U.S. National Park Service

Fire Management Plan

Grand Teton National Park and the John D. Rockefeller Jr., Memorial Parkway

Grand Teton National Park and
The John D. Rockefeller, Jr. Memorial Parkway
Wildland Fire Management Plan

Prepared By
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Recommended By: _____ Date: 6.7.2021
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Recommended By: _____ Date: 6/7/21
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EXECUTIVE SUMMARY

This 2021 Fire Management Plan (FMP) represents a newly formatted version of the Parks' approved FMP that was completed in 2004 and updated in 2009. The 2004 plan was developed through a process involving public meetings, notices, and scoping that fully described the goals and objectives of the fire and fuels management programs of Grand Teton National Park and the John D. Rockefeller, Jr., Memorial Parkway (GTNP/JODR). The DOI/USDA issued "Implementation Guidance" in 2009 supporting the existing federal wildland fire policy. The 2009 update to the FMP adopted the terminology updates and other nuances of the 2009 guidance document.

In subsequent years the DOI-NPS has updated Departmental Orders and Reference Manual guidance regarding the format and content of agency Fire Management Plans, most recently in 2021. This updated FMP retains the elements of the fire and fuels programs first described in the 2004 plan while following the current agency prescribed format for FMPs. The further adaption of the terminology/nomenclature utilized when describing wildland Fire Management responses since 2009 also required sections of the plan to be updated.

Additionally, since 2004 new lands have been acquired through sale and donation that have added to the area the FMP encompasses. In 2017 the Park completed a "Foundation" planning effort that identified fundamental resources and values for GTNP/JODR, which also addressed the role of fire in the Park.

The program goals and objectives, Wildland Fire Management strategies, established Fire Management units, and approved fuels management activities first described in the 2004 FMP remain unchanged.

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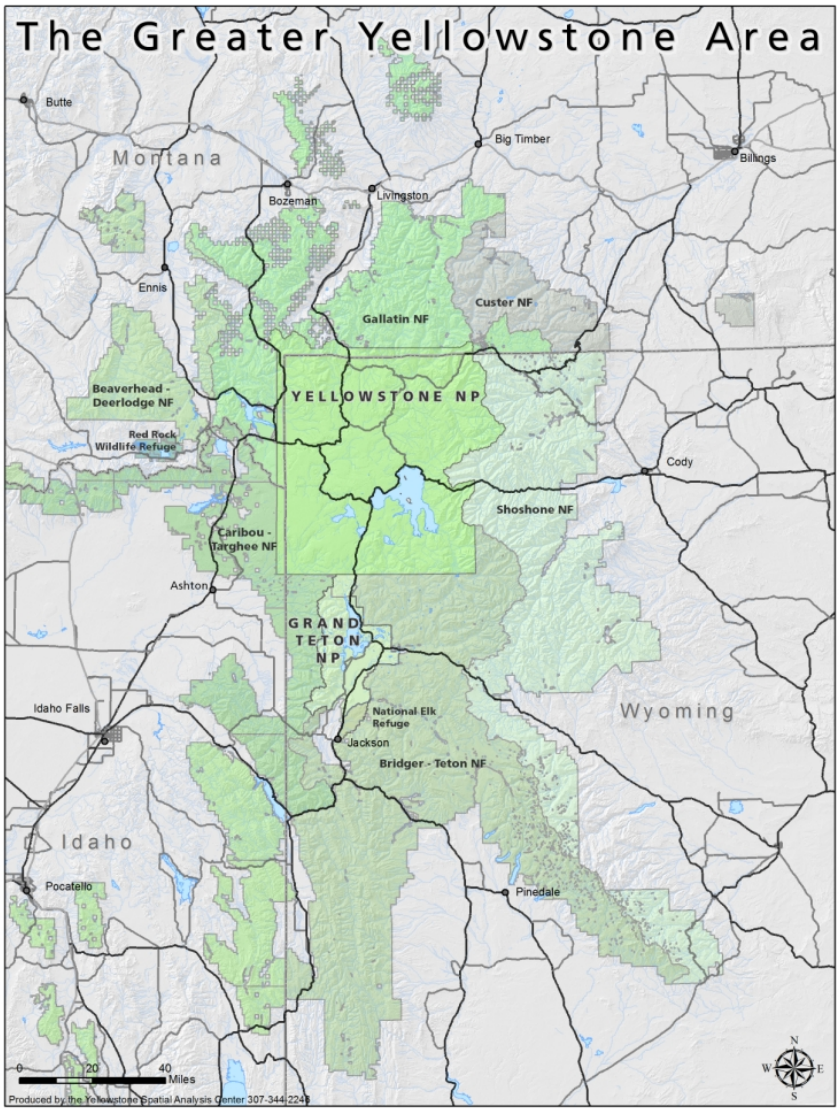
1.0 INTRODUCTION, LAND MANAGEMENT PLANNING, and COMMUNICATION

As part of its mission, the National Park Service manages wildland fires to protect the public, park communities, and infrastructure, conserve natural and cultural resources, and maintain and restore natural ecosystem processes (NPS Wildland Fire Strategic Plan, NPS 2020). Each park unit with burnable vegetation must have an approved Fire Management Plan that will address the need for adequate funding and staffing to support the Fire Management Program. (Directors Order #18, Wildland Fire Management, NPS 2008). To align with the DOI FMP Framework, the NPS developed Fire Management Planning guidance described in NPS Reference Manual (RM) - 18, Fire Planning, Chapter 4 (2019), that considers fire program complexity and efficient and effective planning direction.

The Grand Teton National Park Wildland Fire Management Plan (FMP) provides direction and establishes specific procedures to guide all wildland fire program activities within Grand Teton National Park and John D. Rockefeller, Jr. Memorial Parkway. Language in this document referring to "Grand Teton National Park," "GTNP," or "the Park" includes both park units.



Map 1: Map of the Greater Yellowstone Area

The Grand Teton National Park (GTNP) Fire Management Plan is a strategic plan that defines a program of work to manage wildland fire, (includes prescribed fire and wildfire), and non-fire fuel treatments, and is based on direction contained in existing park unit planning documents. This plan provides for firefighters and public safety, and includes strategies for managing wildland fires; it also addresses values to be protected and is consistent with GTNP resource management objectives and environmental laws and regulations such as the National Environmental Policy Act (NEPA), the National and State Historic Preservation Acts, the Clean Air Act, the Endangered Species Act, etc.

The GTNP Fire Management Officer (FMO) determines program requirements to implement land-use decisions through the FMP to meet management objectives. The FMO is responsible for developing, maintaining, and annually evaluating the FMP to ensure accuracy and validity by completing an annual review. (Interagency Standards for Fire and Fire Aviation Operations (Red Book), Chapter 3, NPS Program Organization and Responsibilities).

1.1 Program Organization

The GTNP Fire Management Program receives support from the Intermountain Regional Office (DOI Region 7), Division of Visitor and Resource Protection, Branch of Wildland Fire and Aviation Management. The Branch of Wildland Fire and Aviation Management resides within the Division of Visitor and Resource Protection, with the Branch Chief reporting directly to the Park's Chief Ranger. The GTNP and Bridger-Teton National Forest Fire Management Programs represent an integrated organization and work together under the Service First authority to form the Teton Interagency Fire Management Program which works closely with the US Fish and Wildlife Service- National Elk Refuge, Wyoming State Forestry Division-District 4, and Jackson Hole Fire & EMS.

The organization of the GTNP Fire Management Program helps to define areas of responsibility, provide clear direction and accountability, and further the development of a responsive Fire Management Program. Key program elements and responsibilities are outlined at least to a workgroup and responsible party. Other areas of responsibility for implementation of the Fire Management Program held by specific Park personnel include the Superintendent, Deputy Superintendent, Chief Ranger, and the Chief of Science and Resource Management.

The Fire Management Program organization chart, found in Appendix I, details shared positions with the Bridger-Teton National Forest is detailed in Appendix I.

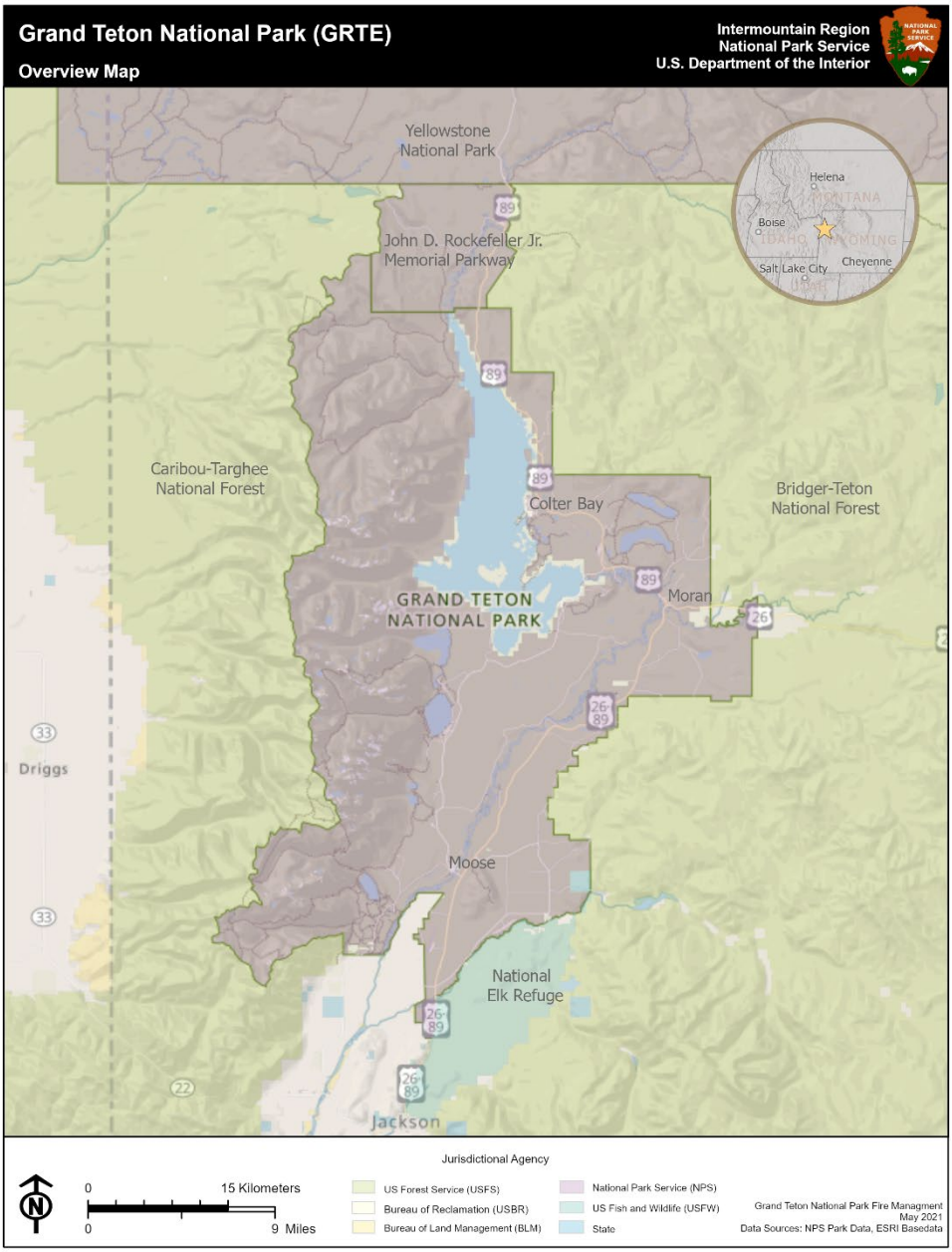
1.2 Fire Management Actions

The 2009 Guidance for Implementation of Federal Wildland Fire Management Policy reinforced the concept of a range of management strategies (perimeter control, point/zone protection, monitoring) being applied during a fire response, potentially changing over time and space during the duration of a fire. Wildland fires in GTNP will be managed for one or more objectives (i.e. not solely suppression or monitoring) and the objectives can and may change as fires move across the landscape. Fuels treatments will be used to meet specific project objectives for defined units. Objectives can range from fuels reduction and the creation of defensible space around values at risk to introducing fire where wildland fire has been absent, or to meet specific resource-based objectives for a discrete area (habitat or invasive species management, for example).

Response to fires in GTNP will be coordinated with local partners, especially when the potential for the fire to spread beyond NPS jurisdiction exists. Fire Management actions will reflect a commitment to safety, be cost-effective, and be designed to accomplish desired objectives.

Primary park/resource management strategies informed overarching objectives specific to three Fire Management Units (FMU's). A Fire Management Unit (FMU) defines any land management area with a specific set of objectives, topographic features, access, values-to-be-protected, political boundaries, fuel types, major fire regime groups, or other characteristics that sets it apart from management characteristics of an adjacent unit.

Fire regime, natural barriers, and values to be protected delineate the three different GTNP FMU's (see Map 3) known as Backcountry, Conditional, and Protection. Managers may apply prescribed fire, manage wildfire responses for multiple objectives, and/or utilize mechanical fuel reduction throughout all FMUs in the Park to meet specific management objectives.



Map 2- Grand Teton National Park/John D. Rockefeller, jr. Memorial Parkway

1.3 Environmental Compliance

This FMP's Environmental Assessment (EA) describes and analyzes the potential environmental effects of the proposed action (this Plan) and two alternatives. The preferred alternative selected from the Finding of No Significant Impact accompanies this plan. The attached EA meets the requirements of the National Environmental Policy Act (NEPA), the National Historic Preservation Act (NHPA), and Section 7 of the Endangered Species Act (ESA). Consultation with Bureau of Reclamation, Bureau of Land Management, U.S. Forest Service (USFS), Jackson Hole Fire & EMS, U.S. Fish and Wildlife Service, Wyoming Game and Fish Department, Wyoming State Historic Preservation Office (SHPO), and the general public was conducted concurrently with public review of the EA. Projects implemented under this plan will be specifically evaluated to ensure all NEPA/NHPA requirements have been

addressed. If projects outside of the scope of the EA are necessary, additional NEPA/NHPA consultation and documentation will be completed.

Planning, Environment & Public Comment (PEPC)

NEPA Document Name	Document Date Signed (month/day/year)	Project ID Number#
Environmental Assessment (EA) Finding of No Significant Impacts (FONSI)	October 2004 12/02/2004 Date of signed FONSI	PEPC 41257

1.4 Park Unit/Resource Management Planning

This Fire Management Plan implements objectives recommended in the management plans listed below and the selected Proposed Action contained in the EA. The Fire Management Program, guided by safety, protection, and resource management goals, should protect park assets, and perpetuate natural and cultural resources and their associated natural processes while providing for the safety of incident responders, employees, and the visiting public. The FMP presents the actions that will integrate Fire Management with park management goals safely and professionally.

GTNP Master Plan and John D. Rockefeller (JODR), Jr. Memorial Parkway General Management Plan

The Master Plan for GTNP (1976) identifies the restoration of natural fire regimes in the Park as a major management initiative. The General Management Plan for the Parkway (1980) identifies several broad, resource management objectives including conserving wildlife and natural habitats; identifying and preserving significant natural and cultural resources; and managing the natural environment to enhance scenic values.

Strategic Plan for Grand Teton National Park and John D. Rockefeller, Jr. Memorial Parkway

Fire Management Plan goals such as managing fire on an ecosystem scale, restoring the natural role of fire to the landscape, using fire as a natural resource management tool, and providing structural protection to historic structures align with the Mission Statement for GTNP that is included in the Park's Strategic Plan (2005). The Park's mission statement states, "Grand Teton National Park is dedicated to the preservation and protection of the Teton Range and its surrounding landscapes, ecosystems, cultural and historic structures that represent the natural processes of the Rocky Mountains and the cultures of the American West."

Foundation for Planning and Management for Grand Teton National Park and John D. Rockefeller, Jr. Memorial Parkway (PEPC ID 64729)

The Foundation for Planning and Management for GTNP and John D Rockefeller, Jr. Memorial Parkway (2017) identifies Ecological Communities and Natural Processes, including fire, as a core component of the Park's fundamental resources and values. Fire, highlighted as a park phenomenon, gives opportunities for scientific and educational study and visitor enjoyment. The Foundation document advocates for educating the public about the ecological value of recently burned areas for the diversity of plant and animal communities. Air quality, including smoke from wildfires, represents an additional area of emphasis that relates to Fire Management.

Resource Management Plans recommend natural-caused fires be allowed to burn within designated areas, except when this would endanger life, property, or would result in unacceptable social, environmental, or economic impacts, or violate air quality regulations. These plans also recommend management (or "implementation") of prescribed fires under specific conditions.

1.5 Collaborative Planning

This plan used a collaborative process utilizing an interdisciplinary team approach consisting of members of GTNP, Bridger-Teton National Forest, National Elk Refuge, Jackson Hole Fire & EMS, the public, and the NPS Intermountain Region. This plan outlines operational guidelines for implementing the described Fire Management Program. The staff at GTNP intends to rely heavily on collaboration with neighboring Fire Management resources as opportunities exist to work with local, county, and state, and federal agencies in meeting the fire and resource objectives.

The fuels management component of this plan follows recommendations of the National Cohesive Wildland Fire Management Strategy (Cohesive Strategy) which established a framework to restore and maintain ecosystem health in the fire-adapted ecosystems and to protect identified communities at risk. The Cohesive Strategy is a push to collaboratively work together among stakeholders and across landscapes to progress towards three goals: resilient landscapes, fire-adapted communities, and safe and effective wildfire response. GTNP fire staff will work alongside resource managers and neighboring agencies to achieve the goals stated in the Cohesive Strategy by implementing a program that allows a fire to fulfill its natural role in the ecosystem, promoting the development of defensible space in proximity to fire-hardened structures, while prioritizing firefighter and public safety in all management decisions.

1.6 Communication and Education

Fire management employs accurate and timely information and education as key components of both planned treatments and unplanned incidents. Grand Teton National Park will prioritize the following endeavors, with a high level of coordination with internal and external partners:

Communication Goals

- Use the context of GTNP to spark an interest in fire
- Keep internal and external audiences informed with accurate and timely incident information
- Communicate consistent messages about the benefits and risks associated with wildland fire
- Use language consistent with national interagency efforts, such as the Cohesive Strategy
- Collaborate with interagency, interdivisional, and community partners as efficiently and effectively as possible
- Build trust with local communities

Strategy

- Fire Management will coordinate with the divisions of Interpretation & Partnerships and Science & Resource Management to facilitate opportunities to engage key audiences and foster an ongoing dialogue to educate the public about fire ecology and Fire Management objectives.

- The Fire Management Officer will collaborate with the Chief of Interpretation & Partnerships and the Public Affairs Office to periodically update park-specific talking points, tiered from national messages, as well as in-briefing materials for incoming incident Public Information Officers as needed.
- Fire Management will coordinate fire prevention efforts, including outreach and fire restrictions, with the divisions of Interpretation & Partnerships, Visitor & Resource Protection, Business & Administration along with Public Affairs and interagency partners.
- The Park Public Affairs Officer will issue news releases and other media products about current fire danger status, all fire restrictions, and significant prescribed and wildland fires. These will be coordinated with and often jointly issued by Teton Interagency Fire partners.

GTNP's fire communication and education messages will be informed by this Fire Management Plan and will complement national fire communication strategies and the Guidance for Implementation of Federal Wildland Fire Management Policy. This is further elaborated on in Appendix F Wildland Fire Communication & Education Plan. Additional information can be found in RM - 18, Chapter 20, Communication and Education.

2.0 WILDLAND FIRE PROGRAM MANAGEMENT GOALS AND OBJECTIVES

The Fire Management Program at Grand Teton National Park and John D. Rockefeller, Jr. Memorial Parkway will respond to all unplanned ignitions based on an assessment of resources at risk (or expected to benefit) and likely consequences to firefighter and public safety and welfare. Wildland fire will be managed to enhance resource protection, diminish risk and consequences of undesirable wildland fires and sustain naturally occurring vegetative communities and watersheds while taking actions to minimize the risk to life or property and work to diminish any unacceptable social, environmental, or economic impacts. A community-based approach to wildland fire issues will involve close collaboration and cooperation with neighboring agencies that have a vested interest in wildland fire issues. These principles will also guide the planned application of prescribed fire and mechanical fuels reduction throughout the Park.

2.1 Goals

GTNP Fire Management Program designed goals to achieve desired future conditions related to the ecological role of fire; the protection of resources, life, and property; enhancement of interagency cooperation and community involvement; the use of adaptive management for continuous improvement; and the effective management of personnel and resources. See the table below for specific GTNP goals.

2.2 Objectives

Each of the FMP's goals has specific objectives that guide activities in the Park's Fire Management Units. See the table below for specific GTNP objectives.

Table 1 - Goals and Objectives for Grand Teton National Park

	Goal 1 Ensure that firefighter and public safety remains the highest priority in every Fire Management activity.
	Objectives
•	Provide required annual safety training to all red-carded personnel per the Interagency Standards for Fire and Fire Aviation Operations (Red Book) and NPS policy.

• Incorporate safety considerations into all decision-making processes (e.g., WFDSS, Fuel Treatment Plans, etc.).
• Provide operational briefings that address safety considerations to all line personnel before every shift.
Goal 2 Implement a fire program that allows the natural process of fire to persist in GTNP.
Objectives
• Manage naturally caused fires as a dynamic ecosystem process to the maximum extent feasible.
• Support the Park by providing Fire Management tools to restore and perpetuate a mosaic of climax, sub-climax, and seral vegetation.
• Mimic natural fire regimes as directed by resource management objectives.
• Maintain a mosaic of climax, sub-climax, and seral forest vegetation, thereby reducing the probability of disturbances such as disease and insect epidemics or large, high severity fires that are outside the historic range of variability.
• Manage fires using the full range of options to protect, restore, or maintain resources, assets, and developments within and adjacent to the Park.
• Perpetuate wilderness values by following the Minimum Requirements Decision Process established in Section 4(c) of the 1964 Wilderness Act.
Goal 3 Protect life, property, resources, and assets from unwanted fire effects.
Objectives
• Prevent, detect, and take effective management action on each new wildland fire detected.
• Reduce risk from fire to identified resources, private lands, developed areas, and infrastructure.
• Simulate the effects of natural fires and/or reduce fuel loading in areas of the Park where wildland fire is not appropriate and may threaten lives and/or property of employees, visitors, and neighbors.
Goal 4 Enhance internal and external relationships through collaboration and coordination.
Objectives
• Maintain an interagency fire program that provides for safe, cost-effective, efficient, and ecologically sound Fire Management.
• Foster understanding and support among staff, visitors, neighbors, and partners for the wildland fire, prescribed fire, fuels management, and aviation programs.
• Conduct educational outreach programs.
• Implement a fire prevention program to minimize human-caused fires.

	Goal 5 Use adaptive management to continually assess the Fire Management Program.
	Objectives
•	Evaluate and adjust prescriptions as needed for prescribed fires, wildfires, and non-fire fuels treatments through monitoring.
•	Ensure Fire Management Program activities integrate and complement other park planning processes.
•	Ensure the program remains responsive to input from interagency partners and the public.
	Goal 6 Manage personnel and financial resources effectively.
	Objectives
•	Identify fire program skill requirements and responsibilities; actively recruit, retain, and train staff; maintain qualifications and provide employee development opportunities.
•	Employ fiscal responsibility and accountability in all aspects of fire program management activities and actions.

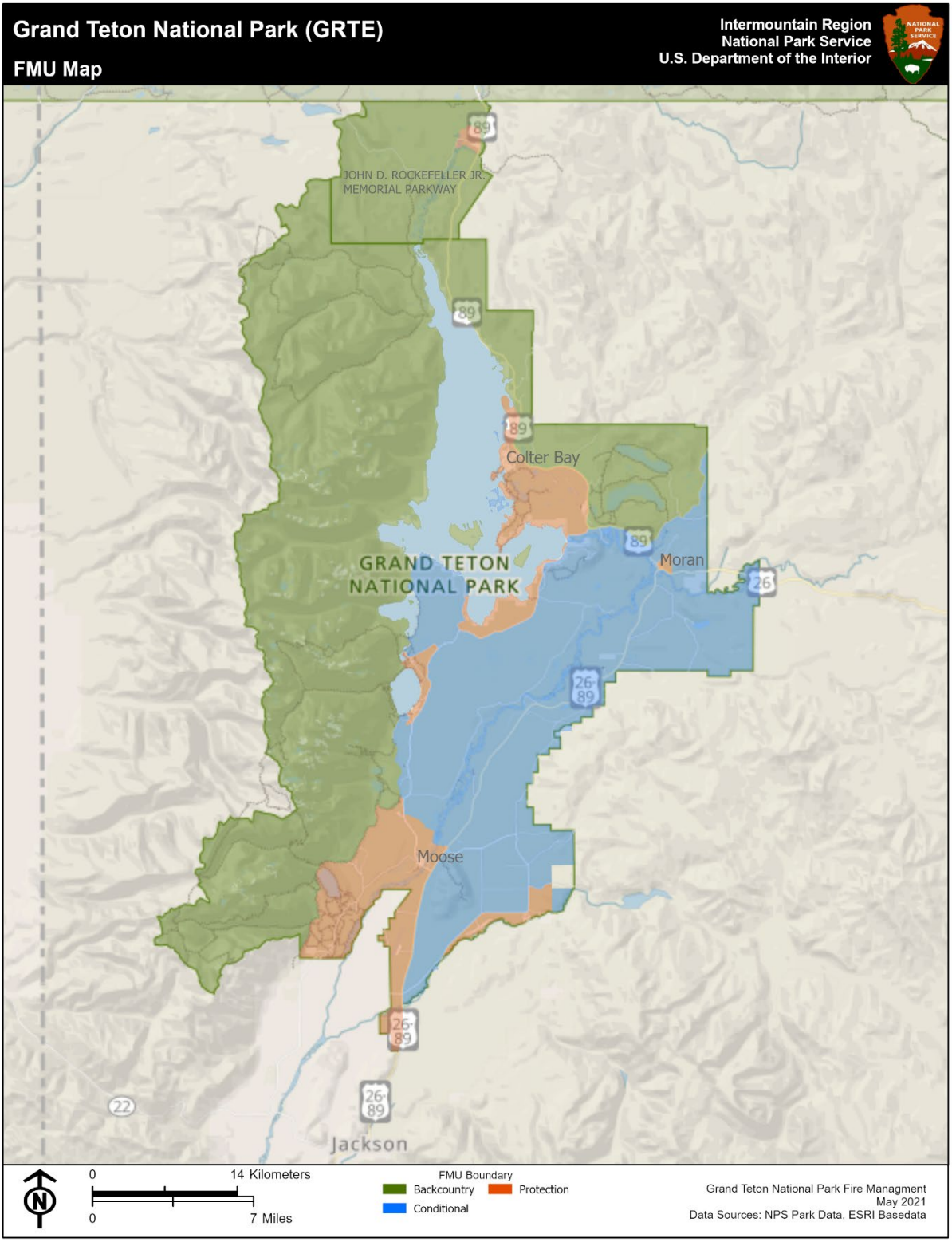
3.0 WILDLAND FIRE OPERATIONAL GUIDANCE

The Interagency Standards for Fire and Fire Aviation Operations (Red Book) describes national wildland fire policy. This document receives annual updates and references very detailed and specific language for wildfire response. The *Reference Manual (RM) - 18, Wildland Fire Management (2019),* and *Reference Manual (RM) – 60 Aviation Management* provide policy for the National Park Service. The GTNP FMP assumes conformity with agency and national policy in all actions and serves to provide locally specific guidance.

3.1 Management of Wildfires

Three identified FMU's within the Park to assist managers in determining the desired management strategy to use when an unplanned ignition occurs. The map and descriptors below define specific objectives for each unit. All Fire Management strategies (monitor, point/zone protection, perimeter control) will be considered throughout all FMU's, where management decisions would reflect the goals of allowing the natural process of fire to persist in GTNP while protecting life, property, and other resources from unwanted fire effects.

When applicable, wildland fire will be managed to enhance resource protection, diminish the risk and consequence of severe wildfires, and sustain naturally occurring vegetation communities and watersheds. The response to wildland fires will be based on ecological, social, and legal consequences of the fire, considering firefighter safety as the highest priority. Tactics will consider values at risk as well as the effects on park resources of selected actions.



Map 3 - Fire Management Units (FMU's)

Backcountry Unit (FMU 1; 184,394 acres)

Management of natural fire starts within this unit will be maximized for the ecological role they play in restoring and maintaining vegetation communities within the desired range of successional classes. Management actions will consider effects on firefighters and public safety. The Backcountry Unit comprises approximately 55% of the Park's acreage, including most of the Park's backcountry. The unit consists of nearly 100,000 acres of conifer forest (54%), and 67,000 acres of rock, open water, and sparsely vegetated, non-burnable areas (36%). Natural fires will be allowed to fulfill their role in the ecosystem, provided they pose an acceptable risk to firefighters and the public, that protection of developments is likely to be successful and other unwanted fire effects can be mitigated. Additionally, adjoining landowners' acceptance of wildland fire or land management objectives will be considered and is critical to the successful management of the natural fire program. Specific objectives are as follows:

- Allow fire to play its ecological role in the Park to the greatest extent possible.
- The selected wildland fire strategy and associated tactics and actions will consider the impacts to Recommended/Potential/Eligible wilderness lands and character.
- Develop incident objectives that protect values at risk and manage firefighter and public safety.
- Use suppression as the initial response to human-caused wildfires in a safe, and cost-effective manner while being mindful of the setting and potential unwanted effects of possible management actions.

Conditional Unit (FMU 2; 89,283 acres)

The Conditional Unit represents an area where the risk of fire escape beyond park boundaries is higher than in the Backcountry Unit and in many of those instances, adjacent lands and jurisdictions are less accepting of fire. Much of the valley floor and eastern foothills found in the Conditional Unit make up more than 27% of the Park. Of the nearly 90,000 acres included, half represent sagebrush vegetation (approximately 46,000 acres). Most of the Park's aspen is also in this unit. Management actions attempt to balance the restoration and perpetuation of fire-dependent ecosystems while protecting life and property within and beyond park boundaries. Specific objectives for this unit follow:

- Contain 90% of all unwanted wildland fires at less than 10 acres in size within 2 operational periods.
- Recognize the resource benefits of naturally occurring fire when conditions and fire location warrant.
- Utilize prescribed fire and fire surrogate fuels treatment prescriptions to mimic desired effects of wildland fires that are not allowed to play their full ecological role due to risk considerations.

Protection Unit (FMU 3; 30,360 acres)

This unit comprises multiple distinct areas closest to structures, and where the occurrence of unwanted fire presents the greatest threat to life and property. Approximately 30,000 acres of land occur within this unit or 9% of the Park. The vegetation exists mainly as a mixture of low elevation mixed conifer (almost 7000 acres; 24%); persistent lodgepole pine (roughly 4500 acres; 15%); and sagebrush steppe (approximately 7500 acres; 25%). Near developed areas, these plant communities represent the "wildland urban interface," and have desired future conditions associated with managing hazard fuels. Fires within this unit will receive a prompt, safe, and cost-effective suppression response causing the least possible resource damage. Specific objectives for the Protection FMU include:

- Contain 90% of all unwanted wildland fires at less than 10 acres in size within 2 operational periods.
- Coordinate with local partners and cooperators when conditions warrant implementing fire restrictions.
- Coordinate with law enforcement to ensure evacuation pre-plans are developed.
- Multiple fire starts will be prioritized by the Duty Officer to best meet objectives and provide for public and firefighter safety.
- Ensure implementation plan development considers socio-political-economic impacts, including wildland urban interface (WUI).
- Consider the use of mechanized equipment to control fire spread in instances where threats exist to human life/safety issues or fire immediately threatens highly valued park assets and/or private lands, under the approval authorities outlined in this plan.
- Consider utilization of mechanized equipment in fuels treatment implementation (tractors, mowers, skidders, etc.) if a decrease in treatment costs can be shown while creating effective fuel model changes.
- Maintain site-specific hazardous fuel reduction treatments near structures or cultural sites to park specifications and International Code Council WUI Code guidelines.

3.1.1 Wildfire Response Planning

Expected Fire Behavior

The range of fuel and weather conditions found in Grand Teton National Park during the historical record of fire seasons is great and varied, as are vegetation and topography. Many factors influence the distribution and characteristics of fuels, including plant community, fire history, topography, seasonality, snowpack, climate, animal, and human activities.

The fire season for the Park generally runs from late June into the middle of October. Most fires have occurred during this period as the climatic circumstances promote favorable conditions for ignition. Recent years have shown individual seasons to be highly variable with generally more days later in the season under conditions that fires can start, spread, and require a significant response.

At high elevations, fuels are sparse, and the environment is often cold and moist. Lightning strikes frequently ignite fires; however, these fires have short durations, remain small, and often involve only a single tree. Stand-replacing events occasionally occur during extreme droughts. Thin deposits of litter and duff generally characterize forested areas in the Park with a wide range of understory and surface fuel accumulation depending upon stand age. They burn under a mixed-severity regime, with creeping and torching fire behavior that results in pockets of varying degrees of stand disturbance. These forests are also well adapted for large stand-replacement events, such as crown fires, which occur during extended drought periods combined with wind events when large-diameter fuels have become dry. Windblown firebrands often accelerate fire spread during both crown and ground fire events. Fires in higher elevation and forested areas have the potential to be long-duration events, punctuated by a handful of large spread events in between periods of slow to moderate surface spread.

Fires within sage and grass stands can move rapidly following fuels and topographic features such as gently rolling hills. Shrub and grass vegetation carry fire when live and dead fuels are sufficiently dry and abundant. When grass production is high, fuels are dry, and winds are sufficiently strong, these fuels are highly volatile, and fires can spread very rapidly. Under higher fire danger conditions and wind events, these fires can be very unpredictable.

The following fuel and weather criteria have been identified as critical local thresholds. If combined, they can greatly increase fire behavior:

- 20' wind speeds over 20 mph
- Relative humidity values below 17%
- Temperature above 85°F
- 1000 hour fuel moisture less than 12%
- Woody fuel moisture less than 90%, and
- Herbaceous fuel moisture less than 80%

Initial Response Procedures

The current Fire Danger Operating Plan (FDOP) and Incident Organizer used within the Teton Interagency Dispatch Zone documents the Park's initial response actions The FDOP in Appendix D contains guidance for annual fire season preparedness actions along with daily staffing protocols during fire season. The Initial Response Plan outlines the planned initial response to a valid fire report based on location and current conditions. The Incident Organizer includes an Initial Fire Size up to be completed by the first resources on-scene of the fire and communicated to Dispatch and the Fire Duty Officer.

Beyond the drawdown of those identified initial resources, the Park Duty Officer establishes priorities for committing Fire Management resources. Considerations for setting initial response priorities include:

- Imminent threat to firefighters and/or public safety
- Threats to private property and improvements
- Wildland urban interface zones
- FMU objectives
- Cultural/Archeological resource sites
- Wildlife habitat (Threatened and Endangered species sites)
- Length and type of resource commitment

All unwanted wildfires will receive prompt, safe, and cost-effective suppression actions to extinguish or limit the growth of the fire, regardless of the strategies and tactics chosen. All fires determined to be human-caused are unwanted. Natural ignitions will be considered for all management responses based on several considerations including, values at risk, resources present, location of fire start, time of the season, and current and predicted weather and fire behavior.

Appendix D – Preparedness Planning Documents contains the Park's Initial Response Plan. See Red Book, Preparedness, Chapter 10 for the most current direction. . Reference current Initial Response direction in RM - 18, Managing Wildfire, Chapter 2 and Red Book, Incident Management and Response, Chapter 11.

Transition to Extended Response

The response plan defines transitioning to an extended response when a fire exceeds initial response and when the initial management objectives for the fire have not been successful, or the fire has not been contained by initial resources dispatched to the fire *and:*

- an alternative strategy supplants initial control efforts, *or*
- the fire exceeds management capabilities assigned to the fire, *or*
- the fire has not been contained within the first 48 hours ***and*** there is no reasonable estimate of containment or control

In those cases where initial actions taken on a wildland fire remain unsuccessful, a new course of action will be developed utilizing the Wildland Fire Decision Support System (WFDSS). Constant monitoring and regular fire assessments inform the determination of a fire's evolving complexity. The Duty Officer in coordination with the Incident Commander and the Agency Administrator will utilize the Risk and Complexity Assessment process to formally document their thoughts regarding incident complexity and the adequacy of assigned incident command.

During transition periods, assigned resources will still manage the fire until such time a transfer of command to an incoming Incident Commander or Incident Management Team can be safely effected. A thorough operational briefing needs to occur between outgoing and incoming resources. Clear lines of authority need to be established quickly to minimize confusion, maintain operational control, and ensure firefighter safety. As a fire moves into extended response, consideration must be made by the Park Duty Officer as to which resources will remain committed to the incident and which will be released and made available to meet the ongoing initial response workload. Refer to the Red Book, Incident Management and Response, Chapter 11, for current direction on wildfire command and organizational structure.

Decision Support

All fires within Grand Teton National Park will be assessed following a decision support process that examines the full range of potential responses, evaluated from a risk management perspective. For extended responses and fires with multiple objectives, key fire and resource staff who make up the Fire Management Committee (FMC) collaborate to support the decision-making process. This group ultimately makes a management strategy recommendation to the Park's Agency Administrator (AA). The Park Superintendent (or Agency Administrator) makes the final decision on any Fire Management strategy other than suppression. The Fire Duty Officer may elect to suppress any wildfire that they determine poses a threat to human life and/or property that cannot be mitigated.

Fire Management Committee

The FMC reviews the situation of a current wildland fire incident and provides input and feedback regarding management alternatives. Considerations include the location of a fire, determination of cause, time of the season, seasonal severity, impacts to visitor and park operations as well as values at risk and those that would benefit from fire. The FMC will weigh these factors, describe alternative strategies, and ultimately make a recommendation to the Agency Administrator for a selected

management strategy. The AA will make the decision and document that decision in WFDSS. A single wildland fire may have multiple documented management decisions throughout the season as conditions change and the fire moves across the landscape. Many of those decisions will have FMC input.

Membership in the Fire Management Committee includes the Deputy Park Superintendent, Chief Ranger; the Chief of Science & Resource Management; and the Fire Management Officer. These positions can be filled by designated Actings, and/or the current Fire Duty Officer. The Chief Park Ranger* typically chairs the FMC. To gain situational awareness regarding the determined decision, the following staff will also be included; the Chief of Facilities Management, the Public Affairs Officer, the Chief of Business & Administration, affected District Ranger(s), and the Chief of Interpretation and Partnerships. Subject matter expertise may also be contributed by various resource specialists, fire behavior specialists, and the Fire Ecologist. In the case of a multi-jurisdictional incident, representatives from affected entities will be invited to participate in the FMC discussions and will be involved in the management decision process.

The Fire Management Committee can be convened in person, or virtually via conference call. The Fire Duty Officer and Chief Ranger will coordinate scheduling the FMC meeting and communicate to all parties involved. Based upon the fire situation, this may happen in a very expedient manner.

**If a designated Acting fills the Chief Ranger role, the FMC will be chaired by the current fire staff (FMO, Deputy FMO, or designated Fire Duty Officer).*

Minimum Impact Strategy and Tactics (MIST)
When managing wildland fire, the park will utilize Minimum Impact Strategy and Tactics (MIST) as described by National Park Service Policy in RM-18 - Chapter 2. MIST represents a mindset of how to manage a wildfire while minimizing the long-term effects of the associated actions rather than representing a separate or distinct classification of firefighting tactics. MIST employs the concept of using the minimum tool to safely and effectively accomplish the task while minimizing negative impacts to natural and cultural resources, a “do the least damage” philosophy. MIST should be considered for application on all fires throughout the Park.

While MIST emphasizes managing wildland fire with the least impact on the land, actual fire conditions and good judgment will dictate the actions taken. Firefighters must primarily consider what necessary actions will halt fire spread or meet their tactical assignment, while safely managing the incident. Impacts of those actions important but secondary considerations.

The use of MIST will not compromise firefighter safety or the effectiveness of suppression efforts!

Appendix J contains full MIST guidelines for Grand Teton National Park.

3.1.2 Wildland Fire Decision Support System (WFDSS)

The Wildland Fire Decision Support System (WFDSS) will be used to document the management objectives and strategies if a wildfire exceeds the initial response or if the management objectives contain elements of protection and resource benefit. Key elements of the process include setting incident objectives, completing a relative risk assessment, and developing an accompanying organizational needs assessment.

These support tools consider items such as:

- Values, hazards, and probability contribute to the incident's Relative Risk rating
- the risk rating then gets incorporated along with implementation difficulty of the selected strategy and socio-political concerns to determine an incident's organizational needs, helping to select the appropriate level of incident organization

WFDSS will be used to describe the situation, evaluate the expected effects, establish objectives and constraints, and ultimately define a course of action. Appendix H describes strategic objectives and management requirements for wildfire incidents in the Park and receives an annual update in WFDSS. NPS direction for using WFDSS can be found in the Interagency Standards for Fire and Fire Aviation Operations (Red Book) in Chapters 3 and 11.

Management Requirements and Strategic Objectives

Management Requirements and Strategic Objectives originate from associated unit management plans, as well as related compliance documents, and provide the framework, and limitations/challenges for wildfire response. They provide the foundation of the WFDSS decision. To publish an Incident Decision in WFDSS, applicable fire-related protection and resource management objectives and requirements must be incorporated into WFDSS.

GTNP employs Strategic Objectives either across the entire park unit or may limit them to a specific Fire Management Unit (FMU). WFDSS Spatial Fire Planning for GTNP uses uploaded spatial data that corroborates these strategic objectives. Management Requirements originate from the FMP Biological Assessment/Opinion. Appendix J Fire Management Mitigation Measures describes these management requirements.

3.2 Fuels Treatments

Fuels Management Goals and Objectives

The ability to manage fuels with multiple tools (mechanical treatments, prescribed fire, and wildland fires) enables Fire Management personnel to most effectively maintain hazard fuel loads, to minimize risk to property, life, and cultural resources within the context of the agency and park's policy framework.

Mimicking natural processes through prescribed fire will reduce fuel loading and function as a fuel break or buffer tool to reduce risks associated with managing future wildland fires. Mechanical fuel treatments will be used to reduce fuel loads to achieve structural protection and safety objectives. Fuels treatment in areas adjacent to park developments and boundaries will be prioritized to reduce the risk of loss of

resources due to unwanted fire. Prescribed fire and mechanical fuel treatments function to modify fire behavior to give suppression resources more time and more favorable conditions to protect life and property in the event of a wildfire moving into the area. Additionally, these treatments may increase the comfort levels of decision-makers in evaluating natural starts for considerations to obtain resource or ecological benefit.

Fuels Treatments
All fuels treatment projects will have identified measurable objectives tiered from park resource or management plan goals and objectives. In accordance with current policy, assigned resources will monitor project implementation. This data will be documented and included in the project file. Included in the implementation plan will be the strategies for monitoring and evaluation of project success. This program of monitoring is discussed further in section 4.1 of this FMP.

Prescribed Fire
The prescribed fire strategy for the Park will be to utilize fire to accomplish both resource and fuels management objectives. Prescribed fire will be used in areas where the risk of natural fires to park resources would preclude using that approach. It will also be used to target vegetative communities determined to be affected by the previous policy of fire exclusion and ongoing decisions to suppress fires. Each of the three Fire Management units includes opportunities for prescribed fire.

Non-fire Fuels Treatments
Non-fire fuel treatments within the Park will focus on protecting values at risk by removing hazardous fuels including standing live and dead trees and ladder fuels to reduce the threat of crown fire. Dead and down fuel, and sagebrush/steppe vegetation, including grasses, will also be removed to reduce the flame length and fire intensity. These tasks could include the use of hand tools, chainsaws, brush cutters, and other mechanized equipment appropriate for the task.

General Fuels Management Implementation Procedures
Planning for fuels projects requires working in a collaborative process that involves all park disciplines for project prioritization, education, design, goal and objective development, implementation, and monitoring.

Project proposals will initiate an interdisciplinary review according to Grand Teton National Park's approved process. Information about fuels treatment objectives, project prescription, project boundaries, timing, areas of special concern, and monitoring and evaluation will be provided. Fire staff will then develop a strategy to meet the project objectives while addressing management requirements.

Activities proposed in this FMP will be planned and implemented in accordance with RM 18, Fuels Management Chapter 7, the Interagency Prescribed Fire Implementation Guide, and the Red Book, Fuels Management, Chapter 17. In addition, all planned prescribed fire treatments must coordinate with the Wyoming Department of Environmental Quality-Air Quality Division.

Multi-year Fuels Treatment Plan

The park will submit proposed projects to the Region for approval using the Hazardous Fuels Reduction Module in the National Fire Plan Operations and Reporting System (NFPORS). The national system will also track accomplishments of the program, report performance, and measure success for the NPS in meeting fuels treatment targets. A three-year Planned Program of Work (PPOW) can be found in (NFPORS). The NPS Active Management Dashboard displays maps of the fuels treatments accomplished by the National Park Service's Wildland Fire Management Program, including GTNP.

Defensible Space

The NPS adopted the International Code Council's (ICC's) International Urban-Wildland Interface Code (2006; revised 2018) through the parameters described in Executive Order - Wildland-Urban Interface Federal Risk Mitigation (May 18, 2016). The ICC's code (sections 603 and 604) describes defensible space and maintenance requirements for wildland urban interface areas. Reference RM - 18, Fuels Management, Chapter 7 for additional information.

Current information about NPS Structure Protection needs can be found at NPS Wildland Fire Risk Assessment (WFRA). https://wildfire-risk-assessments-nifc.hub.arcgis.com/.

3.3 Preparedness

Appendix D provides the Annual Delegations of Authority, Inter-Park Agreements, Cooperative, and Interagency Agreements, Fire Danger Operating Plan (Preparedness Plan, Staffing Plan, and Initial Response Plan). Refer to RM - 18, Preparedness, Chapter 5 and Red Book, Preparedness, Chapter 10 for current preparedness direction.

Preparedness Activities

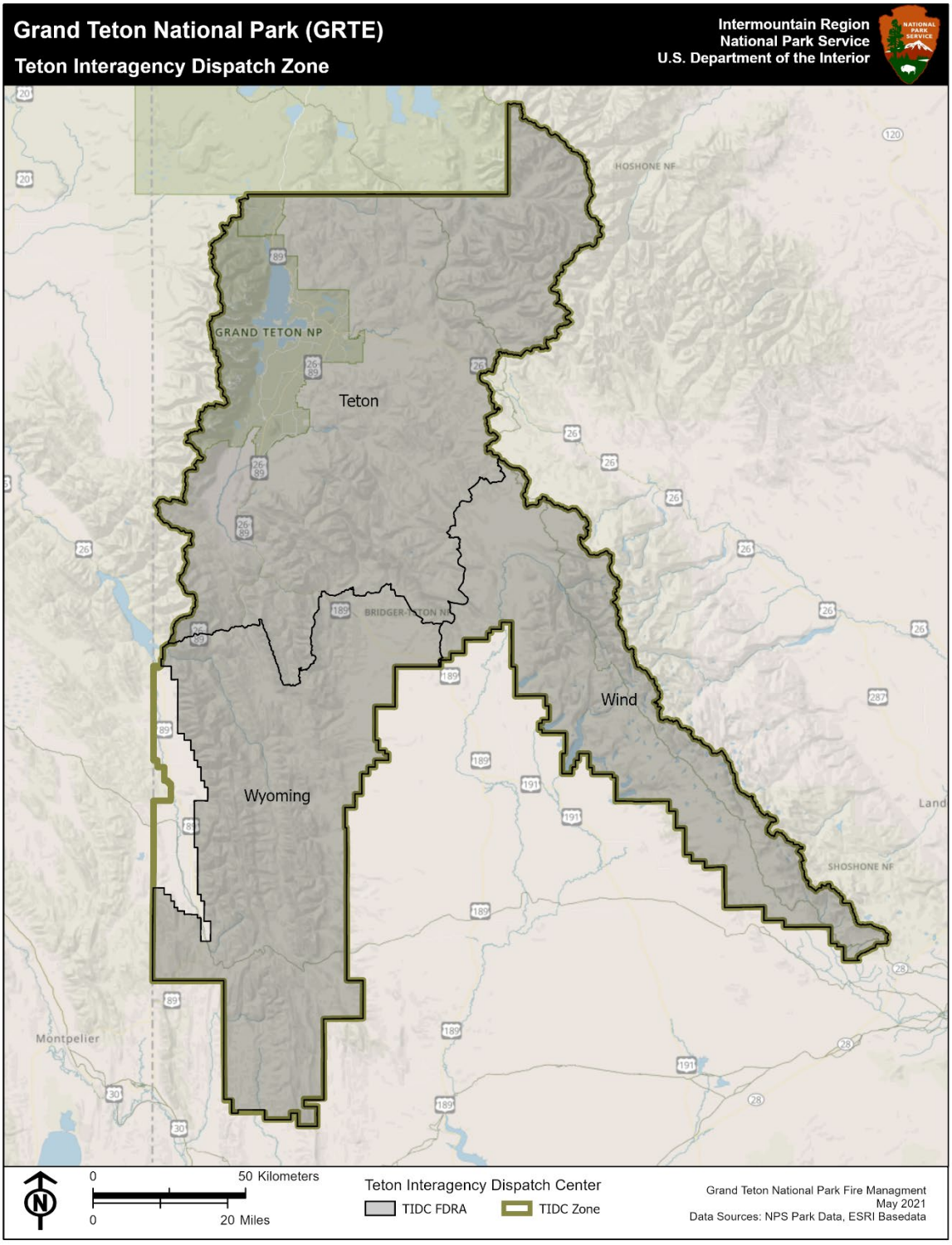
Preparedness activities in this plan provide detailed procedures and standards for preseason readiness, wildland fire operations, and ongoing activities throughout the fire season. The Park partners as a member of the Teton Interagency Fire organization with the Bridger-Teton National Forest, as described in a Master Agreement and supporting Annual Operating Plans, see Appendix C. Preparedness activities will accordingly include the review of blended interagency modules, and shared functional staff positions to ensure readiness. Grand Teton National Park's range of preparedness activities follows in the summary below.

Operational preparedness reviews will be conducted annually and will use the latest Interagency Preparedness Review Checklists. The review includes management responsibilities, fire program oversight, initial and extended response dispatch services, aviation program activities, and all operational resources. Only those checklists appropriate to the fire program need to be addressed. Reviews will ensure operational readiness of equipment and personnel, currency and adequacy of local MOU's and interagency agreements, and understanding of agency policy and park staff responsibilities as outlined in this plan. The review team files an annual report of findings with the Fire Management Office as well as being communicated to the Fire Management Officer of the Intermountain Regional Office.

The training and development of park staff in the skills necessary for safe and effective implementation of the Fire Management Program remain key to its success. All personnel taking part in the fire program will meet current agency and NWCG standards (National Interagency Incident Management System, Wildland and Prescribed Fire Qualification System Guide, PMS 310-1) for training and job qualification. Typical annual activities include a training needs assessment considering all levels of NWCG courses, continuing education topics, NPS essential competencies, etc. A local training schedule will be developed to meet the identified needs. At a minimum, training presented locally will meet the needs required to maintain NWCG incident qualifications. Additional guidance and procedures can be found in Appendix K Training, Qualifications, and Certification Plan.

The approved Fire Danger Operating Plan (FDOP) establishes discrete Fire Danger Rating Areas across the Teton Interagency Dispatch Zone, analyzes historic fire occurrence, and includes statistical analysis of multiple fire danger indices, see Appendix D. It also includes several sub-ordinate planning guides:

- Preparedness Plan - describes overall program responsibilities as fire conditions escalate/decrease through the year
- Staffing Plan – describes daily staffing requirements for Fire Management resources
- Initial Response Plan – identifies initial resources to dispatch to reported fires based upon location and the day's forecast fire conditions



Map 4- Teton Dispatch Zone Fire Danger Rating Areas (FDRA)

The National Weather Service (NWS), Riverton, WY Forecast Office generates fire weather forecasts for the Teton Dispatch Zone. The Riverton NWS office produces fire weather forecasts twice daily during fire season. Teton Interagency Dispatch Center communicates the day's fire planning forecast and additional

watches/warnings and issues daily fire danger ratings for GTNP and the Teton Zone based on the FDOP.

Coordination and Dispatching

Grand Teton National Park, the Bridger-Teton National Forest, and Jackson Hole Fire & EMS have a very close working relationship. The cooperative holds local coordination meetings regularly to cover local training needs and scheduling, assess and prioritize wildland urban interface treatments, communications issues, staffing, and incident management. The Park and forest often utilize county resources for both initial response and extended staffing on large fires, and Park resources will assist on county wildfires upon request. The use of county resources adheres with the established statewide agreement which outlines mutual aid commitments and contracting for services beyond initial assistance. Adjacent agencies can respond across administrative boundaries should they determine an imminent threat of fire crossing onto their jurisdiction.

Interagency agreements exist, particularly through the Greater Yellowstone Area, to facilitate coordinated management of wildland fire across agency boundaries. For GTNP the agreement remains especially important along shared boundaries with the Caribou-Targhee and Bridger-Teton National Forests' as well as Yellowstone National Park, each of which manages significant wildland fire programs.

The Greater Yellowstone Area Wildland Fire Management Sub-Committee maintains an annual Planning and Coordination Guide that further defines fire program coordination activities and resource-sharing opportunities between the federal units.

The Teton Interagency Dispatch Center (TIDC) performs fire, aviation, and all-risk incident dispatching for Grand Teton National Park and the Bridger-Teton National Forest. The Center Manager works directly for the Park's Fire Management Officer. An interagency Board of Directors and an Operations Group made up of the Park and Forest FMO's and other unit staff, guide Center operations. TIDC also provides initial and extended response dispatching for the National Elk Refuge (WY-NER) and extended response dispatching and resource mobilization services for the Wyoming State Forestry Division, District 4, and Lincoln, Sublette, and Teton (WY) counties as requested. All of the units served by TIDC have representation to the TIDC Coordinating Group. An Operating Guide details roles and responsibilities for all participants in Center operations.

The Initial Response Plan identifies initial fire responses for the Teton Zone. The plan's scheme intends to cover those situations where initial resources are sufficient to cover local zone and unit fire activity. In many cases, multiple fire start situations and elevated preparedness levels will dictate the need to deviate from initial planned responses based upon resources at risk and life/safety priority setting. The Duty Officer works closely with the adjacent unit Duty Officers (North Zone or Supervisor's Office of the Bridger-Teton National Forest, Jackson Hole Fire/EMS) and the TIDC Initial Attack Dispatcher to coordinate and prioritize initial responses in these situations.

Duty Officer

During the wildland fire season, a wildland fire Duty Officer will be on call through TIDC. During periods of elevated preparedness (PL3 and higher locally) the Duty Officer position will be staffed 7 days a week through the burn period, in addition to being on call. The FMO will provide a list of designated Duty Officers annually before the start of the fire season. Those DOs will receive a formal Delegation of Authority from the Superintendent.

The experience and qualifications needed to provide the skills and abilities to perform as the Duty Officer can be varied. The following guidelines cover a range of qualifications and experience in a variety of functions that generally contribute to the overall competency of the Duty Officer. The NPS has not prescribed any specific qualification to be required to meet this level, rather a combination of skills from each function is desired.

Command: Incident Commander, Type 3 (ICT3), Strategic Operations Planner (SOPL), Prescribed Fire Manager/Burn Boss, Type 2 (RXMG/RXB2)

Operations: Task Force Leader (TFLD), Division/Group Supervisor (DIVS)

Planning: Fire Behavior Analyst (FBAN), Long Term Fire Analyst (LTAN), Field Observer (FOBS)

General Staff: Safety Officer, Type 2 (SOF2) or Line Safety (SOFR)

The primary responsibilities of the Duty Officer include:

- Assigning Fire Management personnel to fires based upon incident priorities, resources at risk, tactical needs, and IA resource capability and qualification.
- Coordinating daily with Teton Interagency Dispatch Center, BTF Forest, and Zone Duty Officers during PL 3-5.
- Assessing Fire Management resource fatigue by monitoring personnel and implementing work-rest guidelines.
- Monitoring all fire activities with emphasis on fires transitioning in complexity to ensure appropriate plans are in place, clear ICS organization, and all necessary command & general staff positions remain staffed as needed.
- Monitoring incident complexity to ensure the assignment of appropriate Incident Commanders.
- Assisting the Agency Administrator in completing and understanding all wildland fire decision documentation (WFDSS).
- Ensuring notifications to park management are made regarding fire activity and issues of concern.

The annual Delegation of Authority issued by the Park Superintendent further elaborates Duty Officer responsibilities. The fire program also maintains Duty Officer Manual (external to this FMP) and makes it available to all designated DO's to ensure consistency in the performance of this critical function.

Agency Administrator

The Park Superintendent has the responsibility per the Red Book, Chapter 3, NPS Program Organization and Responsibilities "for the safe and efficient implementation of Fire Management activities within their unit, including cooperative activities with other agencies or landowners under delegations of authorities." The Red Book further defines performance requirements for the Superintendent or their principal actings to the Fire Management Program. For the purposes of the Parks Fire Management Program, "principal actings" signify as Agency Administrators and will meet NWCG requirements to be qualified as such (AADM) in the Incident Qualification and Certification System. For GTNP, those positions will typically be the Superintendent, Deputy Superintendent, Chief Ranger, and Chief of Science and Resource Management. Throughout the fire season a qualified AADM will be identified and available for Fire Management decisions.

The target training for the Superintendent and Deputy will be the M-582 class, "Fire Program Management, Leading Complex Fire Programs.

Prevention

Prevention of unwanted, human-caused fires remains a high priority. Minimizing human-caused fires reduces risk to responders and the public as well as exposure of park assets. The most effective method for preventing human-caused fires calls for a comprehensive communication and education strategy (see the Fire Communication/Education Plan in Appendix F). Informing park visitors regarding fire conditions, campfire safety and fire regulations will be done through websites, social media, newsletters/flyers, Public Service Announcements, and verbal communication. The fire program will coordinate fire prevention messaging campaigns annually with all TIDC partners (federal/state/local) to ensure consistent messaging.

Campground and Fire Management and park interpretation staff regularly patrol the Parks campgrounds and provide additional information as well as enforcing fire safety. Additionally, communication and coordination with utilities and commercial users will strive to minimize the risk of accidental fire starts associated with powerlines, road construction, and other permitted work. The Park Safety Officer reviews all "hot" work permits. Permits require fire suppression equipment to be on-site and work areas to be monitored after activity. Permits will not be approved during elevated fire danger conditions.

Lower Valley Energy (LVE) has the responsibility for managing powerline corridors and mitigating the potential for hazard trees to impact active transmission/ distribution lines. An agreement exists with LVE describing their approved mitigation measures and debris disposal requirements. The Fire Prevention Plan will be incorporated into this FMP as Appendix G.

Safety Program/Plan

GTNP has a Safety, Health, and Wellness Management Plan. The most current version (02/2021) is currently filed at P:\SOP's and POLICY PARK WIDE\Safety & Accident Reporting\2.SHW_Annual Safety Plan. Incident reporting SOP's and death reporting procedures are also stored in this file structure. This plan complies with

Reference Manual 50B, National Park Service Occupational Safety and Health Program.

Job Hazard Analysis
As a requirement, The Fire Management Officer ensures completion of job hazard analyses (JHA) for fire and fire aviation activities so enacted mitigation measures reduce risk as directed in the GTNP Safety, Health and Wellness Management Plan and the Red Book, NPS Program Organization and Responsibilities Chapter 3. JHA's reside currently on file with individual modules and remain available to all Fire Management employees. Copies of relevant JHA's stay filed on the Fire Management's network drive and hard copies exist on hand.

3.4 Post-Fire Programs and Response

Grand Teton National Park maintains responsibility for taking prompt action after a wildfire to minimize threats to life or property, and to prevent unacceptable degradation to natural and cultural resources. Damages resulting from wildfires receive attention through four activities:

Suppression Repair: Every effort will be made to prevent damages to resources, land, or facilities resulting from wildfire suppression or management actions. Clear communication, careful planning, and the use of Resource Advisors (READs) will guide fire operations and contribute toward meeting this goal. The IC or assigned representative is responsible for ensuring the assessment and implementation of suppression repair work. Wildfire suppression funding pays for the repair. Expectations will be communicated during IC Delegation and revisited during incident management meetings.

Emergency Stabilization: Emergency Stabilization activities intend to protect life and property and critical resource values from additional damage by post-fire events such as flooding or tree fall. An Emergency Stabilization (ES) Plan must be developed and proposed for funding. These actions befit the responsibility of the Superintendent, who may designate a team of specialists to evaluate, propose, and carry out the ES plan. This activity is paid for from Emergency Stabilization (ES) funding.

Rehabilitation: Rehabilitation intends to repair wildfire-damaged lands that are unlikely to recover naturally to management approved conditions, or to repair or replace minor facilities damaged by wildfire. This activity must be proposed in a BAR plan to receive funding and is paid for from Burned Area Rehabilitation (BAR) funds.

Restoration: The intent is to continue the rehabilitation efforts started in the BAR process beyond the time limitation set by the Department. This activity is paid for from regular program funds.

RM - 18, Post Wildfire Programs, Chapter 18 and the Red Book, Incident Management and Response, Chapter 11 provide direction on current processes and timeframes."

3.5 Air Quality/Smoke Management

The State of Wyoming has implemented Smoke Management Regulations under the authority of the Clean Air Act. Grand Teton National Park will work closely with the Wyoming Department of Environmental Quality (WY-DEQ) to ensure compliance with the regulations

and the development of meaningful mitigation actions. A comprehensive Smoke Management Plan (SMP), which meets the requirements of the Regional Haze Rule and the Clean Air Act, includes burn activity reporting, smoke reduction techniques, and alternatives to burning. Additional Smoke Management information can be found in RM 18, Air Quality and Smoke Management, Chapter 9.

3.5.1 Air Quality Issues

Air quality in northwestern Wyoming is considered good because of little industrial activity and low populations in the region. Major sources of gaseous pollutants and deposition in the area are electric utility power plants, industrial fossil-fuel combustion, and oil and gas processing in southwestern Wyoming and southeastern Idaho. Annual emissions levels of gaseous sulfur dioxide (SO2), oxides of nitrogen (NOx), and volatile organic compounds (VOC) in Wyoming are moderate relative to other states (Peterson et al. 1998).

GTNP is classified as a Class I air quality area and John D. Rockefeller, Jr. Memorial Parkway is classified as a Class II air quality area. Under NPS policy, both park units are managed as Class I areas and both are in attainment with federal and state ambient air quality standards.

3.5.2 Smoke Management Activities

WY-DEQ under the authority of the Clean Air Act regulates air quality impacts resulting from wildland and prescribed fire activities. The smoke management regulations promulgated by WY-DEQ outline mitigation measures required of the Park in implementing Fire Management activities that have the potential to affect air quality.

Mitigation measures are proposed for both unplanned and planned fire events. While measures target the same air quality elements regardless of whether the fire is a planned ignition or a wildfire, the regulation recognized the limits of implementing some measures during unplanned events. Measures considered under the management of wildland fires include coordination with the WY-DEQ and other wildland Fire Management entities within the area or airshed. In the context of prescribed fires, projects consider alternatives to burning, utilize emission reduction techniques, conduct burns under favorable smoke dispersal conditions, and require prior public notification of the intent to burn.

Prescribed fire projects implemented under this FMP will meet the requirements of the state's project registration. The NPS will coordinate with WY-DEQ to determine effects on the airshed or public health before project implementation. Project registration includes documenting any alternatives to burning that were considered and the use of emission reduction techniques applied during implementation. Project managers will work closely with WY-DEQ to mitigate any identified concerns. Mitigation measures may include burning under different atmospheric conditions for better smoke dispersal, limiting the acres treated in any one burn period to reduce smoke production, or burning under different fuel conditions to minimize smoldering and incomplete combustion.

Park staff monitor air quality adjacent to prescribed and wildland fire project areas and in nearby developed areas by recording smoke dispersal and column mixing height observations, tracking smoke complaints by visitors and residents, and inform the public in advance of planned activities. Smoke impacts from planned and unplanned events may trigger a change in management strategy.

3.6 Data and Records Management

Fire program information, data, and records are used by GTNP, regional and national offices for a variety of purposes. This information must be well managed to be readily available for use when needed and safeguarded from damage or destruction. Records are covered by N1-95-05-02, an interagency disposition schedule, and Directors Order-11D, Records and Electronic Information Management.

Fire reporting follows guidelines established by NPS policy, DO-18, and the associated RM-18. All park units are required to complete reporting requirements for all fires that occur within their boundaries. The IC is responsible for completing the appropriate sections of the Incident Organizer, based on the incident's complexity, and completing a short incident narrative of significant events. Additionally, the IC will collect spatial data (origin point and perimeter for fires 10 acres in size or greater) and submit that to the fire planner. The FMO or Deputy FMO will utilize this information to finalize the official fire report.

Agency policy further defines how fire reports will be managed, spatial data associated with wildland fires and fuels treatments will be collected, stored, and shared and how program and incident data and records will be managed, RM - 18, Information and Technology Management, Chapter 19. A GIS database is maintained locally for all wildland fires and mechanical and prescribed fire projects implemented in the Park and surrounding area.

Individual employee training and qualifications records will be maintained by the Fire Management Office utilizing the current agency standards. Interagency Qualification Cards will be issued and certified by the FMO or their designee. The Incident Qualifications and Certification System (IQCS) will be updated as needed (annually at a minimum) with fire training and fire experience records. See the Training, Qualifications and Certification Plan, Appendix K, for additional details, including roles and responsibilities of the staff and the procedures for hard copy records management of training and qualification information.

4.0 PROGRAM MONITORING AND EVALUATION

The Grand Teton National Park Fire Management Program uses lessons learned from incident and program reviews as well as monitoring in its adaptive management process for both planned and unplanned actions at the project/incident level for overall program effectiveness.

4.1 Monitoring

Monitoring is the process of collecting data and information to determine whether the GTNP Fire Management Program is meeting management goals and objectives. Monitoring also provides feedback about the success of individual fuels treatments and the effects of unplanned fires.

The fire effects program provides data collection, analysis, and interpretation for prescribed fires, wildfires, and mechanical treatments. Specific approaches and methodologies are outlined in the Park's Fire Effects Monitoring Plan, Appendix E. Results from monitoring are

shared with inter- and intra-agency partners to facilitate adaptive management and inform interpretive programs.

Monitoring is further described in RM - 18, Fire Ecology and Monitoring, Chapter 8, with specific details in the NPS Fire Monitoring Handbook.

4.2 Research

When applicable, GTNP utilizes local, regional, and national scientific research findings to refine goals and objectives and modify management actions and/or treatments accordingly. The best available science will inform actions relating to firefighter safety, fire response strategies, and/or fuel treatment design. Interactions between fire and climate change are integral to the use of scientific research (see 4.3 below).

When opportunities arise for collaboration with academic researchers, GTNP will support investigations to better understand the role of fire, such as fire effects on vegetation, wildlife habitat, soil properties, and invasive species.

The following is a partial list of identified fire-related research needs:

- Long-term fire history and burn severity in various vegetative communities
- Fuel loading and distribution including crown fuels
- Post-fire vegetation changes
- Fire effects on invasive species
- Fire's role in restoring former agricultural lands to native sagebrush steppe communities
- Aspen influence on fire behavior and applications for fire control
- Strategies to prevent post-fire over-browsing of aspen and shrubs by ungulates
- Effects of mechanical thinning on fire behavior
- Effects of mechanical thinning on neotropical migrant bird species
- Sage grouse habitat parameters, seasonal use, and distribution
- Fire effects on sensitive species habitats (blister rust and whitebark pine)
- Fire effects on ungulate migration and seasonal use patterns
- Fire ecology of high elevation forests
- Techniques for treating sagebrush steppe with prescribed fire to create desired mosaics
- Fire effects on soil properties, nutrient budgets, water quality, and air quality parameters
- Impacts of burn patch size and dispersion on understory species re-colonization

4.3 Climate Change

Grand Teton National Park utilizes the best available science to guide climate change adaptation for planned and unplanned Fire Management activities. This includes monitoring climate trends, maintaining preparedness for expected weather and fire behavior, and planning climate-appropriate fuels treatments. Fire managers engage with academic researchers, GTNP Science & Resource Management colleagues, and interagency partners to track and predict changes in fire regimes. They work collaboratively to address the NPS mission through climate-adaptive approaches including monitoring, research, and scenario planning.

The Northern Rockies Adaptation Partnership, a group of science and land management agency specialists (including representatives from GTNP) published a climate vulnerability assessment in 2018 (Halofsky et al. 2018). This document provides historical and projected

climate information for the Greater Yellowstone Subregion including GTNP. It also outlines relevant strategies for key resource areas including forested and rangeland landscapes.

Fire managers at GTNP recognize two major areas where climate change introduces new challenges. These include the effects of repeated stand-replacing fires in subalpine forests and postfire invasion of annual grasses in sagebrush.
GTNP's forests have adapted to recover from infrequent, stand-replacing fires (Turner and Romme 1994). With climate change, however, fire seasons are becoming longer, with extreme heat and drought on a more regular basis, making the landscape receptive to large fires more often (Westerling et al. 2011). Researchers predict that in the coming century, short interval reburns will occur to the extent that the structure and distribution of forests in the Park are altered (Turner et al. 2021, Hansen et al. 2020).

In sagebrush vegetation, warmer and drier weather is associated with reduced resilience to invasive annual grasses (Chambers et al. 2014). These grasses create a fuel bed that invites short-interval surface fire, which in turn allows them to replace native shrub communities that recover more slowly after they are burned. Climate change is expected to exacerbate these threats to valued habitats that already challenge Grand Teton National Park's fire and vegetation managers (Bradley 2009, Barnett and McCloskey 2008).

4.4 Evaluations, Reviews, and Updates

Fire Program Review
The National Park Service has developed the Wildland Fire Program Review Guide that describes the review framework. For more information reference RM - 18, Evaluations, Reviews and Investigations, Chapter 16. The Intermountain Region conducts Annual Program Assessments that evaluate the health of a program across 12 program areas. Findings and trends identified in the Annual Assessments assist regional managers in focusing their formal review schedule.

Wildland Fire Incident Review
All wildland fires and fire-related incidents will be reviewed in accordance with RM - 18, Evaluations, Reviews and Investigations, Chapter 16 and the Red Book, Reviews and Investigations Chapter 18

Annual Fire Management Plan Update
Fire Management Plans do not expire and remain in effect until superseded by a new or revised plan. However, annual updates are required for the plan to be valid for the current year. Once the Annual Update Checklist is completed the Superintendent will sign the FMP Annual Update Checklist. All approved changes will be incorporated in the FMP and the Annual Update Checklist will be added to the FMP immediately following the cover-page. The revised FMP, including the signed Annual Update Checklist, will be uploaded to the NPS Wildland Fire, Planning and Budget SharePoint. Fire Management Plans that do not have a current Annual Update Checklist are not considered current.

NWCG GLOSSARY

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APPENDICES

(Red Book, NPS Program Organization and Responsibilities, Chapter 3 and Preparedness, Chapter 10)

A. Annual Delegations of Authority
1. AA to FMO
2. AA to Duty Officers
3. Type 4/5 IC delegation
4. Template IMT delegation and In-Brief

B. Inter-Park Agreements
1. BICA
2. FOBU
3. FOLA

C. Cooperative and Interagency Agreements
1. GTP/BTF Master and AOP
2. WY Statewide AOP
    a. District 4 Attachment
3. GYA Fire Management Planning and Coordination Guide

D. Preparedness Planning Documents
1. Fire Danger Operating Plan (FDOP)
    a. Preparedness Plan
    b. Staffing Plan
    c. Initial Response Plan
    d. Fire Restriction Plan

E. Fire Effects Monitoring Plan

Ecological basis for Fire Management (Veg classes/fire regime document)

F. Wildland Fire Communication and Education Plan

G. Fire Prevention Plan

H. WFDSS Strategic Objectives and Management Requirements

I. Teton Interagency Fire Organization Chart

J. Fire Management Mitigation Measures
1. Minimum Requirement Analysis
2. MIST Guidance

K. Training, Qualifications, and Certification Plan