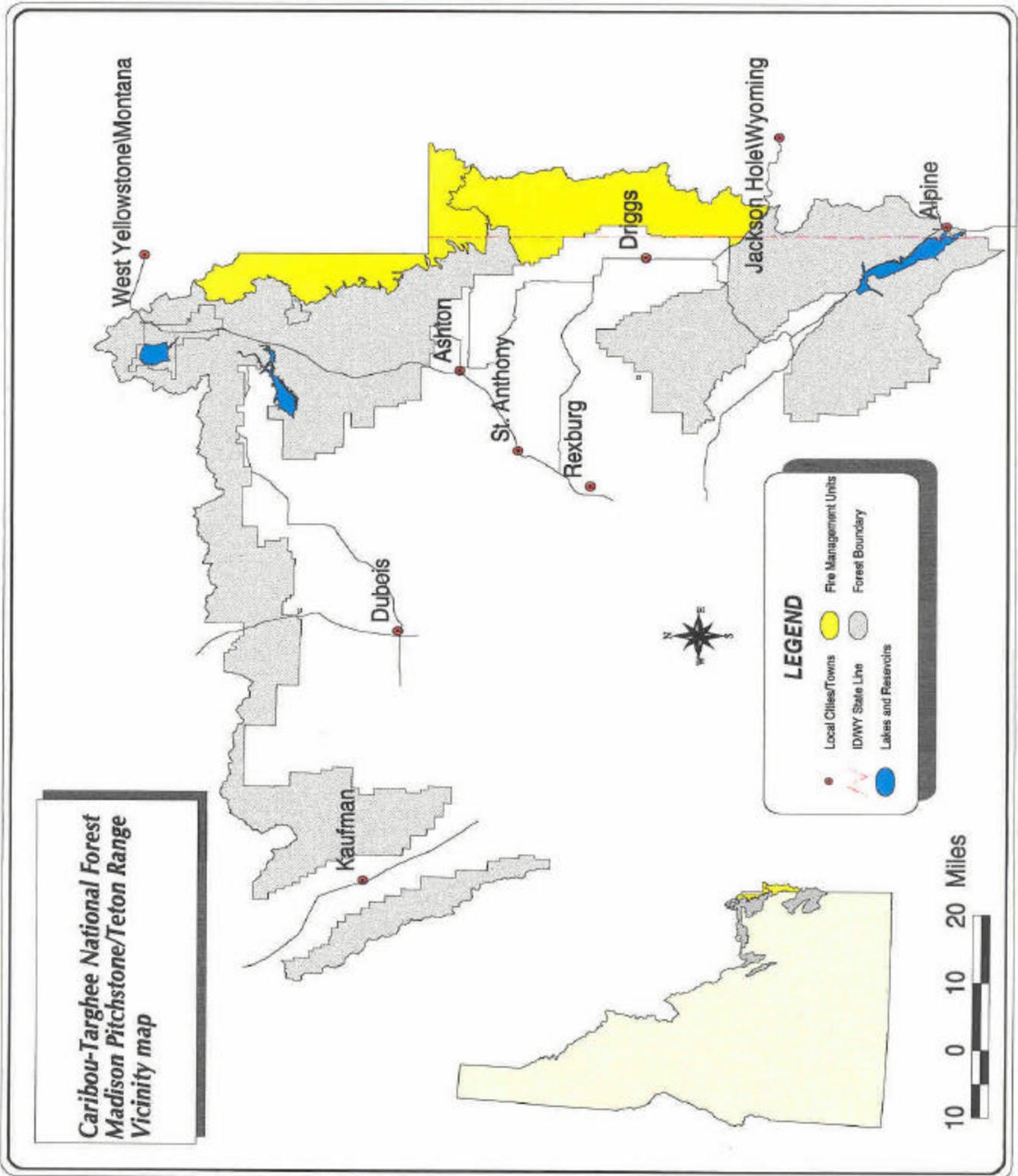


Madison Pitchstone Teton Range Vicinity Map (Map 1)



Area Description

Subsection Descriptions

Madison-Pitchstone Plateaus Subsection

The largest portion of the Madison Plateau subsection lies within Yellowstone National Park. The portion on the Forest is managed by the Ashton/Island Park District. The Ashton-Flagg Ranch Road and Fish Creek Road are the major access routes through the area. Grassy Lake, a 320-acre artificial lake, as well as other lakes and streams in the area, are popular fishing areas and are accessed by the Ashton-Flagg Ranch road. Several organized youth camps fall within this subsection. The Cave Falls road is the only motorized access to the southwest portion of Yellowstone Park. Segments of the Continental Divide National Scenic Trail and the Two Top National Recreation (snowmobile) Trail lie within this subsection.

Forests comprise 97 percent of the area. Lodgepole pine is the most common forest cover type (76 percent), with mixed stands of lodgepole pine and Douglas fir making up the remaining forested area (24 percent). Relatively minor amounts of aspen and various mixed conifers provide some diversity. The southern portion of the subsection is unique in that there are many wet meadows and small lakes intermingled with the forests.

The 1988 North Fork Fire scorched 17,700 acres in the northern part of this subsection, stimulating aspen suckering in numerous locations. This fire event and past timber harvesting primarily in the north half of the subsection have shifted 39 percent of the lodgepole pine into the nonstocked, seedling and sapling age classes. Active management of aspen has also provided some age class diversity. Due to fuel reductions and young age classes resulting from these disturbances, fire is less of a concern here than in many other areas. However, conditions in the southern portion of the Madison subsection are presenting some fire risks as aspen and lodgepole pine stands convert to Douglas fir through succession. Mature subalpine fir and Douglas fir in this southern area experienced outbreaks of western balsam bark beetle and Douglas-fir beetle in the past decade. These conditions have subsided, but could easily recur since vegetation conditions have not changed.

Currently 63 percent of the forests are in a mature or older age classes and provide suitable nesting sites for various bird species. Currently 23 percent of the forested acres are in nonstocked and seedling conditions, which provide foraging habitat.

The two designated wildernesses on the Forest lie wholly or partially within this subsection. The Jedediah Smith Wilderness (123,451 acres) is mostly in the Teton Range subsection with the balance in the Madison Plateau subsection. The Winegar Hole Wilderness (10,715 acres) is totally within the Madison Plateau subsection. Winegar Hole is largely primitive with very little use. This is mostly due to access difficulty, since there are only four miles of trail in the area. Use of this area is mostly for hunting big game. The Jedediah Smith is intensively used in the summer with approximately 74,000 visits (hiking, backpacking, and horseback riding). This is a spectacular mountainous area on the west slope of the famous Teton Mountain Range. These wildernesses are two of twelve designated in the Greater Yellowstone Area, which total 3.8 million acres. An area in this subsection in Idaho adjoining Wyoming's Winegar Hole Wilderness is recommended for wilderness designation.

Teton Range Subsection

This area encompasses the Teton Mountains, bounded on the north by South Boone Creek, on the south by Highway 22, on the west by the Teton Basin and on the east by Jackson Hole in Wyoming. The Teton Range is a spectacular line of high peaks rising abruptly along the east side of the Teton Basin. The landscape is a diverse mix of forested and open vegetation. The Jedediah Smith Wilderness traverses the upper portions of the west slopes of the Teton Mountains. The Grand Targhee Ski and Summer Resort is a major tourist destination. Two permitted organized youth camps operate within the subsection. This area is known for its many backcountry trail systems, which are accessible by horse or foot.

The landscape is a diverse mix of forested (57 percent) and open (43 percent) community types. Forest tree species include Douglas fir, lodgepole pine and mixed conifers. Lodgepole is mixed with Douglas fir in 31 percent of the forested area, indicating that the pine is converting to Douglas fir through succession. Open Douglas-fir forests, mountain brush, aspen and sagebrush pockets are found predominately on south and west aspects. Aspen is being encroached upon by conifers as succession proceeds, and the amount of aspen has declined compared with historic levels due to fire suppression. Upper elevations are characterized by dense mixed conifer forests, open grass/forb meadows, and talus slopes. Conifers are moving into riparian areas and mountain meadows due to fire suppression.

Since much of the Teton Range subsection is designated wilderness, timber harvest has been limited. Due to this fact and long-term fire suppression, only one percent of the forested acres is in the nonstocked, seedling or sapling age classes. The preponderance of mature and older forests (97 percent of total) makes this area suitable habitat for species such as marten and owls that prefer late-seral stage forests. Conversely the lack of fire has contributed to a decline in habitat for bighorn sheep and promoted susceptibility of the forested lands to insect infestations, diseases and large-scale fires. In recent years the western balsam bark beetle has been active in the subalpine fir. The Douglas-fir beetle has killed pockets of Douglas fir in the past decade, but beetle populations have declined since 1992.

The Jedediah Smith Wilderness (123,451 acres) is mostly in the Teton Range subsection with the balance in the Madison-Pitchstone Plateaus subsection. The Jedediah Smith is intensively used yearlong with approximately 74,000 visits per year. Some of this use is shared with Grand Teton National Park, lying immediately to the east across the Teton Crest.

Teton Valley has been experiencing a development boom recently and urban interface is a growing concern for the Forest.

The subsection includes the Bechler-Teton Bear Management Unit. This area will experience little vegetation treatment in the near future while providing a high degree of security for grizzly bear. In addition to grizzly bears, peregrine falcon, bighorn sheep and many big game species inhabit the area

Of critical importance to this subsection is the high amount of mature and over mature vegetation. To achieve the desired vegetation conditions for all of the management prescriptions will require careful fire management since little of this area will be available for silvicultural treatment.

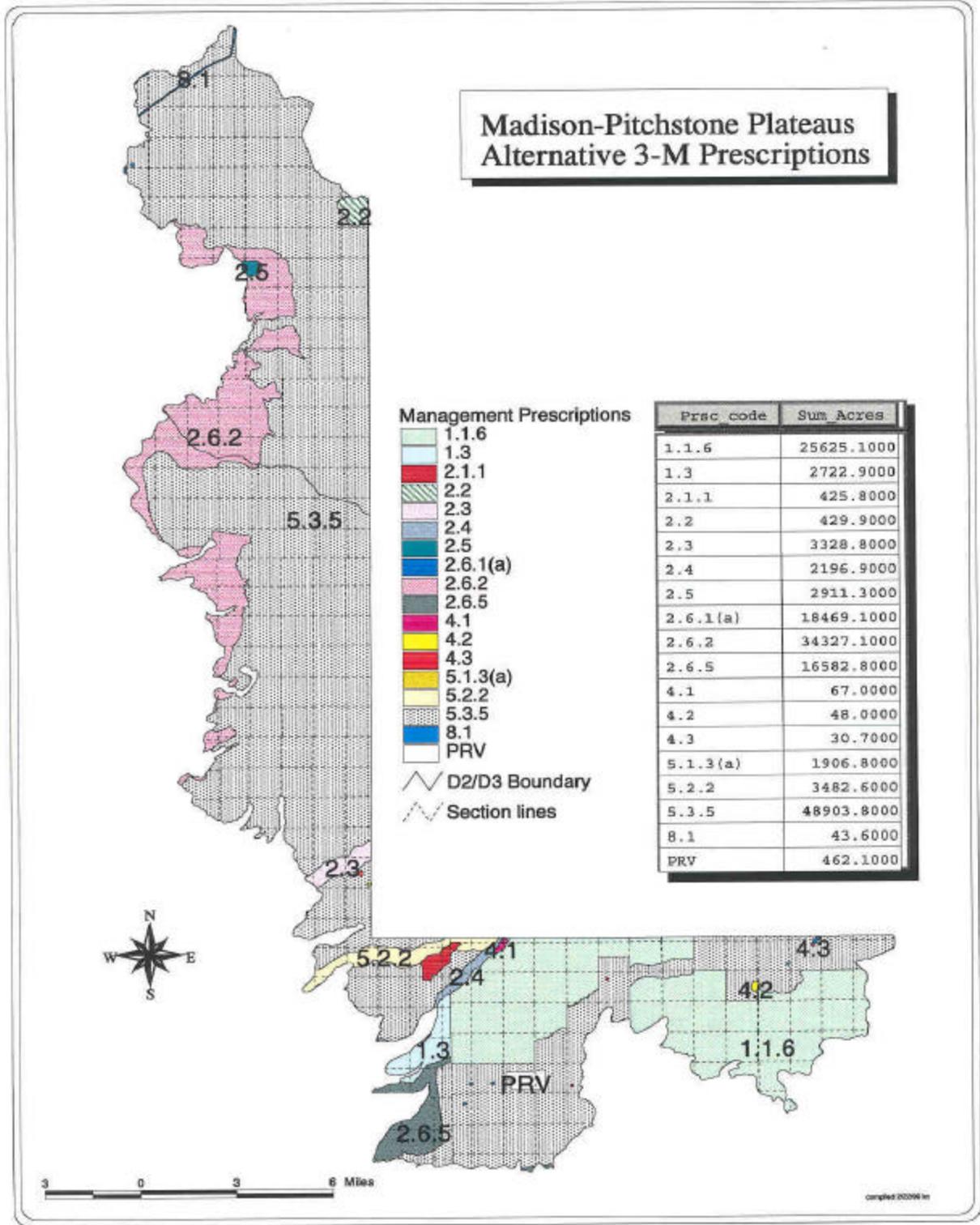
Subsections and Prescriptions

In recent years the Forest Service has embraced the concept of Ecosystem Management. This is an approach to natural resource management that strives to ensure healthy, productive, sustainable ecosystems by blending the needs of people and environmental values in a given area such as the Forest. An ecosystem is a complex system of living and nonliving components that interact and change continually. Healthy ecosystems are those that are in PFC. Ecosystems that are in PFC display resilience to disturbance to the structure, composition and process of their biological and physical components. They retain all of their parts and functions for future generations even though vegetation patterns, human uses or other conditions may change. Understanding ecological processes (fire and other natural disturbances) and how these processes shaped vegetation patterns over time in a landscape are important steps towards implementing Ecosystem Management.

Working guidelines for ecosystem management state that effects of proposed actions should be considered at several geographic scales including one scale larger and one smaller than that at which the action is proposed (USDA Forest Service, June 1994). Based on a larger national mapping effort it was determined that the Forest wholly or partially overlays seven large ecological units, or subsections, which were delineated using physiographic parameters. Using this approach, resource conditions can be viewed at a scale between the larger forest and the smaller prescription area levels. This guidebook focuses on the Madison-Pitchstone Plateaus (M331Ab) and Teton Range (M331Db) subsections henceforth referred to as the Madison-Pitchstone Plateaus Fire Management Area (MP FMA) and Teton Range Fire Management Area (TR FMA).

The Targhee National Forest Plan (revised 1997) implements an array of different management regimes which have been applied to various parts of the Forest to address specific management needs or public desires. The 45 prescriptions are organized in categories and presented in a sequence allowing progressively more active management. All prescriptions are organized according to the five components used in the Final EIS and forest wide direction. Prescriptions, as they pertain to wildland fire use and prescribed fire within the MP-FMA and TR-FMA, are summarized in Map 1 and Table 1. More comprehensive management prescription descriptions can be found in the Targhee National Forest 1997 Revised Forest Plan.

Management Prescriptions Map (Map 2)
Madison-Pitchstone Plateaus



Management Prescriptions Map
Teton Range subsection (Map 3)

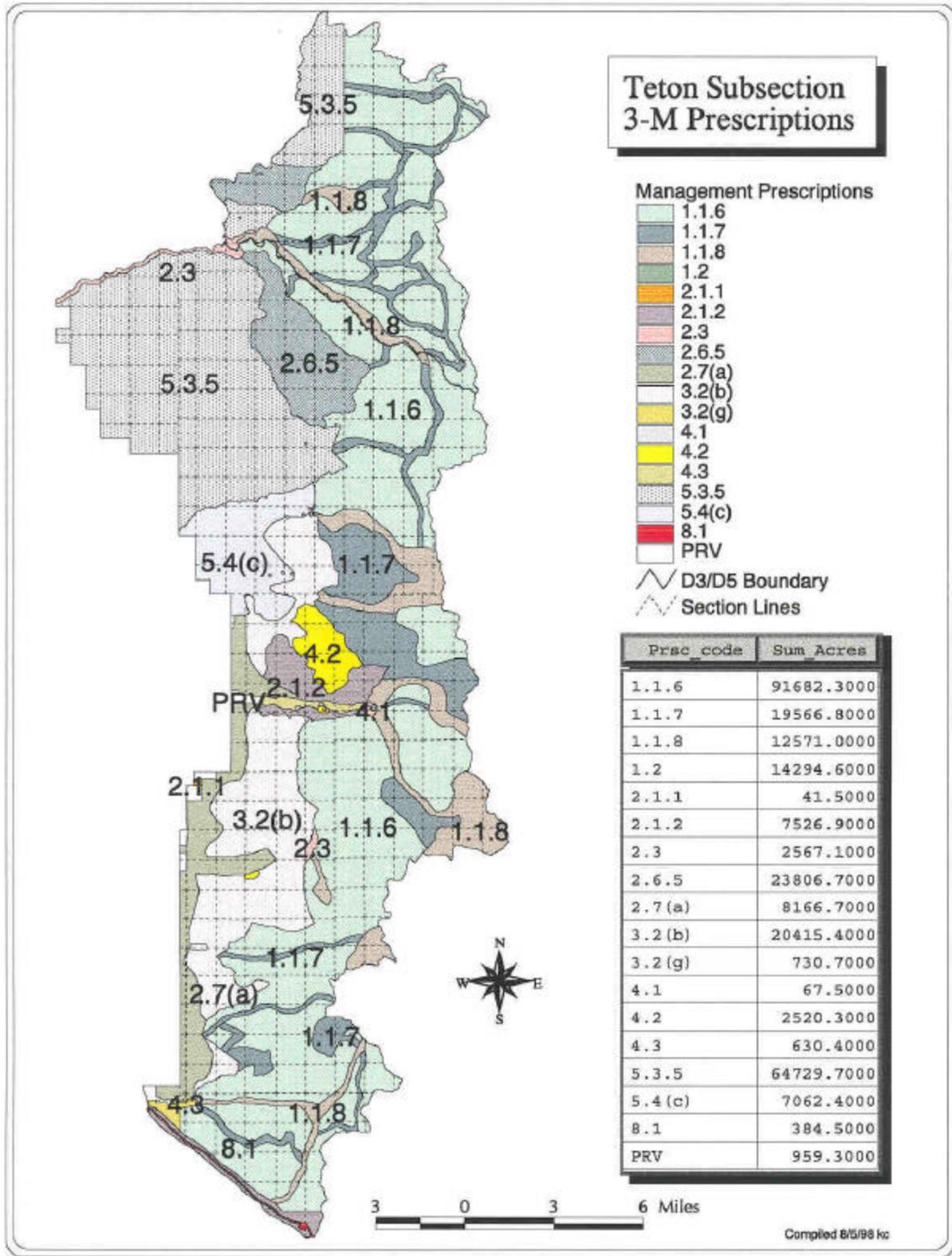


Table 1.

Madison-Pitchstone Plateaus FMA Prescriptions

Prescriptions	Acres	Wildland Fire Use	Prescribed Fire
1.1.6	25,689	yes	yes
1.1.7	629	yes	yes
1.3	2627	yes	yes
2.1.1	439	yes	yes
2.2	430	yes	yes
2.3	1972	yes	yes
2.4	1409	yes	yes
2.5	1405	yes	yes
2.6.1(a)	5	yes	yes
2.6.2	26,072	no	no
2.6.5	1870	yes	yes
2.8.3	15,764	yes	yes
4.1	89	no	yes
4.2	46	no	yes
4.3	31	yes	yes
5.1.3(a)	2	no	yes
5.2.2	1883	no	yes
5.3.5	115,836	yes	yes
8.1	223	no	yes
PRV	815	N/A	N/A
STA	637	N/A	N/A
Total	197,873		

- A "no" designation in either the Wildland Fire Use column or Prescribed Fire column indicates that particular management activity is not permitted within the given management prescription.
- A "yes" designation in either the Wildland Fire Use column or Prescribed Fire column indicates that particular management activity is permitted within the given management prescription.

**Table 2.
Teton Range FMA Prescriptions**

Prescriptions	Acres	Wildland Fire Use	Prescribed Fire
1.1.6	91,682	yes	yes
1.1.7	19,566	yes	yes
1.1.8	12,571	yes	yes
1.2	14,294	yes	yes
2.1.1	41	yes	yes
2.1.2	7526	yes	yes
2.3	2567	yes	yes
2.6.5	23,806	yes	yes
2.7(a)	8166	yes	yes
3.2(b)	20,415	yes	yes
3.2(g)	730	yes	yes
4.1	67	no	yes
4.2	2520	no	yes
4.3	630	yes	yes
5.3.5	64,729	yes	yes
5.4(c)	7062	yes	yes
8.1	384	no	yes
PRV	384	N/A	N/A
Total	277,715		

Grizzly Bear Recovery Zone

The entire MP-FMA and the northern portion of the TR-FMA is situated within the Grizzly Bear Recovery Zone. Wildland fire use and prescribed fire is permitted within the Grizzly Bear Recovery Zone in order to maintain or improve grizzly bear habitat. The primary areas for habitat improvement are those that provide for whitebark pine regeneration.

Fire Use is not permitted within management prescription 2.6.2 (Grizzly Bear Core Area).

Fire is an important process to help insure the survival and regeneration of whitebark pine. This species can survive surface fires which kill other tree species that compete with it. Since whitebark pine reproduces on fire prepared sites, stand replacing-fires help perpetuate the species. Historically, fire has occurred in whitebark pine communities every 30-300 years. Suppression of fire has favored subalpine fir and Engelmann spruce over whitebark pine. With continued absence of fire, the whitebark pine will likely give way to the spruce and fir.

Wildland fire use can be utilized within the recovery zone if greater than 70% of the forested acres are comprised of vegetation that provide for security cover for the grizzly bear. Security cover is defined as forested acres (all tree species) which have not been managed in the last 20 years, and managed or burned forested acres which meet the following criteria:

Overstory Basal Area of trees 5.0"+	Understory Trees/acre 0-4.9" and 7'+	Acreage Multiplier
130+ sq. ft. per acre	250+	1.0 (good)
80-129 sq. ft. per acre	150-249	0.7 (medium)
30-79 sq. ft. per acre	50-149	0.4 (poor)

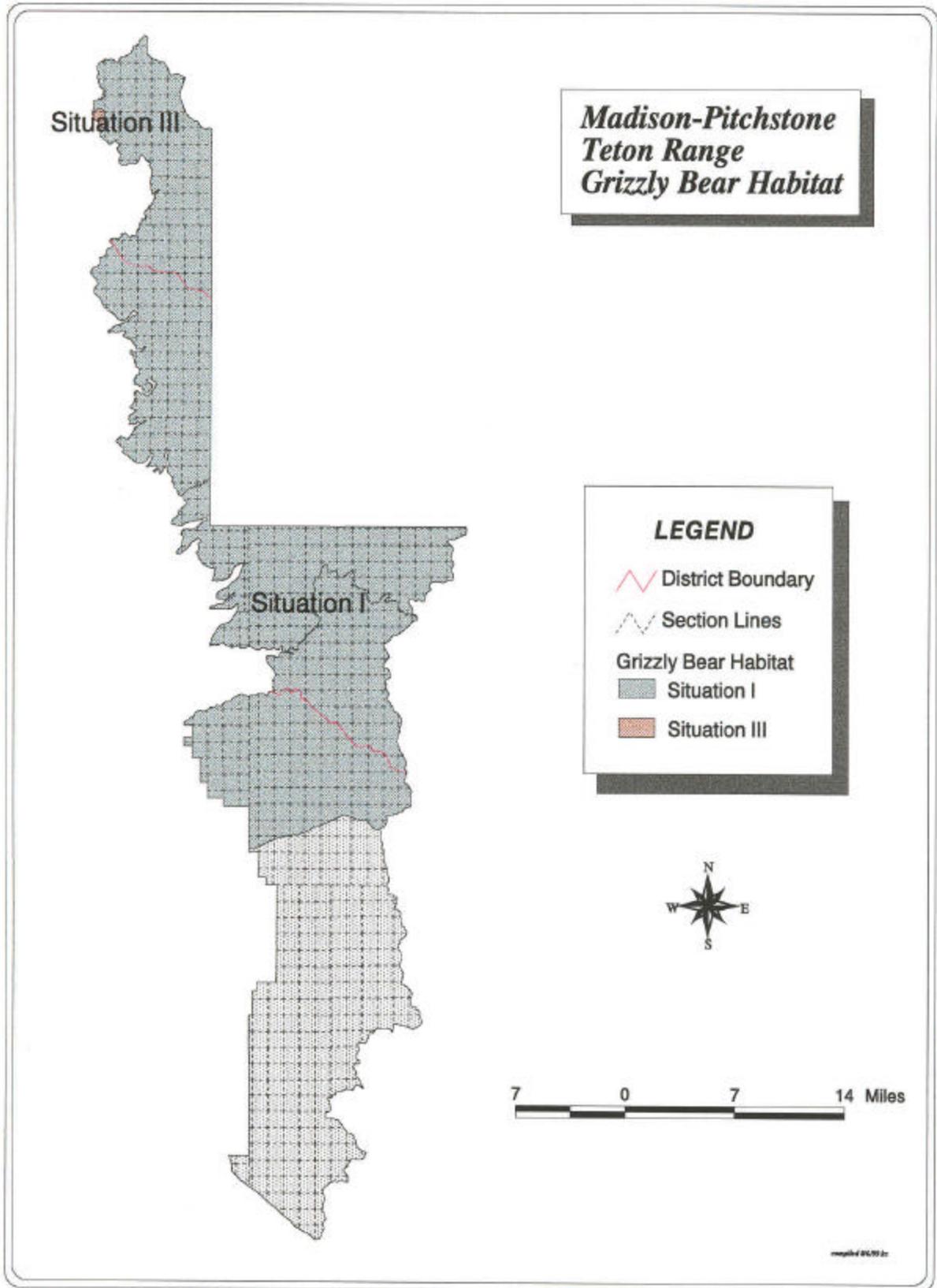
The overstory and understory categories for security cover are to be considered separately. A stand having either 130 sq. ft. basal area per acre or 250 understory trees per acre over seven feet tall would meet the requirements for full security cover. Both live and dead tree basal areas are used for overstory calculations.

The 70% security cover figure must be derived from an analysis area of at least 7000 acres in size.

Guidelines

- Consult district or forest wildlife biologist: In the event of a designated WFU within the Grizzly Bear Recovery Zone, the Fire Use Manager will consult the district or forest wildlife biologist to determine if the candidate ignition is likely to achieve the objectives of improving or maintaining grizzly bear habitat.

Grizzly Bear Recovery Zone (Map 3)



Aquatic Influence Zones

This prescription applies to the aquatic influence zone associated with lakes, reservoirs, ponds, perennial and intermittent streams, and wetlands (such as wet meadows, springs, seeps, and bogs). These areas control the hydrologic, geomorphic, and ecological processes that shape the various water types mentioned above and directly affect aquatic life. They also provide unique habitat characteristics, which are important to those plant and animal species that rely on aquatic, wetland, or riparian ecosystems for all or a portion of their life cycle. Many such habitats are locally rare or are sensitive to disturbance (such as fens and thermal springs). Overall, these areas serve as important reservoirs of biodiversity; critical linkages for the interchange of plant and animal genetic material; specialized areas of nutrient cycling and freshwater filtration, storage, and transport; and are important to water quality.

Management emphasis is directed at the application of ecological knowledge to restore and maintain the health of these areas in ways that also produce desired resource values, products, protection, restoration, enhancement, interpretation, and appreciation of these areas.

Fire Use is permitted under this management prescription utilizing the following guidelines

Guidelines

- If a WFU is burning in a watershed having a 303(d) listed stream ("Water Quality Limited", or WQL), notify the Forest Hydrologist. The 303(d) list is updated every two years, and is provided to the Districts as it is updated.
- If a WFU is burning in a watershed having known soil and water conditions that may be adversely affected by fire, notify the Forest Soil Scientist or Hydrologist.
- Forest Plan guidelines state that no more than 30% of a watershed should be in a hydrologically disturbed condition at one time. Forest hydrologist will provide information on specific watersheds
- WFUs that may affect SNOTEL sites or public water supplies need to be reported to the appropriate entity: NRCS for SNOTEL sites, and Idaho Division of Environmental Quality for public water supplies.
- Avoid locating bases, camps, helibases, staging areas, helispots, hazardous material storage facilities, and other centers for incident activities within these lands. If the only suitable location for such activities is within this area, an exception may be granted following a review and recommendation by a resource advisor. The resource advisor will prescribe the location, use conditions, and rehabilitation requirements.
- Avoid application of chemical retardant, foam, or additives in these areas. Exceptions may be warranted in situations where overriding safety concerns exist, or following a review and recommendation by a resource advisor, when an escape would cause more long-term damage.

Grazing Allotments

There are currently thirteen active grazing allotments entirely or partially within the boundaries of the MP&TR-FMAs. Information regarding individual grazing allotments is summarized in tables 3&4 and map 6.

**Table 3. MP-FMA
Grazing Allotments**

Allotment Name and Number	Allotment Type	Livestock Number	AUM's	Total Acres
Meadow Creek #2614	Cattle	500	175	2715
Fall River Ridge #302	Cattle	741	3590	25,850
Squirrel Meadows #303	Cattle	1097	5816	29,620

**Table 4. TR-FMA
Grazing Allotments**

Allotment Name and Number	Allotment Type	Livestock Number	AUM's	Total Acres
Tepee Creek #509	Cattle	100	540	22,134
Canyon Badlands #519	Sheep	1200	1164	6640
Darby Creek #501	Cattle	115	544	6375
Dry Basin #523	Sheep	300	231	1466
Fred's Mtn. #502	Cattle	50	148	2706
Game Creek #503	Cattle	92	413	1256
Leigh Cr. #504	Cattle	157	567	6346
Mill Cr./Teton #506	Cattle	68	321	5927
Moose Cr. #527	Sheep	1100	902	24,437
Spring Cr. #508	Cattle	65	306	5457

Guidelines

- Range Permittees must be notified at the start of the fire. If necessary they may need to relocate their stock to a safer location. The development of the Maximum Manageable Area for Fire Use projects during Stage III analysis should consider the impact to permittees.

Soils

MP-FMA

The Madison-Pitchstone Plateaus subsection consists of a large consolidated ash flow that came out of Yellowstone National Park and overtopped the east rim of the Island Park Caldera. The landscape is dissected by dendritic and parallel drainage systems.

The soils in the northern part of the subsection are greater than 60 inches to bedrock, having medium textured surface layers and stratified gravelly coarse textured to extremely gravelly coarse textured subsurface layers. The soils in the southern part of the subsection are greater than 60 inches to bedrock, having gravelly medium textured surface layers and very gravelly to extremely cobbly medium textured subsurface layers. These soils have a moderately low inherent fertility, are droughty and have windthrow hazards. They are highly erodible if the subsoil is exposed, as it is in the northern part of the subsection due to the North Fork Fire.

A principal ecological concern affecting soil quality (southern portion) is the susceptibility to fires, increasing the risk of losses in soil productivity associated with such events, including areas on the 1988 North Fork Burn that have not recovered yet.

Principal management activities affecting soil quality include OHV use, dispersed recreation, effects associated with timber harvest which have resulted in roads, compaction, organic matter removal or displacement and loss of woody residue.

Four landtype associations occur within the Madison-Pitchstone Plateaus subsection: 1) 401--Northern Madison Plateau - Conifer Forest, 2) 402--Southern Madison Plateau - Conifer Forest, 3) 403-- Falls River Basin - Conifer Forest, and 4) 404--Eastern Falls River Basin - Conifer Forest. Descriptions of these landtype associations are located in Appendix A and Map 6.

TR-FMA

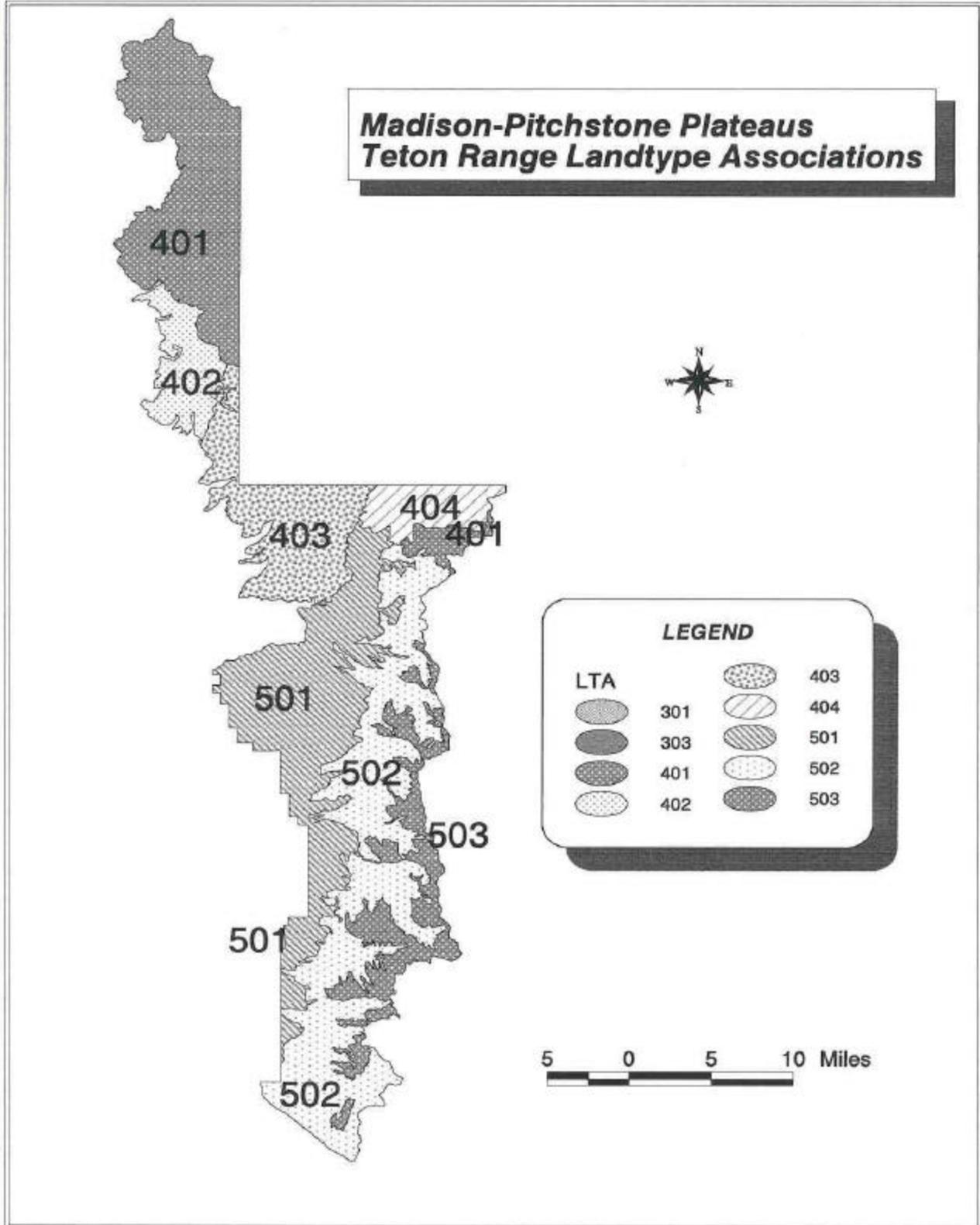
North-south trending mountain range. The dominant rock types are granite, limestone, sandstone, dolomite, slate, gneiss and quartzite. The landscape is dissected by parallel drainage systems.

This subsection consists of two primary landscape settings. These include foothills on lower to mid elevations and mountain side-slopes at mid to high elevations. Soils on these landscapes are 40 to greater than 60 inches to bedrock, having nongravelly to very gravelly medium textured surface layers and gravelly to extremely stony medium textured subsurface layers. These soils have low to moderately low inherent fertility, low to moderate compaction hazard, moderate to high erosion hazard, reforestation concerns and low to high mass instability hazards.

Principal ecological concerns affecting soil quality in this subsection include conifer expansion into aspen, sagebrush/grass, riparian and mountain meadow communities causing site changes, and the area's susceptibility to fires with increased risk of losses in soil productivity associated with such events.

Three landtype associations occur within the Teton Range subsection: 1) 501--Teton Foothills - Conifer Forest, 2) 502-- Teton Mountains - Conifer Forest, and 3) 503--Teton Range Crest - Alpine. Descriptions of these landtype associations are located in Appendix A and Map 6.

LTA Map Madison Pitchstone-Teton Range (Map 6)



Research Natural Areas (RNAs)

Fire Management Direction for Existing and Proposed Research Natural Areas on the Targhee National Forest

There are nine existing and three proposed Research Natural Areas (RNAs) on the Targhee National Forest. The MP-FMA contains one established RNA (Moose Creek Plateau) and 2 proposed RNAs (Rock Lake and Wyoming Creek) (Table 5). The TR-FMA currently contains no RNAs (existing or proposed). The existing RNAs are in Prescription Area 2.2 of the 1997 Revised Forest Plan (RFP) for the Targhee National Forest. There is no existing Prescription Area for proposed RNAs. RNAs are important ecological or natural areas established for non-manipulative research, education, or to maintain natural diversity on National Forest system lands. They also may assist in carrying out provisions of special acts, such as the Endangered Species Act and the monitoring provisions of the National Forest Management Act. RNAs are good examples of physical or biological units in which current natural conditions are maintained insofar as possible. These conditions are ordinarily achieved by allowing natural, physical and biological processes to prevail without human intervention.

Table 5--Existing and Proposed Research Natural Areas within the MP& TR-FMAs

Area Name	Year Established	Ranger District	Size/Acres	Area Features
Moose Creek Plateau	1991	Island Park	440 acres	Obsidian sands, lodgepole pine
Wyoming Creek	Proposed	Ashton	401 /1	Willow, meadow
Rock Lake	Proposed	Ashton	300 /2	Meadow, lake lily pads

/1 Approximate acres, Prescription Area 2.1.1

/2 Approximate acres, Prescription Area 1.1.6

Forestwide direction for the management of existing RNAs (Prescription Area 2.2) on the Targhee National Forest is found on pages III-83 through III-85 of the 1997 Revised Forest Plan (RFP). There is no forestwide direction for the management of proposed RNAs in the RFP. Also, there is no forestwide direction for fire management activities identified in Prescription Area 2.2. Management direction for proposed RNAs is located under the specific direction for the Prescription Areas where each proposed RNA is located. In addition to the direction identified in the RFP additional direction is found in FSM 4063 and the Establishment Records for each RNA. A summary of fire management direction for each RNA is located in Appendix B. Should conflicting direction for fire management activities (human or natural ignitions), be identified; the protocol for the management of fire activities will be as follows:

- Direction identified in the Establishment Records for existing RNAs, will take priority over all other direction for those RNAs.
- If direction does not exist in the Establishment Records for existing RNAs, direction in FSM 4063 will take priority.
- Direction does not exist for proposed RNAs in either the RFP or FSM 4063. Direction identified in the specific Prescription Areas where the proposed RNAs are located and Forest wide S&G's will be followed.

- If direction does not exist for proposed RNAs in the RFP Prescription Areas; then all human or natural ignitions will be extinguished as quickly as possible using means that will cause minimal damage and the Forestwide S&G's on page III-6 of the RFP will be followed.

Smoke and Air Quality

During the average fire season, unstable summer time air combined with prevailing southwest winds provide good smoke dispersal in the MP & TR-FMAs. These conditions will typically push the smoke northeast towards Yellowstone and Grand Teton National Parks, Teton Wilderness. The aforementioned areas are Class I airsheds and air quality will be monitored throughout the burning season.

Towns and recreation areas to the west of the subsections are less likely to be affected by smoke although late summer and early fall night time conditions would allow inversions to drain smoke westerly towards the town of Driggs, Victor, Island Park and other communities in the surrounding areas.

The Environmental Protection Agency (EPA) recently set policy which does not excuse wildland prescribed fires from exceeding National Ambient Air Quality Standards (NAAQS) for PM-10 (particulate matter having a nominal aerodynamic diameter less than or equal to 10 microns)(EPA 1996). Even more recently, the EPA issued standards for PM 2.5 and ozone to take effect September 1997 (USDA 1997). The EPA will develop broader guidance in the near future to address issues raised by smoke emissions from wildland prescribed fires and other policy issues surrounding prevention of significant deterioration, conformity, visibility protection programs and regional haze.

The Targhee National Forest is a member of the Montana/Idaho State Airshed Group. At this time the Montana/Idaho State Airshed Group Operations Guide has no operating procedures or provisions for wildland fire use (WFU). However, the website for the above airshed group (<http://www.smokemu.org>) should be consulted for identified WFU levels. These levels will summarize and map predicted air quality data and provide input for Go/No Go decision-making regarding smoke impacts. *Currently, a permit is not required for WFUs originating in Idaho.*

For prescribed fire activities, the Montana/Idaho State Airshed Group will monitor air quality in the Idaho portion of the subsections. Between September 1 and November 31, burners belonging to the airshed group are required to notify the airshed coordinator (EIIFC Center Manager) at Eastern Idaho Interagency Fire Center by 10 a.m. the day prior to burning. The coordinator will determine the go/no go status of burning in relation to smoke issues. Burn permits are required for all prescribed fires. Although the PM 2.5 standards are under review, the Airshed group will continue to monitor them for air quality.

The monitoring unit for Wyoming portions of the subsections will be the Wyoming Department of Environmental Quality, Division of Air Quality (WDEQ/AQD). WDEQ/AQD requires a burn permit for prescribed fire. Requests for permits are made to: Mark Arn at marn@missc.state.wy.us. He can also be reached by phone at: (307) 777-7391 or by fax at (307) 777-5616. Permits will be issued within a week of notice and remain valid for one year from the date they are issued. WDEQ/AQD requires 24-hour notification prior to each burn. At this time there is no closed burn season in effect and burn permits may be acquired any time of the year. *Currently, permits are not required for WFU.* Air quality standards for Wyoming are PM 2.5 and will be monitored by WDEQ/AQD.

It is anticipated that air quality restrictions concerning WFU may change. As new regulations are enacted, the Madison-Pitchstone Teton Range Wildland Fire Use Guidebook will be modified to assure compliance with new policy and regulations.

FUEL TREATMENTS

Prescribed fires are permitted within most management prescriptions in the included-FMAs as a method to treat areas of unnatural fuels build up and to restore fire's ecological role in the Forest. Within these subsections, fuel treatments may be necessary to effect reductions in both naturally occurring fuels and hazardous fuel accumulations resulting from resource management, fire exclusion, and land use activities.

Objectives of these fuel treatment measures include:

- Mitigation of risks to firefighter and public safety
- Reduce the risk to private property, administrative sites, bridges, etc.
- Reduce, to an acceptable level, the risks and consequences of wildland fire within the MP & TR FMAs.
- Reduce the risk of wildland fire escaping from the MP & TR-FMAs.
- Increase the opportunity for natural fire to play its role on the landscape within the MP & TR-FMAs.

Acceptable fuel treatments are:

1. Prescribed fire and/or mechanical manipulation of fuels outside the wilderness boundary.
2. Prescribed fire to treat fuels within the wilderness boundary.
3. Utilize fire within wilderness to achieve objectives of holding and/or contingency strategies in wildland fire implementation plans.

The objectives are to reduce hazardous fuel accumulations, particularly around developments and boundary areas. Treating hazardous fuels may also reduce the risk and consequences of a wildfire escaping the FMAs.

The use of prescribed fire within and/or outside the wilderness prior to Wildland Fire Use event will occur on a project by project basis. Appropriate public scoping and involvement, consideration evaluation by an interdisciplinary team, environmental analysis, and decision document are necessary prior to project implementation. Prescribed fires may be utilized in wilderness to reduce unnatural buildup of fuels when wilderness fire management objectives set forth in FSM 2324.21 can be met and **all** of the following conditions are satisfied.

- The use of prescribed fire or other fuel treatment measures outside of wilderness is not sufficient to achieve fire management objectives within wilderness.
- An interdisciplinary team of resource specialists have evaluated and recommended the proposed use of fire.
- The interested public has been involved appropriately in the decision.
- Lightning-caused fires cannot be allowed to burn because they pose serious threats to life and/or public property within wilderness or to life, property, or natural resources outside of wilderness.

Do not use prescribed fire in wilderness to benefit wildlife, maintain vegetative types, improve forage production, or enhance other resource values. Although these additional effects may result from a decision to use prescribed fire, use fire in wilderness only to meet wilderness fire management objectives (FSM 2324.22).

Fire History

The average fire season in the MP & TR FMAs begins in early July and ends sometime between early September and late October depending on early snowstorms. It is not unusual for an early snow storm to cause a presumed season ending event, only to be followed by two or three weeks of drying and warm temperatures causing a short return to fire season.

Based on fire records from 1970 to 1998, 36 lightning caused fires have burned within the MP-FMA. Seven of these fires attained a size greater than one acre. The largest lightning caused fire for this time period consumed 43 acres. The largest fire to burn in the Madison-Pitchstone Plateaus subsection was the North Fork Fire in 1988. This was a human-caused fire that burned a total of 406,359 acres. 17,700 acres of the North Fork Fire burned within the Madison-Pitchstone Plateaus.

From 1970 to 1998, 63 lightning fires have burned within the TR-FMA. Three of these fires exceeded 1 acre in size with the largest fire attaining a size of 8 acres. During the same time period 39 human-caused fires have burned within the subsection. The largest of these attained a size of 51 acres.

MP-FMA Fires By Size Class and Cause

Size (Class/ Acres)	Lightning Caused	Human Caused
A (<.25 Acres)	10	19
B (.25-9.9 Acres)	23	9
C (10-99.9 Acres)	3	0

TR-FMA Fires By Size Class and Cause

Size (Class/ Acres)	Lightning Caused	Human Caused
A (< .25 Acres)	54	32
B (.25-9.9 Acres)	9	6
C (10-99.9 Acres)	0	1

Fire occurrence for the Island Park, Ashton and Teton Basin Ranger Districts is summarized in Table 6. Graphs were compiled using the Firefamily Plus program and include: Total fires and acres, fire distribution by month, size class distribution, fire cause distribution, and incidence of multiple fire days. Large acreage figures in the table are due to the 1988 North Fork Fire. This analysis includes areas of the districts outside the Madison-Pitchstone Plateaus and Teton Range FMAs, but is valuable in illustrating general trends.

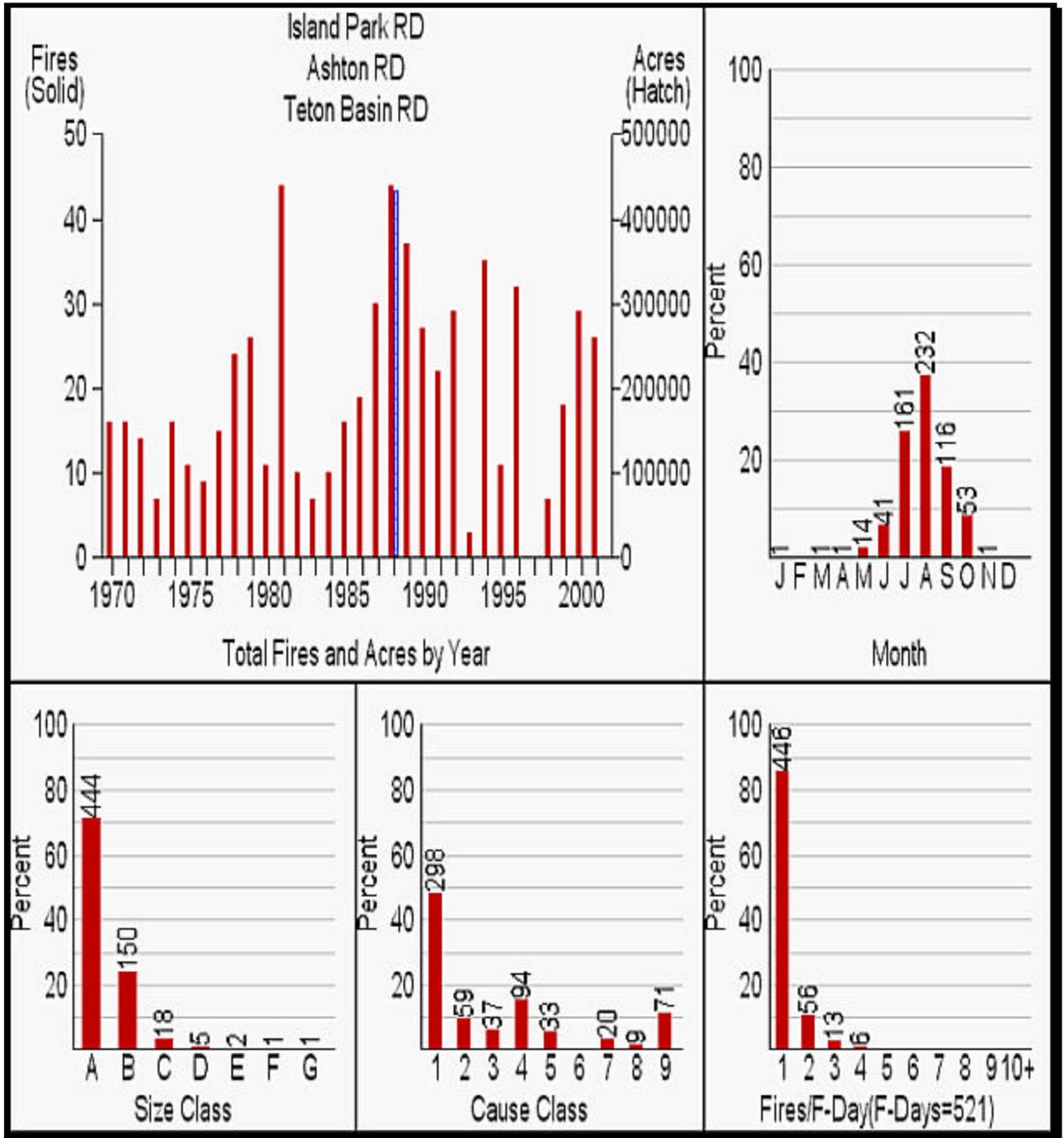
Past studies of fire history for the Jedediah Smith Wilderness and adjacent areas indicates that prior to the 1900's fires with perimeters in the 2000-8000 acre range were apparent on oblique photos in the lodgepole stands in the northwestern portion of the wilderness. The Teton Forest Reserve was surveyed in 1897. Dr. T. S. Brandegee of the United States Geological Survey, noted that most portions of the Reserve appeared to have been repeatedly burned over. DeLacy (1876) observed wildfires in August 1863 between Swan Valley, Idaho, and Jackson Lake. He described the landscape as being under a pall of smoke from fires burning north of Jackson Lake and noted that in summer, smoke from forest fires was common in the mountains (Gruell 1980). 1872 photos of Teton Canyon show very apparent evidence of a large fire occurrence. Photos taken from the same photopoint in 1969 show conifer sites heavily forested, while some of the

openings apparent on the 1872 photos are dominated by trees. Mature aspen stands occupy sites that were formerly quite open. Areas of the burn show a marked increase in the establishment and growth of conifers (Gruell 1980).

Since settlement, the potential for fire spread has been reduced by yearly consumption of fine fuels by livestock grazing. The consumption of fine fuels has, in turn, contributed to the success of initial attack by fire suppression crews (Gruell 1980).

Fire occurrence distributions for the Ashton, Island Park, and Teton Basin Ranger Districts are summarized in Table 6.

Table 6. Fire Occurrence Distributions 1970-2000 (Fire data compiled for Island Park, Ashton, Teton Basin Ranger Districts with Firefamily Plus software).



Fire Regimes

Douglas-fir Fire Regimes - It appears that Douglas-fir forests in this area historically had a fire interval of 20-50 years. These fires were generally low ground fires, which tended to thin the stands, favoring large older Douglas-fir trees with thick bark. Fire suppression has led to conditions on the Forest where most Douglas-fir stands have multiple stories and dense stocking (trees/acre). Trees of various heights provide a "ladder" for fire, allowing it to reach the tree crowns. Absence of frequent ground fires can cause dead fuels to build up over time. Fires which start under these conditions are much more severe than ground fires and tend to replace the Douglas-fir with earlier seral species such as aspen or lodgepole pine (Bradley et al. 1992)

Lodgepole pine Fire Regimes- In this area between the years 1200 and 1700, major fires occurred in the lodgepole pine component approximately every 100 years. Stand -replacement fires in lodgepole pine are closely tied to epidemics of the mountain pine beetle. Tree mortality caused by the beetle creates massive amounts of fuel. Fires that start under such conditions are likely to be severe. This cycle of beetles, fire and stand replacement is part of lodgepole pine's evolutionary history in the Rocky Mountains. We witnessed this cycle on the Forest beginning with the beetle epidemics in the 1960's and ending with large fires such as the North Fork Fire in 1988. Conditions for these large fires still exist in much of the Forest's mature lodgepole pine.

Most lodgepole pine, with the exception of that on cool moist sites, historically experienced low intensity fires every 40-60 years. Fire suppression has interrupted this portion of the lodgepole fire cycle on the Forest. The effects of this are likely not too serious, since conditions created by the mountain pine beetle are similar to those created by light ground-fires (stands are thinned and regeneration may fill in the understory). (FEIS 1997).

Aspen Fire Regimes- The average fire-free period historically was 40 years or longer for pure aspen stands. Fire in aspen has been reduced in size and frequency throughout the West due to fire control and the cessation of intentional burning. Fire suppression on the Forest has resulted in many aspen stands that are now mixed, or overtaken by, conifers such as Douglas-fir or lodgepole pine. If left undisturbed for long period of time, conifers can change the soil characteristics so that aspen are less likely to survive (Cryer & Murray 1992). Mixed conifer/aspen stands are conducive to large stand-replacing fires. If such fires were allowed to occur, they would likely lead to pure aspen regeneration providing the fires were not so severe as to destroy the aspen root systems. Moderate severity fires result in better aspen sprouting than either high or low severity fires (Bradley et al. 1992).

Subalpine Fir Fire Regimes- Subalpine fir forests generally occupy cool, moist habitats and are therefore common at higher elevations. Because of this, fire is relatively infrequent in this type, occurring every 50-350 years depending on aspect, elevation, and other factors. Large fires generally occur only during drought conditions and periods of high winds. Ladder fuels are common in this type, so fires can spread easily between tree crowns and burn large acreages (Bradley et al. 1992).

Sagebrush/Grassland Fire Regimes- Historically, fires likely occurred every 10-25 years in the Forest's sagebrush communities (Clark and Starkey 1990, Houston 1973, Winward 1987). These fires created a mosaic of vegetation conditions across the landscape. In the absence of fire, these communities tend to progress toward stands of Douglas-fir or dense sagebrush. Dense sagebrush stands are less diverse than sagebrush/grasslands, and more susceptible to soil erosion because the herbaceous vegetation is lacking. Much of the sagebrush/grassland on the Forest and throughout the west is in advanced seral stages due to the absence of fire (Winward 1992).

Whitebark pine Fire Regimes- Fires are important to the survival and regeneration of whitebark pine. This species can survive surface fires which kill other tree species that compete with it. Since whitebark pine reproduces on fire-prepared sites, stand replacing fires help perpetuate the

species. Historically, fire occurred in whitebark pine communities every 30-300 years. Suppression of fires has favored subalpine fir and Engelmann spruce over whitebark pine. Other disturbance agents affecting whitebark pine are white pine blister rust and mountain pine beetle (Morgan et al. 1994).

The Caribou-Targhee National Forest has very little site-specific fire history data. Currently, a fire history study for the Big Bend Ridge area of the Island Park subsection is in progress. Additional fire history studies at the individual subsection level are recommended and this data will be added to the guidebook as it becomes available.