

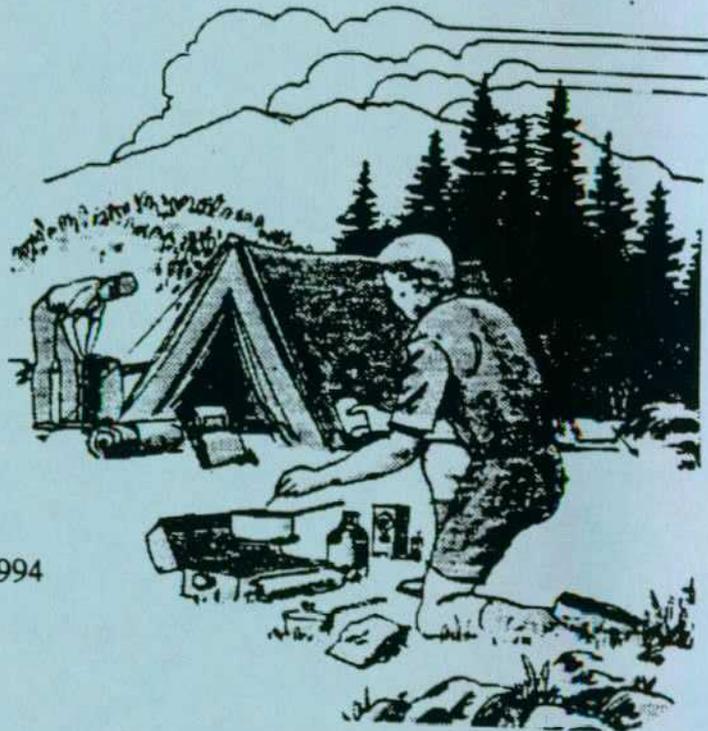
YELLOWSTONE NATIONAL PARK

draft

BACKCOUNTRY MANAGEMENT PLAN

and

ENVIRONMENTAL ASSESSMENT



January 1994

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I. INTRODUCTION

More than 95 percent of Yellowstone National Park is considered backcountry. The park has 97 trailheads, more than 1,200 miles of trails, and 303 designated backcountry campsites, which received more than 44,000 visitor-use nights in 1993. The majority of use occurs during June through September. Backcountry trails and campsites are used by both private parties and commercial outfitters, who are regulated by limited concession permits and commercial use licenses.

Backcountry management has evolved as use has grown. Trails, campsites, bridges, signing, and backcountry management policies all developed to meet users' needs as perceived by various park staff. Objectives and procedures were sometimes distinctly different from district to district within the park. Consequently, standards and enforcement were not consistent throughout the park. Park-wide goals and objectives were unclear, and the backcountry management program did not develop with formal public review. Thus, there is need for a plan with specific goals and objectives for backcountry management that outlines consistent procedures and standards to achieve those goals.

The purpose of this plan is to establish backcountry goals, objectives, policies, and procedures which direct visitor use and ensure resource protection, to analyze the impacts of these policies and procedures on the environment, and to serve as a guide for park employees who manage the backcountry. The plan provides a framework of measurable standards related to desired resource and social conditions and provides a basis for operating procedures to achieve those standards. The *Backcountry Management Plan* supplements the park's *Master Plan* (1974) and *Resources Management Plan* (1994).

In accordance with the Wilderness Act, a wilderness study was completed for Yellowstone in 1972. It recommended that more than two million acres of Yellowstone National Park be designated as wilderness. Although Congress has not acted on this recommendation, lands recommended for wilderness status are managed so as not to preclude wilderness designation, in accordance with National Park Service (NPS) *Management Policies* (1988) and Yellowstone's *Master Plan* (1974). Yellowstone's backcountry has not been developed with the exception of a relatively sparse trail system and a historic network of patrol cabins. Seven designated wilderness areas administered by the U.S. Forest Service adjoin the park.

In 1969 Congress passed the National Environmental Policy Act. This act requires all federal agencies to provide environmental information for public review before decisions are made and before actions are taken. Public involvement in Yellowstone's *Backcountry Management Plan* was initiated by issuance of a press release and scoping statement sent to regional news media, interested parties, and the general public in the summer of 1991. As requested, park staff met with representatives of several backcountry user groups in 1992 and 1993 to discuss the planning process and issues. Responses obtained from the scoping and public meetings are discussed further below. Using this public input in combination with that from park staff, goals and objectives for backcountry management were outlined. An

environmental assessment of the proposed actions and alternatives for each issue discussed in this plan can be found in Chapter VIII.

II. PURPOSE AND NEED FOR THE PLAN

Few records pertain to backcountry use and management prior to 1971. In 1973 Yellowstone developed its present system of managing overnight backcountry use through a designated-campsite permit system. Previously, designated campsites were not defined or established, however, overnight camping and fire permits were required. A central backcountry office was created to record and track campsite use. Yellowstone developed operating procedures for backcountry management in 1974. From 1973-1982 backcountry use steadily increased, peaking in 1981 with an average of 23,730 people, or 53,850 person-use nights per year (Figure 1). Backcountry use then declined by approximately one-third between 1982 and 1986. Since 1987 (except for 1988 when most of the backcountry was closed due to fires), human use has increased steadily and currently exceeds 44,000 people-use nights each year.

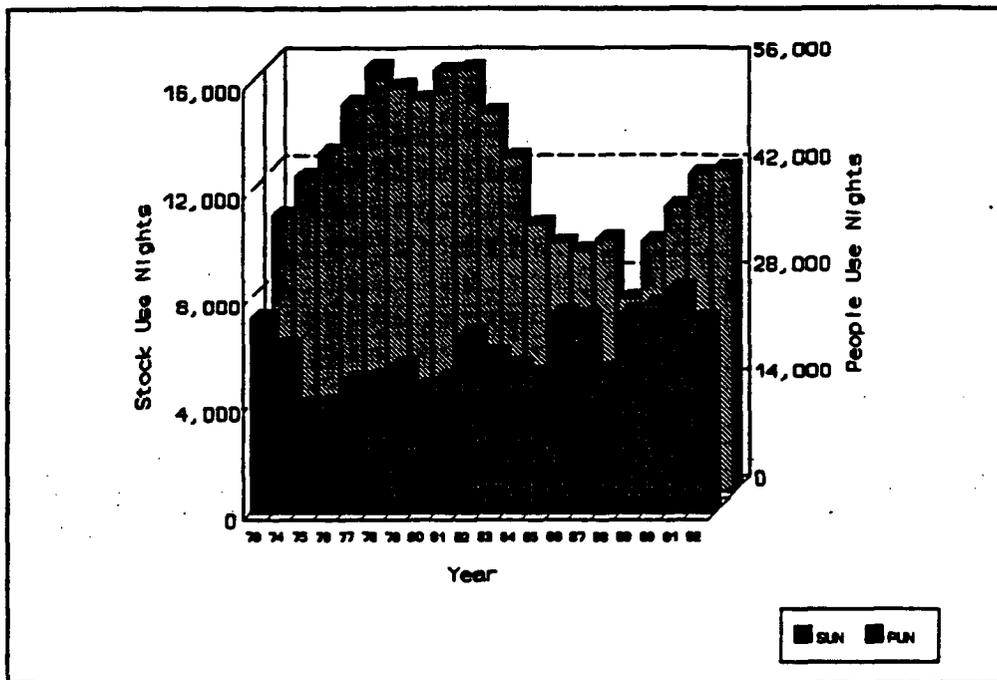


Figure 1: Number of Stock-Use Nights (SUN) and People-Use Nights (PUN), 1973 - 1992.

Stock use began to increase as early as 1986 (Figure 1) and, with the exception of 1988, climbed steadily through 1991. Stock use is currently approximately 8000 stock-use nights per year.

Day use was monitored in 1992. Day use varied, depending on trail location and distance from the trailhead, and ranged from zero to 109 people per day per trail. Overall, the level of day use appears to be approximately four times the level of overnight use.

A reservation system for commercial outfitters was implemented in 1985. A guide-certification program for stock outfitters was adopted in 1988 to ensure quality visitor services, improve information exchange between the park and outfitters, and provide for safety of operations.

Today, overnight use is managed through a system of backcountry permits. Backcountry staff throughout the park work in conjunction with the headquarters Backcountry Office to dispense up-to-date information about trail and campsite conditions and special restrictions designed to minimize public safety hazards and resource conflicts. The park is implementing a computerized network for backcountry permitting. Park rangers, in cooperation with trail crew staff and others, are responsible for the supervision of trails, campsite maintenance and evaluations, law enforcement and resource protection patrols, outfitter evaluations, monitoring visitor use and mitigating resource impacts, recommending any needed corrective action, and other resource management activities.

Two designated national trails pass through the park, the Continental Divide National Scenic Trail and the Nez Perce National Historic Trail. Most use originates in the park although some groups, primarily horse parties, enter the park from adjacent trails on national forest lands.

Boats are allowed on most all backcountry lakes but are prohibited on rivers and streams with the exception of the Lewis Channel. Boat use appears to have remained relatively stable for three decades, based on the number of boat permits issued annually. In 1963, the park issued 4,011 permits to boaters; in 1973, the number was 3,312. In 1993 the park issued 3,233 boat permits, 58 percent of which were for non-motorized craft and 42 percent of which were for motorized boats.

During winter, cross-country skiing is the principal backcountry activity. Since 1988 backcountry visitor-use nights each winter season (December through March) ranged from 1,157 (1990-91) to 2,333 (1989-90), with an average of 1,841. The 5-year trend suggests there will continue to be some visitors, but not a growing number, that desire a winter backcountry camping experience. However, overall winter visitation figures have rapidly outgrown 5- and 10-year projections. Winter camping use is highest in February, which coincides with the highest parkwide winter visitation figures. The majority of winter visitors travel into the park for day trips or stay overnight at one of the park lodges. Observations

suggest that demand for winter backcountry day trips (on skis, snowshoes, or foot) has been increasing and will continue to increase.

III. LEGISLATIVE AUTHORITIES AND ADMINISTRATIVE CONSTRAINTS

A. Legislation

The Act of March 1, 1872: "Set [Yellowstone] apart as a public park...for the benefit and enjoyment of the people...and for the preservation...of all timber, mineral deposits, natural curiosities or wonders...and their retention in their natural condition."

The Act of May 7, 1894: Provided for the protection of birds and mammals, prohibited hunting, and regulated fishing.

The Act of August 25, 1916 (The Organic Act): "The National Park Service...shall promote and regulate the use...by such means...as 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 a manner...as will leave them unimpaired for future generations."

The Act of April 9, 1924: Authorized construction and improvement of roads and trails in the National Parks.

The Wilderness Act of 1964: Mandated a review of every roadless area of 5,000 contiguous acres or more in national parks...and report...a recommendation as to suitability...for preservation as wilderness.

The Concessions Policy Act of 1965: Encouraged and enabled private persons and corporations "to provide and operate facilities and services...[deemed] desirable for the accommodation of visitors...such services shall be limited to those that are necessary and appropriate for public use and enjoyment...and are consistent with the preservation and conservation of the area."

National Historic Preservation Act of 1966: Called for administration of federally owned prehistoric and historic resources...for the inspiration and benefit of present and future generations.

National Trail Systems Act of 1968: Created a trails system "to provide for the ever-increasing outdoor recreation needs...and to promote preservation of, public access to, travel within and enjoyment of...the outdoor areas and historic resources of the Nation."

Endangered Species Act of 1973 (as amended): Outlined a program "to conserve threatened and endangered species...insure that any action carried out by [each federal] agency is not

likely to jeopardize the continued existence...or result in destruction or adverse modification of habitat of such species."

Archaeological Resources Protection Act of 1979: Secured for the present and future benefit of the American people, archaeological resources and sites on public lands.

B. NPS Management Policies (1988)

- * The primary objective in natural zones will be the protection of natural resources and values for appropriate types of enjoyment...with a concern for fundamental ecological processes.
- * Management emphasis will be on minimizing human impacts on natural animal population dynamics.
- * Landscape conditions caused by natural phenomena...will not be modified unless required for public safety or for necessary reconstruction of dispersed-use facilities, such as trails.
- * Human activities will be managed to control erosion. The intensity of use will be regulated in certain areas and at certain times based on water quality monitoring.
- * NPS will strive to preserve the natural quiet and...sounds associated with the physical and biological resources. Action will be taken to prevent or minimize unnatural sounds that adversely affect park resources or visitor's enjoyment of them.
- * In natural areas, artificial outdoor lighting will be limited to basic safety requirements and will be shielded when possible.
- * NPS will...preserve the soil resources and prevent, to the extent possible, unnatural erosion...or contamination of the soil.
- * Archaeological resources will be left undisturbed unless removal of artifacts...is justified by protection, research, interpretive or development requirements.
- * Cultural resources will be professionally evaluated and categorized according to criteria of significance. Pending planning decisions, all cultural resources will be protected and preserved in their existing conditions.
- * In preference to new construction, every reasonable consideration will be given to using historic structures for park purposes compatible with their preservation and public appreciation.
- * Historic and prehistoric burial sites will be identified and protected.

- * Information regarding the location, nature and cultural context of archaeological and historic resources may be exempted from public disclosure...if it has been determined that dissemination will have substantial adverse effects on the resources.
- * NPS will take no action that would diminish the wilderness suitability of an area recommended for wilderness designation...management decisions pertaining to recommended wilderness will be made in expectation of eventual wilderness designation.
- * In protecting wilderness character and resources...NPS will adhere closely to the "minimum tool" concept. Potential disruption of wilderness character and resources and applicable safety concerns will be considered before, and given significantly more weight than, economic efficiency. Administrative use of motorized equipment or mechanical transport, including motorboats and aircraft, will be authorized only (1) if determined by the superintendent to be the minimum tool needed to achieve the purposes of the area, or (2) in emergency situations involving human health or safety or the protection of wilderness values.
- * The wilderness management plan will establish indicators, standards, conditions and thresholds above which management actions will be taken to reduce impacts.
- * Ranger stations, patrol cabins, associated storage or support structures, drift fences and facilities supporting trail stock operations may be placed in wilderness only if necessary to carry out wilderness management objectives.
- * Unpaved trails and trail bridges may be provided where they are essential for resource protection or where significant safety hazards exist during the normal period of use.
- * Development of facilities to serve users will generally be avoided; campsites may be designated when essential for resource protection or enhancement of opportunities for solitude. Facilities may include a site marker, fire ring, tent site, food-storage device and toilet, but only if determined to be the minimum necessary. Picnic tables will not be placed in wilderness.
- * Only those signs necessary to protect wilderness resources or for public safety will be permitted...they should be compatible with their surroundings and be the minimum size possible.
- * NPS will encourage and facilitate those uses that require the wilderness environment and do not degrade wilderness resources and character. Management actions will be directed toward providing opportunities for primitive and unconfined types of recreation by park visitors.
- * Wilderness-oriented commercial services, such as guide services for outfitted horseback or hiking trips, may be authorized if they meet the "necessary and appropriate" tests of the

Concessions Policy and Wilderness Acts and if they are consistent with the wilderness management objectives.

- * Appropriate restrictions may be imposed on any authorized activity in the interest of preserving wilderness character and resources or to ensure public safety.
- * NPS will not eliminate or unreasonably control risks that are normally associated with wilderness, but will strive to provide users with general information, recommended precautions, minimum-impact use ethics and applicable regulations.
- * Refuse will not be disposed of in backcountry areas, except that combustibles may be burned where authorized. The NPS will not provide refuse containers in backcountry areas.
- * As a general rule, public use of motorized equipment or any form of mechanical transport will be prohibited in wilderness.

C. Administrative Constraints

- * As stipulated in the *Final Environmental Impact Statement, Grizzly Bear Management Program* (1982) and *Yellowstone's Annual Bear Management Operations Plan*, a number of areas are closed on a permanent or seasonal basis or are restricted in the types and levels of public use allowed. This is done in order to balance the use and safety of humans with protection of grizzly bears and their habitat. These restrictions may be reviewed and modified in the context of the Grizzly Bear Management Program or a revision to that Environmental Impact Statement, with appropriate NEPA and Section 7 (Endangered Species Act) compliance.
- * Regulations stipulated in Title 36 of the *Code of Federal Regulations*, governing parks, forests, and public property, are incorporated into this document and into backcountry management operations.
- * Documents relevant to this planning effort include the 1974 *Master Plan* for Yellowstone National Park, which establishes guidelines for overall use, preservation, management, and development of the park; the 1972 *Wilderness Recommendation* for Yellowstone, which found ten units totaling 2,016,181 acres of primitive lands in the park suitable for preservation as wilderness and proposed them for inclusion in the national wilderness preservation system; the 1986 and 1991 *Statement for Management*, which establish management objectives for Yellowstone; and the 1990 *Winter Use Plan*, a comprehensive plan establishing policies for overall management of winter visitor use in the park.

IV. GOALS AND OBJECTIVES OF THE PLAN

A. Goals

1. Protect and conserve natural and cultural resources while recognizing fundamental ecological processes.
2. Provide opportunities for visitors to enjoy a quality backcountry experience.
3. Protect the backcountry resource and accommodate reasonable wilderness uses in a manner that does not cause significant deterioration to those resources.

B. Objectives

1. In keeping with NPS *Management Policies* (1988), manage the proposed wilderness so as not to preclude eventual wilderness designation.
2. Apply policies consistently throughout all areas of the park, thereby enhancing backcountry users' experiences and their understanding of and compliance with regulations.
3. Promote minimum-impact use through education, enforcement, and design standards which will provide a backcountry experience consistent with a primitive setting. Apply the "minimum tool" concept and reduce impacts on natural and cultural resources and visitor experiences caused by administrative uses.
4. Stabilize and restore deteriorated areas and prevent further damage of backcountry resources.
5. Base management decisions on sound scientific data and information. Incorporate new data and information, as necessary, into a dynamic backcountry management program.
6. Incorporate safety into all aspects of the backcountry operation, while not eliminating the inherent risk(s) offered by the wilderness environment.
7. Integrate backcountry management objectives with those defined in other management plans, particularly those related to threatened and endangered species.

V. OVERVIEW OF ISSUES

The issues addressed in this plan are many but can be grouped into three general categories: *Management of Visitor Use, Resource Protection and Management, and Information and Orientation for Backcountry Users*. The management issues were developed through the scoping and planning process. Park employees, managers, and the general public were asked to identify the issues which the plan needs to address for effective backcountry management. The following is a brief synopsis of the three issue categories.

A. Management of Visitor Use

Despite a long history of use in Yellowstone, "backcountry" has not been officially defined. Nor has the park identified its goal(s) with regard to the visitor experience(s) offered. While visitor experience is highly individual and personal, recreational experiences may be described on a spectrum. This spectrum is based on such factors as the isolation one is likely to encounter, the means of access (i.e., motorized or non-motorized, roads or trails), the amount and visibility of management or regimentation, and the degree of impacts on both resources and visitors (Clark and Stankey 1979). Users traditionally access Yellowstone's roadless areas by foot, stock, and/or boat; each mode of access presents different management challenges and requires slightly different management policies and techniques.

Park managers may wish to describe the type(s) of backcountry recreation opportunities that are likely to be found by visitors and delineate how management activities affect those opportunities. Placement, frequency, and design of signs, trail markers, bridges, campsite facilities, administrative structures, and other facilities (such as food poles and fire rings) affect both physical resources and, potentially, visitors' perceptions of "wildness." Trail standards, markers, and use of mechanized equipment for trail construction, maintenance, emergencies, or for other purposes similarly may affect how visitors' view their backcountry experience.

Use levels should be addressed on a broad, parkwide scale and as well as a more localized level. Use levels can affect natural and cultural resources and also affect visitors' enjoyment. Again, visitors vary widely in their tolerance for other users in the backcountry. Recreation planners suggest that recreation providers try to "match" visitors' desired experiences with opportunities that are likely to provide visitor satisfaction.

Visitors may choose a commercial provider of recreation services, such as a backpack or stock outfitter, for their trip into Yellowstone's backcountry. Commercial users have, in the past, been allowed some special opportunities, such as advance reservation of campsites, that may conflict with non-commercial users. The providers of commercial services have an economic interest in Yellowstone's backcountry management program; such aspects as use limits and seasons may affect an outfitter's ability to conduct a profitable business. Special uses such as climbing or hunter access across the park need to be addressed, as does the management of National Scenic and National Historic trails that cross Yellowstone.

Policies have not always been clearly described to employees or to the public, nor has there been consistent application of policy or information about using the backcountry. This has resulted in some negative experiences for users, particularly those who make repeat or extended trips throughout the park.

B. Resource Protection and Management

As stated in the goals of this plan, the park must preserve its natural and cultural resources while recognizing fundamental ecological processes. Backcountry use and management must be done in a manner consistent with protection of soils, water, native vegetation, geothermal resources, native birds and other wildlife (especially threatened and endangered species), fisheries, archeological and historical sites, and aesthetics.

Any level of human use affects the park's natural and cultural resources. The goal is not to eliminate such effects, but to set acceptable standards for resource protection and/or limits on adverse effects. In this manner a balance is achieved between resource use and protection. The park must also outline a consistent program for long-term inventory and monitoring of its resources in order to measure the success of this balancing act.

Standards for protecting and monitoring the status of backcountry resources must be clear and measurable. The staff of the park must have the time and skills necessary to monitor the resources and to apply resultant data to management actions designed to meet the defined resource objectives. Past inventories and monitoring efforts have lacked consistency and/or staff and financial support to build a useful, long-term database.

C. Information and Orientation for Backcountry Users

One means of accomplishing many management objectives is through information and education. Backcountry users are a widely dispersed constituency who may access the resource from dozens of geographic locations. The presentation of information designed to enhance users' experiences, increase their knowledge, and improve their level of caution and compliance with park rules and recommendations is integral to achieving goals and objectives outlined in this plan. How, what, and where information is made available should be outlined in concert with programs to manage resources and visitors. Visitors now receive backcountry information from many sources, formal and informal. Park staff at visitor centers and backcountry offices are not always equipped with the most accurate information about resource or safety conditions, recommended user behaviors, or with knowledge of the backcountry areas visitors desire to access.

Users and park staff need accurate information about trail locations and conditions. Historically, the park has rerouted, renamed, or abandoned many trails that may still appear on maps or in printed guidebooks. The park should use consistent names to refer to well-established routes and should present up-to-date information on trail and campsite locations

and conditions in its public information. Regulations and policies must be clearly outlined and this information made available to backcountry users for trip planning.

Summary

The lack of a *Backcountry Management Plan* has prevented the park from presenting a comprehensive program outlining goals, objectives, and techniques for balancing backcountry use with other objectives, such as human safety and resource protection. This has resulted in an operational system that lacks consistent application across the park and that is complex to explain to users and to new staff. Management actions taken with an intent to improve resource conditions are difficult to evaluate for success because there is no defined standard against which to measure the results. Information about the range of backcountry experiences that visitors might reasonably expect to find in the park is not presented well. And, because the park has not consciously defined how it will manage the backcountry setting, there is widespread but unplanned variation in the types of facilities and trail and campsite conditions that visitors encounter. This *Backcountry Management Plan* is intended to correct these problems.

VI. OVERVIEW OF ALTERNATIVES

Several broad alternatives have been suggested to address all the issues. In this section of the plan, we identify these alternatives and display a table of how they compare with each other in addressing specific issues, for instance, use levels. In the subsequent chapter (VII), each specific management issue is outlined in detail, including the history of the current management practice, the proposed action, and alternatives considered or rejected.

A Limits of Acceptable Change (LAC) approach to planning (Stankey et al. 1985) is increasingly used to help define the resource and social conditions desired in a land-use area. Once desired conditions are outlined, management actions may be prescribed to achieve those conditions.

During the development of this plan, Yellowstone National Park staff used a modified LAC approach to backcountry planning. First, park management's concerns and issues were identified and public input was solicited. A Scoping Statement was released for public review during the summer of 1991. Fifty comments were received and incorporated into the review. The planning team then outlined a variety of different opportunities they believed Yellowstone offered and/or could provide to its users, including trail and/or camping opportunities with varying associated degrees of risk and solitude. The staff also determined what existing and newly collected data could be used to describe resource or social conditions. Overnight and day-use visitor statistics for backcountry trails and campsites and inventories of backpacker and stock campsite conditions were collected and analyzed. Then, using this existing resource and social condition information, the planning team proposed standards for different zones of the backcountry. These zones provide different opportunities

and conditions likely to be experienced by visitors. The proposed alternatives describe management actions that may be used to achieve the proposed standards. Once a final course of action is determined, monitoring of resource and social conditions would continue. Monitoring may eventually result in revised management actions or revised standards; any revisions would be designed to achieve the overall goals and objectives outlined in this plan.

The Proposed Action - A Zoning System

Under the proposed action Yellowstone's backcountry would be divided into three zones: *Threshold Zone*, *Backcountry Zone* (subdivided into *High*, *Moderate*, and *Low Use Trail* classes), and *Pristine Zone*. These delineations are based on levels of use that existed in 1992, and on a spectrum of desired conditions/experiences the park wishes to offer to users. While not defining overall use limits for trails or zones, the intent is to present users with information about use levels and likelihood of contacts with other parties. The degree and types of use, presence of cabins, bridges, additional facilities, and many other conditions may affect visitors' experiences. Presentation of information about resource and social conditions may help visitors choose a trip that is likely to provide them with their desired experience. The proposed action would also define the limits of acceptable change in backcountry campsite size, levels of grazing at campsites, the total number of campsites available parkwide, and the number of and types of facilities available for public and administrative use.

The *Threshold Zone* would adjoin roads or park developed areas where most park visitors concentrate their use. This zone would contain easily accessed, short-distance trails that receive moderate to high use. Campsites would generally not be available in this zone, and a higher profile of management presence would be evident. Many visitors will find that this zone provides them a high-quality outdoor experience.

The *Backcountry Zone* would include all of the park trails outside of developed and *Threshold* areas. Within this zone, there would be no attempt to limit day use at present. Backcountry trails may vary from moderately challenging to more challenging, but would generally be well-maintained and cleared for stock travel. Trails would have the minimum marking necessary to guide users. Minimal facilities may be provided to protect visitors or resources (such as bridges over bogs or hazardous stream crossings and toilets in high-use areas). Natural features would generally not be signed. Efforts would be made to minimize the administrative presence. The "minimum tool" concept would be applied when maintaining trails, patrol cabins, and campsite facilities. The minimum tool is the minimum device necessary to successfully, safely, and economically accomplish the objective; the chosen tool or equipment should be the one that least degrades wilderness values.

Trails would be classified into *High*, *Moderate*, and *Low Use* classes, which reflect the level of day, overnight, and stock use. These classifications would serve to inform visitors of the amount of solitude they are likely to experience along a chosen trail and would help managers set work priorities and standards. Camping would generally be restricted to

designated campsites along trails. Overnight use would be managed by limiting the number of campsites available and by setting a maximum number of persons and/or stock that may be permitted at each site. Campsites would also be classified into high, moderate, and low use classes (independent of the trail condition classes). Campsite classes reflect the amount of measured resource impact at campsites and the amount of use. These classifications would primarily be used to assist park staff in assessing site-specific management goals against measurable standards.

Pristine Zones would have no trails (but could contain abandoned trails); dispersed use and camping may be permitted under certain circumstances. No signs, markers, bridges, or facilities would generally be found, although cultural resources would be preserved. Administrative presence would be minimal in *Pristine Zones*, and generally would be limited to necessary ranger patrols, emergency circumstances (searches and rescues), or specially permitted operations that may require use of equipment for access, long-term monitoring, or telecommunications.

Users could access the backcountry by foot or by using stock, as private parties or by using commercial services provided by permitted concessioners. Boats of any kind could access all of Lewis Lake and non-motorized boats would be a means of accessing Shoshone Lake. On Yellowstone Lake, motorized boats could be used to access the main body of the lake and half of the Flat Mountain Arm; non-motorized boats would be the only watercraft permitted as a means of accessing the South and Southeast Arms and the tip of Flat Mountain Arm.

Winter use of the backcountry outside of developed and *Winter Threshold* areas would generally require a high degree of self-sufficiency on the part of the users. Users would necessarily assume a considerable degree of solitude and risk, have map and compass skills and equipment, be prepared for inclement winter weather, carry survival gear, and should have low expectations for prompt emergency assistance.

Resources would be protected by a variety of means, including directing use away from sensitive areas (such as backcountry thermal basins), limiting use types and/or levels, educating users on minimum impact camping techniques, timing of use restrictions, and site rehabilitation.

Park backcountry offices would display large-scale maps indicating the backcountry zones and trail condition classes. Backcountry camping permits would be required for all overnight users. The park would investigate a system to allow all users an opportunity to make backcountry campsite reservations in advance and would ensure equitable allocation of campsite reservation opportunities between commercial and non-commercial users. Information would be designed to help visitors match their expectations with an itinerary likely to meet those conditions. Efforts would be made to ensure that information presented in guidebooks, topographic maps, and other recent references is accurate for trail names, locations, and conditions. Information at backcountry offices and trailheads would be standardized with regard to safety messages, rules, and regulations, and would address route-

specific information where appropriate. Interpretive messages would be presented for some areas.

Alternative A - The No-Action Alternative/Continuation of Present Management

In this alternative, Yellowstone's backcountry would be defined as any part of the park more than 250 yards from paved roads and more than one-half mile from park facilities (other than trails and patrol cabins). Exceptions would exist where special considerations would require an exception to standard backcountry management practices or where trails beyond 250 yards from roads would not be managed as backcountry areas. Examples of exceptions would include the Upper Geyser Basin boardwalk trails, the Lone Star Geyser Trail, and the Slough Creek Trail to the Silvertip Ranch. The park's *Statement for Management* (1991) indicates management zoning for Yellowstone, as outlined in *NPS Management Policies* (1988). Yellowstone's management zones include a Natural Zone (the vast majority of park acreage), Historic Zones, and a Park Development Zone. The park's 1972 *Wilderness Recommendation* delineated 2,016,181 acres for potential inclusion into the National Wilderness Preservation System; this appears in some park planning documents as a Wilderness Subzone.

No conscious effort would be made to define backcountry conditions by area. Although a spectrum of backcountry opportunities would be available, no deliberate effort would be made to match visitor expectations with an itinerary likely to meet those expectations. Visitors could experience varying use levels, numbers of encounters, and administrative presence on backcountry trails in different portions of the park's backcountry. Limits of acceptable change for campsite size and condition and for grazed sites, if determined, would be set on a site-by-site basis by area rangers.

Trail standards would generally be the same parkwide, but standards for placement of bridges and for the amount and type of campsite facilities, signing, trail marking, and administrative use would sometimes vary by district and would be determined by area rangers. Thus, visitors may have difficulty recognizing the level of risks and wildness associated with each trail. For example, the Snake River must be forded immediately upon leaving the trailhead at South Entrance, but smaller creeks farther up the same trail are often bridged. Today, some fords, mountain passes, and destinations are marked with a placename sign, while in other areas no landmarks are signed. Along some trails, orange markers are placed at frequencies of several dozen yards; other trails have few markers. Information about such conditions is not readily available in backcountry offices or at trailheads. Under this alternative, these conditions would continue.

Some winter trails, such as those close to the Old Faithful, Mammoth, and Canyon areas, are marked to a high standard, while others are not. Because of this and the lack of consistent winter trail information presented, visitors may not know how to assess the degree of risk associated with their winter backcountry travel. Under the no-action alternative, this condition would continue.

Access to the backcountry would continue to be by foot or by using stock, as private parties or by using the commercial services provided by permitted concessioners. Currently, commercial outfitters can reserve a percentage of backcountry campsites well in advance; non-commercial parties cannot do so. Motorized boats are now used to access all of Lewis Lake and the main body and portions of the arms of Yellowstone Lake; non-motorized boats are used to access Shoshone Lake. These conditions would continue under the no-action alternative.

Resources would be protected by a variety of means, as in the proposed action. But no system would be maintained to standardize the application of data from stock-use transects or backcountry campsite inventories across the park. Backcountry camping permits would continue to be required of all overnight users.

Information at backcountry offices would be standardized with regard to safety messages and regulations. Major trailheads now have standardized information about rules, regulations, safety messages, and bear management. Maps are generally not available at trailheads, nor are all trailheads marked from the main road to direct visitors to the correct starting point. Interpretive signing may be found at some trailheads and along some backcountry trails. Information about trail names and conditions (i.e., maintained or abandoned) is sometimes inconsistently presented in recent guidebooks, maps, and at park information centers and backcountry offices. These conditions would continue under the no-action alternative.

Alternative B - Uniform Backcountry Management

This alternative would strive for uniform management of the backcountry throughout the park. The backcountry would be defined as all park land contained within both the Wilderness Subzone and the Natural Environment Subzone (*Statement for Management* 1986); all backcountry management policies, regulations, and standards would apply here. Limits of acceptable change in backcountry campsite size and levels of grazing at campsites would be defined uniformly throughout the park. Standards for campsite facilities, bridges, trail maintenance, signs, and trailhead facilities would apply uniformly to all backcountry trails and trailheads.

A smaller spectrum of backcountry opportunities would be available compared to the proposed action. Visitors could expect high use levels in non-backcountry zones but, in general, would experience moderate use levels, numbers of encounters, and administrative presence on backcountry trails. Trails would be deliberately marked to prevent persons from getting lost, and trail junctions, river fords, and significant landmarks such as mountain passes would be signed. No attempt would be made to delineate trails based on measured amounts of use. Eventually all major rivers would be bridged at trail crossings. All campsites would have the same facilities, and all trails would be maintained to a standard suitable for stock use. Off-trail day use would be permitted in many areas; this would provide a different, more primitive experience for some travelers. However, no off-trail camping would be permitted.

Winter trails would be marked to the same standard as in summer, providing a moderate to challenging experience for winter users, depending on their skills and the distance they choose to go into the backcountry. While users should be prepared for winter weather conditions, the assumption of risk would not be as high as under the **Proposed Action**.

Access would be by foot or by using stock, as private parties or by using the commercial services provided by permitted concessioners. Approximately 50 percent of stock and non-stock campsites would be available for advance reservation by commercial users. A percentage of campsites in popular areas would be available for all groups to reserve in advance. Motorized boats would be a means of accessing the backcountry of Yellowstone and Lewis lakes, as described under *Alternative A* and non-motorized boats a means of accessing Shoshone Lake. However, the park would remove boating-related facilities, including docks, from the backcountry.

Resources would be protected by a variety of means, as in the **Proposed Action**. Backcountry camping permits would be required of all overnight users. Information at backcountry offices and trailheads would be standardized with regard to trip planning, safety messages, and rules and regulations. No interpretive signing would be found along backcountry trails.

The following table (**Table 1**) outlines the three major alternatives and how they compare in addressing the major issues.

TABLE 1 - ALTERNATIVES FOR BACKCOUNTRY MANAGEMENT

ISSUE	PROPOSED ACTION (Zone System)					ALTERNATIVE A (Present Management)	ALTERNATIVE B (Uniform Management)
	THRESHOLD ZONE	BACKCOUNTRY ZONE			PRISTINE ZONE		
		High-Use Trails	Moderate-Use Trails	Low-Use Trails			
Defining the Backcountry of Yellowstone	All of park Wilderness and Natural Environment subzones defined as backcountry and divided into <i>Threshold, Backcountry, and Pristine zones</i> (Fig. 4) to guide management activities as described under other issues					No zoning, backcountry 250 yds from road, with exceptions	No zones, includes Wilderness and Natural Environment Subzones (Fig. 3)
Defining the Visitor Experiences Offered	Moderate to high use; travel by foot, stock, bicycles; surface may be asphalt, boardwalk, or old roadbeds	Moderate to high foot use; moderate stock use; natural tread surface	Moderate foot use; high stock use; natural tread surface	Low foot and stock use; natural tread surface	Low use levels; encounters with other visitors extremely rare; no maintained trails	No effort to manage for different visitor experiences	Emphasize same experience throughout backcountry
Designated Trails and Campsites versus Dispersed Use	No campsites; numerous designated trails exist; dispersed day use opportunities exist	More than 1000 miles of maintained trails and 303 campsites exist; accessible by either foot, stock, or boat			No trails, no designated campsites; limited dispersed camping may be permitted	Historic trail network in place; districts may close or re-route trails and limit camping; dispersed use opportunities limited	Existing trails and sites remain; no new trails; no dispersed camping use permitted
Accessibility and Risk	Impediments to access may be altered; risk generally low	Trails not necessarily modified for ease of access, but steepness, elevation gain, and impediments would be described to help users choose desired level of difficulty; moderate to high risk associated with backcountry travel; prompt assistance or rescue not assured, but all reasonable efforts would be made to undertake search-and-rescue missions			Access is a challenge; users should assume high risk and self-sufficiency	One trail and campsite is designed for wheelchair access; no effort to describe challenge factors; moderate to high risk; reasonable efforts made for search and rescue	Trails would be classified for accessibility by mobility-impaired; moderate to high risk; reasonable efforts made for search and rescue

TABLE 1 - ALTERNATIVES FOR BACKCOUNTRY MANAGEMENT

ISSUE	PROPOSED ACTION (Zone System)					ALTERNATIVE A (Present Management)	ALTERNATIVE B (Uniform Management)
	THRESHOLD ZONE	BACKCOUNTRY ZONE			PRISTINE ZONE		
		High-Use Trails	Moderate-Use Trails	Low-Use Trails			
Marking and Managing Trailheads	Trailheads well-marked with uniform signing, trail registers, topo maps, mileages to key destinations; need for facilities to be assessed at each site	No trailheads present in these zones				Trailheads marked sometimes with trail name, sometimes not; maps not posted at trailheads; facilities determined by area personnel	Topo maps, uniform signs, uniform facilities at all trailheads, including parking space, vault toilet, hitchrails and horse-trailer parking
Management of National Scenic and National Historic Trails	Trails marked at park entry and exit points with National Trail symbol; no special interpretation occurs on trails. Existing trails and campsites used as much as possible, but new campsites and trail segments may be added to facilitate through users of national trails					Trail use accommodated by existing trail and campsite network; through use of entire routes would not be easily facilitated	Trails marked every 100' with National Trail symbol; existing trails would be used; campsites would be added along routes; interpretation of trails would occur
Trail Clearing, Maintenance, and Rehabilitation	Trails maintained to high standard, easy to follow 36" tread, 10' cleared height; surface may be natural, boardwalk, or paved	Trails maintained to stock standard (24-26" tread, 10' high clearance); natural surface; tread easy to follow due to use levels and/or maintenance level; signs of old trails to be removed; these trails of highest priority for clearing and maintenance	Trails maintained to stock standard and of natural surface; trails easy to follow due to use but of moderate priority for clearing, maintenance, and rehabilitation; signs of old trails to be removed	Trails maintained to stock standard and of natural surface; trails may sometimes be a challenge to follow due to low use and low priority for clearing and rehabilitation; old trails to be removed	No trails in this zone	Same parkwide trail standard but variation occurs in areas nearest frontcountry (paved, boardwalk surfaces); area staff determine priorities for clearing and rehabilitation; traces of old trails remain	All park backcountry trails maintained to same high standard but would not be paved; all abandoned trails to be eliminated and rehabilitated

TABLE 1 - ALTERNATIVES FOR BACKCOUNTRY MANAGEMENT

ISSUE	PROPOSED ACTION (Zone System)					ALTERNATIVE A (Present Management)	ALTERNATIVE B (Uniform Management)
	THRESHOLD ZONE	BACKCOUNTRY ZONE			PRISTINE ZONE		
		High-Use Trails	Moderate-Use Trails	Low-Use Trails			
Signing and Marking Trails and Features	Trails well-marked by signing or tread; interpretive signs may occur	Marked only at trail junctions and confusing spots; high use generally makes trails easy to follow; some historic and directional signing present	Marked only at trail junctions and confusing spots; trails moderately easy to follow; minimal new signing provided	Marked only at trail junctions and confusing spots; trail tread not always obvious due to low use levels; minimal signing	No trails; generally no signs or markers present	Level and type of signing and trail marking varies by district	All trails uniformly marked to high standard; junctions, fords, natural features would be marked
Marking the Park Boundary	Zone does not overlap with park boundaries	Boundary marked with standard NPS boundary marker on trees or posts along park line; existing clearcut swaths would be allowed to naturally revegetate and no new ones cut				Marking varies by district; signs, paint blazes, clearcut swaths all could exist	Marking by painted or blazed trees or posts in uniform manner
Use Limits and Campsite Capacities	No campsites; currently no day use limits	Parkwide capacity for camping parties set at 303 (current number); no present limit on day use party size or number; campsites designated for small (max. 8 persons) or large (max. 12 visitors plus up to 3 additional outfitters/guides/organized group leaders) parties; max. 25 stock per campsite		Parties of up to 4 persons may request undesignated campsites under special conditions; no overnight stock parties		Number of campsites and maximum party sizes fluctuate; vary by district; no day use limits	300 campsites would be designated for groups (max. 20 persons) or individuals (max. 8); limit 25 stock per campsite; no day use limits at present
Campsite Standards	No campsites	All campsites in 2-point design with food pole and marker; LAC standards established for High, Moderate, and Low Impact campsites; procedures outlined for relocation and rehabilitation of sites that fail to meet standards based on measurable criteria; standard guideline established for determining no-wood-fire sites			No campsites; no wood fires	No campsite standards exist; facilities vary; criteria for closing/relocating sites vary by district	All campsites would have same standard design and facilities; all wood fires prohibited
Placement/Design of Bridges	Most stream crossings bridged	Bridges generally built only to alleviate resource damage or major safety hazards; bridge designed to blend in with landscape and be minimum necessary; major bridge construction not anticipated			No trails; no bridges	Placement and design vary by district	All streams not safe for hikers to cross would be bridged

TABLE 1 - ALTERNATIVES FOR BACKCOUNTRY MANAGEMENT

ISSUE	THRESHOLD ZONE	BACKCOUNTRY ZONE			PRISTINE ZONE	ALTERNATIVE A (Present Management)	ALTERNATIVE B (Uniform Management)
		High-Use Trails	Moderate-Use Trails	Low-Use Trails			
Boating Access and Facilities	Motorboat use allowed; includes waters adjacent to Grant Village and Lake/Bridge Bay developments on Yellowstone Lake and waters adjacent to Lewis Lake campground	Boating prohibited on park rivers (except Lewis Channel); non-motorized boats allowed on most all non-thermal backcountry lakes; Lewis Lake, the main body of Yellowstone Lake and the eastern portion of Flat Mountain Arm would be <i>High Use</i> zones with motorboats allowed; Shoshone Lake, all of the South and Southeast arms and the western portion of Flat Mountain Arm of Yellowstone Lake would be <i>Low Use</i> , open only to non-motorized boats.			Non-motorized boats allowed on non-thermal lakes; no boating on rivers	Boats prohibited on rivers except Lewis Channel; motorboats restricted in lower arms of Yellowstone Lake; non-motorized boats allowed on non-thermal lakes and all of Yellowstone Lake	Boating prohibited on park rivers except Lewis Channel; experimental motorboat restriction initiated in Southeast Arm of Yellowstone Lake; non-motorized boats on non-thermal lakes
Facility Standards	Minimum tool concept applies; facilities likely to be evident	Goal is to reduce evidence of facilities by screening from trails and campsites; no net increase in number of patrol cabins and major structures; minimum tool concept applies to other facilities; non-historic cabin structures could be replaced with log-type design			Little or no evidence of other facilities	Facilities may be evident; varies between districts; no effort to screen from trails or campsites	Most incompatible facilities would be removed from backcountry
Management of Commercial Use	Commercial services provided by permitted individuals and businesses; permittees would be evaluated periodically; park would evaluate placing all backcountry outfitters under Limited Concessions Permits; number of stock outfitters would be reduced through natural attrition until demonstrated demand for more					2-year moratorium on granting new commercial use licenses while park evaluates need; only stock outfitters evaluated	Target numbers set for commercial use providers: 50 stock, 10 boat, and 10 backpack outfitters, managed by Limited Concessions Permits

TABLE 1 - ALTERNATIVES FOR BACKCOUNTRY MANAGEMENT

ISSUE	PROPOSED ACTION (Zone System)				ALTERNATIVE A (Present Management)	ALTERNATIVE B (Uniform Management)	
	THRESHOLD ZONE	BACKCOUNTRY ZONE					PRISTINE ZONE
		High-Use Trails	Moderate-Use Trails	Low-Use Trails			
Management of Stock: Use Limits and Off-trail Travel	Day use party size cannot exceed 25 stock; no campsites available; off-trail day travel allowed unless area closed	Most trails open and maintained to accommodate stock use; trails not suitable identified in Appendix III. Maximum 25 stock per party; stock use allowed at percentage of campsites along <i>High</i> , <i>Moderate</i> , and <i>Low Use</i> trails			Off-trail travel limited to day trips in areas not closed; only 1 pack animal per party; no camping permitted	Approximately 1/3 of campsites open for stock use; maximum 25 stock per party; no trails closed to stock use; no off-trail overnight stock use allowed	Stock permitted off-trail for day trips but no pack stock allowed; some trails would be hiker-only to separate user groups; 1/3 campsites open; max. 25 stock per party
Management of Stock: Pre-trip Stock Holding Areas	Two temporary overnight stock-holding areas evaluated after 1994; permit required; no facilities provided; no overnight stock use at trailheads or campgrounds	No stock-holding areas exist in these zones				Two overnight stock-holding areas would remain for foreseeable future; permit required; no facilities provided	No overnight stock-holding areas provided; no overnight use permitted at trailheads
Management of Stock: Stock Retention, Feeding, and Grazing	Free grazing of stock not permitted	Free-grazing of stock or weed-free pellets/oats permitted; highlines allowed outside core campsites; hitchrails could be provided at <i>High Impact</i> sites; standards established to manage grazing around campsites	Free-grazing of stock or weed-free pellets/oats permitted; highlines allowed outside core campsites; no hitchrails provided; grazing standards apply at campsites	Free-grazing of stock or weed-free pellets/oats permitted; no hitchrails provided; no campsites	Free grazing and weed-free pellets/oats permitted; no standards for highlines and hitchrails; grazing limits vary by district	Free-grazing and weed-free pellets/oats permitted; no new hitchrails allowed; opening dates specified by elevation and meadow type	

TABLE 1 - ALTERNATIVES FOR BACKCOUNTRY MANAGEMENT

ISSUE	PROPOSED ACTION (Zone System)				ALTERNATIVE A (Present Management)	ALTERNATIVE B (Uniform Management)	
	THRESHOLD ZONE	BACKCOUNTRY ZONE					PRISTINE ZONE
		High-Use Trails	Moderate-Use Trails	Low-Use Trails			
Hunter Access Across Yellowstone's Boundary	No hunter access routes exist.	Eagle Pass to Dike Creek Trail and Skyrim Trail are only designated hunter access routes; hunters may not retrieve game inside park boundaries; visitors alerted to safety hazards during hunting season			No trails/hunter access routes; no retrieval of game across park boundary	Hunter access now on Dike Creek and Skyrim Trails; other routes may be considered; no game retrieval in park	No hunter access routes would be permitted; no retrieval of game from within park
Rock Climbing	Climbing allowed except where prohibited; no motorized tools, fixed anchors, gluing/prying rock prohibited; no equipment to be left in place after climbs; bivouacs may be accommodated under dispersed use camping guidelines; heavily-used summit routes may be delineated as maintained trails, except in <i>Pristine Zone</i>				Climbing allowed except in Grand Canyon and on thermal features; no motorized tools allowed; chalk and hardware allowed at district's discretion; anchors and slings may be left throughout season	Climbing would be regulated by permit system; no anchors or slings left behind after climb; no motorized climbing equipment or bolts allowed; no bivouac camping allowed; no new summit trails established	
Use of Mechanized Equipment	Motorized equipment permitted only for administrative use and only if <u>minimum</u> tool necessary; visitors would expect to encounter or hear motorized equipment due to proximity to motorized zones	Motorized equipment permitted only for administrative use and only if <u>minimum</u> tool necessary; chain saws used for initial trail clearing, goal is to accomplish as much administrative work as possible by July 15 annually; helicopters <u>not</u> used to supply cabins, and all non-emergency helicopter landings must be approved by the Superintendent			Goal is <u>no</u> non-emergency use of mechanized equipment; all mechanized equipment used must be approved by the Superintendent	Chain saws and other small mechanized equipment routinely used to clear trail at the district's discretion; helicopters used to supply cabins and trail crews	No non-emergency use of mechanized equipment would be allowed in the <i>Backcountry</i> or <i>Pristine zones</i> except by permission of the Superintendent

TABLE 1 - ALTERNATIVES FOR BACKCOUNTRY MANAGEMENT

ISSUE	PROPOSED ACTION (Zone System)				PRISTINE ZONE	ALTERNATIVE A (Present Management)	ALTERNATIVE B (Uniform Management)
	THRESHOLD ZONE	BACKCOUNTRY ZONE					
		High-Use Trails	Moderate-Use Trails	Low-Use Trails			
Winter Use	Winter Threshold trails marked to high standard and may be groomed; these marked on winter maps/guides; camping <u>may</u> be permitted under backcountry camping guidelines	Trails generally <u>not</u> groomed; no additional trails marking beyond what exists for summer trails; users are expected to be proficient with map and compass and be prepared for rigors of weather and wilderness conditions; winter camping allowed out of sight of ski trails by permit; max. party size 12 persons with up to 3 additional guides/group leaders for organized groups; no wood fires except in emergency circumstances or in fire rings at designated sites; temporary snow structures/shelters permitted			No trails, no markers present; camping possible by permit under conditions described for <i>Backcountry Zone</i>	Winter trail maps available for popular winter-use areas; trail grooming and marking varies between districts; camping limits set by districts using summer guidelines; no wood fires allowed	Ski trails frequently marked to guide users; camping allowed only in summer designated sites; wood fires allowed atop snow if wood available; human waste must be packed out
Administrative Uses	Moderate evidence of administrative facilities and activities; visitors likely to hear chain saws, see utility lines/boxes, communications gear, etc.	Visitors would occasionally see/hear evidence of administrative activities (motorized equipment, research activities, or telecommunications or other specialized equipment); mechanized equipment use permitted by Superintendent only if minimum tool; where possible, administrative activities should be scheduled at times of low visitor use; area managers would consider screening or camouflaging administrative sites or re-routing trails away from patrol cabins and other facilities			Very few administrative facilities exist; non-emergency use of mechanized equipment extremely rare	No deliberate attempts to screen or camouflage administrative facilities or re-route trails away from them	No non-emergency exceptions granted for new administrative facilities/uses/access; visitors could see/hear some administrative work throughout backcountry
Protection of Wildlife and Fisheries	Birds, fish, and wildlife protected by various means outlined in <i>Resources Management Plan (RMP)</i> : interpretive and/or regulatory signs, patrols, directing public away from sensitive areas (nest sites, calving areas, spawning streams, etc.) or seasons. Access to Molly, Stevenson, Frank islands restricted; food-storage poles to be established in 100% of campsites by 1995; campsites, trails, facilities in long-term conflict may be redesigned or relocated to other areas; activities avoid or mitigate disturbance to threatened or endangered species			Resource protection patrols occur; use directed away from sensitive areas	No deliberate attempt to redesign or relocate campsites or facilities; only 93% of campsites have food pole; access restricted to nesting islands	Regulatory signs commonly used; facilities in conflicts with wildlife to be removed or relocated; Frank, Stevenson, Molly Islands closed to access	

TABLE 1 - ALTERNATIVES FOR BACKCOUNTRY MANAGEMENT

ISSUE	PROPOSED ACTION (Zone System)				ALTERNATIVE A (Present Management)	ALTERNATIVE B (Uniform Management)	
	THRESHOLD ZONE	BACKCOUNTRY ZONE					PRISTINE ZONE
		High-Use Trails	Moderate-Use Trails	Low-Use Trails			
Protection of Geothermal Resources	Regular monitoring and patrol of thermal areas would occur; no camping in thermal areas; signing to designate safe travel routes and prevent vandalism as necessary; swimming in currently pristine waters warmed by thermal runoff not promoted				Foot/stock use off-trail in thermal areas discouraged; no camping allowed in thermal areas; signing at discretion of districts	Off-trail travel prohibited in thermal areas; regulatory signing present in all thermal areas; swimming/bathing actively managed in designated thermal areas	
Protection of Soils and Vegetation	Trails designated to limit impacts; no wood fires allowed; other actions occur as in <i>Backcountry Zone</i>	Trail re-routes and bridges designed to minimize/mitigate soil and vegetation impact; campsites designated, inventoried, and managed to limit acceptable size of areal impact; stock use managed to reduce soil and vegetation effects; hay and straw prohibited to control spread of exotic plants; wood fires only in designated fire rings and where downed wood available			No trails or campsites limit impacts to soils and vegetation; limited stock use; no wood fires	No new trails or campsites planned; campsites size and damaged trees limited to 1992 levels; no wood fires permitted in summer; hay and straw prohibited to prevent spread of exotic plants	
Protection of Water Quality	Trails designed and bridges placed to minimize erosion into surface waters; no deliberate expulsion of fuels, waste, solvents into waters; soaps/detergents prohibited in park waters; consider placing toilets at campsites where person-use-nights exceed 150-200 annually; proximity to water table will be tested; packing out human waste <u>may</u> be considered at high use sites; campsites too close to water may be relocated farther away if possible				No trails, no campsites, no waste facilities installed	Campsites closer than 100' from surface water to be relocated; Wallowa toilets installed at all sites where person-use nights exceed 150 annually; human waste packed out from all other sites	

TABLE 1 - ALTERNATIVES FOR BACKCOUNTRY MANAGEMENT

ISSUE	PROPOSED ACTION (Zone System)				ALTERNATIVE A (Present Management)	ALTERNATIVE B (Uniform Management)	
	THRESHOLD ZONE	BACKCOUNTRY ZONE					PRISTINE ZONE
		High-Use Trails	Moderate-Use Trails	Low-Use Trails			
Protection of Cultural Resources	Cultural resources protected by various means outlined in <i>Resources Management Plan (RMP)</i> : non-disclosure of sites, interpretive and/or regulatory signs, patrols, and directing public away from sensitive areas; trails, campsites, facilities in long-term conflict with cultural resources to be relocated or removed; ground disturbance and structural modifications require cultural compliance; staff has increased awareness of cultural resources				Cultural resources largely unknown to park staff; no programmatic approach to relocating facilities in conflict with cultural sites	Regulatory signing and other measures used to protect cultural sites; facilities in long-term conflict with cultural resources to be removed	
Research, Inventory, and Monitoring on Backcountry Use	Use statistics collected and analyzed for trends and management implications. Day use data collected at minimum 5 year intervals; campsites and grazed sites inventoried to parkwide standard; inventory data used to prioritize resource management actions; research and monitoring projects proposed to answer specific needs			No trails or campsites to inventory; research/monitoring as appropriate	Frequency and method of campsites and grazed area inventories vary by district; day use data not collected	Permit system implemented to monitor day use; campsites inventoried every 3 years; range readiness every 5 years	
Helping Users with Trip Planning	User information designed to tell users the spectrum of backcountry opportunities available in each zone; staff would assist users in planning trip to match expectations; printed trip planner/map available; topographic maps eventually installed at each trailhead				No printed trip planner/map available; no zones or recreational opportunity spectrum outlined to guide trip selection; topographic maps not posted at most trailheads	Trip planner available; fee may be charged; range of recreational opportunities presented but is more limited by uniform management; topographic maps at trailheads	
Providing Safety Information	Updated <i>Beyond Road's End</i> given to all backcountry permittees and persons requesting backcountry information; visitors encouraged to select trip in zone that matches their safety concerns and skill level; uniform safety information posted at trailheads; fire, hunting, and avalanche seasonal dangers posted; unsafe areas <u>may</u> be closed by Superintendent's order				<i>Beyond Road's End</i> and other separate brochures used; safety information posted at trailheads, but may vary	Uniform safety information available at visitor contact stations and trailheads	

TABLE 1 - ALTERNATIVES FOR BACKCOUNTRY MANAGEMENT

ISSUE	PROPOSED ACTION (Zone System)					ALTERNATIVE A (Present Management)	ALTERNATIVE B (Uniform Management)
	THRESHOLD ZONE	BACKCOUNTRY ZONE			PRISTINE ZONE		
		High-Use Trails	Moderate-Use Trails	Low-Use Trails			
Orientation for Backcountry Users	Park would design new, updated video-tape orientation program and present it to all visitors requesting camping permits and backcountry information; Frequent User's Card available to repeat visitors; winter video designed when time/funds permit					Slide-tape program continues in use; some information outdated; Frequent User's Card available	Outdated slide-tape program discontinued; information given verbally on in printed handouts
Reserving Backcountry Camping Opportunities	Park would investigate system to allow all users to reserve portion of backcountry campsites in advance, when time and funding permits					Only commercial users continue to be able to reserve campsites more than 48 hours in advance	All campsites available for advance reservation by all users for a fee, when time/funds permit

VII. ISSUES AND ALTERNATIVES

This chapter details the various issues identified previously. The action the park proposes to implement is clearly identified as are alternatives to the proposed action. For some issues, alternatives considered but rejected (for the reason stated) are included. The National Environmental Policy Act (NEPA) requires inclusion of a "No-Action Alternative" when analyzing all possible alternatives. In this case, the no-action alternative is the "status quo" or "no change" from current management direction for that issue.

A. MANAGEMENT OF VISITOR USE

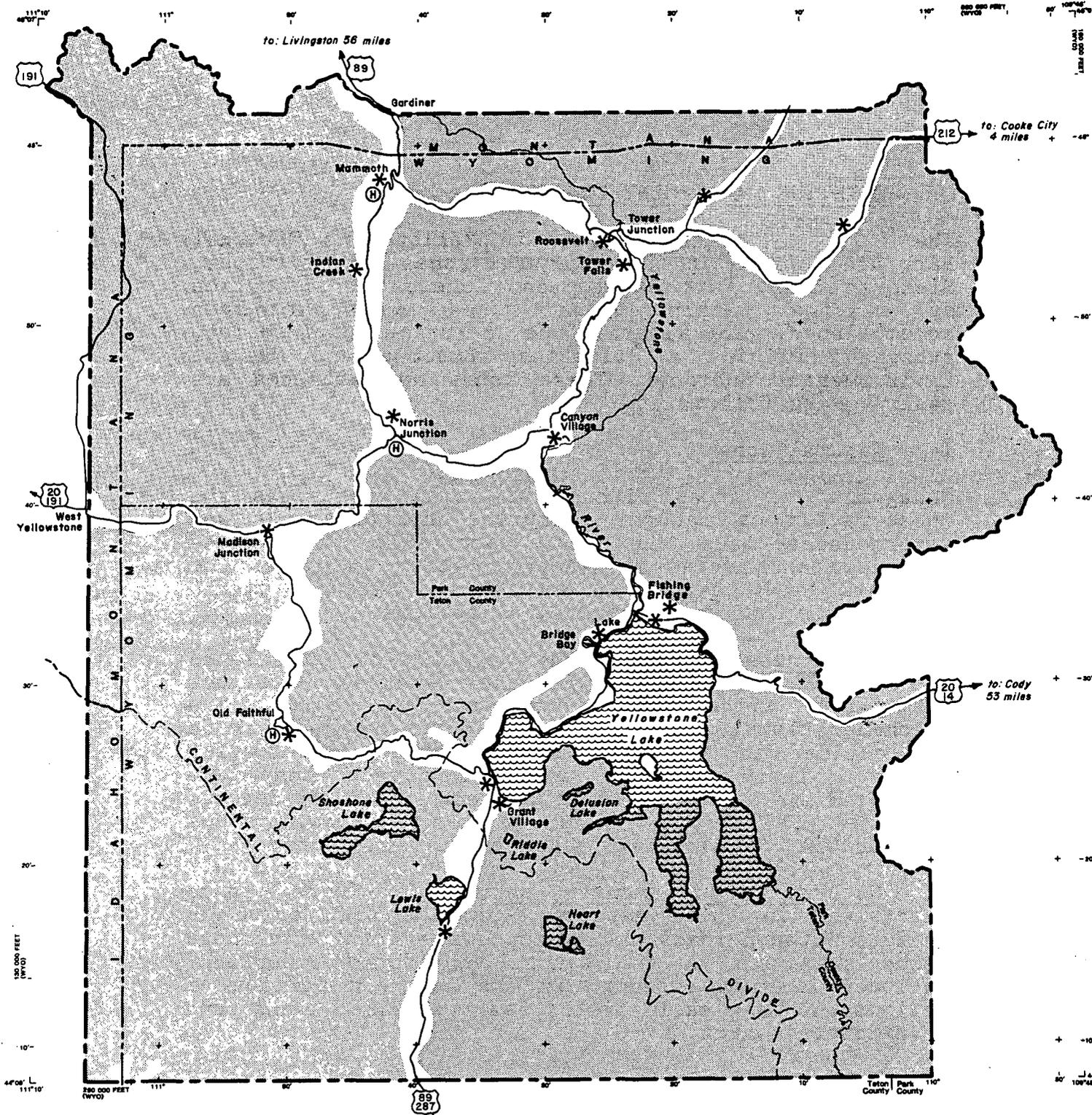
Issue: Defining the Backcountry of Yellowstone National Park/Defining the Type(s) of Backcountry Visitor Experiences Offered

NPS *Management Policies* (1988) state that the term backcountry refers to primitive, undeveloped portions of parks. Some parks have defined their backcountry more precisely, as those areas which are more than 250 yards from a paved road and more than one-half mile from any park facilities other than trails, unpaved roads, and trail shelters.

Yellowstone National Park's 1972 *Wilderness Recommendation* proposed that 2,016,181 acres be designated as wilderness under the 1964 Wilderness Act. Figure 2 displays the boundaries of the proposed wilderness. Ten units are displayed showing wilderness zones at undefined distances from park roads, utilities, and other structures. Most backcountry patrol cabins and the South, Southeast, and Flat Mountain arms of Yellowstone Lake are included in the wilderness proposal. Although the wilderness areas recommended for Yellowstone have never been formally acted on and designated by Congress, those areas are managed so as not to preclude wilderness designation, in accordance with NPS *Management Policies* (1988) and Yellowstone's 1974 *Master Plan*. Road corridors, developed areas, six backcountry cabins, the main body of Yellowstone Lake, and sections of the park's northwest corner are excluded from the wilderness proposal.

Yellowstone's *Statement for Management* (1986) describes the park's existing management zones as a Natural Zone, a Historic Zone, and a Park Development Zone. The Natural Zone is further divided into a Wilderness Subzone and a Natural Environment Subzone. Figure 3 displays the boundaries of these zones. With minor variation, the Wilderness Subzone corresponds very closely with the proposed wilderness map. The Natural Environment Subzone includes all areas immediately adjacent to developed areas, roads, and utility corridors to the boundary of the Wilderness Subzone.

Most of Yellowstone's trails and access to backcountry areas originate in either the Natural Environment Subzone or the Park Development Zone. All boardwalked trails are within these zones as well. Some confusion has resulted over what management actions shall apply in areas close to park roads and developed areas, because there has been no clear definition of what constitutes Yellowstone's backcountry.



legend

-  park boundary
-  road
-  natural zone
-  wilderness subzone
-  development zone (including roads)
-  historic zone

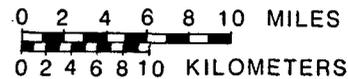


Figure 3

**Existing Management Zoning Map
Yellowstone National Park**

United States Department of the Interior - National Park Service

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A visitor's backcountry experience is highly subjective depending on his/her background and level of outdoor experience. Elements that may affect a visitor's backcountry experience include: the presence or absence of trails; the quality of trails, trail markers, bridges, cabins, docks, designated campsites, directional or informational signs and other facilities; the amount of human-caused noise, light, odors (such as diesel fumes or outhouse odors); the numbers and types of other users encountered; the amount and types of regulations encountered; the amount and type of pre-trip information available; the presence and type of wildlife sharing the backcountry; the amount and types of risk, such as wildlife encounters, difficult terrain, and river crossings; and weather conditions.

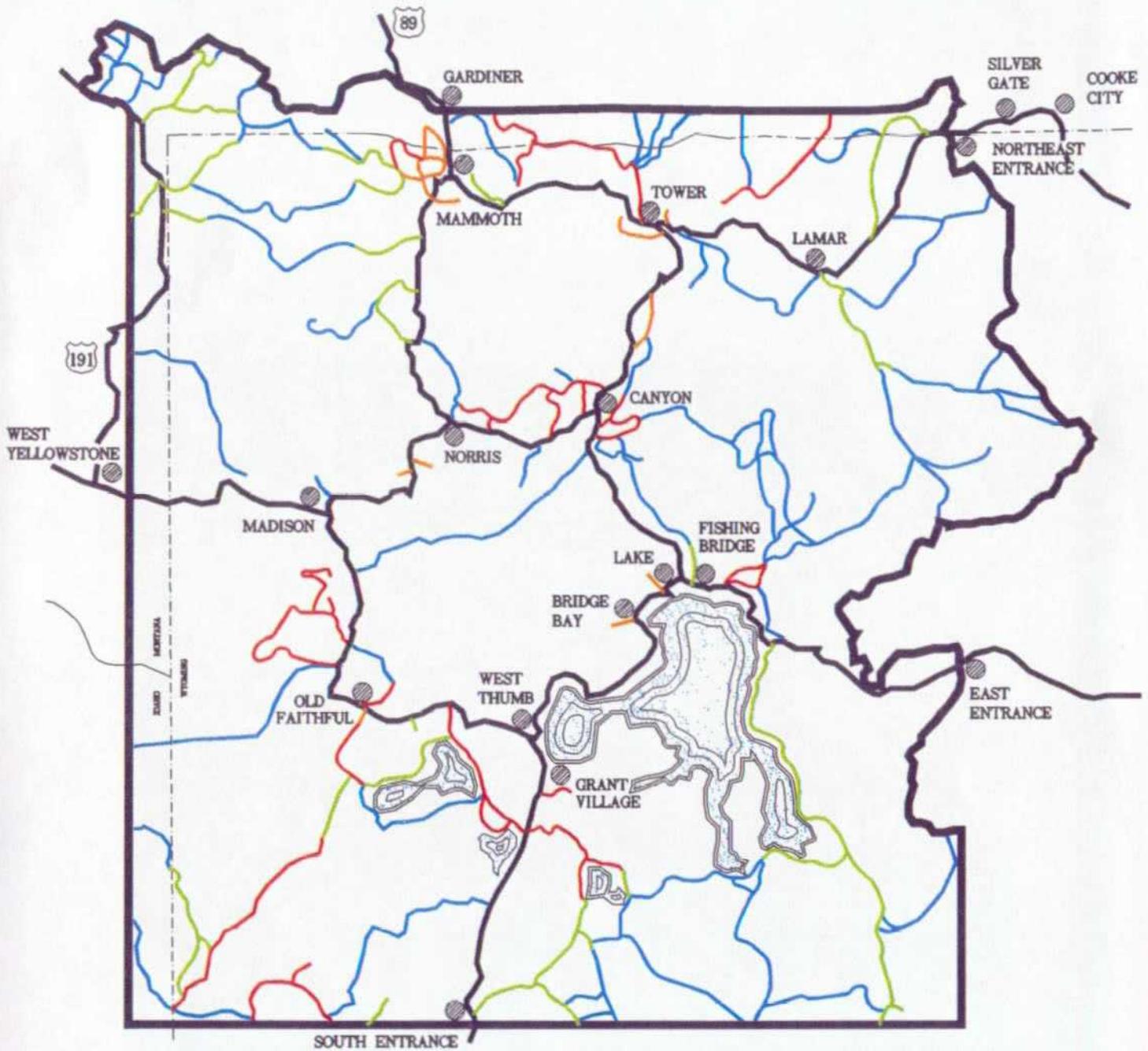
It is generally accepted that a wilderness experience is associated with moving from an area with more to fewer signs of human presence; from more to fewer developments; from more to less human-caused noise; from wide to narrower roads or trails; from more to less maintained trails; from more to fewer markers, signs, and regulations; and from more to less assurance of personal safety. Many persons tolerate or even expect an increased degree of personal risk when entering the backcountry.

Historically, Yellowstone has provided a broad range of backcountry experiences to a diverse set of recreational users. This variety includes highly maintained and heavily used boardwalks adjacent to park roads and developments, well-trodden trails with bright orange markers and directional signs, minimally maintained trails that date to the park's early days, and trailless expanses where fallen trees and other natural barriers challenge the user. This spectrum of backcountry opportunities has simply evolved rather than resulting from a plan to provide such an array. The *status quo* may make it difficult for a backcountry visitor to match his or her desired opportunities with a location that might provide such an experience. The lack of a clear definition of backcountry causes confusion for park staff responsible for planning and making decisions about maintenance, interpretation, law enforcement, and resource management operations.

Proposed Action. Yellowstone's backcountry would be defined as all park land within the Wilderness Subzone and the Natural Environment Subzone, with specific exceptions described as indicated in Figure 3. There is no intent for this plan to apply to the park's developed areas, which are considered frontcountry.

The backcountry would be further divided into three zones: a *Threshold Zone*, a *Backcountry Zone* (subdivided into *High*, *Moderate*, and *Low Use* trails), and a *Pristine Zone* (Figure 4). These delineations are based on levels of use that existed in 1992 and on a spectrum of desired conditions/experiences the park wishes to offer to users. (The use classes will be discussed in detail under specific issues such as *Use Limits and Campsite Capacities* and *Campsite Standards*.) The degree and types of use, presence of cabins, bridges, and other facilities as well as many other conditions may affect visitors' experiences. Presentation of information about these conditions would help visitors to choose a trip that is likely to provide them with their desired experience.

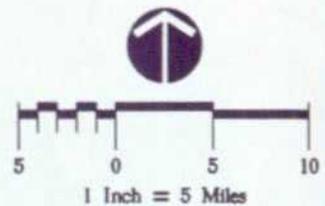
FIGURE 4 PROPOSED BACKCOUNTRY ZONES



LEGEND

- Threshold Zone
- Backcountry Zone**
- Class I Trail (High Use)
- Class II Trail (Moderate Use)
- Class III Trail (Low Use)
- AS WITH AREA Pristine Zone

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1 of 3

INTENDED BY:
P. BICES
DESIGNED BY:
P. BICES
TEXT/REVISED BY:
E. WILLIAMS
DATE:
1/12/94



TITLE OF SHEET
**BACKCOUNTRY TRAIL
 CONDITION CLASSES**
 YELLOWSTONE NATIONAL PARK

DRAWING NO.
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REC. NO.
SHEET
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The *Threshold Zone* would adjoin roads or park developed areas where most park visitors concentrate their use. Easily accessed, short-distance *Threshold* trails generally would not have campsites available, would have moderate to high use, and would have a higher profile of management presence evident to visitors.

The *Backcountry Zone* would include all of the park trails outside of developed and threshold areas. Backcountry trails may vary from moderately challenging to more challenging, but would generally be well-maintained, cleared for stock travel, and marked at difficult junctions or confusing spots to guide users. This zone would contain designated campsites and minimal facilities to protect visitors or resources (such as bridges over bogs or hazardous stream crossings and toilets in high use areas). The *Backcountry Zone* would include most of the park's lakes and portions of the arms of Yellowstone Lake (see *Backcountry Boating Access and Facilities*.)

The *Pristine Zone* would have no maintained trails, although some evidence of abandoned trails would exist. Dispersed use and camping may be permitted under certain circumstances.

Figure 4 identifies the proposed *Threshold*, *Backcountry*, and *Pristine* zones of the park. These proposed zones could change based upon new management directives or any future legislation (such as enactment of wilderness designation for areas of Yellowstone). All maintained trails would be described as either frontcountry, backcountry threshold, or backcountry trails. All currently maintained trails, as well as those already abandoned and those proposed for abandonment, are listed in Appendix I. Park backcountry offices would display large-scale maps indicating these zones and trail condition classes.

Alternative A. The No-Action Alternative. Yellowstone's backcountry would be defined as any part of the park that is generally more than 250 yards from paved roads and more than one-half mile from park facilities other than trails and patrol cabins. Exceptions would exist where special considerations require an exception to standard backcountry management practices, or where trails beyond 250 yards from roads would not be managed as backcountry areas. Examples would include the Upper Geyser Basin boardwalked trails, the Lone Star Geyser Trail, and the Slough Creek Trail to the Silvertip Ranch.

The park would maintain the *status quo*, offering a variety of backcountry opportunities but providing only an informal chance of relating the visitor's desired experience with opportunities presented by the park's existing array of trails and campsites. No deliberate efforts would be made to describe the wilderness opportunities offered on each trail. All maintained backcountry trails would generally be managed to offer the same type of visitor experience; uniform maintenance and facilities standards would be applied. However, due to local differences in area management, in one area trails may be frequently marked while in another they may not be; in one area of the park all streams may require the visitor to ford while in another all streams may be bridged, regardless of distance from the trailhead.

Alternative B. Yellowstone's backcountry would be defined as all park land within the Wilderness and Natural Environment subzones, wherein all backcountry management policies, regulations, and standards would apply. A smaller spectrum of backcountry opportunities would be available compared to the proposed action. The frontcountry trail opportunities would be the same as in the proposed action, and the off-trail opportunities would be similar (and rare). All maintained trails and backcountry campsites would be managed for the same experience and to the same defined standard. Visitors could expect to see the same level of management presence whether they are one mile or twenty miles from the trailhead, i.e., all trails would be moderately primitive. Because of user selection, use levels would vary from trail to trail and present some variation in opportunity for solitude.

Issue: Designated Trails and Campsites versus Dispersed Use

Most park trails were initially established as fire prevention or cavalry patrol routes early in the park's history. Some 1200 miles of trail currently exist in the park, accessing all major backcountry lakes, numerous waterfalls, mountain peaks, and thermal areas. Winter ski trails generally overlay summer foot/horse trails and/or park roads. Current trail conditions are sometimes unclear due to discrepancies in various maps and guides available for public use. The present number of trails appears to be adequate in meeting public demand, and there are off-trail opportunities that exist for users willing to undertake more rigorous conditions. No clear policy exists on whether new trails will be constructed or old trails abandoned.

In the early 1970s the park designated backcountry campsites at locations that had been used as camping areas in the past. These sites were located so as to provide water, good views, access to major features, and convenient spacing along the trails. Most of these sites are still in use today, although there are areas where campsites are not spaced to facilitate a convenient day's itinerary for a backpacker. The designated campsite system concentrates visitor impacts to relatively small areas. In 1992 campsites were surveyed and averaged 68.4 square meters of bare area and 194 square meters of additional affected area (indicated by vegetative trampling, exposed roots, or other visible changes in site resources). Facilities to help minimize attracting bears (such as food-storage poles) have been placed at many of these designated sites, and the park believes that by managing where people camp, the likelihood of bear-human encounters has been reduced to approximately one each year. Having designated sites also facilitates monitoring and cleanup of those campsites.

In much of Yellowstone's backcountry the terrain and quantity of downed trees make cross-country travel challenging. However, some visitors seek just such an experience and request permission to travel cross-country and camp in undesignated sites. Public and staff are not always aware of whether or not travel is permitted off of park trails, or is simply discouraged. Cross-country travel and camping in undesignated areas of the park can be permitted at the District Ranger's discretion, but such requests are generally discouraged. Some users have complained about the inconsistent handling of requests for undesignated

camping. The requirement that essentially all users stay in designated campsites limits the type of experience that backcountry campers can have in Yellowstone, as well as the type of experience commercial outfitters can provide to their clients.

Proposed Action. In general, no new trails would be planned or constructed in either the *Backcountry* or the *Threshold zones*. By definition, the *Pristine Zone* would have no trails; there may be some sign of old, abandoned trails, but efforts would be made to remove these over time. Ski trails would overlay summer foot/horse trails or snow-covered roadways. If need is demonstrated for a new trail, the decision on whether or not to build it would generally be based on resource management concerns as opposed to increased demand. A project clearance form and, if necessary, an environmental assessment would be prepared to address impacts of construction on the physical, biological, and social environment.

Day hikers and horse riders would be permitted to travel (off-trail) in *Pristine Zones* except where areas are closed, such as in certain Bear Management Areas. Users of *Pristine Zones* would be required to use minimum impact techniques and behaviors. In general, the use of pack animals off trail would be prohibited unless no other access is available to a designated campsite. An exception would permit the use of one pack animal to transport personal gear on day trips. Park staff would increase efforts to monitor day-use levels and trends and resource conditions. If damage is occurring to natural and cultural resources or if opportunities for solitude are significantly reduced, day-use permits may be required for stock parties and/or hikers in some areas.

Camping would generally be restricted to the *Backcountry Zone* and to designated campsites. The total number of designated campsites would not increase, although campsites could be relocated or removed to lessen impacts to natural or cultural resources. Relocated campsites would be along existing trails and would not be placed in areas of significance for wetlands, known cultural resources, or known nest or den sites for threatened or endangered species. All designated campsites would be listed on backcountry information and all users would be afforded equal opportunity for use subject to other management guidelines (such as guidelines for advance campsite reservations).

Camping in undesignated sites in the *Pristine Zone* could be permitted by the District Ranger. Such requests would not be permitted if they conflict with Bear Management Areas or other special resource protection measures. In general, the undesignated camping opportunity would only be available to parties who are oriented toward destinations that cannot be reasonably reached in a day from a designated campsite. A maximum of four persons per camping party would be allowed, and no stock parties would be allowed to camp in undesignated sites. Campers would be required to use minimum impact camping techniques, follow other regulations, build no wood fires, pack out all waste, and stay no more than three nights in a particular location. Parties would be distributed geographically for solitude.

Alternative A. The No-Action Alternative. The park would continue to maintain designated trails and campsites as described under the Proposed Action, however off-trail/undesignated camping would be permitted at the discretion of District Rangers. Campers would be advised to camp at least 100 feet from water and pack out all waste; other restrictions may be assigned by area rangers. If a site is regularly used, it would be added to the campsite inventory list and standard facilities would be provided. Construction of new trails (foot, stock, or ski) may occur at the discretion of area rangers, providing appropriate compliance is completed. Day hikers and horse riders would be permitted to travel off-trail except where areas are closed, such as in proximity to thermal areas and in certain Bear Management Areas. Pack animals off-trail would be prohibited except to access a designated campsite, or to transport personal gear on day trips (one pack animal per party.)

Alternative B. Existing designated trails and campsites would be available. No new trails would be planned or constructed in the backcountry. Day hikers and riders would be permitted to travel off trail, but pack stock would not be permitted off-trail. Camping in other than designated sites would not be permitted, except in emergency situations.

Alternatives Considered But Rejected. An alternative to change the present system of designated trails and/or campsites to a zone system of hiking and camping was considered but rejected. There has been relatively little demand expressed for zone hiking or camping in Yellowstone, and the proposed action provides some of this type of opportunity for backcountry users. A major change to undesignated trails and campsites would depart significantly from management actions described in the *Final Environmental Impact Statement, Grizzly Bear Management Program (1982)*. The existence of some 1200 miles of trail and 303 campsites has resulted in well-established trails and sites that will long show the evidence of regular use. Considerable site rehabilitation would be required to remove existing trails and campsites and rehabilitate them. At the same time, under a zone system, new impacts from dispersed users would likely become visible. There would be a tendency for visitors to concentrate in popular and/or easily accessed routes and suitable camping locations. Today's trail and campsite network provides relatively predictable patterns of human use to which animals, including bears, have adapted. A major change in human-use patterns and distribution could result in associated changes in wildlife behavior.

Issue: Accessibility and Risk

By definition, the backcountry is not an easy area to access. Persons of limited mobility, hearing, sight, or physical stamina are not necessarily prohibited from accessing the backcountry. Individuals with physical or mental disabilities may be more capable and determined to access the wilderness than many non-disabled individuals. While some persons expect or desire all areas of a national park to be accessible, others--both disabled and nondisabled--desire the challenge and risk that entering a wilderness or backcountry presents.

Dogs assisting hearing- and/or sight-impaired visitors are permitted to accompany their owners on backcountry trails, an exception to the restriction against pets on trails. Non-motorized wheelchairs are exempted from the restriction against wheeled vehicles on park trails, but due to terrain, rocks, streams, downfall, and grade, very few trails in Yellowstone are accessible to persons in wheelchairs.

Information about the level of challenge presented by specific areas of Yellowstone's backcountry is not readily available to interested users. Staff may lack information with which to consistently and accurately explain regulations and policies on the use of wheelchairs and hearing-ear or seeing-eye dogs to inquiring visitors. This can lead to inadvertently limiting opportunities for physically and mentally challenged visitors to enjoy the park backcountry.

Since 1991 park staff have modified one backcountry campsite to accommodate wheelchair access and have been working with a private consultant to survey additional park trails for accessibility.

Proposed Action. The park, in cooperation with other organizations, would continue to inventory and describe trail accessibility factors, including steepness, terrain, elevation gain, and impediments, such as stream crossings, narrow or one-log-width bridges, etc. In *Threshold Zones*, impediments to access could be altered or removed to facilitate access to a variety of users. Outside *Threshold Zones*, trails would not be widened, hardened, or bridged for ease of accessibility, beyond the proposed trail standards for each zone. Persons with hearing, sight, or other non-mobility limitations would receive detailed information about the risks they could expect to encounter in *Threshold*, *Backcountry*, and *Pristine zones*. Individual users would be encouraged to determine for themselves, based on their understanding of their own capabilities and information on trail conditions, whether or not they could expect to reach a destination or a campsite. A sample of backcountry sites would be modified to accommodate wheelchair users on trails in which steepness, terrain, and natural topography accommodate wheelchair access.

In accordance with *NPS Management Policies* and 36 CFR, wheelchairs (motorized in the frontcountry and non-motorized in the backcountry) and dogs specially trained to assist hearing- or sight-impaired visitors would continue to be allowed on park frontcountry and backcountry trails, with caution advised due to wildlife.

All users would be encouraged to accept the inherent risks of the backcountry experience, and to provide for their own safety and comfort in accordance with existing regulations. Users could expect that in emergency circumstances all reasonable efforts would be made in search-and-rescue attempts. However, users should expect that rescue time and ease would be less assured and less prompt as the distance into the backcountry increases. Thus, when using *Backcountry Zones* and, especially, *Pristine Zones*, users should be prepared to be self-sufficient. Users should be proficient with map and compass and equipped with food,

clothing, and other gear to protect themselves in typical high mountain weather and terrain conditions in all seasons of the year.

Alternative A. The No-Action Alternative. One backcountry trail and campsite accessible to wheelchair users has been established in the park's backcountry. No other trail modifications would be done specifically to increase access. No special effort would be made to inventory and classify trails for accessibility. Dogs used to assist hearing- and/or sight-impaired visitors would be permitted on backcountry trails. In emergency circumstances, all reasonable efforts would be made in search-and-rescue attempts throughout the backcountry, as described in the Proposed Action.

Alternative B. Each trail would be categorized as to its accessibility as follows and managed uniformly within each class:

- Level 1: all facilities and trails would be accessible by most people with mobility impairment without assistance
- Level 2: trails and most campsite facilities would be useable with effort by the "average" person with mobility impairment
- Level 3: sites and trails would be useable for an athletic disabled person without assistance
- Level 4: trails and campsites would be useable by the mobility-impaired person only with assistance
- Level 5: trails and campsites would be inaccessible to most persons with mobility impairment

Most backcountry trails in the park would be categorized as Level 4 or 5; most frontcountry trails would be categorized as Level 1. No additional effort to change trail or campsite designs would occur. Dogs used to assist hearing- and/or sight-impaired visitors would be permitted on backcountry trails. Users could expect that in emergency circumstances all reasonable efforts would be made in search-and-rescue attempts throughout the backcountry, but response time would vary based on distance, weather conditions, and other circumstances.

Issue: Marking and Managing Trailheads

Yellowstone's trailheads offer an important opportunity to set the stage for the subsequent backcountry experience. They also offer what may be the last opportunity to present important information to the visitor about the conditions that will be encountered in the backcountry. Trailhead signs on the main park roads are inconsistent. In most locations, a small sign indicating "Trailhead" with an arrow points to the parking area for a trail. The name of the trail and mileages to common destinations are usually found posted a short distance down the trail. Consequently, visitors often cannot tell which trailhead the sign refers to, causing some confusion in locating the starting point for a trip. In 1990 the park

established a new sign standard for trailhead signs, using the common trail name (e.g., "Hellroaring") in combination with the international symbol for a hiking trail. However, fewer than half the park trailheads have been marked with these signs. Also, locations where visitors and stock must cross the main road between the trailhead parking area and the trail are inconsistently marked and sometimes pose a safety hazard.

Information and facilities at the trailheads vary. The lack of consistent information and facilities at park trailheads causes visitor inconvenience and may contribute unnecessarily to safety or resource problems. Most trails are marked with a large brown sign containing a trail register, a place for informational handouts, and posted information about backcountry regulations and safety in bear country. Maps are posted at less than a dozen trailheads. Information handouts are often unavailable or become scattered, resulting in litter. Trail register sheets are inconsistently provided and checked by park staff. Signing the trail register is voluntary. Posted information is often buffeted by weather or wildlife and looks ragged or it may be missing. The park is currently preparing a Wayside Exhibit Plan for its major trailheads, which will detail the design, materials, and text for the trailhead signs. A list of all park trailheads is found in Appendix II.

Facilities at trailheads differ as well. Many trailheads lack comfort stations and/or sufficient parking to match demand. Some horse users complain about the lack of hitching rails and stock-truck ramps. There is often insufficient turnaround room for trailer units at major trailheads used by horse parties.

Approximately 15 percent of the trailheads are located on the boundary between the park and the adjacent national forests. These access points are numbered and named for administrative purposes, but are not signed in the same manner as roadside trailheads. Consistent information may not be posted, though users entering from another jurisdiction need to be clearly informed about park rules (such as no hunting or firearms allowed). Some boundary trailheads have trail registers for visitors to sign in, but these are not checked by park staff with any regularity; thus, visitors who do sign in may have a false sense of security.

Proposed Action. All roadside trailheads would be indicated at the main park roads with a wooden sign of uniform design. The name of the trailhead and the international hiker symbol would be on the sign. Appropriate traffic signs marking pedestrian and/or stock crossings would be placed on the roadside as necessary. At the parking lot, or generally within the first 100 yards of the trail, a weather-resistant sign would include (at a minimum): the name of the trailhead/trail, a trail register, a topographic or other map showing the trail's relative location in Yellowstone, and mileages to key destinations. Consistent information on safety, bear management restrictions/food storage regulations, emergency contacts ("911," etc.), and other important area regulations would be included. Interpretive information may be included. All information would be secured under weather-proof material; no information handouts would be provided.

At each major trailhead, the need for a comfort station and refuse disposal would be assessed, as would a designated area for boat- or horse-trailer parking, hitching rails, stock-truck ramps, or boat ramps. Where facilities are proposed, their design and location would be subject to interdivisional park review. All facility development would avoid wetlands and cultural resources and would comply with guidelines for protection of threatened or endangered species.

At boundary trailheads not located on a park road, a wooden sign meeting the approved park standard for boundary trailheads would clearly indicate that users are entering Yellowstone National Park. Other information would be provided about safety, food storage/bear management precautions, and area regulations. Trailhead registers would generally not be placed at boundary trailheads.

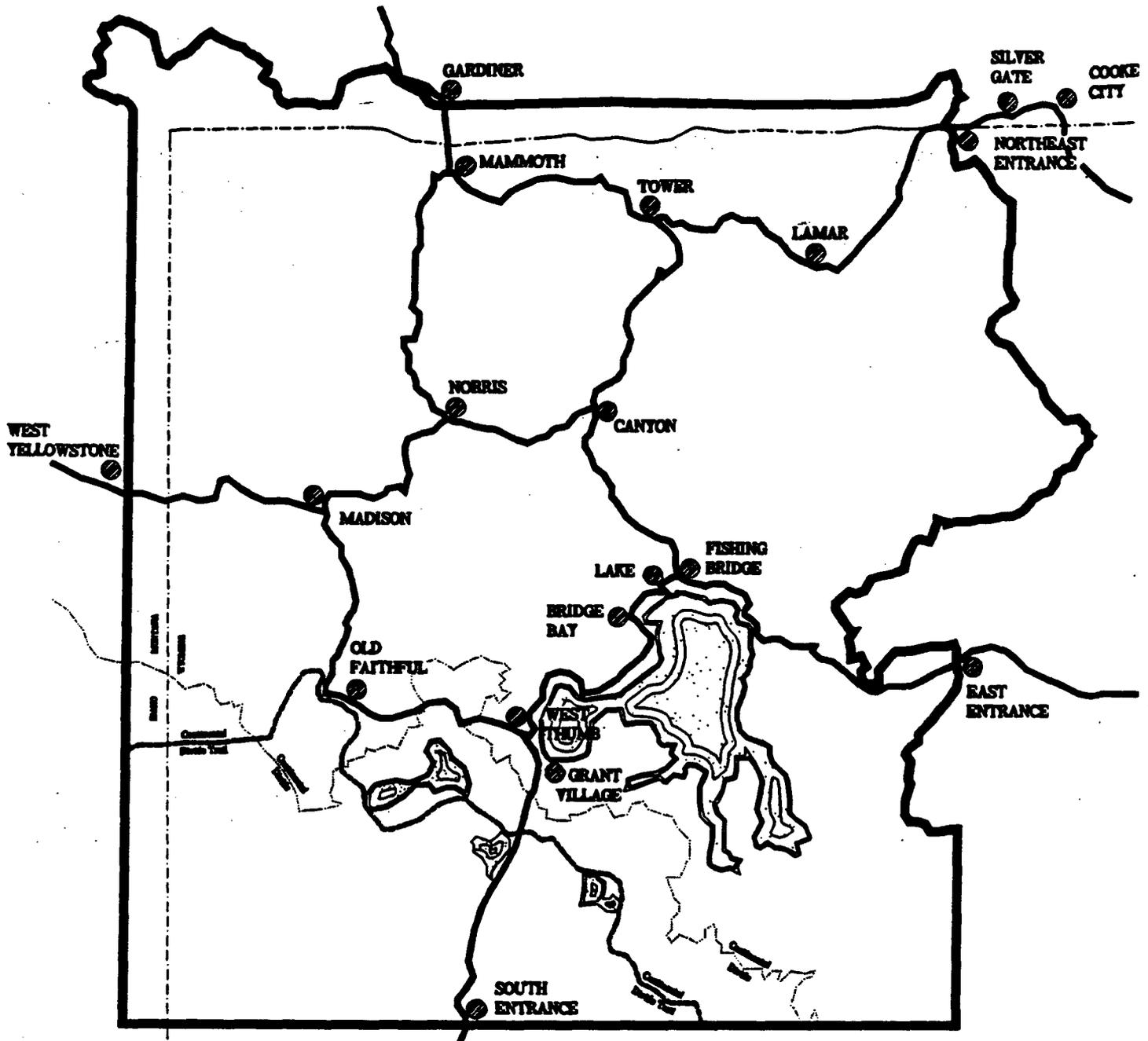
Alternative A. The No-Action Alternative. Trailheads would be indicated at the main park roads with a wooden sign stating "Trailhead," such as now exist in many locations in the park. At or near the trail's starting point, a wooden sign board would contain posted information, including bear warnings, other safety information, emergency contacts, park regulations, and a trail register. Maps would generally not be posted. Other facilities, such as vault toilets, boat ramps, stock-truck ramps, hitching rails, and trailer parking, would be provided if space is available and if determined to be necessary by area personnel.

Alternative B. The goal would be to provide uniform facilities at all trailheads, including the name of the trailhead/trail, a trail register, a topographic or other map showing the trail's relative location in Yellowstone, mileages to key destinations, and the information on safety, bear management and regulations listed under the Proposed Action. Interpretive information may be included. All major trailheads would have a vault toilet and refuse disposal, parking for at least six vehicles and, if appropriate, a designated area for boat- or horse-trailer parking, hitching rails, stock-truck ramps, or boat ramps.

Issue: Management of National Scenic and National Historic Trails

Sections of the Nez Perce National Historic Trail and the Continental Divide National Scenic Trail are located in Yellowstone (Figures 5 and 6). The Nez Perce Trail parallels the park's West Entrance Road, cuts across the park along the Mary Mountain Trail from Nez Perce Creek to Buffalo Ford in Hayden Valley (where it crosses the Yellowstone River), and continues eastward along the historic Howard Eaton Trail to Indian Pond. The trail then follows the Pelican Valley Trail and crosses Mist Creek Pass into the Upper Lamar Valley. At this point one fork continues into the Upper Lamar and the other follows Upper Miller Creek past Hoodoo Basin and out of the park. The historic route does not always follow existing trails, and use of the trail is subject to existing management policies and programs. The comprehensive plan for the Nez Perce National Historic Trail does not call for any development of the trail.

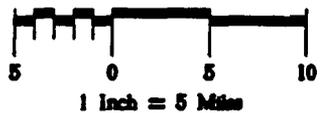
FIGURE 5 CONTINENTAL DIVIDE TRAIL



LEGEND

- Continental Divide
- Continental Divide Trail

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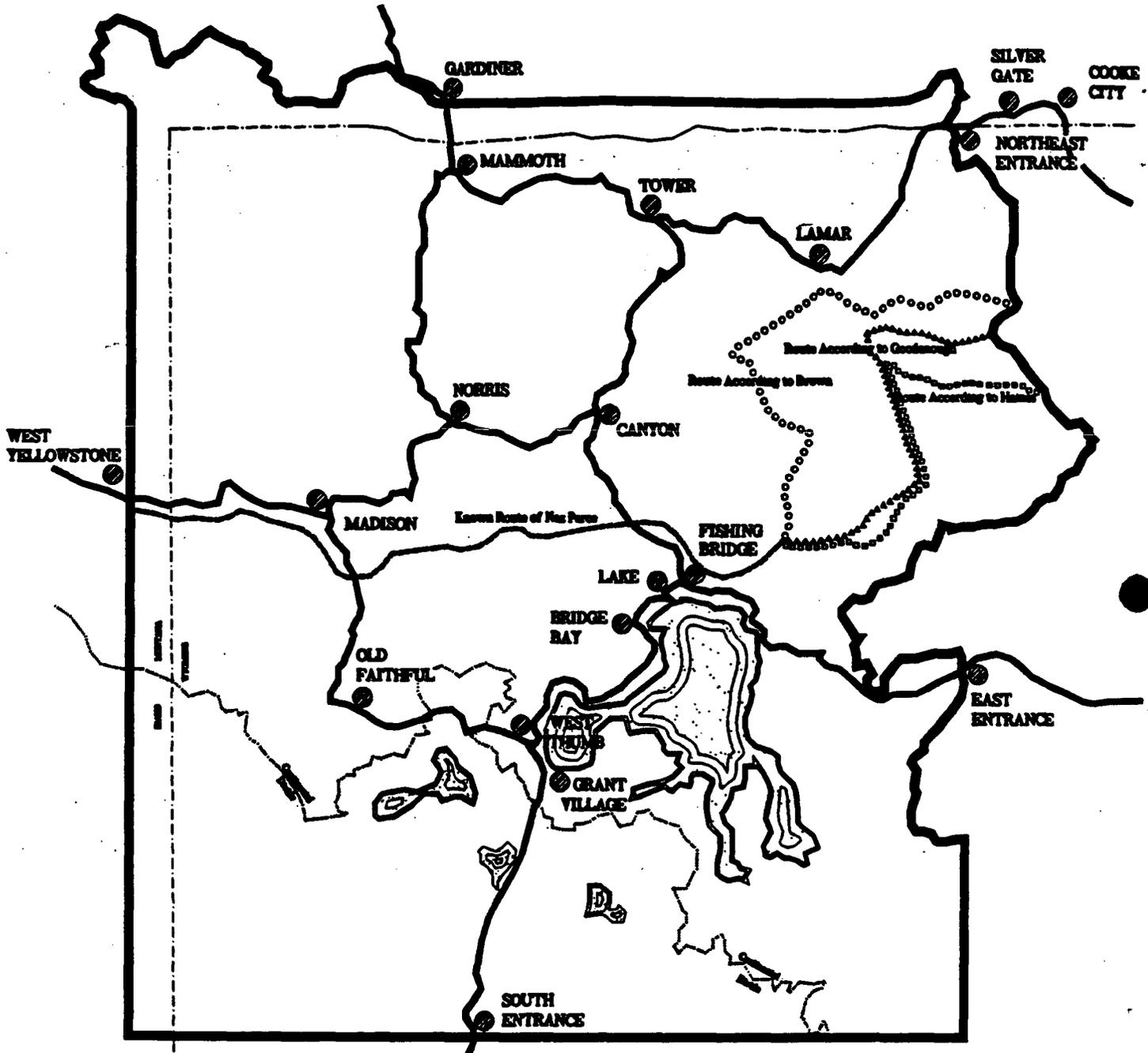
FORWARDED:
P. RIDGES
BY:
P. RIDGES
TECH. REVIEW:
E. WILLIAMS
DATE:
1/2/94



TITLE OF SHEET
CONTINENTAL DIVIDE TRAIL
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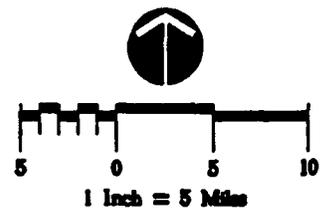
FIGURE 6 NEZ PERCE TRAIL



LEGEND

- Continental Divide
- Known Route of Nez Perce
- Route According to Brown
- Route According to Goodenough
- Route According to Haines

ON MICROFILM



DESIGNED: P. RIDGES CHECKED: P. RIDGES TECH. REVIEW: E. WILLIAMS DATE: 1/2/94	SLUR SHEET NO. 	TITLE OF SHEET NEZ PERCE HISTORIC ROUTES YELLOWSTONE NATIONAL PARK	DRAWING NO. 101/60296 SHEET <table border="1" style="width: 100%; text-align: center;"> <tr><td>1</td></tr> <tr><td>1</td></tr> </table>	1	1
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A route through Yellowstone for the Continental Divide National Scenic Trail was designed by park staff in the 1980s. The trail enters Yellowstone along the park's western border with Idaho. It then crosses to Summit Lake and into the Old Faithful developed area. From there the trail proceeds past Lone Star Geyser over Grants Pass to Shoshone Lake and Lewis Lake. The trail crosses the South Entrance Road, connects to the Heart Lake Trail, and then proceeds to the Snake River Trail where it exits the south boundary of the park near Fox Creek.

These nationally designated trails often do not coincide with Yellowstone's existing backcountry trail and campsite network. On the Continental Divide route, there are no designated campsites between the park's west boundary and Summit Lake. East of Summit Lake this trail enters/crosses the Old Faithful developed area where there is no campground; the nearest backcountry campsites are in the Lone Star Geyser area, which are frequently occupied by hikers not destined for the Continental Divide Trail. There are no campsites located along three-fourths of the Nez Perce Trail route in Yellowstone, as it was originally conceived as a roadside interpretive experience along much of its route through the park.

At present, there is little printed information available for potential national trail users. The trails are not marked to distinguish them from other park trails. There is a small but growing number of users inquiring about these special trails. Through-hikers and riders attempting to travel the entire length of such a route in one season often plan their trips well in advance. Yellowstone presently has no advance reservation system for non-commercial backcountry users. Consequently, advance planning of such itineraries is not easy to accomplish. The park needs to accommodate hikers and riders destined for these routes, while meeting its resource and interpretive goals and objectives for these nationally designated trails.

Proposed Action. Printed information about the national trails in the park would be made available at park visitor centers and backcountry offices and sent to persons requesting advance information about trip planning. This information would illustrate the trail routes through the park, describe how the visitor may access the routes in the backcountry, and discuss the protection of significant resources along these routes. The Nez Perce Trail would be interpreted as a roadside trail in Yellowstone, in accordance with the comprehensive plan for that trail; however, much of the route may be accessed by existing backcountry trails and campsites. No special on-site interpretation of national trails would occur outside of *Threshold Zones*.

The trails would be marked, using either the National Scenic Trail or National Historic Trail symbol, at the points where each trail enters or leaves the park, and they may be referenced at appropriate trailheads or major trail junctions. No other special marking would be evident along these *Backcountry Zone* trail lengths. Similar management actions would occur as described for any future trails that might be designated.

Backcountry use of the Nez Perce and Continental Divide national trails would be accommodated as much as possible by the existing trail and campsite network. The park would study the potential need for constructing new trail segments or reopening old trail segments to facilitate backcountry use of the Nez Perce National Historic Trail along portions of its route. Other trail segments may require relocation for resource management reasons. Campsites may be added to facilitate through hikers and riders traveling the entire length of either the Continental Divide or Nez Perce trails in the park, or any other future nationally designated trails, in accordance with overall campsite limits and standards. In general, these campsites would be reserved solely for use by such through hikers and riders. These users might also be accommodated with a permit to camp in undesignated sites, as described under *Designated Trails and Campsites Versus Dispersed Use*. Because National Scenic and National Historic trail through hikers and riders may have logistical constraints associated with traveling these trail lengths, such users would be allowed and encouraged to obtain backcountry permit reservations in advance.

Alternative A. The No-Action Alternative. Information about the routes of the national trails in Yellowstone may or may not be readily available at all backcountry offices. The trails would not be marked to distinguish them from other trails in the park. Backcountry use of the Nez Perce and Continental Divide national trails would be accommodated to the degree that is allowed by the existing trail and campsite network. No special accommodation would be made for users who desire to complete the entire route of a national trail within the park's backcountry.

Alternative B. National Scenic and National Historic trails would be marked approximately every 100' along their length by the symbol associated with each Congressionally designated trail. Backcountry use along these trails would be accommodated by the existing trail network, but campsites would be added to facilitate through users, such as between the park's west boundary and the Old Faithful area. Interpretation of the significance of national trails would be found along designated routes.

Issue: Trail Clearing, Maintenance, and Rehabilitation

Yellowstone National Park has approximately 1200 miles of maintained trails. Frontcountry trails may be paved or boardwalked, such as those found at many roadside thermal areas. This plan does not address the management of frontcountry trails. While maintenance, construction, and reconstruction are generally performed under the direction of a Trails Foreman, rangers perform routine trail clearing and marking. Current standards in the *National Park Service Trails Management Handbook* (1983) and other references call for a classification system of trail types.

A master list or map classifying trails is not complete. Information about trail standards and conditions is not easily available to visitors who may wish to use that information in trip planning. A spectrum of trail conditions may be available, but not by design. Maps and

guidebooks of varying dates describe trails that may no longer be maintained or marked. Some old trails that have been poorly maintained or abandoned may still attract some users, who may expect the trail to be cleared and marked.

Proposed Action. *Threshold trails* would be maintained to a high construction standard, generally an easy-to-follow 36-inch tread of dirt, stone, boardwalk, bituminous, or other surfaced material. The cleared height would be approximately 10 feet. *Backcountry trails* would be of natural materials and would be maintained to a "stock standard" (unless closed to stock use), in accordance with the *NPS Trails Management Handbook* (1983). Generally, this means that trails would have a 24- to 36-inch wide tread and clearances 8 feet wide and 10 feet high for stock passage. Trails would generally be cleared on a regular basis to prevent new trails from developing around fallen trees, washouts, or other impediments. The level of use (*High, Moderate or Low*) on a trail would not affect the standard for width, height, or tread; however, visitors could expect that *High Use trails* would receive a higher priority for maintenance and clearing than *Low Use trails*. Ski trails would follow summer trails or roads, which should provide ample clearance. Ski trails, unless along a road used by motor vehicles in summer, would not be mechanically groomed.

All backcountry trails are listed in Appendix I. This list includes trails historically abandoned and those that are now proposed for abandonment. Reassignment of a trail to a different class, prioritization of trail clearing and maintenance projects, and revisions in trail maintenance standards would be agreed upon by all divisions participating in clearing and maintaining trails. When trails have been officially abandoned, efforts would be made to remove them from maps and guidebooks during reprinting.

Ranger and maintenance staff would jointly prioritize trails needing rehabilitation, relocating, or reconstruction. High priority would be placed on relocating or rehabilitating trails in perennially boggy areas or wetlands. Field rehabilitation efforts, such as removal of old markers, bridges, and waterbars, would be added to project directives and accomplished as time and staffing allow. Re-routes more than 100 yards in length would require project clearance to ensure interdisciplinary input into the need for and design of trail relocation and to ensure natural and cultural compliance. Adverse impacts to wetlands, cultural resources, threatened or endangered species, and other sensitive resources would be avoided in trail relocations, rehabilitations, and reconstructions.

Alternative A. The No-Action Alternative. Summer and winter trails would be cleared and maintained in accordance with minimum standards as established in the various trails management handbooks. Maintenance trail crews would be responsible for major construction and reconstruction of trails and bridges. Crews would use whatever maintenance standard they believe to be appropriate. Area rangers would be responsible for trail clearing and routine maintenance and would exercise discretion with regard to the amount and type of clearing and minor maintenance necessary. No off-road machine grooming of ski trails would be allowed. Various trails, although considered abandoned,

may still appear to be maintained because marking, bridges, or signs remain. Some of these routes would still be indicated on trail maps and guidebooks.

Alternative B. All trails in the park's backcountry would be maintained to a high standard but would not be paved. All trails determined to be abandoned would be rehabilitated and all traces of such trails eliminated.

Alternatives Considered But Rejected: An alternative to maintain trails in accordance with the type and amount of use (as reflected in *High*, *Moderate*, and *Low Use* condition classes described above) was considered. *High Use* trails would be paved or maintained with other surfaced material. *Moderate Use* trails would be maintained to a lower construction standard. *Low Use* trails would be maintained to a wilderness trail standard, where routes would be marked but unimproved except for some clearing and work in dangerous areas. The result would be a visible difference in trail tread and clearance. However, this alternative was rejected for several reasons. Use patterns and trail conditions do not always progress from high to low as distance increases from park roads and trailheads. This alternative would cause increased complexity for trail managers and possibly confuse users. Also, because stock use is fairly prevalent on most park backcountry trails, maintaining any trails at a lower standard with fewer tree removals and a narrower clearance width is problematic.

Issue: Signing and Marking Trails and Features

Many, but not all, maintained trails are currently delineated by orange 3-inch x 5-inch markers and/or by tree blazing, rock cairns, meadow markers, and directional signs to guide backcountry users to their destinations. In some areas distance information is presented periodically on trail markers by indicating the mileage or kilometers from a trail terminus. Marking varies widely from district to district and regardless of the amount of trail use or relative distance from developed areas and trailheads. The point from which the distance is marked is not indicated. Because the distance marked is not always from the nearest trailhead, many users may be confused.

Prior to 1980 all backcountry signs were routed in wood and mounted on wooden posts. In accordance with new servicewide sign standards issued in 1981, Yellowstone drafted standards for metal routed backcountry signs. There was much disagreement over aesthetics, construction difficulty, sign durability, and cost associated with these new standards. This resulted in varying degrees of compliance across the park. Currently the park continues to use a blend of sign materials, frequencies, and designs. There is also widespread variation in the number and placement of signs for interpretive and safety reasons.

Park visitors come with different expectations about how trails will be marked, signed, or maintained. The variety in trail marking and signing often leads to visitor confusion about what one can expect in Yellowstone. The frequency and type of signing may affect visitors' experiences in positive or negative ways, by providing or failing to provide information that

may enhance their safety or enjoyment. The prevalence of trail markers and signs can also influence some visitors' perceptions about the wilderness character of the backcountry.

Proposed Action. *Threshold* trails would be easy to follow, either by a well-worn tread, by markers, or both. Interpretive and natural features may be signed on *Threshold* trails. *Backcountry* trails, whether in *High*, *Moderate*, or *Low Use* classes, would have the minimum marking and signing necessary to follow the trail in normal summer weather conditions and daytime visibility. To minimize the overall effect on aesthetics and wilderness character, natural features and points of interest in the *Backcountry Zone* would generally not be signed. *Backcountry* trails would not normally be marked with signs or trail markers, except at:

1. Trail junctions
2. River fords where necessary to facilitate crossing
3. Locations where trail tread is not obvious
4. Newly rerouted trails where it is necessary to establish trail tread (in this case signs and markers are considered temporary)
5. Confusing areas (i.e., wildlife trails close to maintained trails)
6. Areas where special signing is needed for regulatory or resource protection reasons.

Markers would be poles of natural materials, rock cairns, existing tree blazes, or directional signs (only at trail intersections). Whenever none of these methods are sufficient to keep a trail user from becoming confused under normal daylight conditions, small (approximately 3-inch x 5-inch) orange metal trail markers would be placed on trees. To minimize the human intrusion on the wilderness setting, new markers would not indicate mileage (or kilometers) from trailheads; old markers with such notation would be removed as soon as possible.

Trail signs would include the trail name and distances to major trail junctions, park boundaries, trail terminus, or destination points. A sign would mark each backcountry campsite at the point where users should leave the trail; the core camp (the central gathering point, such as around the fire ring) would also have a small sign indicating the campsite number. Signs would meet established park specifications. The proposed standard would be wood-routed signs in the backcountry. Area rangers would be responsible for installation and maintenance and for replacing existing signs as time and budgets allow. A sign inventory and management system would be established. All sign information could then be easily accessed when replacements or changes are needed.

Ski trails in close proximity to developed areas receive a high level of use. Certain of these ski trails vary from the summer trails which are designated *Threshold* trails. The list of *Winter Threshold* trails is in Appendix IV. Marking on *Winter Threshold* trails would be the minimum necessary to prevent skiers from encountering unusual hazards (cliffs, river crossings) or becoming sidetracked into unmarked, untravelled areas. Either the international skier symbol or a wood-routed sign indicating "Ski Trail" with a directional arrow would be

used. Beyond these *Winter Threshold Zones*, ski trails would not be marked to facilitate casual winter use. The intent is to encourage backcountry users to be self-sufficient and to maintain the wilderness character of the *Backcountry* and *Pristine zones*.

In the *Pristine Zone* there would be no signing, except to indicate the park boundary and, if necessary, to protect sensitive resources.

Alternative A. The No-Action Alternative. Signs would be installed at trailheads, trail junctions, some points where trails cross the park boundary, some river fords, and at all designated campsites. A mixture of wood and metal signs would continue to exist in the backcountry. Occasional topographic features, such as lakes or mountain passes, may be signed.

Trail marking, summer and winter, would vary from low frequency to high frequency, generally indicated by 3 x 5-inch orange metal markers, but sometimes by cairns, poles, or blazes, at the discretion of area rangers. On some trails, distance from the trailhead would be posted in miles or kilometers on the orange markers. Other trails would have no indication of the distance from the trailhead. Information about the level of trail marking on each route would not be readily available at backcountry offices or visitor centers or by reading maps and trail guides.

Alternative B. All trails would be marked to a high standard in order to promote increased visitor safety and reduce the likelihood that, summer or winter, users would become lost. Signs would indicate turnoffs for campsites, major trail junctions, river fords, and topographic features. Signs would be metal routed and would indicate distances between major junctions or destinations. No attempt would be made to vary trail marking or signing based on use levels or area of the park or to minimize the visual impact of frequent marking. Markers would be 3 x 5-inch orange metal and placed on trees 8 to 10 feet above the ground. In meadows or other non-forested areas, markers would be placed on posts. Frequency of markers would be such that by standing under one marker, a visitor should be able to see the next. Markers would indicate the distance from the trailhead in miles and kilometers.

Issue: Marking the Park Boundary in the Backcountry

There are approximately 291 linear miles of park boundary, nearly all of which are in the backcountry. Much, but not all, of the boundary is marked with NPS boundary signs or by other means. Some signing is necessary so that visitors and staff know where the park boundary lies in order to comply with and enforce park regulations, respectively. Historically, boundary marking may have included cutting blazes into tree trunks, painting trees, posting signs, or clearcutting a swath to delineate the park from a neighboring jurisdiction. Today, because of aesthetic and resource concerns, this need must be met in a

manner other than by creating a discernible physical barrier or significantly altering the natural landscape.

Proposed Action. In *Pristine and Backcountry zones*, the boundary of Yellowstone would be marked primarily by placing a standard size NPS green and white boundary marker on trees or posts along the park line. (*Threshold Zones* do not overlap with park boundaries.) Boundary signs would be limited to the minimum necessary to mark the boundary, especially where such signing may detract from significant natural features or views. Existing clear-cut swaths would be allowed to naturally revegetate; no new boundary swaths would be cut. Regulatory and informational signs would be placed at boundary trailheads where users enter Yellowstone from another jurisdiction (see *Marking and Managing Trailheads*).

Alternative A. The No-Action Alternative. The backcountry boundary would be marked by either an NPS boundary marker, existing clear-cut swaths, and/or blazes or paint marks, at the discretion of area rangers. No deliberate effort would be made to minimize the visible impact of boundary marking on significant natural features or views. Regulatory signs would be placed at boundary trailheads where users enter Yellowstone from another jurisdiction; the information presented would be determined by area rangers.

Alternative B. The boundary would be marked by painting or blazing trees or posts. At all trail crossings on the park boundary, regulatory and information signs containing the same information presented at park trailheads would be installed.

Issue: Use Limits and Campsite Capacities

It is difficult to estimate backcountry day use in Yellowstone. Day use was monitored on 71 trails in 1992; use varied, ranging from zero to 109 people per trail per day. Day use is not thought to be a problem in most areas of the park at this time. At present there are no limits on day use in the backcountry.

In 1993 Yellowstone had 289 designated backcountry campsites, including 12 multi-party sites, for a total capacity of 303 parties per night. Of these, 106 sites were available for stock use. At present, each campsite is assigned a party-size limit, and some sites have an additional limit on the total number of use nights allowed per week and/or per season. The maximum number of persons allowed at each site varies from 2 to 20. While all the campsites in popular locations are occupied to capacity at times during a summer season, the backcountry has never been "full" to its current capacity. The present situation causes some user parties to be inconvenienced when scheduling trips across the park. It is often difficult to accommodate certain group sizes at campsites within a reasonable days' travel. Also, the party-size limits have frequently been changed with the intent of improving resource conditions (such as the amount of bare ground or firewood available) at campsites. However, there is an absence of data by which to judge whether limiting the party size

benefits resource condition as intended; the widespread variation in use limits complicates any potential correlation between this management action and its contribution to the resource.

Stock-use sites are similarly assigned a party-size limit for both persons and number of stock. This can make it difficult for a party to plan a trip progressing from campsite to campsite. At multi-party sites, 2-4 parties may be permitted to stay in the same campsite area, however, the total number of persons may not exceed 20. Seven of the park's 12 multi-party sites are among the 24 largest campsites based on size of affected camp area; use in those sites averaged between 210 and 794 person-use nights in 1992. Staff are concerned that such sites receive unacceptable levels of human use each season. Some users have also complained about sharing sites with other parties. These parties are not necessarily of the same user type (i.e., stock and non-stock), which often leads to conflict.

While the demand for backcountry campsites is below the number of opportunities that are available on parkwide basis, individual locations can receive significant pressure resulting in resource damage. Under present management, individual backcountry rangers use their judgment to determine when a site has received too much use. At that time, the ranger may recommend an adjustment in the allowable party size or in the number of total use nights, or the ranger may recommend the site be closed for rest/revegetation. Thus, the maximum capacity for overnight backcountry use per night in the park varies annually. The average capacity for camping in Yellowstone's backcountry between 1989 and 1992 was a maximum of 3,421 people/night.

An analysis of use data for 1992 indicates that 231 campsites averaged 102.8 person-use nights. (A person-use night is the equivalent of one person camping for one night; a party of four persons at the same site would result in four person-use nights for that one date.) In high-impact sites, person-use nights averaged considerably more, 287 per site in 1992; low-impact sites averaged 66.2 person-use nights. The average number of stock-use nights (again, the equivalent of one horse for one night) at stock campsites was 24.8 in 1992, but high-impact sites averaged 80.6 stock-use nights compared to low-impact stock sites, which averaged only 11 stock-use nights in 1992. This was the first season that an attempt was made to measure use in conjunction with an inventory of backcountry site conditions. Additional data and analysis are necessary for a longer term before any possible correlations might be established between use levels/types and resource condition at campsites. However, park staff believe that management of backcountry campsites would improve by using such data when making decisions about changing campsite locations and/or use levels and types.

Proposed Action. The proposed action would not set limits on the amount of day use in the backcountry at this time. However, the effects of day use are relatively unknown, and future studies may indicate that, in some areas of the park, day use is adversely affecting park resources or visitors' experiences. In the future, the park may consider implementing backcountry day use restrictions. These use restrictions could be in the form of setting party size limits or limits on the total number of users per trail per day.

The capacity for backcountry camping parties would be limited to the 303 (individual and multi-party) sites that currently exist. Information would continue to be collected on resource conditions associated with existing use levels. The level of use (*High, Moderate* or *Low*) on a trail is an indicator of past trail use and popularity; however, visitors could expect that *High Use trails* present greater likelihood of encountering other user groups along the trail and/or at campsites than *Low Use trails*.

The monitoring of resource conditions and associated use levels would provide information to determine if damage is occurring to natural or cultural resources or if visitor needs were not being met. If so, the locations of campsites may be changed to address those resource conditions or to accommodate visitor demand. The criteria for changing campsite locations are discussed under *Campsite Standards*.

Trails in the *Backcountry Zone* are divided into *High, Moderate, and Low Use* classes. Regardless of use level, individual campsites would accommodate either large parties (maximum of 12 visitors per site, with no more than 3 additional organized-group leaders or commercial outfitters/guides permitted, for a maximum of 15 persons) or smaller parties (maximum 8 persons per site). Multi-party sites that remain would accommodate a maximum of 8 persons per party (larger groups would be able to split their party between sites). Multi-party sites would be assessed by area staff to determine if any site should be changed to an individual party site. No new multi-party sites would be established. The maximum number of stock allowed per site would be 25. The limit for all winter camping parties would be a maximum of 12 visitors, (with no more than 3 additional organized-group leaders or commercial outfitters/guides permitted, for a maximum of 15 persons) per party. Individual sites may be limited to smaller numbers of persons and/or stock if local conditions cannot support the maximum numbers. The Superintendent may grant exceptions to these use limits under special conditions.

In the *Threshold Zone* there would be no camping. In the *Pristine Zone*, parties of up to four persons may request permission to camp in undesignated sites under special conditions, provided they do not conflict with Bear Management Areas or other special resource protection measures. In general, the undesignated camping opportunity would only be available to parties oriented toward destinations that cannot be reasonably reached in a day from a designated campsite. No stock parties would be allowed to camp in undesignated sites. Campers would be required to use minimum impact camping techniques, build no wood fires, pack out all waste, and stay no more than three nights in a particular location. Parties would be distributed geographically for solitude.

Data on backcountry camping use levels and campsite conditions would be collected and analyzed in a consistent manner, and such information would be used to improve the management of both backcountry resources and visitor experiences.

Alternative A. The No-Action Alternative. The number of backcountry sites and the maximum allowable party size would fluctuate with demand and based on what area rangers

believe the resource can accommodate. Camping outside of designated sites may be granted by a District Ranger, with his/her stipulations. Use data would continue to be kept by the park's Backcountry Office; campsite inventories would be done at the discretion of each district's staff. Analysis and use of data in decision making would be at the discretion of the district staff.

Alternative B. Campsites would be designated as either group sites (with a maximum of 20 persons allowed per site) or individual sites (with a maximum of 8 persons per site). Stock would be limited to a maximum of 25 per site. The total number of campsites would be limited to 300. A site could be changed from an individual to a group site if there was demand and if area rangers believed the site could accommodate larger parties. Camping outside of designated sites would not be permitted except in emergency situations. Data would be kept and used as outlined under the Proposed Action.

Issue: Campsite Standards

Although there are currently no standards, all park backcountry campsites generally conform to the same pattern. Inventories of 226 sites (out of 289) were conducted from 1989 to 1992. Each site is close to water (at times too close) and to trees. Most sites are on the edge of a meadow or a lakeshore and have a high scenic value. The physical locations and layouts of many existing campsites do not correspond to printed or verbal recommendations given to campers to minimize site impacts and enhance campers' personal safety. A number of campsites have been closed or relocated in the last 10 years due to their location and/or topographical limitations. Still, many sites (123 of 198 sites inventoried in 1992) are less than 100 feet from a water source (contrary to regulations in 36 CFR). A campsite's proximity to a main trail can be undesirable to visitors who may be disturbed by passersby on the trail. Also, because wildlife often travel along human trails, campers in sites located close to main trails may be more likely to encounter wildlife, such as bears, in or near their sites. An estimated one-third of backcountry campsites (46 of 162) are within 100 feet of the main trail. Numerous sites are also within sight of another campsite, which some campers may perceive as not aesthetic. One-third of inventoried campsites (35 of 106) do not allow proper separation of sleeping and cooking areas to minimize bear-human attraction.

There is no standard for campsite facilities, except that all campsites have a marker sign. Most sites have a fire ring, and 93 percent of all sites have a food-storage pole or cable. Some sites have "sleeping areas" (a tent site located away from the fire ring). Other facilities that have been placed at campsites in the past include picnic tables, fire grates, outhouses, hitching poles, boat docks, and garbage cans; some of these facilities remain. NPS *Management Policies* (1988) state that refuse containers and picnic tables will not be placed in wilderness/backcountry areas and that facilities should be the minimum necessary to protect the resource and human safety. The decision to build a human waste facility has varied considerably based on area rangers' discretion, as has the design of such facilities. In some areas, use levels likely require the placement of such a facility. This, in turn, obligates

the park staff to a long-term commitment to maintain the facility. In some past instances, the lack of interdisciplinary planning for such facilities has resulted in problems maintaining facilities and has affected soil or groundwater quality due to improper site selection. No permanent structures may be constructed by user groups, nor may park resources at or around trails or campsites be damaged to deliberately provide for users' convenience or facilities.

Collection of dead and downed wood and building campfires is generally permitted in firepits in both frontcountry and backcountry areas. The park has received some complaints from visitors who believe wood campfires should not be restricted. In 1993, wood fires were prohibited at 62 campsites. To date this limitation has been based on area rangers' judgment. In some areas, however, dead and downed wood has become depleted near campsites; some areas (such as around Shoshone Lake) show considerable evidence that standing trees having been cut. Campsite inventory data on site impacts and/or lack of downed wood availability could be used to help determine whether wood campfires should be restricted.

Proposed changes in campsite status, location, or facilities are currently reviewed by the District Ranger, relayed to the Backcountry Office, and approved or denied by the Chief Ranger. No written criteria have been established for removing or relocating sites. Establishing a new campsite is now done only to replace a site that has been closed.

Campsite inventories provide information about the average conditions at campsites in relation to each other and to conditions in other wilderness areas. This information could be used instead of "judgement calls" in determining whether or not a site should be revegetated, use-limited, or closed for resource concerns. It could also be used to modify campsites or the recommendations given to campers, which are designed to enhance the visitors' safety and/or recreational experience.

Proposed Action. All designated backcountry campsites would be located to minimize resource impact while at the same time providing an aesthetic experience for both the camper(s) and trail users. Campsites would be located only in the *Backcountry Zone* and should be:

1. designed in a "2-point" system, with a campfire ring and food-storage pole to indicate the cooking/eating site (point 1) and at least one sleeping site a minimum of 100 feet from the fire ring (point 2) (see Figure 7);
2. located so that potential sleeping sites are at least 100 feet from water;
3. located so that both points of the campsite are a minimum of 100 feet from the main trail; and
4. located at least 100 yards from and, ideally, out of sight of any nearby campsite.

All campsites would have:

1. a small campsite marker, indicating the site name/number;
2. at least one food-storage pole; and
3. a campfire pit/fire ring, unless the site is designated a "no-wood fire" site (see *Protection of Soils and Vegetation*).

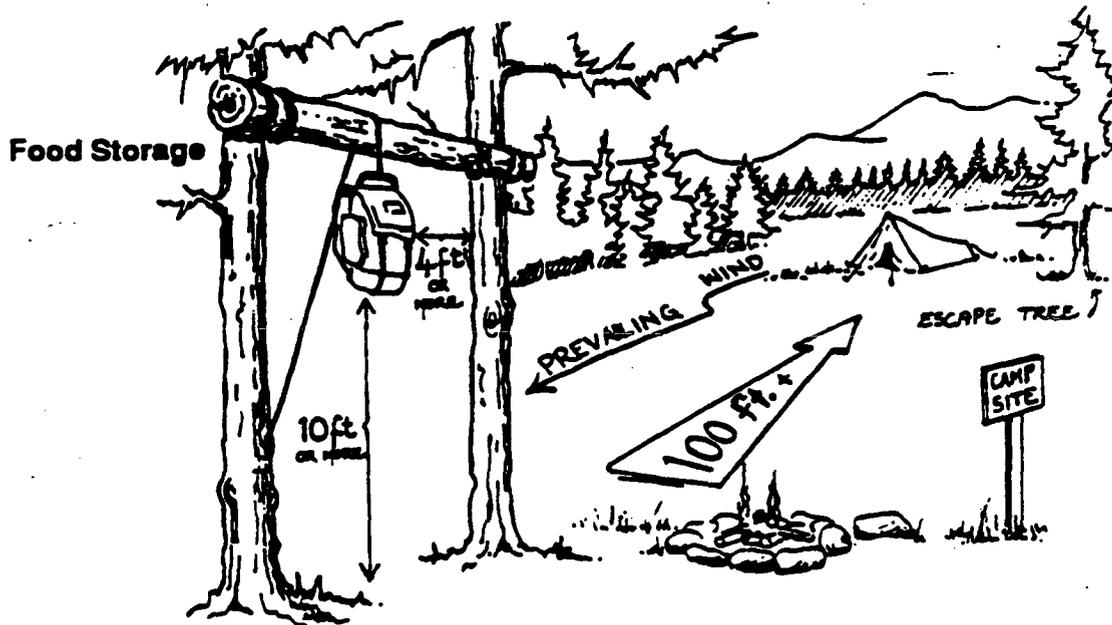


Figure 7: Schematic Design of Backcountry Campsite

Incompatible permanent facilities, such as picnic tables and refuse containers, would not be permitted. Campers may use temporary improvements, such as kitchen-fly frames, if installed without damage to trees or ground vegetation; these must be dismantled when the site is vacated. The need for a human-waste facility would be assessed on a site-by-site basis as outlined in the Campsite Standards charted below (see Table 2). Siting of human-waste facilities would be done in consultation with engineering and/or soil/water specialists to ensure proper facility location and construction. Other resource specialists would be

consulted to ensure that impacts to wetlands and threatened or endangered species would be avoided.

Wood fires would not be permitted in *Threshold Zones* (where no campsites are located) or in *Pristine Zones*. In *Backcountry Zones*, campfires would be allowed in established fire rings at designated campsites where inventory data indicates that sufficient quantities of dead and downed wood are available within 100 yards of the site. Restriction of campfires would be considered at sites that fail to meet this condition, at sites where the number of damaged trees exceeds 25, and/or at sites where person-use nights exceed 100 annually. The Superintendent would approve all such restrictions.

Table 2 details the limits of acceptable change for three classes of campsite use in the *Backcountry Zone*. Campsites are classified as either *Class I* (High Impact), *Class II* (Moderate Impact), or *Class III* (Low Impact) sites based on existing use data and the physical site attributes inventoried as described above. (These classes are independent of the trail use levels.) At approximately five-year intervals, these characteristics would be remeasured at campsites. This information would allow backcountry managers to evaluate the effectiveness of actions designed to achieve the campsite standards and/or to revise the standard to reflect more realistic conditions.

Existing campsites that do not meet the standard would be prioritized for management action. This may include site revegetation, addition or removal of a toilet facility, planting to screen sites from trails or to screen administrative sites from campsites, and/or relocation of the core camp or sleeping site. If management action cannot bring the site into standard, relocation or removal of the site may be considered. Potential relocation sites would be reviewed with by park staff through the project clearance process to assess effects on natural and cultural resources. Relocations would be recommended by area rangers and approved by the Superintendent. New sites would comply with the overall limit on number of campsites and with specific campsite standards described above. New or relocated campsites would avoid adversely affecting threatened or endangered species, cultural resources, or wetlands. If suitable alternatives do not exist, or if relocation would likely cause greater long-term resource impacts than leaving an existing site where it is (such as along some lakeshores where no viable alternatives exist to placing campsite within 100 feet of the surface water) a site may be excepted from one or more standards.

**TABLE 2
PROPOSED BACKCOUNTRY CAMPSITE STANDARDS**

Measurable Indicator	Class I High Impact	Class II Moderate Impact	Class III Low Impact
Total Area	≤ 1000 m ²	≤ 600 m ²	≤ 200 m ²
Bare Ground	≤ 250 m ²	≤ 175 m ²	≤ 75 m ²
# Damaged Trees	No increase	No increase	No increase
Litter	None	None	None
Food Pole	1 per site	1 per site	1 per site
Distance: core camp to trail	≥ 100 ft	≥ 100 ft	≥ 100 ft
Distance: sleep to cook site	≥ 100 ft	≥ 100 ft	≥ 100 ft
Distance: sleep/ waste site to water	≥ 100 ft	≥ 100 ft	≥ 100 ft
Dead/downed wood available; fire permitted	5 armloads w/in ≤ 100 m; consider no fires if damaged trees ≥ 25 and PUN ≥ 100/year	3 armloads w/in ≤ 100 m; consider no fires if damaged trees ≥ 25 and PUN ≥ 150/year	3 armloads w/in 100 m
Administrative presence	May be evident	Discourage evidence	Eliminate evidence
Outhouse	May include; consider if PUN ≥ 150/year	May include; consider if PUN ≥ 200/year	Encourage other waste management

PUN = People-Use Nights

Alternative A. The No-Action Alternative. Existing campsites would generally be maintained in their current location, regardless of their proximity to existing trails, water courses, and other campsites. Campers would be advised to maintain their distance between sleeping and cooking/food-storage sites and between waste sites and water. Facilities would

include, at a minimum, a campsite marker and a fire ring (except for sites designated for "no-wood fires"). Sites may have other facilities, such as a food-storage pole, pit toilet, hitching rack, or separate sleeping site away from the fire ring, at the discretion of the area staff. In compliance with *NPS Management Policies* (1988), no refuse containers or picnic tables would be provided in the backcountry. No deliberate effort would be made to screen sites from each other or from administrative sites. No measurable standards would be defined for campsite size or vegetative condition, but sites may be closed or relocated at the judgment of area ranger staff.

Alternative B. All campsites would have a site marker and a food-storage pole. Sites would contain a designated cooking/eating area but no designated sleeping area. Campers would be advised to maintain distance between sleeping and cooking/food-storage sites and between waste sites and water. Sites would be located a minimum of 100 feet from water and at least 50 feet from the main trail. Sites that cannot meet this standard would be relocated. All sites that receive an average of 200 visitor-use nights per season would have a toilet installed within the campsite perimeter (See *Protection of Water Quality*). The standards for affected and bare camp area and damaged trees (such as described under **Proposed Action**) at all sites would be allow no increase from 1992 measurements. Wood fires would be prohibited at all backcountry campsites, except in emergency circumstances. In winter, wood fires would be permitted on snow-covered sites where dead wood is available; campers would be required to bury or scatter ashes and remove traces of any fire ring.

Issue: Placement and Design of Bridges

Bridges may be viewed alternately as a convenience, a necessity for safe crossing of dangerous waters, or an intrusion into the wilderness. Yellowstone visitors now find great variety in where bridges are provided and in the type of bridge constructed -- from a simple half-cut log over a narrow creek to massive, metal suspension bridges over the Yellowstone River. In some areas bog bridges have been built to minimize resource impacts in perennially wet areas but in other areas they have not, and trail conditions may frequently be muddy in spring and summer. Even along one length of trail a visitor may encounter numerous waterways to ford while in other locations streams will be bridged. There is no consistent level of challenge or inconvenience for which the visitor can prepare, and there is no consistent standard for the presence or design of bridge structures in the park's backcountry.

Proposed Action. Bridges would generally be built only to alleviate major safety hazards or minimize resource impacts, such as in boggy areas or at stream crossings. Bridges would be the minimum necessary to accomplish the job and may be as simple as a single, flattened log across a stream. Construction materials and style would be chosen to blend with the landscape. In the *Threshold Zone*, visitors would find most stream crossings bridged for ease of access, although some small waterways would be crossed by using fallen logs or rock-

hopping. Along either *High, Moderate, or Low Use* trails in the *Backcountry Zone*, visitors would not be assured that streams would be bridged and must be prepared to cross streams unassisted. In order to limit resource damage to stream banks and boggy areas or, in rare instances, to accommodate stock or human safety, the need for bridges would be assessed jointly by backcountry rangers and trail maintenance foremen; their recommendations would be submitted for joint approval by the Chief Ranger and the Chief of Maintenance. Existing bridges in this zone would be reevaluated for necessity and may be removed. Major new bridge projects, such as those that require steel and concrete materials, are not anticipated and, if considered, would require project clearance to determine the need for environmental assessment. Construction of minor stream or bog crossings, such as with simple log structures, would avoid impacts to wetlands, threatened or endangered species, and cultural resources. There would be no bridges in the *Pristine Zone*.

Alternative A. The No-Action Alternative. There would be no deliberate effort to manage stream crossings based on distance from the trailhead or level of wilderness experience provided. The need for bridges over stream crossings and boggy areas would be jointly determined by backcountry rangers and trail maintenance foremen. Newly constructed bridges would be the minimal structure necessary. Bridge design could vary considerably in different areas of the park. In some districts small streams would be bridged, while in others major rivers, such as the upper Yellowstone and the Snake, would require fording regardless of proximity to roads and trailheads. Appropriate compliance would be done for construction of major structures.

Alternative B. All streams that cannot be safely crossed by an adult hiker would be bridged in *Threshold* and *Backcountry* zones with the minimum structure possible. Visitors could expect to jump some small water courses encountered on trails. Bog bridges would be installed whenever necessary to prevent resource damage. Appropriate compliance would be done for construction of major structures.

Issue: Backcountry Boating Access and Facilities

Boating is not permitted on park rivers, except on the channel connecting Lewis and Shoshone lakes where non-motorized boating is permitted. A 1986 *River Use Analysis and Assessment* documented the park's reconsideration of the historic prohibition against river boating in the park; based upon environmental analysis and public input, the Superintendent reaffirmed the boating restrictions on all rivers but the Lewis Channel.

No limits now exist on the number of boats allowed on lakes. Yellowstone and Lewis lakes, two of the park's largest water bodies, are accessible from the park road system and provide access to the backcountry. The park permits powerboats up to 40 feet in length on Lewis and Yellowstone lakes; non-motorized boating is permitted on most other lakes. Shoshone Lake is particularly popular with backcountry boaters, primarily canoeists. In the northern two-thirds (approximately) of the South and Southeast arms of Yellowstone Lake, motorboats

may not exceed 5 miles per hour (mph); these areas are termed "no-wake" zones. The southernmost third of these arms and the western half (approximately) of the Flat Mountain Arm of Yellowstone Lake are non-motorized zones. Based on monitoring done in 1993, boater use of non-motorized zones is quite low, and use of the no-wake zones is moderate to low. Yellowstone's *Wilderness Recommendation* (1972) proposed wilderness classification for the arms of Yellowstone Lake. Recently, interest in wilderness designation for the Yellowstone backcountry has been rekindled and, along with it, some interest in zoning the arms of the lake for non-motorized boating.

There are no backcountry campsites on Lewis Lake; 23 backcountry campsites are located on or near the shores of Shoshone Lake, and 43 on Yellowstone Lake. Some of these sites are accessible to non-motorized and/or motorized boat users as well as to hikers or stock users.

The presence of boats and the level and type of access along the shore of Yellowstone Lake influences aesthetics and resources, such as birds and fish, and affects the nature of the visitor experience available on shoreside trails and campsites. In the past, a number of facilities, including toilets, fire grates, picnic tables, food poles, and boat docks, have been provided to campers at three boat-accessible campsites. The park has also maintained docks for boat users since the early 1960s at Plover Point, Wolf Point, Eagle Bay, and Frank Island. The park maintains an administrative boat dock at Trail Creek in the Southeast Arm of Yellowstone Lake. The presence of some of these facilities is inconsistent with NPS *Management Policies*.

Proposed Action. Boating would continue to be prohibited on park rivers, except for the Lewis Channel. Non-motorized boating would continue to be permitted on non-thermal backcountry lakes. Motorized and non-motorized boating on Lewis and Yellowstone lakes and non-motorized boating on Shoshone Lake would continue. Shoshone Lake would be classified as a *High Use Backcountry Zone*; visitors could expect a high degree of use despite the absence of motorized boats and equipment.

The shorelines of Yellowstone Lake and Lewis Lake would be divided into either *Threshold Zones* or *Backcountry Zones* (*High Use, Moderate Use, and Low Use*) (Figure 4). The waters immediately adjacent (within approximately 100 yards) to the Grant Village and Lake/Bridge Bay developed areas on Yellowstone Lake and the Lewis Lake campground area would be classified as *Threshold Zones*. Lewis Lake, the main body of Yellowstone Lake, and the eastern part of Flat Mountain Arm of Yellowstone Lake would be zoned *High Use Backcountry*; motorboat use would be allowed and visitors could expect high awareness of other users. No new boating facilities would be constructed but, for the foreseeable future, existing docks at Lewis Lake campground and on Yellowstone Lake at four locations (Plover Point, Wolf Point, Eagle Bay, and Frank Island) would remain. The park would remove non-critical facilities along Yellowstone Lake, including those that contradict NPS policies (i.e., garbage cans or picnic tables). The only facilities provided would be those that are provided elsewhere in the backcountry (fire rings, food-storage poles, toilets in high-use/impact areas, and campsite markers).

A historic patrol cabin and administrative dock at Trail Creek in the Southeast Arm of Yellowstone Lake, and a historic patrol cabin on Peale Island in the South Arm of the lake would remain. Administrative use of motorized equipment to and from these areas could be permitted by the Superintendent if this is the minimum tool necessary.

The South and Southeast arms and approximately the western half of Flat Mountain Arm of Yellowstone Lake and all other non-thermal backcountry lakes would be classified as *Low Use Backcountry*. Only non-motorized boating would be allowed. Visitors could expect to occasionally see other boaters or users on the shore around these waters. This proposal is consistent with Yellowstone's 1972 *Wilderness Recommendation*, except that recommendation included all of Flat Mountain Arm within the proposal for wilderness. (Motorized boating is not allowed in wilderness.) These proposed zones could change based upon new management directives or any future legislation (such as enactment of wilderness designation for areas of Yellowstone). Administrative motorized access would be permitted in *Moderate* and *Low Use zones* only if such access is the minimum tool necessary as jointly determined by the Chief of Maintenance and the Chief Ranger (see *Administrative Use*).

Boat users would be informed of restrictions on boat access and approach to sensitive resources, such as bird nesting areas. This would be done verbally and/or by using printed information (especially when users obtain park boat permits) and by site- or area-specific signing.

At the present time, no limits are proposed on the numbers of boats allowed on each lake. Backcountry campsites on Shoshone and Yellowstone lakes would continue to be provided and would be managed within the guidelines stated under *Designated Trails and Campsites Versus Dispersed Use* and *Campsite Standards*. Commercial use may be limited as discussed under *Management of Commercial Backcountry Use*.

Alternative A. The No-Action Alternative. Boating access would continue as currently described. Boating would continue to be prohibited on park rivers, except for the Lewis Channel. No limits would exist on the number of boats allowed on lakes. Docks, campsites, and facilities that now exist would remain. The need for new facilities along lakeshores would be assessed locally by area rangers; project clearance and environmental and cultural compliance procedures would be required for any new facility construction.

Alternative B. Boating would continue to be prohibited on park rivers, except for the Lewis Channel. Motorized boating access would be permitted on Lewis Lake and the main body of Yellowstone Lake. No-wake motorized boating would continue as currently permitted in most of the South Arm of Yellowstone Lake, except that the lower portion of the arm would be restricted to non-motorized boating. The park would experiment with closing the entire Southeast Arm of Yellowstone Lake to motorized boating. The park would monitor boat use in the arms of Yellowstone Lake and evaluate impacts to visitors and resources; after at least two years of the experimental motorboat restriction, the park would determine whether to retain the closure and/or to potentially extend or modify the motorboat restrictions in this or

other arms of the lake. Lakeshore campsites would be maintained, but the park would remove all facilities except fire grates, food-storage poles, toilets in high use/impact areas, and campsite markers. Docks would be removed and replaced with mooring buoys anchored in water deep enough to prevent grounding of vessels, yet close enough to shore to avoid being a hazard to navigation.

Issue: Other Facility Standards

In addition to those already described, facilities in the backcountry include patrol cabins, barns, and sheds used for administrative use; food poles; toilets in proximity to heavily used campsites; several fire-lookout towers; and monitoring equipment such as radio antennae, repeaters, and snow-measuring equipment. Much of this equipment needs servicing at least annually, resulting in requests for helicopter access to the backcountry. The majority of the cabins and fire lookouts are historic; maintenance and use occur regularly.

These facilities affect the visual quality of both trail and off-trail experiences and, when accessed by helicopter, may impact the quiet of the backcountry. In addition, most of the park's backcountry is proposed wilderness which, according to NPS *Management Policies* (1988), is to be managed so as not to preclude eventual wilderness designation. This policy discourages building additional permanent structures in the backcountry. At present the park has no established guidelines on building, maintaining, or accessing facilities in the backcountry. Visitors are not regularly alerted to the presence of such facilities or administrative use of them, which may affect their backcountry experience.

Proposed Action. The park would apply the "minimum tool" concept in the backcountry (see *Mechanized Equipment*). The goal would be to have no net increase in major administrative structures (as listed in Appendix V) placed or constructed in the *Backcountry* or *Pristine zones* over the number that existed in 1992. However, a cabin or other facility may be considered for replacement or relocation, following proper compliance. Existing cabins and barns would be evaluated for potential inclusion on the National Register of Historic Places. The park's goal would be to replace non-historic cabins (i.e., A-frames) with cabins of a log-type design which would blend with the wilderness character of the park's backcountry. Other administrative structures, such as food-poles, human-waste facilities, and monitoring or telecommunications equipment, would be limited to the minimum tool necessary to do the job. All incompatible facilities would be evaluated for potential consolidation into existing administrative sites or for removal from the park's backcountry. Exceptions would be approved by the Superintendent and documented in the park's Backcountry Office.

Cabins that are not intended as public contact stations would be screened from trails, campsites, and other commonly used areas (such as lakeshores); short stretches of trail could be rerouted to direct visitors away from cabins or facilities intended for administrative use only, particularly in the *Backcountry Zone*. Buildings not being used would be evaluated for

removal and non-replacement. No relocations, alterations, or removals of historic structures would occur without cultural resource compliance (see *Protection of Cultural Resources*). Any new placement or relocation of structures would avoid disturbing wetlands and threatened or endangered species. Campers would be alerted to the presence of administrative facilities or planned activities (such as a work project requiring helicopter access) when obtaining a backcountry permit. Day hikers could expect some evidence of administrative presence to be visible, particularly in the *Threshold Zone*. They could expect little or no evidence of administrative activity in the *Pristine Zone*.

Alternative A. The No-Action Alternative. No deliberate effort would be made to remove incompatible facilities from the backcountry or to consolidate facilities at existing administrative sites. Existing cabins may be replaced or relocated to other areas in order to facilitate administration of the backcountry, and additional cabins or structures may be proposed by area ranger staff; appropriate compliance would occur. No relocations, alterations, or removals of cultural resources would occur without appropriate compliance. Visitors would continue to see and/or hear evidence of park administrative activities in parts of the backcountry, regardless of zone or distance from a road or trailhead.

Alternative B. Most incompatible facilities would be removed from the park's backcountry, but occasional exceptions would occur; efforts would be made to concentrate these facilities within several miles of park roads and trailheads. No additional cabins or structures would be built in the proposed wilderness of Yellowstone. If destroyed, cabins or fire towers would not be replaced. No relocations, alterations, or removals of historic resources would occur without compliance. Visitors could expect to see little evidence of park administrative activities once they were several miles beyond a road or trailhead.

Issue: Management of Commercial Backcountry Use

In response to public demand for guided trips, commercial use of Yellowstone's backcountry has occurred for many years. Commercially guided backcountry horse, backpacking, boating, cross-country skiing, and photography tours are among the services provided by either Limited Concessions Permittees (LCPs) or Commercial Use Licensees (CULs). Persons or businesses providing these services must pay a fee to operate commercially in the park, are required to have liability insurance covering bodily injury and property damage, and are required to comply with park regulations. Some of the commercial services are due for review to determine whether they are necessary and appropriate, as required by the Concessions Policy Act.

Commercial stock use of the backcountry has been increasing since the mid-1980s. Commercial stock use is approaching its practical, manageable limits in many popular areas of the park, with regard to campsite availability, use limits, and measurable resource impacts. Even though many outfitters conduct a minimal number of trips annually (in 1992, 27 of 62 permittees or 44 percent conducted fewer than five trips each), their collective

capacity to provide outfitting services appears to meet or exceed public demand. In 1990 the permits held by stock outfitters were converted from Commercial Use Licenses, which are unlimited in number, to Limited Concessions Permits. The purpose of this conversion was to limit the total number of operators; however, no analysis has been done to determine how many outfitters are necessary to provide these services to the public. All 70 licenses that existed in 1990 were "grandfathered" into the new LCP program. The permitted stock outfitters must participate in an annual guide-certification program. This program is a means to exchange information between backcountry managers and the outfitters regarding minimum-impact techniques, use limits, facilities, and other topics. Permittees are also evaluated annually on to the quality of service they provide.

The potential exists for other commercial backcountry activities, which are currently authorized under Commercial Use Licenses, to increase greatly. At present Commercial Use Licensees include photography, fishing, and backpacking guides who also provide services in the backcountry. The CUL program does not provide for establishing limits on the number issued for a given service, for the evaluation of the services provided, or for their compliance with resource management objectives and regulations. This situation has the potential to negatively affect the backcountry visitors' experience(s) and the backcountry resources. In order to further study the appropriate number of licensees which should be available to provide non-stock outfitting and other commercial uses parkwide, the park established a moratorium on granting new licenses in 1994-1995.

Commercial users enjoy some privileges that non-commercial users do not have. They are permitted to make advance reservations for campsites to which they guide users. Commercial users also occasionally request a drop-off service, whereby an outfitter uses stock or a boat to provide a group access into the backcountry but leaves the party to then hike or boat on their own. Advance reservations for such groups have not been consistently handled in the past. Commercial-use providers need to understand clearly their privileges and operating requirements. While commercial-use providers offer a service to the public, they can also compete with private users for some resources (such as for popular campsites).

Proposed Action. Commercial use of the backcountry would be provided by permitted individuals or businesses that provide a needed service for an already permitted use. Commercial permitting of new uses would only be considered in accordance with concessions management policies and regulations. The park's goal would be to manage the number of commercial outfitters while maintaining a balance between resource management goals, user demands, and the visitor-use opportunities outlined in this plan.

The park would evaluate placing all backcountry outfitters under Limited Concessions Permits. If determined necessary, prospectuses would be published, and the public would have an opportunity to apply for these permits.

The number of stock outfitters currently licensed under LCPs would be gradually reduced through "natural attrition" until there is a demonstrated public demand for increased

availability of services, provided those services can be accommodated within existing use limits and resource parameters. Attrition includes a permittee's voluntary non-renewal, termination of unsatisfactory operators (as determined by the Concessioner Review Program), or the possible denial of requests by outfitters to transfer their permits. A panel of park staff, headed by the Chief Ranger, would review each request for transfer using guidelines established for this purpose, and the panel would recommend whether a request should be approved or denied. Final authority to approve or deny the transfer of a concessions permit rests with the Washington office.

All commercial backcountry users would be subject to periodic evaluation to help determine whether the permit/license is renewed. Regulations and guidelines pertaining to commercial use would be enforced by backcountry rangers and evaluations reported to the Concessions Office and/or Backcountry Management Office, which administratively oversee the commercial-use permittees/licensees. Privileges granted to commercial-use providers, such as advanced reservations, would require that a guide or outfitter accompany the user group for the duration of the backcountry trip. The allocation of campsites between commercial and private users is further discussed under *Reserving Camping Opportunities in the Backcountry*.

Alternative A. The No-Action Alternative. Commercial use of Yellowstone's backcountry would be provided by permitted or licensed individuals or businesses that provide a needed service for an already-permitted use. Limited Concessions Permittees (stock outfitters) would be subject to periodic evaluation as specified in their permit and required to complete annual guide certification. The number of stock outfitters would be gradually reduced through attrition until there is a demonstrated public demand for increased availability of services, provided those services can be accommodated within existing use limits and resource parameters. Commercial Use Licenses would not be limited in number (except for a temporary moratorium in 1994-1995 while the park studies the need for additional licensees or for converting CULs to LCPs) nor would licensees be required to undergo certification, orientation, or evaluation. Commercial use providers would continue to be able to reserve backcountry campsites, which in some popular areas could prevent private users from getting permits for specific campsites.

Alternative B. Commercial use would be managed as under Proposed Action, except that a target number of commercial use providers would be established for each type of service. The goal would be to eventually have a maximum of 50 commercial stock outfitters, 10 boat outfitters, and 10 backpack outfitters providing services in Yellowstone. Other commercial use providers could be limited, with target numbers of each to be determined in the future. Prior to each permit renewal, park management would evaluate and adjust, as appropriate, the target number of permittees for each type of commercial activity; only that number of permits would be issued. Competition for campsite reservations would be addressed by establishing a system whereby all users could reserve backcountry campsites in advance.

Issue: Management of Stock Use

Pack- and saddle-stock have been used in the Yellowstone area since the mid-1800s, first for exploration and then for land management and protection and for recreational purposes. This use continues to play an important part in the administration of the park's backcountry operation: "Pack animals" are defined as and limited to horses, burros, mules, ponies, and llamas. As with other forms of access, the localized impacts of stock use compel resource managers to have a program for managing this type of use and its effects on the park environment.

The majority of recreational stock use is now provided by commercially guided pack trips, whose popularity has been generally increasing since the mid-1980s. Commercially guided saddle- and pack-stock outfitters operate under Limited Concessions Permits (LCPs) and must meet guidelines established in the *Concessions Operating Plan for the Operation of Guided Saddle and Pack Stock within Yellowstone National Park*. This document is reviewed and revised annually during a meeting of park staff and LCP holders.

The maximum number of animals per stock party has been limited in an effort to reduce impacts caused by larger groups of stock (see *Use Limits and Campsite Capacities*). Stock-related facilities at trailheads and campsites have already been discussed (see *Marking and Managing Trailheads* and *Use Limits and Campsite Capacities*). The following subtopics also relate to stock-use management in the backcountry.

Stock-trail Use Limits and Off-trail Travel

Currently most trails within Yellowstone are used by stock. Stock users are encouraged to use maintained trails in order to keep impacts to regular travel corridors. However, the park permits saddle-stock to travel anywhere off-trail throughout the park except where prohibited by closure or other restrictions. The use of pack animals off-trail is prohibited unless no other access is available to a designated campsite; an exception allows the use of one pack animal to transport personal gear on day trips. If off-trail use is low and evenly distributed, impacts should be minimal. If, however, off-trail stock use concentrates in specific areas and increases in number, popular routes may become established trails, and destinations may show additional grazing effects. All trails may not be suitable for stock use due to terrain, soil type, and/or safety concerns. Some stock users desire to have additional off-trail travel opportunities. But, some non-stock users perceive stock use or sharing the same trails with stock as a negative experience or influence on the park environment.

Proposed Action. The use of pack- and saddle-stock is recognized as a traditional, historical, culturally significant, and appropriate form of recreational and administrative use in Yellowstone National Park. Most of Yellowstone's trails would be open and maintained to a reasonable degree for stock use. Trails that are not suitable for stock use due to safety or resource impact concerns are identified in Appendix III, and these trails would be closed

to stock use. Additional trails could be added to the list if legitimate resource or safety concerns are identified. Such information would be made available in backcountry offices and visitor centers and in printed backcountry information.

Off-trail travel by stock parties would be limited to day trips in areas not otherwise restricted (such as thermal areas or Bear Management Areas closed to off-trail travel); one pack animal per party could be used to transport personal gear for riders. Backcountry orientation for visitors would include the information that stock parties or evidence of stock presence may be encountered on any trail not listed in Appendix III; this information would also be made available in backcountry offices.

Alternative A. The No-Action Alternative. The park would continue to allow stock use on most trails. No deliberate effort would be made to delineate trails that are not suitable for stock. Off-trail travel would be permitted for day riders only as stated in the Proposed Action. Exceptions could be granted by permission of the District Ranger. Visitors could expect stock use or evidence of it on nearly any trail in the park.

Alternative B. Stock parties would be permitted off trail for day use, but there would be no pack stock allowed off trail. The park would designate some trails as hiker-only trails in order to separate user groups and avoid potential conflicts. Other actions would be as described in the Proposed Action.

Alternatives Considered But Rejected: An alternative discussed would have allowed dispersed off-trail stock use for day or overnight trips, to gradually change from designated campsites to a zone system of permitted camping. This alternative was rejected because, as addressed under *Designated Trails and Campsites Versus Dispersed Use*, there has been relatively little demand expressed for off-trail opportunities, and the proposed action does provide some of this type of opportunity for day riders. The established trail system and existing campsites would long show the evidence of regular use. Considerable site rehabilitation would be required to alleviate the resource impacts and visibility of existing trails and campsites. At the same time, additional impacts would likely become visible, especially at stock campsites, as users dispersed. There would be a natural tendency for visitors to concentrate use at or along popular and/or easily accessed routes and suitable camping locations, which would cause additional sites to show the effects of use. Park staff also believe that the existence of designated campsites and food-storage poles has contributed significantly to a reduction in bear-human conflicts and associated goals related to grizzly bear conservation.

Pre-trip Stock-holding Areas

Camping is not allowed at park trailheads, and horses are not allowed in frontcountry campgrounds. The nearest places for stock parties to camp and hold their stock are outside park boundaries and some distance away. Some stock users have expressed the desire for a place to hold their stock on the night before starting their backcountry trip into Yellowstone

in order to facilitate an earlier start. In 1991 the park experimentally designated two roadside administrative areas as overnight stock-holding areas; a special-use permit is required, and no facilities are provided. No out-of-vehicle camping is allowed at these sites. A long-term decision on accommodating these requests has not been made.

Proposed Action. The park would continue experimental use of the two existing stock-holding areas through 1994, with no out-of-vehicle camping allowed. No additional stock-holding areas would be permitted during this period, and no facilities would be established at the two existing sites. At the end of the 1994 season, the need for providing overnight stock-holding areas would be evaluated and a decision made about continuing use in those areas. If need for such areas has not been demonstrated and/or if there have been demonstrated resource impacts or site-use conflicts, the stock holding areas would be discontinued.

Alternative A. The No-Action Alternative. The two designated stock-holding areas would continue to be available for the foreseeable future. No deliberate evaluation of need or use would be conducted. A special-use permit would continue to be required for use of these areas.

Alternative B. No overnight stock-holding areas would be provided in Yellowstone. No overnight use would be permitted at trailheads. It would be necessary for stock to be held outside the park prior to initiation of backcountry trips.

Management of Stock Retention, Feeding, and Grazing

The methods used to manage stock at campsites affect campsite condition, appearance, and ability to sustain long-term use. There are a number of methods that reduce impacts to vegetation in and around these sites. Loose herding, hobbling, picketing, and portable electric fences have all been used to retain stock in grazing areas. Highlines have been used to retain stock adjacent to core-camp areas, but are restricted to a temporary means of retention while packing or unpacking, saddling or unsaddling, and feeding. In some areas, hitchrails have been constructed when area rangers perceived an unacceptable level of tree damage caused by highlining. Currently, park staff exercise considerable discretion in how and where they require stock users to retain stock; this sometimes results in complaints from stock users of inconsistent treatment. Stock are occasionally used to drop off clients at non-stock campsites; no special effort has been made to ensure that stock presence or impact is not evident at these backpacker sites.

To reduce the chance of introducing exotic plant species into the backcountry, supplemental feed is restricted to certified weed-free pellets, cubes, and/or rolled oats. Manure must be removed and scattered away from core camps, and an effort must be made to scatter manure in all other stock retention locations. Some stock users find these restrictions inconvenient or unnecessary.

The degree of grazing impact at stock-use sites is dependent on a number of factors, including plant species, soil type, the level of native ungulate grazing, and climatic conditions. Short-term grazing is permitted at stock sites and along trails. However, grazing must be properly managed and monitored to prevent long-term resource impact and change. As with retention methods, park staff have used a combination of their varied experiences and interpretations of site impacts when addressing stock management in backcountry areas. Seasonal opening dates and limits on stock use are discussed annually. In the past, stock users have been prohibited from using park backcountry campsites early in the summer and have not been allowed to reserve as many stock-use night opportunities as they desired. Stock users have expressed concern about inconsistent treatment and/or constantly changing rules. By incorporating data on use levels and resource conditions, park staff and users could improve the management of stock use.

Proposed Action. Supplemental stock feed would be restricted to certified weed-free pellets, cubes, and/or rolled oats. A grazing-use management system is designed to meet users needs without causing long-term impacts on vegetation and native grazers. The park would require that manure be removed at least 100 feet from core camps and be scattered in all other stock retention locations, such as grazed meadows. Generally, stock should not be allowed to linger inside the core camp; when dropping off clients at non-stock sites, outfitters would be required to remove manure and other evidence of stock use inside the core camp.

No free grazing of stock would be permitted in *Threshold Zones*. In *Backcountry* and *Pristine zones*, loose herding, hobbling, picketing, and/or portable electric fences may be used to retain stock in grazing areas. Highlines to retain stock would only be allowed outside core-camp areas. Support trees would have to be padded to prevent resource damage; unless hitchrails or designated highlines have been provided, lines would have to be moved frequently to disperse trampling. All stock users requesting advance information or backcountry permits would receive a copy of *Horsepacking in Yellowstone*, which discusses recommended stock-retention techniques. Hitchrails would not be constructed in *Class III (Low Impact)* backcountry campsites or in *Pristine Zones*; they may be considered for placement at *Class I (High)* or *Class II (Moderate Impact)* backcountry campsites only if the minimum tool necessary and only after stock-use nights exceed 100 per year at a campsite. No construction would occur in wetlands or areas of known threatened or endangered species or cultural resources.

Range utilization would be monitored in meadows adjacent to often-used stock sites. The goal of monitoring would be to avoid vegetation damage that can occur by allowing stock into meadows too early or by allowing an excess of stock grazing in a specific area. Monitors would use the U.S. Forest Service grazed-loop system to estimate range utilization. The Forest Service range readiness system would be used to estimate when a site can first be opened to stock each season. For range utilization, two sets of four to eight transects each (depending on meadow size and use patterns) would be established during the summer season. Transects would be mapped on aerial photos of stock-site meadows and areas of high intensity grazing would be delineated. Stock grazing intensity generally appears to be

highest immediately adjacent to core camps. Backcountry resource managers would use monitoring data and the aerial photos to redistribute stock grazing to areas of less-intense use and, if necessary, to restrict stock grazing where redistribution is not successful (e.g., in small meadows).

Advanced reservations at stock sites would be limited to the number of stock-use nights that would likely result in a maximum of 35 percent range utilization. This limit would be updated yearly based on cumulative monitoring results. Commercial users would be limited to reserving 75 percent of the projected maximum stock-use nights. Unless monitoring indicates that first opening can occur earlier in the season at specific locations, no stock sites could be reserved in advance of July 1, annually. Proposed stock-site grazing standards would be instituted; when monitoring indicates that any area of a stock site meadow reaches 35 percent utilization, that area of the meadow would be closed to further stock grazing. Managers would direct users to redistribute stock use to other areas of the meadow. If any area of a stock meadow reaches 50 percent utilization, the meadow would be closed to stock use for the remainder of the season. These standards are summarized in Table 3.

Data collection and analysis would be coordinated through the park's central Backcountry Office to ensure consistent methodology and the building of a long-term database. The standards and appropriate management actions would be updated as necessary, incorporating additional data on use levels and resource condition, as well as input from stock users.

**TABLE 3
PROPOSED BACKCOUNTRY GRAZING STANDARDS**

	<i>Threshold Zone</i>	<i>Class I High Impact Sites</i>	<i>Class II Moderate Impact Sites</i>	<i>Class III Low Impact Sites</i>	<i>Pristine Zone</i>
Grazing Utilization Goal	No Grazing	≤ 35%; redistribute stock in grazing areas	≤ 35%; redistribute stock in grazing areas	≤ 25%; redistribute stock in grazing areas	0% change in vegetation
% of SUN for advance reservations	None	75%	75%	75%	None
Upper grazing limit	None	50% utilization	50% utilization	50% utilization	0% change

Alternative A. The No-Action Alternative. Supplemental stock feed would be restricted to certified weed-free pellets, cubes, and/or rolled oats. Users would be required to scatter horse manure. Stock retention may be by holding, picketing, loose herding, or electric fencing. Highlining would be allowed at the discretion of area rangers, and hitchrails could be constructed following completion of environmental compliance. There would be no deliberate effort to provide a consistent type of hitching at stock sites. Grazing limits would be established by area rangers, generally using data from grazing transects. However, there would be no deliberate effort to standardize application of the data or to set limits on percent utilization or percent reservable stock use nights. In some areas, sites would be managed on a "rest-rotation" system (i.e., a site not would not be used more than two consecutive nights by the same or different parties); in other areas, only the total number of stock-use nights per season would be limited. Opening dates would be based on the judgment of area rangers, but generally would not be before July 1, annually.

Alternative B. Stock retention and feeding methods would be as described under the Proposed Action, except that no additional hitchrails would be constructed in backcountry areas. Users would be required to scattered horse manure 100 feet from core-camp areas and grazed meadows. Stock site opening dates would be based on the following elevation and meadow-type guidelines (Sauer 1990):

<u>Elevation</u>	<u>Meadow Type</u>	<u>Date</u>
up to 7000'	Dry meadow	7/01
7000'-7500'	Dry meadow	7/15
7000'-7500'	Wet meadow	8/01
7500'-above	Dry meadow	8/01
7500'-above	Wet meadow	8/15

Stock-use limits would be established for each site. Monitoring of grazing would occur as described for the Proposed Action. However, whenever stock sites reach 35 percent utilization they would be closed to further use for that season.

Issue: Hunter Access Across Yellowstone's Backcountry

Hunter access, including the possession of weapons and game hauling, is generally prohibited in Yellowstone. Regulations in 36 CFR allow the Superintendent "to issue a permit to carry or possess a weapon, trap or net, and to provide access to otherwise inaccessible lands or waters contiguous to a park area when other means of access are otherwise impracticable or impossible." Yellowstone allows hunters to transport weapons and lawfully taken game along two routes designated as approved hunter-access areas where no reasonable alternative access exists. These are Eagle Pass to the Dike Creek Trail, and the Skyrim Trail, where the hydrographic boundary precludes safe travel outside the park. Hunters are required to obtain a Hunter Access Permit to use these routes. Because the park is surrounded by

extensive areas of huntable big-game habitat, some confusion is expressed each year by staff and the public about what hunter access is available across Yellowstone National Park land.

Hunters are not allowed into the park to pursue and/or retrieve animals that have been shot outside the park. This "zero-tolerance" policy has resulted in some hunters leaving animal carcasses, which then serve as food for scavengers, including grizzly bears, close to the boundary. Hunters and park staff have expressed some confusion about this policy, despite the legal interpretation by government solicitors that it is non-discretionary.

Some park trails near or adjacent to the boundary present increased risk to backcountry users during hunting season. These added safety hazards along with recommended safety precautions need to be communicated to park visitors using the backcountry.

Proposed Action. There are now and would continue to be no hunter access routes in *Threshold* or *Pristine zones*. In the *Backcountry Zone*, for the foreseeable future the park would continue to allow hunter access and provide an enforcement presence in the Dike Creek and Skyrim areas where hunter access may occur. Hunters would be required to carry firearms out of sight on pack animals and not on riding stock. The CFR requires that firearms be broken down or packed so as not to be readily accessible. Rangers would increase patrols during hunting seasons and when hunter camps outside the park are in use. A zero-tolerance policy would be enforced with regard to hunters retrieving carcasses inside park boundaries. The park would inform other users in these areas that hunter access may occur on these routes and recommend that visitors wear bright clothing or "hunter orange" to aid their visibility. Park staff would also inform visitors to be alert for carcasses.

Alternative A. The No-Action Alternative. Hunter access would continue along the existing designated routes, and rangers would provide an enforcement presence in areas where hunter access occurs. A zero-tolerance policy would be enforced with regard to retrieving carcasses inside park boundaries. No deliberate efforts would be made to increase information to other users in those areas about the potential to encounter hunters or to patrol for the presence of carcasses. Other routes for hunter access may be requested and their use permitted by the Superintendent.

Alternative B. No hunter access would be permitted across Yellowstone National Park by hunters carrying weapons or transporting game. Hunters and outfitters with camps adjacent to the park boundary would be required to use other routes to reach their hunting areas outside Yellowstone. The zero-tolerance policy would be enforced with regard to retrieving carcasses inside the park.

Issue: Rock Climbing in the Backcountry

Yellowstone provides some opportunities for mountain, rock, and/or ice climbing. The most popular peaks can be reached by non-technical routes, such as a maintained trail or a well-

worn footpath to the summit. Some of the routinely climbed peaks involve scrambling and may require technical ice-climbing equipment or at least an ice axe. Winter and spring ascents are made via snow or ice couloirs. Almost no high-angle technical rock climbing is done on the high peaks due to the poor quality of the rock; however, high-angle rock climbing is done at a few limestone and granite rock-outcrop areas. This type of rock climbing may cause physical damage to the rock due to breaking off of hand- and foot-holds, and from placement of equipment such as pitons, bolts, and/or chocks.

Climbing related off-trail hiking may cause other environmental effects, such as damage to alpine vegetation. Where there is no marked trail, there may be numerous parallel routes to the summit of a popular peak. These usually go straight up the slope and are prone to erosion. Park regulations prohibit climbing and off-trail, off-boardwalk travel in thermal areas. Climbing is also prohibited at the Mammoth Terrace formations, including Liberty Cap, and in the Grand Canyon of the Yellowstone between Chittenden Bridge and Silver Cord Cascade.

Traditionally, climbing has not been a major activity in Yellowstone. However, visitors have occasionally been misinformed as to whether climbing is allowed at all in the park. Park staff have not established clear guidelines on the use of certain climbing equipment, such as chalk or hardware, or for whether or not bivouacs are allowed as part of a climb. Some park staff have expressed concern about the additional responsibility the park assumes for climbers' safety and rescues (which may require specialized training, equipment, and access).

Proposed Action. In 1993 a servicewide task force proposed guidelines for climbing in national parks; this information has been used to develop the park's proposed action. Climbing would continue to be allowed as part of the backcountry experience in all areas of the park not specifically closed to this activity (as described above), in accordance with other regulations. Each climber is primarily responsible for his/her own safety in undertaking this high-risk activity; the park would undertake no special efforts to prepare for high-risk climbing rescues, although rangers would respond to emergencies to the best of their skills and abilities.

In *Threshold*, *Backcountry*, and *Pristine zones*, no motorized tools, fixed anchors, or other climbing equipment that defaces rock would be allowed. Techniques such as gluing or chipping rock to create, augment, or reinforce holds, or other practices such as forcibly prying off rock and removing vegetation to enhance a route would be prohibited. No equipment would be allowed to remain in place after completion of an individual's climb. Park staff would monitor the effects of use on routes that receive significant use. In accordance with criteria for establishing new trails, the park may consider delineation of summit trails where off-trail scrambling is heavily concentrated. Off-trail use, including the use of bivouacs to facilitate successful completion of summit climbs, may be accommodated as described under *Designated Trails and Campsites versus Dispersed Use*. Climbing would continue to be prohibited in highly visible areas and/or for resource protection.

Alternative A. The No-Action Alternative. Climbing would continue to be allowed except in the Grand Canyon of the Yellowstone and on thermal features (as described above). Climbers would assume primary responsibility for their own safety. Area rangers may make recommendations for restricting techniques that are believed to cause unacceptable resource damage. Use of motorized climbing equipment would continue to be prohibited. The use of gymnast's chalk and climbing hardware would be permitted at the area rangers' discretion. Anchors and slings may be left in place throughout the climbing season to facilitate belays and rappels on climbs requiring their placement. Routes that develop in popular areas, such as to summits of mountain peaks, may be converted to formal trails at the discretion of area rangers, following completion of appropriate environmental compliance.

Alternative B. The park would consider climbing an acceptable recreational pursuit where it does not detract from other visitors' experiences and where it poses no threat to vegetation, soils, and rock. Use would be limited by a climbing permit system. Climbers would be primarily responsible for their own safety. Anchors and slings used as rappel and belay points could not be left behind. Motorized climbing equipment and bolts for belay and rappel points would not be allowed. Bivouac camping would not be permitted. Additional summit trails would not be established.

Issue: Mechanized Equipment in the Backcountry

Public use of motorized equipment in the backcountry is prohibited. Administrative use of certain types of motorized equipment to achieve management objectives is allowed and governed by NPS *Management Policies* (1988). The majority of motorized equipment use in Yellowstone's backcountry today is related to trail maintenance and construction. Other uses include using chainsaws to cut firewood at administrative sites, to construct new facilities, or to cut firelines. Helicopters are sometimes used for fire management, search and rescue operations, or trail maintenance projects.

Limitations on the use of motorized equipment may influence the safety of staff involved in backcountry operations, and the efficiency of maintenance, research, or other administrative activities. For example, if trails are not cleared of downfall, horse travel may quickly establish new trails around downed logs, causing resource damage. However, the use of mechanized equipment in the backcountry affects visitors' experiences and aesthetics, wildlife resources, and the wilderness character of the area. Adjacent to Yellowstone are several legislated wilderness areas, whose users can also be affected by the use of mechanized equipment inside the park.

Proposed Action. In all of Yellowstone's backcountry, use of motorized equipment by the public would continue to be prohibited. Motorized equipment use would only be permitted for administrative use if it is the minimum tool required. A 1972 Department of Interior National Park Service memorandum defined minimum tool as "the minimum device necessary to successfully, safely, and economically accomplish the objective. Economic

factors should be considered the least important of the three criteria. The chosen tool or equipment should be the one that least degrades wilderness values temporarily or permanently." In *Threshold Zones*, visitors could expect to encounter or hear motorized equipment due to the proximity to motorized-use zones (such as along park roads and along the shores of the main body of Yellowstone Lake). Administrative use of mechanized equipment, if the required minimum tool, would be permitted for trail clearing or construction. In *Pristine Zones*, the goal would be no non-emergency use of mechanized equipment. All mechanized equipment use in this zone must be approved by the Superintendent. Helicopter flights and landings would be coordinated by the Chief Ranger or his designee to minimize effects from noise.

In *Backcountry Zones*, motor vehicle and snowmobile use would be prohibited, except as approved for search-and-rescue or other emergency purposes only. Chain saws and other small maintenance equipment may be used for initial trail clearing; the goal would be to accomplish as much of this work as is possible prior to July 15 annually. The park would strive to use handtools for small maintenance and construction projects on trails and around cabins and, as much as possible, for subsequent routine trail clearing throughout the season, except in critical circumstances (such as following major blowdowns). The Superintendent may approve the use of mechanized equipment and light explosives, if the necessary minimum tool for major bridge-building, equipment servicing, cabin construction, or major research, resource management, or maintenance projects. Information about these projects, including the potential use of mechanized equipment, would be provided to backcountry campers obtaining permits for nearby sites. Helicopters would not be used to supply patrol cabins and work crew operations except in emergency situations. All non-emergency helicopter landings must be approved by the Superintendent to assure adherence to the minimum tool philosophy.

Alternative A. The No-Action Alternative. Motor vehicle and snowmobile use in the backcountry would be prohibited except as approved for search-and-rescue and other emergency purposes only. Snowmobiles may not be used except on roadways unless emergency circumstances exist. Use of mechanized equipment, explosives, and non-emergency helicopter landings would be permitted in order to achieve specific management objectives, and would require the approval of the Superintendent. Chainsaws and other small mechanized equipment would be allowed for initial and routine trail clearing at the discretion of area rangers. The use of hand tools would be encouraged for removal of additional downfall when it is possible to do so quickly and effectively. Helicopters may be used to supply cabins and trail crew operations when other alternatives do not exist.

Alternative B. Emergency use of mechanized equipment, including helicopters and chain saws, would be permitted for fire management and search-and-rescue operations with the approval of the Superintendent. No non-emergency use of mechanized equipment would be allowed in the *Backcountry* or *Pristine zones* except by permission of the Superintendent.

Issue: Winter Use of the Backcountry

The winter season begins when a sufficient amount of snow exists on the ground to cover summer trails and campsites and when walking becomes impractical, making the use of skis or snowshoes necessary to access most of the park backcountry. Winter conditions generally exist in most of Yellowstone from late October to early May. Historically, the park has lacked a comprehensive or consistent system to manage backcountry trail use and camping during the winter. Subdistricts have developed independent operating procedures and philosophies concerning winter backcountry use. Ski trails generally overlay summer roads or trails and have been marked to different standards in different parts of the park. Winter backcountry campers are required to get a permit, as in summer, although more flexibility has been allowed for winter camp location in some areas. Printed information states that wood fires are prohibited in winter, although there is no such requirement in the park compendium. Winter trail and backcountry use appears to be slowly but steadily increasing, and staff and visitors have expressed need for improved information about winter backcountry use. Conditions on ski trails, levels of trail marking and signing, recommended procedures for handling human waste, and expectations of rescue are not consistently addressed in verbal and written information.

Proposed Action. Winter information guides would be available for the major developed areas of the park; these include maps of *Winter Threshold* ski trails, which would be marked to a higher standard in winter than in summer (see *Signing and Marking Trails and Features* and Appendix IV). Ski trails, unless atop a road used by motor vehicles in summer, would not be mechanically groomed. Ski trails in the *Backcountry Zone* (those not on the *Winter Threshold Trails* list) generally would not have special supplemental markers or signs posted for winter use, although trailheads and junctions may be marked "ski trail" or with the international skier symbol. Winter backcountry users would be expected to assume primary responsibility for their safety and to have a map and compass and be competent in their use. General avalanche advisory information would be available at park headquarters and winter visitor centers. If conditions warrant, areas may be closed to backcountry travel due to avalanche or other dangers.

Permits would be issued for winter camping within designated areas, zones, or campsites, as determined by area rangers. In developed or *Threshold Zones*, area rangers may allow skiing/snowshoe parties to camp in frontcountry campgrounds that have been closed for the winter season. Parties skiing or snowshoeing along snowmobile corridors may also be permitted to camp out of sight of roads and travel corridors, following rules for backcountry camping (see below).

In the *Backcountry Zone* maximum party size for winter camping would be 12 visitors (with no more than 3 additional organized-group leaders or commercial outfitters/guides permitted, for a maximum of 15 persons), as in summer. In some areas, campers may be assigned to designated summer campsites, which may or may not be snow covered. Campers would be required to camp out of sight and sound from ski trails, 100 feet from water, and a quarter-

mile from other backcountry campers. No camping would be allowed in thermal areas. Snow shelters and other temporary snow structures would be permitted. Food must be stored (hung) as in summer. Wood fires would not be permitted, except in emergency circumstances, unless fire rings and dead/downed wood could be located (such as on lower elevation designated campsites). Toilet paper must be completely burned or packed out. Disposal of human waste would be in deep tree wells on a level bench 100 yards from a water source. All garbage must be packed out. Special travel considerations pertaining to route finding and river crossings would be noted on the backcountry permit. Under special circumstances permits would be issued by mail up to two weeks in advance of a trip, provided a party has made the request in person or by phone; however, parties must check on local conditions prior to initiation of the trip.

Alternative A. The No-Action Alternative. A winter trail map would be available for each popular winter-use area of the park, although trail marking would vary between areas. Some trails would be frequently marked to help prevent skiers from becoming lost, while in other areas the trails would require considerable map and compass skill to follow in winter. Each area would designate winter camping areas or sites for use when significant snowpack does not allow use of summer campsites. Summer backcountry campsite standards would be followed relative to site locations, use limits, and campsite capacities; these may vary considerably from area to area. No wood fires would be allowed under any circumstances. Food storage and waste disposal would be as described under the Proposed Action. Permits could be issued by mail up to two weeks in advance of a trip, provided a party has made the request in person or by phone; however, parties must check on local conditions prior to initiation of the trip. All parties would be required to notify the issuing ranger station or the Communications Center at the termination of their trip.

Alternative B. Ski trails would be marked frequently in each area under the assumption that winter and summer users may have few skills with map and compass. Camping would be restricted to the same designated sites that are used in summer. Wood fires would be permitted where dead and down fuels are available. Campers would be encouraged to build small fires, and all summer fire restrictions would apply. Unburned garbage or paper scraps would be packed out. Unburned wood material would be scattered and the fire site naturalized. All human wastes, toilet paper, and garbage would be packed out to mitigate sanitation problems following snowmelt. Until initiation of a parkwide campsite reservation system, reservations for camping would be handled as in summer.

Issue: Administrative Uses of the Backcountry

Administrative activities in the backcountry include resource management activities; ranger patrols; interpretive activities; research or monitoring of natural and cultural resources; maintenance of facilities such as trails, cabins, and bridges; and wildland fire management. In the course of completing necessary work, park staff or cooperators may be exempted from standard backcountry policies or regulations. Examples include the use of mechanized

equipment to complete facility construction or equipment maintenance, off-trail travel in areas otherwise restricted (such as geologic research in thermal areas), and the presence of three staffed fire lookouts in the backcountry. Backcountry patrol cabins are maintained for administrative use; some of these cabins and other facilities, such as snow monitoring sites or power and communications equipment, are visible from backcountry trails and campsites. These activities can affect park resources and visitors' experiences in and adjacent to the park.

Proposed Action. Administrative uses of the backcountry would continue to occur as necessary, and the minimum tool concept would be used to minimize effects on visitors' experiences. Visitors should expect a moderate level of visible administrative presence in *Threshold Zones*. The park's goal would be to plan administrative activities and facilities (including research projects, telecommunications, etc.) to minimize the exceptions required to any regulations or goals stated in this plan, particularly in *Pristine Zones*, where visitor expectations of solitude would be the greatest. In *Backcountry Zones*, visitors should expect to occasionally encounter administrative users or their tools, though area managers would consider mitigating measures (i.e., screening, camouflage coloration, re-routing trails away from administrative sites, scheduling administrative activities to times of low visitor use, etc).

Inventory efforts would include documentation of facilities or other activities that are likely to affect visitor experiences or backcountry aesthetics and to facilitate mitigation of administrative activities. The presence of administrative facilities and uses would be documented by the Backcountry Office. Visitors would be informed that in some areas they may encounter administrative facilities, such as fire lookouts or patrol cabins. Persons using backcountry campsites in the course of administrative duties would be issued backcountry permits and informed of safety and other regulations, just as visitors are. At backcountry patrol cabins, wood fires would be permitted only in fire pans or existing fire rings; in approved undesignated camps, wood fires would be permitted only when confined in a fire pan that prevented soil sterilization and creation of a fire ring. Administrative use of patrol cabins would be restricted to park staff and cooperators/associates and would be approved by District Rangers. Mechanized equipment use is prohibited, except as described under *Mechanized Equipment in the Backcountry*.

Alternative A. The No Action-Alternative. Administrative uses would continue to occur as necessary throughout the backcountry. These vary widely from area to area and trail to trail. No deliberate attempts would be made to guide placement of new facilities, schedule research or monitoring projects, inventory facilities, or consider mitigation of facilities and uses that might affect visitors' experiences. Persons could request and be assigned backcountry campsites during the course of completing work in the park. Use of patrol cabins would occur as described in the **Proposed Action**. Information about administrative facilities or users may be available to visitors, but no conscious effort to match visitors' expectations for solitude with avoidance of administrative uses would be made at backcountry offices or visitor centers.

Alternative B. There would be no non-emergency exceptions granted for new administrative uses or facilities in the park's backcountry. Existing administrative uses and facilities could remain, with the goal of minimizing their effect on visitors. Visitors should expect some level of administrative presence throughout the backcountry.

B. RESOURCE PROTECTION AND MANAGEMENT

This *Backcountry Management Plan* is based upon the park's *Resources Management Plan* (1994), which outlines the primary components of cultural and natural resource programs in Yellowstone. More detailed information about parkwide resource management, inventory, research, and protection projects can be found in that document. The following summarizes the primary resource issues, objectives, and programs as they relate to backcountry use and management.

Issue: Protection of Wildlife and Fisheries

Backcountry use and management affects the wildlife and fisheries of the park, even though there is little consumptive use of these resources. Yellowstone provides habitat for resident and migratory species, including at least 52 mammals, 279 birds, 10 reptiles and amphibians, and 13 native fishes. While all native species receive protection, management has focussed on certain wildlife issues due to political, biological, and legal concerns.

Grizzly bears, protected under the Endangered Species Act (ESA), and black bears reside in Yellowstone. The primary objective of Yellowstone's bear management and related backcountry human-use program is *to preserve and maintain natural population of bears as part of the park's natural fauna and provide for visitor safety*. The emphasis is on prevention rather than control of problem bears, and the program is closely interrelated with Yellowstone's backcountry management operations. The operational program contains the following components:

1. a program of visitor and staff education (slide shows, permits, personal contact, printed information programs);
2. enforcement of regulations designed to protect both humans and bears;
3. attempts to reduce unnatural contacts between bears and visitors (visitor restrictions and control of problem bears); this occurs by restricting visitor activities when necessary by emergency closures, continuing established restrictions and seasonal closures (Bear Management Areas), and by eliminating human-associated food sources (such as by providing food-storage poles at established backcountry campsites);

4. monitoring heavy bear-use areas for signs of bear activity, posting warnings as appropriate, or considering additional special management (see item #3); and
5. maintaining a program of research on bears and their habitat and incorporating the resultant data and analyses into management recommendations.

Yellowstone is home to three endangered bird species, the bald eagle, the whooping crane, and the peregrine falcon. A number of bird species are also protected under the Migratory Bird Treaty Act. Numerous birds, such as osprey and colonial nesting birds, nest along the shorelines and on islands of Yellowstone Lake. Other sensitive birds include common loons, trumpeter swans, and owls. Backcountry use may potentially affect these and other species.

Of the native species of fish in Yellowstone, one (the Arctic grayling) has been proposed for protection under the ESA. Cutthroat trout (as well as several non-native trout species) are a major attraction for visitors. Angling has long been a major visitor activity in Yellowstone's front- and backcountry. Angling demonstrates a traditional exception to park prohibitions against consumptive resource use; anglers have been able to catch and keep fish, although public hunting and trapping in Yellowstone has been long prohibited by law. Basic objectives of the aquatics management program in the park are to:

1. manage aquatic systems as an integral part of the park ecosystem;
2. preserve and restore native species and aquatic habitats; and
3. provide the visitor with the opportunity to angle for wild fish in a natural setting.

Special regulations include limits on number and size of fish taken and limits on bait and gear that may be used. The park has also instituted catch-and-release fishing, where feasible.

Feeding or harassing any park wildlife is prohibited. Harassment includes approaching animals too closely. Pets are restricted to within 100 feet of roads and must be controlled at all times. Backcountry use and management must be conducted in ways that do not threaten the long-term maintenance of the park's fish, bird, and wildlife populations.

Proposed Action. Birds, fish, and wildlife would be protected and managed by a variety of means. The park would continue to review and improve educational media, enforcement efforts, resource monitoring and research methods, and control procedures used in wildlife and fisheries management programs. Interpretive, educational, and/or regulatory signs may be used in *Threshold* or *Backcountry zones* (see *Signing and Marking Trails and Features*) to help protect wildlife resources. Public access may be directed to or away from areas or restricted in order to prevent or mitigate wildlife conflicts, such as in bighorn sheep lambing or bison calving areas. Information about use restrictions would be available at major access points and in park backcountry offices.

The park would continue its grizzly bear management program, as stipulated in the *Final Environmental Impact Statement, Grizzly Bear Management Program* (1982) and

Yellowstone's Annual Bear Management Operations Plan. A number of areas would continue to be closed on a permanent or seasonal basis or restricted as to types and levels of public use. Backcountry campsites would be inventoried for potential changes in design or location recommended to reduce bear-human conflicts. The park's goal would be to have a food-storage pole in 100 percent of park backcountry campsites by the end of 1994.

Sites where sensitive nesting birds are present would be monitored and may be temporarily closed or restricted to human access. The Molly Islands, in the Southeast Arm of Yellowstone Lake, and the water surrounding them for a distance of 1/2 mile would remain closed to all human entry to protect colonial nesting birds; monitoring would only be by observation from boats. Portions of Frank and Stevenson islands would remain closed to protect ospreys and bald eagles nesting in these areas. If trails, campsites, or boat docking/mooring sites appear to be in long-term conflict with nesting birds, relocation of the visitor-use site(s) would be considered.

The aquatic environment would continue to be managed primarily for the protection of native species and secondarily for quality angler experience. Native species would be restored where practical. Certain areas, such as spawning streams, would be closed to use seasonally to protect fish and predators. Rangers would continue to vigorously enforce fishing regulations while on backcountry patrols.

Alternative A. The No-Action Alternative. Actions would be as described under the Proposed Action, except that there would be no deliberate effort to review and/or improve procedures, educational media, or locations of facilities, trails, or campsites that currently present wildlife conflicts. Relocation of backcountry facilities away from areas of potential wildlife conflicts may be done as recommended by area staff, but the proposed actions and rationale may vary from area to area. There would be no deliberate goal to provide a food-storage pole at all campsites. The park would continue a cooperative fisheries management program with the USFWS. No particular efforts would be expended to educate backcountry rangers in fisheries interpretation and enforcement, but regulations would be enforced as time and staff allow.

Alternative B. A variety of management measures would be taken as necessary to protect wildlife and fisheries. Regulatory signing would be allowed in any area of the backcountry. Trails, campsites, boat docks, or other backcountry facilities that are in long-term conflict with nesting birds or other sensitive wildlife areas would be relocated or removed. The Molly Islands and all of Frank and Stevenson islands would be closed to human access. Closures would be signed and detailed in printed backcountry information.

Alternatives Considered But Rejected: Major review and revision of the Bear Management Areas has been suggested by some backcountry users who wish to access areas that are now closed or seasonally restricted to public use. This alternative was considered but rejected because these restrictions must be reviewed and modified through revision of Yellowstone's

Final EIS, Grizzly Bear Management Program (1982), with appropriate NEPA and Section 7 (Endangered Species Act) compliance, rather than in the context of this document.

Issue: Protection of Geothermal Resources

The majority of the more than 120 mapped or named thermal areas in Yellowstone are in the backcountry. More than 70 percent of all remaining active geysers in the world are in Yellowstone. Thermal basins may contain siliceous sinter or travertine sheet deposits, acid-altered soils or bedrock, a unique array of rare plants, cyanobacteria and algae mats, and thermal-dependent birds, reptiles, mammals, insects, and microorganisms. Backcountry thermal areas attract many visitors, yet they are extremely fragile. Geyseric deposits form over hundreds of years, are very brittle, and are often damaged inadvertently by visitors, or unfortunately, by malicious vandalism or souvenir seekers. Hot springs and geysers have been destroyed by people who deliberately threw or jammed debris into the vents. Rare plants and cyanobacteria mats have been trampled by indiscriminate foot traffic, swimming, and wading. There are also serious safety concerns related to backcountry thermal basins. Swimming or bathing in a thermal pool or stream that has waters originating from a thermal spring or pool is prohibited; swimming or wading in waters warmed by thermal runoff but not solely of thermal origin is not illegal. Backcountry areas where waters are warmed by geothermal influx have become popular for swimming. Use of these areas has dramatically increased since the late 1970s, causing visible bank erosion, vegetation loss, and crowding in certain locations.

Proposed Action. Backcountry rangers would make frequent foot patrols in thermal areas to make interpretive and/or law enforcement contacts. Monitoring of features and any resource damage would be documented annually by area rangers and/or the park geologist. Due to the fragile nature of thermal features as well as to safety concerns, travel in thermal areas may be restricted. Camping on thermal ground would be prohibited. Signing to indicate unsafe or delicate thermal features would be placed if necessary (see *Signing and Marking Trails and Features*). Names of thermal features would not be signed, except in *Threshold Zones*. Regulations pertaining to vandalism of natural features would be enforced. Swimming or wading in waters warmed by thermal runoff but not solely of thermal origin would be discouraged in additional, currently pristine areas.

Alternative A. The No-Action Alternative. Backcountry rangers would patrol thermal areas incidental to other routine patrols. Monitoring of features and resource damage would be done as time and staff permit. Off-trail travel in thermal areas would continue to be restricted. Camping on thermal ground would be prohibited; no designated campsites would be established within any backcountry thermal area. Signing to indicate unsafe or delicate features would be done at the discretion of area rangers. Swimming or bathing in a thermal pool or stream that has waters originating from a thermal spring or pool would be prohibited. Promotion or restriction of swimming in other waters would be left to the discretion of area staff.

Alternative B. Actions would be similar to those described under **Proposed Action**, but both foot and stock off-trail travel (except for approved research, monitoring, emergency rescue, resource protection, or other administrative activity) would be prohibited in backcountry thermal areas in all zones. Interpretive or regulatory signing may be placed in thermal areas in any zones to promote safety and visitor education. Swimming or bathing in waters of thermal origin would be prohibited; swimming or bathing in waters not solely of thermal origin would be actively managed in designated backcountry thermal areas, such as Boiling River, Three Rivers Junction, and Snake River Hot Springs.

Issue: Protection of Soils and Vegetation

Backcountry use inevitably results in compaction of soils and vegetation on trails and at campsites. Soil compaction may result in increased runoff and in long-term denuding of vegetation at sites. Stock grazing can change the abundance, diversity, and species composition of vegetative communities. Horses have been a traditional vector for importation of exotic plants; seeds can also be transported on humans' clothing and equipment. Visitor use must be managed so that changes in plant species composition and diversity are minimized and site impacts are confined to acceptable limits. These limits may be based on resource data from grazing transects, on areal limits (the maximum trampled or compacted square footage per campsite), on visitor perceptions of aesthetics, or on other factors, such as the number of exposed tree roots per site.

Campfires do cause soil damage, thus fire pits are often provided to confine soil sterilization to specific microsites. Live or standing dead trees may be stripped of branches if there is a shortage of legal (dead-and-downed) firewood. During periods of high fire danger, the Superintendent may close all or a portion of a park area to the use of fires. Wood fires in winter have traditionally been prohibited due to the difficulty in obtaining dead-and-downed wood, although winter conditions may make a fire even more desirable. Many backcountry users desire to have a campfire, especially where it is perceived that wood availability is not limited.

Proposed Action. The system of designated trails and campsites would be maintained, to minimize impacts to soil and vegetation by concentrating use rather than dispersing it. Careful planning of new proposed trails, re-routes, bog bridges, and campsites would be done to minimize additional impacts to soils and vegetation. Wheeled vehicles (except non-motorized wheelchairs) would not be permitted in the backcountry, in part to reduce impacts to soils and vegetation. Periodic site inventories would be used to evaluate changing conditions against desired limits on campsite area trampled or compacted (see *Campsite Standards*). Impacts to vegetation caused by stock grazing are addressed under *Management of Stock Use*. Stock use would be restricted in spring and early summer to allow trails time to sufficiently dry out, thereby reducing soil disturbance. Litter would be burned or packed out by the user or, if necessary, by backcountry rangers. To prevent the spread of exotic plants, hay and straw would continue to be prohibited. Infestations of exotic plants in the

backcountry would be reported to the District Resource Management Coordinator, who would assist field staff in monitoring and control methods.

Wood fires would not be permitted in *Threshold Zones* or in *Pristine Zones* (see *Designated Trails and Campsites versus Dispersed Use*). In *Backcountry Zones*, wood fires would be allowed in established fire rings at designated campsites where inventory indicates that sufficient quantities of dead-and-downed wood are available within 100 yards of the site. At sites that fail to meet this condition or where the number of damaged trees exceeds 25, and/or where person-use nights exceed 100 annually, restriction of campfires would be considered. If a site is closed to wood fires, this information would be added to the master campsite information and made available to users when getting their backcountry permit. Administrative use of fire would be managed as described above (see *Administrative Uses of the Backcountry*). At backcountry patrol cabins, wood fires would only be allowed in existing fire rings; where administrative users were permitted to camp in undesignated camping sites, fires would only be allowed if confined in a fire pan that prevented soil sterilization and creation of a fire ring.

Alternative A. The No-Action Alternative. Designated trails and campsites would continue to be used. New trails and sites could be developed. Levels of unacceptable use by stock and non-stock parties would be determined by area staff. Exotic plant infestations would be monitored and controlled as time and staff permit. Wood fires would be permitted at some sites and prohibited at others as determined by area staff. No deliberate effort would be made to monitor the condition of soils and vegetation except in stock-grazing sites.

Alternative B. No new trails or campsites would be established, thus limiting impacts to existing designated trails and campsites. Wheeled vehicles (except non-motorized wheelchairs) would not be permitted. The park's goal would be to limit campsite size and the number of damaged trees to conditions that existed in 1992. Litter would be packed out. Hay and straw for stock would be prohibited. Exotic plant infestations would be monitored and controlled as time and staff permit. In summer, wood campfires would be prohibited except in emergency situations. In winter, wood fires would be permitted on snow-covered sites where dead wood is available; campers would be required to bury or scatter ashes and remove traces of any fire ring.

Issue: Protection of Water Quality

Generally, Yellowstone's backcountry waters are thought to be in near-pristine condition. There are water quality concerns, however, including disposal of human waste at heavily used campsites (particularly those near streams, lakes, and above shallow water tables); pollution from soaps, detergents, and food wastes; petroleum-product pollution from power boats; and increased sediment loads from eroded trails or campsites. Pit toilets have been installed at heavily used campsites in an attempt to mitigate effects of human waste on soils and water. Pits require periodic burning to reduce volume and relocation when full. Toilets

at some locations need further evaluation because of proximity to surface waters or because of shallow water tables.

Proposed Action. Prevention or mitigation of erosion, especially at bogs, stream crossings, and upslope from surface water would be achieved through trail maintenance projects. Motorized boating and equipment would not be used except on Yellowstone and Lewis lakes (as described above). No deliberate expulsion of waste, fuels, or other solvents would be permitted into park waters. Use of soaps and detergents (including biodegradable products) would be prohibited in park waters. Disposal of soaps, detergents, and human waste must be at least 100 feet from water bodies; however, fish entrails should be disposed of in facilities provided or by puncturing the air bladder and depositing the remains in deep water.

Toilet facilities would be considered at backcountry campsites where person-use nights exceed 150 (in *Class I* sites) or 200 (in *Class II* sites) annually; a pack-out policy may also be considered in some high-use areas. As discussed under *Campsite Standards*, campsites located less than 100 feet from surface water would be relocated, unless such relocation would result in equal or greater resource or safety concerns. Toilets would not be relocated without testing for proximity to the water table, and no facilities would be dug below the water table. The goal would be to survey water quality in the backcountry as time and funds allow. High priority would be placed on surveying for giardia, coliforms, and other potential health hazards at high-use campsites near water.

Alternative A. The No-Action Alternative. Trail maintenance in areas where there are bogs, stream crossings, and other erosive landscapes would continue. Motorized equipment would be prohibited on park waters (except Yellowstone and Lewis lakes). Disposal of soaps, detergents, and human and food waste must be made at least 100 feet from water. Fish entrails must be disposed of in facilities provided or by puncturing the air bladder and depositing the remains in deep water. Water quality problems may be identified during routine backcountry patrols, but no parkwide program to survey backcountry water quality would be done in the foreseeable future. The need for trail or campsite redesigns or relocations and pit toilets would be determined by area rangers.

Alternative B. Actions would be as described under the **Proposed Action**, except that campsites located less than 100 feet from surface waters would be relocated at a greater distance away from the water. Wallowa toilets would be installed at all sites where person-use nights exceed 150 annually. At other sites, users would be required to pack all human waste out of the backcountry.

Issue: Protection of Cultural Resources

Human occupation of Yellowstone dates to more than 10,000 years before present, as indicated by prehistoric and historic evidence throughout the park. Cultural resources may be anything created, used, or altered by humans; these resources may not be collected or

disturbed for personal use. In Yellowstone's backcountry such resources include prehistoric sites and artifacts, historic trail routes used by Native Americans, historic roads and buildings built by the U.S. Cavalry, and backcountry patrol cabins, many of which are still being used by park staff. Cultural resources must be evaluated for significance before being removed or disturbed. Backcountry use and management activities that may affect cultural resources include building or relocating trails and campsites; modifying and/or removing bridges, buildings, and patrol cabins; and disturbing or removing artifacts (e.g., projectile points, bottles, human skeletal remains). The park lacks a comprehensive program to survey and evaluate the cultural significance of backcountry resources; previous research and mitigation activities have focused on assessing the effects of human use and development on cultural sites in the frontcountry.

Proposed Action. The Cultural Resources Management Specialist would provide each District Ranger with a list of cultural resources and maps indicating the locations of cultural sites. (Public access to this information is restricted under the Freedom of Information Act.) The park's goal would be to have at least one ranger in each district complete Archeological Resources Protection Act or other cultural resource training. The park would undertake a long-term program to survey and evaluate sites of backcountry use, including locations of existing campsites and patrol cabins, for cultural significance. Staff would promptly report discovery of potential cultural resources. Interpretive, educational, and/or regulatory signs or other enforcement and education efforts may be used in *Threshold* or *Backcountry zones* to help protect cultural resources. Sites of cultural significance may be protected by non-disclosure of information, minimizing or eliminating interpretive presentations, relocating trails or campsites, and/or use limitations or closure. Trails, campsites, boat docks, or other backcountry facilities that are in long-term conflict with cultural resources would be relocated or removed.

Management activities, including the movement of old (historic) trash; structural modifications, additions, or removals; and any ground disturbing activities that could affect cultural resources would not proceed without appropriate cultural compliance. Such activities would avoid disturbing wetlands or threatened and endangered species.

Alternative A. The No-Action Alternative. Cultural resources would remain largely unknown to much of the park staff, including backcountry rangers. Disclosure of significant cultural sites may or may not occur, depending on the knowledge of different staff. Known cultural sites would be protected by occasional enforcement efforts incidental to rangers' routine patrols. Relocation of trails or campsites to protect cultural resources could be considered, but this would vary from area to area in the park. Management activities and the need for cultural compliance would be discussed with the Cultural Resource Management Specialist, but this may vary due to varying knowledge of different staff.

Alternative B. A variety of management measures would be taken, as described in the **Proposed Action**, to protect cultural resources. Regulatory signing would be allowed in any area of the backcountry. Backcountry facilities that are in long-term conflict with cultural

resources would be removed. Ground-disturbing activities and removal of potential cultural resources would not occur without cultural compliance.

Issue: Conducting Research, Inventory, and Monitoring Programs on Backcountry Use

Good data is essential to making intelligent management decisions. Some research studies on natural and cultural resources have occurred in the backcountry of the park, but few efforts have been aimed at studying the relationship of backcountry users to park resources. Inventories designed to gather baseline data can often be time-consuming and expensive. Monitoring designed to detect changes over time requires that key indices be defined in order to assess resource condition. Campsites, trails, and stock-use sites have been the subject of periodic inventory and/or monitoring efforts in the past decade or two. However, inventory and monitoring of backcountry resources have not been conducted consistently in the past, nor has a set of standards or objectives been established for such efforts. This lack of information and guidance has prevented managers from objectively evaluating the effectiveness of various management techniques in achieving desired resource conditions or other goals.

Proposed Action. Specific questions on how use affects resources or on how user groups affect each other would be proposed by rangers, other staff, and/or researchers for potential study. Statistics on overnight use, by area and user type, would continue to be collected from backcountry permits and analyzed annually for trends and management implications. Day use would be estimated, using uniform trailhead registers parkwide or another accepted method, at a minimum five-year interval (begun in 1992). Park staff would make a concerted effort to increase monitoring of day-use trends and impacts. Additional methods would be developed to address associated resource management issues, such as monitoring the effects of stock use on the establishment and spread of non-native plants.

Campsites would be inventoried (as begun in 1989) for basic information, such as presence of food pole, distance from main trail and from water, campsite design, and other parameters listed under *Campsite Standards* above. The park's goal would be to add information about soil conditions, habitat type, and other basic resource conditions to the database. Area backcountry managers would use inventory data to prioritize sites for rehabilitation, relocation, or other appropriate management action. Campsite conditions would be remeasured against campsite standards at approximately five-year intervals. Stock grazing at campsites and other regularly used areas (such as adjacent to administrative patrol cabins) would be monitored a minimum of twice each season, in August or September. This would be done at least until stock capacities are estimated for each site. Subsequently, grazing utilization would be measured a minimum of once each season against the standard for maximum use specified under *Stock Retention, Feeding, and Grazing*. In addition, range readiness would be monitored each season until average opening dates are established for each campsite or administrative site. Information from research studies and continued

monitoring efforts would be used to update inventory and monitoring protocols and campsite and other standards outlined in this plan, as appropriate.

Alternative A. The No-Action Alternative. No deliberate effort to study backcountry use-resource relationships or to inventory and monitor campsite resources and use impacts would be outlined. Data from previous efforts would be available, and some additional efforts would likely result from individual or area initiative. The park would continue to lack a coordinated direction for backcountry inventory and monitoring, and there would likely continue to be a lack of usable data for managers' use. Statistics on overnight and day use, by area and user type, would continue to be collected and analyzed for trends and management implications. Day-use data would not be regularly collected or analyzed. Information collected at trail registers would vary, as would the frequency with which registers would be checked.

Alternative B. Statistics would be collected on overnight use and day use by institution of a day-use permitting system. Campsite inventories would be completed for the sites not yet inventoried and repeated every three years to assess changes from 1992 conditions. Range readiness dates, established by elevation for wet and dry sites, would be reevaluated on a five-year basis.

C. INFORMATION AND ORIENTATION FOR BACKCOUNTRY USERS

Issue: Helping Users with Backcountry Trip Planning

Visitors requesting backcountry trip planning information are currently given a multi-page information packet. The packet contains general information about how and where to obtain backcountry permits, backcountry rules and regulations, and campsite capacities and restrictions. The packet does not contain a map of sufficient quality for accurately planning a backcountry trip. Topographical maps showing backcountry trail and campsite locations are posted in all backcountry permit-issuing stations and are also available for purchase at park visitor centers. However, published books and maps often become quickly outdated given changing resource conditions (such as after the 1988 wildfires) and/or management actions (such as relocation of campsites or rerouting of trails). None of the printed information is designed to assist visitors in matching their desired experiences with a trip zone or location likely to provide a corresponding recreational opportunity.

Proposed Action. Backcountry user information would be designed to present information about the spectrum of recreational opportunities provided by Yellowstone's backcountry. This information would allow staff to assist backcountry users in designing a trip which would be likely to match their wilderness expectations. Users seeking opportunities not available in Yellowstone would be directed to other park, recreation, or wilderness areas. The park would develop a backcountry trip planner, including a map (not intended to be of scale or detail to replace topographic maps) for distribution with the backcountry information

packet. Topographic maps showing the locations of backcountry trails and campsites would continue to be posted at all backcountry permit-issuing stations and at major trailheads.

Alternative A. The No-Action Alternative. No backcountry trip planner/map would be available for distribution to the public. No deliberate efforts would be made to help visitors match desired experiences with site conditions or backcountry zones. Visitors would plan their trips by using the topographical maps showing trail and campsite locations that are posted at all backcountry permit-issuing stations. In addition, maps showing backcountry trail and campsite locations would be available for purchase.

Alternative B. The park would develop a backcountry trip planner for distribution with the backcountry information packet. Visitors could expect that, due to a uniform parkwide system of backcountry management, the range of opportunities for wilderness experiences would be limited. No zone system would be mapped or applied to the Yellowstone backcountry. People requesting backcountry information would be charged a fee to cover the costs of the information. For those people who do not wish to purchase a map, topographical maps showing the locations of backcountry trails and campsites would continue to be posted at all backcountry permit issuing stations; topographic maps would also be posted at all trailheads.

Issue: Providing Safety Information to Backcountry Users

Many visitors to Yellowstone's backcountry may have little backcountry experience or may be unfamiliar with the specific risks presented by the regional environment. Visitors are often poorly equipped for the hazards they may encounter. Dangerous river crossings, extremely cold lakes, high winds, inclement weather, lightning, high elevations, rugged terrain, wildfire, thermal features, and bears and other wildlife all pose a threat to the safety of backcountry users.

The safety of the visitor is not guaranteed. While experience levels range from novice to expert, backcountry trails are not necessarily marked or managed for the least experienced user. In order to reduce the hazards associated with the backcountry, overnight backcountry users currently are given some or all of the following backcountry safety information handouts: *Beyond Roads End*; *Grizzly, Grizzly, Grizzly, Grizzly*; *Bear Us In Mind - Grizzly Country*; *Entering Grizzly Country - A Risk*; *Horsepacking In Yellowstone*; *Boating Regulations*; *Fatigue*; *Hypothermia*; *What About Hotpotting in Yellowstone?*; and *Is the Water Safe?*. Some of these sources contain outdated and/or conflicting information. The volume of information presented to the visitor can be overwhelming. In 1992 park staff reviewed and combined the most relevant information now contained in separate handouts into one revised version of *Beyond Roads End*; separate specific brochures are provided to certain user groups such as boaters and stock users. Outdated versions of the numerous brochures listed above may still be in circulation.

NPS policy and Yellowstone's *Wildland Fire Management Plan* (1992) allow for natural fire to occur, within prescribed parameters of fire behavior and weather, as an integral part of the ecosystem's processes. Fire suppression zones have been established to protect the park's developed areas and to allow park managers to honor fire protection agreements with agencies outside park boundaries. The vast majority of Yellowstone's backcountry is not considered a fire suppression zone, although every reasonable effort will be made to protect threatened structures, especially cultural resources. Wildfire conditions could change suddenly, making it difficult to alert backcountry users to dangers in a timely manner. Emergency closures may be necessary for other safety or resource reasons.

Proposed Action. The revised *Beyond Roads End* would be issued to all backcountry permittees, sent to persons requesting advance trip information, and reflected in the text of trailhead exhibits. Efforts would be made to eliminate outdated and redundant brochures. Visitors would be encouraged to accept the responsibility of the inherent risks associated with backcountry use as part of the backcountry experience. Visitors would be encouraged to choose a trip/zone accordingly to match their abilities. The park would review *Beyond Roads End* and other literature annually for needed changes, and incorporate the most current information available about safe techniques and behaviors in wilderness settings.

During fire season the park would inform visitors of fire danger and fire activity when conditions warrant, using normal communication channels. Areas of fire activity would be clearly signed at trailheads and along roadways, and backcountry personnel would inform visitors obtaining backcountry permits of the exact location of fire activity. During hunting seasons, backcountry users would be reminded that hunting activity may occur just outside park boundaries and appropriate precautions should be taken. In winter, avalanche and severe winter weather conditions would also be made available at visitor centers and backcountry offices. The Superintendent may close all of the park or a portion of the backcountry, including roads and trails, when wildfire, prescribed natural fire, avalanche danger, or other conditions pose an imminent threat to public safety.

Alternative A. The No-Action Alternative. The park would continue to dispense backcountry safety information through *Beyond Roads End*; separate handouts would continue to be used for special user groups, such as boaters. Brochures would be updated with current information as needed. Information posted at trailheads would generally be as described above, but would vary at the discretion of area rangers posting the information.

Alternative B. The park would annually update *Beyond Roads End* with the most current information available. Separate brochures would be used for backcountry boating, stock use, and other topics, as necessary. Similar safety information would be posted at all trailheads. All backcountry safety information and literature would be reviewed and approved annually by the Chief Ranger. Visitors would be encouraged to accept the inherent risks as part of the backcountry experience. Visitors would not deliberately be encouraged to plan trips to match their experience levels.

Issue: Orientation for Backcountry Users

Before being issued a backcountry permit, non-commercial overnight backcountry users are required to view a backcountry slide/tape program containing information concerning hiking and camping in bear country, stream crossings, sanitation, navigation, campfires, weather, hypothermia, regulations, and horse use. Verbal information from park rangers includes current trail and campsite conditions as well as safety information. This is updated as new information becomes available. The slide/tape program was written nearly ten years ago and contains some outdated information. In addition, some of the slides in the current program display equipment no longer commonly in use. The slide/tape viewing equipment units are old and break down frequently. Some important information gaps, such as how to protect cultural resources and how to select a trip itinerary likely to meet desired recreational expectations, are missing from the current program.

Day users are not required to view the program, although it is offered to them. Commercial users who book a trip through an outfitter do not see the program. However, outfitters are required to attend an annual orientation program so they can obtain current information. Repeat overnight visitors are reluctant to view the program each time they come to get a backcountry permit; the time it takes to obtain a permit is estimated to average 25 minutes per user group. In 1991 the park initiated, on a trial basis, a new procedure for repeat users. After receiving orientation information the first time each season, a backcountry permittee could receive a "Frequent User's Card." Only card-holders are exempt from viewing the slide/tape orientation program prior to being issued a permit.

Proposed Action. The park would replace the slide/tape program with a video orientation program. Information would be updated and improved. Information on protection of cultural resources and on matching visitor expectations with selection of an appropriate backcountry zone would be included. The slide/tape units would be replaced with TV/VCR units. All non-commercial visitors requesting backcountry information would be invited to view the program, and it would be required prior to issuance of an overnight permit. The "Frequent User's Card" would be available upon request to all repeat backcountry visitors, unless a resource violation has been issued to the visitor(s). Winter users would be shown a special winter video and/or given a winter checklist.

Alternative A. The No-Action Alternative. The park would continue to use the current slide/tape program to convey backcountry safety information to visitors. The slide/tape program would be updated with new text and slides as funds become available. All non-commercial visitors requesting a backcountry permit would be required to view the program. Repeat visitors who knew about the opportunity could continue to obtain a "Frequent User's Card."

Alternative B. The park would discontinue use of the current slide/tape program. All backcountry safety and regulatory information would be conveyed to visitors verbally or

would take several years to implement and would require increased capital expenditure (for computer equipment).

VIII. ENVIRONMENTAL CONSEQUENCES OF PROPOSED ACTIONS AND ALTERNATIVES

The National Environmental Policy Act (NEPA) of 1969 requires that the environmental consequences of any federal action be examined before decisions are made and before actions are taken. Through the NEPA process, the public has the opportunity to participate and comment on federal actions. The purpose and need for this plan are discussed in Chapter II, and the proposed action and alternatives are detailed in Chapter VII. The environmental consequences of the proposed action and the various alternatives are presented in this chapter. NEPA requires inclusion of an alternative of no action when analyzing alternatives. The "No-Action Alternative" is commonly (and herein) the "status quo" or "no change" from current management direction. The environmental consequences have been analyzed for each issue with regard to the impacts upon the visitor experience, natural resources, cultural resources, and the socio-economic environment. The following paragraphs summarize the impacts of this plan.

The *Backcountry Management Plan* would have numerous beneficial effects for the backcountry user. Backcountry users would benefit from consistent park-wide standards and enforcement of regulations. The backcountry would be divided into three zones; each would be managed similarly throughout the park. The visitor would know what to expect regarding levels of trail marking, bridging, campsite facilities, apparent administrative use, and solitude in Yellowstone's backcountry. Recreational opportunities would be more equitably distributed among all users, and a wider spectrum of backcountry opportunities would be available to choose from as a result of the proposals presented in this plan. Clear and concise information would be available to backcountry users about these standards and backcountry opportunities. Many backcountry users wanting a wilderness experience in Yellowstone's backcountry could now plan trips to meet their expectations. Those wishing to have a less rigorous journey could find a backcountry experience to meet their needs. The beneficial effects of this plan would be both immediate and long-term and would both directly and indirectly affect individual users.

Clearly defined backcountry zones and consistent park-wide standards for a variety of backcountry management issues would benefit natural and cultural resources, reducing the impacts of backcountry use upon these resources. Standards established for trails and campsites would confine use to established areas and define overuse so that corrective actions could be taken to reduce human impacts to resources. Water quality would be improved by removing human use from areas too close to streams and lakeshores and by more adequately dealing with human-waste issues. Surveys for cultural resources along existing and proposed trails and campsites would identify significant sites and allow managers to remove or mitigate human use in these areas of concern. Backcountry cabins and other historic structures would

through informational handouts available at backcountry permitting stations. Information and educational media would be updated as funds permit.

Issue: Reserving Camping Opportunities in the Backcountry

Yellowstone requires overnight users to obtain a backcountry permit from one of 12 permit issuing stations located throughout the park. A permit specifies the conditions under which visitors may use an assigned area to camp. Appropriate restrictions (such as "no wood fires") are stated on the permit; all users receive standard information on safety, minimum impact camping techniques, etc. Permits are generally available daily from June through September; in the "shoulder seasons," rangers may or may not be available at visitor centers or ranger stations to respond in a timely manner to visitor requests for backcountry permits. Commercial users are offered the opportunity to make advance reservations by mail earlier in the season. Presently, the system allows commercial users to book a percentage of visitor-use nights in advance in popular sites (30 percent for Commercial Use Licensees and 50 percent for Limited Concession Permits), thereby discriminating against the non-commercial users. But, the commercial use provider pays a fee for this privilege. Some private parties, including non-profit groups, have expressed the desire to be able to make advance reservations, especially in high-use areas. Private stock users have expressed concern that this would impair their ability to deal with the logistics of bringing their stock to the park for overnight trips. At present, campsites can be reserved by non-commercial users no more than 48 hours in advance and only in person on a first-come, first-served basis. The competition between commercial and non-commercial groups desiring sites in popular areas has resulted in a number of requests to modify the permitting or reservation system.

Proposed Action. The park's goal would be to eventually provide all users some opportunity to reserve a portion of backcountry campsites in advance via phone or mail. The park would investigate options for instituting such a system, and would ensure that commercial and non-commercial users received equitable opportunities to reserve popular campsites. This would likely require additional funding and staff to implement. While the park investigates a parkwide campsite reservation system, the current allocation of use nights to commercial non-stock users may be reduced to allow non-commercial users increased opportunity to use these sites; this would correspond to the system now in place for commercial stock-site permits. Permits would be available free or at a minimal charge for the processing of reservations. Permittees would receive standard information on safety, minimum impact camping, and special restrictions pertaining to their itinerary.

Alternative A. The No Action Alternative. Only commercial users would be able to make advance campsite reservations. Fees would continue to be charged for changing reservations once granted. Private parties could not make reservations except 48 hours in advance.

Alternative B. All campsites would be available for advance reservation by licensed commercial and private users. A small fee would be charged per reservation. This system

be surveyed and evaluated for their cultural significance, thus allowing managers to more fully protect these facilities. The long-term results of these actions not only directly affect the resources themselves but indirectly affect other natural and cultural resources by establishing backcountry use standards that allow natural processes to continue with minimal influences from man.

Certain proposed actions could reduce the economic return and place additional burdens on commercial outfitters by limiting the numbers of clients and stock permitted, strictly regulating grazing impacts, and allowing non-commercial users to reserve campsites, among others. The restriction on party size to 12 people with 3 additional leaders or guides or outfitters would also prevent large organized groups from camping in Yellowstone's backcountry. Educational and social opportunities would be more limited for these groups. Between 1985 and 1992, the average party size at stock sites was 4.6 people, and only 15 percent of stock outfitters had parties with more than 12 people (total) in 1993; the average party size (between 1985 and 1992) for non-stock sites was 3.2 people, with only 1.6 percent of the parties issued permits for more than 12 people. Consequently, it appears that a relatively small number of outfitters and other groups would be adversely affected by these limits on party size while these party size limits would conversely improve the backcountry visitor experience for many other users. More strictly and scientifically regulating grazing may place additional burdens on stock users and commercial outfitters, but the expected resource benefits would allow all users to benefit from a healthier natural ecosystem.

Limiting boating in the South and Southeast arms and the western portion of the Flat Mountain Arm of Yellowstone Lake to only non-motorized use would improve the wilderness experience for many backcountry users along the shore of the lake. However, some fishermen, boat-dropped backcountry parties, and casual lake sightseers would be inconvenienced. Certain backcountry users who plan trips into the southeastern portion of the park may need to add an additional day to their trip without the option of having a boat drop-off or pick-up available within the arms, such as is now possible.

The proposed *Backcountry Management Plan* is programmatic in nature, and many of the action items do not have site-specific locations. As described under several issues, new or relocated trails, campsites, or facilities (such as cabins) would be subject to further environmental and cultural compliance through the park's project clearance process.

A. MANAGEMENT OF VISITOR USE

Issue: Defining the Backcountry of Yellowstone National Park/Defining the Type(s) of Backcountry Visitor Experiences Offered

Proposed Action. Under the proposed action Yellowstone's backcountry would be clearly and consistently defined into three zones, the *Threshold Zone*, *Backcountry Zone*, and the *Pristine Zone*. The visitor experience would be enhanced under the proposed action because

there would be consistency of backcountry management within each zone throughout the park. The proposed action would provide park visitors a wider spectrum of opportunities to match their desired backcountry experience. Visitors would be better able to match their expectations for a backcountry trip/experience with what the park has to offer. This would help prevent the less experienced backcountry user from choosing a trip that was too difficult or too primitive for their level of comfort and expertise. Conversely, it would assist the visitor desiring a more primitive experience to find a trip that provides him/her the desired level of risk or solitude. The proposed action would have no effect on natural or cultural resources or the socio-economic environment under this proposed action.

Alternative A. The No-Action Alternative. Under this alternative local differences in area management would continue to result in the lack of parkwide consistency in backcountry management. All areas within 250 yards of park roads would be considered backcountry under this alternative, yet these areas would frequently contain facilities, high user numbers, noise, and other influences that visitors and staff might not associate with a backcountry experience. This alternative would allow for only an informal chance of relating the visitor's desired experience with opportunities presented by the park's existing array of trails and campsites. No deliberate effort would be made to describe the wilderness opportunities offered along each trail. There would be no effect on natural and cultural resources or the socio-economic environment under the no-action alternative.

Alternative B. A narrower spectrum of backcountry opportunities would be available to the backcountry user under this alternative because the entire backcountry would be managed in the same manner. All maintained trails and backcountry campsites would be managed for the same experience and to the same defined standard. Facilities and trail maintenance would be consistent throughout the backcountry. Visitors would expect to see the same level of management presence throughout the backcountry. The opportunity for solitude would be less varied than under the proposed action. There would be no effect on natural or cultural resources or the socio-economic environment under this alternative.

Issue: Designated Trails and Campsites versus Dispersed Use

Proposed Action. Under the proposed action, there would generally be no additions to the 1200 miles of trail or 303 campsites currently in the park. Therefore, no significant additional impacts would be expected. Currently, direct effects to natural resources (wildlife, soils, vegetation, water) and, sometimes, cultural resources occur from the existing trail network and backcountry campsites. (These effects are addressed under other issues.) Although minor trail reroutes and relocation of campsites could occur under this alternative, strict guidelines for such actions would be followed (see *Trail Clearing, Maintenance, and Rehabilitation* and *Campsite Standards*). Indirectly, visitor use of trails and campsites results in displacement of wildlife, but the relatively predictable patterns of human use allow wildlife to adapt. The potential for camping in the *Pristine Zone* would be strictly regulated, thus, limiting most all effects on natural and cultural resources over large areas of the park.

Those few users who have good reason to camp in the *Pristine Zone* could be granted permission on a case-by-case basis.

Alternative A. The No-Action Alternative. Under this alternative, new trails or campsites could be established without park-wide consistency of design or resource standards. This could potentially establish new human-use patterns and/or cause temporary displacement of wildlife. Effects on cultural resources, the visitor experience, and the socio-economic environment are similar to the **Proposed Action**.

Alternative B. The effects of this alternative would be similar to those described for the **Proposed Action**. Prohibiting all off-trail pack stock and all undesignated-site camping would limit certain visitor experiences. Some commercial outfitters could also be limited by this restriction. This restriction would, however, prevent off-trail site impacts.

Issue: Accessibility and Risk

Proposed Action. Under the proposed action the park would inventory and describe all trails and campsites with regard to their conditions and accessibility. This would result in all users having a better understanding of what was available to them. The visitor experience would be enhanced because there would be more trails and campsites available to a wider spectrum of users, and impediments/hazards would be well-described. Under this alternative, visitors would be better able to identify a backcountry trip that matched their objectives and limitations than exists at present. Continuing to allow non-motorized wheelchairs in the backcountry would not be expected to have any additional impact. Allowing guide dogs to assist hearing- or sight-impaired visitors on backcountry trails, however, could possibly affect individual wildlife on a localized and short-term basis. There would be no effect on cultural resources under the proposal. There could possibly be positive impacts for commercial operators, who would now have more opportunity to service special clients.

Alternative A. The No-Action Alternative. Under this alternative, the opportunity for backcountry experiences would remain the same as present for mobility-impaired visitors. The lack of information about trail conditions and difficulty would likely prevent some visitors from having a quality backcountry experience, or even attempting to access the backcountry. Allowing guide dogs to assist hearing- or sight-impaired visitors on backcountry trails, however, could possibly affect wildlife as described above. There would be no effect on cultural resources under this alternative.

Alternative B. This alternative would provide the same number of backcountry opportunities for those visitors with disabilities as the **No-Action Alternative**. However, because all trails would be categorized as to their accessibility under this alternative, all visitors would have a clear understanding of what to expect in relation to accessibility in the backcountry. Allowing guide dogs to assist hearing- or sight-impaired visitors on

backcountry trails, however, could possibly affect wildlife as described above. There would be no effect on cultural resources under this alternative.

Issue: Marking and Managing Trailheads

Proposed Action. Under the proposed action all roadside trailheads would be clearly marked and named, thereby lessening visitor confusion and improving the visitor experience and safety. Inclusion of topographic maps, mileages to key destinations, and consistent regulatory and safety information on the trailhead register would also enhance the visitor experience. Locating appropriate traffic signs marking pedestrian and/or stock crossings would improve visitor safety. By assessing the need for comfort stations, refuse disposal, and other visitor facilities at each trailhead, any necessary facilities could be appropriately provided to improve the visitor experience. Trailheads on the park boundary would also be uniformly signed, thereby alleviating the current confusing situation. There would be no effect on natural or cultural resources (proper design and compliance would be followed if any facilities are located at trailheads). Limited additional funding would be required to achieve consistent signing and information.

Alternative A. The No-Action Alternative. The confusion and inconsistency and the sometimes unsafe and unsanitary conditions that currently exist at trailheads would continue. Not only would the visitor experience suffer, but there would possibly be long-term adverse impacts to natural and cultural resources at localized sites. There would be no effect on the socio-economic environment under this alternative.

Alternative B. Under this alternative there would be more impacts to natural resources (particularly soils and vegetation) as all major trailheads would contain a vault toilet, refuse disposal, parking for at least six vehicles, and other facilities as appropriate. Impacts to cultural resources would be avoided through design of the trailheads. Stock users could be positively affected by more stock facilities added to more trailheads. The visitor experience would be enhanced by providing consistent information and improved facilities at trailheads. The improved facilities would also benefit commercial users. This alternative would require additional funding to construct the new facilities.

Issue: Management of National Scenic and National Historic Trails

Proposed Action. By providing printed information and facilitating the use of nationally designated trails, visitor appreciation of the Nez Perce and Continental Divide trails would be improved. Under the proposal campsites may be added to facilitate through hikers and riders, in accordance with overall campsite limits and standards; in general these campsites would be reserved solely for use by these through hikers and riders. Any new campsites established would result in some natural resource impacts (soil compaction, vegetative trampling, changes in established wildlife behavior patterns) but these impacts would be

minor and localized. The new sites would be evaluated through the park's project clearance process and impacts to areas known to have wetlands, cultural resources, or threatened or endangered species concerns would be avoided or mitigated. Users of the nationally designated trails may also be accommodated with a permit to camp in undesignated sites and would be allowed to obtain backcountry permits in advance, thereby facilitating their use of these trails.

Under this alternative new trail segments might be built to facilitate use of the Nez Perce National Historic Trail. Other trail segments may be evaluated for relocation to address resource protection concerns. The park's project clearance process would be initiated to ensure interdisciplinary input into the need for and design of any additional trail segments and to ensure natural and cultural compliance. If any trail segment is constructed, there would be some natural resource impacts to soils, vegetation, and established wildlife-use patterns. Careful design and placement would minimize these impacts. The NPS would incur costs if any new trail segment was constructed, however, more opportunities would be available for visitors to experience this historic trail.

Alternative A. The No-Action Alternative. This alternative would have no significant resource impacts. However, visitors interested in nationally designated trails would continue to have difficulty obtaining information about the routes through the park and would continue to be inconvenienced in using the trails due to the lack of campsites along them. Visitors are also inconvenienced by the lack of a continuous trail along the Nez Perce National Historic Trail route.

Alternative B. The effects of this alternative would be similar to those described under the Proposed Action. Campsites for users of the nationally designated trails would be constructed.

Issue: Trail Clearing, Maintenance, and Rehabilitation

Proposed Action. Specific trail construction, maintenance, and rehabilitation standards would be applied under the proposed action, and information about trail conditions and standards would be made available to the public. By establishing consistent parkwide standards and informing the visitor of trail conditions, the visitor's backcountry experience would be enhanced as visitors would know what to expect. Although there would continue to be some natural and, possibly, cultural resources impacts from existing trails (soil erosion, vegetation trampling, etc.), consistent standards would mean that sensitive resource areas would be addressed. Major trail reroutes (longer than 100 yards) would not occur without parkwide review. Cultural resources, wetlands, threatened or endangered species, and other sensitive resources, would be avoided in trail relocations, rehabilitations, and reconstructions. When trails have been abandoned, efforts would be made to remove them from maps and guidebooks, and field rehabilitation would be planned, all of which improves the backcountry experience for the visitor in the long term. Short-term confusion caused by recently closed

(but clearly visible) trails would be lessened by signing and trail restoration. There would be no socio-economic impacts under the proposed action.

Alternative A. The No-Action Alternative. Trail maintenance standards would not necessarily be consistent parkwide. The absence of parkwide review for trail reroutes could mean that natural or cultural resources might be inadvertently affected by trail rehabilitation/construction. Information about trail status and condition and about trail standards would not be readily available or necessarily accurate, which could adversely affect visitors' backcountry experiences.

Alternative B. The effects of this alternative would be similar to those described under the **Proposed Action**. However, not all park trails are currently maintained to the highest standards. Therefore, trail maintenance could be more costly under this alternative. Certain trails would be maintained at an increased width and clearance under this alternative, affecting more soil and vegetation than under the proposed action.

Issue: Signing and Marking Trails and Features

Proposed Action. Under the proposal visitors could expect a consistent level of signing. Some signing on *Threshold* trails would help prevent casual hikers from becoming lost, but less signing on *Backcountry* trails would enhance the wilderness character of the backcountry. Backcountry visual resources would be enhanced by parkwide sign standardization and design and by minimizing trail markers in the *Backcountry Zone*. Fewer signposts would mean fewer impacts to soil and vegetation. Any new signposts would be properly placed to avoid impacts to wetlands and cultural resources. Although there would be some signing for skiers in the *Winter Threshold Zone*, areas beyond this zone would not be signed. This would enhance the winter backcountry user's wilderness experience. In all seasons visitors in the *Backcountry* and *Pristine zones* would have to exhibit a considerable amount of self-reliance and responsibility for their own safety.

Alternative A. The No-Action Alternative. The variety in trail marking and signing under this alternative could lead to confusion over what visitors could expect in various areas of the park. This could adversely affect visitors' experiences in the backcountry. Visual quality would continue to be affected in locations that contain multiple or frequent markers and at some isolated features in the wilderness. Although signposts would be properly placed to avoid impacts to cultural resources, increased numbers of signposts would impact soils and vegetation. There would be effect on the socio-economic environment.

Alternative B. Under this alternative all trails would be marked to the same high standard. Although this may somewhat increase visitor safety, signing costs would be higher than at present. Increased signing would indicate increased management presence and negatively affect some visitors' experiences and perceptions of wilderness. It also would detract from

the enjoyment of users who wish to assume more risk for their own behavior and survival in the backcountry.

Issue: Marking the Park Boundary in the Backcountry

Proposed Action. By consistently marking the boundary of Yellowstone, backcountry visitors would clearly understand where the park's boundary is located and the protection of park resources would be improved. The proposed action would enhance the visual integrity of the backcountry with a singular consistent method of marking the boundary. The adverse effects of blazing, painting trees, or clearing vegetation would be eliminated. There would be no adverse effects on cultural resources or on the socio-economic environment.

Alternative A. The No-Action Alternative. The adverse effects of blazing, painting trees, or clearing vegetation would continue under this alternative. These include impacts to individual trees, loss of nesting trees and wildlife cover, and impacts to the visual aesthetics of an area. There would be no effect on cultural resources or on the socio-economic environment.

Alternative B. Under this alternative, there would be potential adverse effects upon the trees from blazing or painting. This alternative would negatively effect the visual integrity of areas and potentially would detract from the backcountry experience of visitors.

Issue: Use Limits and Campsite Capacities

Proposed Action. The proposed action would have long-term benefits for the physical and biological resources of the park by limiting the number of campsites available in the backcountry and limiting the number of people and stock that may use them. However, some outfitters may be affected economically by not being able to accommodate larger groups. The park examined its past records for outfitter-guided party size. Between 1985 and 1992, the average party size at stock sites was 4.6 people, with only 15 percent of stock outfitter parties having more than 12 people (total) in 1993. Also, some larger, self-guided groups would not be able to camp in the backcountry as a group. The average party size (between 1985 and 1992) for non-stock sites was 3.2 people, with only 1.6 percent of the parties issued permits for more than 12 people. Consequently, it appears that a relatively small number of outfitters and large groups would be adversely affected by these limits on party size. These party-size limits would conversely improve the backcountry visitor experience for many other users by lessening noise and the sense of crowding. The Superintendent could issue permits to large user groups in special circumstances.

The proposal would set consistent maximum size limits on campsites. The simplification of campsite party limits would enhance visitors' ease in planning backcountry trips. Camping in undesignated areas would be given consistent guidance, reducing visitor confusion over

such opportunities. The amount of possible user opportunity available would be decreased slightly from the maximum possible allowed between 1989 and 1992 (3,421 persons/night) to 3,048 persons/night. However, because visitor use has been considerably lower than the maximum allowed, this planned reduction should not adversely affect existing users. Impacts to soils and vegetation would be lessened by reducing the size of large multi-party sites and by prohibiting the establishment of new multi-party sites. Because consistent size limits would be set parkwide, any changes proposed for resource management purposes could be more adequately monitored than previously for results. The locations of campsites may change to accommodate resource conditions or visitor demand but only as outlined under *Campsite Standards*. Impacts to wetlands, cultural resources, and threatened or endangered species would be avoided or mitigated.

Alternative A. The No-Action Alternative. By allowing the number of backcountry sites and the maximum number of persons/site to fluctuate on demand, visitor opportunities could increase but natural resource impacts would occur. There would be increased soil and vegetation compaction and wildlife displacement at localized sites. Parkwide consistency in campsite monitoring and analysis would not be attained. There could be local variation in granting permission to camp in nondesignated sites. All of this could result in a decline in the quality of the backcountry experience.

Alternative B. The effects of this alternative would be similar to those described under the Proposed Action, except that larger group sites would be allowed. Larger sites cause more localized resource impacts to soils and vegetation. Some visitors who wish this type of social camping opportunity would not find it available in the park.

Issue: Campsite Standards

Proposed Action. The proposed action would prioritize urgent actions needed to reduce disturbed area at campsites that exceed established standards. This would benefit visitor safety and sanitation, help reduce adverse impacts to water and other sensitive resources, and help reduce the potential for bear-human conflicts. This alternative would provide measurable objectives by which physical, natural, and, possibly, cultural resources conditions and visitor opportunities at each campsite could be evaluated. At large existing sites, actions would be taken to reduce impacts on resources. By separating campsites from each other and from trails and administrative facilities, the wilderness experience and visual aesthetics would be positively affected. In some areas of traditional use, camping opportunities could be altered or removed, but the rationale for removal would be resource-based and consistent throughout the park. This alternative would assure compliance with existing NPS policies and regulations. In some areas wood fires could be prohibited, adversely affecting some users who want a fire. However, the restrictions on wood fires and the gathering of dead-and-down wood would be made where the resource is being adversely affected. The result of these restrictions would be an improvement in the resource conditions. There would be no effect on the socio-economic environment.

Alternative A. The No-Action Alternative. Generally campsites would not be moved from their current locations, therefore, this alternative would allow the existing impacts/problems in some sites to continue. Visitor safety would potentially be affected by poor sanitation practices that adversely affect soils and water quality. Significant resource impacts at the largest existing sites would not be addressed. The lack of campsite standards could result in increased soil compaction, vegetative disturbance, disturbance of cultural resources, and negative effects to wildlife habitat at sites. Continued variation in management actions (use limits, revegetation, rest/rotation, etc.) at campsites from year to year would result in the inability to determine the true effectiveness of site rehabilitative treatments. Camping opportunities could be increased or reduced without consistent guidance in different areas of the park.

Alternative B. This alternative would result in consistent conditions at backcountry campsites. The impacts on water quality and solitude from other campsites and trails would be improved over the existing conditions, but not to the extent provided by the Proposed Action. Locating toilets at heavily used campsites would have a beneficial impact upon water quality, but would affect visual quality and cause increased facility maintenance costs. No wood fires would be allowed under this alternative; this regulation would most likely negatively impact many backcountry users who desire wood fires for cooking or aesthetic reasons. This alternative could result in more new impacted areas as a result of relocating campsites that currently are too close to water or the main trail.

Issue: Placement and Design of Bridges

Proposed Action. The proposed action would set consistent standards throughout the park for when bridges (whatever type) would be built. This action would mean that visitors would need to take more responsibility for their own safety when crossing streams in the *Backcountry* and *Pristine zones*. Some visitors could be inconvenienced or negatively affected by the absence or removal of river bridges; others who desired a more wilderness experience and minimal visual intrusions would be positively affected. Any new major bridge construction would follow the park's project compliance process and would avoid adverse impacts to wetlands, threatened and endangered species, or cultural resources. There would be no effect on the socio-economic environment.

Alternative A. The No-Action Alternative. Under this alternative there would be no consistent parkwide standard for bridge design or placement. This would result in backcountry users being unable to predict what level of risk, safety, or visual impact to expect on different trails. Existing bridges that may not be needed would continue to affect park resources (soils, vegetation, and, possibly, wetlands) and the visitor experiences. Although any new bridges would be the minimum structure necessary, soils, vegetation, and, possibly wetlands or cultural resources, could be affected.

Alternative B. The effects of this alternative would be to increase the number of structures in the backcountry as many more streams would be bridged than are today. Visitors desiring the most primitive experience may have their backcountry experience adversely affected by the visual intrusion and absence of risk posed by bridges in remote areas. Visitors expecting a high degree of safety and convenience or dry feet would be positively affected. There would be significant increased costs to the NPS for bridge construction if this alternative was chosen.

Issue: Backcountry Boating Access and Facilities

Proposed Action. The proposed action would reiterate the park's regulation restricting boats from using any park rivers (except the Lewis Channel). The range of boating opportunities on park lakes would remain the same as at present; however, under the proposal, the park would prohibit motorized boats in the South and Southeast arms of Yellowstone Lake. Some motorboat users and some boat-fishing guides could be inconvenienced or economically affected by this new restriction, but the restriction would result in reduced disturbance to birds, fish, other lake-associated wildlife, shallow plant species, and visitors who desire a quieter environment along the lakeshore. This restriction would also ensure compliance with *NPS Management Policies* (1988) for proposed wilderness areas. Except for the existing boat docks on Yellowstone Lake and at Lewis Lake campground, no new boating-related facilities would be allowed. This could limit opportunities for some visitors wishing to access shorelines; there are limited opportunities to easily beach motor boats on the shores of Yellowstone and Lewis lakes. Water quality would continue to be affected by accidental spills or intentional releases from motorboats, but the effects in the arms of Yellowstone Lake would be reduced from the present level. All non-critical facilities would be removed from campsites on the lakeshore in accordance with *NPS Management Policies*.

Alternative A. The No-Action Alternative. Lake and lakeshore users would continue to experience varying degrees of sight and sound impacts from boating use, which may conflict with their expectations of a backcountry experience. Motorboats would continue to cause some displacement or other impact to water quality, bird, mammal, and plant life in the South and Southeast arms of Yellowstone Lake. New boating facilities could be allowed and could impact physical and natural resources along the lakeshore as well as the degree of isolation perceived or experienced by backcountry users. There would be no effects to the socio-economic environment under this alternative.

Alternative B. The effects of this alternative would be similar to that of the Proposed Action, except that motorized boats would continue to be permitted to access in the South Arm of Yellowstone Lake. The experimental closure of the Southeast Arm of the lake to motorboats would enable resource managers to evaluate the effects of this restriction on wildlife and the backcountry user. This alternative would remove all existing boat docks, reducing the visual and physical effects of these structures, but inconveniencing boat users. This could also result in increased boat damage, accidents, and/or site impacts as boaters

attempted to beach their boats in unsuitable sites, shallow waters, rocky promontories, etc. The socio-economic effects would be similar to the Proposed Action.

Issue: Other Facility Standards

Proposed Action. The wilderness character of Yellowstone's backcountry would be enhanced by the park's adherence to the minimum tool concept in the backcountry. In order to properly manage and protect Yellowstone's resources as well as park visitors, some backcountry administrative facilities (patrol cabins, fire lookouts) are needed. However, these facilities would be restricted to the number currently in the park (Appendix V). This would restrict some future administrative options for backcountry managers and other park staff, but would ensure compliance with NPS *Management Policies* (1988) for proposed wilderness areas. By retaining historic backcountry facilities and allowing traditional use of them, these cultural resources of the park are preserved. These structures would be evaluated for their National Register significance under this alternative. Removing incompatibly designed facilities and replacing them with more rustic structures, would enhance the wilderness character of the backcountry. Existing facilities would continue to influence localized sites and associated natural and cultural resources, but these impacts would be reduced as some facilities were removed.

Alternative A. The No-Action Alternative. Under this alternative, incompatible existing facilities in the backcountry would continue to detract from some visitors' backcountry experiences. Some existing facilities would continue to affect soils, vegetation, water quality, and, possibly, cultural resources and would continue to displace some wildlife. Additional structures could be constructed, although this is in conflict with NPS *Management Policies* for management of proposed wilderness. Any new structures would add to the total number of backcountry structures in Yellowstone.

Alternative B. The effects of this alternative would be similar to the Proposed Action, except that if a structure was destroyed, it would not be replaced.

Issue: Management of Commercial Backcountry Use

Proposed Action. Under the proposed action all businesses operating in the backcountry of Yellowstone National Park would be subject to the same evaluations and regulations. This would assure consistency of service for the backcountry visitor who hires a commercial outfitter. While this would increase administrative responsibilities for both the providers and NPS staff, it should result in improved service for the backcountry commercial visitor. Under the proposal and after further study, the park may require all commercial outfitters to have a Limited Concessions Permit. This would restrict the number of outfitters for each approved activity, thereby potentially limiting business opportunities for additional commercial providers. The number of licensed stock outfitters would gradually be reduced

until there is a demonstrated public need for more outfitters. This would be done through attrition, termination of unsatisfactory operators, and possible denial of transfer requests. This would potentially prohibit some business opportunities for outfitters. Alternatively, a reduction in the total number of commercial-use providers would reduce the number of competitors for a limited resource (stock-use nights available). There would be no effects on natural or cultural resources under this proposal.

Alternative A. The No-Action Alternative. The potential for inconsistent service and, potentially, a lessening of the commercial visitor's backcountry experience would continue under this alternative. Only businesses operating with a Limited Concessions Permit would be subject to evaluations of the quality of service provided. Stock outfitters would be gradually reduced through attrition until a demonstrated public need for more services was exhibited. Following a moratorium in effect for 1994 and 1995, the Commercial Use Licensees that provided visitor opportunities would again be unlimited in number; these outfitters would not be evaluated for the quality of experience or service provided. The impacts of this alternative on commercial operators would be similar to the Proposed Action.

Alternative B. The effects of this alternative would be similar to those described under the Proposed Action, except that a target number of commercial providers for each activity would be set. Some existing commercial permittees and licensees would lose the opportunity to serve park visitors. This would be based on competition and the evaluation of services they have provided in the recorded past. Visitors would continue to have opportunities to obtain guided commercial trips.

Issue: Management of Stock Use

Stock-trail Use Limits and Off-trail Travel

Proposed Action. The proposed action would enhance visitor safety and the protection of park resources by restricting stock use in areas that are dangerous or have sensitive resources. Trail maintenance costs would be lower on those trails where stock use is prohibited. The opportunity for stock users to access *Pristine Zones* would be limited to day-use only and only one pack animal would be allowed per party. The effects of stock use on natural resources and on other backcountry users would be limited to existing trails and campsites and to areas reasonably accessible by day from the existing trails network. This would limit soil compaction and vegetation loss and lessen potential wildlife displacement.

Alternative A. The No-Action Alternative. The continued stock use on most trails, without delineation of stock suitability or use levels, would continue to negatively affect visitor and stock safety and some park resources. The effects on visitor opportunities would be similar to those described under the Proposed Action.

Alternative B. The effects of this alternative would be to limit the opportunities for some stock users by designating some trails hiker only and restricting all pack animals to designated trails. The separation of these potentially conflicting user types would result in a perceived higher quality experience for some stock users and some backpackers. Other effects would be similar to those described under Proposed Action.

Pre-trip Stock-holding Areas

Proposed Action. Under the proposal, the park would continue experimental use of the two existing stock holding areas through 1994. At the end of the 1994 season, the need for providing overnight stock holding sites would be evaluated and a decision made about continuing use in those areas. The proposed action would result in minimal site disturbance, as the existing stock holding areas are located in long-existing administrative sites located in close proximity to main park roads. These two sites have long experienced soil compaction, site hardening, and moderate levels of administrative traffic and use. The levels of use experienced to date or expected by stock users would not cause a significant increase in wildlife displacement or vegetation disturbance. The restriction against out-of-vehicle camping eliminates potential impacts caused by ground fires or food attractants. The opportunity for stock users to camp with their stock in proximity to park trails would remain limited, causing some inconvenience for this user group. The opportunity for pre-trip stock holding areas could be decreased if, after evaluation in 1994, the designated stock holding areas were eliminated. If these pre-trip stock-holding areas are eliminated, it could cost some stock outfitters time and money trailering stock back and forth.

Alternative A. The No-Action Alternative. The effects of this alternative would be similar to those described under the Proposed Action, except that the opportunity for pre-trip stock holding in the existing sites would continue for the foreseeable future, saving some stock outfitters time and money.

Alternative B. This alternative would not allow overnight stock holding areas in the park. This could potentially adversely effect the stock users desiring areas to hold their stock overnight inside the park and cost them time and money. There would be no change in effect on the natural resources of the currently used stock holding areas as there are no plans to rehabilitate the areas.

Management of Stock Retention, Feeding, and Grazing

Proposed Action. The proposed action would have positive effects on the natural resources of the park by the imposition of certain restrictions limiting stock use. Native grazers would benefit from less competition from grazing stock. Restrictions on the types of supplemental feed allowed would aid the park's effort to control the importation of seeds of exotic plants into the backcountry. Campsite condition and appearance would improve by limiting stock use in core-camp areas. Properly scattered manure would attract fewer insects, break down more quickly, and minimize aesthetic impacts viewed by other campers. Impacts to trees in

and around stock sites would be lessened by restricting their use for stock retention. The construction of hitchrails would be restricted to limit soil compaction and denuding of sites. Stock users would be able to choose from among several methods of stock retention in grazing areas, however, stock grazing would be dispersed, rather than concentrated in order to avoid compacted or hardened sites. Impacts to vegetation in and around stock sites would be monitored and certain grazing areas could be further restricted, as necessary. Monitoring would be done using standard interagency methods to evaluate range utilization and conditions. The goal would be to not exceed 35 percent utilization, as measured by grazing transects, in the area surrounding any *Class I* or *Class II* campsites. The goal would be to not exceed 25 percent utilization in grazed areas at any *Class III* campsite. The goal in *Pristine Zones* would be for no measurable non-native grazing impacts. Stock use would continue to be restricted in spring and early summer until campsites have sufficiently dried out to reduce soil disturbance. Most of these restrictions have already been phased into practice in Yellowstone's backcountry and commercial outfitters are aware of them. The long-term goal of all of these restrictions is the protection of the resource, which is the basis of an outfitter's business. Restricting commercial users to 75 percent of the reservable stock-use nights would allow non-commercial users more opportunity to use these sites. Consistent and long-term data collection would allow park managers to evaluate the success of management actions taken to limit resource impacts.

Alternative A. The No-Action Alternative. Under this alternative, stock-site management would continue to be inconsistent, as would guidance given stock users on highlining and stock retention. The variety of management standards and use limitations would be confusing to some stock users and would restrict some opportunities to experience the backcountry. Some stock presence or impact would be visible inside core camps of non-stock sites used occasionally for rest or lunch stops. Continued variation in application of stock utilization data would make it difficult to evaluate the success of management actions taken to limit resource impacts. Native grazers could be displaced from some areas of the park by competition from stock grazing. Restrictions on the types of supplemental feed allowed would aid the park's effort to control the importation of seeds of exotic plants into the backcountry.

Alternative B. The effects of this alternative would be similar to those described under the **Proposed Action**. The prohibition of additional hitchrails would limit the number of structures and local compacted sites, while spreading out vegetative impact caused by horses. However, campers would experience reduced opportunities to use stock sites once the grazing utilization limit had been reached during the season. This could negatively affect the economic opportunities of some stock outfitters. Park staff and stock users would have less flexibility to manage stock in grazed areas. Area opening dates would be more restrictive.

Issue: Hunter Access Across Yellowstone's Backcountry

Proposed Action. The proposed action would provide access (for the foreseeable future) to hunters needing to pass through the park to hunting areas that are otherwise inaccessible while continuing to prohibit non-necessary access to hunters. The safety of other users would be improved by providing clear information about the designated hunter access routes and recommended safety precautions. The zero-tolerance policy would be enforced. Some game shot outside the park could enter the park before dying, thus providing food for scavengers, but denying the hunter the animal he/she killed.

Alternative A. The No-Action Alternative. As in the Proposed Action hunter access would continue on the designated routes through the park but additional routes could be designated. This could present added conflicts with non-hunters. The zero-tolerance policy would be enforced with the same consequences for wildlife and hunters as in the Proposed Action. Visitor safety would not necessarily be improved.

Alternative B. This alternative would reduce the traditional hunter access that has been allowed in the park. This could negatively effect hunters and commercial outfitters in areas outside the park. The need for the law enforcement patrols along previously-used hunting access routes would likely increase. The zero-tolerance policy would be enforced and would have the same consequences for wildlife and hunters in the Proposed Action.

Issue: Rock Climbing in the Backcountry

Proposed Action. The proposed action would continue to allow climbing in all areas of the park not specifically closed to this activity, thereby accommodating a special visitor use. However, in order to protect the physical and natural resources of the park, no motorized tools, fixed anchors, or other climbing equipment that defaces rock would be allowed. Gluing or chipping rock to create, augment, or reinforce holds, or other practices such as forcibly prying off rock or removing vegetation to enhance a route, would also be prohibited in order to protect the resource. To protect the visitor experience for others, climbing may be prohibited in highly visible areas and/or for resource protection. The proposed action would limit visual intrusions and physical damage to rock formations and outcrops. Monitoring and/or prohibiting climbing in highly visible areas or sensitive areas would minimize aesthetic and resource impacts. The delineation of summit routes could cause an increase in the amount of compacted trail in the park, but would reduce the dispersed impact of off-trail scrambling in high-elevation areas with short vegetation growing seasons. Clear guidance on bivouacs would be provided to climbers, enhancing their opportunity to experience Yellowstone's backcountry.

Alternative A. The No-Action Alternative. The effects of this alternative would be similar to those of the Proposed Action, except that visual and physical impacts from chalk,

anchors, and slings would be more obvious. No clear guidance would be provided on off-trail use or bivouacs, which could impact some visitors' experiences.

Alternative B. The visual effects of this alternative would be similar to those described under the **Proposed Action**. This alternative would limit the amount of compacted trail tread, but the effects caused by users taking dispersed routes to popular summits would continue. The opportunity for climbers to reach summits long distances from trails would be significantly reduced as bivouac camping would not be allowed. The establishment of a climbing permit would result in improved climber use statistics, but would increase the administrative workload and inconvenience climbers.

Issue: Mechanized Equipment in the Backcountry

Proposed Action. The proposed action would allow the visitor a more consistently quiet experience in the backcountry by restricting motorized equipment to the minimum tool necessary or to emergency circumstances. This policy would also have beneficial effects upon wildlife by reducing noise and associated displacement. It could, however, increase the manpower and time required to complete trail and/or other facility construction or rehabilitation projects and trail clearing. Mechanized equipment could be used in search-and-rescue operations, therefore, visitor safety would not be compromised.

Alternative A. The No-Action Alternative. This alternative would continue to result in visitors experiencing less quiet than they might expect in Yellowstone's backcountry. Wildlife would continue to be displaced or disturbed by helicopter and chain saw noise, with no seasonal limitation. However, the time and physical effort park staff expend on trail clearing and maintenance projects could be less than under the **Proposed Action**. There would be continued conflicts between park administrative use and NPS policy guidelines pertaining to potential wilderness areas.

Alternative B. The effects of this alternative would have the greatest beneficial impacts upon noise reduction, associated visitor experiences, and wildlife. It would place the greatest burden on park staff, would cost more money, and would result in higher likelihood that trailing around downed trees would compact additional vegetation. There would be a high level of consistency with policy guidelines and expectations of wilderness users crossing park boundaries.

Issue: Winter Use of the Backcountry

Proposed Action. Under the proposed action, the casual winter skier would find the ski trails in the *Winter Threshold Zone* marked to a high standard, which would provide added safety. The backcountry skier desiring a more wilderness experience (less trail marking and other signs of human influence) would be accommodated on all other trails. The proposed

action would provide more opportunity for the visitor to relate their desired experience with opportunities presented by the park's ski trails and winter campsites. Visitors would receive clear and consistent information about winter trail marking, grooming, camping conditions, and winter risks. The opportunity for large groups to camp would be reduced, although the proposed limit is well above the average size of parties requesting winter camping permits today. Strict camping regulations would reduce resource impacts and would disperse use. By prohibiting wood fires (except in emergencies and at lower elevation sites) some campers may be inconvenienced. Under some circumstances visitors would be allowed to obtain permits in advance for winter camping, thereby facilitating their trip planning.

Alternative A. The No-Action Alternative. Under this alternative local differences in area management would mean that some trails may be frequently marked but others would not be marked at all. Visitors would not know what to expect, and some casual skiers may encounter difficulties in unmarked trail areas. There would be no consistent guidance given on winter camping, use limits, and minimization of resource impacts from area to area in the park. Wood fires would not be a part of any winter camping experience, even in lower elevation sites where wood and existing fire pits are available.

Alternative B. The effects of this alternative would be to limit the variety of winter experiences offered. Risk would be minimized by marking all trails for a high degree of human safety; this would negatively affect some summer and winter visitors' perceptions of the wilderness character and visually impact trail corridors by increased marking. Oversnow campers would have less opportunity to disperse their use or select sites when finding snow-covered designated sites is difficult. Wood fires could be part of the winter camping experience.

Issue: Administrative Uses of the Backcountry

Proposed Action. The proposed action would provide for continuation of necessary administrative use of the backcountry while better informing visitors of how and where such use or evidence is occurring. This would enhance the backcountry user's experience. The proposed action would reduce the administrative presence and its associated disturbance to resources and aesthetics in *Pristine Zones*. It would standardize guidelines given to administrative users of off-trail campsites, patrol cabins, and other facilities.

Alternative A. The No-Action Alternative. This alternative would provide for continued necessary administrative use, but without consistent guideline throughout the different backcountry zones. There would be no consistent guidelines for minimization or reduction in physical, biological, or visual effects of administrative activities and facilities. Visitors would experience some administrative presence regardless of the backcountry zone, without clear expectation of where, when, and how administrative use would occur.

Alternative B. Under this alternative, visitors would experience some administrative presence regardless of where they are in the backcountry. The park's goal would be to minimize the effects of these activities and facilities.

B. RESOURCE PROTECTION AND MANAGEMENT

Issue: Protection of Wildlife and Fisheries

Proposed Action. The proposed action would assure protection of park wildlife resources and continuance of quality wildlife viewing and fishing while providing for quality backcountry experiences for visitors. This would be done by using a combination of education and enforcement measures. Sensitive bird, fish, and wildlife resources, including species listed under the Endangered Species Act, would be protected from disturbance and harassment. Temporary displacement of birds and wildlife from trails and campsites would continue to occur during periods of human use; however, these impacts occur along long-established corridors and at sites to which birds and wildlife may already be habituated.

Threatened and Endangered Species

Actions outlined in this plan do not depart from the program outlined in the *Final Environmental Impact Statement, Grizzly Bear Management Program* (1982). Two key factors influence the potential recovery of the grizzly bear population in greater Yellowstone. These are the effectiveness of the habitat available to grizzly bears and bear mortalities. Human activities may displace bears or cause them to change their behavioral patterns. Human foods or other substances may attract bears to backcountry campsites. Backcountry use patterns in the park and the actions proposed in this plan would directly result in some level of bear displacement and habituation continuing to occur. The system of bear management areas established in the *Grizzly Bear Management Program* (1982) continues to separate bears and humans in key habitats and is a likely contributor to a positive trend in numbers of grizzly bears observed from 1987-1993. Food storage devices and regulations have contributed to a decline in numbers of bear translocations and removals since the 1970s. Additional food-storage poles and campsite design changes would reduce the likelihood of bear-human conflicts. However, all of these restrictions do limit some visitor experiences in some areas and at some times of the year.

Indirect effects of the proposed actions are more difficult to predict than are direct effects. The existing conditions and the proposed actions place high priority on minimizing conflict between bears and humans, and between humans and other resources. Human activity and its associated risk of displacement and potential mortality of grizzly bears may cause changes in the behaviors and relationships of bears that use an area. These effects are likely to be complex and not easily observed. Again, the proposed actions are believed to cause the least indirect impacts, if any, to bear behavior and population dynamics, since additional use and

development would be confined to existing backcountry trails and campsites with well-established seasonal use patterns.

The greater Yellowstone grizzly bear population is the second largest of the recovery populations and is estimated to have a minimum of 225-251 bears (Knight, pers. commun. 1992-93). In the past decade the rate of bear management actions has averaged about one grizzly (either sex) being removed from the park every year; during the period 1986-1993, none of those bears were removed because of backcountry bear-human conflicts. In 1993, bear monitoring studies indicated that the Yellowstone ecosystem grizzly population is nearing the desired population parameters outlined in the *Grizzly Bear Recovery Plan* (1993). That plan set population goals as follows:

1. fifteen females with cubs annually over a running six-year average;
2. sixteen of 18 Bear Management Units occupied by sows with young from a running six-year sum of observations, and within the Plateau and Henry's Lake BMUs, a study will be initiated in 1993 to determine the capability of these BMUs to support females with young; and
3. known human-caused mortality does not exceed 4 percent of the population estimate based on the most recent three-year sum of females with cubs, furthermore, no more than 30 percent of the known, human-caused mortality shall be females.

The six-year average of observed unduplicated females with young steadily increased from 12 females per year during the period 1973-78 to 20 females per year during the period 1986-1993 (Knight et al. 1993). As of 1993, the six-year average of known human-caused mortality was 4.33 bears per year, with an average of 1.33 adult females per year. Known adult female mortality averaged at or below target levels from 1983 through 1993. The goal to have 16 Bear Management Units occupied by sows with young was met in 1993.

The proposed action would have a positive influence on the grizzly bear population by setting measurable standards and limits to guide future backcountry use and management throughout the park. Thus, the various proposed actions for backcountry management are not likely to adversely affect the continued existence of the grizzly bear population.

Although evidence suggests that transitory wolves occasionally occur the park, there is no evidence that a breeding pair of wolves or a viable population inhabits Yellowstone at this time. Wolves are not highly sensitive to human backcountry use, except during times of denning, and, if wolves are restored to Yellowstone, the park would restrict access to denning areas if necessary. Wolves are highly mobile and secretive, generally avoiding areas of human use and occupation. None of the various proposed actions for backcountry management would affect the existence of a potential wolf population in Yellowstone Park.

In recent years, only two individual whooping cranes have been documented annually in Yellowstone, and these two birds summer separately in the southern half of the park, seldom seen even by backcountry visitors. Peregrine falcons forage along backcountry rivers; no known peregrine falcon aeries are in close proximity to backcountry trails or campsites. However, if a peregrine aerie would be found near a campsite or trail, that campsite or trail could be closed if necessary to prevent human disturbance of the nesting birds at sensitive times. Bald eagles, which both migrate through and reside year-round in the park, are closely monitored. Campsite, trail, and boat access is restricted as necessary to prevent disturbance to the nesting birds. Therefore, both direct and indirect effects of backcountry use on Yellowstone's endangered bird populations is minimal, and the effects have been and will continue to be mitigated by management actions. The continued existence of the whooping crane, peregrine falcon, and bald eagle populations in Yellowstone would not be affected by any of the various proposed actions for backcountry management.

Alternative A. The No-Action Alternative. Under this alternative, resource impacts would be similar to those of the **Proposed Action**, except that visitor education, safety, and the backcountry experience would not necessarily be improved. Food storage at sites that do not have a food pole would not necessarily be improved. Bear management areas and other restrictions on use for birds and other wildlife would continue to limit the visitor in some areas and at some times.

Alternative B. The effects of this alternative would be similar to those described under the **Proposed Action**. However, this alternative would possibly limit the areas for human use. Those actions limiting human use, such as closure of Frank, Stevenson, and the Molly islands, would further protect rare, threatened and endangered bird species. The visual impact of regulatory signs on aesthetics and on soils and vegetation would be greater under this alternative than the **Proposed Action** or **Alternative A**.

Issue: Protection of Geothermal Resources

Proposed Action. The proposed action would increase monitoring and protection of backcountry geothermal features. Visual impacts caused by signs in backcountry areas would be minimal. Safety would be the responsibility of the user, but this information would be presented in backcountry literature and at visitor contact stations and trailheads. The opportunity for "hotpotting" in waters not solely of thermal origin would exist, but would be discouraged in areas not now used for this activity. This should reduce the potential increase in this activity and its associated impacts on geothermal resources. Travel off trail in thermal areas would be restricted, limiting the impacts to soils from compaction, to vegetation from trampling, and to water quality.

Alternative A. The No-Action Alternative. Off-trail travel in thermal areas would continue to be restricted, possibly adversely affecting the backcountry users' experience in some cases. Less frequent monitoring and patrols for resource protection would result in higher

likelihood of thermal vandalism or other site impacts. Hotpotting could increase, causing impacts to geothermal waters and associated soils and vegetation. The visual impact of signs in backcountry thermal basins would be greater than under the Proposed Action.

Alternative B. The effects of this alternative would be similar to those described under the Proposed Action, except that off-trail travel in thermal areas would be prohibited and designated backcountry hotpotting areas would be actively managed. This would improve visitor safety and limit impacts to geothermal features and the surrounding environment.

Issue: Protection of Soils and Vegetation

Proposed Action. Under the proposed action, retention of designated trails and campsites would concentrate use and associated impacts to soils and vegetation rather than dispersing that use and associated impacts to previously unaffected areas. Visitor and stock use would be managed so that changes in plant species composition and diversity and importation of exotic plant species would be minimized. Damage to trees due to highlining and wood collecting would be minimized. Site-specific impacts to soils would also be limited (soil compaction, construction of bog bridges in wet areas). Stock-use restrictions in spring and early summer would protect resources by reducing soil disturbance in wet areas during the growing season. Limits on wood campfires would prevent soil damage, confine soil sterilization, and limit damage to living or standing dead trees. The prohibition of wood fires at some sites would be based on a measurable standard used throughout the park. This would limit the opportunity for wood campfires, though this experience would still be available at many sites.

Alternative A. The No-Action Alternative. Designated trails and campsites would continue to impact soils and vegetation, as under the Proposed Action. Any new trails and sites would adversely impact soils and vegetation through soil compaction, increased runoff, and long-term denuding of sites. The management of grazing levels and wood fires would occur without a consistent standard across the park, which would influence some visitors' experiences.

Alternative B. The effects of this alternative would be similar to those described under the Proposed Action. However, no opportunity for campers to experience wood fires would exist in summer, regardless of the availability of dead-and-downed wood. The size of compacted campsites and the number of damaged trees would be limited to existing levels, but no improvement would be attempted.

Issue: Protection of Water Quality

Proposed Action. The proposed action would have beneficial impacts upon water quality by mitigating the effects of human waste on soils and water at heavily used campsites

(particularly those near streams, lakes, and above shallow water tables). Pollution from soaps, detergents, and food wastes in the backcountry would be limited; pollution from petroleum products from power boats would be minimized; and sediment loads from eroded trails or campsites would be reduced. Toilet facilities or a human waste pack-out policy would be considered at backcountry campsites where person use nights exceed 150-200 annually. Toilets would not be relocated near water without testing the proximity to the water table. No facilities would be dug below the water table or without cultural compliance.

Alternative A. The No-Action Alternative. Under this alternative, current impacts from poor sanitation practices, campsites too close to surface waters, and poorly sited human waste facilities would continue. Other impacts would be similar to those of the **Proposed Action**.

Alternative B. The effects of this alternative would be similar to the **Proposed Action**, except that regulation of the disposal of human wastes would be more stringent. Unless there is a Wallowa toilet at the campsite, backcountry users would be required to pack out all human waste. This alternative would require increased costs and time to build and maintain the toilets. (Cultural compliance would be completed prior to any soil disturbance.) In some areas, this alternative would affect visitors' experiences either positively or negatively, depending on how they perceived the requirement to pack out human waste. It would require additional facilities or instructions on disposal of packed-out waste, as such facilities are not readily available locally. The cost of establishing such a program could be significant.

Issue: Protection of Cultural Resources

Proposed Action. The proposed action would increase the knowledge base of park staff responsible for cultural resource protection and contribute to increased documentation, monitoring and protection of cultural sites. When necessary, sites would be protected from disclosure or interpretation in order to preserve them from intentional or accidental disturbance. Management activities, including such actions as the movement of old trash, modifications or additions to or removals of structures that are 50 years old or older, and significant ground-disturbing activities on previously undisturbed ground would not proceed without cultural compliance.

Alternative A. The No-Action Alternative. Lack of knowledge about cultural site locations and appropriate means of protection would result in continued deterioration of cultural resources under this alternative. Relocations or repairs of facilities or trails could inadvertently impair cultural sites, landscapes, or structures.

Alternative B. The effects of this alternative would be similar to those described under the **Proposed Action**. However, administrative uses and visitor experiences could be affected by

the removal of traditional campsites, trails, or facilities that conflicted with cultural resources.

Issue: Conducting Research, Inventory, and Monitoring Programs on Backcountry Use

Proposed Action. The proposed action would benefit the physical, biological, and sociological resources of the backcountry by providing a systematic process to monitor the effects of use. It would improve backcountry interpretation and management by establishing a parkwide database on long-term trends in resource and social conditions.

Alternative A. The No-Action Alternative. This alternative would result in continued lack of coordination in backcountry interpretation and management. The absence of consistent and high-quality data would not provide for improved monitoring or management of physical, biological, or social resource conditions in the backcountry.

Alternative B. The effects of this alternative would be similar to those described under the **Proposed Action**. However, the administrative responsibility for a day-use permit system and more frequent inventories take more staff time and effort.

C. INFORMATION AND ORIENTATION FOR BACKCOUNTRY USERS

Issue: Helping Users with Backcountry Trip Planning

Proposed Action. The proposed action would increase the likelihood that visitors could choose a trip to match their desired experiences. It would enhance visitor safety and satisfaction by providing improved information to visitors in advance of their trips and at park trailheads. This not only saves time for the visitor, but better information will educate the visitor and could result in greater cultural and natural resources compliance and protection. The proposed action could have adverse impacts to the park as the cost of producing the government trip planner may come out of other backcountry management programs. The trip planner would not be designed to replace high-quality trail guides or topographic maps for visitor safety and in-depth reference.

Alternative A. The No-Action Alternative. The lack of advance planning information and maps at trailheads would continue to result in some visitor dissatisfaction or confusion about what conditions to expect on their backcountry trip. If visitors lack the knowledge or understanding of the resources, there could be less compliance with regulations designed to protect those resources.

Alternative B. The effects of this alternative would be similar to those described under the **Proposed Action**, except that the backcountry user would be charged a fee for the trip planner and map.

Issue: Providing Safety Information to Backcountry Users

Proposed Action. The proposed action would enhance visitors' backcountry experiences by providing information in one accurate brochure designed to help them select a safe and reasonable backcountry trip for their level of expertise and time schedule. Special risks, such as fires or avalanche danger, would be posted or other actions would be taken if necessary to protect visitor safety. However, the nature of the wilderness experience would be acknowledged to be risky, requiring the visitor to take primary responsibility for their backcountry safety. The Superintendent may close the park or a portion of the backcountry, including roads and trails, when fire, avalanche danger, or other conditions pose an imminent threat to public safety.

Alternative A. The No-Action Alternative. The effects of this alternative would be similar to those described under the **Proposed Action**. The information posted at trailheads would not be as consistent as that provided for under the **Proposed Action**.

Alternative B. The effects of this alternative would be similar to those described under the **Proposed Action**.

Issue: Orientation for Backcountry Users

Proposed Action. The proposed action would be more time efficient for the backcountry visitor. Outdated orientation programs would be revised and made more accurate. This action would aid in protecting park natural and cultural resources and park visitors. By implementing this action the park would incur costs for the video production and equipment purchase. "Frequent User Cards" for repeat users would speed the process of getting a backcountry permit.

Alternative A. The No-Action Alternative. The use of the slide/tape program would continue. The information would continue to be dated and/or inaccurate, thereby potentially adversely affecting park resources and the visitor. The time to obtain a permit would continue to be inconvenient for many backcountry users.

Alternative B. This alternative would entail more staff and visitors' time to obtain backcountry permits, and the information given could be inconsistent. The presentation of the information would be less visual and may result in lower compliance with regulations, such as for proper food storage and waste disposal.

Issue: Reserving Camping Opportunities in the Backcountry

Proposed Action. This alternative would allow all users some opportunity to reserve a portion of backcountry campsites in advance via phone or mail. This would benefit many

backcountry users who now would be able to plan a desired trip in advance. This could initially have adverse economic impacts upon the National Park Service for it would likely require additional funding and staff to implement. It could also adversely affect those commercial outfitters who profit from those visitors who are unable to reserve a campsite except through the use of a commercial outfitter.

Alternative A. The No-Action Alternative. This alternative would continue to allow commercial users to reserve backcountry sites, particularly popular sites. However, it would adversely effect non-commercial users, who do not have the same privilege of choosing sites in advance.

Alternative B. This alternative would allow an equitable distribution of backcountry sites for both non-commercial and commercial visitors as all sites would be reservable in advance. However, there would be a fee charged for advanced reservations. Visitors without reservations could be prevented from any use if all sites were already taken.

D. CUMULATIVE EFFECTS

An analysis of the cumulative effects due to implementing the proposed actions in the *Backcountry Management Plan* includes a discussion of current development plans within Yellowstone National Park and information about development plans for the lands surrounding the park, those within the greater Yellowstone ecosystem. Most development proposals within the park are concentrated in existing developed areas. Few of these development proposals directly affect the backcountry, but some, such as road reconstruction, are related through their impacts on trailheads.

Although numerous construction and maintenance projects are planned for the greater Yellowstone area (GYA) over the next 20 or more years, the major emphasis of these projects is to replace, repair, or rehabilitate existing facilities that are approaching the end of their useful service life. Where new facilities are needed, they are concentrated in and adjacent to existing developed areas to minimize the creation of new, isolated developments. While some commitment of previously undisturbed resources is inevitable, as are some adverse cumulative effects, many of the project efforts that will be undertaken involve the removal of existing development and revegetation of areas affected by past human activity.

The time span of these development projects is also critical. This analysis primarily covers the period 1994 through 1998 but notes continuing development projects through the year 2000 and beyond. The purpose of this discussion is to recognize the relationship and cumulative effects of the actions called for in the *Backcountry Management Plan* in relation to other management and development actions occurring in the park.

The cumulative effects of the various actions within the park on most wildlife species are generally localized. Although these localized effects appear to be temporary in nature, the

lasting effects are unknown. Certain wide-ranging wildlife species, such as the grizzly bear, could be affected by the large number of construction projects in the widely varying locations. However, most all of these construction projects would occur within current development zones and along roadways, areas which bears are aware of and tend to avoid.

Most all of the projects are maintenance in nature (road rehabilitation, housing construction, sewage treatment facilities), providing appropriate facilities for visitors and employees. The other projects are rehabilitative in nature and are a result of Yellowstone's commitment to restoring disturbed areas in the park to natural conditions as directed by *NPS Management Policies*.

A considerable amount of planning is directed towards placing all new construction in existing developed areas. However, an inevitable result is the enlarging of some of these areas as well as an increase in development density in some other areas. The potential exists for the large number of projects mentioned in this analysis, carried out over many years, to have some cumulative effects on the Yellowstone ecosystem. Nonetheless, because many sensitive species already avoid developed areas, these small increases in developed areas are not as likely to adversely affect park resources as if additional areas were developed.

Non-mobile resources stand the highest chance of disturbance from the development of previously undisturbed land. However, the park is aware of these possibilities and are taking all steps possible to mitigate any negative cumulative impacts. These steps first include avoidance. Where that is not possible, data recovery plans for cultural resources and restoration of wetlands and other natural habitats is planned. It is hoped that these steps will lessen or completely mitigate any negative impacts from an action that would otherwise add to the cumulative effects on the Yellowstone ecosystem of the projects in this analysis.

The cumulative effects of the various actions within the park on visitors would primarily be felt by short-term visitors who stay in one area. Their entire visit may be disrupted by construction activities. Employees and area residents could be inconvenienced for a number of days or weeks by local construction projects.

Parkwide Projects Potentially Affecting the Backcountry

A number of resource management and development projects are planned that would have effects in more than one area of the park and have direct and indirect effects on backcountry users and backcountry management.

- The draft *Environmental Impact Statement, Bison Management Plan*, due for release for public comment in 1994, has ramifications primarily in the northern and western portions of the park. Most obvious could be the construction of bison management structures in the park near Gardiner, Montana, depending on the alternative selected. Conceivably, some bison management activities could result in localized, temporary restrictions on backcountry use.

- The USFWS recently released the *Draft Environmental Impact Statement, The Reintroduction of Gray Wolves to Yellowstone National Park and Central Idaho*. The proposed action would allow experimental reintroduction of wolves into the park and would use three temporary wolf-holding facilities; however, no decision has been made on this proposal as of this date. Temporary closures of backcountry areas immediately around the holding facilities could occur when wolves are in the pens. In addition, backcountry use restrictions could occur temporarily around den sites and other sensitive areas.
- Road reconstruction has a direct effect on backcountry planning and facilities. Projects that involve overlays, such as the recently completed West Entrance-to-Madison Junction project, can result in the removal of unneeded social turnouts and the repaving of existing trailheads and turnouts. Relocation or reconfiguration of the trailheads is usually not included in overlay projects unless there are particular problems or safety hazards. Road reconstruction activities may involve minor or major realignments of road segments, and all road features, including trailheads, turnouts, and parking areas, are evaluated during the planning and design process. The following paragraphs note some recently completed and proposed projects. They are outlined more fully in the *Parkwide Road Improvement Plan (1992)*.
 - The West Entrance-to-Madison Junction road segment was repaved in 1992 and 1993; repaving of the road segment from Norris to Canyon began in 1993 and is scheduled for completion in 1994. If planning is completed and funding is available, reconstruction of the Madison Junction-to-Biscuit Basin road segment will begin in 1994 and extend over three to four years in two separate contracts. Trailheads would be reconfigured, much of the Fountain Freight Road would be closed to private vehicular traffic, and a new trailhead would be constructed on the Fountain Freight Road.
 - The Tower-to-Northeast Entrance road segment is scheduled for resurfacing in order to extend the life of the road until such time that it can be reconstructed. This segment would be done following completion of compliance, possibly as early as 1995.
 - Reconstruction of the East Entrance Road will begin in summer 1994 and will continue through at least 1999. Reconstruction of the section of road between Lake Butte and Sylvan Pass will occur first, with the segment between Pelican Creek and Lake Butte scheduled for reconstruction next. The latter segment will include relocation of Nine Mile Trailhead to the south side of the road.
 - The Grand Loop Road segment from Little Thumb Creek to Arnica Creek is scheduled for reconstruction in 1995 or 1996, following completion of compliance. The small section of roadway from Bridge Bay to Lake (the bypass) would also be rehabilitated concurrently with the Little Thumb Creek to Arnica Creek segment.

- Following the Madison Junction-to-Biscuit Basin road project, planning and compliance for reconstruction of the road segments from Madison Junction-to- Norris and from Norris-to-Mammoth will begin. These projects, as described in the *Parkwide Road Improvement Plan*, will result in continual road reconstruction activities in the west and central portions of the park for at least a decade.
- Following completion of compliance, rehabilitation of various abandoned quarries would begin under the state of Wyoming's Abandoned Mine Lands program. The priority would be the Little Thumb Pit area near West Thumb. The stream corridor below the rock quarry would be rehabilitated initially. Additional areas to be rehabilitated are the Ice Lake Pit and the Dry Creek Road area. In the long-term these projects would restore areas of the park to natural conditions.
- Completion of the rehabilitation of the Fishing Bridge Campground along with other rehabilitation projects in the Fishing Bridge/Pelican Creek area as called for in the 1988 *Fishing Bridge Development Concept Plan* would reduce the impact of existing developments and human use on grizzly bears. This project would continue the park's effort to restore areas that are no longer necessary for park management or intensive visitor use. This project will certainly disturb nearby wildlife and other resources and may adversely affect backcountry users in the immediate vicinity while being implemented, but the long-term result will be the restoration of park resources to natural conditions.

Other Park Projects

- The Finding of No Significant Impact for the *Employee Housing Plan* was released in December 1992. Construction of some housing units will occur each year, with facilities at the West Entrance, Canyon, Tower, Lake, and/or East Entrance areas being priority. In 11 developed areas, approximately 125 year-round and 347 seasonal housing units will be upgraded, replaced, or newly constructed if the plan is fully implemented. Current funding levels allow replacement or rehabilitation of only a few quarters each year.
- One possible project that would affect three different areas of the park is the proposed Fishing Bridge campsite replacement project. A draft environmental impact statement is scheduled for release for public review in 1994. If this project is approved, construction could begin as early as 1995. The descriptions below for the Grant Village, Canyon, and Norris areas more fully describe the proposals for these affected areas.
- At Old Faithful, a number of projects are on-going or will soon be underway to implement the approved *Old Faithful Development Concept Plan* (1985). An employee pub, concession dormitory, and bus-repair facility were constructed in 1993. The old employee pub was removed from behind the Old Faithful Inn as were many of the Snow Lodge cabins. Plans are underway to build a new ranger station, backcountry office,

and clinic, replacing unsightly trailers. The Snow Lodge will be replaced with a more appropriate facility designed for winter use. Renovation of the interior of the Old Faithful Inn began in 1992 and will continue through 1995. Some housing will be constructed to replace deteriorated employee quarters.

- A number of projects are planned for the Madison area, possibly starting in 1995 and running through the next 15 or more years, depending on funding. Under the approved *Employee Housing Plan*, employee housing, a recreation center, an addition to the maintenance building, and new office space could be built. Rehabilitation of the wastewater treatment plant is also being considered.
- At Norris, as a result of the approved *Employee Housing Plan* a new maintenance facility, a recreation center, and additional employee housing will be built when funding becomes available. The Fishing Bridge campsite replacement proposal, if approved would site 175 replacement campsites here and rehabilitate the existing campground. A new water treatment plant and a new sewage treatment facility would also be built over the next ten years if this proposal is approved.
- Replacement housing and additional employee housing have been approved for the West Entrance in the *Employee Housing Plan*. However, funding is not currently available for these projects.
- The *Lake/Bridge Bay Development Concept Plan* was completed in 1993. A new service station/auto repair facility and some employee housing will be constructed at Lake to replace those facilities at Fishing Bridge. The campground at Bridge Bay will also be rehabilitated, possibly beginning in 1995. Construction of housing for medical service personnel at Lake will be completed in 1994 and 1995.
- At Grant Village, a number of development projects are planned. In 1994, the concession lodge registration building will be evaluated for relocation or removal and replacement. As part of the Fishing Bridge campsite replacement proposal, if approved, the group campsite loop in the Grant Campground may be reconfigured to 35 individual sites as early as 1995.
- Development projects in the Mammoth Hot Springs area include additional housing rehabilitation and conversion of the former powerhouse to an archival/research library facility (following appropriate compliance), interior renovations of several buildings, and continued work on the interior of the new garage.
- At Canyon, the *Employee Housing Plan* called for new and replacement housing units to be built to replace unsatisfactory quarters, if funds become available. A new wastewater treatment plant will be completed in 1994. Under the approved *Canyon Lodging Plan* (1988), continued replacement of obsolete guest cabins could occur during the next five years, depending on funding. The Fishing Bridge campsite replacement proposal, if

approved, would place 100 campsites in previously disturbed areas adjacent to the existing campground.

- In the Tower-Roosevelt area beginning in 1994, if funding is available, construction of a maintenance building, a community center, the rehabilitation of the wastewater facilities, and employee housing will begin and will probably last beyond 2000. This construction was approved in the *Employee Housing Plan*. Concessioner cabins will also be upgraded and replaced along with rehabilitation of Roosevelt Lodge.
- The Northeast Entrance area is also slated for road and housing construction projects beginning in 1995 and running through 2000. The Yellowstone Institute began student cabin replacement in 1993 at Lamar Buffalo Ranch following issuance of a Finding of No Significant Impact. This project will run through 1995.

A number of other resource restoration and rehabilitation projects are also planned within the park over the next few years. Burial of power and telephone lines has and will continue to occur, and the result of removal of overhead lines from scenic areas is a visual benefit for visitors. Restoration of these utility corridors also becomes possible once the poles and wires are removed. Possible conversion to trails of three miles of the Fountain Freight Road and associated side roads combined with wetland mitigation projects in the Madison Junction-to-Biscuit Basin road rehabilitation proposal would reduce the effect of this corridor on wildlife. Continued efforts to identify, secure funding, and accomplish restoration of abandoned quarries, roads, and gravel pits in various locations throughout the park will be implemented to reduce the impact of these disturbed areas on wildlife and other park resources. These projects continue the park's effort to restore areas that are no longer necessary for park management or intensive visitor use. All projects will certainly disturb nearby wildlife and other resources and may adversely affect backcountry users in the immediate vicinity of the projects while they are being implemented, but the long-term result will be the restoration of park resources, such as wildlife habitat.

Projects Outside the Park

A number of projects exist outside the borders of the park, but still cumulatively effect the Yellowstone ecosystem and backcountry management in particular. The projects currently known include:

- The Wyoming Highway Department is planning reconstruction of 25 miles of US Highway 14/20 between the East Entrance and the east boundary of the Shoshone National Forest. This project would result in year-round access to the park through the Northeast Entrance and should be underway by 1995.
- The Noranda mining companies submitted an application to the state of Montana for a permit to mine gold, silver, and copper in an area two miles northeast of Yellowstone National Park near Cooke City, Montana. Although the proposal is still in the early

stages and an environmental impact statement will need to be completed, some exploration work associated with obtaining the permits is proceeding. Lights from the mine, in particular, may be visible to backcountry users within the northeastern portion of the park. This project along with year-round access to the park from the Northeast Entrance would result in more use of that area of the park.

- Mineral Hill Mine is located at Jardine, Montana, approximately three miles north of the park. This cyanide vat-leaching gold mining operation is continuing, with additional exploratory drilling and ore testing occurring in the adjacent area. Lights from the mine are currently visible in the northern portion of the park. If surficial development of an adjacent area in Crevice Creek occurs, both the disturbance and lights could be visible from backcountry areas of the park.
- Oil and gas leases exist outside the park boundaries, but currently no wells are in production. The only known potential oil or gas exploration near Yellowstone is the proposed Ruby Exploratory oil/gas well on the Line Creek Plateau, south of Red Lodge, Montana, and 33 miles east of Yellowstone National Park.
- The Royal Teton Ranch, located north of the park's boundary, has water rights to geothermal flows from natural springs in the area of Corwin Springs, Montana. Legislation is pending in Congress prohibiting any development of thermal resources within the Corwin Springs Known Geothermal Area. A supplemental environmental impact statement on Royal Teton Ranch development proposals was recently approved by the state of Montana, and it is expected that some construction of facilities could begin in 1994. The facilities are visible from backcountry areas in the northwest corner of the park.

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X. PREPARERS AND CONSULTANTS

PREPARERS

Sue Consolo Murphy, Management Biologist/Planning Team Leader
Beth Kaeding, Editor/Outdoor Recreation Planner
Tom Olliff, Natural Resource Specialist/Planning Team Leader
Doug Ridley, (former) Bechler Subdistrict Ranger/Planning Team Leader
Bill Schneider, Outdoor Recreation Planner

Planning Team:

Brian Chan, Lamar Subdistrict Ranger
Ann-Marie Chytra, Snake River Subdistrict Backcountry Supervisor
Colette Daigle-Berg, Tower Subdistrict Ranger
Bonnie Gafney, Gallatin Subdistrict Backcountry Supervisor
Brian Helms, (former) Old Faithful Subdistrict Backcountry Supervisor
Rick McAdam, Mammoth Subdistrict Backcountry Supervisor
Mark Marschall, Assistant Subdistrict Ranger, Lake
Wes Miles, Lake Subdistrict Backcountry Supervisor
Dave Phillips, Assistant Subdistrict Ranger, Snake River
Dan Reinhart, Lake District Resource Management Coordinator
Paul Slinde, Trail Crew Foreman
Cat Syrbe, Old Faithful Subdistrict Backcountry Supervisor

CONSULTANTS:

Judy Churchwell, Concessions Management Specialist
Steve Frye, (former) Assistant Chief Ranger
Kerry Gunther, Wildlife Biologist
Roderick Hutchinson, Geothermal Geologist
Terry McEaney, Management Biologist
Andrew Mitchell, Helitack Foreman
Mike Murray, Assistant Chief Ranger
Dan Rhodes, Landscape Architect
John Sacklin, Branch Chief, Planning and Compliance
Ruth Scott, Natural Resource Specialist, Olympic National Park
Dan Sholly, Chief Park Ranger
Catherine Smith, Cultural Resource Management Specialist
Anita Varley, Backcountry Office Supervisor
Tammy Wert, (former) Backcountry Office Supervisor
U.S. Fish and Wildlife Service

APPENDICES

MAINTAINED TRAILS - 1993

TRAIL NAME	LOCATION	SUBDISTRICT	ZONE
Sportsman Lake (E)	Glen Creek TH* to Sportsman Lake <i>(Threshold from TH to Snow Pass Jct; BC beyond)</i>	Mammoth/Gall.	TH/BC
Yellowstone River	Yellowstone Rv. TH to jct. Hellroaring Cr. TR	Mammoth/Tower	BC
Mount Holmes/Winter Creek	Mt. Holmes TH to summit of Mount Holmes/fire look.	Mammoth	BC
Trilobite Lake	Mt. Holmes TR to Trilobite Lake	Mammoth	BC
Grizzly Lake	Grizzly Lake TH - Grizzly Lake - jct./Mt. Holmes TR	Mammoth	BC
H. Eaton: Mammoth-Golden Gate	Sepulcher Mt. TH to Glen Creek TH	Mammoth	TH
Electric Peak Spur/S.E. Ridge	Sportsman Lake TR(E) to Electric Peak base of ridge	Mammoth	BC
Electric Peak North Spur	Deaf Jim Cabin to summit along boundary	Mammoth	BC
Cache Lake	Sportsman Lake TR(E) to Cache Lake	Mammoth	BC
Sportsman Lk-Gardner's Hole Cut	Sportsman Lake TR(E) along Gardner River, marked	Mammoth	BC
RR R-O-W/Gardiner-Reese Cr.	SW side Yellowstone River from Gardiner-Reese Creek	Mammoth	TH
Sepulcher Mountain	Sepulcher Mt. TH to summit & jct. Sportsman Lake TR	Mammoth	BC
Snow Pass	Snow Pass TH to jct. Sportsman Lake TR(E)	Mammoth	TH
Clagett Butte	Between Snow Pass and Sepulcher Mt. trails	Mammoth	TH
Upper Mammoth Terraces	Trails around Mammoth Upper Terrace Drive	Mammoth	TH
Mammoth Terraces	Liberty Cap-Minerva-Jupiter Terrace-Upper Terrace Dr.	Mammoth	FC
Beaver Ponds Loop	Beaver Ponds TH/Old Gardiner Rd-jct. Sepul. Mt. TR	Mammoth	TH
Indian Cr./Supt's Campground	Indian Creek CG-old service rd. to SW; ski trail	Mammoth	TH
Mammoth T.W. corral-Snow Pass	Mammoth T.W. corral-YACC camp-Snow Pass TH	Mammoth	TH
Bunsen Peak	Bunsen Peak TH to summit-Osprey Falls TH on old rd	Mammoth	TH
Osprey Falls	Osprey Falls TH on Bunsen Peak rd to Osprey Falls	Mammoth	TH
Wraith Falls	Wraith Falls parking area to Wraith Falls	Mammoth	TH
Undine Falls	Undine Falls parking area to overlook	Mammoth	FC
Lava Creek	Lava Cr. TH-Lava Cr. picnic area	Mammoth	BC
Blacktail Ponds Spur	Lava Cr. TH to jct. Blacktail TR	Mammoth	TH
Blacktail Deer Creek	Blacktail TH - Yellowstone River Trail	Mammoth	BC

MAINTAINED TRAILS - 1993

TRAIL NAME	LOCATION	SUBDISTRICT	ZONE
Rescue Creek	Rescue Creek TH to jct. Blacktail Deer Creek TR	Mammoth	BC
Children's Fire Trail	Blacktail plateau at Frog Rock Curve	Mammoth	FC
Crevice Creek	Bet. Yellowstone Rv. TR and Crevice Cabin/bndry	Mammoth	BC
Boiling River	45th parallel parking area .5mi to Hot/Boiling River	Mammoth	FC
Solfatara Creek	Solfatara Cr. TH/Norris CG to parking S. of Beaver Lk	Mammoth	TH
Bannock	Warm Creek picnic area to Silver Gate/bndry	Lamar	
Pebble Creek	Pebble Creek TH to Warm Creek TH	Lamar	BC
Trout Lake	Trout Lake TH to Trout Lake	Lamar	TH
Lamar River	Soda Butte TH-jct.Frost Lk & Mist Creek Pass	Lamar	BC
Cache Creek	Lamar River TR/Cache Cr. confluence-Republic TH	Lamar	BC
Thunderer Cutoff	Thunderer TH to jct. Cache Creek Trail	Lamar	BC
Miller Creek	Lamar/Miller Cr. conf.-jct. Bootjck Gap/Hoodoo B. TR	Lamar	BC
Canoe Lake	Jct. Miller Cr.Trail - Canoe Lake	Lamar	BC
Bootjack Gap	Jct.Bootjack Gap/Miller Cr. TR - Bootjck Gap TH/bdry	Lamar	BC
Hoodoo Basin	Jct. Hoodoo B/Miller Cr. TR -Hoodoo B. TH/bndry	Lamar	BC
Frost Lake	Mist Creek/Lamar Ri.trails jct. to Frost Lake TH	Lamar	BC
Lamar River Stock Cutoff	Lamar River stock TH to Lamar River Trail	Lamar	BC
Cold Creek Cabin admin. route	Cold Creek Cabin to jct. w/Mist Creek Pass trail	Lamar	BC
Rose Creek	Lamar R.S. up service road along Rose Creek	Lamar	TH
Slough Creek	Slough Creek TH to Upper Slough TH/park bndry	Tower	BC
Slough Creek CG fishing access	along S/E side Slough Cr. from CG north to cascades	Tower	BC
Bliss Pass	Pebble Cr. TR to Slough Creek TR	Tower/Lamar	BC
Buffalo Plateau	Hellroaring TR-Buffalo Plateau-TH/park bndry	Tower	BC
Buffalo Fork	Slough Creek meadow - Buffalo Fork TH	Tower	BC
Hellroaring Creek	Hellroaring TH-jct. Yellowstone River TR-park bndry	Tower	BC
Hellroaring Stock Cutoff	Hellroaring TR S.E. of ford to stock bridge	Tower	BC

MAINTAINED TRAILS - 1993

TRAIL NAME	LOCATION	SUBDISTRICT	ZONE
Coyote Creek	Hellroaring TR-Coyote Creek TH/park bndry	Tower	BC
Specimen Ridge	Specimen Ridge TH to jct. w/Lamar River TR	Tower/Lamar	BC
Agate Creek	Specimen Ridge TR to Agate Creek	Tower	BC
Yellowstone River Overlook	Yellowstone Rv picnic area-jct. Specimen Ridge TR	Tower	BC
Yancey's Hole	Tower Jct. TH to Yancey's Hole (stagecoach route)	Tower	TH
Garnet Hill Loop	Tower Jct. TH around Garnet Hill	Tower	BC
Garnet Hill Spur	Bet. Garnet Hill Loop and Hellroaring TR	Tower	BC
Yancey's Creek	Petrified Tree parking area-Yancey's Hole; T.W. ride	Tower	TH
Lost Lake	Roosevelt Lodge loop around lake to Tower R.S.	Tower	TH
Petrified Tree	Petrified Tree parking area to fenced in tree	Tower	FC
Roosevelt Lodge-Tower Falls	Fr. jct. Lost Lake TR East to Tower Fall C.G.	Tower	BC
Lost Lake Horse Spur	T.W. corrals-jct. Roosevelt Lodge TR.-Tower Falls TR	Tower	TH
Lost Creek Falls	Behind Roosevelt Lodge up Lost Creek to falls	Tower	TH
Tower Creek	Tower Falls CG upstream along Tower Creek, deadends	Tower	BC
Tower Falls	Tower Falls parking area to overlook/base of falls	Tower	FC
Calcite Springs Overlook	Calcite Springs parking area to overlook	Tower	FC
Chittenden Rd/Mt.Washburn (N)	Chittenden Rd. parking area to Summit Mt. Washburn	Tower	TH
Wapiti Lake	Jct. Clear Lake-Ribbon Lake Loop - Wapiti Lake	Canyon	BC
Clear-Ribbon Lakes Loop	Wapiti Lk TH-Clear Lk/Rib.Lk/Wapiti Jct.-Sour Cr.Jct	Canyon	BC
Sour Creek	Cuts off Clear Lk/Rib.Lk Loop-Jct.w/ H. Eaton TR	Canyon	BC
Wrangler Lake	Cuts SE off Sour Creek TR to Wrangler Lake	Canyon	BC
Clear Lake	Clear Lk TH-Clear Lk-Wapiti Lk TR W.of Sour Cr TR	Canyon	BC
South Rim	Canyon Rim Trail-south side, Chitt.Bridge-Artist Pt.	Canyon	FC
Artist Pt-Point Sublime	Artist Point to Point Sublime	Canyon	TH
North Rim	Canyon Rim TR - Chittenden Bridge to Inspiration Point	Canyon	FC
Artist Point	Artist Point parking area to Overlook	Canyon	FC
Uncle Tom's Trail	Uncle Tom's parking area to falls overlook in canyon	Canyon	FC

MAINTAINED TRAILS - 1993

TRAIL NAME	LOCATION	SUBDISTRICT	ZONE
Brink of Upper Falls	Upper Falls parking area to overlook	Canyon	FC
Brink of Lower Falls	Brink of Upper Falls parking area to overlook	Canyon	FC
Lookout Point/Red Rocks	Lookout Point parking area to overlook	Canyon	FC
Grandview Point	Grandview Point parking area to overlook	Canyon	FC
Inspiration Point	Inspiration Point parking area to overlook	Canyon	FC
Canyon Vill.-N.Rim cutoff	P-Loop Canyon Village-North Rim TR at Grandview Pt	Canyon	FC
Silver Cord Cascade spur	From Ribbon-Clear Lake loop to Silver Cord Cascade	Canyon	TH
Seven Mile Hole	Glacial Boulder TH-Seven Mile Hole-Jct.Washburn Spur	Canyon	BC
Mt.Washburn Spur	Summit of Mt. Washburn to Jct.Seven Mile Hole TR	Canyon	BC
Mt.Washburn Trail (S)	Dunraven Pass Picnic Area to Summit/Fire Lookout	Canyon	TH
Cascade Creek	Cascade Cr. TH (just W. of Canyon Jct.) to Cascade Lk	Canyon	BC
Cascade Lake	Cascade Lake TH (picnic area) to Cascade Lake	Canyon	BC
H. Eaton-Cascade Lk-Norris CG	Cascade Lk-Grebe Lk-Wolf Lk-Ice Lk-Norris Campgrnd	Canyon/Norris	BC
Observation Peak	Jct. Cascade Lake TR to Observation Peak Summit	Canyon	BC
Grebe Lake	Grebe Lake TH to Grebe Lake and jct. Howard Eaton	Canyon	BC
Ice Lake	Ice Lake TH to Ice Lake and jct. Howard Eaton	Canyon	BC
Wolf Lake	Cuts off Ice Lake TR N.E. to jct. Howard Eaton	Canyon	BC
Canyon trail ride-Cascade Creek	Canyon corrals - Howard Eaton S. of Canyon Rd	Canyon	TH
Mud Volcano	Mud Volcano parking area around boardwalk	Canyon	FC
H.Eaton:Fishing Bridge-Canyon	Wapiti Lake TH to Fishing Bridge TH thru Hayden V.	Canyon/Lake	BC
Little Gibbon Falls	Little Gibbon Falls TH to Howard Eaton Trail	Canyon	BC
Blowdown/Fire Trail	Parking lot W. of Ice Lake TH around boardwalk	Norris	FC
Norris Geyser Basin	Norris Geyser Basin parking-Back & Porcelain Basins	Norris	FC
Norris Geyser Basin-Norris CG	Norris CG to Norris G.B. past snow course	Norris	FC
Bridge Bay - Natural Bridge TH	D Loop Bridge Bay CG to Natural Bridge Rd/TH	Lake	TH
Hatchery Creek-Bridge Bay	Hatchery Cr along lakeshore - Bridge Bay	Lake	FC

MAINTAINED TRAILS - 1993

TRAIL NAME	LOCATION	SUBDISTRICT	ZONE
Lake Lodge-Fishing Bridge	along old roadbed	Lake	TH
Elephant Back Loop	Elephant Back TH to summit and loop back	Lake	TH
Pelican Creek	Pelican Creek TH up W. side of valley to Wapiti Lk.	Lake	BC
Pelican Valley fishing access	cuts off Pelican TR approx. 1mi from TH	Lake	BC
Raven Creek Cutoff	Pelican Cr./Pelican Cone jct. to Pelican Springs	Lake	BC
Astringent Creek/Broad Creek	Pelican Cr. TR-Astring Cr-Tern/White Lk-Wapiti Lk TR	Lake	BC
Upper Pelican Creek Cutoff	Cutoff bet. Astringent Cr-Pelican Cr. E. of Fern Lk	Lake	BC
Turbid Lake	NineMile TH to Turbid Lake	Lake	BC
Crow Creek cutoff	Ridge tr. connecting Shoshone NF Jones & Crow Cr. TR	Lake	BC
Fern Lake	Cutoff bet. Wapiti Lk - Astringent Cr. via Fern Lake	Lake	BC
Mist Creek Pass	Pelican Creek bridge-Mist Creek Pass-jct. Lamar R. TR	Lake/Lamar	BC
Avalanche Peak	Avalanche Peak TH to Summit	Lake	BC
Storm Point	Indian Pond parking area to Storm Point	Lake	TH
Pelican Creek Nature Trail	W. side of Pelican Creek Bridge to lakeshore	Lake	TH
LeHardy Rapids	LeHardy Rapids parking areas along boardwalk	Lake	FC
Eagle Pass/Mountain Creek	Thorofare TR-N.E. to Eagle Pass TH/park bndry	Lake	BC
Thorofare Trail/E. Shore Yell Lk	Nine Mile TH to Thorofare R.S. and TH/park bndry	Lake	BC
Thorofare-South Boundary Cutoff	Cutoff bet. Thorofare TR/R.S. and South Bndry TR	Lake	BC
Yellowstone Meadows Cutoff	S. Bndry Tr/Thorofare Cr. ford to bndry, Bridger Lk	Lake	BC
Hawk's Rest	Thorofare TR .5mi S. Thorofare R.S. to BTNF bndry	Lake	BC
Mountain Creek Triangle	Thorofare TR cutoff S. side of Mountain Creek	Lake	BC
Dike Creek	Mountain Creek TR to Dike Creek-Shoshone NF bndry	Lake	BC
Lower Ford	Trail Creek TR-Yell. Ri., northern ford-Thorofare TR	Lake	BC
Trail Creek Admin. Route	Bypasses Trail Creek Cabin to south	Lake	BC
Upper Ford	Trail Creek TR-Yell. Ri., southern ford-Thorofare TR	Lake	BC
Natural Bridge Trail	Natural Bridge TH to Natural Bridge	Lake	TH

MAINTAINED TRAILS - 1993

TRAIL NAME	LOCATION	SUBDISTRICT	ZONE
DeLacy Creek/Shoshone E.shore	DeLacy Creek TH along E.shore Shoshone Lake-Outlet	Grant/Snake River	BC
West Thumb Overlook Loop	West Thumb Geyser Basin-overlook W. of road	Grant	TH
West Thumb Geyser Basin	West Thumb Geyser Basin parking area-boardwalk loop	Grant	FC
Duck Lake	West Thumb parking area to Duck Lake	Grant	TH
Riddle Lake	Riddle Lake TH to Riddle Lake	Grant	BC
S.Boundary/Lynx Creek	Upper Snake River/S. bndry TR to Thorofare	Snake R/Lake	BC
Trail Creek	Heart Lake-Heart Rv.jct -Yellowstone R. or Thorofare TR	Snake R/Lake	BC
South Shore Shoshone Lake	Lone Star Geyser-Shoshone Geyser Basin-Outlet	O.F./Snake R.	BC
North Shore Shoshone Lake	DeLacy Creek TR at Shoshone Lk-Shoshone Geyser Basin	Snake River	BC
Shoshone Geyser Basin	through Shoshone Geyser Basin	Snake River	BC
Shoshone G.B. horse cutoff	From S.shore Shoshone Lake TR, detour west around GB	Snake River	BC
Dogshead	Shoshone/Dogshead TH to Shoshone Lake outlet	Snake River	BC
Lewis River Channel	Shoshone/Dogshead TH along Lewis Rv channel to outlet	Snake River	BC
(South) Pitchstone Plateau	Phantom/Pitchstone TH to jct. Mountain Ash Cr. TR	Snake River	BC
Beula Lake	Beula Lake TH to Beula Lake	Snake River	BC
Heart Lake	Heart Lake TH-Heart Lk-Basin Cr.Lk-jct. S.Bndry TR	Snake River	BC
Mount Sheridan	Heart Lake to summit, Mount Sheridan	Snake River	BC
S. Boundary/S. Entrance-Harebell	S.Bndry (E)TH-Snake River Hot Springs-Harebell Jct.	Snake River	BC
S. Boundary/Harebell-Fox Creek	Harebell Jct. - Big Game Ridge -Upper Snake Rv-Fox Cr.	Snake River	BC
Snake River Cutoff	Bet. Harebell cutoff and S.Boundary TR	Snake River	BC
Harebell Cutoff	From S.Boundary TR at Harebell Jct. to Basin Cr. cutoff	Snake River	BC
Snake River Canyon	From jct. Heart Rv. TR/Basin Cr.cutoff along upper Snake River to South Boundary TR	Snake River	BC
Basin Creek cutoff	Bet. Heart Lake TR and S. Boundary TR along Basin Cr.	Snake River	BC
Heart River	Bet. Heart Lk.outlet and Snake Rv.Canyon along Heart R.	Snake River	BC
Two Ocean Plateau	Bet. S.Bndry TR/Fox Cr. and Trail Creek TR	Snake River	BC
Trail Creek/Two Ocean Cutoff	Triangle cutoff bet. Trail Creek TR and Two Ocean TR	Snake River	BC
Coulter Creek	Bet. S.Bndry TR W. of Harebell Jct. - Coulter TH/bndry	Snake River	BC

MAINTAINED TRAILS - 1993

TRAIL NAME	LOCATION	SUBDISTRICT	ZONE
Bechler Meadows	Boundary Cr. Tr.NE to N.end Bechler Meadows	Bechler	BC
Fish Lake-Mtn.Ash Cutoff	Fish Lake TH to Mountain Ash Creek Trail	Bechler	BC
Union Falls Spur	Mountain Ash Cr. Trail to Union Falls/end	Bechler	BC
North Fork Spur	From Union Falls TR to Scout Pool	Bechler	BC
Mountain Ash Creek	Jct. Bechler Ri. Tr.-Union Falls Spur - Grassy Lake TH	Bechler	BC
Boundary Creek	Bechler R.S. - Dunanda Falls - Buffalo Lake TH	Bechler	BC
Robinson Cr-Buffalo Lake Loop	Bechler R.S.-Robinson Lake-Buffalo Lake	Bachler	BC
Bechler River Cutoff	Bechler R.S. - Bechler River Trail	Bechler	BC
Rocky Ford Cutoff	Bechler Meadows Tr. - Bechler River Trail	Bechler	BC
North Pitchstone	Bechler Ri. Tr. .5mi N. of Twister Falls-dead end 2mi.	Bechler	BC
Bechler River	Cave Falls - Mtn.Ash Creek/Three Rivers	Bechler	BC
Bechler Meadows Cutoff	Boundary Cr.-Bechler Meadows-Bechler Ri.Trail	Bechler	BC
Cascade Creek spur/Falls R.cutoff	Cascade Creek TH northeast to Mountain Ash Creek	Bechler	BC
Terraced Falls spur	Mountain Ash Creek TR Northwest to Terraced Falls	Bechler	BC
S.Bndry:Grassy Lake-S. Entrance	Grassy Lake TH to Snake River Ranger Station	Bechler/Snake R.	BC
S.Bndry: Calf Creek-Bechler R.S.	Calf Creek TH on Grassy Lake Rd. to Bechler R.S.	Bechler	BC
Mary Mountain/Nez Perce TR	Nez Perce Creek TH to Alum Creek in Hayden Valley	O.F./Canyon	BC
Sentinel Meadows	Sentinel Meadows TH to Sentinel Meadows	Old Faithful	BC
Imperial Meadows	Imperial Meadows TH-jct.Fairy Cr.TR-Sen. Meadows TR	Old Faithful	BC
Little Firehole Meadows/Fairy Cr	Mystic Falls-Imperial Geyser-Imperial Meadows TH	Old Faithful	BC
Fairy Falls (N)	Goose Lk. barricade to Fairy Falls	Old Faithful	BC
Fairy Falls (S)	Steel Bridge 4mi North of O.F. to Fairy Falls	Old Faithful	TH
Mystic Falls	Biscuit Basin TH to Mystic Falls	Old Faithful	TH
Biscuit Basin	Biscuit Basin parking area around boardwalk loop	Old Faithful	FC
Fountain Paint Pots	Fountain Paint Pots parking area around boardwalk	Old Faithful	FC
Black Sand Basin	Black Sand Basin parking area around boardwalk loop	Old Faithful	FC
Three Senses Nature Trail	Near N. end Firehole Lake Drive around Firehole Lake	Old Faithful	FC
Fern Cascades	H.Eaton TH/O.F. housing area to Fern Cascades	Old Faithful	TH

MAINTAINED TRAILS - 1993

TRAIL NAME	LOCATION	SUBDISTRICT	ZONE
H. Eaton: O.F. to Lone Star	H. Eaton TH to Lone Star Geyser	Old Faithful	BC
Lone Star	Lone Star TH to Lone Star Geyser on old road	Old Faithful	TH
Kepler Cascades	Kepler Cascades parking area to overlook	Old Faithful	FC
Kepler Cutoff	Mallard Lake TH to Kepler Cascades via old roadbed	Old Faithful	TH
Spring Creek	Spring Creek TH down Spring Cr to jct. Lone Star TR	Old Faithful	BC
Upper Geyser Basin	Old Faithful V.C. to Morning Glory Pool & Daisy Group	Old Faithful	FC
Observation Pt-Solitary Geyser	Upper Geyser Basin tr to Obs. Pt.-Solitary Geyser	Old Faithful	FC
UGB-Biscuit Basin trails	Morning Glory and Daisy Group-Biscuit Basin trails	Old Faithful	FC
Punch Bowl-Black Sand Basin	Punch Bowl Spring to Black Sand Basin on old roadbed	Old Faithful	FC
Mallard Lake	Mallard Lake TH to Mallard Lake	Old Faithful	BC
Mallard Creek	Mallard Creek TH to Mallard Lake	Old Faithful	BC
Summit Lake	jct.w/Mystic Falls TR - Summit Lake TH/park bndry	Old Faithful	BC
Gneiss Creek	Seven Mile Bridge to Gneiss Creek TH	Madison/Gallatin	BC
Harlequin Lake	Harlequin Lake TH 1.5mi W. Madison Jct. to lake	Madison	TH
Purple Mountain	Madison Jct. TH to summit of Purple Mountain	Madison	BC
Terrace Spring	Terrace Spring parking area around boardwalk	Madison	FC
Monument Geyser Basin	Monument Geyser Basin TH to Monument Geyser Basin	Madison	BC
Firehole Canyon Swimming Hole	Parking area on Firehole Canyon Drive to waterline	Madison	FC
Artist's Paint Pots	Artists Paint Pot parking area to paint pots	Madison	TH
Fawn Pass/Fan Creek	Fawn Pass/Fan Creek TH to Glen Creek TH	Gallatin/Mammoth	BC
Fan Creek	Cutoff between Fawn Pass TR-Sportsman Lake Jct.	Gallatin	BC
Bighorn Pass	Bighorn Pass TH(W) to Bigh.Pass TH(E)/Indian Cr	Gallatin/Mammoth	BC
Daly Creek	Daly Creek TH to Skyrim Trail/park bndry	Gallatin	BC
Sky Rim	Jct. Daly Cr.TR to Sheep Mountain/Shelf Lake	Gallatin	BC
Black Butte	Black Butte TH to Bighorn Peak Summit/Sky Rim TR	Gallatin	BC
Black Butte-Daly Cr. Cutoff	Black Butte TR to Daly Creek TR E.of Lava Butte	Gallatin	BC

MAINTAINED TRAILS - 1993

TRAIL NAME	LOCATION	SUBDISTRICT	ZONE
Specimen Creek	Specimen Cr. TH to Shelf Lake and park bndry	Gallatin	BC
Crescent Lake/High Lake	Jct. Specimen Creek TR-Crescent Lk-High Lk-Sports.Jct.	Gallatin	BC
Sportsman Lake (W)	Jct. Specim. Cr. TR up E. fork Specimen Cr-Sports Lk	Gallatin	BC
Fawn Pass-Bighorn Pass Cutoff	Connects Fawn-Bighorn Pass TRs 5mi. E. of Hwy 191	Gallatin	BC
Bacon Rind Creek	Bacon Rind TH to park boundary	Gallatin	BC
*Nez Perce National Historic Trail	Route overlaps existing trails only on portion of trail; additional trail sections may be developed to accommodate backcountry users of this trail	Gallatin Madison Old Faithful Lake	BC BC/TH TH/BC TH/BC
Continental Divide N.S. Trail	Route overlaps existing trails through park	Bechler Old Faithful Snake River	BC TH/BC BC

* Backcountry trail not identified in entirety during establishment of National Historic Trail; route was identified as roadside route through much of the park

HISTORICALLY ABANDONED TRAILS AS OF 1993

TRAIL NAME	LOCATION	SUBDISTRICT	ZONE
H.Eaton: Grizzly Lk-Norris	Grizzly Lake TH S. to approx. 1mi North of Norris	Mammoth/Norris	
H.Eaton: Blacktail-Hellroaring	Blacktail Creek east to Hellroaring TH	Mammoth/Tower	
H.Eaton: Golden Gate-Indian Cr.	Glen Creek TH south to Indian Creek	Mammoth	
H.Eaton: Indian Cr-Winter Cr.	Indian Creek south to Winter Creek ford	Mammoth	
Reese Creek-Electric Creek	Stephens Cr. rd-Reese Creek-Electric Creek	Mammoth	
Rainbow Lake service rd	Stephens Cr. rd south to Rainbow Lake	Mammoth	
Chalcedony Creek	Parallels Lamar Rv. on s.side to Specimen Ridge TR	Lamar	
Soda Butte	Confluence of Soda Butte/Lamar to jct. Lamar River TR	Lamar	
Republic Pass Spur	Up E.fork Cache Creek, 4.8km upstream fr. Cache Cabin	Lamar	
Crandall Pass	Follows E. fork of Cache Creek N. of Cache Mountain	Lamar	
H.Eaton: Buffalo P.A.-Washburn	connects w/Old Antelope Creek Trail/in BMA	Tower	
Bison Peak Ridge	Buffalo Pens to Slough Creek; Lamar R.S.-Lower Slough	Tower	
Little Buffalo Pack Trail	off Buffalo Plateau TR, deadends nr. Lamar/Slough confl	Tower	
Junction Butte	Baronett's Bridge pullout-Jct.Butte-Little Buffalo	Tower	
Garnet Hill cutoff-Tower R.S.	Garnet Hill TR-NE ent. rd-Tower Jct.	Tower	
Slough Creek fishing access	Old rd-Start of Slough Creek Rd. to Slough Creek	Tower	
South Rim Drive/Old Artist Pt	2nd pullout E. Chitt.Bridge to Artist Point along rim	Canyon	
H.Eaton: Chitt.Brid.-Glacial Bld	Chittenden- Crystal Falls-Glacial Boulder Trail	Canyon	
Grebe Lake old fire rd cutoff	cuts off Grebe Lake trail, follows old fire road	Canyon	
Trout Lake service rd	Grand Loop Rd. at Trout Creek to W. end Hayden Valley	Canyon	
Beaver Lake	Around Beaver Lake	Mammoth/Norris	
H.Eaton: Norris-Madison-O.F.	Norris CG-Gibbon Falls-Firehole Lk-O.F.	Norris/O.F./Madison	
Clear Creek	Sylvan Lake to Thorofare Trail	Lake	
Storm Point-Pelican Creek CG	S. side E. Entrance rd bet. Storm Pt and old CG	Lake	

HISTORICALLY ABANDONED TRAILS AS OF 1993

TRAIL NAME	LOCATION	SUBDISTRICT	ZONE
H.Eaton: Pelican Cr TH to CG Trail Lake	bet. old Pelican Creek CG and Pelican Creek TH Trail Creek trail south to Trail Lake	Lake Lake	
West Thumb to Grant Village H.Eaton: West Thumb-DeLacy Cr H.Eaton: Duck Lake-Arnica Cr. Beach Lake	E. side Grand Loop Rd, West Thumb GB to Grant CG parallels Craig Pass Rd, crossed S. to DeLacy Creek West side of West Thumb-Lake road Arnica Creek to Beach Lake	Grant Grant Grant Grant	
Dogshead, old road South Entrance H.Eaton: S.Entrance-West Thumb S.Entrance-Moose Falls	Dogshead TH north to Grant Village Bet. South Entrance and Heart Lake TH along Lewis Rv Paralleled S.Entrance Rd. on west side Powerline W. of S.Entrance Rd. to Moose Falls	Snake River/Grant Snake River Snake River Snake River	
Nez Perce Cabin-Mary Mtn TR **Old Fountain H.Eaton: Divide-DeLacy-Dry Cr.	past cabin, crosses Nez Perce Creek to join Mary Mtn TR Firehole River picnic area to West Entrance Rd Between Divide Overlook TR-DeLacy-Craig Pass	Old Faithful Old Faithful Old Faithful	
Cougar Creek abandoned cabin	Cougar Creek TR to dead end at former cabin site	Madison	
Robinson Lake loop	Around Robinson Lake off of West Boundary trail	Bechler	
West Boundary	Cuts off S. of Bacon Rind TR along bndry to 191	Gallatin	

** Route may be included in reassessment of need for Nez Perce National Historic Trail

TRAILS NEWLY PROPOSED FOR ABANDONMENT - 1994

Bunsen Peak TW horse trail	Mammoth T.W.corrals on Bunsen rd- Osprey Falls TH	Mammoth	TH
Yell.River fishing access	Baronett's Bridge pullout to Lamar-Yell. confluence	Tower	BC
Antelope Creek Trail	Tower Fall to Buffalo picnic area	Tower	
Old Soldier's Trail	parallels W.Side Slough Creek from CG to Jct. Buffalo Fork Trail	Tower	
! Otter Creek corrals to Mary Mtn Plateau Trail	NPS horse corrals to Mary Mtn/Alum Creek TH Cygnet Lake south to Mary Lake	Canyon Canyon	TH BC
Turbid Lake Rd. Jones Pass Mountain Creek Old Howell Creek	Pelican TH to Turbid Lake on old roadbed E. from Turbid Lake TR to Jones Pass/park bndry Admin. route from Eagle Peak trail-6D5 to bndry Admin. route parallels Howell Creek between 6D5-6D6	Lake Lake Lake Lake	
Divide Overlook Lone Star-H.Eaton cutoff	Jct. Spring Creek Trail and old trail, to lookout site Firing range cutoff between Lone Star rd & H.Eaton TR	Old Faithful Old Faithful	BC
Cougar Cr.- Winter Creek	Winter Cr. TR S. of Mt.Holmes to Cougar Cr. TR	Madison	
W.Bndry: W.Yell.- Buffalo Lk Daly Cr-Boundary Spur North Daly Cr-Boundary Spur South Sportsman Lake-Mol Heron	Swath along west bndry West Yell-S.Riverside-Buff.Lk Off of Daly Creek TR to Gallatin NF bndry Off of Daly Creek TR to Gallatin NF bndry From Sportsman Lake north to Gallatin NF bndry	Bechler/Gallatin Gallatin Gallatin Gallatin	BC

YELLOWSTONE TRAILHEADS

Trailheads located on park roads

1K1 SEPULCHER MOUNTAIN
1K2 SNOW PASS
1K3 GLEN CREEK
1K4 BUNSEN PEAK
 OSPREY FALLS
1K5 BIGHORN PASS
1K6 MT. HOLMES
1K7 SOLFATARA NORTH
1K8 GRIZZLY LAKE
1N1 YELLOWSTONE RIVER
1N2 RESCUE CREEK
1N3 LAVA CREEK
 WRAITH FALLS
1N4 BEAVER PONDS
1N5 BLACKTAIL CREEK NORTH
2K2 TOWER JUNCTION
 TOWER FALLS
 TOWER CREEK
 YANCEY'S HOLE
 GARNET HILL
 ROOSEVELT LODGE/LOST LAKE
 PETRIFIED TREE/LOST LAKE
 LOST CREEK FALLS
2K4 SPECIMEN RIDGE
2K5 SLOUGH CREEK
 SOLDIERS' TRAIL/BUFFALO CREEK CUTOFF
2K6 MOUNT WASHBURN NORTH
2K7 YELLOWSTONE RIVER PICNIC AREA
2K8 HELLROARING
3K1 SODA BUTTE/LAMAR
3K2 PEBBLE CREEK
3K3 THUNDERER
3K4 WARM CREEK
 TROUT LAKE
4K1 SOLFATARA CREEK
4K2 ICE LAKE
 LITTLE GIBBON FALLS
4K3 GREBE LAKE

4K4 CASCADE CREEK
4K5 CASCADE LAKE
4K6 GLACIAL BOULDER
4K7 WAPITI LAKE
CLEAR LAKE (AT UNCLE TOM'S PARKING LOT)
4K8 ARTIST POINT
4K9 DUNRAVEN PASS PICNIC AREA
ALUM CREEK/MARY MOUNTAIN EAST
5K1 BRIDGE BAY MARINA (Boat)
5K2 FISHING BRIDGE
ELEPHANT BACK
AVALANCHE PEAK
NATURAL BRIDGE
5K3 PELICAN VALLEY
5K4 SEDGE BAY (Boat)
5K5 NINE MILEPOST/THOROFARE
7K1 GRANT VILLAGE MARINA (Boat)
7K2 DeLACY CREEK
7K3 RIDDLE LAKE
8K1 SHOSHONE/DOGSHEAD
8K2 N.SHORE LEWIS LAKE
8K3 LEWIS LAKE DOCK (Boat)
8K4 PHANTOM/PITCHSTONE
8K5 SOUTH BOUNDARY WEST
8K7 SNAKE RIVER/SOUTH BOUNDARY EAST
8N1 HEART LAKE
8N3 FLAGG RANCH
9K1 BECHLER RANGER STATION
9K2 CAVE FALLS
0K1 LONE STAR
0K2 BECHLER/SHOSHONE/HOWARD EATON
0K3 MALLARD LAKE
0K4 BISCUIT BASIN
0K5 STEEL BRIDGE/FOUNTAIN RD EXIT/FAIRY FALLS
0K6 SENTINEL MEADOWS
0K7 NEZ PERCE CREEK/MARY MOUNTAIN
0K8 IMPERIAL MEADOWS/FEATHER LAKE
0K9 MALLARD CREEK
SPRING CREEK
MK1 MADISON JUNCTION/PURPLE MOUNTAIN
MONUMENT GEYSER BASIN
HARLEQUIN LAKE
WK1 DALY CREEK
WK2 BLACK BUTTE

WK3 SPECIMEN CREEK
WK4 BACON RIND
WK5 FAWN PASS
WK6 BIGHORN PASS
WK7 GNEISS CREEK
WK8 SEVENMILE BRIDGE
WK9 WEST ENTRANCE

Trailheads located on park/forest boundary

1N7 CREVICE
2N1 COYOTE CREEK
2N2 BUFFALO PLATEAU
2N3 BUFFALO FORK
2N4 UPPER SLOUGH
2N5 UPPER HELLROARING
3N1 REPUBLIC PASS
3N2 CANOE LAKE
3N3 BOOTJACK GAP
3N4 HOODOO
3N5 FROST LAKE
6K1 EAGLE PASS
6K2 THOROFARE
6K3 SNAKE RIVER/FOX CREEK
6K4 BRIDGER LAKE
6K5 HAWKS REST
8K6 BEULA LAKE
8K8 COLTER/WOLVERINE
9K3 FISH LAKE
9k4 CALF CREEK
9K5 CASCADE CREEK
9K6 GRASSY LAKE
9K7 ROBINSON CREEK
9K8 BUFFALO LAKE
9K9 SUMMIT LAKE

YELLOWSTONE TRAILS NOT SUITABLE FOR STOCK USE

**Osprey Falls Trail
Beaver Ponds Trail
Wraith Falls Trail
Upper Terraces
Sheepeater Trail
Trout Lake Trail
Tower Falls Trail
Seven Mile Hole Trail
Artist Point/Point Sublime Trails
North/South Rim Canyon Trails
Storm Point Trail
Avalanche Peak Trail
West Thumb Overlook Trail
Shoshone Geyser Basin Trail
Monument Geyser Basin
Artist Paint Pots
Harlequin Lake Trail**

WINTER THRESHOLD SKI TRAILS

TRAIL NAME	LOCATION	SUBDISTRICT
Black Sand Basin	between Daisy Group and Black Sand Basin	Old Faithful
Biscuit Basin	Morning Glory to Biscuit Basin on old roadbed	Old Faithful
Mystic Falls	Biscuit Basin to Mystic Falls on summer trail	Old Faithful
Fairy Falls	Steel bridge trailhead to Falls	Old Faithful
Powerline	Morning Glory Pool-Fairy Falls TH along e. side of rd	Old Faithful
Kepler Cutoff	between Lodge Kepler Cascades, connects to Lone Star	Old Faithful
Riverside	From West Entrance along Barns road	West/Gallatin
Middle Creek	From East Entrance up Middle Creek	Lake/East
Natural Bridge	Natural Bridge TH/Grand Loop Rd. to Natural Bridge	Lake

WINTER THRESHOLD SKI TRAILS

TRAIL NAME	LOCATION	SUBDISTRICT
Upper Terrace Loop	Mammoth Upper Terrace Drive in summer	Mammoth
Bunsen Peak Road	Top of Golden Gate looping E-N to YACC camp on rd	Mammoth
Glen Creek	Top of Golden Gate to connect w/Snow Pass Trail	Mammoth
Snow Pass	Between Upper Terrace Drive and Glen Creek Trail	Mammoth
Sheepeater	On Swan Lake Flats bet. Sheepeater Cliffs & Bunsen Pk	Mammoth
Bighorn Loop	Behind Indian Creek C.G. toward Bighorn Pass	Mammoth
Indian Creek Loop	Around Indian Creek C.G. on powerline	Mammoth
Baronette	Lower Soda Butte bridge to Upper bridge	Lamar
Bannock	Warm Creek picnic area to park bndry	Lamar
Blacktail	Blacktail Deer Plateau Drive in summer	Tower/Mammoth
Lost Lake	Petrified Tree to Calcite Springs Overlook & Tower Jct.	Tower
Chittenden Loop	Tower C.G. to top of "gut road", loops down main road	Tower
Tower Falls	Tower Jct. along unplowed road to Tower Falls	Tower
Roller Coaster	Around perimeter of Canyon C.G.	Canyon
Canyon Rim	Along North Rim drive summer road	Canyon
Cascade Lake	Canyon warming hut/admin area to jct. summer trail	Canyon
Inspiration Point	Follows N. Rim drive spur road to the point	Canyon
Spring Creek	Spring Creek TH down creek to Lone Star Trail jct	Old Faithful
Howard Eaton (O.F.)	housing area to Lone Star on old wagon road route	Old Faithful
Fern Cascades	housing area to Fern Cascades and H.Eaton trailhead	Old Faithful
Lone Star Geyser	Lodge cabins to Lone Star via summer service road	Old Faithful
Mallard Lake Trail	O.F.Lodge cabins to Mallard Lake	Old Faithful
Mallard Creek Trail	Mallard Lake to O.F./Madison road and U.G.B.	Old Faithful

MAJOR ADMINISTRATIVE STRUCTURES IN THE BACKCOUNTRY

Historic Patrol Cabins/Lookouts/Barns

Buffalo Lake Patrol Cabin
Buffalo Plateau Patrol Cabin
Cache Creek Patrol Cabin
Clear Creek Patrol Cabin
Cougar Creek Patrol Cabin
Crevice barn
Crevice Mountain Patrol Cabin
Crystal Springs Patrol Cabin*
Fawn Pass Patrol Cabin
Fern Lake Patrol Cabin
Fox Creek Patrol Cabin
Harebell Patrol Cabin
Heart Lake barn
Heart Lake Patrol Cabin
Hellroaring Patrol Cabin
Hellroaring shed
Lamar Mountain Patrol Cabin
Lower Blacktail Deer Creek barn
Lower Blacktail Deer Creek Patrol Cabin
Calfee Creek Patrol Cabin
Mary Lake Patrol Cabin
Mount Holmes Fire Lookout
Mount Sheridan Fire Lookout
Mount Washburn Fire Lookout
Nez Perce Patrol Cabin
Park Point Patrol Cabin**
Pelican Cone Fire Lookout
Pelican Springs Patrol Cabin
Slough Creek Patrol Cabin
Slough Creek Scout Cabin
Thorofare barn
Thorofare Patrol Cabin
Trail Creek barn
Trail Creek Patrol Cabin
Upper Blacktail Deer Creek barn
Upper Blacktail Deer Creek Patrol Cabin
Upper Miller Creek Patrol Cabin

* In process of being relocated to Three Rivers, 1993-94

** Accidentally burned in 1992; replacement would be non-historic

Cabins Yet to Be Inventoried for Historic Value

Cold Creek Patrol Cabin
Daly Creek Patrol Cabin
Elk Tongue Patrol Cabin
South Riverside Patrol Cabin

Non-Historic Cabins

Cabin Creek Patrol Cabin
Cove Patrol Cabin
Deaf Jim Patrol Cabin
Howell Creek Patrol Cabin
Outlet Patrol Cabin
Sportsman Lake Patrol Cabin
Three Rivers Patrol Cabin
Union Falls Patrol Cabin
Winter Creek Patrol Cabin