplanned ignition. These zones would be composed of one quarter (0.25) mile buffers around frontcountry developed areas (e.g. Mammoth, Canyon Village, Northeast Entrance, as shown on the map on page 18 of the EA) to mitigate risk to values. All unplanned ignitions which originate within the suppression strategy zones will receive immediate suppression strategy response due to the close proximity of people and property. The zones will help facilitate a faster response time to wildfires within these zones. The balance of the Park's landscape would be considered for all unplanned ignition response strategies (i.e. monitor, point/zone protection, suppression), where management decisions would reflect the goal of allowing natural ecological processes to occur utilizing the safest, most effective, and most efficient methods available while meeting Park managers' identified goals and objectives.

Backcountry or wilderness values at risk will be protected using a point/zone protection strategy to lessen the effects of fire around the value. Opportunities to mitigate risk to park resources and values using manual, mechanical, and prescribed fire treatments would be included in this alternative.

Current fire management guidance has replaced several terms used to describe the activities undertaken within the 2004 FMP. Updated terminology under the Preferred Alternative includes prescribed fire (i.e. planned ignitions) and wildfire (i.e. natural or human caused unplanned ignitions). Wildfires would be managed with one, or a combination of, different response strategies which include: monitor strategy, point/zone protection strategy, and/or suppression strategy.

Wildfires managed with a monitor or point/zone protection strategy under the Preferred Alternative would be managed according to goals and objectives rather than specific prescriptions (e.g. weather and fire behavior parameters) as in the No Action.

Important improvements to the Preferred Alternative include greater emphasis on interdisciplinary planning as well as increased efficiency in response to unwanted fires. Desired conditions, goals, and objectives are better defined for fire management under this alternative.

Wildland fires would be evaluated for management response, while planned projects, including prescription, mechanical and manual fuel reduction projects would be implemented to protect values at risk.

### **Mitigation Measures**

Under the selected action, various mitigation measures will be implemented. These mitigation measures are listed in Appendix A.

### **Alternatives Considered**

Two alternatives were evaluated in the EA including the no action alternative and one action alternative. Under Alternative 1, No Action, there would be a continuation of current management actions under the 2004 Fire Management Plan. The 2004 Fire Management Plan allowed for naturally occurring fires within the Park to be assessed for management of multiple goals and objectives under specific pre-set prescriptions, suppression of unwanted fires, manual and mechanical fuel treatments, and prescribed fires. Alternative 2, Proposed Action, is the preferred alternative, as described in the previous "Selected Action" section.

### **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. The environmentally preferable alternative is identified upon consideration and weighing by the Responsible Official of 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 2, the Proposed Action, is the environmentally preferable alternative for several reasons: a) It provides the full spectrum of fire management strategies and practices to accomplish Yellowstone fire and resource management objectives while protecting human life, and identified resources and values. b) It allows a broader set of goals and objectives for wildfires than the No Action alternative; rather than more confined prescriptions, allowing for the safety of firefighters, visitors, employees, and Park neighbors and the protection of Park development, while allowing fire to play its ecological role in the Park to the greatest extent possible. c) It is more streamlined with

the inclusion of suppression strategy zones, safer, more cost effective wildfires, and could lead to quicker initial response. For these reasons, Alternative 2 causes the least damage to the biological and physical environment and best protects, preserves, and enhances historical, cultural, and natural resources, thereby making it the environmentally preferable alternative.

By contrast, Alternative 1 (No Action) is not the environmentally preferable alternative because, while it represents the current management direction for Yellowstone National Park in conformance with the Park's 2004 Wildland Fire Management Plan, it would not achieve fire management goals to as great an extent as Alternative 1, the Proposed Action.

### **Why the Selected Action Will Not Have a Significant Effect on the Human Environment**

As defined in 40 CFR §1508.27, significance is determined by examining the following criteria:

***Impacts that may be both beneficial and adverse. A significant effect may exist even if the Federal agency believes that on balance the effect will be beneficial.***

Implementation of the preferred (selected) alternative will result in some adverse impacts; however, the overall benefit of the project, particularly a revised decision making process and prompt fire management response, outweighs these negative effects. The adverse effects are summarized as follows. Negligible to moderate adverse and beneficial impacts of the preferred alternative will occur to air quality, water quality, geological resources, wilderness, vegetation and wetlands, fish and wildlife, threatened and endangered species, visitor use and experience, cultural resources, and socioeconomic resources. Implementation of the Yellowstone National Park Fire Management Plan will be an overall benefit to park resources in the long-term.

The overall benefit of implementing the preferred (selected) alternative is that the decision making process and terminology are updated, and prompt fire management response to unplanned fire is improved, thus protecting, life, property, and resources.

#### ***The degree to which the proposed action affects public health or safety***

Firefighter and public safety is the first priority in the development of an FMP. In light of this, numerous mitigation measures will be implemented related to human health and safety. Only fully qualified (i.e. meeting National Wildfire Coordinating Group qualifications and accepted interagency knowledge, skills and abilities for the assigned fire job) personnel will be assigned fire management duties (unless assigned as trainees, in which case they would be closely supervised by an individual fully qualified for the given position). No operation will be initiated until all personnel involved have received a safety briefing describing known hazards and mitigating actions, current fire season conditions, and current and predicted fire weather and behavior. Wildland fire incident commanders will minimize firefighter exposure to heavy smoke when possible. Park neighbors, visitors and local residents will be notified of all fire management events that have the potential to impact them. The superintendent or designee may, as a safety precaution, temporarily close parts of the Park to the visiting public. With all of these measures in place, adverse effects on health and safety will be minimized.

#### ***Unique characteristics of the geographic area such as proximity to historic or cultural resources, park lands, prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas***

As described in the EA, negligible to moderate effects to cultural resources were identified for the Preferred Alternative. The possibility of disturbing currently unmapped and unsurveyed sites exists, although this would be unlikely. Mitigation measures to protect cultural resources would be employed during project implementation and are described in the EA.

Wetlands would be avoided during treatment under the Preferred Alternative. There are no prime farmlands within Yellowstone. The Preferred Alternative does not include planned fire management activities that would affect any ecologically critical areas, wild and scenic rivers, or other unique natural resources, as referenced in the Wild and Scenic Rivers Act, Management Policies, 40 CFR 1508.27, or the criteria for national natural landmarks.

***The degree to which the effects on the quality of the human environment are likely to be highly controversial***

The Selected Action's overall effects on the human environment would be beneficial as a result of the reduction of wildfire risk and maintenance of natural fire regimes, and thus not likely to be controversial. Implementation of the Preferred Alternative would not have a significant adverse effect on key resources or values at Yellowstone and would be unlikely to generate any effects on the human environment that would be highly controversial.

***The degree to which the possible effects on the quality on the human environment are highly uncertain or involve unique or unknown risks***

As previously described, risks involved under the Proposed Action alternative relate to firefighter and public safety. Mitigating measures employed will reduce the effects to public safety and have been effective in other instances. Therefore, there are no highly uncertain or unique or unknown risks identified.

***The degree to which the action may establish a precedent for future actions with significant effects or represents a decision in principle about a future consideration***

National Park Service Wildland Fire Management Guidelines (DO-18) require all parks with vegetation capable of sustaining fire to develop a wildland fire management plan. The plan should meet the specific resource management objectives for the park and ensure firefighter and public safety is not compromised. These guidelines further state that all non-structural fires occurring in the wildland are classified as either planned ignitions or unplanned ignitions. Fires may be authorized by an approved wildland fire management plan and contribute to a park's resource management objectives. The preferred alternative neither establishes a NPS precedent for future actions with significant effects nor represents a decision in principle about a future consideration.

***Whether the action is related to other actions with individually insignificant but cumulatively significant impacts. Significance exists if it is reasonable to anticipate a cumulatively significant impact on the environment. Significance cannot be avoided by terming an action temporary or by breaking it down into small component parts.***

No major (significant) cumulative effects were identified in the EA. Impacts of the preferred alternative on air quality, water quality, geological resources, wilderness, vegetation and wetlands, fish and wildlife, threatened and endangered species, visitor use and experience, cultural resources, and socioeconomic resources were identified. As described in the EA, cumulative impacts were determined by combining the impacts of the preferred alternative with other past, present and reasonably foreseeable future actions. The impacts of other past, present and reasonably foreseeable future actions on resources, in conjunction with the impacts of the preferred alternative, will result in both beneficial and adverse cumulative impacts ranging in intensity from negligible to moderate. Therefore, the preferred alternative will not contribute or result in significant cumulative impacts.

***The degree to which the action may adversely affect districts, sites, highways, structures, or objects listed in or eligible for listing in the National Register of Historic Places or may cause loss or destruction of significant scientific, cultural, or historical resources.***

As described above, Yellowstone has more than 2,000 documented prehistoric and historic sites; 1,030 historic structures entered on the List of Classified Structures, 375 are listed on the National Register of Historic Places and 351 have been determined eligible for listing; several cultural landscapes; and over 600 recorded ethnographic resources.

Adverse impacts to cultural and historic resources would be overall minor to moderate, short- to long-term, adverse or beneficial and local depending on the nature and intensity of any wildfire and subsequent fire management response and rehabilitation activities. Adverse effects on cultural and historic resources from planned fire management actions would be avoided or minimized through identifying the resources prior to disturbance and protecting the resources. Prior to prescribed burning and fuel reduction project implementation, an archeologist meeting the Secretary of the Interior's standards would inventory unsurveyed areas for cultural resources, and the Park would ensure compliance with Section 106 of the National Historic Preservation Act. If necessary, mitigation would be developed in consultation with the Wyoming, Idaho, and Montana State Historic Preservation Officers.

During the preparation period for this Fire Management Plan and Environmental Assessment, the park hosted a conference call with all three SHPOs associated with the Park, during which IDSHPO and MTSHPO indicated that they would defer to WYSHPO for 106 compliance for the YELL FMP. Letters were sent to all three SHPOs requesting concurrence for the preferred alternative, but only the WYSHPO responded, ID and MT let the 30-day clock run out.

The 30-day period in which the Idaho and Montana State Historic Preservation Offices were given to respond for concurrence to the preferred alternative expired on November 1, 2012 with no response from either office, indicating they had no objection to the plan. The Wyoming State Historic Preservation Office responded on October 3, 2012 through a letter in which they concurred with the preferred alternative, but indicated additional Section 106 compliance will need to be completed on an individual project level.

***The degree to which the action may adversely affect an endangered or threatened species or its habitat that has been determined to be critical under the Endangered Species Act of 1973.***

Two federally listed species occur in the project planning area:

Canada lynx (threatened) are considered rare in the Greater Yellowstone Area and are believed to use boreal or montane forests. Evidence of lynx in the Park comes from winter tracking surveys, lynx hair-snare transects, and historic sightings. Park wide, only four lynx sightings have been reported by visitors in the last 10 years. Surveys have documented one possible, two probable, and two definite cases of lynx presence. Population numbers are unknown. Lynx critical habitat was designated in Yellowstone in 2009.

As of 2011, the Yellowstone ecosystem grizzly bear (threatened) population is estimated at 593 bears occupying over 12 million acres. There are more grizzly bears today, occupying a larger area, than there were in the late 1960's prior to the closure of the ecosystem garbage dumps (312 bears occupying 5 million acres). Grizzly bears now occupy areas they have been absent from for decades and are expanding into areas far outside of the recovery zone.

The gray wolf was native to the Yellowstone area when the Park was established in 1872. Historically hunted for their hides and as predators, they were eliminated from the ecosystem by the 1930s. With reintroduction efforts, in 2011 at least 98 wolves (10 packs and 2 loners) occupied

the Park. At the end of 2011, there were approximately 499 adult wolves consisting of 38 breeding pairs present in the Greater Yellowstone Area. The gray wolf was delisted on September 30, 2012 during the informal consultation period with the U.S. Fish and Wildlife Service. This species is discussed here because its status has changed during the development of this plan.

Two candidate species also occur in Yellowstone:

The wolverine is a wide-ranging mustelid that naturally exists at low densities throughout much of northern and western North America. Wolverines have been detected in the Greater Yellowstone Ecosystem including the eastern, northern, and southern portions of the Park.

Whitebark pine is a major component of the forest community in areas above 8,400 feet and a major understory component of lodgepole dominated forests from 7,000 to 8,400 feet. Whitebark pine populations in Yellowstone have been declining due to native mountain pine beetles and non-native blister rust, which is caused by a fungus. Whitebark pine exist both as an overstory and understory component within the forest communities in many regions of the Park. If either of these species are listed under the Endangered Species Act, the Park would reconsult with the U.S. Fish and Wildlife Service (USFWS).

Impacts on federally protected species under the preferred alternative will be negligible to minor, short- to long-term, and adverse or beneficial. It is unlikely that any federally protected species would be harmed by fire management activities, and may benefit from post fire conditions. Some displacement due to fire management activity, habitat loss and degradation would occur, although impacts would be short-term and not jeopardize continued existence of species. Short-term benefits would also occur from managing vegetation and habitat for natural resource objectives. Habitat could be enhanced or created, and likely to have long-term benefits to listed species. Avoidance measures and mitigation would be used to protect federally listed species. The use of a monitor or point/zone protection response strategy would provide beneficial effects by allowing natural processes to perpetuate so natural ecological function would be maintained and restored on more acreage in the Park.

On September 18, 2012 the park sent a letter to the USFWS requesting informal consultation on the 2012 Yellowstone Fire Management Plan Environmental Assessment, Alternative 2. On December 5, 2012 the park received a letter from the USFWS concurring with the Park's determination of "may effect, not likely to adversely affect" for grizzly bear, Canada lynx, and designated critical habitat for lynx. On September 30, 2012 gray wolves were delisted and consultation on this species is no longer required. Additionally, impacts to threatened and endangered species do not differ from impacts described in a prior informal consultation that occurred in 2005 on the 2004 FMP when Yellowstone National Park prepared a Programmatic Biological Assessment (PBA; dated January 31, 2005). The USFWS sent a letter on March 28, 2005 concurring with the Park's "may effect, not likely to adversely affect" determination that concluded that informal consultation. Future consultations with the USFWS will occur for individual fuels treatment projects that are described in Appendix B of the FMPEA prior to implementation of those projects. The USFWS does not give a determination on proposed or candidate species within the park.

***Whether the action threatens a violation of Federal, State, or local law or requirements imposed for the protection of the environment***

The action will not violate any federal, state, or local laws or environmental protection laws.

**Public Involvement and Native American Consultation**

The EA was made available for public review and comment during a 30-day period ending October 19, 2012. A total of eight responses were received. To notify the public of this review period, a

letter was mailed to stakeholders, 103 members of the Park's affiliated Native American tribes, interested parties, and a press release was sent to newspapers and news organizations. The content of the responses varied. No single topic was commented on by more than one commenter. This total includes six letters from unaffiliated individuals and two letters from State offices: one letter from the Wyoming State Historic Preservation Office and one letter from the Wyoming Game and Fish Department. Of the eight responses, all were from within states that contain Yellowstone National Park land.

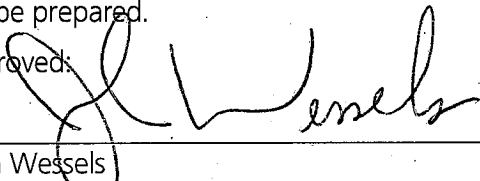
Public review and comments did not result in any substantial changes to the information and findings presented in the EA or to the NPS selected alternative. Based on comments received, there were a few changes to the text of the EA which are addressed in errata sheets attached to this FONSI. The FONSI and errata sheets will be sent to all commenters. A summary of issues raised and NPS responses to substantive comments are included in the "Response to Comment" section.

## Conclusion

As described above, the preferred alternative does not constitute an action meeting the criteria that normally require preparation of an environmental impact statement (EIS). The preferred alternative (selected action) will not have a significant effect on the human environment. Environmental impacts that could occur are limited in context and intensity, with generally adverse impacts that range from localized to widespread, short- to long-term, and negligible to moderate. There are no unmitigated adverse effects on public health, public safety, threatened or endangered species, sites or districts listed in or eligible for listing in the National Register of Historic Places, or other unique characteristics of the region. No highly uncertain or controversial impacts, unique or unknown risks, significant cumulative effects, or elements of precedence were identified. Implementation of the action will not violate any federal, state, or local environmental protection law.

Based on the foregoing, NPS has determined that an EIS is not required for this project and thus will not be prepared.

Approved:



John Wessels  
Regional Director, Intermountain Region, National Park Service

2/25/13  
Date

# Errata Sheets

## Yellowstone National Park Fire Management Plan

### Yellowstone National Park

According to NPS policy, substantive comments are those that 1) question the accuracy of the information in the EA, 2) question the adequacy of the environmental analysis, 3) present reasonable alternatives that were not presented in the EA, or 4) cause changes or revisions in the proposal.

Some substantive comments may result in changes to the text of the EA, in which case, they are addressed in the *Text Changes* section of the Errata Sheets. Other substantive comments may require a more thorough explanatory response and are addressed in the *Response to Comments* section. NPS responds to all substantive comments in either or both of these sections.

Substantive comments to the Yellowstone National Park Wildland Fire Management Plan Environmental Assessment varied, with no single topic commented on by more than one commenter. A few comments, which are addressed below, resulted in minor changes to the text of the EA.

#### Text Changes

**Change lines 17-18, page 10** from "Suppress human caused wildfires in a safe, cost-effective, and environmentally sensitive manner" to "Use suppression as the initial response to human caused wildfires to acknowledge suppression is not the only acceptable response if the wildfire should escape the initial response."

**Change text on line 17, page 28** from "5th Level (10 digit) hydrologic units (HUC)" to "4th Level (8 digit) hydrologic units (HUC)."

**Add after line 21, page 28** "Yellowstone National Park works with partner agencies throughout the GYA preventing the spread of new AIS populations and notifies these agencies if new AIS populations are discovered or water is transported across boundaries."

Change text on line 9, page 44 from "50 foot wide right-of-way" to "40 foot wide right-of-way."

**Add after line 33, page 124** "Although agencies typically only take into account affects to historic properties that are eligible for the National Register, park managers may also consider affects to, and manage cultural resources that are not historic properties."

Change the following terminology throughout the document:

- "Planned fire" has been replaced with "planned ignitions" or "prescribed fire."
- "Unplanned fire" has been replaced with "unplanned ignitions" or "wildfire."
- "Appropriate management response" has been changed to "management response."

#### Response to Comments

**Comment 1** – This is a large document and I may have missed this, but I did not see any reference to making structures less susceptible to fire (i.e. fire proof shake shingles, etc.). This could be a valuable tool in addition to fuel reduction.

**Response 1** – The Fire Management Plan EA does not specifically address the use of fire resistant construction materials, but it does reference the International Code Council (ICC). Sections 501 through 507 of the ICC discuss special building construction regulations in the wildland urban



interface. Park fire managers work to ensure these National Park Service required standards are included within all of the park development comprehensive area plans produced for Yellowstone National Park. Yellowstone National Park managers often must make decisions related to various competing resource concerns, and sometimes other criteria may take precedence when choosing materials (i.e. historic significance, location, visual aesthetics).

**Comment 2 – Burn Pile Concerns:** On previous fuels projects, burn piles within lodgepole canopies have resulted in the death of trees intended to be left intact due to heat stress. Burn piles should be utilized carefully.

**Response 2 –** Lodgepole pines have shallow root systems, making them very susceptible to blowdown. Park fire managers have determined it is better to complete multiple partial thinning treatments over several years versus a full thinning treatment within one year because of the potential for blowdown. By completing partial treatments over several years, some treatment areas are not always opened up enough to allow standing live trees to not be affected by burn piles. If trees are affected by burn piles (e.g. scorched or killed due to burn pile proximity), these trees will either be left as standing dead for wildlife use, or will be taken down in the next partial thinning treatment. The overall loss of lodgepole pine canopy trees is negligible resulting from pile burning.

**Comment 3 –** Safety briefings are mentioned for all fire crews. It would be good to include Resource Briefings as well. When a Resource Advisor is dedicated to a fire, we brief all incoming resources on both safety and resource concerns associated with YNP in general as well as the specific fire or camp area. Inclusion of the specific need of these briefings would be beneficial.

**Response 3 –** All fire resources which come from outside of the Greater Yellowstone Area are required to not only receive a resource briefing, but are required to watch the full bear safety video before engaging in any fireline duties. A member of the resource management staff is contacted during the initial states of a wildfire (see mitigation measures on page 30), and a resource advisor is assigned to every wildfire, though staffing limitations and particularly intense fire seasons may not always make this possible. If a member of the resource management staff is not available to brief outside resources, a member of the fire management staff will assist in giving a resource management briefing.

**Comment 4 –** It is stated that all equipment will be fueled 150 feet from water sources. This is great, but will it really be implemented or is it even practical. The agricultural pump for instance used on the Cygnet Fire is not easily mobile. Even Mark-3 pumps are unlikely to be disconnected and moved each time they are fueled. By the nature of pumps, they will be in close proximity of water sources. Containment and care is certainly required, just wanted to check on this 150 foot rule. I would support it and distance from water sources and fuel is ideal, just questioning the practicality.

**Response 4 –** In most instances, when fueling a Mark III pump, no fuel is actually poured from can to can, the empty fuel can is merely swapped with a full fuel can. When using a large agricultural pump (i.e. high volume, low psi pump), it cannot practically be moved 150 feet away from the water source to refuel. Mitigation measures include a fuel containment system be used at all times, and equipment will be fueled at least 150 feet from water sources whenever practical.

**Comment 5** – I'm glad to see a limit on the number of people associated with Spike Camps, even 100 is pushing it, but several years ago, we had over 120 on a camp at Crow Pass on the East Entrance Road (against the recommendation of the READ). It did attract a bear and resulted in numerous issues. Spike camps should be limited to small numbers and short duration whenever possible.

**Response 5** – Park fire managers agree with the need to keep spike camps small in size, number of people, and as short of duration as possible. Park fire managers are committed to protecting all resources within the park; therefore, all efforts will be made to reduce impacts from spike camps.

**Comment 6** – I appreciate the mention of all equipment and vehicles shall be cleaned prior to entering the park, but this does not currently occur. Would it be possible to have this included in the Resource Order so that crews know if this requirement and can ensure they get cleaned prior to arriving?

**Response 6** – The park has recently started to include this on resource orders when ordering crews and equipment for park fires, and all vehicles are inspected prior to being dispatched to the fireline.

**Comment 7** – A mention is made of a 50 foot corridor for Northwest Energy. I may be wrong, but was under the impression that it was a 40 foot corridor.

**Response 7** – You are correct that the corridor for Northwestern Energy is 40-foot. The mention of a 50 foot corridor is incorrect and the text will be changed on page 44 from "50 foot wide right-of-way" to "40 foot wide right-of-way".

**Comment 8** – Under the "Additional Conservation Measures Specific to Grizzly Bears" section, a reference is made to Monitoring Exotic Vegetation. This is followed by "If funding is available". Given the significant resources allocated to fire suppression, funding for exotic vegetation should be more of a priority and shouldn't be the only issue limited by funding. Monitoring and control of exotic vegetation has always been an issue and concern related to post-fire funding. Fire accounts are typically closed too soon to fund long term issues such as exotic vegetation monitoring and control which often occur over years if not decades.

**Response 8** – Yellowstone National Park implements an invasive vegetation program that focuses on prevention, early detection, survey and treatment of invasive species. Most of the park's efforts occur along park roads and developments and known backcountry areas. During fire activity, the spread of invasive weeds is minimized through efforts of the fire Resource Advisor program (READ). The READ program directs equipment to be cleaned if it came from known weed infested areas, and also collects informal monitoring data regarding conditions of existing and newly discovered populations of exotic plants. Minimum Suppression techniques and fireline rehabilitation are also employed to help prevent the spread of invasive plants associated with fire activity.

**Comment 9** – At the end there is a spelling error "Managi Environmental Groups" is written, I would assume "Managing" was the intent?

**Response 9** – We assume that the commenter is referring to page 141 of the FMP/EA, where 'Mangi Environmental Group' is included in the list of preparers and consultants. Mangi Environmental Group is the name of the NEPA contractor, and it is not a typographic error.

**Comment 10** – Reference Section 1.3.1, bullet two under “Purpose” – “Preserves abundant and diverse wildlife in one of the largest remaining nearly intact wild ecosystem on earth, supporting unparalleled biodiversity.”

The let burn policy is contrary to this “Purpose” given the destructive nature of a catastrophic fire [example in the 1988 fire season] which left grazing wild life with insufficient food to maintain wild life through the harsh winter months resulted in starvation and a decline in wild life population. Further, the starvation resulted in massive elk, deer, and bison deaths [expanding upon typical grazing ranges] into the winter throughout the Yellowstone National Park [YNP or Park] and also onto private lands outside, and adjacent to, the Park. The financial burden of disposal was on the private land owner. The objective of the second bullet under “Purpose” was not met. The EA does not address how the Park would address these two issues in the future.

It is unclear how the second bullet under “Purpose” is met: “Provides for the benefit, enjoyment, education and inspiration of this and future generations” with this EA given the destructive nature of fire.

**Response 10** – Fire is a well-documented, natural process within park ecosystems. While wildfire can be viewed as destructive to those unfamiliar with certain ecosystems, such as a lodgepole pine ecosystem which relies on fire to regenerate, it is a very important part of the ecosystem within the park. Although some ungulate deaths have been attributed to the 1988 fire season, most ungulates actually benefitted from the renewal of grasses and forbs which followed the fire. Some animals have short term adverse effects to fires because they are displaced and potential food sources are affected. Most of these short term adverse effects to animals are offset by the long term benefits of increased habitat and forage in the years following a fire. By excluding fire from the Yellowstone ecosystem, the National Park Service would not be meeting its purpose of preserving and providing the landscape for future generations.

**Comment 11** – Reference Section 1.4 Fire Management Objectives

It would seem a further objective of the fire management goals to coordinate and support a “good neighbor” policy with adjacent land owners as well as “land management agencies” [State, Federal, and Local]. YNP is more than a National [and International] Jewel, it is a neighbor to surrounding States, towns, and land owners, and as such, it should be obligated to act as a neighbor through communication, actions, and policies.

**Response 11** – Park fire management strives to exhibit a ‘good neighbor’ policy through participation in the Greater Yellowstone Area Interagency Fire Management Planning and Coordination Committee. Press releases are submitted for many different fire management activities within the park throughout the year, and the park’s website is updated often to assist in disseminating information to the public. The park also holds public meetings in the gateway communities which may be affected by park projects.

**Comment 12** – Reference Section 1.5.2 Impact Topics Dismissed From Further Analysis

Floodplain events residing only within the YNP boundaries and having no possible domino effect outside YNP can be limited to a 100-year event; however, the resulting aftermath effects that would extend outside the YNP boundaries should be evaluated and considered and 500-year events, given the destructive natural of floods as a cascading effects/events [vegetation damage, wild life, terrain changing, cascading debris, etc.]. It is myopic [as a good neighbor and Federal

Agency] to consider only events locally and not globally. The aftermath of fires is generally flooding, erosion, and environmental destruction. Flooding as a secondary destructive event [resulting from a fire event] from weather causing erosion from snow and rain is real and fails to meet the "Purpose" requirement outline earlier in the EA. The failure to consider an in-depth analysis of floodplain events within YNP [even if localized] and effects outside the boundary of YNP is criminal and places the public, private property, and public property [State, local, and other Federal] in harm's way.

Unique and Prime Farmlands [Title 7, Chapter 73, Section 4201 (c)(1) of the Farmland Protection Policy Act (FPPA)] – Has consideration been given to the domino effect from fire's aftermath from flooding events that extends outside the YNP boundary and would affect this Act?

**Response 12** – Fire is a natural part of the ecosystem within Yellowstone, and there is usually no large scale aftermath of flooding, erosion, and environmental destruction after a wildfire which has occurred within the park, let alone outside of the park. While some small scale erosion may occur after a wildfire, events will be small and localized. Flooding that may occur within, or outside of the park, will not be due to wildfires in most instances, and therefore floodplains were dismissed from full analysis. Unique and prime farmlands was dismissed as an impact topic as there are none within the park, and none outside of the park which would be likely to have any measurable impacts or be affected by wildfires that happen within the park.

**Comment 13** – We do have some comments on Section 3.11.2 (Cultural Resources/Methodology) of the EA. In the discussion of determinations of effect to historic properties, particularly "The thresholds of change for the intensity of an impact" on Archeological Resources, Historic Resources, Cultural Landscapes, and Ethnographic Resources (Effect Discussion), the assumption behind the determinations appears to be that all of these resources are Historic Properties as defined at 36 CFR 800.16(l). Clarification that not all of these resources are Historic Properties would strengthen this portion of the EA.

**Response 13** – Agencies must consider potential effects of the proposed action to historic properties. The National Historic Preservation Act also defines Historic Properties as those cultural resources evaluated for inclusion to the National Register of Historic Places, and those cultural resources that have not yet been evaluated for their inclusion. The following sentence will be added to the end of the first paragraph of section 3.11.2 Methodology: "Although agencies typically only take into account affects to historic properties that are eligible for the National Register, park managers may also consider affects to, and manage cultural resources that are not historic properties."

**Comment 14** – Additionally, while the opening paragraph of 3.11.2 discusses the consultation process under Section 106 of the National Historic Preservation Act, the Effect discussion does not adequately reflect the role of consultation in assessing affects per 36 CFR 800.5(a). In particular, the discussion of the role of Native American consultation in relation to Historic Properties of religious and cultural significance to them (under Ethnographic Resources) should be addressed explicitly.

**Response 14** – The park will continue to consult with Native American tribes regarding actions which may affect historic properties, including ethnographic resources and other significant cultural resources. Tribes received scoping letters sent December 12, 2011 asking for input at the beginning of this NEPA process. Tribes also received notice of the availability of YELL FMP EA for comments

that ended October 19, 2012. Should tribes identify resources of religious and cultural significance to them, additional consultation with them regarding affects will be completed.

**Comment 15 – Fire Management Objectives:** 1) The Fire Management Objectives (pg. 9) do not include an adequate protection objective tiered to the national fire program goals and resource management goals. DO-18 includes the goal "Protect natural and cultural resources and intrinsic values from unacceptable impacts attributable to fire and fire management activities." The Resource Management Plan contains the goal "Preserve the natural and cultural resources of Yellowstone and to allow natural processes and interactions between resources to occur with a minimum of human influence." While the Fire Management Plan lists many important values to be protected within its pages, there is no associated protection objective to address these values in the list of Fire Management Objectives. As a result, it would be difficult to derive an appropriate incident objective to protect these values for a wildfire incident. In other words, if one were to read the list of objectives given, there would be no basis for any kind of protection response, other than to "suppress human caused wildfires." What is the fire management program's objective for protecting values at risk, and how are protection priorities established? Is there a difference between the proposed alternatives in their ability to meet protection objectives for valued resources and infrastructure?

2) The objective of "Suppress human caused wildfires in a safe, cost-effective, and environmentally sensitive manner" is more restrictive than necessary under the 2009 Guidance for Implementation of Federal Wildland Fire Policy, and removes leeway in decision making. The 2009 Guidance directs that the "initial action on human caused wildfire will be to suppress the fire;" however, it does not direct that suppression is the only option should the fire escape the initial response. Yellowstone has in the past used wildfires to accomplish resource objectives even when the ignition source was human caused, and the park should strive to retain that latitude. I am not suggesting that arson fires be allowed to burn, but there is little difference between a lightning-caused fire and a fire caused by a downed powerline, and such fires should not automatically be suppressed without adequate evaluation of their potential benefits and risks. Don't preclude options unnecessarily.

**Response 15 –** Fire is treated as a natural process within the park. While there is no specific objective within the fire management objectives, this subject is discussed on page 24, under point/zone protection within recommended wilderness. When a wildfire starts, agency administrators, fire management staff, and cultural and natural resource staff take into consideration any possible values at risk (e.g. sensitive natural and cultural resources) when determining what the initial response to the wildfire will be. One of the objectives on page 10 has been reworded to say "Use suppression as the initial response to human caused wildfires to acknowledge suppression is not the only acceptable response if the wildfire should escape the initial response."

**Comment 16 – Wildfire Response Strategy:** The move from the prescriptive conditions (Alternative 1) to pre-determined resource objectives (Alternative 2) will tie fire management response more closely to the Resource Management Plan as directed by national policy, but will require additional evaluation of fire effects and preplanning to be successful. To be fully implementable, resources and infrastructure with the potential to be affected by exposure to fire should be evaluated to determine what effect fire (at multiple levels of intensity) will have on these values, what effects are acceptable/unacceptable (as determined by measurable objectives based on desired future conditions), and how conflicts will be prioritized/resolved (e.g., fire can benefit one resource while harming another-which effect takes precedence?) Whether the park has the capacity and

commitment to develop these criteria in an effective timeframe should be addressed in the Environmental Assessment. To be clear, I support Alternative 2 over Alternative 1, but would like to see the park commit to the workload associated with Alternative 2's success.

**Response 16** – Yellowstone fire management staff is in the process of a park-wide structure assessment. This means every structure will be rated to determine its defensibility against a wildfire. While this is not the solution to all questions, it is a start by determining what buildings are within the park and the level of work which will be needed should a wildfire threaten any one of them. When a wildfire starts, cultural and natural resource staff are assembled with agency administrators and other staff to determine which values have the highest priority. This is also true of all planned fire management projects (e.g. planned ignitions, hazard fuel treatment); an interdisciplinary team will be used to determine desired future conditions, evaluate potential impacts, and those that are unacceptable, among many other tasks. Using this process, it is determined what the project would look like, how it would be completed, and which values are more important than others. More specific tactical information will be included in the FMP.

**Comment 17** – Whitebark Pine: As an example of the issue with the Wildfire Response Strategy as discussed above, whitebark pine has a very complex relationship with fire, and adequately describing the resource objective/desired future condition for whitebark pine in Yellowstone is critical to ensuring that fire management "gets it right." Closer ties with the GYCC Whitebark Pine Strategy and more detail tying fire effects in whitebark pine to management objectives is necessary to adequately protect this species of special concern. In addition to protecting "plus trees," areas suitable for whitebark pine that have been ceded to a subalpine fir cover type due to previous fire suppression should be identified and prioritized for the use of fire to meet resource objectives. The GYCC Whitebark Pine Strategy (2011) states as one of the management strategies, "Before the fire season begins, work with fire management offices to identify locations where fire may be beneficial or detrimental to whitebark pine management goals;" this strategy would be useful for ALL critical resources affected by fire in Yellowstone. The park should commit to this approach and the associated workload on a prioritized basis.

**Response 17** – Yellowstone National Park is an active partner with the Greater Yellowstone Coordinating Committee Whitebark Pine Subcommittee. This includes collaboration with monitoring the health of whitebark pine, mapping whitebark pine stands, promoting gene resistance for white pine blister rust and the protection of ten "Plus trees" in the park. Plus trees are trees that have been selected by their indication of having a resistance to rust and because they contribute toward a GYA conservation of this important high alpine landscape. Park biologists and resource managers work with the fire planning team and participate toward management objectives that involve whitebark pine conservation. This would include the premise that wildland fire is an important component of whitebark pine conservation. The park also recognizes the value of Plus trees and takes measures to protect these trees from mountain pine beetle and if feasible, from wildland fire. Park fire managers will meet with resource managers in the spring to determine where the whitebark pine plus trees are, and the areas which need protection.

**Comment 18** – Definitions: Several of the definitions integral to the document are incorrect or unsupported by policy or NWCG terminology. "Planned/unplanned fires" are not legitimate terms- ignitions are planned or unplanned, not fires (2009 Guidance for Implementation of Federal Wildland Fire Policy). It is ironic that the term "unplanned fire" appears so pervasively throughout the Fire Management Plan. "Wildland Fire" is defined incorrectly in the outtake box on page 16. The definition not only refers to wildland fires as "unplanned or unplanned," it also precludes

prescribed fire from the definition (which is contradicted by text on the same page). The correct definition (from the NWCG terminology memo #24-2010) is "A general term describing any non-structure fire that occurs in the vegetation and/or natural fuels." The intent of this term is stated in this memo as "A general term that includes both prescribed fire and wildfire."

**Response 18** – The document has been changed to reflect the following inadvertent terminology errors:

- All planned fire has been replaced with planned ignitions, or prescribed fire.
- All unplanned fire has been replaced with unplanned ignitions, or wildfire.
- It has been clarified there are two types of wildland fire: wildfire (i.e. unplanned ignitions), and prescribed fire (i.e. planned ignitions).
- All references to appropriate management response have been changed to management response.

**Comment 19** – In our letter dated December 20, 2011, we misstated the following recommendation: "that will prohibit water from being transported between 5th Level (10 digit) hydrologic units (HUC) watersheds, unless in an emergency (life or structure loss)." The recommended language should be: "that will prohibit water from being transported between 4th Level (8 digit) hydrologic units (HUC) watersheds, unless in an emergency (life or structure loss)."

**Response 19** – The language in bullet four on page 28 has been edited to reflect the revised recommendation.

**Comment 20** – We recommended adding the following language to bullet 4: If water is transferred from waters located outside of the Park boundary, the Yellowstone Aquatic Invasive Species staff will contact the Wyoming Game and Fish Department's Aquatic Invasive Species coordinator.

We recommend consulting with WGFD personnel before each fire season. The purpose of this meeting is to identify water's that may contain AIS.

**Response 20** – The following language has been added to bullet four on page 28: "Yellowstone National Park works with partner agencies throughout the GYA preventing the spread of new AIS populations and notifies these agencies if new AIS populations are discovered or water is transported across boundaries."

Yellowstone National Park is an active partner with the Greater Yellowstone Coordinating Committee Aquatic Invasive Species Subcommittee. This includes collaboration with prevention of AIS through park outreach, inspections and decontamination of boats entering Yellowstone waters, and survey of Yellowstone waters for new AIS populations. Park biologist and resource managers work with the fire planning team and participate toward management objectives that involve Aquatic Invasive Species prevention. During fire activity, the spread of Aquatic Invasive Species is minimized through the fire Resource Advisor program where water pick-ups and drops are specified within the same drainage system. Water transfer equipment would be cleaned if it came from known AIS areas. Minimum suppression techniques and rehab also help prevent the spread of Aquatic Invasive Species associated with fire activity. The park works with partner agencies throughout the GYA preventing new AIS populations and notifies these agencies if new AIS populations are discovered or water is transported across boundaries.

**Comment 21** – It is acknowledged that the forests of Yellowstone are partially dependent on forest fires for forest propagation, however at what point is enough? The Park has been fairly well gutted by fire, so why are natural fires still permitted, even in previously burned areas?

**Response 21** – Fire is a natural part of Yellowstone's ecosystem. One of the main objectives is to allow fire to play its ecological role in the park to the greatest extent possible. Some areas of the park have a shorter fire return interval than others, meaning some areas historically burned every 30 years, versus others which may burn every few hundred years. Many, many different variables (e.g. weather, terrain, vegetation) determine if and when an area will burn; the park prefers to allow nature to decide if all of the variables will align and an area will burn.

**Comment 22** – As an asthma sufferer, the current forest fire management policy is a real burden to tolerate. It is becoming ever more difficult to recover from months of continual fire stench and city-like air pollution smog during the summer months. Where is the government's concern for the well-being and dignity of the average human person. Yellowstone has become a major industrial complex air pollution source for the entire inter-mountain area.

The air pollution from the mushroom cloud of a forest fire visually surpasses that of a coal fired power plant, thus casting a hypocritical and conflicted light on the government's efforts to control air pollution from snow mobiles.

**Response 22** – Fire is a natural part of the Yellowstone ecosystem, and it is well documented that fire is a source of particulate matter and gases within the atmosphere during the summer months, particularly within the Northern Rockies. While some fires within the park do become large and are long in duration (up to several months), a majority of the fires within the park are small and their smoke only affects localized areas. All of the three states the park lies within (MT, ID and WY) regulate and require burn permits for planned ignitions, and in addition, the state of WY requires all unplanned fires over 100 acres to be reported. Most of the smoke, especially during the summer of 2012, was from Northern California and Idaho, not from fires within the park.



## **Appendix A – Mitigation Measures**

The following best management practices (BMPs) and mitigation measures, as presented in the EA, would be used to prevent or minimize potential adverse effects associated with fire management. These practices and measures would be incorporated to reduce the magnitude of impacts and ensure major adverse impacts would not occur. Mitigation measures undertaken during project implementation would include, but would not be limited to, those listed below. The impact analysis in the “Environmental Consequences” section was performed assuming these BMPs and mitigation measures would be implemented as part of all action alternatives.

### **Fire Management Activities, including Hazard Fuel Reduction Projects**

NPS policy requires fire managers and firefighters to select management tactics commensurate with a fire’s existing or potential behavior, but which cause as little impact to natural and cultural resources as possible. All fire management activities and fuel reduction projects in Yellowstone would therefore incorporate the minimum impact tactics, to the greatest extent feasible and appropriate for the given situation. Examples of minimum impact tactics to be implemented include:

- The use of any heavy equipment (e.g. dozers, plows) in support of wildfires would require prior approval from the Superintendent’s office.
- The use of motorized equipment for hazard fuel reduction projects within recommended wilderness areas would require approval through the minimum requirement analysis process.
- Avoid using fireline explosives in non-forested areas. Keep fireline width as narrow and shallow as possible when it must be constructed.
- Use existing natural fuel breaks and human-made barriers, wet line, or cold trailing the fire edge in lieu of fireline construction whenever possible. Avoid ground disturbance as much as possible, particularly within known natural and archeological/cultural/historic resource locations. When fireline construction is necessary in proximity to these resource locations it would involve as little ground disturbance as possible and be located as far outside of resource boundaries as possible.
- Use water in lieu of fire retardant whenever possible.
- Using soaker hose, sprinklers or foggers in mop-up; avoiding boring and hydraulic action.
- Minimizing cutting of trees when possible.
- Scatter or remove debris as prescribed by the incident commander or project leader.
- Except for emergency actions such as wildfires, search and rescue missions, maintaining equipment that enhances safety (communications, lookouts,) training, etc.; all helicopter landings in recommended wilderness must go through the minimum requirement analysis process. If a helicopter or heavy equipment will be needed for a hazard fuel reduction project, the minimum requirement analysis tool will be utilized.
- All proposed hazard fuel treatment projects will adhere to the Park’s Bear Management Area seasonal restrictions to avoid displacement of bears from prime food sources and minimize bear/human habituation and injuries.

### **Human Health and Safety**

Firefighter and public safety is the highest priority in every fire and fuel management activity. In light of this:

- Only fully qualified (i.e. meeting NWCG qualifications and accepted interagency knowledge, skills and abilities for the assigned fire job) personnel would be assigned fire management duties (unless assigned as trainees, in which case they would be closely supervised by an individual fully qualified for the given position).
- No operation would be initiated until all personnel involved have received a safety briefing describing known hazards and mitigating actions, current fire season conditions, and current and predicted fire weather and behavior.
- Wildland fire incident commanders would minimize firefighter exposure to heavy smoke when possible.
- Park neighbors, visitors and local residents would be notified of all fire management events that have the potential to impact them.
- The superintendent or designee may, as a safety precaution, temporarily close parts of the Park to the visiting public.

### **Property**

- To the greatest extent feasible and appropriate, Park infrastructure, any other development, and adjacent non-federal agency land would be protected during all fire management activities.

### **Air and Water Quality**

- The Park would comply with the Clean Air Act, the Clean Water Act, and all other applicable federal, state, and local laws and requirements. Additionally:
  - The wildfire response strategy selected to manage a wildland fire would consider air quality standards. All prescribed fires will follow Department of Environmental Quality air quality standards and reporting requirements.
  - During fire suppression strategies, water would be used in lieu of fire retardant whenever possible. If retardant must be used, bodies of water would be avoided.
  - A 300 foot buffer for retardant around water bodies would be employed. This is a nationally recognized standard (April 2000, Interagency Guidelines for Aerial Delivery of Retardant or Foam near Waterways) which states:
  - When approaching a waterway visible to the pilot, the pilot shall terminate the application of retardant approximately 300 feet before reaching the waterway. When flying over a waterway, pilots shall wait one second after crossing the far bank or shore of a waterway before applying retardant. Pilots shall make adjustments for airspeed and ambient conditions such as wind to avoid the application of retardant within the 300-foot buffer zone.
  - This buffer is understood, and implemented by all fire managers working within Yellowstone.
  - Water would not be transported between 4th Level (8 digit) hydrologic units (HUC) watersheds, unless in an emergency (life or structure loss). If water is transported, Yellowstone Resource Management staff will be contacted to determine if aquatic invasive species (AIS) have been transported and if so, a monitoring plan would be developed and implemented. Yellowstone National Park works with partner

agencies throughout the GYA preventing the spread of new AIS populations and notifies these agencies if new AIS populations are discovered or water is transported across boundaries.

- If equipment is used in an area known to contain AIS or suspected to contain AIS, the equipment would be inspected by Yellowstone Resource Management staff. If aquatic invasive species are found, the equipment would need to be decontaminated. Decontamination may consist of:
  - Draining all water from equipment and compartments, cleaning equipment of all mud, plants, debris, or animals, and dry equipment for five days in summer (June, July & August); 18 days in Spring (March, April & May) and Fall (September, October & November); or three days in Winter (December, January & February) when temperatures are at or below freezing.
  - Using a high pressure (3500 psi) hot water (140° F) pressure washer to thoroughly wash equipment and flush all compartments that may hold water.
- All equipment will be fueled at least 150 feet from water sources. If portable pumps are used near water sources, a fuel containment system will be used at all times.

### **Natural and Cultural Resources**

- Natural and cultural resources would be protected from the adverse effects of fire and fuel management activities. During all management activities, the minimum impact tactics (MIST) policy would be incorporated to the greatest extent feasible and appropriate, employing methods least damaging to Park resources for the given situation.
- Historic structures would be protected from wildland fire via the maintenance of existing defensible space around each, appropriate to the cultural landscape itself.
- Avoiding ground disturbance within known sensitive or unique natural and cultural resource locations. When ground disturbance is necessary in proximity to these resource locations it will involve as little impact as possible and be located as far outside of resource boundaries as possible.
- Prior to prescribed burning and fuel reduction project implementation, an archeologist meeting the Secretary of the Interior's standards would inventory unsurveyed areas for cultural resources, and the Park would ensure compliance with Section 106 of the National Historic Preservation Act.
- Prior to prescribed burning and fuel reduction project implementation, an interdisciplinary team process will be used, which includes the Park's T&E coordinator, to determine if the project will have detrimental effects on T&E species. The USFWS will also be consulted for all non-emergency fire management actions to ensure compliance with Section 7.
- No mechanized heavy equipment would be used within archeological site boundaries.
- A member of resource management staff will be contacted during the initial stages of emergency actions (e.g. wildfire), and a resource advisor may be assigned to the incident. The interdisciplinary team approach will be used to mitigate effects to sensitive resource areas during non-emergency fire management actions (e.g. prescribed fire and hazard fuel treatments).

- Pre-Attack Planning During the Fire Season: The pre-attack plan, part of the Park's fire management program, would be reviewed and revised annually prior to each fire season based on the following priorities: sensitive cultural and natural resource areas and sites, wildland urban interface, timber type, vegetation maps, wildlife habitat, fuel maps, and smoke/air quality impact models.
- A minimum requirement analysis will be completed for all non-emergency mechanical (e.g. helicopter landings) actions proposed to take place within recommended wilderness areas of the Park.
- Fire crews would be trained in and use Best Management Practices for reducing the chances of bear conflicts with wildfire response efforts, including training crews in food storage, actions to prevent encounters on the fire-line, how to react to bear encounters, how to react to charging bears, use of bear spray, and placement and management of front-country fire camps and backcountry spike camps to avoid conflicts with bears. Bear-proof food storage boxes would be used for food and garbage storage in all backcountry fire camps. Bear-proof garbage cans and dumpsters would be used in all front-country fire camps. Best bear management practices are used on all wildland fire incidents within the Park.
- Backcountry firefighter camps will be located greater than one mile from known active lynx dens and wolf dens or rendezvous sites. To minimize human-wildlife interactions, each camp will be attended by a resource advisor who enforces camp protocols. Large firefighter camps (greater than 100 people) will be strictly limited to pre-existing disturbed sites (e.g., baseball fields) in the vicinity of developed areas and roads.
- Avoid implementation of non-fire fuel treatments within one mile of known active lynx den sites and/or suspected denning areas between May 1 and July 31, known grizzly bear den sites between November 15 and April 15, and known active gray wolf den or rendezvous sites between April 15 and August 1.
- Monitor for occurrences and establishment of exotic vegetation invasions following fuel treatments and suppression activities, if sufficient funding is available.
- All non-emergency hazard fuel removal projects will be completed after August 1 every year, outside of the bird breeding period, unless nesting bird surveys are completed within the treatment area.
- During extended attack (non-initial attack), all fire vehicles and equipment will be cleaned and inspected when they enter the Park.
- Firelines, fire camps, and spike camps will be rehabilitated post-fire as necessary.
- Geothermal areas will be avoided as much as possible to protect the sensitive areas and for firefighter safety.
- A landscape architect will review/assist with the proposed treatment plans for each hazard fuel project, as an active member of the interdisciplinary team, and when appropriate by assisting in the marking of trees to be cut in collaboration with the fire management specialists.
- Educate fire personnel about known locations and the cultural resources of the Park, including known cultural landscape resources for avoidance during implementation within the project area. Defensible spaces in historic districts often include vegetation surrounding

buildings and structures, and may also include roads, trails, walkways, fences, rock walls, etc.

- Minimize ground disturbance when possible, including avoidance of fire control lines, new roads, and trails through cultural resources.
- Topsoil: The seeds and mycorrhizae contained in topsoil are the best means for revegetation in disturbed areas. Fragile topsoil will be protected during tree cutting activities in order to ensure all disturbed areas will revegetate and no scars will be left due to the dragging of slash, equipment turn-arounds, and ground compaction. Park topsoil stripping, stockpiling, salvaging, and replacement methods will be followed.
- Screening during hazard fuel projects: ecotone areas (the transition area between meadow and forest) are usually thicker and have more screening potential due to sun exposure at the meadow's edge. For those structures that have been constructed with the intention of utilizing the screen of the ecotone, mechanical thinning should maintain the overall screening characteristic whenever possible.
- Roads and trails during hazard fuel projects: the screening characteristics of vegetation along corridor(s) within the site will be preserved whenever possible.
- Debris will be scattered, such as cut trees, limbs, and brush produced by manual thinning actions; large amounts of debris will not be left in the project area.
- Flush cut stumps as low to the ground as possible, and cover the stumps during the rehabilitation phase.

## Appendix B – Non-Impairment Finding

National Park Service's *Management Policies, 2006* require analysis of potential effects to determine whether or not actions will impair park resources. The fundamental purpose of the national park system, established by the Organic Act and reaffirmed by the General Authorities Act, as amended, begins with a mandate to conserve park resources and values. National Park Service managers must always seek ways to avoid, or to minimize to the greatest degree practicable, adversely impacting park resources and values.

However, the laws do give the National Park Service the management discretion to allow impacts to park resources and values when necessary and appropriate to fulfill the purposes of a park, as long as the impact does not constitute impairment of the affected resources and values. Although Congress has given the National Park Service the management discretion to allow certain impacts within park, that discretion is limited by the statutory requirement that the National Park Service must leave park resources and values unimpaired, unless a particular law directly and specifically provides otherwise. The prohibited impairment is an impact that, in the professional judgment of the responsible National Park Service manager, would harm the integrity of park resources or values, including the opportunities that otherwise would be present for the enjoyment of those resources or values. An impact to any park resource or value may, but does not necessarily, constitute an impairment. An impact would be more likely to constitute an impairment to the extent that it affects a resource or value whose conservation is:

- necessary to fulfill specific purposes identified in the establishing legislation or proclamation of the park;
- key to the natural or cultural integrity of the park; or
- identified as a goal in the park's general management plan or other relevant NPS planning documents.

An impact would be less likely to constitute an impairment if it is an unavoidable result of an action necessary to pursue or restore the integrity of park resources or values and it cannot be further mitigated.

The park resources and values that are subject to the no-impairment standard include:

- the park's scenery, natural and historic objects, and wildlife, and the processes and conditions that sustain them, including, to the extent present in the park: the ecological, biological, and physical processes that created the park and continue to act upon it; scenic features; natural visibility, both in daytime and at night; natural landscapes; natural soundscapes and smells; water and air resources; soils; geological resources; paleontological resources; archeological resources; cultural landscapes; ethnographic resources; historic and prehistoric sites, structures, and objects; museum collections; and native plants and animals;
- appropriate opportunities to experience enjoyment of the above resources, to the extent that can be done without impairing them;
- the park's role in contributing to the national dignity, the high public value and integrity, and the superlative environmental quality of the national park system, and the benefit and inspiration provided to the American people by the national park system; and
- any additional attributes encompassed by the specific values and purposes for which the park was established.

Impairment may result from National Park Service activities in managing the park, visitor activities, or activities undertaken by concessioners, contractors, and others operating in the park. The NPS's threshold for considering whether there could be an impairment is based on whether an action will have significant effects.

Impairment findings are not necessary for visitor use and experience, socioeconomics, public health and safety, environmental justice, land use, and park operations, because impairment findings relates back to park resources and values, and these impact areas are not generally considered park resources or values according to the Organic Act, and cannot be impaired in the same way that an action can impair park resources and values. After dismissing the above topics, remaining topics to be evaluated for impairment include air quality, water quality, geological resources, wilderness, vegetation and wetlands, fish and wildlife, threatened and endangered species, and cultural resources.

Fundamental resources and values for Yellowstone are identified in the enabling legislation for the park, the draft Foundation for Planning and Management Statement, and the Long Range Interpretive Plan. Those documents state that the fundamental resources and values come from the Park's geologic wonders, the abundant and diverse wildlife, the 11,000-year-old continuum of human history, and providing for the benefit, enjoyment, education and inspiration of this and future generations. According to these documents, all of the impact topics carried forward in this EA are considered necessary to fulfill specific purposes identified in the establishing legislation or proclamation of the park; are key to the natural or cultural integrity of the park; and/or are identified as a goal in relevant NPS planning documents.

- **Air Quality** – The Preferred Alternative will have negligible to moderate, short-term, localized to regional, adverse impacts on air quality depending on fire characteristics such as size, intensity, fuels, and burning conditions. Adverse impacts would be offset over the long-term through reduced potential for unwanted fires, as a suppression strategy response would occur more quickly because of predetermined strategy zones, creating lesser amounts of smoke within these areas. Although air quality is a fundamental resource at the park, the Preferred Alternative will not have any major adverse impacts on air quality; therefore, there will be no impairment to air quality.
- **Water Quality** – The Preferred Alternative will have negligible to minor, short- to long-term, localized, adverse effects on water quality from impacts caused by fire protection, management of wildfires, and fuel management. Overall, adverse impacts on water quality would be reduced due to a faster response to unwanted wildfire because of predetermined suppression strategy zones, and the use of an interdisciplinary team planning process for all prescribed fire and fuel treatments. Although water quality is a fundamental resource at the park, the Preferred Alternative will not have any major adverse impacts on water quality; therefore, there will be no impairment to water quality.
- **Geological Resources** – The Preferred Alternative will have negligible to minor, short- to long-term, local, and adverse impacts on geological resources; and minor to moderate, long-term beneficial impacts. Thermal areas may be adversely affected in the event of a wildfire from deposition of sediment from adjacent burned areas and increased water temperature, which may in turn affect the function, chemistry, and microbiotic communities of the feature. The level of impact would be dependent upon the size of the area burned, proximity of the burn to geothermal areas, and the size of the features. Adverse impacts on paleontological resources could occur from wildfire and subsequent fire management response and rehabilitation activities. Adverse effects from prescribed fire management actions would be avoided through identifying known paleontological sites prior to disturbance and protecting them. The effects on soils from preparation for and implementation of prescribed fire, fuel reduction projects, and

suppression would be adverse. In the long-term, however, the effects of prescribed fires and wildfire on soils would be beneficial due to perpetuation of natural ecosystem processes. Although geological resources are fundamental resources at the park, the Preferred Alternative will not have any major adverse impacts on geological resources; therefore, there will be no impairment to geological resources.

- **Wilderness** – The Preferred Alternative will have negligible to minor, short-term, localized, adverse impacts on recommended wilderness during and immediately after fire management actions, and changes to wilderness character would be small. Using prescribed fire and allowing wildland fire use in recommended wilderness would enhance and maintain many wilderness characteristics. In the long-term, fewer fires would need to be suppressed, resulting in fewer direct impacts associated with protection actions. Flexibility to use wildfire response strategies, including a monitor or point/zone protection strategy with resource goals and objectives would promote the natural role of fire across the landscape. The potential for wildfires outside the range of normal variability could be minimized, benefitting recommended wilderness over the long-term. Although wilderness is a fundamental resource at the park, the Preferred Alternative will not have any major adverse impacts on wilderness; therefore, there will be no impairment to wilderness.
- **Vegetation and Wetlands** – The Preferred Alternative will have negligible to moderate, short- and long-term, adverse effects on vegetation, including invasive species and rare plants, and the severity of the impact depends on the nature and intensity of wildland fire. Sedimentation increase in wetlands could occur, creating minor, short-term, adverse effects. Long-term benefits to vegetation from allowing natural processes to perpetuate through wildland fire would maintain and restore vegetation to its natural ecological function. Although vegetation and wetlands are fundamental resources at the park, the Preferred Alternative will not have any major adverse impacts on vegetation and wetlands; therefore, there will be no impairment to vegetation and wetlands.
- **Fish and Wildlife** – The Preferred Alternative will have negligible to minor, short-term, adverse effects on wildlife and fish associated with fire management activities depending on the nature and intensity of wildland fire. Direct mortality and wildlife displacement due to habitat loss and degradation would occur, although overall wildlife populations in the Park would not be jeopardized. Direct mortality of fish and degradation of fish habitat could occur. Sedimentation increase in fish-bearing streams could occur, creating minor, short-term, adverse effects on fish populations. There would be more short-term adverse impacts with the use of a monitor response strategy, but also greater long-term benefits from allowing natural processes to perpetuate so that natural ecological function would be maintained and restored on more acreage in the Park. Although fish and wildlife are fundamental resources at the park, the Preferred Alternative will not have any major adverse impacts on fish and wildlife; therefore, there will be no impairment to fish and wildlife.
- **Threatened and Endangered Species** – The Preferred Alternative will have negligible to minor, short- to long-term, and adverse or beneficial impacts on threatened and endangered species depending on the species in question. No federally protected species would be harmed by the fire management activities, and many species would benefit from post fire conditions. Some mortality and wildlife displacement due to habitat loss and degradation could occur, although overall wildlife and plant populations in the Park would not be jeopardized. The use of a monitor or point/zone protection response strategy would provide beneficial effects by allowing natural processes to perpetuate so natural ecological function would be maintained and restored on more acreage in the Park. Although threatened and endangered species are fundamental resources at the park, the Preferred Alternative will not have any major adverse



impacts on threatened and endangered species; therefore, there will be no impairment to threatened and endangered species.

- **Cultural Resources** – The Preferred Alternative will have negligible to moderate, short- to long-term, local, and adverse or beneficial impacts on cultural resources depending on the nature and intensity of any wildfire and subsequent fire management response and rehabilitation activities. Adverse effects on cultural resources from prescribed fire and fuel treatment management actions would be avoided through identifying the resources prior to disturbance and protecting the resources. Archeological resources could suffer direct, minor to moderate, long-term, adverse impacts during wildland fire management activities as unidentified archeological sites sometimes cannot be protected. Direct damage to or loss of historic structures and sites from wildfire and wildfire suppression activities would result in long-term, adverse impacts of minor to moderate intensity. The effects on historic structures from fuel reduction projects would be localized, short-term to long-term, minor to moderate, and beneficial. Fire or suppression activities could have short- and long-term, minor to moderate adverse impacts on cultural landscapes as viewshed changes could result in loss of trees and structures, burned vegetation and stumps, exposed soils in fire lines altering the character of the landscape. Fire can also have long-term, minor to moderate beneficial impacts on cultural landscapes as vegetation composition can be altered beneficially. Long-term, minor to moderate, adverse impacts on ethnographic resources would occur if they are lost or damaged by wildland fires or fire suppression strategy activities. There would be long-term, minor to moderate, beneficial impacts on ethnographic resources as fire can be beneficial to culturally important plant species. Although cultural resources are fundamental resources at the park, the Preferred Alternative will not have any major adverse impacts on cultural resources; therefore, there will be no impairment to cultural resources.

In conclusion, as guided by this analysis, good science and scholarship, advice from subject matter experts and others who have relevant knowledge and experience, and the results of public involvement activities, it is the Superintendent's professional judgment that there will be no impairment of park resources and values from implementation of the preferred alternative.

