Backcountry Recreation Management

Program Guidance

Backcountry Recreational Use Planning

Each area with a sufficient level of backcountry recreational use must develop a backcountry recreational use management plan. Several options exist for completing these plans. The plan can be a component of the park general management plan; it can be a single integrated plan that addresses a broad spectrum of recreational activities, such as a park backcountry management plan, which discusses all backcountry recreational uses; or it can be an activity-specific document such as a wilderness management plan, river use management plan, a cave use management plan, etc.

For most parks with significant levels of backcountry recreational use, the relatively brief discussion contained in a general management plan will not be adequate. These parks will require the preparation of broad spectrum and/or activity-specific plans. The scope of these plans will vary from park to park. In some parks, a single plan may be adequate to address all types of backcountry visitor use; in other parks, activity-specific plans may be required; and some parks may have both broad spectrum and activity-specific plans. Specific types of recreational use plans most often prepared are: wilderness, stock use, climbing, cave use, river use, backcountry use, and off-road vehicle plans for beach use. If multiple recreation use plans are developed for different topical areas, cumulative effects of the different activities must be considered.

By definition, any recreational use will result in some level of impact. The backcountry planning process is not as much a process of determining how to prevent or mitigate any human-induced change as well as deciding how much change will be allowed to occur and whether there is an adverse impact or an impairment to one or more park resources or values whose protection is essential to the purposes for which the park area was established. Determining appropriate season of use, type of use, and amount of use, and influencing visitor behavior is required for the appropriate preservation and management of park resources. This includes sensitive resources such as endangered species or managing National Register of Historic Places properties where resource protection goals are absolute. In all cases, integration of appropriate research data, management constraints, and public interests must be combined to achieve a successful plan. One widely accepted method for accomplishing this is the "Limits Of Acceptable Change" model (G. Stankey et al.).

In the development of backcountry recreational use plans, it is critical that the plan focus on visitor use as opposed to focusing on the developments being considered to facilitate that use with the paramount goal of minimizing development. While it may be true that the actual developments cause the greatest environmental impact, it is critical to remember that developments are only constructed in support of the recreational use and are not the final goal of the planning effort. It would be appropriate, for example, to complete a visitor use plan for an area before completing a trail development plan for that same area.

Any restrictions on use should directly relate to the establishment of specific desired future conditions in the general management plan, management objectives identified in the plan, or resolve specific, documented impacts. Where restrictions are imposed, they should be implemented on a graduated scale from indirect controls such as public education to direct controls such as use limitations and area closures.

A wide range of preferences for recreation use opportunities exists among NPS visitors. The wide diversity of resource opportunities and settings found in parks provides the opportunity for a broad segment of the public to pursue the particular recreational experiences they are seeking. These recreation use opportunities are defined by various physical, biological, managerial, and social conditions. Each of these conditions can be best characterized as a continuum. For example, access can range from a paved highway to a primitive trail. High quality recreation experiences can be derived at any point along this continuum, depending on the values and purposes of the recreationists. Superintendents should develop an understanding of the various conditions, both existing and desired, and ensure that actions taken avoid unacceptable impacts on resources, and, where that can be accomplished, preserve desired recreational opportunities.

One common technique for preserving this diversity of high quality experiences is the stratification of use levels through zoning. In developing backcountry use management plans, zoning has proven useful as a means of achieving management objectives and providing different experiences for satisfying various user demands. Managers may want to establish different recreational use zones ranging from areas with high concentrations of use to pristine areas with very little use. This management concept has broad applicability from management of boating to off-road vehicle use to river use. However, managers need to have a thorough understanding of zoning as it applies to wilderness and ensure that zoning does not adversely affect wilderness values.

Persons assigned responsibilities for preparation of backcountry recreational use plans should have both educational and practical experience in both managing visitor use and natural resources. In addition, persons with cultural resource management expertise should be involved. Depending on plan complexity, expertise in the following areas may be needed: wilderness management, environmental compliance, law enforcement, interpretation, maintenance, and concessions management. Most plans will be completed at the park level with input from regional and support offices as requested.

Public participation is essential for the development of a successful plan. The amount of public involvement will be determined on a case-by-case basis, based on general guidance concerning public participation in the planning process.

All backcountry recreational use management plans are public documents developed through a sequential planning process. Compliance with the National Environmental Policy Act through preparation of an environmental assessment or an environmental impact statement, depending on the level of impact and public concern associated with the proposed action, is required on all plans. Since a major purpose of the compliance document is to assist in the decision-making process by analyzing alternative actions, it must be prepared prior to the final plan except under special circumstances. The environmental compliance document can be either a separate document or integrated with the draft plan.

Backcountry Recreational Use Plan Requirements

A backcountry management plan should address previous planning history, authorities, affected resources, visitor use analyses, regional/national recreational context, existing and proposed facilities, specific management objectives, the proposed actions, commercial and/or concessions activity, monitoring, plan update and review, and implementation responsibilities. The following sections describe the activities that resource managers should assist in conducting.

Affected Resources

The plan must identify all resources that could be affected by visitor recreational activities or associated developments. This should include natural and cultural resources as well as important aspects of the visitor use experience. The plan must discuss the current condition of those resources; the potential impact to these resources of the proposed uses; the implications of the natural components, such as soils, water courses, and sensitive resource locations, for uses and facility design; and whether or not mitigation is currently needed to achieve management objectives. Prior to approval of the plan, adequate information on critical resources must be developed to determine the likelihood of potential impact. Surveys for endangered species and associated critical habitat and archeological resources must precede implementation of any actions with possible adverse effects. If any species listed under the Endangered Species Act is known or suspected in the area, an informal and, if warranted, formal consultation under Section 7 of the Endangered Species Act must be completed (see RM 77-8, in preparation).

Monitoring Program

The plan must outline a monitoring program, which will be used to determine whether the management objectives are being achieved. The monitoring program must be capable of identifying specific mitigation actions directed at specific resources and locations, periods of time, and types and amount of visitor use. Some components of monitoring may be limited to regular observation to determine the extent of facility deterioration. Other components may be needed to detect changes to resource conditions. Still others may relate to visitor use. For monitoring components other than simple observations, the protocol for the monitoring plan, including a statistically valid sampling design, should be peer reviewed by more than one reviewer with relevant expertise.

Special Types of Plans

Wilderness management plan

Each park with designated, proposed, potential, recommended, or suitable/study area wilderness is required by NPS Management Policies and DO 41 Wilderness Preservation and Management to develop a wilderness management plan. This plan will preferably be an integrated plan that addresses all visitor recreational uses (e.g., hiking, stock use, caving, river use) and other ongoing or projected activities in the wilderness area and provides for the accountability, consistency, and continuity of the park's wilderness program, including the assessment of "minimum requirement" (Section 4 (c) of the Wilderness Act) for all activities affecting this resource. Additional guidance on the development of wilderness management plans may be found in DO/RM 41.

Cave use management plan

Caves contain cultural, paleontological, biological, and/or geological resources, which are essentially nonrenewable. In recognition of this, cave use management plans for areas with numerous cave resources or particularly outstanding cave resources should consider a full range of use levels. These use levels should range from caves that are open to all human use without permit to caves that are closed to all use including management and research use. See also, in this Reference Manual, Cave Resources Management. (See also Section 6.3.11.2 of NPS Management Policies, Chapter 6)

Stock use management plan

See the discussion on stock use management plans in this Reference Manual in Livestock Management.

Backcountry Recreational Use Management Issues and Strategies

The six most common backcountry management issues are trail deterioration, campsite deterioration, littering, human waste, wildlife impacts, and crowding and visitor conflict,. Deterioration of trails and deterioration of campsites are the most common and widespread impacts in backcountry settings. Except for crowding and visitor conflict, these management issues are discussed in detail below, stressing the use of natural resource information in techniques appropriate for addressing them.

1. Trail management

The majority of environmental impacts from recreational trails result from inappropriate trail design, location, construction, and maintenance. Thorough site analysis, careful planning and design, quality construction, and thoughtful maintenance and monitoring, backcountry resources will be protected while affording a reasonable standard of safety and comfort for the user.

Sustainability

Sustainability of backcountry trail corridors is defined as the ability of the travel surface to support current and anticipated appropriate uses with minimal impact to the adjoining natural systems and cultural resources. Sustainable trails have negligible soil loss or movement and allow the naturally occurring plant systems to inhabit the area, while allowing for the occasional pruning and removal of plants necessary to build and maintain the trail. If well-designed, built, and maintained, a sustainable trail minimizes braiding, seasonal muddiness and erosion. It should not normally affect natural fauna adversely nor require re-routing and major maintenance over long periods of time.

Planning

One key to ensuring long-term trail sustainability and reducing impacts to natural resources is identifying new and rebuilt trails projects in relevant planning documents such as general management plans, development concept plans, and interpretive prospectuses. This can be achieved by the involvement of an interdisciplinary planning team. Each project should include information on site topography, hydrography, soils, wetlands, locations of sensitive plant and/or animal species or communities, visitor trip origins and destinations, design guidelines, and anticipated maintenance strategies. Backcountry management plans should be coordinated with related plans, such as sign plans. Good planning can avoid problems such as steep grades and erosion, which destroy sustainability.

Factors that must be considered to achieve trail sustainability include soil types, the grades of the trail profile relative to existing cross-slopes, surface moisture and drainage, solar aspect, exposure, types and seasons of use, use volumes, desired design and maintenance standards, ecological implications for trailside vegetation, and functional and aesthetic control points (trailheads, scenic views, lakes, etc.). Planners should develop sustainability criteria tailored for each trail project that provide a reference point from which the achievement of future accomplishments can be measured.

Design and construction

Design and construction of trails is a complex combination of skills and should be accomplished by experts. Experience in trail design, construction, and management is essential for implementing projects that involve poor soils, complex topography, high levels of use (especially when stock animals are involved), and extensive improvements, such as surfacing or structures. Experience is also essential to design multiple use trail corridors to meet standards that allow safe use of the trail. For consultation, contact regional or support offices, the Denver Service Center, or parks with significant trail programs. Trail organizations may also provide assistance. In addition to consulting experts in trail design and construction, it is important to consult experts in resource disciplines, if these are not available in the park.

Two of the most common problems of backcountry trails, deterioration through overuse of popular trails and the development of undesired routes at popular destinations, can be avoided by drawing on personnel or outside experts with trail design and management experience and by following commonly accepted standards of trail design after thorough field study. Observing proposed or existing routes through several seasons, including winter, will assist the planning team in determining the fitness of new corridors for trail development, as well as the level of improvement or rerouting required to achieve sustainability for rebuilt trails.

There are a variety of factors necessary for a sustainable, low-impact trail. By carefully fitting the trail profile to the local topography, erosion will be minimized, thus increasing the durability and sustainability of the natural surfaces.

(See References for a detailed list of guidance available for trail management.)

New uses on existing trails

When new uses (e.g., mountain bikes on hiking trails) are being considered for existing trails (many of which evolved through use and not design), planning teams must carefully consider sustainability factors. The design principles used for old roads and railway beds are significantly different from those used for trails, so it is necessary to evaluate sustainability factors when redeveloping these types of corridors for new uses. In addition, new uses may have very different impacts on resources than old uses, and a new environmental assessment may be required. The evaluation of other trail projects in the local area can assist in developing sustainability criteria for the current project.

Maintenance and monitoring

1. Maintenance is required to perpetuate a trail's intended dimensions and integrity and to minimize impacts to natural resources. Monitoring and updating maintenance schedules each season and year ensures continued sustainability. In addition, monitoring various use factors over time such as access, patterns, and intensity is important to ensure ongoing sustainability. Consistent multi-year record keeping is important to ascertain trends. The type and amount of use on a particular trail, along with that trail's ability to support changing patterns of use, will influence the type and complexity of the monitoring program.

Using photographs to monitor trail use at access points and high-use locations can be effective in recording changes to the natural environment, especially vegetation. Transects can be used to monitor changes to soils. Effective trail monitoring will help pinpoint specific use and resource problems early and thereby suggest modest improvements or management actions in lieu of more intensive and intrusive remedial measures at a later date.

Undesired trails develop when use cannot be sufficiently limited to existing trails. Undesired trails most commonly develop close to managed trails, at switchbacks, and in wet meadows. Away from managed trails, undesired trails develop along frequently used cross-country routes and in popular destination areas as multiple trail braiding. Management techniques available for resolving this problem include keeping visitors on the managed trails by locating and delineating them properly or by enforcement, proper timing of visitor use, education on wilderness ethics, and limiting overall use patterns.

2. Campsite management

Similar to trail deterioration, the problems with campsite deterioration involve both deterioration of desired campsites and development by campers of more sites than are desired or needed. The most pronounced ongoing impact at established sites is enlargement, caused by spreading out to adjacent undisturbed or lightly disturbed areas. The most important influences on the amount of deterioration on established sites are the types, amount, and season of use; soil type; substrate durability; visitor behavior, and where and how visitors camp. Management tactics that should be employed to address this problem

include restricting camping to certain categories of users based on number in party or by limiting stock use, location of designated campsites in durable areas, limits on camping duration, campsite rotation, restricting camping to designated sites, hardening of campsites, prohibition of campfires, encouraging dispersed use combined with education on minimum impact camping techniques (in low use areas only), and prohibition of damaging practices or equipment. Another issue that needs attention in siting campgrounds is avoidance of high hazard flood zones. Natural resource managers can provide expertise and assistance in determining flood plains, substrate requirements, and stock use impacts.

3. Litter management

Litter has been identified in a number of studies as a significant source of impact on the backcountry experience, as well as on wildlife through increased wildlife human interaction. Certain activities, such as bait fishing, are highly correlated with increased litter. Litter is one of the easiest backcountry problems to resolve. Continual reinforcement of the pack-it-in, pack-it-out philosophy has already resulted in reduction of backcountry littering. Careful management of activities associated with litter, visitor education, maintenance of a litter-free environment by park personnel, and enforcement are the primary techniques for resolving this issue. Natural resource managers should assist in developing visitor education materials that provide information on adverse effects on resources caused by litter.

4. Human waste management

Human waste usually becomes a problem where use is relatively high or where options for placement of waste are restricted. Where use is heavy, reduction in visitor use through overall use limitations, length of stay limits, designation of campsites away from water bodies, or restriction of areas to day use only may be necessary. Where locations for waste disposal are particularly limited, such as along river corridors and technical climbing routes, the option of carrying out waste should be explored. If these techniques are unsuccessful, then regularly maintained toilet facilities may be required. Selection of the type of toilet facility to be installed must carefully consider such factors as soils, potential water source contamination, maintenance, and cost. Aerobic composting offers a mechanism for waste degradation and recycling, which produces an organic product that can be used to improve impacted soil situations. Note that installation of toilet facilities in wilderness is a last resort, to be implemented only after a thorough investigation of alternatives. The human waste problem may be partially mitigated by education of visitors on proper waste disposal methods.

5. Wildlife impact management

Human recreational use in backcountry settings if not planned for and managed appropriately can have an adverse effect on wildife and wildlife habitat. Wildife habitat loss primarily results from impacts on vegetation and soils along trails and at campsites. However, the wildlife impacts of greatest concern to park staff are wildlife disturbance and attraction and feeding.

Wildlife disturbance by visitors in backcountry settings includes both intentional and unintentional disturbance. These impacts can be serious when they occur during critical periods, such as when animals are weak or breeding. Some adverse impact and disturbance to wildlife may be associated with pets in the backcountry whether the pets are allowed, or illegal. The magnitude of impact can also be increased if recreational use areas coincide with important wildlife habitat. Good planning should seek to avoid this. Primary techniques or strategies for addressing this concern are educating visitors about potential impacts of their behavior, complete closure to pets, and seasonal area closures to prohibit or restrict access in locations or during times that are critical for wildlife survival.

Attraction and feeding of wildlife can be a serious problem, especially in bear country. However, attraction of smaller mammals also leads to impacts on those animals, or to equipment damage and visitor injury. The primary techniques for addressing this concern are educating visitors on proper food storage and potential impacts of wildlife feeding, avoiding bear concentrations, and providing food poles or cables for hanging food, or other food storage devices. (See also, Hazardous Animals in the Public Health and Safety section in this Reference Manual.)

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