

**FINDING OF NO SIGNIFICANT IMPACT**  
**FIRE MANAGEMENT PLAN**  
**Glacier National Park**  
**West Glacier, Montana**

The National Park Service (NPS) proposes to implement a new Fire Management Plan for Glacier National Park, Montana. The Glacier Fire Management Plan will become the park's component of a joint fire management plan with the Flathead National Forest to maximize cooperation and result in better planning and response to fire activity in the area. Where National Forest Service and National Park Service lands share a common boundary, similar fire management objectives will be met through joint operations and shared positions where possible. This Finding of No Significant Impact only addresses actions on NPS lands.

The plan will guide the wildland fire program by providing management direction that will support the accomplishment of resource management and protection objectives:

- Restore and/or maintain fire to its natural role to the maximum extent possible and enable natural processes to function essentially unimpaired by human influence;
- Improve fuel reduction (mechanical fuel reduction and prescribed burning) treatments that will enhance defensibility around structures;
- Suppress unwanted wildland fires;
- Expand opportunities under a multi-year treatment schedule for increasing the use of prescribed fire over previous levels to better meet resource objectives.

The 1,013,595 acres comprising Glacier National Park in northwest Montana are of worldwide significance. Established in 1910, Glacier was set aside "as a public park or pleasure ground for the benefit of the people of the United States" (enabling legislation for Glacier National Park). The wide variations in climate, elevation, geology, and soils help define four geographic vegetation patterns. Glacier provides habitat for natural populations of indigenous carnivores and most of their prey species and nearly all species of terrestrial wildlife present when the park was established. The long and varied human history of the region also is reflected in the park's cultural resources, which include historic buildings and structures, archaeological sites, and ethnographic landscapes. Glacier also serves the spiritual needs of native peoples of the area.

Glacier National Park and Waterton Lakes National Park of Canada are designated the world's first International Peace Park. Waterton-Glacier International Peace Park also has been designated an International Biosphere Reserve and a World Heritage Site. Ninety-five percent of Glacier National Park is proposed wilderness, and following NPS policy, is managed as designated wilderness.

The park continues to recognize the role that fire plays in a balanced natural resource management program. Accordingly, the purpose of this federal action, under the authority of Director's Order 18,<sup>1</sup> is to prepare and implement an updated long-range Wildland Fire Management Plan. The Fire Management Plan would provide direction to a program that uses the benefits of fire to achieve desired resource conditions while protecting park resources and those of adjoining lands into the future. Further, this plan implements the Glacier National Park Resource Management Plan (1993), replaces the current Fire Management Plan (1991), updates existing goals and objectives, and redefines strategies and actions to accomplish them under the general guidance provided by the park's General Management Plan (NPS 1999a).

This assessment was prepared in accordance with the National Environmental Policy Act (1969) and will evaluate the potential impacts of a range of fire management program strategies under a new plan on a variety of impact topic areas. It is also intended to facilitate sound decision-making based on the current and best understanding of direct and indirect, short-term and long-term, and cumulative consequences of the proposal to thereby determine whether an environmental impact statement is required.

The need for a new Fire Management Plan is based not only on policy but also on scientific study and monitoring that are contributing to a growing understanding of successional trends in the park.

Ninety percent of the natural fire starts in the park occur west of the continental divide (NPS files). Ninety-eight percent of Glacier's 1910–1968 fires occurred between June 19 and September 19, and 95% of these fires occurred at elevations below 7,100 ft (2165 m). About two-thirds of the fires occurred on south-facing slopes (O'Brien 1969).

Large fires on record include the following locations, with acres burned inside park boundaries:

- 1910 – Large fires throughout Montana, North Fork area, Firebrand Pass (47,900 acres)
- 1926 – Large fires in North and Middle Fork area (10,500 acres)
- 1929 – Halfmoon Fire burned in Apgar/Middle Fork area (34,400 acres)
- 1936 – Heavens Peak Fire burned over Swiftcurrent Pass (14,142 acres)
- 1967 – Huckleberry and Glacier Wall Fires (6300 acres)
- 1984 – Napi Point and Crystal Fires (6500 acres)
- 1988 – Red Bench Fire (22,000 acres in park)
- 1994 – Howling, Anaconda, Adair, and Starvation Fires (16,465 acres)
- 1998 – Kootenai Complex, North Fork Complex (9411 acres)

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<sup>1</sup>Effective November 17, 1998, the objective of RM-18 is to institutionalize within the NPS the new policies, organizational and operational relationships, and changes in law and reporting requirements and to direct that all parks with vegetation capable of burning will prepare a Fire Management Plan that is responsive to the park's natural and cultural resource objectives and safety of park visitors, employees, and developed facilities.

- 1999 – Anaconda Fire (10,800 acres)
- 2000 – Parke Peak, Sharon (2742 acres)
- 2001 – Moose Fire (24,000+ acres in park)

Fire history data suggest a declining fire frequency as suppression policies interrupted natural fire cycles, altered vegetative communities, and increased the acreages of wildfires since 1910 (Barrett 1997). The forest composition has become less diverse from an age, spatial and species composition standpoint. Fire suppression results in reduced forest vigor due to increased windfall, and damage from insect pests such as Mountain pine beetle (*Dendroctonus ponderosae*), and fungal infestations such as root rot (e.g., *Fomes spp.*) and blister rust (*Chronartium ribicola*). Excluding fire from the landscape concurrent with heavy mortality due to blister rust and mountain pine beetle and a rapidly declining seed source in the whitebark pine type increases the threat to the continued existence of the species. Whitebark pine is a keystone species of the upper subalpine ecosystem by protecting watersheds, promoting post-fire forest regeneration and providing a valuable food source for wildlife (Tomback et al. 2001).

Mixed-severity natural fires, which include a range of fire sizes and intensities, serve to maintain a diversity of species and age-classes, open meadows, and wildlife habitats, and to moderate fuel loads. Lack of natural fire due to suppression decreases habitat diversity and promotes unnaturally dense fuel loads, resulting in unnaturally high intensity fires. Forest stands with coarse woody debris can contribute to forest & wildlife diversity, and most of the park is within the range of natural variability with regard to fuel loading and fire return intervals, but in some areas, fuel loads have exceeded the natural range of variability.

A recent example is the Anaconda Fire. In 1999 the park managed the Anaconda Fire for resource benefits and significantly reduced the fuel loading and fire danger over 10,000 acres. In 2001 the Moose wildfire burned into the park in the same general area, but was unable to carry within the Anaconda fire perimeter due to the reduced fuel loads and the resultant mixed vegetation mosaic. If park management had suppressed the Anaconda Fire, the Moose Fire undoubtedly would have burned a much larger area, produced much larger volumes of smoke, and likely would have burned much more severely with more intensity possibly damaging watershed, soils, wetlands and other values.

## ALTERNATIVES INCLUDING THE PREFERRED ALTERNATIVE

The proposal is to conduct fire management activities that allow for wildland fire use (management of naturally ignited wildland fires to accomplish specific objectives) and suppression and increased use of prescribed fire and increased non-fire treatments to meet objectives.

The proposed Fire Management Unit (FMU) boundaries will allow for changes if baseline conditions or management objectives change in specific areas. Three FMUs are

proposed, based on the National Fire Plan and Glacier resource management objectives. The Wilderness/Resource Benefits FMU contains proposed wilderness; wildland fire use is the primary strategy. The Mixed Values FMU includes remote locations as well as urban/wildland intermix areas; wildland fire use is an option, but prescriptions are more restrictive because of values to be protected. The Developed Area FMU contains areas of urban/wildland intermix; fire starts will typically be suppressed. The use of prescribed fire and mechanical fuel reduction treatments will be emphasized in this unit.

The park will increase the use of prescribed fire. Depending on conditions, the park will treat an average of 100 to 500 acres per year to meet ecological and hazard fuels reduction objectives. As work progresses, the schedule will be revised to build on past accomplishments.

The park will also increase the scope of non-fire treatments to meet resource and protection objectives. Manual fuel reduction strategies will be used as needed in the wildland/urban interface areas, and in combination with prescribed fire for debris disposal. Priority areas planned for manual treatments and debris disposal/low-intensity fuel reduction burns over a multi-year treatment schedule include Apgar, Cut Bank, Glacier Park Headquarters Compound, Many Glacier/Swiftcurrent, Rising Sun, Saint Mary, Two Medicine, and Upper Lake McDonald (Ranger Station and Lodge).

Mitigation will be implemented to protect air quality, wilderness, natural soundscapes, wildlife and threatened and endangered species, soils, vegetation (including exotic plant management), water quality, aquatic resources, wetlands, aesthetics, recreational values, cultural and ethnographic resources, park operations and park neighbors.

**Mitigation for Air Quality.** To protect Class I air-quality-related values, including visibility, all fire management activities other than suppression of unwanted wildland fires will follow Montana/Idaho Airshed Group guidelines for Best Management Practices and ensure that particulate concentrations do not exceed standards that may result in reduced air quality or impact visibility and public health.

Glacier National Park is a member of the Montana/Idaho Airshed Group, whose membership includes those agencies with an interest in the use of fire for resource management purposes and that are committed to conserving Montana's air quality. The state is divided into airsheds, of which Glacier National Park is in airshed numbers 2 and 9. The Montana Department of Environmental Quality requires that members submit a list of planned burns to the Monitoring Unit in Missoula, Montana. From information contained in the permit application, the Missoula Monitoring Unit issues daily decisions that can either restrict or allow burning to proceed/continue.

The burning seasons and notifications to be followed under Air Quality Bureau requirements are as follows:

-March 1 through August 30 – Major open burning requires a permit from the Department of Environmental Quality. Burners must employ “Best Available Control

Policy” (BACT).

-September 1 – November 30 – Major open burning requires a permit from the Department of Environmental Quality (DEQ). Burners are required to call the Smoke Management hotline prior to ignition and to observe burning restriction issued by the DEQ.

-December 1 through February 29 – BACT includes burning only during time periods specified by the DEQ.

Specific mitigating measures that will contribute to reducing adverse effects on air quality in the park resulting from prescribed fires or wildland fires managed for resource benefit include the following (MDEQ 2001):

- Submit burn plans to the Monitoring Unit, Missoula, Montana
- Provide information on type, acres, location, and elevation
- Formally coordinate burns among members
- Monitoring unit may issue restrictions through the airshed coordinator(s)
- Ensure adequate smoke ventilation and to adjust ignition patterns, confinement actions, etc. with weather patterns
- Ensure that burn prescriptions and ignition plans provide for optimal smoke dispersion for the specific circumstances of the fire
- Public health advisories based on measured concentrations of particulates may be issued by Montana Department of Environmental Quality
- Employ Best Management Practices (BMPs) to minimize smoke production and impacts, including reducing emissions by excluding fuels from burning, and burning to increase combustion efficiency
- Minimize smoke effects around roads or highways, airports, and other sensitive areas
- Employ informational and interpretive messages to inform visitors and public
- Monitor particulates and smoke concentrations from the West Glacier air quality station
- Initiate suppression measures if smoke effects cause exceedences of the National Ambient Air Quality Standards (NAAQS) or significant visibility impairment.
- Employ Best Available Control Technology (BACT)
- Promptly notify Smoke Management Unit./Montana DEQ of any wildland fire use.
- Provide prestated objectives and predefined geographic areas for wildland fire use to Smoke Monitoring Unit/ Montana DEQ.

**Mitigation for Natural Soundscapes.** Impacts of noise generated by chain saws used for prescribed burn preparation and mechanical fuel reduction will be mitigated by scheduling work during hours when visitors use is at its minimum for the day or time of year. Work will not occur near campgrounds, residences or hotels in the early morning or late evening hours. Most mechanical fuel reduction will occur in developed areas, but much of the prescribed burning is planned for areas in or near the proposed wilderness. Noise impacts from the fire itself are considered natural. Use of natural barriers and evening humidity recoveries on prescribed fires will limit the use of chainsaws and

pumps to short duration noise just prior to and briefly during the burning operations.

**Mitigation for Threatened and Endangered Species and Species of Concern.** Five wildlife species protected under the Endangered Species Act occur in the park: the threatened bald eagle (*Haliaeetus leucocephalus*), grizzly bear (*Ursus arctos horribilis*), bull trout (*Salvelinus confluentus*), and Canada lynx (*Lynx canadensis*), and the endangered gray wolf (*Canis lupus*). The slender moonwort (*Botrychium lineare*) is currently listed as a candidate plant species.

To insure protection of these species, the Montana Field Office of the U.S. Fish and Wildlife Service (USFWS) forwarded recommendations to Glacier National Park for wildland fire program operations (Appendix G of the EA). These recommendations are adopted and summarized below.

- That the USFWS be contacted as soon as reasonably possible in the event there is a wildfire incident within Glacier National Park
- That the USFWS be involved in Burned Area Emergency Rehabilitation (BAER) team activities
- That Glacier National Park consider updating post-fire baseline data for all threatened and endangered (T&E) species to document changes in affected watersheds

In addition to the recommended measures listed above for mitigation, the following mitigation measures will also be considered for habitats of all T&E species and species of concern:

- Confer with or consult appropriate park resource management staff where ignition, mixing of fuels and helicopter bucket dipping and/or drafting operations from streams and lakes is proposed in areas of known or potential listed or sensitive species habitat
- Minimize low level helicopter flights
- Avoid nesting and roosting areas of listed species; avoid wolf denning and rendezvous areas; ensure that briefings to fire personnel include precautions and guidelines when operating in grizzly habitat

**Mitigation for Soils.** Unwanted wildland fires are treated as emergency incidents. These situations may call for rehabilitation efforts applied following the fire's passage, such as installation of erosion-control devices on steep slopes or covering bare soil to prevent soil movement and promote rapid revegetation of a site. Mitigating measures will be specifically identified following on-site evaluation, usually by a BAER (Burned Area Emergency Rehabilitation) team.

Effects on soils during prescribed fires will be mitigated largely in the pre-planning process, where prescribed fire plans include protection objectives for soils and prescriptions that call for low-intensity fire. Soils protection objectives are similarly developed in consultation with a resource advisor during the management of wildland

fire for resource benefit.

**Mitigation for Vegetation.** Mitigating impacts to park native vegetation associated with all fire management strategies consist of actions including, but not limited to, the following:

- Control of weeds/exotic populations that may invade burn treatment sites
- For all wildland fires (suppression and wildland fire for resource benefits) and prescribed fire projects, natural barriers (i.e., rock outcroppings, surface water, open meadow, barren areas, ice, etc.) and/or man-made features (roads, trails, rights-of-way, etc.) will be considered in identifying control lines or Maximum Manageable Area. A resource advisor from the park may assist in cases where sensitive vegetation habitat exists or is suspected.
- Manual removal of trees in hazard reduction projects where only deemed necessary following an approved project plan
- Consulting with natural resource specialists on proposed locations of camps, staging areas, helispots, or other management actions that may remove or disturb native vegetation
- Before prescribed fires and/or non-fire fuels management actions, conduct a plant survey when indicated to determine if any species of special concern (see list in Appendix D) in Montana or Glacier National Park occur on the proposed project area
- Consideration of the known effects of fire and non-fire treatment on limited/sensitive species in mitigation planning
- Following project work, constructed lines will be re-covered to prevent erosion and promote vegetative recovery.

*Exotic Species.* NPS management policies that describe program guidance for preventing accidental introductions of exotic species also apply to fire management (NPS 2001g), and consist of the following.

- Before initiating prescribed burning or fuel reduction projects identify the exotic species present or likely to invade the disturbed areas, take measures to prevent such invasion, and assess those measures. If the risk of invasion by exotic species is high at a particular site, prescribed burning or mechanical fuel reduction will require consultation with Integrated Pest Management to weigh the cost and benefits of the project and to greatly reduce the possibility of any introductions.
- Work with neighbors to control exotics on neighboring lands before they become established in the park.
- Alter natural disturbance regimes to restore native vegetation.
- Employ informational and interpretive messages to provide prevention information on exotic species introductions to visitors and public.
- During rehabilitation of high-severity burned slopes, straw certified by a county weed district to be weed seed free will be considered as needed.

Most exotic species occur in formerly or currently disturbed sites, such as burn areas, because of the removal of duff and exposure of mineral soil. Preferred fire-use strategies should support the perpetuation of native plant communities and successional stages if low-intensity surface fires are managed to protect soils. Seasonality of fire and non-fire treatments that do not favor the growth needs of exotic plants are management considerations along with consultation with the park staff ecologist on a site-specific basis during project planning.

In areas that require further manual treatment, noxious weeds will be surveyed to determine the frequency of weeds present before ground disturbing activities are done. If weeds are found to be present, measures will be implemented to help avoid spreading and increasing the abundance of the weeds present. Measures such as persistent cleaning of equipment, low ground disturbance, avoidance of areas by equipment will reduce the chance of increasing weed problems.

**Mitigation for Water and Aquatic Resources.** Mitigation of fire effects on water quality and quantity and aquatic habitat largely depends on the level of severity and time of year. Increased sedimentation from high-severity wildland fires may directly affect water quality. Careful application of prescribed fire under best management practices reduces the risk of increased sedimentation concentrations in streams. Seed germination, re-sprouting, and nutrient cycling serve to quickly restore ground cover above riparian areas immediately after a fire.

Generally, riparian habitat, including its biological resources, has low to moderate susceptibility to fire, since much of the vegetation on streamside banks is green year-round. Fire Use events in riparian areas are considered natural events and little mitigation is required for the fire itself, however, minimum impact techniques will be used during management and suppression actions. Standard best management practices to be used will include not using retardant or foam near streams and lakes, taking extra care when using fire pumps to avoid any gas leakage, and utilizing minimum impact management techniques (MIMT) when “cutting” fireline in riparian areas, and opting for wetlines will be done whenever feasible.

**Mitigation for Wetlands.** Mitigation measures to protect wetlands will be identified through consultation with the resources staff during project planning that may involve any identified wetlands. On-site protection measures may include adjusting proposed project boundaries or total avoidance, burning at lower intensities, and protection of forest cover in known wetland habitat. Retardant and foam will not be used near wetlands. Operating and filling gas operated machinery will be avoided in wetlands and, when not possible, will be conducted with extra care and the use of catchments. Wetline, natural barriers and burnout will be utilized over cutting wherever possible in wetlands.



**Mitigation for Proposed Wilderness.** All backcountry management activities, including fire management and hazard fuels reduction around backcountry structures, are subject to a *minimum requirement* process. This concept is described in detail below.

Excerpts from the *Glacier National Park Backcountry Management Plan* (GNP 1994) that pertain to impact mitigation for wildland fire management activities in proposed wilderness:

*In applying the minimum requirement concept, it is important to understand the distinctions between the terms "minimum requirement," and "minimum tool." Minimum requirement is a documented process the NPS will use for the determination of the appropriateness of any proposed actions affecting wilderness.*

*Minimum tool means the use or activity, determined to be necessary to accomplish an essential task, which makes use of the least intrusive tool, equipment, device, force, regulation, or practice that will achieve the wilderness management objective. This is not necessarily the same as the term "primitive tool," which refers to the actual equipment or methods that make use of the simplest available technology (i.e. hand tools).*

*Glacier National Park will apply the minimum requirement concept when making decisions concerning management of the wilderness area. This includes decisions concerning management goals from long-term programs, actions and recurring activities may be approved for an extended period. Approved programs or activities that fail to comply with the terms and conditions of the original request may be revoked by the Superintendent.*

Also stated in the Backcountry Plan for Glacier National Park are fire activities, policies and impacts that are subject to the minimum requirement process. They include temporary roads, use of motor vehicles, motorized equipment, or motorboats (chainsaws, rock drills, power brushers, etc.), landing of aircraft, helicopter long-line release of materials, use of mechanical transport (bicycles, canoe carts, wheelbarrows, etc.), new structures or installations (backcountry campgrounds, spike camps, bridges, patrol cabins, toilets, radio repeaters, weather stations, research devices, etc.), major new regulations pertaining to wilderness visitor use and/or resource protection.

The requirement also appears in individual project plans, wildland fire implementation plans that direct the management of wildland fires used for resource benefits, aviation plans that may pre-identify flight routes over backcountry for certain types of operations, incident action plans as minimum impact tactics, and the park's Fire Management Plan. Firefighters will be briefed on which minimum impact tactics to employ to ensure that wilderness values are protected while safely and successfully accomplishing fire management objectives. Resource advisors are assigned to incident

management and fire use teams.

**Mitigation for Wildlife.** Mitigation measures designed to protect animal species and habitats and are similar to those listed above for vegetative resources.

- Consult with natural resource specialists on proposed locations of camps, staging areas, helispots or other management actions that may remove or disturb native wildlife
- Select time of year and day for fire management actions that least affect breeding and/or nesting animals. Work will not occur near campgrounds, residences or hotels in the early morning or late evening hours.
- Before prescribed fires and/or non-fire fuels management actions, conduct an animal survey when indicated to determine if any species of special concern (see list, Appendix D) in Montana or Glacier National Park occur on the proposed project area
- Consider avoiding potential wildlife corridors between cover areas as well as small patches of cover between the larger cover areas

**Mitigation for Aesthetics/Recreational Values.** During mechanical fuel reduction, vegetation will be manually feathered in conjunction with prescribed burns in order to maintain aesthetics of the developed areas. To mitigate any potential impacts to visitor and public enjoyment, informational and interpretive messages will inform and educate visitors and the public about the effects of natural fire and the objectives of prescribed fires.

**Mitigation for Cultural and Ethnographic Resources.** The Fire Plan commits Glacier National Park to complete Section 106 review for each proposed fire project. Glacier National Park will consult with the Advisory Council on Historic Preservation, Montana State Historic Preservation Office (SHPO), Tribal representatives, and members of the public as appropriate, in developing a Programmatic Agreement to establish wildland fire, prescribed fire, and hazard fuels reduction protocols for the purpose of compliance with Section 106. Mitigation measures specific to planned projects recommended by the SHPO in consultation will be included in any burn plans, wildland fire implementation plans (fires used for resource benefit) or incident management plans for suppression actions

During planning for fuel reduction projects, including prescribed fires and manual treatments, the cultural resource specialist will be consulted. Other mitigation actions described below will be included as part of Section 106.

Wildland fires that pose a potential threat to identified cultural resources may require a qualified cultural resource specialist to provide specific on-site mitigation strategies. The following mitigating measures will be implemented as conditions warrant.

- Use protection measures in cultural sites or areas identified by the Cultural Resource Specialist and/or local tribal officials; may include constructing fireline around sites,

treating sites with approved retardant, removal of fuels around sites, etc.

- Locate, identify, and isolate sites that are vulnerable to fire effects or human activities.
- Conduct a cultural resource survey when recommended by a cultural resource specialist before prescribed fire and/or non-fire fuels management projects.
- Remove fuel concentrations in close proximity to known cultural sites.
- Educate fire crews about the need to protect cultural resources.
- Minimize ground disturbance wherever possible.
- Conduct post-fire cultural resource surveys to identify, evaluate, and document impacts.
- Perform other site-specific measures to protect cultural sites and features as indicated.
- Consult with cultural resource specialists on proposed locations of camps, staging areas, helispots, or other management actions that may disturb cultural resources.

Tribes in the area are cooperating with the park in an ongoing information exchange that provides the basis for protection protocols. As a matter of routine, tribal officials will be contacted well in advance of planned fire management project work to determine if traditional use areas are included in the planning area.

**Mitigation for Park Operations.** Short-term inconveniences such as temporary road or area closures, slow traffic, etc., will be mitigated largely with planning, timely notifications, and adequate personnel availability.

**Mitigation for Park Neighbors.** Mitigation will include consultation with tribes, officials of the Canadian government, officials of state and county governments, and private citizens to identify response measures that are appropriate to a fire situation to ensure protection objectives are met. Decision-tree documentation and prescribed-fire plans will reflect specific mitigation measures needed to protect life, property, and associated values. Timely informational messages to inform park neighbors of fire status and actions being taken by the park are also important mitigating measures.

The other alternative considered was a No Action alternative. Under the No Action alternative, the current fire management plan could continue to be implemented. The park would continue to allow wildland fire use and suppression and would continue current levels of limited prescribed fire and non-fire treatments to meet objectives.

Wildland fire use refers to the management of naturally ignited wildland fires to accomplish specific objectives in predefined geographic areas outlined in the Fire Management Plan. Under the current plan, the park has begun to reduce fuel buildup and in some areas has approximated natural fire regimes, but not to the level needed for comprehensive ecosystem maintenance and restoration or to meet protection objectives. In addition, the No Action alternative would not satisfy the new requirements of the National Fire Plan and the 2001 Federal Wildland Fire Management Policy.

During internal and external scoping, three additional alternatives were identified but rejected. One was to suppress all fires. This alternative was dismissed for several reasons, including the inconsistency with federal wildland fire policy, National Park Service policy, and Glacier's General Management Plan that calls for allowing natural processes, including fire, to function essentially unimpaired by human influence to the maximum extent possible.

Another alternative considered but rejected was to allow all wildland fires to burn without human intervention. This would result in adverse impacts to human life, property, and resource values and threats to neighboring agencies and ownerships, as well as violations of state and federal laws for protection of air-quality, listed species and habitats, and cultural resources.

The last alternative considered but rejected was to omit the use of prescribed fire at any scale anywhere in the park. This would limit the park to using only mechanical fuel reduction; experience has shown that not having prescribed fire as a management tool would only result in further risk of damaging wildland fires.

## **ENVIRONMENTALLY PREFERRED ALTERNATIVE**

The environmentally preferred alternative is to implement the revised Fire Management Plan because it surpasses the no-action alternative in realizing the *full range* of national environmental policy goals as stated in the National Environmental Policy Act. The preferred alternative integrates resource protection with opportunities for an appropriate range of fire uses that promote ecosystem diversity. The environmentally preferred alternative is determined by applying the criteria suggested in the National Environmental Policy Act of 1969 (NEPA), which is guided by Council on Environmental Quality (CEQ) regulations. CEQ regulations provide direction that "the environmentally preferred alternative is the alternative that will promote the national environmental policy as expressed in NEPA's section 101(b). The following Section 101 criteria are compared with the NPS preferred alternative.

- "Fulfill the responsibilities of each generation as trustee of the environment for succeeding generations"

Implementing the revised fire management plan will enhance ecosystem diversity and general forest health into future generations through the prudent restoration of fire into fire-evolved and fire-dependent ecosystems in Glacier National Park.

- “Assure for all generations safe, healthful, productive, and esthetically and culturally pleasing surroundings”

As fuels and native vegetative community structure are restored to more normal ranges of variability across the landscape under the preferred alternative, conditions of safety, health and productivity and therefore pleasing surroundings will be enhanced. The proposed increased removal of dead and down fuels of all sizes will enhance the defensible space around developments or along boundaries by minimizing the intensity of wildfire.

- “Attain the widest range of beneficial uses of the environment without degradation, risk of health or safety, or other undesirable and unintended consequences”

Actions under the preferred alternative will meet resource and protection objectives intended to achieve a broad range of benefits to the Glacier National Park environment as natural disturbance from periodic fire is restored. *Public and firefighter safety is the number one priority.* The Federal Wildland Fire Policy (2001) states: “Firefighter and public safety is the first priority, and all Fire Management Plans and activities must reflect this commitment.” The Fire Management Plan for Glacier National Park will direct necessary measures that will ensure the safety of firefighters and the public.

- “Preserve important historic, cultural, and natural aspects of our national heritage and maintain, wherever possible, an environment that supports diversity and variety of individual choice”

Accomplishment of objectives under the revised Fire Management Plan will support principles of natural and cultural diversity in the area and reduce the severity and risk of wildfires to historic structures in Glacier National Park. The preferred alternative will also help sustain a more diverse and natural ecosystem that will foster a wide range of spiritual as well as recreational activities.

- “Achieve a balance between population and resource use that will permit high standards of living and a wide sharing of life’s amenities”

The revised Fire Management Plan will not negatively affect the balance between population and resource use in Glacier National Park. It will not increase resource use, nor will it increase park visitation or population.

- “Enhance the quality of renewable resources and approach the maximum attainable recycling of depletable resources”

Under the revised Fire Management Plan, the proposed increase in the use of fire in Glacier National Park under a multi-year treatment schedule will serve to return a more natural vegetative mosaic to the landscape. On the lower slopes of

the Middle Fork of the Flathead River for example, mixed-severity burn treatments will open historic winter range and migration corridors and encourage the reproduction of browse species. Another example is in the North Fork valley prairies, where fire can be used to reestablish the historically frequent fire regime that deters tree encroachment, prevents sagebrush dominance, and recycles litter and duff.

## **WHY THE PROPOSED ACTION WILL NOT HAVE A SIGNIFICANT EFFECT ON THE HUMAN ENVIRONMENT**

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

### *Impacts that may be both beneficial and adverse*

The NPS preferred alternative will have no impacts on environmental justice, floodplains, geology and topography, prime and unique farmland, socioeconomics, wild and scenic rivers, or bull trout. There will be negligible to moderate, long-term beneficial effects on vegetation and wildlife, gray wolves, grizzly bears, Canada lynx, and bald eagles; the proposed action may affect but is not likely to adversely affect gray wolves, grizzly bears, Canada lynx, bald eagles, and golden eagles. The preferred alternative will have short-term minor adverse but long-term minor to moderate beneficial effects on soils, water and aquatic resources, wetlands, and wilderness values. There will be short-term negligible to moderate adverse effects, but long-term minor to moderate beneficial effects to air quality, cultural and ethnographic resources, aesthetics and recreational values, park operations and park neighbors as hazard fuels are managed and fire is restored as a natural disturbance on a landscape scale in the long-term. There will be short-term, localized, minor adverse effects to the natural soundscape during mechanical fuel reduction activities.

### *Degree of effect on public health or safety*

The project will result in improved public health and safety. Prescribed fires and mechanical fuel reduction will help reduce vegetative fuels in project areas, thus reducing the probability that future wildland fires will get out of control and damage structures or affect air quality. Mitigation measures for air quality are listed in the EA, and they will ensure that particulate concentrations do not exceed standards that may impact public health. Mitigation measures include temporary road or area closures and traffic control to protect public safety. To reduce risk to workers, chain saw operators must complete a Wildfire Power Saw course to become a Class A faller, and they must wear personal protective equipment. To prevent prescribed fires from getting out of control, several measures are used, most important being no fires will be set unless the prescribed conditions are met, which take into account current and forecasted weather conditions. Other measures include installing sprinkler systems and hose lays, digging hand lines where necessary, and using natural barriers to fire.

*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*

The revised Fire Management Plan will have no impacts on prime farmlands, Wild and Scenic Rivers, or ecologically critical areas. There will not be any significant effects to historic or cultural resources, park lands, or wetlands, as described in Table 2 in the EA.

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

Implementation of the revised Fire Management Plan will reduce the likelihood of a large uncontrolled wildfire. These types of fires are highly controversial due to the potential for undesired effects. Prescribed burning and mechanical fuel reduction can also be controversial, but when conducted appropriately, they provide safe and effective means of reducing fuels to a level that would enhance the resiliency of forests to wildland fire, thus restoring or maintaining the ecological role of fire on the landscape without the loss of resources the public holds dear. Several comments were received from the public in support of fuel reduction. There were some concerns during the first public review about prescribed fire and mechanical fuel reduction locations and methods; these concerns were addressed in the revised EA.

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

The revised Fire Management Plan involves prescribed fire, which poses risks of escaped fire causing damage to natural and cultural resources. Several measures will be used to prevent escape of prescribed fire, including burning only when current and forecasted climatic conditions fall within the prescription, installing sprinkler systems or hose lays, digging hand lines where necessary, and using natural barriers to fire. Other specific mitigating factors to be used will be discussed in detail in the site specific burn plans.

*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*

None.

*Whether the action is related to other actions with individually insignificant but cumulatively significant impacts*

Cumulative impacts would be minor to moderate, short-term, and adverse and minor to moderate, long-term beneficial for air quality, threatened and endangered species and species of concern, vegetation, and aesthetics and recreational values. There would be minor to moderate, short-term adverse cumulative effects for natural soundscapes, wildlife, and park operations. There would be minor, long-term adverse cumulative effects for soils. There would be minor to moderate, long-term beneficial cumulative impacts to water and aquatic resources, wetlands, cultural resources, and park

neighbors. Cumulative effects to wilderness would be negligible to minor, short-term adverse, and minor to moderate, long-term beneficial. None of these cumulative impacts are significant.

*Degree to which the action may adversely affect districts, sites, highways, structures, or objects listed on the National Register of Historic Places or may cause loss or destruction of significant scientific, cultural or historical resources*

After applying the Advisory Council on Historic Preservation's criteria of adverse effects (36 CFR Part 800.5, *Assessment of Adverse Effects*), the National Park Service concluded that implementation of the preferred alternative will have *no adverse effect* on cultural resources of Glacier National Park. The plan also commits the NPS to undertaking standard Section 106 consultation procedures for fire management activities. The Montana State Historic Preservation Office (SHPO) commended the park for its recognition of fire effects in the plan and the mandated consideration of cultural resources in park decisions regarding fire. It did not find the plan detailed enough to reach a finding of effect. The SHPO made suggestions for language and procedures to be included in a programmatic agreement. Until a programmatic agreement is completed, the park will conduct section 106 consultation with the Montana State Historic Preservation Office for each undertaking. Nevertheless, there always remains the potential for adverse effects from unwanted wildland fires and/or suppression actions. The mitigation measures described will reduce the potential for activities during those events to cause adverse effects.

*Degree to which the action may adversely affect an endangered or threatened species or its critical habitat*

The park submitted a Biological Assessment on April 14, 2003. The USFWS concurred with our determination of "may affect, not likely to adversely affect" bald eagles, gray wolves and grizzly bears. Because of a recent Court order, the USFWS cannot concur with a "may affect, not likely to adversely affect" determination for Canada lynx, therefore formal consultation was initiated, and a Biological Opinion dated June 27, 2003. It is the opinion of the USFWS that the Fire Management Plan, as proposed, is not likely to jeopardize the continued existence of the Canada lynx. The impact to the lynx and its habitat would be insignificant and/or discountable. No critical habitat has been designated for this species, therefore none will be affected. The USFWS did not include any additional terms and conditions in the Opinion.

The park determined in the EA that bull trout may be affected but will not likely be adversely affected by sediment and debris during and after prescribed and wildland fires (page 73). The EA also states that the impacts to bull trout will be negligible with mitigation measures in place. The Biological Assessment prepared for section 7 consultation with the USFWS covers prescribed fires but not suppression, as suppression activities will be covered separately under emergency consultation. The mitigation measures include ways the park will minimize impacts to bull trout and for prescribed fires, the park determined "no effect" to bull trout, and therefore we did not



consult on bull trout.

*Whether the action threatens a violation of federal, state or local environmental protection law*

The action violates no federal, state or local environmental protection laws.

*Impairment*

In addition to reviewing the list of significance criteria, the National Park Service has determined that implementation of the proposal will not constitute an impairment to any of the National Park's resources and values. This conclusion is based on a thorough analysis of the environmental impacts described in the Fire Management Plan/EA, the public comments received, relevant scientific studies, and the professional judgment of the decision-maker guided by the direction in NPS *Management Policies* (December 27, 2000). Although the plan/project has some negative impacts, in all cases these adverse impacts are the result of actions taken to preserve and restore other park resources and values. Overall, the plan results in benefits to park resources and values, and it does not result in their impairment.

## PUBLIC INVOLVEMENT

A joint interdisciplinary team was formed that consisted of representatives of Glacier National Park, and the Flathead National Forest. The Glacier National Park portion of the team began scoping in November 2001. Public scoping meetings were held November 13 and 19, 2001 in Browning and West Glacier, Montana. The team also conducted scoping sessions with the Blackfeet Nation, Flathead Agency of the Bureau of Indian Affairs, Parks Canada and the British Columbia Forest Service, Glacier National Park, and the Flathead National Forest Supervisor's Office. Two letters were received from the public during scoping. The Montana Environmental Information Center urged us to use regular prescribed fire as a tool to keep the forests healthy. The National Parks and Conservation Association wrote suggesting the park consider fall burning for prescribed fire, aggressive use of wildfire management and to minimize the use of helicopters proposed wilderness for fire and search and rescue. They also suggested that professionals should conduct urban-wildfire fuel reduction and thinning. These were addressed in the plan. Regarding helicopter use, it is guided by the park's Aviation Management Plan, and each flight is critically reviewed prior to approval.

The *Draft Fire Management Plan and Environmental Assessment* was released to the public for a 30 day comment period in October, 2002. Two public open houses were conducted after this release on December 18 and 19, 2002, at Browning and West Glacier, Montana. A press release was also issued. Nine letters were received. Three letters from individuals supported the preferred alternative, one of whom emphasized the need to protect public and private structures in the park from fire. Another individual wrote opposing the use of prescribed fire. The National Parks and Conservation Association wrote that the plan should consider more aggressive

treatment of hazardous fuels near buildings and using prescribed fire on the east side of the park, and urged that more acreage should be subjected to prescribed fire. They also complimented the park on the prescribed burning in the North Fork. A letter was received from the Montana Department of Environmental Quality with minor editorial comments regarding air quality regulations. The Montana State Historic Preservation Office sent a letter supporting the EA because it acknowledged possible effects to cultural resources. The Montana State Historic Preservation Office requested that the park develop a Programmatic Agreement to protect cultural resources during fire management activities. Until a Programmatic Agreement is completed, the park will conduct section 106 consultation with the Montana State Historic Preservation Office in Helena for each undertaking. If an adverse effect is determined, this FONSI will be void and a new EA will be prepared. However, the SHPO and the park do not anticipate that any undertakings will result in an adverse effect.

A letter was received from an individual with several concerns. They included the lack of a complete literature review, references, definitions, and maps, not enough justification for the proposed prescribed fire program and specific planned burns, lack of in depth analysis including supporting literature citations on the effects of fire on wildlife, and lack of some specific data on wildlife. He questioned the methods for mechanical fuel treatments, he disagreed with the dismissal of noise as an impact topic, and he disagreed that much of the forests in the park were out of their natural fire cycle regimes.

After considering all the comments received, the park decided to address these by revising the Fire Management Plan and EA and releasing it again for public review and comment. Additional literature reviews were conducted, maps were added, and several components of the plan were clarified. No changes were made to the analyses of impacts on resources.

The revised Fire Management Plan EA was prepared and was released in March 2003 for another 30 day public review. A press release was also issued. Four letters were received. One was from the Montana Department of Environmental Quality with minor editorial comments and one was from an individual supporting the preferred alternative; these did not result in changes to the EA.

The third letter was from an individual. His comments are summarized. He felt that the EA focused on fire suppression resulting in forests out of balance with natural fire regimes. He believes that most of the park is not in this situation. He stated that the specific prescribed burn projects still need justification; the maps of mechanical fuel reduction treatment areas show large areas with natural resources that will be impacted if the treatment extends as far as the map seems to show; Fire Management Unit boundaries are not entirely appropriate; and he made additional comments on references.

The park requested a meeting with Steve Barrett, a consulting research forester and author of Glacier National Park fire histories, to discuss these concerns. He also submitted his comments on the Plan in the fourth letter. Concerns raised by the third and fourth letters are addressed as follows.

The park is in relatively good ecological condition, in part because the park has had an active prescribed fire program since the late 1980s, but primarily because the park has had an active Fire Use program as well as made good use of “appropriate management responses” to suppression wildland fires. Exceptions include dry community types that remain impacted by fire exclusion. While the EA may give the impression that fire exclusion is a major problem throughout the park, this could actually be affecting as little as ten percent of park forests. Therefore, a goal of the fire management plan will be to “maintain” fire cycles, not just to “restore” them. Long interval stand replacement fires are the predominant disturbance type in the park, while mixed-severity fires are less common. The EA may seem to over-emphasize the role of mixed-severity fires while it downplays the role of stand replacement fires. The park believes prescribed fire is important as a preparatory step for allowing wildland fires to burn in some areas of the park where, without preparation, they could get out of control, such as along boundaries or near infrastructures. Also, special management intervention has been deemed necessary to maintain fire cycles in some whitebark pine stands, even though stands may not be out of balance, but where fire might be used to promote blister rust-resistant regeneration of whitebark pine. Errata sheets are attached to address the other concerns.

Table 1 (errata sheet) now contains specific justifications for listed prescribed burn projects. The mechanical fuel treatment maps in the EA show specific project areas, and a wildlife biologist will be consulted on each project before trees are cut to minimize impacts to natural resources. Fire Management Units will not change. They were developed with flexibility and protection of natural and cultural resources in mind. The other attached errata sheet identifies references inadvertently left out of the original document.

A copy of the FONSI and errata sheets will be sent to the commenters. All comment letters are attached.

## CONCLUSION

The proposal does not constitute an action that normally requires preparation of an environmental impact statement (EIS). The proposal will not have a significant effect on the human environment. Negative environmental impacts that could occur are negligible to moderate and temporary in effect. There are no unmitigated adverse impacts 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, cumulative effects, or elements of precedence were identified. Implementation of the action will not violate any federal, state or local environmental protection laws.

Until a Programmatic Agreement is completed, the park will conduct section 106 consultation with the Montana State Historic Preservation Office in Helena for each undertaking. If an adverse effect is determined, this FONSI will be void and a new EA will be prepared. However, the SHPO and the park do not anticipate that any undertakings will result in an adverse effect.

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

Recommended:  /s/ Michael Holm 7/16/03  
Superintendent Date

Approved:  /s/ Michael Snyder 7/18/03  
Intermountain Regional Director Date

## **Errata Sheets**

The following errata sheets contain changes to the EA in response to substantive comments, and minor changes to the text of the EA. None of these changes resulted in changes to the effects analysis nor to any of the alternatives presented in the EA.

## Errata Sheet – replaces Page 16

*Due to substantive comments, additional justification for each prescribed burn unit was added to Table 1.*

Prescribed Burn Unit	Acres	Initial Burn	Target Date	Justification/objectives
<b>North Fork Grassland</b>				
Bericlaus #1	21	1992	2003	Reduce coniferous and sagebrush encroachment into prairies and maintain the mean fire interval of approximately 30 years. Preserve historic structures and historic scene and allow for greater flexibility in managing fire use fires to the west of the prairies.
Bericlaus #2	19	1993	2003	as above
Bericlaus #3	32		2003	as above
Indian Tree #4	65	1996	2003	as above
Miller Cabin #5	75	1993	2003	as above
Aspen Corner #6	92	1996	2002	as above
Cedar Tree #7	100	1996	2003	as above
Ladder #8	60	1996	2003	as above
Dry Fork #10	82	1988	2005	as above
Johnnie #11	96	1988	2005	as above
Airie #12	122	1988	2005	as above
Round Prairie	46	1992	2005	as above
McGee Meadows	180		2006	as above
Sage Flats	160		2006	as above
<b>Forest Restoration- Underburn</b>				
Ponderosa 1B	50		Assess	Maintain stands of ponderosa pine by underburning vegetation to reduce ladder fuels and prevent overstory mortality during future wildfires. Provide a buffer along the inside North Fork Road from which holding actions can be utilized to manage Fire Use fires to the west within Glacier Park's boundary. Portions burned in 2001 Moose Fire.
Ponderosa 1C	50		Assess	As above
Picnic #2	16	1999	Assess	As above
Ponderosa 4A	23	1998	2008+	As above
Ponderosa 4B	12	1998	2008+	As above. 30-40% burned in 1999 Anaconda WFURB. Burned in Moose Fire.
Dutch #7	80	1999	Assess	As above. Burned in 1999 Anaconda WFURB. Burned in 2001 Moose Fire.
St. Mary Meadows	300		2007	Reduce coniferous encroachment and subsequent fire intensities within aspen stands. Utilize burned stands as holding opportunities for preventing wildfires fire from threatening developed areas or leaving the park boundaries.

<b>Forest Restoration – Mixed Severity</b>				
Upper Nyack Whitebark	•1200		2008+	Research the applicability of prescribed fire for restoring whitebark pine in stands that have been decimated by blister rust. Units will be monitored for natural seedling re-growth and planted with blister rust resistant seedlings to determine how (or if) the species can best be restored and maintained. The whitebark burn with the highest probability of success will be selected for initial research treatment.
Loneman Whitebark	•1000		2008+	as above
Logging Whitebark	•1600		2008+	as above
Starvation Ridge	•1200		2008+	Utilize the boundaries where the 1996 Starvation Fire had been suppressed along with natural barriers to expand upon the burn area near the Canadian border. Enhancing the burned area along the boundary will provide for greater fire use opportunities in the northern drainages of the north Fork and reduce the risk of fire escaping the park.
Sage Creek Drainage	•1200		2008+	As above. Though a mixed-severity burn, portions of the Sage Creek drainage consist of meadows with coniferous and sage encroachment that will fall under objectives similar to the North Fork Grassland units.
<b>Debris disposal</b>				
Glacier Institute Piles	10		2003	Burn small piles of slash generated from fuel reduction around the Glacier Institute Field Station.
Camas Dump Piles	5		yearly	Burn vegetation and woody debris from around the park that has been piled at the Camas dump location.
West Glacier/Apgar Piles	varied		2005+	Burn small piles of slash generated from mechanical fuel reduction around West Glacier and Apgar developed areas.
St. Mary Piles	varied		2005+	Burn small piles of slash generated from mechanical fuel reduction around the St. Mary developed area.
<b>Fuel Reduction</b>				None identified

Note: There are no prescribed fires planned for 2004; fuels focus will be on initiating mechanical Wildland-Urban Interface projects.

## Errata Sheet – replaces Page 37

### *Text changes*

and Spalding's campion, not known to exist in the park, and the candidate species slender moonwort, which does occur in the park.

**Gray Wolf.** In 1986 the first documented denning of wolves in the western United States in over 50 years occurred in Glacier (Ream et al. 1991). Wolves have continued to den in the park nearly every year since. Two separate wolf packs with a total of 10-33 wolves maintained home ranges in the North Fork throughout the 1990s. Recent sightings document two packs occupying the North Fork and a third pack in the Middle Fork area. The population dynamics of recolonizing wolves are extremely variable. Wolf monitoring activities in Glacier National Park have been reduced since wolf ecology research concluded in 1996.

Gray wolves are wide-ranging and their distribution is tied primarily to that of their principal prey (deer, elk, and moose). Key components of wolf habitat are: 1) a sufficient, year-round prey base of ungulates and alternate prey; 2) suitable and somewhat secluded denning and rendezvous sites; and 3) sufficient space with minimal exposure to humans (USFWS 1987). Low elevation river bottoms that are relatively free from human influence provide important winter range for ungulates and wolves. Wolves are especially sensitive to disturbance from humans at den and rendezvous sites during the breeding period. Human activity near den sites can lead to pack displacement or physiological stress perhaps resulting in reproductive failure or pup mortality (Mech et al. 1991). Indirectly, wolves support a wide variety of other species; common ravens, coyotes, wolverines, mountain lions and bears feed on the remains of animals killed by wolves. Bald and golden eagles routinely feed on the carcasses of animals killed by wolves during the winter. As apex predators, wolves also help regulate the populations of their prey ensuring healthy ecosystems and greater biodiversity (Terborgh 1988).

In addition to the resident North Fork and Middle Fork packs, wolves have been reported in every major drainage in the park in recent years including the Many Glacier, McDonald, Cut Bank, St. Mary, Belly River, and Two Medicine Valleys (NPS files). Wolves denned in 1993 and 1994 in the Belly River area in Alberta, but there has been no verified denning activity east of the Continental Divide in Glacier National Park. Recent sightings and historic records for the east side of the park suggest that wolves are in the process of recolonizing the area. Pack activity has recently been observed in the St. Mary, Many Glacier and Belly River Valleys.

**Bald Eagle.** Bald eagles use portions of Glacier National Park on a year-round basis as nesting and wintering residents (Yates 1989), and as seasonal migrants (McClelland et al. ~~1982~~ 1994, Yates et al. ~~2001~~). There are 11 known bald eagle breeding areas in the park, including five in the North Fork Valley, two in the Goat Haunt-Belly River area, one in the Middle Fork Valley, one at Lake McDonald, one at Saint Mary Lake, and one in the Two Medicine Valley. There is another nest within 5 kilometers of the western park boundary in the North Fork Valley, and it is likely that these eagles forage inside the park as well. Documented spring and summer eagle activity in the Many Glacier Valley indicates that there may be other resident bald eagles nesting near Sherburne Reservoir (NPS files). Glacier National Park is within a major bald eagle migration corridor (McClelland et al. 1996, Yates et al. ~~2001~~). Some eagles remain to forage near Lake McDonald and winter in the area, especially along the Middle and North Forks of the Flathead River.

Productivity of Glacier's nesting bald eagle population is considered low and is generally less



**Errata Sheet – insert after page 94**

*Text changes*

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## Errata Sheets – insert after Page iii

### *Text changes*

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