Theodore Roosevelt National Park

FIRE MANAGEMENT PLAN

United States Department of the Interior
National Park Service
Theodore Roosevelt National Park
Medora, North Dakota

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I. INTRODUCTION

The Wildland Fire Management Plan is an addendum to the park Resource Management Plan meeting requirements of the National Environmental Policy Act (NEPA) and serving as detailed program of action, providing specific guidance and procedures for accomplishing wildland fire management objectives.

This document is also guided by NPS Fire Management Guideline (DO-18, 1998), which requires that any area with vegetation capable of supporting fire will develop a Fire Management Plan. The Organic Act of the National Park Service (August 25, 1916, Section 102) provides the authority for implementation of this plan.

As enacted in Public Law 38, April 25, 1947, lands were "dedicated and set apart as a public park for the benefit and enjoyment of the people," subject to the provision of the Act of August 25, 1916 (39 Stat. 535), entitled an Act to Establish the National Park Service "...which purpose is to conserve the scenery and the natural and historic objects and the wildlife therein and to provide for the enjoyment of the same in such manner and by such means as will leave them unimpaired for the enjoyment of future generations." The park was named in honor of Theodore Roosevelt, who made significant contributions to conservation and the development of the West. The park's natural resources played a significant role in shaping the life of Theodore Roosevelt during the era of open range cattle industry, which consequently influenced his role as a conservationist during his term as President of the United States.

Fire represents an ecological factor of significant importance in the development and structure of nearly every terrestrial ecosystem in North American and has been present in natural ecosystems since the origin of climate on earth (Wright and Bailey 1982). It has been well established that the plains ecosystem has historically experienced frequent, fast running, short duration fires. From the recorded accounts of early European explorers and settlers, fires were a common occurrence on the plains (Higgins 1986). Fires were often ignited by lightning activity during the late spring to early autumn season. The writings note that the plains were often on fire as a result of Indian activities, i.e., to signal others, to herd game, to adjust the vegetative mix, to clear campsites, etc. Following the influx of European settlers in the mid-to-late 1800's, most human-caused prairie fires resulted from the carelessness of cowboys and cooks, rather than Indians (Wright and Bailey 1980).

As National Park Service (NPS) management planning is becoming more intensive, fire management is assuming a role of greater importance. This Wildland Fire Management Plan has been prepared to serve as a detailed program of action, which provides specific guidance and procedures for accomplishing park fire management objectives. The implementation of this plan will define levels of protection necessary to ensure safety, protection of facilities and resources; will minimize undesirable environmental impacts of fire management, and will define levels of fire use to restore and perpetuate natural processes given current understanding of the complex relationships in natural ecosystems.

II. POLICY COMPLIANCE

A. ENABLING LEGISLATION

Authorities for establishment and management of Theodore Roosevelt National Park are found in the following acts and laws:

1. An act to establish the Theodore Roosevelt National Memorial Park, April 25, 1947 (61 Stat. 52);
2. An act to amend the Act of April 25, 1947, relating to the establishment of Theodore Roosevelt National Memorial Park, and for other purposes, approved June 10, 1948 (62 Stat. 352), authorized additional area and revised the boundary for Elkhorn Ranch;
3. An act to add certain lands to the Theodore Roosevelt National Memorial Park (62 Stat. 384), approved June 12, 1948;
4. An act to revise the boundaries of Theodore Roosevelt National Memorial Park (70 Stat. 55), in the state of North Dakota;
5. Public Law 95-625, National Parks and Recreation Act of 1978, approved November 10, 1978; Section 301 revised boundaries of the North Unit; Section 401 designated wilderness areas in the park; Section 610 changed the name to Theodore Roosevelt National Park;

B. OTHER AUTHORITIES

The authority for FIREPRO funding (Normal Fire Year Programming) and all emergency fire accounts is found in the following authorities:

1. Section 102 of the General Provisions of the Department of Interior's annual Appropriations Bill - provides the authority under which appropriated monies can be expended or transferred to fund expenditures arising from the emergency prevention and suppression of wildland fire.
2. Public Law 101-121, Department of the Interior and Related Agencies Appropriation Act of 1990 - established the funding mechanism for normal year expenditures of funds for fire management purposes.
3. 31 USC 665 (E) (1) (B) - provides the authority to exceed appropriations due to wildland fire management activities involving the safety of human life and protection of property.

Authorities for procurement and administrative activities necessary to support wildland fire suppression missions are contained in the Interagency Fire Business Management Handbook. Authorities to enter into agreements with other Federal bureaus and agencies; with state, county, and municipal governments; and with private companies, groups, corporations, and individuals are cited in NPS-20 (Federal Assistance and Interagency Agreements).

Authority for interagency agreements is found in "Interagency Agreement between the Bureau of Land Management, Bureau of Indian Affairs, National Park Service, U.S. Fish and Wildlife Service of the United States Department of the Interior and the Forest Service of the United States Department of Agriculture" (1982). Authority for rendering emergency fire or rescue assistance outside the National Park System is the Act of August 8, 1953 (16 USC 1b(1)) and the Departmental Manual (910 DM).

Existing agreements pertaining to implementation of the fire management program are cited or included in Appendix E.

C. DEPARTMENT OF THE INTERIOR POLICY

Department of the Interior policy (910 DM) regarding wildland fire suppression states that all wildland fires will be classified as either wildfires or as prescribed fires. Wildfires are defined as free-burning fires requiring suppression responses; all fires occurring on wildlands other than prescribed fires. These fires can, but do not always, achieve burning intensities capable of causing loss of life, detrimental impacts upon natural resources, and damage to, or destruction of, man-made developments. Prescribed fire is defined as the skillful application of fire to wildland fuels by planned or unplanned ignition. These fires are conducted under prescription, and on a predetermined area that will produce the intensity of heat and rate of spread required to accomplish certain management objectives. Prescribed fire objectives are to employ fire scientifically to realize maximum net benefits at minimum impact and acceptable cost.

The Departmental Manual (910 DM) further states that within the framework of management objectives and plans, overall wildfire damage will be held to the minimum possible giving full consideration to:

1. an aggressive fire prevention program,
2. the least expenditure of public funds for effective suppression
3. the methods of suppression least damaging to resources and the environment, and
4. integration of cooperative suppression actions by agencies of the Department among themselves or with other qualified suppression organizations.

D. NATIONAL PARK SERVICE POLICY

National Park Service management policy directs each park to prepare a wildland fire management plan that is appropriate for that park's purpose and resources. Fire management in Theodore Roosevelt is based upon this policy and the guidance found in DO-18, Fire Management Guidelines (June 1998). This guideline identifies fire as the most aggressive natural resources management tool employed by the National Park Service. This guideline also states that all wildland fires are classified as either wildfires or prescribed fires. Prescribed fires, naturally ignited or management ignited, may be authorized by an approved wildland fire management plan and can be of significant importance in achievement of the park's resource management objectives.

RM-18 identifies considerations to be addressed by park fire management programs. These are:

1. Protection of human life, both employee and public,
2. Protection of facilities and cultural resources, and
3. Perpetuation of natural resources and their associated processes.

III. DESCRIPTION OF AREA

The data that comprise the general description are summarized from the existing Natural

Resources Management Plan and General Management Plan written for Theodore Roosevelt National Park.

A. Location

Theodore Roosevelt National Park is composed of three unconnected parcels of land situated in western North Dakota, midway between the northern and southern borders of the state (Figure 1). The Little Missouri National Grasslands, with the Little Missouri River bisecting both the South and North units and forming the east boundary of the Elkhorn unit, surround the three units. The South Unit is composed of 46,346 acres that lies within Billings County and is bounded on its southern border by Interstate Highway 94. The Southern unit contains the Park Headquarters, located at the historic town of Medora, North Dakota. The Elkhorn unit is a small parcel of undeveloped land situated approximately 31 miles north of the South unit/I-94 boundary and 25 miles west of U.S. 85. The Elkhorn Unit (middle unit) lies within Billings County and comprises 218 acres of the park. The North unit headquarters is located along U.S. Highway 85 and is situated approximately 85 miles north of the South unit. The North Unit consists of 24,070 acres and is within McKenzie County.

Approximately 42% of the park is designated as the Theodore Roosevelt Wilderness. Some 19,410 acres of wilderness were set aside in the North Unit and some 10,510 acres in the South Unit.

B. Climate

Theodore Roosevelt National Park has a continental climate characterized by cold winters and hot summers with high variations from day to day. Annual precipitation is approximately 14 inches, most of which falls during the spring and summer, usually with thunderstorms. Average annual snowfall is approximately 31 inches, with snow cover possible from October to April. June is the month receiving the highest average precipitation during the year. Average maximum daytime temperatures reach their highest levels during summer months (Fig. 5). Average minimum temperatures range from nearly 21^{o}F to nearly 57^{o} (Fig. 5). Extremes of over 100^{o} can occur during the summer months while sub-zero temperatures can occur during the winter months. Winds show little annual variation with normal wind speeds ranging from 8 - 11 mph. However, during thunderstorms or winter storms, locally strong winds are possible.

C. Topography, Geology, and Soils

The entire park lies within the Missouri Plateau and the North Dakota Badlands section of the Great Plains physiographic province. This Badlands section is the result of large scale, long term erosion of the northern mixed prairie by the Little Missouri River and its tributaries. The landform now ranges from the river bottomland (with an elevation of 1,958 feet) to flat-topped buttes, ridges, and hills (with a high elevation of 2,850 feet). These lands are marked by canyons, coulees, and numerous erosion drainages (slopes range generally from 10 to 70%) which dissect the larger, contiguous tracts of rolling hill-like grasslands within (and extending beyond) Park boundaries.

The Park's geologic character is one of alluvial sediments, comprised of deposition from parent Rocky Mountain material and from volcanic eruptions. The depth of deposition is

approximately 1,000 feet with the near-basal portion of the deposition exposed in the Park. The deposition strata consist of fine-grained shales, clays, sandstones, silt, sand, and lignite (which are low-grade forms of coal). Throughout the Park, evidence exists to demonstrate that the seams of lignite can and do catch fire, baking the surrounding sedimentary deposits into the hard, brick-like red stone called scoria. The entire Park is located within the Williston Basin, a large geologic zone containing numerous oil and gas deposits.

D. Vegetation

Observations taken in the Park indicate that there are no identified plant species found in the Park that appear on the federal endangered or threatened species list; however, there are occurrences of plants that appear on the North Dakota Natural Heritage Program's endangered species list. There are also no wildlife species that are currently inhabiting the Park and which are listed on the federal Threatened species list. The Park is considered to represent potential range and habitat for any and all species indigenous to mixed prairie grassland ecosystems. With that in mind, Park management policy is to continue observing for signs of any threatened/endangered species and to continuing studying methods of managing Park lands which will protect and enhance the habitat for all native species. However it should be noted, there are still a number of exotic species in abundance in the Park. These include leafy spurge (*Euphorbia esula),* yellow sweetclover (*Melilotus officinalis),* brome grasses (*Bromus sp.),* Canada thistle (*Circium aruvnense),* Kentucky bluegrass (*Poa pratensis)* and Crested wheatgrass (*Agropyron desertorum).*

Badlands/mixed grass prairie vegetation, characteristically diverse, is found throughout the Park. The basis for the difference is found in past livestock grazing practices, elimination and reduction of native wildlife and total suppression fire management policies. With the elimination of livestock grazing, managed cultivation, reintroduction of bison, and concentrated resource management efforts, the current vegetative mix closely reflects what is believed to have naturally existed prior to the influx of the European settlers in the Park locale.

The following is a discussion of major landscape areas, cover types, fire history and potential fire behavior.

1. Upland plateau areas

Upland plateaus with moderate to gentle rolling slopes describe the upland grassland topography. Primary grasses found in these areas include needle and thread (*Stipa comata);* western wheatgrass (*Pascopyrum smithii);* and blue grama (*Bouteloua gracilis).* Other plant species in abundance are upland sedges, such as threadleaf sedge (*Carex filifolia);* western snowberry (*Symphoricarpos occidentalis);* and prairie rose (*Rosa arkansana).*

2. Badland areas

Barren, arid lands (commonly known as the "breaks" or "badlands") characterize the areas in the Park, which show the strongest influence of erosion and scoria formation. Vegetation found in these areas include grasses; little bluestem (*Andropogon scoparius);* blue grama; sideoats grama (*Bouteloua curtipendula);* red threeawn (*Aristida longiseta);* and other species juniper (*Juniperus sp.);* saltbush (*Atriplex sp.);* and greasewood (*Sarcobatus vermiculatus).*

The ravines and draws, especially those located on northwest to northeast facing slopes of 35% to 70% contain a mix of Rocky Mountain juniper (*Juniperus scopulorum),* green ash (*Fraxinus pennsylvanica),* chokecherry (*Prunus virginiana),* western snowberry, skunkbush sumac (*Rhus trilobata),* sedges, wildrye grass (*Elymus sp.),* ricegrass (*Oryzopsis micrantha),* mosses, and lichens. Scattered stands of quaking aspen (*Populus tremuloides)* occur in some wooded draws, primarily in the North Unit.

3. Canyon Bottom/Riparian areas

On both the bottomland and higher floodplains which are underlain by alluvial deposits, both sage and grass species dominate the vegetative mix. Silver sagebrush (*Artemisia cana),* western wheatgrass, green needlegrass, and blue grama grass are all found in abundance in these areas. Lesser amounts of other species of sage, prairie rose and western snowberry are also found here. Along the perennial watercourses, the plains cottonwood (*Populus deltoides)* is dominant. Associated with it in the floodplain forest are Rocky Mountain juniper, green ash, chokecherry, wildrye, wheatgrasses, and sedges. There is often a narrow band of willows (*Salix sp.),* prairie cordgrass, and rushes found between the floodplain forests and the stream.

E. Fauna

Wildlife populations given major consideration in existing Park management plans include: Bison (*Bison bison),* wild feral horses (*Equus caballus),* California bighorn sheep (*Ovis canadensis californa),* whitetailed deer (*Odocoileus virginianus),* mule deer (*O. hemionus),* pronghorn (*Antilocapra americana),* porcupine (*Erethizon dorsatum),* beaver (*Castor canadensis),* black-tailed prairie dogs (*Cynomys ludovicianus),* prairie sharptail grouse (*Pedioecetes phasianellus),* ring-necked pheasant (*Phasianus colchicus),* and wild turkey (*Meleagris gallopavo).* Studies have been undertaken to evaluate the result of reintroduction of elk (*Cervus elaphus)* into the Park. A small herd of longhorn steers is maintained in the North Unit for historical demonstration purposes. Also present in the Park are populations of mammalian and avian carnivores, reptiles, amphibians, birds, and other small mammals. The Resource Management objective is to maximize the existence and mix of the naturally occurring wildlife species, while limiting the populations to sizes compatible with the carrying capacity of Park lands.

F. Cultural Resources

Theodore Roosevelt National Park's cultural resources are classified according to five major categories: sites, structures, objects (not addressed in this document), ethnographic resources, and cultural landscapes. Their current status with regard to present condition, types, and levels of impacts upon them are addressed in this section.

1. Archeological Resources

The first archeological investigations in Theodore Roosevelt National Park were conducted during a seven-day period in 1950. The emphasis of this survey was to locate the former ranch buildings and facilities of the Elkhorn Ranch. In 1957, and again in 1959, further evaluations were done at the Elkhorn site.

In 1968, a preliminary archeological reconnaissance of both the North and South Units was completed. James Sperry recorded 41 archeological sites in the park during the course of the survey. From 1968 to 1987 several pre-construction and minor surveys occurred throughout all units of the park.

In 1989, David Kuehn and crew completed a three-year cultural survey of park lands. An intensive inventory was conducted, covering 13 different project areas in both the North and South Units of the park. Approximately 2,000 acres of the park were surveyed. Two hundred fourteen prehistoric sites were located as well as 61 historic Anglo-American, and six sites which are both historic and prehistoric. The results of the survey can be found in the document Theodore Roosevelt National Park Cultural Sites Inventory (1993).

In 1991, an intensive pedestrian survey of 240 acres was conducted in the South Unit. Two sites were relocated and re-recorded, and an additional eight sites were discovered and recorded. Additional surveys were completed in 1991, 1994 and 1996 for site specific park projects.

All archeological sites within the park are protected by federal legislation (Antiquities Act of 1906, 1979 Archeological Resources Protection Act, Executive Order 11593), Section 110 of the National Historic Protection Act and the Cultural Resource Management Guideline (NPS-28).

To date no archeological sites are listed on the National Register; however, 56 sites have been determined to be eligible and nominations will be submitted by the Midwest Archeological Center. Further survey and evaluation of the park's archeological resources may also yield archeological remains that warrant future nominations to the National Register.

2. Historic Sites and Structures

Historic structures found in Theodore Roosevelt National Park include the Maltese Cross Cabin, the Elkhorn Ranch site, the Peaceful Valley Ranch buildings and historic zone, the Long X cattle trail through the North Unit, the Beef Corral site, several homestead and ranch sites, a grave marker/monument to William Bryant, and miscellaneous artifacts. Two CCC constructed picnic shelters and an overlook shelter in the North Unit and the East Entrance Station in the South Unit are classified as historic structures. In addition, three iron sculptures, of which two are associated with sandstone pylons, are significant representations of this theme.

The Peaceful Valley Ranch complex listed on the LCS consists of a ranch house (circa 1885), bunkhouse (circa 1925), and barn/equestrian center (1904). Over the years the ranch has served as a horse ranch, a dude ranch, park headquarters and residential area, and presently as a base for a horseback riding concession. In 1994, the three structures at Peaceful Valley Ranch were included on the National Register of Historic Places.

3. Cultural Landscapes

Cultural landscapes have only recently begun to be considered an integral component of the park's history. To date none of the historic areas in the park have been evaluated for cultural landscape potential, although several would seem likely to be significant candidates such as former CCC camps, Peaceful Valley Ranch, early homesteads, and the Elkhorn Ranch.

4. Ethnographic Resources

Theodore Roosevelt National Park's ethnographic resources are not well known. The tribes that have potential for affiliation with the park are the Mandans, Hidatsas, Assiniboine, Gros Ventre, and Lakota. An area-wide Ethnographic Overview and Assessment is needed to provide park management with ethnographic information for consideration in management planning for the park.

5. Cultural Resource Surveys

Prior to ignition of prescribed fires, an investigation will occur to determine the status of a cultural resource survey in the area. If a survey has not been made it the area of the prescribed fire, a cursory surface scan will take place prior to the fire to determine the occurrence of cultural resources that may be affected by prescribed fire. A second cursory surface scan will occur following the fire treatment when surface artifacts were found on the preburn survey and archeologist performing the survey identifies the need for post burn survey. All observations and survey reports will be referred to the Midwest Archeological Center in Lincoln, Nebraska for archival and follow-up within their work plans. The park, in consultation with Midwest Archeological Center, will determine any additional management actions necessary after review of the pre and post fire surveys.

6. Cultural Resource Mapping

To facilitate the decision making process during any proposed or occurring fire event, a detailed set of digital cultural resource maps will be developed and incorporated into the park's geographic information system (GIS). The data set will include location, site number, site type, and site evaluation. This information will be readily available for prescribed fire planning and to incident commanders for wildfire management. The estimated completion date for this tool is May 1999.

The digital maps will also include information that will identify preferred fire management activities in regard to specific sites and site types. Actions that will be identified include site avoidance (buffer area), use of physical or applied barriers, mechanical reduction of fuel loads, systematic collection of certain artifact classes prior to burn, follow-up survey, and collection post-burn.

The park contains 12 historic structures that are included on the list of Classified Structures; at least 16 historic sites associated with the ranching and homesteading days; over 214 known prehistoric archeological sites; and approximately 2300 cultural objects that have been accessioned into the park's museum collection. Historic resources in the North Unit of the park include structures and buildings of CCC vintage and traces of the Long X Cattle Trail. In the South Unit of the park are the Maltese Cross Cabin, the East Entrance Station, and the Peaceful Valley Ranch, which dates to the late 1880's.

G. Air Quality

Historically, the Park and surrounding area have enjoyed excellent air quality, with only occasional, short-term air pollution from transient wildfire smoke, blowing dust, and burning lignite veins. Under the terms of the 1977 Clean Air Act amendments, the Park is designated as

a mandatory Class I air quality area, prohibiting significant deterioration of air quality.

Although prescribed fire is defined as a “temporary” source of air pollution, state and local laws may apply to this activity under the general category of “open control burning”. Specifics to the North Dakota State air quality guidelines for prescribed fire smoke and smoke management procedures are contained in the Air Quality/Smoke Management Guideline (Chapter XI).

H. Water Resources

Current water quality in the Park is good; although potential exists for water pollution stemming from the energy development-related recovery and processing sites located in and near Park watersheds. Although not entirely a "water-quality" problem, the potential for flash flooding and accelerated water erosion exists in the many steep-sided, narrow canyons, washes, and gullies found throughout the Park. There are 18 wells, 13 developed springs, and numerous undeveloped springs and seeps within Park borders. Associated with a number of the developed springs and wells are wildlife water storage systems (both cement and fiberglass/plastic) existing above ground.

The Little Missouri River is a perennial third-order stream that flows through the North and South units and along the east boundary of the Elkhorn unit. It can provide water for fire management operations anywhere along it. Paddock Creek, Jones Creek, Jules Creek are all second order streams that have perennial flow and can be counted on for fire management operations. The wells and springs (developed and undeveloped) that can be used for fire management operations are shown on a map in Appendix J.

I. Human Uses

Visitor use of the park is highest from June through August, with the greatest number of visitors staying for a few hours. Most visitors drive through the Park, stopping infrequently for short walks on Park trails. Fewer visitors hike longer distances over the maintained trail system. There are horseback riding opportunities within the Park and drive-in campground facilities receive considerable use during the summer months. There are two parcels of private land within the South Unit and three within the North Unit. These parcels do not contain private structures or improvements. There are sixty-nine buildings owned and managed by the NPS situated within the Park. Other than the Park-maintained longhorn steer herd in the North Unit, there are no livestock grazing allotments or permittees regularly using parklands. NPS has granted a right-of-way for temporary and periodic cattle drives by area ranchers. This right-of-way lies adjacent to the Little Missouri River. Existing mineral extraction leases involve location of drilling sites outside Park boundaries; thus, there are no mining facilities located with the Park. In addition to the scenic drive and hiking trails located within the Park, there are two family campgrounds; two picnic areas; three visitor centers; seven comfort stations; a historic ranch house, bunkhouse, and barn used to house the horseback rides concessionaire; and the Park Headquarters, located within the Park boundaries. These developed areas are shown on a map in Appendix J.

IV. GOAL AND MANAGEMENT OBJECTIVES

RESOURCE MANAGEMENT OBJECTIVES

For NPS management purposes, Theodore Roosevelt National Park is divided into three zones: natural, historic, and special use. Primary resource management objectives are concerned with these three zones. In the natural zone, the principal objective for management is to maintain the primitive character and natural processes. In the historic zone, lands are managed for preservation, interpretation, and protection of historic and archaeological resources. Special use zones are managed for scenic easements and are subject to agricultural, recreational, and limited residential uses that are compatible with protection of scenic values.

This Fire Management Plan prescribed actions necessary to implement Service wide fire management policies (DO-18, 1998) and to achieve park resource management objectives. The park's primary resource management goal is:

> …to protect and interpret the badlands ecosystems surrounding the Little Missouri River and the cultural resources resulting from human habitation of the area.

FIRE MANAGEMENT OBJECTIVES

Theodore Roosevelt National Park's fire management objectives support this goal, and they are: (1) to reduce the incidence and extent of human-caused fires; (2) to allow wildland fire to function in fire-dependent ecosystems; (3) to use fire to meet management objectives; (4) to protect life, property, and park resources from the effects of unwanted fire; and (5) to prevent the adverse impact from fire suppression.

The following fire management strategies should maximize opportunities to achieve these five objectives.

Objective 1: Reduce the incidence and extent of human-caused fires:

- Prevent unplanned human-caused ignitions through a cooperative fire prevention program aimed at the park visitor, staff and neighbors.
- Minimize the occurrence of unwanted (human-caused) fires through reduction of hazard fuels by prescribed fire and/or mechanical treatment in and around developed areas and along park boundaries.

Objective 2: Allow wildland fire to function in fire-dependent ecosystems:

- Permit wildland fire use (lightning-caused) fires in areas where fire dependency has been scientifically proven and the fuel load and vegetative composition are within the range of natural variability.
- Allow wildland fire use within the constraints of policy (DO-18) and the Environmental Assessment/Assessment of Effect for the Fire Management Program of Theodore Roosevelt National Park.

Objective 3: Use wildland and prescribed fire to meet management objectives:

- Create and/or maintain defensible wildland fire use boundaries.
- Where applicable, restore fuel loads and plant community structure and composition to

ranges of natural variability comparable to pre-European settlement using prescribed fire and wildland fire use.

- Minimize the occurrence of unnaturally intense fires through reduction of hazard fuels by prescribed burning.
- Avoid prescribed fires and wildland fire use that would reduce air quality in Medora, North Dakota between Memorial Day and Labor Day.
- Train park staff and cooperators to conduct safe, objective-oriented prescribed fires and wildland fire use consistent with DO-18 requirements.
- Provide opportunities for public understanding of fire ecology principles, smoke management, and wildland fire program objectives.
- Monitor and evaluate the effectiveness of the prescribed fire program.

Objective 4: Protect life, property, and park resources from the effects of unwanted fire:

- Provide for the safety of park visitors, neighbors, and employees during all phases of wildland fire management operations.
- Suppress all unwanted fires in the park and in the interagency mutual aid zone.
- Cooperate extensively with adjacent landowners through Memoranda of Understanding to facilitate safe and prompt suppression of wildfires.
- Suppress all wildfires with minimum cost, environmental and cultural resource impacts.
- Provide opportunities for public understanding of the wildland urban interface problem.

Objective 5: Prevent the adverse impact from fire suppression:

- Suppress unwanted fires commensurate with values at risk.
- Use minimum impact fire suppression techniques and rehabilitate disturbed areas to protect natural, cultural, wilderness and scenic resources from adverse impacts attributable to fire suppression activities.
- Engender the understanding among park staff and firefighters about the impacts of fire suppression on sensitive park resources.
- Ensure that a resource advisor is present on all major suppression actions.

V. Historic Role of Fire

A. FIRE ECOLOGY

With the large tracts of continuous, fine fuels, frequent periods of hot, dry weather, and common occurrence of lighting, the mixed grass prairie in and around the Park has historically experienced fire. This is an integral part of the ecological process shaping the form and content of the vegetative and wildlife composition of the area. From documented reports of early pioneer settlers in the west, the mixed grass prairie was influenced by fires (both purposeful and accidental) set by Native-Americans. Fires occurring in the mixed prairie typically have been fast burning, surface fires that tend to leave a mosaic of vegetation. The mixed prairie grasslands

are characterized by vegetation which grows rapidly, dies back annually above ground, and decomposes slowly, with an average height of 2 to 4 ft (grasses) and small trees and low brush (on north-facing slopes and in draws). Low humidities, low precipitation and unrestricted wind flow characterize the area. Periodic drought is common. Research indicates that fire, together with climate and topography, plays a major role in maintaining the grassland ecosystem and restricting the growth of trees and shrubs to the drier, rocky breaks, less frequently burned draws and riparian lands.

B. FIRE HISTORY

Official recording of fire starts within Park boundaries was initiated in 1949. Given the nature of the mixed grass prairie vegetation, evidence in the form of fire scars has not been available as a tool to estimate pre-1949 fire frequency. Although somewhat speculative, it is estimated that the typical fire frequency in the Badlands area of the northern mixed prairie is from 5 to 30 years (Wright and Bailey 1980). This estimate is based on fire frequency research in ecosystems having types of prairie vegetation mix and topography similar to those features found in the area of the Park and adjacent lands. Higgins (1986) reported that Theodore Roosevelt National Park lands averaged 1.09 fires per year over a 33-year period.

Probably the major difference between the historical fire regime of the mixed grass prairie versus the present is the extent of the fires. Prior to large-scale cultivation of the Great Plains, fires could run for long distances, checked only by major river systems, badland-type topography, or weather. Presently, with large-scale cultivation in place, together with the network of roads and highways dividing up the lands, few fires are able to make the extensive runs historically recorded. The long distance fire is now the exception. A second probable difference is the human-caused fire frequency. With replacement of the Native-American cultures and the lessening of open range cattle ranching practices, most of the historical human causes of fires ceased to be a threat. A large proportion of recently recorded fires is still human-caused, but these tend to be the result of careless campers or accidents. Today, as in the past, fires in the mixed grass prairie tend to be surface fires, occurring with warm temperatures and dry conditions. The flaming front may exhibit flame lengths of 2 - 4, to 10's of feet, depending on the speed of winds and the depth or height of the fuels burning. Generally, the flaming front has high intensity of short duration, spreads quickly and irregularly and does not spot ahead of the front (Vogl 1979).

Available evidence suggests that the frequency of lightning-caused fires in the western North Dakota mixed grass prairie is approximately 24.7/yr/10,000 km^2. (For comparison, the same research indicates the average to be 6.0/yr/10,000 km^2 in eastern North Dakota, 22.4/yr/10,000 km^2 in south-central North Dakota, and 91.7/yr/10,000 km^2 in the pine-savanna lands of northwestern South Dakota and southeastern Montana) (Higgins 1984). Lightning-caused fires were recorded in all months from April to September with 73% of the 294 recorded fires occurring during July and August. There were multiple starts on 44 (86%) of the days experiencing fire. Eighty-eight percent (88%) of these fires burned an area of 3.64 ha or less, although all of these fires had suppression action taken on them. Of four fires where no suppression action was taken, 8.1 ha or less was the mean size of the burned area. Fire frequency data for the Park is inconclusive, with estimates ranging from several lightning starts each year to one every 20 years (Higgins 1984).

Records of fires on Park lands were initiated in 1949. Fire history is illustrated in Tables 1, 2, and 3.

Table 1: Number of fires recorded (1949-1993)

Cause	Number	Percent	Acres
Human	46	54	
Lightning	18	21	
Unknown	21	25	
Total	90	100	3225.9

Table 2: Number of fires by size class (69 fires)

Number and percent of fires	Size Class (acres)				
	A 0 - .25	B .25 - 9	C 10 – 99	D 100 - 299	E 300 +
Number	1	4	17	3	3
Percent	1.5	65.3	24.6	4.3	4.3

Table 3: Fire by period of occurrence (69 fires)

	Months											
	January	February	March	April	May	June	July	August	September	October	November	December
Number of fires	0	1	4	7	7	7	12	27	10	5	2	0

The 90 recorded fires (1949-1993) reflect only those fires on which some suppression action was taken. From Park personnel observations, there is evidence that a number of unrecorded fires occur regularly on parklands. These unrecorded fires apparently are extinguished by rain or simply burn themselves out before being seen and recorded. There is no reasonable estimate available for the numbers or frequency of unrecorded fires that have occurred. The size of such fires has remained small and the fires are obviously of short duration. Of the recorded fires, the incidence of human-caused fires (50 total) noticeably increased between 1968 and 1976 (16 fires) during the same period when Park visitations increased. There were two recorded lightning fires during this same period. Between 1976 and 1979, the only recorded fires were lightning-caused. From 1980 to 1993, there were 13 human-caused fires and only three

lightning-caused. The high visitation period runs from May to September, peaking in July.

From the inception of the Park in 1947, fire management has pursued a policy of full and immediate suppression of all observed fires. The recorded, observed numbers of fires do not include fires occurring on any lands bordering the Park boundaries; although the Park, per formal agreement with the U.S. Forest Service, has initial attack responsibilities for fires occurring on such lands. There is no reasonable available evidence of any suppression strategy on the part of the Native-Americans or upon the part of the early European explorers and settlers.

VI. WILDLAND FIRE MANAGEMENT SITUATION

A. PARK FIRE MANAGEMENT UNITS

The park is divided into twenty-three fire management units along administrative and natural barriers representing locations suitable for defensive fire tactics. Each unit will be managed in a combination mode of appropriate wildland fire management and prescribed fire. Existing management units (Appendix J) will be used to drive actions in various areas of the park. Aggressive firefighting strategies and tactics will be employed for all wildfires occurring in special use units. The appropriate suppression response will be determined and utilized for all wildland fires occurring in natural units. Prescribed fires will be implemented in all units when it has been determined that they can successfully accomplish the desired resource objective.

The south management unit is divided into fifteen units for prescribed fire purposes with the annual burn acreage accomplishment not to exceed 4000 acres for all wildland fire types. This accomplishment is directly tied to bison and elk populations and ensuring adequate forage during the winter season. The prescribed fire accomplishment will be 2500 acres per year averaged over five years.

The north management unit is divided into seven units for prescribed fire purposes with the annual burn acreage accomplishment not to exceed 2000 acres for all wildland fire types. Again, this accomplishment is tied to wildlife populations. The prescribed fire accomplishment will be 1000 acres per year averaged over five years.

Elkhorn unit will be treated as a single unit with a goal to burn the entire unit every six years with less than twenty-five percent being burned in any one year.

Due to current fire hazards, the relatively small size of park units, the fuel types and associated rates of fire spread, historic fire duration, and park staffing and budget limitations, this plan utilizes a combination of appropriate suppression responses and wildland fire use for resource objectives as fire management tools.

Theodore Roosevelt National Park will take immediate, initial attach suppression action on fires on lands situated within one mile of the Park borders based upon prevailing wind direction and local agreements allowing for fires to cross jurisdictional boundaries. It is the intent of Park fire management to manage fires occurring within designated wilderness with as little impact as possible to the natural fire regime.

B. HISTORICAL WEATHER ANALYSIS

Fuel moisture content distribution shows maximums for live woody and herbaceous moisture

contents during the summer when plants are actively growing (Fig. 6). Dead fuel moisture contents show little fluctuation but reach minimum values during the late summer and fall months (Fig. 2). Indicators of fire danger as computed through the National Fire Danger Rating System (NFDRS) show that fire danger is highest when fuel moisture contents are lowest and when plants are not actively growing (Fig. 7). On site weather observations are made in both the north and south units. THRO-N station (321701) in the north unit was initiated in 1997 and THRO-S station (322501) in the south unit was initiated in 19XX. These on site observations are supplemented with cooperative observation data from National Weather Service site from within 25 miles of the park boundary.

C. FIRE SEASON

The fire season at Theodore Roosevelt National Park is generally the period from April Theodore through September each year. This is the period during which 90 percent of fires have occurred; although park records are incomplete in regard to fires suppressed by cooperators outside this period. Park records do indicate a small number of fires have occurred in February, March, October, and November. The April through September period represents situations from before spring green-up until after curing has occurred. Also during this time, climatic conditions are most favorable for ignition. The majority of annual rainfall is received during May and June, but severe thunderstorms can occur in July and August which are responsible for lightning caused fires.

D. FIRE CHARACTERISTICS

Theodore Roosevelt National Park is predominantly mixed-grass prairie, NFFL fuel model L - FBPS model 1, which has been altered historically by grazing and the influx of non-native grasses such as cheatgrass, smooth brome, and Japanese brome. Principal native species include western wheatgrass, several bluestems, gramas, and green needlegrass. Throughout canyons of the badlands areas, near springs, and along streams, woody plant communities are present. The woody draws are a mixture of green ash, chokecherry, juniper, and other shrubs as minor components, NFFL fuel model C - FBPS fuel model 6. Cottonwood, sagebrush, juniper, and other shrubs mainly occupy stream courses.

Grassland fuels burn rapidly when dry. Most grassland plants are surface deciduous with aboveground parts dying back at least once each year, even in regions without seasonal climates. As a result, grasslands are particularly vulnerable to fires during stages when standing plant parts are dry and cured. Most species are xerophytic, often with stiff, scabrous leaves and rigid stems. Associated herbs also orient their leaves to minimize exposure to sun and air and reduce transpiration. Shoots produced after a fire have also been found to have a stiffer composition and more erect form than ordinary shoots. This rigid structure and erect nature not only helps to keep stems upright well after growth terminates, but also exposes the understory and soil surface to sun and wind. Conditions more conducive for combustion can result. Compaction of grassland fuels is nearly always conducive to fire propagation and seldom reaches the degree attained by heavier fuels, even after heavy snows or rains.

Rapid growth and accumulation, slow decomposition rates, chemical and physical composition of grassland plants, and highly flammable nature of plant debris lead to a vegetation type that can readily burn. Grasslands that can be readily and repeatedly burned have apparently evolved

with fire, becoming dependent upon it as the primary decomposition agent and key method of nutrient recycling. At the same time, grassland plants create conditions that make fires almost inevitable. Most of the Park fits NFFL fuel model L – FBPS fuel model 1, which represents perennial grasslands with no over story.

The combination of grassland fuels, topography, and wind patterns in Theodore Roosevelt National Park generally result in wind-driven fires that move rapidly through fine fuels. Wind-driven head fires consume most of the vegetation, have rapid rates of spread, and frequently develop wide heads. These fire fronts often become irregular in outline as topography, fuel loads, winds, natural barriers, and developing fire storms speed up or retard movements. Head fire in dense fuels and tall grasslands has the capability to generate large flames. Transported embers which could cause spot fires ahead of the main fire front are generally rare or sufficiently cooled by the time they reach unburned fuels so that spot fire problems are not significant. Due to the normally high rates of spread, and relatively short duration of heat production, few long-lasting impacts to soils occur and key nutrients supplied by ash are quickly recycled into grassland communities.

Woody draws, confined primarily to north and east slopes, are usually small in size (generally less than 40 acres). Fire behavior in these stands can differ markedly from fires in grasslands. Spotting potential, rate of spread, and fire intensity are generally much higher in woody fuels. Monitoring and experimental burning are needed to better understand fire behavior in these pockets of woody vegetation.

Fire behavior fuel model 1, for short grass is useful although not entirely accurate for predicting grassland fire behavior. Mixed-grass prairie types are present in the park, with species composition including short grasses and mid-height plants.

E. CONTROL PROBLEMS

Control problems can be expected on fires burning in the peak fire season. When continuous fuels and warm, dry, windy environmental conditions are encountered, high fire intensities and rapid spread rates can be achieved within a short time. In these situations, firefighter safety may dictate use of indirect attack suppression methods.

Many areas within the Park present hazardous conditions, such as steep slopes with unstable footing; densely wooded draws; and continuous fuels. Suppression activities in such areas must be carefully planned and executed.

VII. SCOPE OF WILDLAND FIRE MANAGEMENT PROGRAM

The park will use the specific strategies listed below to achieve the park's fire management objectives. The policies of the NPS, as set forth in DO-18 and the Department of the Interior will be adhered to in implementation of these strategies.

A. WILDLAND FIRE MANAGEMENT STRATEGIES

1. Wildland Fire

a) Wildland fire suppression

The park will make every effort to suppress all unwanted wildland fires through initial attack actions. All available park and local firefighting resources will be utilized as necessary to limit damage to values at risk, protect private and public lands outside the park boundary, and provide for firefighter and public safety.

b) Wildland fire use

Unacceptable resource impacts will be avoided as much as possible through aggressive suppression. However, not all wildfires will be suppressed with the same degree of intensity. A full range of initial suppression actions, from aggressive, high intensity actions to low intensity, are preplanned to meet management objectives of individual units while minimizing the loss of resource values, economic expenditures, and/or the use of critical firefighting resources. Such preplanned actions are based upon stated resource management objectives in defined geographic areas outlined in this fire management plan.

The Incident Commander of any wildfire is expected to combine tactics with sensitivity towards park resources and concern for safety of firefighting personnel, park employees, park visitors and park neighbors threatened by the wildfire

2. Prescribed fire

Prescribed fires are intentionally ignited under predetermined weather and fuel moisture conditions that permit managers to exert substantial influence over the spread and intensity levels that the fire can achieve. These fires are ignited for purposes of accomplishing resource management objectives. All prescription parameters, ranges, and objectives are clearly stated in an individual project plan for each management ignited prescribed fire.

a) Hazard fuel reduction

Hazard fuels management activities will be undertaken in and around developed areas and along park boundaries to reduce the fire hazard of natural fuels as weather and risk assessments show a likelihood of damage from wildland fire. These projects will be documented with a written plan approved by the park superintendent. Each plan will described the fuel hazard, the values at risk, the proposed mitigation action with specifications of work to be done and a cost break down associated with the mitigation. Prioritization will be first for firefighter, public and visitor safety associated with use areas and travel cooridors followed by protection of property.

Hazard fuels management activities with mechanical actions outside of developed areas and boundaries will be cost shared with other functions on a one time basis. The objectives for this type of treatment will include the reintroduction of fire to maintain the fire dependency of the ecosystem being treated.

b) Ecosystem management

The park was established to protect some early human development in the area and the natural flora and fauna found during the period of significance which may all be advercely impacted by fire that exceed prescriptions in either intensity or spatial area. In recognition of this park management will use an appropriate management action for wildland fires and chose to go back into the area and use prescribed fire and/or hazard fuels management activites to return the role of fire to function in these fire dependent ecosystem. An example of this may be to take immediate suppression to put out a fire in July or August and then go back in September or October and reignite it when environmental and human use conditions allow.

B. FIRE MANAGEMENT UNITS

For the purpose of guiding fire management the park is subdivided into two units (or "zones) where similar strategies are employed for wildland fire. The zones include (1) Special Use ; and (2) Natural .

1. Special Use Units

This unit consists of five major geographic areas in the South unit, two areas in the North unit and one area in the Elkhorn unit.

S1. Park Headquarters Area: Located in Medora, this area contains the Administration and Visitor Center buildings, fee collection kiosk, visitor parking, maintenance shop area and all park housing. High values at risk (need description on objective/reason for designation for each)

S2. Painted Canyon Area: Visitor Center located 8 miles east of Park Headquarters has heavy visitation from May 1 through September 30. High values at risk

S3. Cottonwood Campground: Located 6 miles north of Headquarters. Has 78 campsites, camptenders residence and office. Busy from Memorial Day through Labor Day. High values at risk.

S4. Peaceful Valley Ranch: Located 6 miles north of park Headquarters, concession operation containing several historic structures and horse trail rides. Busy from Memorial Day through Labor Day. High values at risk.

S5. Roundup Group Campsite: Located 8 miles north of Park Headquarters, this campsite is booked from Memorial Day to Labor Day . Heavy horse use area with limited access.

N1. North Unit Headquarters Area: Located 15 miles south of Watford City, this area contains the Visitor Center, parking area, fee collection kiosk, maintenance shop, fire cache and employee housing. High values at risk.

N2. Juniper Campground: Located 3 miles west of NU Headquarters, has 50 campsites with associated buildings and amphitheater. Busy from Memorial Day through Labor Day. High values at risk.

E1. Elkhorn Ranch Structures: 214 acre historic area isolated area approx. 30 miles north of the South Unit on dirt road. No structures are currently standing.

All ignitions within the boundaries of the special use unit will be declared wildfires and will

result in an aggressive initial attack response. Prescribed fire may be utilized for purposes of hazard fuels reduction and resource management.

2. Natural Unit

This unit includes all of the remaining park lands. In these areas fire can be managed to benefit resources. The following prescriptions apply to natural ignitions considered Fire Use status in the Theodore Roosevelt National Park Natural Fire Management Unit. NFDRS Fuel Model: L and C (weather station #322501). NFFL Fuel Models: 1 and 6

SOUTH UNIT:

WILDERNESS

Strategic objectives Restore fire to the ecosystem keeping with the values of designated wildersness.

Relationship to FMP objectives This area permits the broadest application of fire as the fire-dependent ecosystem is within a wilderness area.

Tactical objectives Protect private property, oil and gas developments and grazing areas west of the park boundary.

Management constraints This area is managed as a wildlerness and appropriate minimum impact tachniques and applications will be employed.

FMU physical descriptors Encompasses all park areas west of the Little Missouri River and east and south of the park boundary. It is further divided into three subunit based on natural features association with stream drainage basins.

Fire effects and behavior characteristics The unit is comprised of grass, brush and some forest in a badlands environment broken by water courses, rock outcrops, and barren ground. The fire regime is a 7-25 years with varying intensity from the unique vegetation and weather associations of the area.

Values to be protected and special concerns The park maintains an electronics site along the west boundary in the south one quarter of this unit. This site is defensible but travel to the site is slow and over rough terrain. The petrified forest is located in the north half of the unit and should have no ground disturbance in the area.

Fire weather cycles Throughout the south unit winter is followed a dry spring subject to late season snow fall followed by immediate warming with early to mid-summer rain storms that produce locally heavy amounts of precipitation. Summer precipitation is typically associated with thunderstorms with significant amounts of lightning. These storms are followed by several days of warm dry weather before the next storm front moves through the area. Fall is characterized by warm and dry conditions after the first northern flow of moisture in early September then slowly tranisitioning to winter by mid-November.

JULES

Strategic objectives Restore fire to the ecosystem while maintaining visitor and local resident access to areas north of the south unit of Theodore Roosevelt NP.

Relationship to FMP objectives Reduce the extent of human-caused fires by treating around developed areas and along park boundaries while using wildland and prescribed fire to restore fuel loads and plant community structure and composition. Need to protect life, property, and park resources from the effects of unwanted fire.

Tactical objectives Protect private property and grazing areas north of the park boundary.

Management constraints The use and access to the area because of the "Scenic Loop Drive" and the main park road will require immediate assessment and monitoring by personnel on scene for the potential to close or limit traffic in the area. Visitor use in the Roundup Group Campground will need to be balanced with risk and impacts to that site and availability to move users to other areas in the park.

FMU physical descriptors This unit comprises the Jones and Jules Creek drainages and the southern reaches of the Government Creek drainage north of the park boundary. The Little Missouri River is the western boundary of the unit. The drainage bottoms are narrow riparian zones openning into the Little Missoure River valley, a wide riparian zone, on the west. The unit is traversed by the "Scenic Loop Drive" in an east-west direction along the northern third of the unit and the main park road is near the west edge.

Fire effects and behavior characteristics The unit is comprised of grass, brush and some forest in a badlands environment broken by water courses, rock outcrops, and barren ground. The fire regime is a 7-25 years with varying intensity from the unique vegetation and weather associations of the area.

Values to be protected and special concerns The Peaceful Valley Horse Concession is located at the southwest corner of this unit which is a summer seasonal operation.

Fire weather cycles Throughout the south unit winter is followed a dry spring subject to late season snow fall followed by immediate warming with early to mid-summer rain storms that produce locally heavy amounts of precipitation. Summer precipitation is typically associated with thunderstorms with significant amounts of lightning. These storms are followed by several days of warm dry weather before the next storm front moves through the area. Fall is characterized by warm and dry conditions after the first northern flow of moisture in early September then slowly tranisitioning to winter by mid-November.

PADDOCK

Strategic objectives Restore fire to the ecosystem while maintaining visitor and local resident access to areas north of the south unit of Theodore Roosevelt NP and protecting private property and National Park Service facilities along the east boundary of the park. Maintain visitor access along the Interstate 94 travel cooridor.

Relationship to FMP objectives Reduce the extent of human-caused fires by treating around developed areas and along park boundaries while using wildland and prescribed fire to restore fuel loads and plant community structure and composition. Need to protect life, property, and park resources from the effects of unwanted fire.

Tactical objectives Protect private property and grazing areas northeast and southeast of the park boundary.

Management constraints The use and access to the area because of the "Scenic Loop Drive"

and the main park road will require immediate assessment and monitoring by personnel on scene for the potential to close or limit traffic in the area.

FMU physical descriptors The unit is comprised of the Paddock Creek drainage including the north and south forlks in the east end of the south unit. The west edge of the unit is bounded by the road into Halliday Well Group Camp then extending south to the Scenic Loop Drive.

Fire effects and behavior characteristics The unit is comprised of grass, brush and some forest in a badlands environment broken by water courses, rock outcrops, and barren ground. The fire regime is a 7-25 years with varying intensity from the unique vegetation and weather associations of the area.

Values to be protected and special concerns The Halliday Well Group Camp is near the western most point ot the unit and the Painted Canyon Visitor Center is at the southern end of the unit. The Painted Canyon Visitor Center sits atop the breaks of Paddock Creek drainage and will require protection from fire in that portion of the Fire Management Unit. The east portion of the Scenic Loop Drive traverses the middle of the unit. Protect the park wildlife handling facility and associated structures located on the east boundary ot the south unit.

Fire weather cycles Throughout the south unit winter is followed a dry spring subject to late season snow fall followed by immediate warming with early to mid-summer rain storms that produce locally heavy amounts of precipitation. Summer precipitation is typically associated with thunderstorms with significant amounts of lightning. These storms are followed by several days of warm dry weather before the next storm front moves through the area. Fall is characterized by warm and dry conditions after the first northern flow of moisture in early September then slowly tranisitioning to winter by mid-November.

SHEEP

Strategic objectives Restore fire to the ecosystem while maintaining visitor and local resident access south ot the south unit of Theodore Roosevelt NP and along the Interstate 94 travel cooridor.

Relationship to FMP objectives Reduce the extent of human-caused fires by treating around developed areas and along park boundaries while using wildland and prescribed fire to restore fuel loads and plant community structure and composition. Need to protect life, property, and park resources from the effects of unwanted fire.

Tactical objectives Maintain traffic flow in the Interstate 94 cooridor by burning out along the right-of-way when fire spread or smoke threats have the potential to impact movement on the Interstate.

Management constraints Impact to the Interstate 94 cooridor will require immediate notification of the North Dakota Department of Transportation and Highway Patrol. The use and access to the area because of the “Scenic Loop Drive” and the main park road will require immediate assessment and monitoring by personnel on scene for the potential to close or limit traffic in the area.

FMU physical descriptors This unit comprises the Sheep Creek drainage from the Little Missouri River east to within ¾ mile of the Painted Canyon Visitor Center. The drainage bottoms are narrow riparian zones openning into the Little Missoure River valley on the west.

The unit is traversed by the "Scenic Loop Drive" along the northern edge of the unit and the main park road along the west edge.

Fire effects and behavior characteristics The unit is comprised of grass, brush and some forest in a badlands environment broken by water courses, rock outcrops, and barren ground. The fire regime is a 7-25 years with varying intensity from the unique vegetation and weather associations of the area.

Values to be protected and special concerns Medora Visitor Center and Community of Medora in the southwest corner of the unit. Cottonwood Campground in the west part of the unit.

Fire weather cycles Throughout the south unit winter is followed a dry spring subject to late season snow fall followed by immediate warming with early to mid-summer rain storms that produce locally heavy amounts of precipitation. Summer precipitation is typically associated with thunderstorms with significant amounts of lightning. These storms are followed by several days of warm dry weather before the next storm front moves through the area. Fall is characterized by warm and dry conditions after the first northern flow of moisture in early September then slowly tranisitioning to winter by mid-November.

NORTH UNIT:

Hagen

Strategic objectives Restore fire to the north unit of Theodore Roosevelt. Restore fire to the ecosystem keeping with the values of designated wildersness.

Relationship to FMP objectives Reduce the extent of human-caused fires by treating around developed areas and along park boundaries while using wildland and prescribed fire to restore fuel loads and plant community structure and composition. Need to protect life, property, and park resources from the effects of unwanted fire. Within wilderness in this area permit the broadest application of fire to the fire-dependent ecosystem in the wilderness.

Tactical objectives Protect private property and grazing areas north of the park boundary.

Management constraints The use and access to the area because of the "Scenic Drive". This will require immediate assessment and monitoring by personnel on scene for the potential to close or limit traffic in the area.

FMU physical descriptors This unit comprises the areas west of Squaw Creek and north of the Little Missouri River including the Appel Creek drainage. The drainage bottoms are narrow riparian zones openning into the Little Missoure River valley on the south and east. The unit is traversed by the "Scenic Drive" in an east-west direction along the northern edge of the unit.

Fire effects and behavior characteristics The unit is comprised of grass, brush and some forest in a badlands environment broken by water courses, rock outcrops, and barren ground. The fire regime is a 7-25 years with varying intensity from the unique vegetation and weather associations of the area.

Values to be protected and special concerns Improvements around the overlooks and pullouts along "Scenic Drive".

Fire weather cycles Throughout the north unit winter is followed a dry spring subject to late

season snow fall followed by immediate warming with early to mid-summer rain storms that produce locally heavy amounts of precipitation. Summer precipitation is typically associated with thunderstorms with significant amounts of lightning. These storms are followed by several days of warm dry weather before the next storm front moves through the area. Fall is characterized by warm and dry conditions after the first northern flow of moisture in early September then slowly tranisitioning to winter by mid-November.

Achenbach

Strategic objectives Restore fire to the ecosystem keeping with the values of designated wildersness. Protect the private property and grazing areas south of the park boundary of the north unit.

Relationship to FMP objectives This area permits the broadest application of fire as the fire-dependent ecosystem is within a wilderness area . Reduce the extent of human-caused fires by treating along park boundaries while using wildland and prescribed fire to restore fuel loads and plant community structure and composition.

Tactical objectives Protect private property and grazing areas south ot the park boundary.

Management constraints This area is managed as a wildlerness and appropriate minimum impact tachniques and applications will be employed.

FMU physical descriptors This unit encompasses the Achenbach Hills and all areas south of the Little Missouri River and north of the south boundary of the north unit.

Fire effects and behavior characteristics The unit is comprised of grass, brush and some forest in a badlands environment broken by water courses, rock outcrops, and barren ground. The fire regime is a 7-25 years with varying intensity from the unique vegetation and weather associations of the area.

Values to be protected and special concerns The area is traversed by the Achenbach Trail and access throughout the unit is limited.

Fire weather cycles Throughout the north unit winter is followed a dry spring subject to late season snow fall followed by immediate warming with early to mid-summer rain storms that produce locally heavy amounts of precipitation. Summer precipitation is typically associated with thunderstorms with significant amounts of lightning. These storms are followed by several days of warm dry weather before the next storm front moves through the area. Fall is characterized by warm and dry conditions after the first northern flow of moisture in early September then slowly tranisitioning to winter by mid-November.

Buckhorn

Strategic objectives Restore fire to the ecosystem while maintaining visitor and local resident access to the north unit of Theodore Roosevelt NP and along the Highway 85 travel cooridor. Protect the park facilities and structures located in the north unit.

Relationship to FMP objectives Reduce the extent of human-caused fires by treating around developed areas and along park boundaries while using wildland and prescribed fire to restore fuel loads and plant community structure and composition. Need to protect life, property, and park resources from the effects of unwanted fire.

Tactical objectives Protect private property and grazing areas north of the park boundary and .

Management constraints The use and access to the area because of the "Scenic Drive" and Highway 85 will require immediate assessment and monitoring by personnel on scene for the potential to close or limit traffic in the area.

FMU physical descriptors This unit comprises the Squaw Creek drainage and all area north and east of the Little Missouri river and south of the park boundary. The Little Missouri River bottom represents a wide riparian zones along the south edge of this unit. The unit is traversed by the "Scenic Drive" in an east-west direction along the southern edge of the unit and the Highway 85 along the east edge.

Fire effects and behavior characteristics The unit is comprised of grass, brush and some forest in a badlands environment broken by water courses, rock outcrops, and barren ground. The fire regime is a 7-25 years with varying intensity from the unique vegetation and weather associations of the area.

Values to be protected and special concerns North Unit Visitor Center and National Park Service administrative facilities and Squaw Creek Campground. Visitor and local traffic along Highway 85 and the "Scenic Drive" will need to be considered in any management action.

Fire weather cycles Throughout the north unit winter is followed a dry spring subject to late season snow fall followed by immediate warming with early to mid-summer rain storms that produce locally heavy amounts of precipitation. Summer precipitation is typically associated with thunderstorms with significant amounts of lightning. These storms are followed by several days of warm dry weather before the next storm front moves through the area. Fall is characterized by warm and dry conditions after the first northern flow of moisture in early September then slowly tranisitioning to winter by mid-November.

ELK HORN UNIT:

Because of limited acreage, extended travel times and a fuels complex of light fuels supporting rapid fire spread this unit will receive an immediate initial attack suppression response for all wildland fires reported.

C. GENERAL MANAGEMENT CONSTRAINTS

Constraints applicable to all suppression actions include:

- Whenever consistent with safe, effective suppression techniques, the use of natural barriers will be used as extensively as possible. The use of backfire techniques, burnout lines improvement, and wetting agents (ground and airborne) is authorized. Fire retardant agent used must be on the approved list of retardant for utilization by the Forest Service and Bureau of Land Management.
- All extended attack and project fire operations will have a park employee designated and available to assist suppression forces in the capacity of Resource Advisor.
- Stream crossings will be limited to set locations.
- Except for spot maintenance to remove obstructions, no improvements will be made to ways,

trails, water sources, or clearings. All sites where improvements are made or obstructions removed will be rehabilitated to pre-fire conditions, to the extent reasonably possible.

- Earth moving equipment such as tractors, graders, bulldozers or other tracked vehicles will not be used for fire suppression (if special circumstances warrant extreme measures to ensure protection, the Superintendent can authorize the use of heavy equipment).
- Fireline location will be outside of highly erosive areas, steep slopes, and other sensitive areas. Following fire suppression activities, firelines will be recontoured and water-barred.
- Riparian areas, which have been completely burned, will be seeded.

Additional constraints applicable to Wilderness Areas include:

- Helicopters may be used to transport personnel, supplies or equipment. Improvement of landing sites shall be kept to a minimum. Helibases will be located outside the wilderness area boundaries. Landing sites within wilderness areas will be rehabilitated to pre-fire conditions, to the extent reasonably possible.
- When handline construction is required, construction standards will be issued requiring the handline to be built with minimum impact to wilderness characteristics. Use of power chain saws is authorized although such use should be kept to a minimum. Handlines constructed by exposing mineral soil will be rehabilitated and erosion control methods used on slopes exceeding 10%.
- Incident Command Posts and camps will be located outside wilderness areas.

VIII. FIRE MANAGEMENT ORGANIZATION & RESPONSIBILITIES

This section describes the key Park personnel involved in fire management, delineates the chain of command, discusses responsibilities, and recommended qualifications. An organization chart showing who is currently assigned these functions is found in Appendix E.

A. FIRE MANAGEMENT RESPONSIBILITIES

Park Superintendent:

As the Agency Administrator, the superintendent is responsible for implementation of all fire management activities within the park, ensures compliance with Department, Service and Park policies. This person has overall responsibility for development and implementation of the Park's fire management program and will lead the Fire Management Committee. Decisions relating to requests for overhead or additional firefighting personnel and equipment, as well as decisions related to appropriate management responses to wildland fire would be made by the Superintendent. Is responsible for periodic assessment signature to certify the continued management of wildland fire use actions is acceptable. This responsibility may be delegated in the Superintendent's absence to someone at the Division Chief level or above in the park.

Fire Management Committee:

Consist of the Park Superintendent, Chief Ranger, Park Fire Management Officer, Resource Management Specialist and District Ranger(s) in whose District the ignition occurs. Other staff personnel may be designated as being on the Fire Management Committee at the discretion of

the Park Superintendent.

The committee shall meet prior to and following the fire season to determine objectives and needs for fire management for the ensuing year and to coordinate and critique the committee's operation and function and review the Fire Management Plan, making revision as deemed necessary. The team may be convened whenever fire and weather conditions indicate that fire presents a serious problem to the Park's resources. When convened, the committee shall evaluate fire potential, weather and management concerns, and determines an appropriate course of action, using the Fire Management and Resource Management Plans as guidelines and any prepared Wildland Fire Situation Analysis for on going fires.

Chief Ranger:

Has overall supervisory responsibility for all Park-related emergency operations, including the integration of fire management activities with other emergency operations. Reviews and advises the Superintendent on requests for fire emergency assistance, operational activities required for the implementation of this Fire Management Plan, and completeness and correctness of all final fire reports. Assumes the authority and responsibility of Agency Administrator in the absence of the Superintendent.

Designates staff personnel to assist the Fire Management Officer with implementation of the Fire Management Plan. Reviews the Fire Management Officer's nominations of staff employees to receive fire-related training and designate those employees who are to receive such training.

Resource Management Specialist:

Annually reviews and revises (as necessary) this Fire Management Plan prior to commencement of the normal year fire season, to ensure that the planned actions and activities support and implement the Park's Resource Management Plan. Coordinates with Fire Management Officer to develop resource management and hazard fuels projects.

Fire Management Officer/Coordinator:

Is responsible for implementation of Fire Management Plan. This responsibility includes coordination and supervision of all prevention, preparedness, detection, wildland fire, prescribed fire, suppression, monitoring, and post-fire activities involving NPS lands. Prepares an annual report detailing fire occurrences and prescribed fire activities undertaken in each calendar year. Coordinates the implementation of this Fire Management Plan with other governmental agencies administering adjacent lands and with local landowners. Develops and implements cooperative fire management agreements with other federal, state, and local agencies and with the local landowners. This report will serve as a post-year's fire management activities review, as well as provide documentation for development of a comprehensive fire history record for the Park. Submits budget requests and monitors FIREPRO funds allocated to Theodore Roosevelt National Park.

Prepares, in consultation with Park Resource Management Specialists, prescribed burn plans for each planned prescribed burn and/or designates a burn boss for the burn to perform this task. Is responsible for preparation of fire reports following the suppression of wildfires and for operations undertaken while conducting prescribed fires. Maintains records for all personnel involved in suppression and prescribed fire activities, detailing the individual's qualifications and certifications for such activities. Updates all fire qualifications for entry into the NPS Wildland

Fire Management Computer System (WFMCS). Nominates personnel to receive fire-related training as appropriate.

Designates the person to serve as Incident Commander (IC) for initial attack purposes. The FMO may assume the position of IC at his/her discretion or designate other personnel to take over that position at his/her discretion.

District Ranger(s):

Coordinates, with the Fire Management Officer, on all prevention activities and on all wildfires, prescribed fires, and post-fire activities occurring within their Districts. Maintains equipment and supply caches adequate to undertake initial attack actions on fires occurring on parklands, ensuring that all equipment and supplies are in good working condition. Determines fire qualifications and training needs of all District personnel who are to be made available for fire duties and informs the Fire Management Officer of this information.

Chief Naturalist:

Provides basic fire program information to park staff and visitors as park of the park information packages and assures that similar information is presented in interpretive programs. Ensures that accurate information is incorporated into park books, brochures and exhibits. Will function as the Park Information Officer in handling all press releases.

Fire Management/Suppression Personnel:

Consists of all Park personnel, whether permanent or seasonal, who are qualified to be involved in wildland fire activities and who are fully equipped with proper personal protective equipment and gear. As a minimum, have taken and passed the minimum classroom training and meet physical fitness standards required of NWCG qualified firefighters.

Undertake fire management duties as assigned by the qualified Incident Commander on each suppression action or by the Prescribed Fire Burn Boss on each prescribed fire project.

Area Fire Management Officer, Northern Great Plains Area:

Coordinates fire management activities within the Northern Great Plains Area, providing technical assistance and advice as needed. Will be available to serve as Type 1 Burn Boss when complexity analysis shows this level and local resources are unavailable to perform at this level.

Fire Program Assistant, Northern Great Plains Area:

This position provides technical and administrative support for the Area Fire Management Officer and all parks within the Northern Great Plains Area. Will assist with dispatching and mobilization activities. Will collect and record daily fire weather observations and ensure they are entered into the Wildland Information Management System (WIMS).

B. QUALIFICATIONS AND TRAINING

To meet program requirements (FIREPRO), the park will maintain the following fire management forces. A minimum of six (6) firefighters with one (1) Incident Commander Type 3 (ICT3), two (2) Incident Commander Type 4 (ICT4) one of which can also hold the ICT3 position, and one (1) Burn Boss Type 2 (RXB2). Additional wildland qualifications will be developed from park staff as interest, training and physical fitness requirements allow.

All personnel involved in wildland fire suppression, prescribed burning, or fire monitoring will meet national standards as determined by the NPS Wildland Fire Qualifications System. Park personnel assigned fire management responsibilities and tasks are to meet the minimum training and experience guidelines for the position held. All personnel involved in fire management operations will have their qualifications, training, and experience entered into the NPS Fire Qualifications System. Records will be available in the Fire Management Office for mobilization and dispatch purposes.

The wildland fire training program developed by the fire management staff is reviewed annually to prioritize training opportunities, nominate specific individuals for training courses, develop the annual park training schedule, and to provide training information to all park employees. Nominations for courses will be submitted for those personnel who have met the prerequisites and have identified these in their annual employee development plan. Priorities will be given to those individuals who have applied for and are a part of the national Overhead Development Program.

Physical fitness standards for all wildland firefighters will be maintained in accordance with NPS and Theodore Roosevelt National Park guidelines.

C. AGENCY AND INTERAGENCY COORDINATION

Theodore Roosevelt National Park maintains close coordination with the Midwest Regional Office in Omaha, NE and the Regional FMO at that office. Coordination for assignments on outside park crew assignments is maintained with Fort Union Trading Post and Knife River Indian Villages NHS. The South Dakota Interagency Fire Council annually conducts fire training that Theodore Roosevelt National Park participates in due to the relatively close proximity.

From an interagency standpoint, Theodore Roosevelt National Park is situated in the Northern Rockies Geographic Area and coordination for resource orders for in-park needs and out-of-park needs are served through the following logistical support sequence:

> In-park resource orders: Theodore Roosevelt National Park to North Dakota US Fish & Wildlife Service Dispatch Center; to Northern Rockies Geographic Area Coordination Center at Missoula, MT; NRCC to National Interagency Coordination Center at Boise.
>
> Out-of-park resource orders: The reverse sequence listed above will take place depending upon where the resource order originates.
>
> Procedures for requesting assistance are found in the Northern Rockies Interagency Mobilization Guide, published annually, and on file in the Theodore Roosevelt National Park fire management office.

Theodore Roosevelt personnel participates in the eastern Montana-western North Dakota Type II interagency crew mobilization.

IX. WILDLAND FIRE PROGRAM

Operational guidelines for managing fire related activities vary, depending on the type of activity (prevention, pre-suppression, suppression, or prescribed fire) and on predicted and existing environmental conditions affecting fires at varying locations. This portion of the Theodore

Roosevelt National Park Fire Management Plan details the operational procedures necessary to implement wildland fire management in Theodore Roosevelt National Park.

A. WILDLAND FIRE USE

All naturally ignited wildland fires may be managed to accomplish resource management goals once an appropriate management response is chosen based upon the Wildland Fire Implementation Plan Stage I: Initial Fire Assessment. All human caused wildland fires will receive a suppression response commensurate with values-to-be-proetected, firefighter and public safety, and cost efficiency and include investigation for possible legal recourse.

1. Rational for wildland fire to accomplish resource objectives.

Theodore Roosevelt National Park has identifed natural zones in both the north and south units with a stated objective to manage and maintain in their primitive character and allow natural processes to occur. Although moderate in size they represent 80% of the acreage in the north unit and 22% of the south unit and based upon geography and geology represent an opportunity to permit fire to play its role in these fire dependent communities. The remaining area of the south unit makes possible not only the resource benefit but also the objective to provide opportunities for public understanding of fire ecology in the area encompasses the loop road which provides and controlled access for visitors to the area. Strategies to provide for firefighter and public safety and protect property will be of an offensive nature before the immediate threat of the fire by removing fuels adjacent to values at risk.

2. Wildland fire use objectives.

Permit wildland fire to interact with the fire dependent communities to maintain the natural variability of the ecosystem. Wildland fire use combined with prescribed fire will not exceed 4000 acres per year in the south unit and 2000 acres in the north unit. The Elk Horn unit is excluded at this time due to size, remote location, and immediate threat to private lands adjoining the unit.

3. General plan of implementing wildland fire use.

An off season workshop will be conducted prior to the start of fire season to review the fire management plan and Wildland and Prescribed Fire Management Policy Implementation Procedures Reference Guide and go through a mock fire use scenario to refresh staff roles and responsiblities. Every other year the regional prescribed fire specialist or fire management officer will be involved in this workshop to critique and assure compliance with policy.

4. Decision responsibilities.

It is the responsibility of the Chief Ranger or their delegee to prepare the Decision Criteria Checklist and Fire Situation in concert with the Resource Management Specialist and then presenting the checklist to the Park Superintendent for evaluation and signature. The decision criteria checklist will include an evaluation of time relative to visitor use in the park at the time of the fire start. See Table 4.

5. Personnel qualifications.

An Incident Commander Type 3 (ICT3) must be assigned to all wildland fire use actions and remain in immediate area (South Unit or North Unit respective of fire location) for the duration of the fire. If wildland fire use actions occur in both unit simultaneously then two (2) ICT3s will be required. Each unit will have an engine and crew assigned to that unit during the

Table 4: Decision Criteria Checklist

Decision Criteria Checklist

Decision Element	*Yes*	*No*
Is there a threat to life, property, or resources that connot be mitigated?		
Are potential effects on cultural and natural resources outside the range of acceptable effects?		
Are relative risk indicators and/or risk assessment results unacceptable to the Park Superintendent?		
Is there other proximate fire activity that limits or precludes successful management of this fire?		
Is visitor use of the area (Memorial Day to Labor Day) to be unacceptably impacted?		
Are there other Park Superintendent issues that preclude wildland fire use?		

The Decision Criteria Checklist is a process to assess whether or not the situation warrants continued wildland fire use implementation. A "Yes" response to any element on the checklist indicates that the appropriate management response should be suppression-oriented.

Recommended Response Action (check appropiate box)	NO_GO (Initial attack/suppression action)	
	GO (Other appropiate management response)	

Signature_____ Date_____

period of wildland fire use. A Prescribed Fire Behavior Analyst will be resource ordered to arrive within 24 hours of the decision to "GO' with an appropriate management response. Should a prescribed fire behavior analyst not be available within 36 hours actions will be taken to suppress the fire.

6. Monitoring required.

Fire Conditions Monitoring as described in the NPS Fire Monitoring Handbook Level 2 monitoring will be completed daily on the fire. During periods of forecast growth greater than 100 acres per day on site observations of dry bulb, relative humidity, wind speed, wind direction and cloud cover will be made one hour before activity begins to two hours after activity ceases or minimally from one hour before sunrise to two hours after sunset. Fire characteristics as described in the NPS Fire Monitoring Handbook Level 2 will be collected on site hourly when conditions and monitor safety permit. Smoke characteristics will be monitoried hourly any time a forecast wind direction places the smoke plume towards a community and/or highway.

7. Fire use preplanning.

Wildland fire use implementation will not be considered when the unit is in or forecast to be in staffing class V (Extreme) at the time of the ignition. All Fire Management Units may be combined with adjoining units in developing the Maximum Manageable Area (MMA) for a fire with the focus then being on the maximum permissable acres allowable because of wildlife forage. When Fire Management Units are combined in the decision process for Wildland Fire Implementation Plan Stage I a Stage II will then be completed.

8. Fire use implementation procedures.

All wildland fire use applications will follow the Wildland and Prescribed Fire Management Policy Implementation Procudures Reference Guide. A Wildland Fire Implementation Plan Stage I will be completed on every wildland fire. The Stage II: Short-Term Implementation Actions will be completed when two or more Fire Management Units are included in the MMA or when the Wildland Fire Relative Risk Rating chart indicates "Moderate" risk. The need assessment chart for Stage III will always be completed with the Stage II activity.

9. Documentation and project records.

Each wildland fire use documentation package will include the following:

- Individual Fire Report Form (DI-1202)
- Fire Weather Forecasts for every day
- Monitoring reports including summary of findings, monitoring schedule, and field observations
- WIMS forecasts (NFDRS indices and components)
- Situation Reports and fire updates
- Incident Maps
- Wildland Fire Implementation Plan including revalidation and certification documents,

Stages I, II and III as appropriate to complexity and duration.

- Wildland Fire Situation Analysis (if appropriate)
- Narrative Summary
- Photographs and videos will be held in the fire management files for one year and then stored with the park archives and library collection.

10. Information and interpretation actions.

During wildland fire use activities, as with prescribed Fires, the park will emphasize the positive elements of fire's past and present role in the park ecosystem through an aggressive interpretive program. Adequate and accurate public information on the goals and program rationale for fire management at Theodore Roosevelt National Park is critical to program success. The local communities of Medora, Belfield, and Watford City are to some degree affected by the monument programs. Smoke generated from wildland fire is of special concern, since public health and safety are affected. One vehicle for dissemination of information is through park interpretive media. Public education programs on fire management themes are most effective when the smoke is present. Interpretive tours and on-site talks during wildland fire will be planned on a case by case basis. Signs will be designed and built that will convey short informative messages to the public on park trails and roads.

The three actions described in Chapter XV (Public Information and Education) of this plan will provide management guidance for this program. In addition, message-specific signs that describe a wildland fire in progress will be posted at appropriate trailheads and along trail(s) through or near the fire.

11. Potential impacts with mitigation.

Paleontology affect should be low as most sites containing significant fossil resources are located in exposed bedrock. If any resources are discovered during fire management activities the ground disturbance and travel will be rerouted around the area, its exact location will be reported to the resource management specialist and a followup determination will be made by a paleonotologist as to the significance of the resource. Any significant paleonotological site should be protected from wildland fire as deemed necessary by the investigating paleontologist and recorded in the parks files.

Vegetation could have some long and short-term impacts associated with infestation of exotic non-native species into fire disturbed sites. Resource Management will monitor each burn site one year post-burn to map infestation levels and treat as appropriate with Intergrated Pest Management (IPM) techniques for control. Project funds may be used for the post-burn used for the post-burn survey.

Wildlife will expereince no adverse impacts if prescription elements are followed.

Rare, Threatened and Endangered Species will have no adverse impacts for the species identified in Appendix B at the time this plan was issued.

Fisheries will experience an immediate post-burn short-term impact from increased soil erosion runoff, and water temperature increases. No actions required as natural vegetation processes will

replace the disturbed communities.

Air Quality/Smoke Management will have immediate short-term impacts, typically of an episodic nature, which will require mitigation when critical sites are impacted. This mitigation will include fire acreage growth when winds are forecast such that the smoke plume will impact Medora. When smoke is forecast or observed to be impacting Interstate 94 the North Dakota Highway Patorl and Department of Tranportation will be notified to restrict traffic speeds commensurate with visibility and associate driving conditioins.

Visual and Noise Quality will experience immediate short-term impacts associated with wildland fire management activities and some long-term impacts resulting from drastic changes in the visual appearance of the affected area. The long-term impacts are perception and must be addressed in media and visitor contacts to promote the understanding of fires role in the ecosystem.

Archeological Resources, Historical Sites and Structures may experience long and short-term impacts with the worst case scenario of previously unrecorded resources being consumed or altered by the fire. Mitigation will be through coordination with the Midwest Archeological Center and protection of known sites. Any sites discovered during wildland fire management activities will have ground disturbance and travel rerouted around the area, its exact location will be reported to the resource management specialist and a followup determination will be made by a representative of MWAC as to the significance of the resource.

Economic impact will be short-term associated with visitors wanting to leave the fire area because of perceived or real threat to health and safety. This can be mitigated through public awareness, information dissemenation, and cooperation with the local communities for a complete understanding of the management actions that are being taken on each wildland fire.

Visitor Use will experience immediate short-term impacts from possible temporary closures, travel restrictions, and visibility impairments. Mitigation is to minimize the impacts but retain the focus of public safety. This is also the opportunity to deal with visitor concerns by increasing the number of visitor contacts through additional staffing and coordination with all cooperators to assure the information is reaching the impacted groups.

Concession Operations may experience a short-term impact from a temporary closure, travel restriction, and/or visibility impairment. Mitigation will be by information sharing and public contacts with effected user groups as to the duration and magnitude of the impact.

B. WILDLAND FIRE SUPPRESSION

1. Wildland fire prevention program

A major goal of the park fire management program is to reduce the threat and occurrence of human caused wildland fires. The Wildland Fire Prevention Analysis and Plan (Appendix I) seeks to accomplish this goal through an analysis of the risk of human caused ignitions within an area; hazards within that area; and values of resources found within that area. Prevention activities developed for specific areas include education aimed at park visitors, employees, and adjacent landowners; engineering (or the use of appropriate equipment, methods, and projects); and enforcement of regulations aimed at preventing human caused fires.

General activities identified through the analysis are summarized below. Detailed information can be found in Appendix I.

Educational activities will focus on educating park visitors and adjacent landowners about fire prevention regulations, appropriate prevention activities, and current fire danger ratings using media, signs, and verbal contact. Educating park employees on fire prevention activities they can integrate into their jobs and working cooperators to develop appropriate fire prevention messages for properties adjacent to the park.

Engineering activities will provide and maintain fire prevention devices (e.g., spark arrestor) on appropriate field equipment, monitor power lines or other potential sources of ignition on a yearly basis, and evaluate park structures for flammable construction materials and the need for hazard fuel reduction work.

Enforcement will conduct routine patrols and enforce regulations regarding campfires, smoking, etc., as appropriate.

2. Wildland fire preparedness

Preparedness includes activities conducted before a fire occurrence to ensure the ability of the park's fire management organization to initiate effective action. This action may include the evaluation of the situation and selection of appropriate suppression strategies. Preparedness activities include recruitment, training, planning, and organization, fire equipment maintenance and procurement of equipment and supplies. The objective of preparedness is to have a well-trained and equipped fire management organization in place to manage all fire situations that confront Theodore Roosevelt National Park managers.

Prior to and during the fire season, the FMO will take the following measures to ensure adequate fire preparedness:

January 1 - April 30: Update and maintain accurate employee training and qualification records. Review Cooperative Agreements with surrounding fire management agencies. Prepare plans for any management ignited prescribed burn projects for hazard fuel reduction and resource management projects. Order fire cache supplies and replacement equipment as needed. Perform annual maintenance on fire weather station. Obtain necessary physical fitness evaluations. Provide updates or changes to cooperators for local and regional mobilization plans.

May 1 - June 15: Inventory fire supplies and equipment and update list. Inspect fire cache to ensure equipment is ready. Check operation of all slip-on and portable pumps. Outfit field vehicles, all initial attack personnel, and interagency crew participants. Review fire weather station observation, recording, and weather station equipment maintenance procedures. Review established procedures for utilizing suppression and emergency preparedness accounts. Evaluate the need for basic firefighter training and conduct if necessary.

June 16 - September 30: Maintain state of readiness as identified in the Step-Up Plan (see Table 4). Operate all slip-on units and portable pumps at least weekly.

October 1 - December 31: Critique fire season. Evaluate individual performance ratings of fire personnel and correct deficiencies and recommend training as needed. Review and revise Fire Management Plan as needed.

Appendix E lists the inventories of caches, engines, and personnel.

3. Wildland fire emergency preparedness

Emergency preparedness describes actions to provide extra capability during times of extreme or unusual fire danger caused by meteorological influences on the park's natural fuel complexes. Unusual occurrences will addressed by planned use of emergency preparedness funds linked to the national Fire Danger Rating System (NFDRS) burning index and described in the step-up plan (Table 4). The park's authority to expend emergency preparedness funds is detailed in RM-18. Appropriate actions for use of emergency preparedness funds include: hiring of temporary emergency firefighters; placing existing staff on extended tours of duty; increasing or initiating special detection operations; pre-positioning additional resources in the park (engines, crews, etc.); and hiring fixed wing or rotary aircraft to accomplish necessary preparation. These are planned to ensure the capability of prompt response with adequate forces to whatever specific fire situation develops.

Authorization to expend emergency preparedness funds will be obtained from the Regional Fire Management Officer who will evaluate the justification presented and reply to the park within 24 hours.

Fire Management involves prevention, detection, preparedness, and suppression activities. The scope of activities associated with each type of fire management action varies with changes in the risk of fires igniting and with the predicted fire behavior. This Plan uses the Burning Index (BI), derived from the National Fire Danger Rating System (NFDRS) (Deeming et al. 1977), as an important measure for basing determinations regarding the scope and extent of fire management activities. Depending on the BI derived from the daily NFDRS/WIMS data, predicted fire danger is classified as low, moderate, high, very high, or extreme. A set of staffing classes which have a corresponding set of actions that the park will initiate to meet potential fire danger has been developed and is presented below as the Step-up Staffing Plan.

Burning indexes utilized in development of Theodore Roosevelt National Park's staffing classes were taken from an historical analysis of fire weather observations archived for the Medora weather station (Station Number 322501). For these observations, the low fire danger rating equates with BI's ranging from 0 to 5; moderate equates with BI's ranging from 6 to 10; high ranging from 11-20; very high ranging from 21 to 31; and extreme with BI's of 32 and greater.

Actions taken under staffing classes I - III are funded through the normal park budget. Additional actions detailed under staffing classes IV - V can be supplemented by emergency preparedness funding requested through the Regional Fire Management Officer. Burning index, associated staffing classes, and designated prevention, detection, and preparedness actions to be taken with each level are discussed in the following table:

4. Wildland fire detection

Theodore Roosevelt National Park relies on ground based fire detection and location system using confirmation of visitor reports with park personnel. Several advantage points are identified for obtaining a better view and triangulation to determine an exact location of a fire. These points are Painted Canyon, Buck Hill, Radio Tower, Badland Overlook, Wind Canyon, and Scoria Point, which are identified on a map in Appendix J.

All smoke and fire reports will be made to the park's communication center. If a dispatcher cannot be reached, than a report will be made to appropriate District Ranger. The Fire Management Officer will be notified of all fire or smoke reports as soon as possible. To enhance communication with cooperators and the public, notification of cooperators fire management offices and the local radio station can also be made.

Visitors and employees will report most fires. Any park employee to whom a fire is reported shall obtain complete information regarding the following: location; fire behavior and smoke dispersal; approximate size; and name, address, and phone number of reporting party. These personnel are instructed to take fire reports from visitors and relay the pertinent information to the dispatch office. If possible, have them remain in contact until the fire is confirmed and located. Further investigation may be necessary if park staff in the field cannot verify a reported fire. Park Rangers on road patrol and backcountry rangers and crews will look for new fire starts as part of their normal routine.

5. Appropriate management response

All suppression actions will be governed by consideration of human safety; availability of effective, appropriate equipment; and management objectives and constraints. Current Theodore Roosevelt National Park goals include aggressive initial attack and/or appropriate management response by NPS personnel of all fires occurring within the park. In general, the goals can be met most effectively and cost-efficiently by:

1. Quickly evaluating each fire occurrence within the Park for geographic location, spread potential, and amount and type of force(s) needed for effective suppression.
2. Providing rapid, aggressive initial attack for those fires to be suppressed.
3. Using appropriate management response methods and tactics designed to efficiently and effectively suppression fires while accomplishing resource management objectives so that Theodore Roosevelt National Park personnel can return to their normal duties as soon as possible.

Whenever fire is reported within Park boundaries, the following steps will be taken:

1. Report of the fire to the Theodore Roosevelt National Park Unit Headquarters and subsequently to Park Main Headquarters.
2. Dispatcher or Fire Management Officer determination of location, legal description, and land ownership at the occurrence site.
3. At least two or more Theodore Roosevelt National Park personnel will be dispatched to the location of the fire. Personnel dispatched will be qualified and equipped to undertake initial attack action.
4. Immediately upon arrival at the fire location, an initial fire size-up (report of the fire size, behavior, environmental conditions, fuels, terrain features, existence of special hazards or threats to persons or improvements, and any other factors observed which could affect fire behavior and suppression efforts etc.) will be completed. This information will be reported to Theodore Roosevelt National Park dispatch. These fire size-up observations will be immediately forwarded to the Fire Management Officer.

5. Upon determination of actual fire location and based on the information reported following the initial fire size-up, the Fire Management Officer will develop the appropriate suppression response, giving consideration to applicable resource management objectives and constraints, together with considerations of personnel safety and economics. Data gathered in the size-up will be utilized by the Fire Management Officer to determine an appropriate strategy for managing the fire.

Specific daily dispatch guidelines to be utilized by the Park Dispatcher will be developed by the Fire Management Officer at the beginning of each fire season. These specific guidelines will be continually updated, as needed, to reflect the changes in available resources, environmental conditions and predicted fire danger as reflected in the daily Burning Index (BI) value. The Park Dispatcher in determining forces for initial attack dispatch will utilize a copy of the current Daily Action Plans.

Table 5: Step-up staffing classes for Theodore Roosevelt National Park

Staffing class	Burning Index	Actions
I (Low)	0 – 5	Prevention - Prevention activities can be grouped into three categories: in-Park activities; out-of-Park activities and presentations to special groups; and coordination with other agencies. During low fire danger situations, in-Park activities will represent the major prevention activities. Visitors, upon entering the Park, will be instructed to restrict vehicle travel to constructed Park roads only; to make no open fires except in designated campgrounds and picnic areas and only in existing, constructed fire places; and to totally refrain from the use of any fireworks or explosives. Detection - Park personnel will carry out normally assigned duties. Preparedness - Park personnel will carry out normally assigned duties.
II (Moderate)	6 – 10	Prevention - In-Park actions described above under conditions of low fire danger will be sufficient for conditions of moderate fire danger. No additional out-of-Park actions or coordination with other agencies are necessary. Detection - Personnel to carry out normally assigned duties. Preparedness - A minimum of one slip-on pump unit for each of the North and South units of the Park will be prepared for operation. Fire suppression tools will be added to Park vehicles involved in field operations.
III (High)	11 – 20	Prevention - In addition to the steps to be taken during periods of low and moderate fire danger, visitors to the Park will be visually warned of the level of fire danger and restrictions will be implemented against any smoking in the Park's back country. Out-of-Park activities may include notification of local media services of increasing fire danger. Detection - Personnel to carry out normally assigned field duties with special emphasis on fire detection. At the discretion of the FMO, one or more individuals may be assigned road patrol at set times during the day. Preparedness - Fire suppression tools will be added to all Park vehicles. A minimum of one slip-on pump unit will be installed and made operable in pick-up trucks in each of the North and South Units of the Park. Each equipped vehicle will carry sufficient tools and supplies to sustain initial attack until first reinforcements can arrive on a fire.
IV (Very High)	21 – 31	Prevention - All previously mentioned prevention activities will be conducted. In addition, out-of-Park activities will be stepped-up to include notification of local and regional media services. Coordination with other agencies will increase in terms of both short and long range planning, public notification, coordinated prevention activities, and increased cooperation. Detection - Park personnel will carry on normally assigned detection duties. FMO may designate one or more personnel to part or fulltime road patrol. Patrols may be increased at the discretion of the FMO or District Rangers. Preparedness - In addition to the steps taken during periods of low and moderate fire danger, all available slip-on pumps will be placed on appropriate Park vehicles and made fire-suppression ready; i.e., in working condition, water tanks full, etc. All appropriate Park vehicles will be stocked with initial attack fire-tools and supplies. All Park personnel qualified and assigned fire suppression duties will be placed on one-hour call-up notice. Dispatch will be staffed for extended hours. Notice will be forwarded to the neighboring offices and Regional Office of the very high fire danger condition. Daily availability of additional local, regional, and national resources will be monitored.
V (Extreme)	32 +	Prevention - In addition to all steps detailed above for the low-moderate-high-very high fire danger conditions, visitors to the Park will be orally warned of the fire danger conditions, all smoking on trails and in moving vehicles will be expressly prohibited, and no open fires or stove fires will be permitted anywhere in the Park. Out-of-Park activities will be continually ongoing through Park personnel or cooperators' efforts. Daily notification of Regional Office FMO will be completed to enable public notification from that office. Cooperators will be continually updated in regard to conditions and opportunities for bans on open burning or related activities. Detection - Fire patrols will be increased in the number of personnel patrolling, in the frequency and in the extent of these patrols. Specially placed lookouts may be ordered as the conditions warrant, at the discretion of the FMO. Preparedness - In addition to preparedness steps taken for low-moderate-high-very high fire danger conditions, The Regional Office will be kept informed of current conditions. The locations of all work crews will be monitored and all fire suppression personnel will be kept on a 15 minute call-up notice. Daily situation reports will reflect the fire danger situation. Neighboring FMOs, cooperators, and other organizations will be updated periodically regarding the situation. Consideration will be given to prepositioning additional local or regional suppression resources in he park to supplement suppressio capabilities. Fire information will be provided daily to visitors, cooperators, Regional Office, and local media. Park Fire Management Committee will be on standby and Superintendent or Acting will be available.

The Fire Management Officer or Park Dispatcher will monitor the Burning Index (BI) daily. The South Unit District Ranger is responsible for the daily collection of fire weather observations from April 15 to September 30, and to ensure that the fire weather station equipment is operable during those times. Whenever a fire is reported on Theodore Roosevelt National Park lands, forces and equipment dispatched for initial attack will be based on daily Burning Index, fire location, existing and predicted environmental conditions and any other factors pertinent to making sound fire management decisions.

All wildfires will receive an immediate and aggressive initial attack response. The Fire Management Officer will assign an Incident Commander and determine the appropriate suppression strategy to be utilized. The Fire Management Officer will keep the Chief Ranger and Superintendent updated of the fire situation. The Fire Management Officer will coordinate all suppression activity within the park and may request that district personnel initial attack a fire. The goal in initial attack actions is to limit damage to threatened values, while minimizing the area burned and preventing escape of the fire.

An Incident Commander Type IV (ICT4) will be responsible for all actions taken on the fire. The ICT4 will inform the Fire Management Officer of the fire situation as soon as possible after arrival in the scene. If the fire behavior and complexity continue to increase, the ICT4 may be replaced by an ICT3 along with additional support personnel and equipment. The Fire Management Officer is responsible for the selection of a replacement Incident Commander. If the fire threatens to exceed all initial attack capabilities, the Fire Management Committee will be convened and the fire will become an extended attack action.

Extended attack actions occur when fires have not been contained or controlled by initial attack forces. Extended attack continues until either the transition to a higher level incident management team is completed or the fire has been contained or controlled. The Wildland Fire Situation Analysis (WFSA) must be completed by park staff when a fire escapes initial attack, and if the action escalates to incident management team levels, the incoming team will be briefed by the Superintendent (Agency Administrator's Briefing) and current Incident Commander. The team will be given a written delegation of authority and will have an Agency Administrator's Representative assigned as a staff member to the incoming Incident Commander. The delegation of authority will provide the Agency Administrator's priorities, constraints, and other guidelines prerequisite to effective suppression of the fire. When the team has accomplished its assigned tasks, the fire will be transferred back to the park. A local Incident Commander will be assigned, and a debriefing will be held by the departing team to provide for an orderly transition of command. The Superintendent will conduct a closeout session that will include a performance evaluation of the departing team. The transition Incident Commander will assume command at the agreed upon time. The departing team will then be demobilized.

Occasions in which two or more fires are ignited can be generally associated with days when high to extreme fire intensity condition exists. Suppression actions taken on multiple fires can quickly deplete Theodore Roosevelt National Park's fire suppression resources; therefore, initial attack dispatching for multiple fire starts will be prioritized. If personnel are available, at least two individuals will be dispatched to each fire reported on days experiencing multiple starts. However, if sufficient personnel are not immediately available, the priority order will govern which fires in which zones will receive the first available personnel resources.

Priority of initial attack on days of multiple fire starts will be:

1. Fires threatening life or property within Park boundaries;
2. Fires starting within the Park which are within one mile of Park boundaries and which have a likely potential to burn across the boundary and onto non-Park lands;
3. Fires starting outside the Park which are within one mile of Park boundaries and which are on lands administered by the USDA Forest Service. Initial attack on fires starting on such lands is allowed pursuant to a Cooperative Fire Control Protection Agreement executed by and between the U.S. Forest Service and the National Park Service.

Accident prevention in fighting fire is extremely important. Firefighting is hazardous work, generally performed in unfamiliar surroundings and under emergency conditions. Special hazards are almost always present and danger from fatigue conditions can give only subtle warnings. It is the responsibility of every incident commander to ensure that safety instructions are given and followed during all suppression actions. It is the responsibility of every employee to perform only jobs that they are qualified for, to wear personal protective equipment at all times, and to ensure that adequate water, food, and rest are provided to firefighters so that high standards of safety can be maintained.

6. Wildland fire monitoring

Wildland fires will be monitored at levels 1 and 2 with observations entered into the park's monitoring database. In the event that long-term fire effects plots are burned in a wildland fire they will then be read, by the NGPA Fire Effects crew, according to the schedule of plot rereads following a burn treatment. Level 1 and 2 monitoring observations will be filed with the final fire package and a copy placed with the records for the fire management unit that was burned.

7. Wildland fire documentation, reports, and records

The following reports, records, and documentation are required as part of the Theodore Roosevelt National Park Fire Management Program.

Each wildland fire suppression fire documentation package will include the following:

- Individual Fire Report Form (DI-1202)
- Fire Weather Observations
- WIMS forecasts (NFDRS indices and components)
- Situation Reports and fire updates
- Incident Maps
- Wildland Fire Fire Situation Analysis (if appropriate)
- Narrative Summary (if appropriate)

1. Annual Reports:

The Fire Management Officer is responsible for preparation of any annual reports dealing with fire activity. Such reports will be submitted to the Chief Ranger for approval and will remain on file in the Fire Management or Resource Management Office.

X. PRESCRIBED FIRE PROGRAM

Prescribed fires are utilized as a tool to achieve management goals. Prescribed fire will reflect and support resource management objectives to modify some vegetative conditions, maintain others and simulate natural fire where ignitions have not occurred or management action was required which restricted the scope of wildland fire use in those areas where it is applicable. Prescribed fire will also be used to develop defensible space along the park boundary. Prescribed fire may also be used in conjunction with mechanical hazard fuel reduction in order to remove fuels that accumulate from fuel reduction operations. Research burning may also take place when it is determined necessary for accomplishment of research project objectives.

Prescribed fires are authorized in Theodore Roosevelt National Park wilderness areas. These fires may be used where determined by resource management and fire management personnel that prescribed fires are necessary as a substitute for naturally occurring fires. To restore fuel loading and vegetative composition to the natural conditions existing prior to the fire exclusion policy and practice followed in the Park through recent years.

Actions included in the prescribed burn mobilization program include: selection and prioritization of projects to be carried out during the year, prescribed burn plans, prescription preparation, documentation and reporting, and burn critiques. Measures to ensure successful implementation of prescribed burns will include burn plans prepared by a qualified Prescribed Fire Manager (RXFM) or a Prescribed Fire Burn Boss (RXB1 or RXB2). The burn plan will reviewed by a qualified RXFM, RXB1, or RXB2 to verify the proposal in regard to fire behavior, fuel conditions, operational assignments, contingency plans, and safety; prescribed burns. A qualified Prescribed Fire Burn Boss will conduct prescribed fires with qualified support personnel present to accomplish objectives. Support personnel will monitor fire behavior and fire effects, control hot spots and fires outside control lines, support ignition needs, and complete initial attack on escape fires. All prescribed fire plans will be approved and signed by the Park Superintendent. Outside support in the form of NPS prescribed fire management teams or interagency incident management teams may be requested for support in planning, implementation, or supplemental management stages.

A. ANNUAL PRESCRIBED FIRE PLANNING

Prescribed burning may be used throughout Theodore Roosevelt National Park to accomplish resource management objectives as outlined in this plan. The Fire Management Officer will prepare the annual prescribed fire plan with assistance from the Northern Great Plain Area FMO at Wind Cave National Park and the Midwest Regional FMO in Omaha, Nebraska. The program will detail all burn projects proposed, including burn plans, for the coming year and will specify objectives of each burn. The program plan will be reviewed by the Chief Ranger and then submitted to the Superintendent for approval.

The Fire Management Officer will recommend a Prescribed Fire Burn Boss for each specific planned burn. The Burn Boss will conduct a field reconnaissance of proposed burn locations with park staff to discuss objectives and special concerns and to gather all necessary information to develop the Burn Plan. After completion of field reconnaissance, a prescribed fire Burn Plan will be developed.

The ten year burn schedule is included in appendix H.

B. PRESCRIBED FIRE BURN PLAN

The prescribed fire burn plan is a site specific action plan which describes the purpose, objectives, prescription, operational procedures, go-no go check list, organization chart, weather forecasts, contingency actions, monitoring actions, and safety concerns involved in burn preparation and implementation. The treatment area, objectives, constraints, and alternatives will be clearly outlined, and no burn will be ignited unless all prescriptions of the plan are met. The factors considered in all burn plans are described in RM-18.

C. PRESCRIBED FIRE OBJECTIVES

The overall fire management program objectives in Theodore Roosevelt National Park are to support the primary management statement of protecting and preserving the natural scene and cultural landscape encompassed by Theodore Roosevelt National Park. To promote the overall fire management program, park management may use management ignited prescribed fires to create fuel breaks, reduce unnatural fuel loading, and reduce fire hazards around structures inside and adjacent to the park and along boundary areas.

Prescribed burning may be conducted anytime of the year to achieve a desired fuels modification. It is recognized that "out of season" burning will be necessary to prepare some areas for "in season" burning and allow for wildland fire use in other areas. In any case environmental and fire characteristics will be applied to achieve the desired outcome specified in the burn plan.

D. PRESCRIBED FIRE OPERATIONS

Prescribed burns shall be conducted under the direction and control of a Prescribed Fire Burn Boss designated by the Theodore Roosevelt National Park FMO. The project Burn Boss will be certified for that position according to standards currently utilized by the National Wildfire Coordination Group. All positions required to conduct the burn will be filled with qualified personnel. All personnel listed in the plan must be available for the duration of the burn or it will be postponed.

Operational guidelines, allowable ranges of fire behavior and allowable ranges in weather conditions shall be specified in the prescribed burn plan drafted for each prescribed burn project. Each prescribed burn project shall include monitoring and evaluation as part of the project. This monitoring and evaluation must be a continuous activity during the actual burn operation. Its purpose is to ensure that the ongoing fire behavior and weather conditions remain within the prescribed burn plan parameters. The individual responsible for the ongoing fire monitoring/evaluation shall keep the project Burn Boss informed of any and all changes which might result in the fire exceeding the prescribed burn plan parameters.

Weather fuel loading and fuel moisture conditions must be monitored closely in planned burn units to determine when the prescription criteria are met. Weather data will be gathered for a period of 30 days prior to burn implementation to enable calculations of fuel moistures, energy release component, ignition component, and burning index can be completed. Fuel moisture samples of dead fine fuels, fine dead woody fuels (if appropriate), and live fuels will be collected, weighed, oven dried, and percent moisture contents calculated to assist in determining when conditions are consistent with the prepared prescription.

When all prescription criteria are within the desired ranges, the Prescribed Fire Burn Boss will select an ignition date/dates based on current and predicted weather forecasts and available resources. The Resource Management Specialist will identify the windows of opportunity and work with the Prescribed Fire Burn Boss to assure the burn in accomplished the year it is scheduled. All personnel and equipment will be assembled on day prior to the planned ignition date. A thorough briefing will be conducted stressing personnel assignments, resource placements, contingency actions, and safety concerns and measures to mitigate these concerns. A current spot weather forecast will be obtained on the day of ignition, and all prescription elements will be rechecked to determine if all parameters are within the desired ranges. If all prescription criteria meet the planned ranges, a test fire will be ignited to determine on-site fire behavior conditions. If these conditions appear satisfactory and consistent with the plan, the burn will continue. If the test burn indicates the fire behavior to be outside the desired ranges, the test fire will be suppressed and the main burn will be postponed until conditions are more favorable.

In the event a prescribed fire escapes the Incident Commander Type III (ICT3) will assume control of the fire and take appropriate suppression actions as discussed in the preburn briefing and identified in the contingency plan. The Chief Ranger and Fire Management Officer will be notified immediately of the current fire status. Once a wildfire declaration has been made, the project cannot return to a prescribed fire designation. For all escaped prescribed fires converted to wildfire status, a Wildland Fire Situation Analysis will be prepared and appropriate resource orders will be placed.

E. PRESCRIBED FIRE MONITORING

Prescribed fire can be successfully used to return fire as an ecosystem process and to transition plant communities toward more desirable compositions. Prescribed burning will be used at Theodore Roosevelt National Park to meet the resource management objectives listed in Section IV of this fire management plan. Monitoring is used to establish quantifiable objectives and then observe and measure the key indicators to evalute whether these objectives were met. For example, the park is going to restore fuel loads and plant community structure and composition. To measure our accomplishment we will need to know what change occurs to the fuel load over time and what species are present and what portion of the community they occupy.

The park will use the protocols in the National Park Service Fire Monitoring Handbook (1992) to examine short and long term fire effects. The Northern Great Plains Fire Monitor based at Wind Cave NP will be installing, monitoring and rereading monitoring plots for the park. Monitoring type descriptions will be written in cooperation with the Resource Management Specialist and included as part of the Fire Monitoring Plan included as Appendix F. Plot installations will be based on burn priorities and reaching a statistically valid sample size within five years for the priority monitoring types.

F. PRESCRIBED FIRE DOCUMENTATION AND REPORTING

All prescribed burn documentation will be completed by the Prescribed Fire Burn Boss and/or the Fire Management Officer. Fire monitors will collect all predetermined information and complete all necessary forms prior to, during, and after the burn. All records will be archived in the park's fire records and stored in the Fire Management or Resource Management Office for

future use and reference.

The Prescribed Fire Burn Boss will prepare a final report on the burn for the Chief Ranger. Information will include a narrative of the burn operation, a determination of whether or not the objectives were accomplished, weather and fire behavior data, a map of the burn area, photographs of the burn, number of hours worked, and final cost of the project.

Each prescribed fire documentation package will include the following:

- Documentation of all management decisions concerning the project
- Environmental Assessment
- Prescribed Burn Plan
- On-site Weather Observations
- Project Maps
- Open Burning Permits
- Spot Weather Forecasts
- Narrative Summary Analyzing Costs, Objectives, etc.
- Individual Fire Report Form (DI-1202)

G. PRESCRIBED FIRE CRITIQUE

The Fire Management Committee will critique each management ignited prescribed fire. A report detailing the actual burn will accompany any recommendations or changes to the program identified. The report will be submitted to the Superintendent and Regional Fire Management Officer for review. A post-season critique of the fire management program, including the management ignited prescribed fire program, will be held each year by the Fire Management Committee.

XI. AIR QUALITY/SMOKE MANAGEMENT

National Park Service fire management activities which result in the discharge of air pollutants, (e.g., smoke, carbon monoxide, and other pollutants from fires) are subject to, and must comply with, all applicable federal, state, interstate, and local air pollution control requirements. These requirements are specified by Section 118 of the Clean Air Act, as amended (42 USO 7418). It is not the primary intent of the Clean Air Act to manage the impacts from natural sources of impairment (i.e., wildland fire use for resource objectives and wildfires). Smoke from these fires is an inevitable by-product. Fires are not considered point sources of emissions, but tend to be spatially distributed singular events, and temporary impacts to visibility and visitor enjoyment must be recognized, expected, and managed. This may include temporary closures or warnings during the progress of management approved prescribed fires. Pertinent areas that will demand attention include the Interstate Highway travel corridor along the south boundary of the south unit and the town of Medora, North Dakota.

Ambient air quality and meteorological monitoring are conducted at the park including gaseous pollutants (sulfur dioxide, and ozone). Meteorological parameters monitored include wind speed and direction, temperature, relative humidity, solar radiation, and precipitation.

Theodore Roosevelt National Park will comply with Air Quality-Smoke Management Guidelines listed in RM-18. The fire management program will be in compliance with interstate, state, and local air pollution control regulations, as required by the Clean Air Act.

Theodore Roosevelt National Park Fire Management Officer will contact local and state authorities to ascertain all procedures prerequisite to compliance with regulations or permits, will obtain any necessary permits or ensure in writing that regulatory requirements will be met. A copy of the Fire Management Plan will be forwarded to the appropriate authorities, if necessary. Personnel from permitting agency will be allowed on-site during prescribed fires and wildland fires used for resource objectives for observational purposes if necessary for their agency needs.

Prescribed burning will be conducted only on days that are acceptable to the permitting agency. In the case of wildland fire use for resource objectives, local authorities will be contacted and kept informed of current status of fire(s). Any monitoring activities will be coordinated with the permitting agency and information collected will be made available to them as requested.

All burn plans will have clear objectives and will monitor impacts of smoke on the human and natural environments. Current and predicted weather forecasts will be utilized along with test fires to determine smoke dispersal.

Prescribed burns ignited in proximity to structures will be ignited only after careful considerations are given to levels of visitation and impacts upon visitation and local residents.

Considerations useful in managing smoke from longer duration fires include:

Develop contingency plans to limit smoke production if the need arises (may involve suppression on portions of the line).

Establish and maintain close communication with state and local air regulatory agencies regarding status of such fires.

XII. FIRE RESEARCH

Research may be performed to support the fire management program by providing information that is useful or necessary in decision making. Currently, principal research needs in Theodore Roosevelt National Park relate to:

1. Assessing the role of fire as a natural process:
    - fire history
2. Assessing the effects of fire:
    - effects on individual plants
    - effects on plant communities
    - effects on prairie dog towns
    - effects on ungulates
    - effects on air
    - correlation of fire effects with fire behavior
3. Assessing suitable fire prescriptions for prescribed burning:

- treatment objectives
- fire behavior parameters
- fire types (heading, backing, flank, etc.)
- season of year

At this time, however, no specific fire research projects have been identified for Theodore Roosevelt National Park. Specific projects or study areas will be defined and they will be discussed in revisions to this plan.

XIII. MONITORING

Monitoring of fires involves the systematic collection and recording of fuels, topography, weather, air quality, and fire behavior data. Monitoring will follow the protocols outlined in the National Park Service Fire Monitoring Handbook. This monitoring will be done by park personnel and supported by the Northern Great Plain Area Fire Effects crew, duty stationed at Wind Cave National Park. Monitoring is key to successful completion of prescribed fires by evaluating accomplishment of the established measurable objectives. Plots, photo points, and vegetation transects will be included as part of the monitoring program to document burn results. Monitoring data will be archived and reviewed for future refinement of prescriptions and to determine program success.

Both short and long term monitoring applicable to a specific burn area will be stated in the prescribed burn plan. Data collected from short term monitoring will be attached to the fire report along with any narrative done by the monitors.

XIV. SAFETY

A. PUBLIC SAFETY

Because wildfires are dynamic and can be hazardous, they must be given very high priority during certain critical conditions. Employees responsible for and involved in any wildland fire management activity must always consider the safety of human life above all other values. Assuring visitor safety takes priority over other activities at all times; being able to provide a consistent and accurate evaluation of fire behavior is the basis for contingency plans, contacts, and briefings that ensure public and personnel safety. The following are Theodore Roosevelt National Park's public and employee safety considerations:

- Limited opportunities to find safety zones for escaping from a fast moving wildfire on the park trail and road system. Park visitors will likely not be able to recognize a safe area so emphasis will be to sweep potentially effected areas as quickly as possible.
- Certain areas will be closed to use when the risks to visitors is too high or there are not enough personnel to handle the situation any other way.
- Information concerning fire danger will be disseminated through the Entrance Station and Visitor Center contacts, trailhead and Bulletin Board signing and backcountry permit issuing.
- Any time human life may be endangered, all necessary means will be taken to warn or evacuate visitors and neighboring landowners and other users.

- Smoke on roadways may create a vehicle visibility hazard, from a fire burning nearby or at night under light wind conditions. It could also occur on roadways outside the park.

The Fire Management Officer will inform the Chief Ranger and the Superintendent of all potentially hazardous fires in the park. The Chief Ranger and the Superintendent will then coordinate public and interagency notifications and implement suppression actions to mitigate the fire's impact within and outside the park. The extent of public notice will depend on the specific fire situation. The following actions should be considered:

- When fire effects travel along any roads in Theodore Roosevelt National Park, patrol rangers will be dispatched to stop or control traffic. The State Patrol and Sheriffs office will be informed and assistance requested as needed.
- When evacuation of an area is recommended, the Superintendent and the Chief Ranger will be informed immediately.
- When heavy smoke impacts the campgrounds, park personnel will be sent to inform people of the situation and assure them of the safety of remaining where they are.
- When fire is projected to rapidly spread and threaten backcountry sites or trails where campers or hikers are known or strongly suspected to be, a park employee will be dispatched to the area by best possible means to notify visitors of the danger. Such individuals will be knowledgeable of fire behavior and fire safety principles to be able to stay with visitors as long as needed to assist them to safety.
- As part of initial and continuing size-up, the incident commander will determine the proximity to the fire of any visitors or other land users, inform them of potential hazards, and aid in evacuation if needed. If life is threatened, and the parties do not cooperate, law enforcement assistance may be requested through dispatch.
- When needed, information on location, behavior, expected dangers, areas to avoid, and other precautions will be posted on park bulletin boards, at the entrance station and local post offices and businesses.
- When the risks from a wildland fire are high, precautionary signs will be posted on trails leading into the fire area. Trails, campsites, and day use sites will be closed if deemed necessary by the Fire Management Committee, and approved by the Superintendent. The Prescribed Fire Burn Boss will ensure that closure and/or informational signs on prescribed burns are properly posted.

A Status Summary (ICS 209) for all fires burning over 24 hours will be provided to park information officer. Information on the fire activity will be broadcast on the park radio as part of a morning report. The status summary will be distributed to all park divisions on a daily basis.

Smoke plume trajectories from large fires will be plotted using computer programs, weather information and onsite monitoring. Expected impacts on off-park communities and roadways will be evaluated and information shared with the respective agencies. If needed, vehicular or air patrols will be used to monitor smoke plumes.

The Fire Information Officer will notify and make media releases o local TV and newspapers, and through electronic mail If needed, a park information "hot line" will be installed, and the Fire Information Officer will be updated whenever new fire information is available. Additional

notification will be made to cooperating agencies, as appropriate, about park fires through the Fire Information Officer

B. FIREFIGHTER SAFETY

Ensuring and maintaining firefighter safety is of the utmost importance and takes precedence over rapid suppression targets or goals. The South Canyon Fire in Colorado in 1994 serves to reinforce the need to ensure and maintain firefighter safety. On all actions on wildland fires in Theodore Roosevelt National Park, the 10 Standard Firefighting Orders and 18 Situations That Shout Watch out will represent Park Policy and will be strictly adhered to. Failure to maintain communications and to obtain fire behavior predictions and weather forecasts constitute grounds to suppression forces to withdraw from firelines and re-establish tactics. It will be the responsibility of the Fire Safety Officer or the Park Safety Officer to ensure that all safety measures are implemented and anyone failing to adhere to fireline safety will be removed from the fire.

The incident commander/burn boss will ensure that:

- All firefighters will wear proper personal protective equipment.
- All firefighters have completed basic wildland fire training S-130/190.
- Communications is possible with all people involved with the fire.
- Fire weather will be taken at minimum every hour during on going fires.
- Any significant change in fire behavior or weather will be communicated immediately to everyone on the fireline.

XV. PUBLIC INFORMATION AND EDUCATION

Good public relations can engender public support and is prerequisite to a successful fire management program. Failure to provide good public information can be responsible for collapse of the program. On the prairie, fires can spread very quickly and visibly, necessitating that timely, accurate information concerning both management and wildfires be provided to park visitors and adjacent land owners.

The Superintendent's Office will issue all press releases regarding fire danger levels, closures, special precautions, and prescribed fires to newspapers, radio and television stations. The Chief Naturalist, when necessary, will function as Information Officer, and provide for effective communication between park personnel, the public, and the media. The fire management program will be incorporated into the park's overall interpretive program and explained when possible and appropriate. At higher staffing classes and/or during periods of high fire activity, an Information Officer will be ordered from outside the park.

Prior to prescribed fires, the Chief Ranger's Office will inform project personnel on details of the burn. Landowners or agencies located near the prescribed burn will be contacted and the Superintendent will initiate a press release. On the day of the burn, all staff should be notified as to the burn's location and any special safety warnings to pass on to visitors, i.e., caution to watch for smoke on the road, or advice not to hike in the area. Key visitor use or access sites where visitors could likely observe or approach the burn area should have temporary signs indicating a

management fire is occurring. This provides for public safety and education, and decreases the likelihood that visitors will report or attempt to put out a wildland fire use or prescribed fire accomplishing resource objectives.

Post-season activities will include those tasks necessary to adequately assess how the local public and cooperators received the efforts. This will be accomplished through coordination meetings with neighbors, contacts with local groups, media, and the State Air Pollution Control Bureau. The purpose of this feedback is to revise plans, procedures and educational efforts regarding overall fire management at Theodore Roosevelt National Park.

The Chief Ranger's Office will cooperate with the Chief of Interpretation on the following programs:

- Development of a brief interpretive handout which will discuss the basic objectives of both using Management Ignited Prescribed Fire and Prescribed
- Develop an outline and materials for an evening program that contains a prevention message and describes the fire program.
- Maintaining a file of public comments received concerning prescribed burns, and useing them to improve communication efforts targeted at increasing support for the fire management program.

Reference: The Step-Up staffing plan for further timing of appropriate responses. Fire Danger, Fire Activity, and/or public and media scrutiny RM-18

XVI. PROTECTION OF SENSITIVE RESOURCES

A. Summary of resources requiring treatment or special protection.

Theodore Roosevelt National Park preserves a variety of cultural resources that complement the natural resources and contribute to the significance of the park. Originally, all of Theodore Roosevelt National Memorial Park was listed on the National Register of Historic Places. In 1982, the park was removed from the register, an action that reflected the shift in emphasis from historic to natural area management, and also a change in the park's name. The North Dakota State Historical Presentation Office has expressed an interest in wood materials and other artifacts from early occupation and area. Mitigation of this will require some pre and post burn inventories of selected areas prior to conducting prescribed fire operations.

B. Description of natural resources and features requiring protection.

The cultural resources of Theodore Roosevelt National Park and the associated management problems are more fully described in the park's Cultural Resource Management Plan. The Fire Management Officer will work closely with the Park Resources Specialist or Chief Interpreter to identify all historic, ethnographic, archeological, cultural landscapes, and collections that need special attention to provide protection from fire. Maps of these sites are located in the Resource Management Specialist's Office. Identified features include Cottonwood Campground, Peaceful Valley Ranch, Radio Tower Site, Painted Canyon Visitor Center and the Wildlife Handling Facility. At present only the Cottonwood Campground and Peaceful Valley Ranch sites require protection which is described in the preattack plan in Appendix G. All other sites will be

addressed in site specific burn plans or as required by the Resource Management Specialist.

When making decisions regarding management actions for wildfire, incident commanders will consider potential impacts to resources including cultural resources prior to implementation. Cultural resource protection actions will be utilized when necessary and or safely possible. A variety of fire management techniques including black lining, foam and or water application, and mechanical fuel removal may be utilized to protect sensitive areas.

As a general rule, vehicle traffic is limited to established roads in the park and is strictly regulated in wilderness areas. Soil disturbance is not encouraged and will not likely occur under most fire management events.

XVII. FIRE CRITIQUES AND ANNUAL PLAN REVIEW

This Fire Management Plan will be reviewed and evaluated annually to determine if the objectives have been met and to make necessary revisions. The Park Fire Management Committee will conduct this evaluation. Any problems associated with the guidelines or standards set for fire management, cost effectiveness and suppression will be addressed through revision or addendum and made a part of this plan. The Superintendent and Regional Director will approve all revisions, with concurrence of the Regional Director - .

Fire reviews will be conducted in accordance with procedures found in RM-18. Each review will be documented and filed with the final fire documentation. The Fire Management Officer will retain a file copy.

The Fire Management Committee and cooperators will critique all suppression actions on fires having extended attack and multi-period activities, if appropriate. If the need exists, the Regional Fire Management Officer can be included in such reviews and a national review by the National Fire Management Program Center can be requested.

All entrapment and fire shelter deployments will be reviewed in accordance with NWCG Wildland Fire Entrapment/Fatality Initial Report and Entrapment Investigation Element Matrix.

Reference Wildlland Fire Management – Reference Manual – 18, Chapter 13.

XVIII. CONSULTATION AND COORDINATION

The primary duty of the park staff is to carry out the fire management program with emphasis on human safety and prevention of damage to private and public buildings and facilities. Careful planning, good public information and a well-trained staff can provide for a safe and effective fire program.

The Fire Management Officer is responsible for coordination and consultation with cooperators regarding fire management activities. This includes involvement with the Midwest Support Office FMO; Northern Rockies Coordinating Group; Northern Rockies Training Center; Billings Zone Coordination Center; Miles City Dispatch Center; North Dakota Interagency Fire Council, Northern Great Plains FMO; Forest Service, Little Missouri National Grasslands; North Dakota State Forest Service; and local cooperators.

The following staff participated in the planning and preparation of this fire management plan:

Noel R. Poe, Superintendent

Jay R. Liggett, former Chief Ranger

Gary Kiramidjian, Chief Ranger

Roger J. Andrascik, former Resource Management Specialist

Russ Runge, Resource Management Specialist

Keith Butler, Facility Manager

Bruce Kaye, Chief Naturalist

Steve Hager, GIS Specialist

Paula Anderson, Biological Technician

Richard Bahr, Midwest Region Prescribed Fire Specialist

XIX. Appendices

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B. Definitions and Abbreviations

Appropriate Management Response – Specific actions taken in response to a wildland fire to implement protection and fire use objectives.

Burning Index – A number related to the contribution that fire behavior makes to the amount or effort needed to contain a fire in a specified fuel type within a rating area.

Confine – Confinement is the strategy employed in appropiate management responses wher a fire perimeter is managed by a combination of direct and indirect actions and use of natural topographic features, fuel, and weather factors.

Detection – The act or system of discovering and locating fires.

Dispatcher – A person employed who receives reports of discovery and status of fires, confirms their locations, takes action promptly to provide people and equipment likely to be needed for appropriate management, and sends them to the proper place.

Emergency – Any incident which requires the response of a fire protection organization's operations units and/or support units.

Fire Management Plan – A strategic plan that defines a program to manage wildalnd and prescribed fires and documents the Fire Management Program in the the approved land use plan.

Fire Management Unit – Any land management area definable by objectives, topographic features, access, values-to-be-protected, political boundaries, fuel types, or major fire regimes, etc., that set it apart from management characteristics of an adjacent unit.

Fire Management Area – A subgeographic area within an Fire Management Unit that represents a predefined ultimate acceptable management area for a fire managed for resource benefits.

Fire Occurrence – Number of fires per unit time in a specified area.

Fire Prevention – All activities concerned with minimizing the incidence of wildfires.

Fire Regime – Periodicity and apttern of naturally-occurring fires in a particular area or vegetative type, described in terms of frequency, biological severity, and areal extent.

Hazard Fuel Reduction – Any treatment of a fuel complex defined by kind, arrangement, volume, condition, and location that rediuces a special threat of ignition or of suppression difficulty.

Incident – An occurrence or event, either human-caused or natural phenomena, that requires action by emergency service personnel to prevent or minimize loss of life or damage to property and/or natural resources.

Incident Commander – Individual resonsible for the management of all incident operations.

Initial Attach – An aggressive suppression action consistent with firefighter and public safety and values to be protected.

National Fire Danger Rating System (NFDRS) – A multiple index scheme designed to provide

fire control and land management personnel with a systematic means of assessing various aspects of fire danger on a day-to-day basis.

Natural Ignition – Any fire of natural origin (e.g., lightning, spontaneous combustion, volcanic activity).

Preparedness – Activities that lead to a safe, efficient, and cost-effective fire management program in support of land and resource management objectives through appropriate planning and coordination.

Prescribed Fire – Any fire ignited by management actions to meet specific objectives.

Prescribed Fire Plan – A plan required for each fire application ignited by managers.

Prescription – Measurable criteria that define conditions under which a prescribed fire may be ignited, guide selection of appropriate management response, and indicate other required actions.

Resource Order – A form used by dispatchers, service personnel, and logistics coordinators to document the rquest, ordering or release of resources, and the tracking of those resources on an incident.

Weather Information Management System (WIMS) – A comprehensive system that helps to manage weather information used in wildland fire program management.

Wildfire – An unwanted wildland fire.

Wildland Fire – Any non-structure fire, other than prescribed fire, that occurs in the wildland.

Wildland Fire Implementation Plan (WFIP) – A progressively developed assessment and opeational management plan that documents tha analysis and selection of strategies and describes the appropriate management response for a wildland fire being managed for resource benefits.

Wildland Fire Management Program – The full range of activites and functions necessary for palnning, preparedness, emergency suppression operations, and emergency rehabilitation of wildland fires, and prescribed fire operations, including nonactive fuels management to reduce risks to public safety and to restore and sustain ecosystem health.

Wildland Fire Situation Analysis (WFSA) – A decisionmaking process that evaluates alternative management strategies against selected safety, environmental, social, economic, political, and resource management objectives.

Wildland Fire Suppression – An appropriate management response to wildland fire that results in curtailment of fire spread and eliminates all identified threats from the particular fire.

Wildland Fire Use – The management of naturally ignited wildland fires to accomplish specific prestated resource management objectives in predefined geographic areas outlined in Fire Management Plans.

C. Species Lists

D. NEPA and NHPA compliance

E. Unit Specific Supplemental Information Requiring Annual Revision

1. Fire call-up list

2. Preparedness Inventory

3. Cooperative agreements

1. Agreement on Fire Management Operations for North Dakota Parks and their relationships with the Black Hills FMO and Midwest Region FMO, dated October 13, 1998.

2. Cooperative Agreement for the North Dakota Fire Council, dated November 20, 1998.

3. Cooperative Fire Control Protection Agreement between Little Missouri National Grasslands of North Dakota (USDA Forest Service), concerning suppression of fires occurring in or threatening National Park Service and USDA Forest Service lands, dated July 1973, and expiring April 1, 1996; and

4. Cooperative Agreement for Structural Fire Protection between the National Park Service, the State Historical Society of North Dakota, and the Town of Medora, North Dakota, dated December 1, 1993.

5. Cooperative Agreement between Theodora Roosevelt National Park North Unit and McKenzie County Rural Fire District, dated February 10, 1993.

6. Memorandum of Agreement for Structural Fire Protection between National Park Service and Billings County Rural Fire Department, dated March 31, 1995.

4. Organization

5. Minimum Organizational Requirements

North Unit

Position	Need	Have	In Training
Incident Commander Type IV or Single Resource Boss Crew/Engine	1	1	0
Fire Fighter Type II	2	1 Permanent 2 Seasonal	0

South Unit

Position	Need	Have	In Training
Incident Commander Type III or RX Burn Boss Level II	1	1	0*
Incident Commander Type IV or Single Resource Boss Crew/Engine or Ignition Specialist	2	1	1
Fire Fighter Type II	6	6 Seasonal	

* Someone will be identified and working in the Trainee Position for Incident Commander Type III and RX Burn Boss Level II at all times.

6. Standard Operating Procedures

MINIMUM IMPACT FIRE SUPPRESSION AND REHABILITATION PROCEDURES

Fire suppression is taking on increased emphasis in accomplishing protection objectives while minimizing environmental degradation. It is becoming that fire management activities be planned to accomplish objectives in the most ecologically sound, economically efficient, and safe manners as possible. Actual fire conditions and sound judgement will dictate specific actions taken during any suppression action. However, consideration of what is specifically necessary to halt fire spread and control it within firelines should include as standard procedure, incorporation of minimum impact suppression tactics (MIST) into all action plans and strategic decisions. Minimum impact suppression tactics will be used and included into Agency Administrator's Briefing and Delegations of Authorities to incoming Incident Management Teams and all other out-of-park resources. Suppression tactics will stress the use of methods and equipment commensurate with threats to life and property, suppression needs, and the chosen strategy of control, contain, and confine, or a combination which will least impact the landscape or disturb park resources. Development of specific tactics in Theodore Roosevelt National Park shall include consideration of the following items:

Safety:

- Safety is of utmost importance.
- Constantly review Watch Out and Fire Orders.
- Use particular caution when working with burning snags, burning or partially burned trees, dead trees, unburned fuel situations between personnel and fire.
- Be constantly aware of surroundings, expected fire behavior, and possible future fire perimeter.

Fireline Construction:

- Select procedures, tools, and equipment that least impact the environment.
- Give serious condition to water use as opposed to surface disturbance.
- In light fuels, consider cold trailing line; allowing fuels to burn out and use swatters or equivalent; constantly recheck cold-trailed line; use minimum width and depth of constructed fireline.
- In medium to heavy fuels, consider using natural barriers as much as possible, cold-trailing fireline; cooling with dirt and water; using minimum width and depth constructed firelines; minimize felling and bucking of woody materials; building line around logs.
- In aerial fuels, brush, burned trees, and snags, consider limbing only enough fuel adjacent to fireline to prevent additional fire spread; removing or limbing those fuels inside firelines which if ignited would have potential to spread fire outside the fireline; cutting brush and small trees flush with ground.
- In trees, burned trees, and snags, consider minimizing all cutting of trees, burned trees, and snags while complying with safety objectives; cutting only live trees when absolutely necessary; cutting stumps flush with ground; scrape around tree bases near fireline if hot and likely to cause fire spread.

- During indirect attack, consider not felling snags on the planned unburned side of fireline unless they constitute a safety hazard; fell only those snags that could reach across firelines.

Mop-up Phase:

- In light fuels, cold trail areas adjacent to unburned fuels; do minimal spading
- In medium and heavy fuels, cold-trail charred logs near fireline; keep spading to a minimum; minimize bucking of logs; return logs to original position; refrain from piling logs or heavy fuels; minimize bucking of heavy woody materials.
- In aerial fuels remove only those fuels which, if ignited, have the potential to spread fire across firelines.
- In burning trees and snags, allow burning trees or snags to burn themselves out while ensuring personal safety; use felling as a last resort.

Incident Command Post, Camp Sites, and Personal Conduct:

- Use existing campsites wherever possible.
- Select new campsites that are unlikely to be observed from visitors.
- Select impact resistant sites such as rocky or sandy soils, or openings in timber.
- Avoid camping along streams or lakeshores or in open meadows.
- Change campsites periodically.
- Do minimal disturbance to land in preparing bedding and camp fire sites.
- Do not clear vegetation or trench areas to create bedding sites.
- Clean and remove all garbage and trash (including micro-trash such as hose ties, candy wrappers, gum wrappers, match covers, etc.).
- Following suppression actions, it is often necessary to rehabilitate damaged areas. When feasible, rehabilitation will be initiated as soon as possible after the fire; and in many instances, it is desirable to initiate such activities during final stages of suppression. During this time, effective use can be made of personnel and equipment still on the firelines.
- Restoration of fire suppression activities should include the following where appropriate:

Firelines:

- fill in deep and wide firelines with soil and organic materials
- utilize cup trenches and water bars as necessary to prevent erosion, use woody material to act as sediment dams
- cut, lop, and scatter any trees or large size brush that was downed during fireline construction - not to exceed 15 inches in depth
- ensure that stumps from cut trees or large size brush are flush with ground

Camps:

- restore campsites to natural conditions as much as possible
- scatter fireplace rocks, charcoal from fires and cover fire rings with soil

- pack out all garbage and unburnable trash

General:

- remove any and all signs of human activity (including "micro-trash")
- restore helicopter landing sites

Immediate rehabilitation actions to prevent further land degradation or resource loss, or to ensure safety, may be carried out as part of the incident. Post-incident rehabilitation actions will be specified in a rehabilitation plan approved by the Branch of Fire Management. Rehabilitation guidelines are contained in RM-18.

Rehabilitation by reseeding of native species of areas burned by wildfires or management ignited prescribed fires will be considered in some exceptional circumstances. Two primary circumstances which may warrant such action are:

1. Sensitive areas subject to significant visitor use when it would be impractical to defer such use and where such use may unreasonably modify natural succession.
2. Areas where non-native species might reasonably be expected to dominate natural regeneration without the seeding of native species.

Rehabilitation by seeding of native species primarily use those species which occur in early seral stages. Local seed sources will be used as much as possible.

7.

F. Wildland and Prescribed Fire Monitoring Plan

G. Preattack plan

The relative remoteness and season occupancy by visitors requires preattack planning for the Cottonwood Campground and historical Peaceful Valley Ranch. The preattack plan will be applicable during the concession operations period.

1. Ensure grasses and shrubs are cleared 30 feet around all structure during vegetation growing season.
2. Ensure Fire Danger Rating signs are in place at the Park Entrance Station and Campground Entrance.
3. Position 300-gallon slip-on unit in pickup at Peaceful Valley Ranch complex.
4. Provide preseason orientation training to concession employees on action plan in the event of a wildland fire in or near the Cottonwood Campground or Peaceful Valley Ranch complex.
5. Upon park dispatch's receipt of smoke and/or fire in or near the Cottonwood Campground or Peaceful Valley Ranch complex notification will immediately be made to park wildland fire resources and Medora Volunteer Fire Department to respond.

H. Multi-year prescribed fire schedule

South Unit Prescribed Fire Schedule

UNIT	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
WILD/1			S200	S110		S750				
WILD/2						S570				
WILD/3						S180				
NORTH/1			S550					F700		
JULES/1				S200						
JULES/2									S790	
JULES/3				S210						
JULES/4					S640			F720		
PAD/1										
PAD/2					S490			F720	F2300	F920
PAD/3		S480								
SHEEP/1	S220			F840		S170	S640			
SHEEP/2							S1200			
SHEEP/3		S170								
CORRAL/1	S1500									F1600
Total	1720	650	750	1360	1130	1670	1840	2140	3090	2520

Burn timing - S = Spring F = Fall

North Unit Prescribed Fire Schedule

Unit	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
BUCK/1			S800							
BUCK/2	F1000				F510		S/F1105			
HAGEN/1					S230					
HAGEN/2		S1210						S520		
HAGEN/3								S660		
ACHEN/1				S/F700		F310			S610	
ACHEN/2						S440			S170	F1000
ELKHORN			F214			F214				
Total	1000	1210	1014	700	740	964	1105	1180	780	1000

Burn timing - S = Spring F = Fall

I. Wildland Fire Prevention Plan

A. Objectives:

- Reduce the threat of human-caused fires through visitor and employee education.
- Integrate the prevention message into interpretive programs.

B. General Actions:

Responsible members of park staff will be familiar with the plan and be able to explain it to other interested parties and the general public.

Fire prevention will be discussed at park safety meetings during the fire season.

Interpretive programs will include fire prevention messages to alert visitors during the fire season.

Community outreach programs will be developed in cooperation with FIREPRO and interpretive staff.

C. Fire Prevention Plan:

The fire prevention analysis is attached to this plan as an appendix. This appendix contains the detailed prevention actions identified for specific areas or fire problems in them each unit. It will be reviewed annually by June 15 each year and updated if changes occur which alter the identified risks, hazards or values. An informal review of the plan will also occur after the fall fire season, no later than December 31 each year.

FIRE PREVENTION

A major objective of the park's overall fire management program is to reduce human-caused wildland fires.

An analysis of the park's human-caused wildland fires was undertaken to identify appropriate and achievable action items for reducing these fires.

The analysis was completed using guidelines established in DO-18, Chapter 5.2 and the NPS Fire Prevention Handbook. A formal record of the full planning process for the park, including base maps, overlays, and complete Fire Prevention Compartment description are on file in the Chief Ranger's Office.

The Fire Prevention Plan will appear as an appendix of the Fire Management Plan.

GENERAL ACTIONS

The following General Actions items have been identified as elements in the park's overall Fire Prevention Program. They are designed specifically to address human caused fires at Theodore Roosevelt National Park.

Human Caused Fires:

A human-caused fire prevention message will be developed and posted on park bulletin

boards.

Responsible person: Chief Ranger, Chief Interpreter

Fire prevention information will be made available to park visitors.

Responsible person: Chief Ranger, Chief Interpreter

During periods of high fire danger an increased fire detection program will be implemented based on the park's step-up plan.

Responsible person: Chief Ranger, Resource Specialist

A fire awareness program will be developed through local schools and groups

Responsible person: Chief Interpreter

SPECIFIC FIRE PREVENTION ZONE RATINGS/ACTION ITEMS

SOUTH UNIT

Wilderness #1

HAZARD HIGH-2/3 of South Unit Wilderness, poor access, the predominate fuels are native and introduced grasses, hardwood draws and sagebrush.

VALUE HIGH-Large # of cultural sites exist, a fall fire would reduce winter forage for wildlife and adjacent landowner livestock grazing.

RISK HIGH-Limited access, Heavy use during the summer months and moderate use in spring and fall.

Specific Prevention Actions Required: Increase patrols during higher manning class days and public information and awareness programs.

Responsible persons: Chief Ranger, Chief Interpreter

Wilderness #2

HAZARD HIGH-Wilderness area, limited access, predominate fuels are native and introduced grasses, sagebrush and some juniper.

VALUE MODERATE-Some cultural sites exist, a fall fire would reduce winter forage for wildlife and adjacent landowners.

RISK MODERATE-Moderate visitor and concession use of the area during the summer.

Specific Prevention Actions Required: Increase patrols during higher manning class days and work closer with concession on fire prevention messages to customers.

Responsible Person: Chief Ranger

Wilderness #3

HAZARD HIGH-Wilderness area, limited access, predominate fuels are native and introduced grasses, sagebrush and juniper.

VALUE HIGH-Parks radio tower, a few cultural sites exist and adjacent landowners.

RISK LOW-Human activity is low, with some use from Cotton wood Campground.

Specific Prevention Actions Required: Same as FP Zone Wilderness #1

Responsible Persons: Same as above

North #1

HAZARD HIGH-Limited access, predominate fuels are native and introduced grasses, sagebrush and rolling scoria complex.

VALUE HIGH-Roundup horse camp and adjacent landowners.

RISK MODERATE-Horse camp gets moderate to heavy use during the summer months.

Specific Prevention Actions Required: Increased patrols during higher manning class days and provide fire danger rating information to horse camp users.

Responsible Persons: Chief Ranger

Jules #1

HAZARD LOW-Badlands topography, predominate fuels are native and introduced grasses, sagebrush with are ground and prairie dog towns.

VALUE LOW-No significant values at risk.

RISK MODERATE-moderate human activity in this area during the spring and fall with some heavy use during the summer.

Specific Prevention Actions Required: Maintain patrols during higher manning class periods.

Responsible Persons: Chief Ranger

Jules #2

HAZARD LOW-Steep scoria, predominate fuels are native and introduced grasses, sagebrush with some bare ground.

VALUE MODERATE-Adjacent landowners.

RISK LOW-Some backcountry horse use during summer months.

Specific Prevention Actions Required: Maintain patrols during periods of higher manning classes.

Responsible Persons: Chief Ranger

Jules #3

HAZARD HIGH-Jones Creek drainage, predominate fuels are native and introduced grasses, juniper draws, rolling scoria complex and bare ground.

VALUE LOW-Halladay Wells Parking Area and the Jones Creek Trail.

RISK HIGH-Heavy backcountry horse use during the summer months.

Specific Prevention Actions Required: Increase patrols during higher manning classes and

inform backcountry users of current fire danger.

Responsible Persons: Chief Ranger

Jules #4

HAZARD HIGH-Reasonable access, predominate fuels are native and introduced grasses.

VALUE HIGH-Higher concentrations of cultural sites and adjacent landowners.

RISK HIGH-Moderate to heavy backcountry horse use during the summer months.

Specific Prevention Actions Required: Increase patrols during higher manning classes and inform backcountry users of the increased fire danger.

Responsible Persons: Chief Ranger

Paddock #1

HAZARD HIGH-Limited access, predominate fuels are native and introduced grasses, sagebrush, juniper draws and steep scoria complex.

VALUE MODERATE-Scattered cultural sites and public facilities just to the west of this unit.

RISK HIGH-Heavy backcountry use during the summer months.

Specific Prevention Action Required: Increase patrols during periods of higher manning classes and inform backcountry users of the fire danger.

Responsible Persons: Chief Ranger

Paddock #2

HAZARD HIGH-Rough topography, limited access, predominate fuels are introduced and native grasses, sagebrush, junipers and scoria complex.

VALUE LOW-No significant values at risk.

RISK HIGH-Heavy backcountry use during the summer months and adjacent landowners.

Specific Prevention Action Required: Increase patrols during periods of higher manning classes and inform backcountry users of increased fire danger.

Responsible Persons: Chief Ranger

Paddock #3

HAZARD HIGH-Rough topography, limited access, predominate fuels are introduced and native grasses, juniper and hardwood draws, sagebrush and scoria complex.

VALUE HIGH-Painted Canyon Visitor Center lies at the south end of this zone and I94.

RISK HIGH-Heavy backcountry use during the summer months.

Specific Prevention Actions Required: Increase patrols during higher manning classes and inform backcountry users of the high fire danger.

Responsible Persons: Chief Ranger

Sheep #1

HAZARD HIGH-Reasonable access, predominate fuels are introduced and native grasses, sagebrush and hardwood draws.

VALUE HIGH-Peaceful Valley Ranch, Cottonwood Campground, Visitor Center, Administration Building, the town of Medora and I94.

RISK HIGH-High concentrations of visitors within this zone in the front and backcountry.

Specific Prevention Actions Required: Increased patrols during periods of higher manning classes, inform visitors, local emergency agencies and businesses of the increased fire danger.

Responsible Persons: Chief Ranger, Chief Interpreter, Fee Collection personnel.

Sheep #2

HAZARD LOW-Reasonable access, predominate fuels are native grasses, sagebrush and rolling scoria complex.

VALUE MODERATE-I94 borders the entire southern edge of this zone and the old CCC Entrance Station.

RISK LOW-Minimal human intrusion into this zone

Specific Prevention Actions Required: Maintain patrols during periods of high fire danger.

Responsible Persons: Chief Ranger

Sheep #3

HAZARD LOW-Reasonable access, predominate fuels are introduced and native grasses, sagebrush with some hardwood and juniper draws.

VALUE LOW-No significant values at risk, I94 at south edge.

RISK LOW-Some backcountry horse use during the summer months.

Specific Prevention Actions Required: Maintain patrols during periods of higher manning classes

Responsible Persons: Chief Ranger

Corral #1

HAZARD HIGH-Reasonable access, predominate fuels are native and introduced grasses, juniper and hardwood draws.

VALUE HIGH-Wildlife Handling Facility and adjacent landowners

RISK HIGH-Heavy backcountry horse use during the summer months.

Specific Prevention Actions Required: Increased patrols during periods of higher manning classes and informing backcountry users of the increased fire danger.

Responsible Persons: Chief Ranger

NORTH UNIT

Hagan #1

HAZARD HIGH-Rough topography, limited access, predominate fuels are native and introduced grasses, river bottom woodlands and some hardwood draws.

VALUE MODERATE-Some scattered cultural sites, adjacent landowners.

RISK HIGH-Heavy summer use with moderate use in spring and fall.

Specific Prevention Actions Required: Increase patrols during higher manning classes and insure backcountry users are informed of the fire danger.

Responsible Persons: Chief Ranger

Hagan #2

HAZARD HIGH-Rough topography, limited access, predominate fuels are native and introduced grasses, sagebrush and river bottom woodlands.

VALUE HIGH-Numerous cultural sites, adjacent land owners.

RISK LOW-Moderate summer use and low use the rest of year.

Specific Prevention Actions Required: Increase patrols during periods of higher manning classes and inform backcountry users of the fire danger.

Responsible Persons: Chief Ranger

Hagan #3

HAZARD MODERATE-Rough topography, limited access, predominate fuels are sagebrush, juniper draws and river bottom woodlands.

VALUE MODERATE-Scattered cultural sites and adjacent landowners.

RISK LOW-moderate summer use and low use the rest of year.

Specific Prevention Actions Required: maintain patrols during periods of higher manning classes and keep the public informed of the fire danger.

Responsible Persons: Chief Ranger

Achenbach #1

HAZARD MODERATE-Rough Topography, limited access, predominate fuels are native and introduced grasses river bottom woodlands and sagebrush.

VALUE MODERATE-Some scattered cultural sites and adjacent landowners.

RISK LOW-Minimal use year round.

Specific Prevention Actions Required: Maintain patrols during periods of higher manning classes and keep public informed of fire danger.

Responsible Persons: Chief Ranger

Achenbach #2

HAZARD MODERATE-Rough topography, limited access, predominate fuels are native and introduced grasses, river bottom woodlands sagebrush and saltbush.

VALUE LOW-No significant values at risk, adjacent land owners.

RISK LOW-Minimal use year round.

Specific Prevention Actions Required: maintain patrols during periods of higher manning classes and keep public informed of fire danger.

Responsible Persons: Chief Ranger

Buckhorn #1

HAZARD MODERATE-Rough topography, reasonable access, predominate fuels are native and introduced grasses, sagebrush and saltbush.

VALUE HIGH-Radio tower, visitor center and gauging station and adjacent landowners.

RISK HIGH-High visitor use year round.

Specific Prevention Actions Required: Increased patrols during periods of higher manning classes and keeping public informed of fire danger.

Responsible Persons: Chief Ranger

Buckhorn #2

HAZARD HIGH-Rough topography, reasonable access, predominate fuels are native and introduced grasses river bottom woodlands and sagebrush.

VALUE HIGH-Juniper Campground and scattered cultural sites.

RISK HIGH-High use during the summer months with moderate use the rest of the year.

Specific Prevention Actions Required: Increased patrols during periods of higher manning classes and keeping public informed of fire danger.

Responsible Persons: Chief Ranger

ELKHORN UNIT

Elkhorn #1

HAZARD MODERATE-River bottom topography, fair access, predominate fuels are cottonwood trees, woody shrubs and some native and introduced grasses.

VALUES MODERATE-Roosevelt's old home site (no buildings) and the fence surrounding the unit.

RISK LOW-Visitation is low year round.

Specific Prevention Actions Required: Maintain patrols during periods of higher manning classes.

Responsible Persons: Chief Ranger

J. Fire Management Maps