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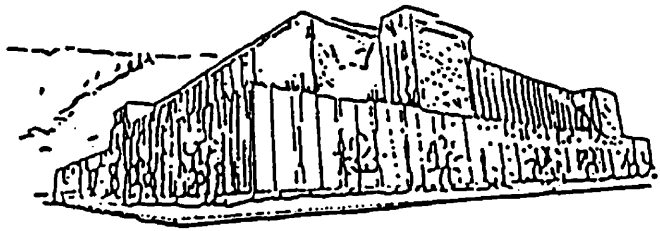
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**AN EVALUATION OF ALTERNATIVE APPROACHES FOR
RECREATIONAL USE ALLOCATION IN THE BOB MARSHALL
WILDERNESS COMPLEX**

by

Suzanne Cable

B. A. Brown University, 1988

presented in partial fulfillment of the requirements

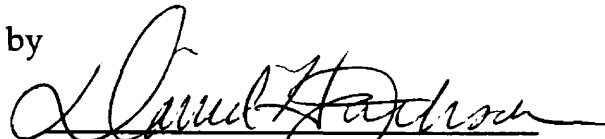
for the degree of

Master of Science

The University of Montana

1996

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Cable, Margaret Suzanne, M.S. May 1996

Resource Conservation

An Evaluation Of Alternative Approaches For Recreational Use Allocation In the Bob Marshall Wilderness (183 pages)

Director: Dr. David Jackson



The allocation of recreational use in wilderness is a task that has challenged Forest Service managers in the Bob Marshall Wilderness Complex (BMWC), as well as other wilderness areas throughout the National Wilderness Preservation System, for nearly two decades. This text reviews and evaluates approaches for allocating recreational use between the commercially outfitted, the institutionally outfitted and the nonoutfitted publics.

A review of literature identifies seventeen approaches to allocation and also discusses the entire recreational use allocation process. Eleven alternative approaches are comparatively evaluated to determine their ability to achieve eight wilderness allocation goals. The analysis results in a ranking of alternatives from best to worst, with the *Objective Analysis and Subjective Decision* and the *Needs Assessment* alternatives being ranked in first and second places respectively. Based on additional review of the advantages of each, the Needs Assessment alternative is recommended for implementation in the BMWC.

Although this evaluation has been conducted specifically for the BMWC, the information included is applicable to other wildernesses and wild land recreation areas throughout the United States. Utilizing site specific modifications to the allocation goals, this evaluation model is reproducible for use in other locations faced by similar challenges.

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CHAPTER 1

INTRODUCTION

This introductory chapter includes the problem statement and research question for this project, explaining the reason for conducting this research. Additionally, a few important terms that are central to this text are defined to prevent misunderstanding of specific terminology.

Problem Statement

Wilderness allocation is a pressing issue in many federally managed wilderness areas throughout the United States. The question of how to make wilderness recreational use allocation decisions when specifically distributing recreational opportunities to outfitted (including institutional and commercial) and nonoutfitted users, has challenged wildland managers and often has led to controversy. Locally, the United States Forest Service (USFS) has been considering the issue of recreational use allocation in the Bob Marshall Wilderness Complex (BMWC) for nearly two decades, without satisfactory resolution. Because of concerns for social and resource impacts, in 1972 a ban was placed on the issuance of any new outfitter permits in the BMWC. This initial ban was supplemented in 1980 by an informal moratorium on expansion of all existing outfitter operations. The 1987 Recreation Management Direction for the BMWC formalized the moratorium pending a decision on outfitted use levels. This temporary ban

has been in effect for over fifteen years and awaits resolution of the initial issue regarding outfitter service levels as well as the more contemporary issue of use levels for all users and related impacts.

Since the 1980 moratorium, the BMWC managers' group¹ has annually identified the need to address the wilderness allocation issue and the need to develop a definitive policy for outfitted and nonoutfitted use allocation. As an issue of particular concern, they have recognized the need to identify an appropriate method to assign the total recreational use into separate portions for the commercially outfitted, the institutionally outfitted, and nonoutfitted segments. The issue has not yet been resolved because of its complex and controversial nature, personnel requirements and funding limitations.

While incremental progress has been made in the management of wilderness use allocation, the original reasons for implementing the moratorium remain and new ones have arisen. Demand for increased use opportunities by current outfitting permit holders continues to grow, requests for new permits from commercial as well as institutional outfitters are increasing, overall use of the BMWC steadily rises, and a method for distributing use between the outfitted and nonoutfitted public has not been identified.

¹ The BMWC managers' group includes USFS representatives from each of the five Forest Service ranger districts (from four National Forests) that share responsibility for management of the BMWC.

The need for a systematic approach to distributing use in the BMWC has received widespread recognition.² Dissatisfaction and frustration with the current moratorium has grown over the years and the need to resolve the wilderness allocation issue continues to intensify. If a comprehensive policy is established and implemented, the wilderness resource, the public, the outfitting industry, and the agency will all benefit.

Research Question

This project attempts to answer the question of: What approach should be used to make recreational use allocation decisions concerning the commercially outfitted, institutionally outfitted, and nonoutfitted segments of the public in the BMWC? Through a comparative evaluation of selected alternatives using a multicriterion decision-making model, this project identifies the relative ability of each alternative to achieve defined allocation goals for the BMWC. This evaluation ranks the alternatives, indicates the most successful alternative, and discusses the consequences of implementing the most successful alternative in terms of its ability to achieve the defined goals.

² The need for a coordinated complex-wide allocation system has been recognized annually by the BMWC managers group as well as by the USFS Northern Regional office and members of the public involved with review and critique of Forest Service policy.

Definitions

Definitions of technical terminology relevant to this study are included in the literature review. However, to clearly establish the particular application of a few key words to this study, the following terms are defined based on the information provided later in the literature review.

Alternative Allocation Approaches

Alternative allocation approaches are alternative contexts for making recreational use decisions between commercially outfitted, institutionally outfitted, and nonoutfitted sectors of the public. More specifically, alternative allocation approaches focus on how managers should make allocation decisions. A wide variety of approaches are reviewed and evaluated that include varying levels of complexity. Some of the approaches can be more accurately referred to as methods, procedures, processes, or even paradigms. However, due to the variability in their design and in their means of implementation, they are collectively referred to as alternative allocation approaches -- or most commonly, alternatives.

Allocation

Wilderness recreational use allocation is the deliberate distribution of recreational use opportunities, or "shares" of use, between the commercially outfitted, institutionally outfitted, and nonoutfitted sectors of the public. This

project seeks to determine the suitability of alternative approaches for use distribution.

Rationing

Rationing is the process of assigning limited use opportunities to individual users within a specific sector (such as the commercially and institutionally outfitted and nonoutfitted sectors). Therefore, this project addresses methods for allocating or distributing use between the outfitted and nonoutfitted sectors of the public, but does *not* address the rationing of use between the individual outfitters within the outfitted sectors, or the individual recreationists within the nonoutfitted sector.

Carrying Capacity

The maximum desirable level of use for an area or its "carrying capacity" is closely related to its allocation for recreational use. This term combines two concepts: (1) the recreational capacity of the area (the maximum number of recreationists that can utilize the area) and (2) the preservation of desirable social and resource conditions. An assessment of carrying capacity determines how many use opportunities are available for allocation, in terms of these dual concepts. This study does not provide a methodology for assessing carrying capacity nor for determining the BMWC's carrying capacity. However, this research has been conducted in close coordination with a simultaneous Forest Service study that addresses the BMWC's maximum

desirable use level (or "carrying capacity"). The results of this evaluation will be integrated with the corresponding Forest Service study.

CHAPTER 2

LITERATURE REVIEW

Recreational use allocation decisions should rely on analyses which cross the boundaries of economics, sociology, political science, ethics, and philosophy. While drawing on each of these disciplines, theorists and practitioners alike have struggled with the task of developing criteria to assist in deciding how to allocate use of a recreational resource between competing users. As demonstrated below, the search for an effective allocation method for use by land use managers and the public has stimulated much discussion, and in some situations, effective use allocation approaches. However, for the allocation level discussed in this paper and in a wilderness setting, contemporary research has not yet met the managers' need for a practical and applicable framework for allocating recreational use opportunities between the primary groups of users. [More specifically, wilderness managers are still looking for theoretically developed, applicable methods for determining appropriate distributions of recreational use between the outfitted (including institutional and commercial) and the non-outfitted segments of the public.]

Within the recreation management literature, information abounds regarding theory, goals, and approaches for allocating recreational use. Numerous examples of actual allocation decisions and supporting analyses are available from various land management agencies. The following literature review first defines "allocation" in the context of recreational use

management. Next, a review of the recreational use allocation process that identifies various levels of required decision making provides the necessary background to discuss allocation approaches. Following a discussion of the broader management framework, traditional and site-specific allocation goals are identified and techniques for allocating use between groups of users are provided. Examples of locations where the reviewed approaches have been employed are included. As supplementary information, Appendix A includes a review of the theoretical development of the "carrying capacity" concept as it applies to recreation management, an explanation of the common models for carrying capacity assessment, and a discussion of rationing.

Most published and professional texts available and included in this review have resulted from allocation of river use. (While important differences exist between use allocation of rivers and of land-based wildernesses, in many situations the ideas discussed are applicable to both, with appropriate modifications.)

Recreational Use Allocation Terminology

Allocation, or more specifically allocation of recreational use, is defined various ways in the literature. All definitions, however, contain common threads of meaning, with only subtle variation. Shelby (1981 and 1991) defines recreational use allocation as the distribution of recreation opportunities among users. Higgs (1987) further describes it as a process by

which individuals or groups make decisions regarding who should receive how much of a particular item or resource. In the context of this text, recreational use allocation is the process by which a public land management agency determines what portions of total potential use will be distributed to various groups (or user categories) using public lands for recreation. A detailed definition offered by one Forest Service wilderness manager is:

Allocation is the apportionment of the type and amount of recreation use between assisted and nonassisted users by geographic area based on an assessment of potential opportunities available, public demand for various types of activity or use, the capability of the land (resources) to support the use or activity, potential conflicts between other uses or users, as well as any identified agency needs for concessionaire services or assistance (Barker, undated).

Barker identifies several factors for consideration in the process of allocating use: potential opportunities, public demand, resource capability, user conflicts, and agency need. Other factors to be considered may include the physical resource, as well as visitor experience, conditions.

Barker also identifies the primary groups under consideration: the outfitted (or "assisted") and nonoutfitted (or "unassisted") users.³ The outfitted group is then divided again by the Forest Service for management purposes into categories of persons served by either commercial or institutional outfitters. Commercial outfitters are defined by the Forest

³ "Unassisted" and "assisted" users could also be interpreted to refer to users that visit the area under their own power as compared to with the assistance of, for example, a horse. In this context, however, Barker is referring to those that visit the area either with or without the services of an outfitter or guide.

Service Manual (section 2721.53) as, "including all commercial outfitting operations involving services for accommodating guests, transporting persons, and providing equipment, supplies, and materials." Institutional outfitters are defined by the Forest Service as:

A variety of membership or limited-constituency institutions, such as religious, conservation, youth, fraternal, service club, and social groups; educational institutions, such as schools, colleges and universities; and similar common interest organizations and associations. This category may include applicants who operate commercially on a limited or intermittent basis in providing service to selected customer clientele rather than to the public at large (Forest Service Handbook 2709.11, Special Uses Handbook, section 41.531).

The Forest Service Handbook further defines outfitting as, "providing through rental or livery any saddle or pack animal, vehicle or boat, tents or camp gear, or similar supplies or equipment, for pecuniary remuneration or other gain," and defines guiding as, "providing services or assistance (such as supervision, protection, education, training, packing, touring, subsistence, interpretation, or other assistance to individuals or groups in their pursuit of a natural resource-based outdoor activity) for pecuniary remuneration or other gain" (Forest Service Handbook, Special Uses Handbook, section 41.53c).

Related to the allocation decision is rationing; that is, the subsequent assignment of opportunities to individuals within the allocated groups (McCool and Utter, 1981). In the words of Stankey and Baden (1977), rationing is a procedure for gaining an opening or "slot" in some system. In most situations, there is a defined amount of use allocated to the group and the

necessary task then becomes to distribute the allocated opportunities between the individuals that desire them.

Recreational use can be allocated at various times during a recreation area's management life-span and can vary as increases in use reflect an area's popularity. For example, allocation programs have been implemented when each of three conditions exist:

- prior to use levels becoming an issue and in preparation of a scarcity situation (when use is less than capacity);
- when use has reached the point where use equals or is thought to equal capacity for some or all portions of an area;
- or most commonly (Shelby et. al., 1989), after the defined maximum use of an area has been exceeded with use constantly exceeding the capacity of the recreation area - thus necessitating a reduction in use (Shelby and Heberlein, 1986).

Table 1 lists examples of locations where allocation programs have been implemented under each of these conditions.

In addition to various times when allocation may occur, allocation and rationing programs do not necessarily apply to all users, over the entire resource, at all times. They may apply to only a portion of users, during a particular time of year (McCool and Utter, 1981), for particular activities, or for specific sites within a larger area. The nature and scope of allocation may vary broadly depending upon the specific context (Regier and Grima, 1985).

Carrying capacity is a complementary concept to allocation. Stankey et al. (1990, p. 216) describe carrying capacity as "the maximum level of use an area can sustain as set by natural factors of environmental resistance such as food, shelter, or water. Beyond this natural limit, no major increase in the

Table 1.--Examples of Allocation Programs Implemented under Various Use Conditions

Condition	Location
When use is less than capacity	Jackson Ranger District, Bridger-Teton National Forest (Jackson, RD undated) Chugach National Forest (Skibeness, 1995) Mountain Lakes Wilderness, Winema National Forest (Mitchell, 1994)
When use equals capacity	Beaverhead National Forest (Beaverhead NF, 1986) Targhee National Forest (Targhee NF, 1992)
When use exceeds capacity	Hoover Wilderness, Toiyabe National Forest (Richter, 1985) Wilderness areas in Inyo National Forest (DeGraff, 1983) Enchantment Lakes area in the Alpine Lakes Wilderness, Wenatchee National Forest (Morton, 1996)

dependent population can occur." Manning et al. (in press, p. 3) reference Dasmann (1964) and define the term more simply as, "the number of animals of any one species that can be maintained in a given habitat." As pointed out by Heady in 1975, these definitions, readily applicable to resource management, are particularly well-suited to wildlife and range management in determining, for example, the optimum number of cattle to be raised per unit of pasture (Becker et al., 1984).

The acquisition of the carrying capacity concept by recreation managers was documented and defined by Wagar (1964, p. 3) as, "the level of recreational use an area can withstand while providing a sustained quality of recreation". Since the term was defined in this way, numerous modifications have been made and published; but most subsequent definitions are variations of Wagar's original theme. Applying this concept to the field of recreation management held great intuitive appeal because of its readily apparent application to resource management (Manning et al., 1995). This appeal led to abundant research and study. Additional development of the idea and the subsequent difficulty implementing carrying capacity programs based strictly on use levels led to further evolution of the idea. Several similar models emerged that apply the concept within a framework of defined resource conditions and management objectives. Based on results from monitoring physical and social resource conditions, if the desired conditions are not achieved using prescribed management actions, the models generally revert to definition of the desired maximum use level and quantitative regulation of use. These models are discussed in detail in Appendix A.

While closely related terms, carrying capacity and allocation are separate concepts. Shelby explained the importance of distinguishing between carrying capacity issues and allocation issues: "Carrying capacity determines the appropriate number of people for a particular experience in a particular setting... Allocation distributes... the recreation opportunities

among users" (1991, p. 8). Limiting use and rationing may or may not occur depending on the level of use in an area relative to its capacity.

The Allocation Process

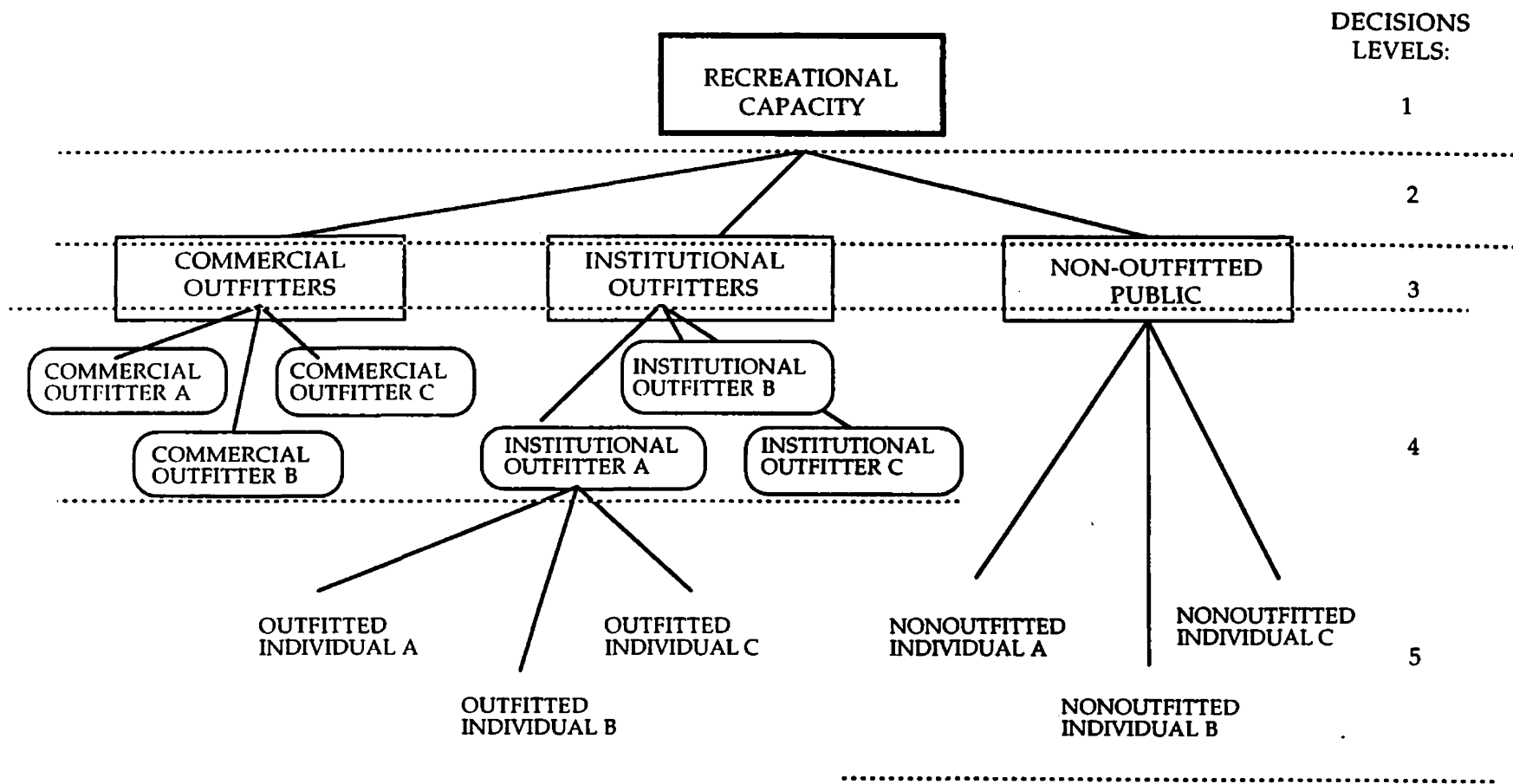
To facilitate understanding of the recreational use allocation process, Figure 1 indicates the various levels at which recreational use allocation decisions are made.

- Decision level 1 determines the desired recreational capacity for an area.
- Level 2 identifies the groups that are to be allocated a portion of the recreational capacity.
- Level 3 determines how much, or what share, of use will be assigned to each group (the allocation of use between groups).
- Level 4 determines how much of the use allocated to outfitted groups will be assigned to individual outfitters (assignment of use opportunities to outfitters on behalf of their clients).
- Level 5 determines which individuals in the nonoutfitted group will be assigned recreational opportunities (assignment of use among nonoutfitted users).

McCool and Utter (1981) define these levels as steps in recognizing and defining sectors, in determining each sector's amount of use, and in deciding how use within each sector will be allotted to outfitters or rationed to nonoutfitted individuals (decision levels 2, 3, 4, 5, respectively, in Figure 1).

As indicated in the previous discussion, some (or all) parts of the decision hierarchy may (or may not) occur in a particular situation. For example, a well-known recreational use allocation and rationing program in

FIGURE 1: RECREATIONAL USE ALLOCATION, HIERARCHY OF DECISIONS



- DECISION 1: DETERMINATION OF RECREATIONAL CAPACITY
- DECISION 2: IDENTIFICATION OF GROUPS AND DEFINITION OF MEMBERS
- DECISION 3: ALLOCATION BETWEEN GROUPS
- DECISION 4: ASSIGNMENT OF USE BETWEEN INDIVIDUAL OUTFITTERS
- DECISION 5: ASSIGNMENT OF USE BETWEEN NONOUTFITTED INDIVIDUALS

the Boundary Waters Canoe Area in the Superior National Forest does not recognize different groups of users (decision levels 2 and 3 in Figure 1). Instead, all users -- whether commercially or institutionally outfitted or nonoutfitted -- compete equally for a limited number of permits, although outfitters may apply for permits on the behalf of their clients. A permitted individual may then choose to go into the Boundary Waters unassisted, or may hire an outfitter or guide (Soderberg, 1995). This process resembles an allocation approach known as "Freedom of Choice" and later discussed in the *Allocation Approaches* subsection.

An ideal allocation system would include coordinated, interrelated decision making at each level. In many situations, however, allocation systems evolve with only the issues (or decisions to be made) in greatest need of attention being addressed first. If a comprehensive allocation plan is to be developed to update an evolved system, or if in the case of the first allocations being made, each of the decisions can fit into a larger framework. For example, several national forests have used variations of one common approach to integrate carrying capacity and allocation decisions, and to particularly include use allocation of the outfitted public. The framework is built around the Recreational Opportunity Spectrum (ROS) concept and identifies a desired use level, which may then be allocated to various groups and/or individual users. Table 2 indicates similar steps taken by five national forests in applying a broader analytical framework to assist in allocation decision making. A complete explanation of each approach is not included in

TABLE 2

EXAMPLE FRAMEWORKS FOR CARRYING CAPACITY ASSESSMENT
AND ALLOCATION OF USE

The following information is provided in abbreviated form and is intended to provide only a conceptual introduction to the processes used, not thorough explanation. For complete explanation, please refer to the original sources.

Targhee National Forest - Analysis of Outfitter and Guide Situation¹

1. Divide the district into working areas with similar terrain types, use, access, or Forest Plan prescriptions
2. Determine the total acres for each area
3. Determine the Recreational Opportunity Spectrum (ROS) classification of each area
4. Multiply each areas' total acreage by the appropriate Capacity Coefficient Range from ROS system resulting in the People At One Time (PAOT)/acre amount
5. Multiply PAOT/acre amount by the percent usable terrain in the area
6. In consideration of pattern of use for each area, determine the theoretical PAOT capacity based on percent usable terrain
- 7.* Calculate the percentage of PAOT capacity to be allocated to commercially outfitted use
8. Multiply commercial capacity by the number of days in the season for that activity resulting in service days allowed per area
9. Subtract existing permitted commercial use days from total number to determine availability of additional opportunities for commercial use

Jackson Ranger District, Bridger-Teton National Forest - Process for Determining Recreational Use Limits²

1. For outfitter and guide permit applications: determine if management objectives would be met
2. Ensure compatibility with ROS classifications
3. Determine limiting factors
4. Inventory limiting factors
5. Determine total allowable use
- 6.* Allocation of use between commercial and non-commercial users

Roosevelt Ranger District, Ashley National Forest - internal draft Environmental Impact Statement³

1. Define management areas (classes) within the wilderness to meet desired conditions
2. Set thresholds (standards) to define the limits of acceptable change
- 3.* Define acceptable number and kind of outfitting and guiding permits issued

Payette National Forest - Projected Recreational Use⁴

1. Determine projected PAOT number based on ROS classifications and coefficients
2. Determine practical maximum use level based on a pattern of use adjustment factor
3. Determine practical potential management level based on Forest Plan targets
4. Determine minimum management level based on budget constraints
- 5.* Identify percentage of the minimum management level that is acceptable for outfitter and guide use

TABLE 2

EXAMPLE FRAMEWORKS FOR CARRYING CAPACITY ASSESSMENT
AND ALLOCATION OF USE continued

Chugach National Forest - Carrying Capacity Study⁵

1. Define the existing condition
2. Define the desired future condition
3. Calculate the carrying capacity based on the ROS classification of the area
4. Determine the limiting factors and their affect on available capacity
- 5.* Adjust the carrying capacity based upon: the existing condition, desired future condition, limiting factors, results of user survey, and public input
6. Provide justification for the adjustments

Note:

- * Step in the process at which allocation between groups (outfitted and nonoutfitted) occurs.

Sources:

- 1 Targhee NF, 1992
- 2 Jackson Ranger District, undated
- 3 Roosevelt RD, 1995
- 4 Payette NF, 1995
- 5 Skibenness, 1995

Table 2; instead, a review of steps conceptually introduces the process. For complete information, please refer to the referenced texts.

Allocation Goals

Review of the published literature and wilderness management documents reveals two types of allocation goals: those based on allocation theory and those driven by applicability for use in the field. The theoretical goal addresses the general objective of resource allocation, while the applied goals relate to both the social and resource concerns of wilderness management.

The theoretically defined goal of allocation is to achieve some measure of distributive justice (Shelby, 1991). Homans (1961) defines distributive justice as the distribution of rewards and costs between persons, with the objective being that individuals will obtain what they ought to have according to what is perceived as fair. Defining fairness, however, varies according to the interpretation of individuals involved in the allocation process (Deutsch, 1975 and Shelby, 1991), as well as the particular resource and the circumstances of the allocation scheme. The overall goal of distributive justice is then commonly further defined by four potentially competing criteria. Those criteria include:

- *equality*, meaning that all users are able to obtain an equal share of the resource, or that they have an equal likelihood of getting to use it,
- *equity*, meaning that those users who contribute more to the system (such as money, time, effort, etc.) get more out of the system (e.g. greater likelihood of using the resource),
- *need*, meaning to designate more use to those who need more of the resource to attain their objectives, and
- *maximization of social efficiency*, meaning to produce maximum benefits by ensuring that the resource is allocated to those for whom it has the greatest value (Shelby and Heberlein, 1986).

These criteria, however, are often mutually exclusive and not appropriate for use in all situations. For example, in the recreational use context, *equality* is based on providing equal opportunities to all users for access to the resource -- a measure of fairness. However, to attain *equity*, those that are willing to, for example, put more effort into mastering the necessary skills to utilize a

resource and obtaining the proper equipment should have priority access -- also a measure of fairness but contradictory to the idea of equality. Additionally, regarding *equity*, mastery of skills and equipment may be important in some high-skill activities, such as whitewater rafting. In other situations, such as day-hiking, skill and equipment may not be as important and, therefore, not important to a particular allocation situation.

While distributive justice is theoretically supported, wilderness managers have had difficulty making the transition from ideally defining what is fair to implementing management plans perceived to be fair by all members of the public. The wide range of opinions held by various members of the public has resulted in an equally wide variety of public perceptions of fairness. Due to the difficulty of transferring the principles of distributive justice from theoretical discourse to field use, more practical allocation goals have been developed. The primary implicit (if not explicit) allocation goal found in wilderness management is resource protection. Examples of other applied goals used by managers to help make allocation decisions include: simplicity and ease of understanding the allocation system, flexibility to accommodate changes in use demand and patterns, outfitter business stability, recognition (without domination) of historical use (Whittaker, 1991), and the provision of an opportunity to achieve quality recreational experiences. Numerous authors have explained these goals, added additional items, and critiqued of the value of each (for example Cullen, 1985; Cullen

and Familton, 1987; Deutsch, 1975; Dustin and Knopf, 1988; Higgs, 1987; McCool and Utter, 1981; Peterson, 1983; Shelby, 1991).

Allocation Approaches

Compared to other areas of recreation management, such as carrying capacity assessment and rationing, approaches used to allocate use between groups (decision level 3 in the Figure 1) are not well theoretically-based with limited published discussion and critique. Due to the necessity, however, of allocating use between groups in many recreational settings, there are numerous applied examples of the approaches used to allocate at this level. In both the published literature and the applied examples, the discussion focuses almost entirely on allocation between only the commercially outfitted and the nonoutfitted publics, with essentially no discussion regarding institutional outfitters.⁴

Allocation Between Groups

In many cases the approach used by resource managers to allocate use between groups is the traditional practice, a judgmental decision. Due to the lack of developed planning and decision-making processes for systematically

⁴ The only identified exception being the Beaverhead National Forest Outfitter and Guide Policy that includes guidelines for assigning temporary use permits to institutional outfitters on an "opportunity basis" rather than as a means of implementing planning decisions and objectives -- as is the case with commercial outfitters (Beaverhead NF, 1986).

addressing allocation decisions, an ad-hoc judgmental decision is made by default (Jackson RD, undated). The approaches, or potential approaches, identified through the literature search, discussions with experts in the field, and review of implemented allocation decisions, include allocation between groups according to the seventeen approaches listed in Table 3. This table defines each approach, its level of development (proposed, theoretical, or applied), the source of the approach, and examples of locations where it has been used, if applicable. Some of these approaches are developed methods while others are only proposed ideas. Additionally, not all of the approaches adhere strictly to the allocation definition used in this text. One example definition of allocation is, "a process by which individuals or groups make decisions regarding who should receive how much of a particular item or resource (Higgs, 1987)." The Spatial and Temporal Zoning approaches allocate use according to where and when, rather than how much, but still achieve the same objective of distributing use between groups. Also, the No Allocation with Equal Opportunity and Freedom of Choice approaches deliberately do not allocate use, but are alternatives that still manage use. Both these approaches eliminate certain steps in the decision making process and offer an alternative to the decision-making hierarchy shown in Figure 1.

Each identified approach has advantages and disadvantages dependent upon numerous site specific characteristics of the location where use is allocated. Additionally, depending upon the level of use in an area compared to its capacity, some alternatives may be more appropriate than others.

TABLE 3

APPROACHES FOR ALLOCATION BETWEEN GROUPS

Approach	Description	Level of Development	Source	Example Locations Used
Historical Use	Assignment of use shares is made according to historic use of the area based on a variety of formulas, for example: average of 2 highest years of annual actual use during last five years (often used with Needs Asses.)	Applied	A, B, C	Beaverhead National Forest (NF); Wallowa-Whitman NF; Gallatin NF; Grand Canyon National Park; Smith River, Lewis and Clark NF
Even-Split ^a	Use is evenly split between groups, for example, 50/50 when there are 2 groups, or 33/33/33 when there are 3 groups	Published and applied	B, C, D, E, F,	Tongass NF; Chugach NF
Needs Assessment ^a	Public need for use by different groups is determined according to assessment of various criteria, for example: resource protection, skills & equipment, knowledge, safety, management objectives	Unpublished theoretical and applied	G, H	proposed Roosevelt Ranger District (RD), Ashley NF; Klamath RD, Winema NF
"Objective" Analysis & Subjective Decision ^b	Based on "objective" analysis of a variety of defined factors, a managerial decision is made regarding use assigned to a group or each group	Applied	I, J, K	Palisades RD, Targhee NF; Olympic NF; Payette NF; Jicarilla RD, Carson NF; Tonto NF; Bitterroot NF; Yellowstone National Park; Jackson RD, Bridger-Teton NF
"Marketplace"	The shares of use assigned to groups is based on use proportions observed during several years when no regulatory constraints on the amount of use existed	Unpublished theoretical and applied	L	Bridgeport RD, Toiyabe NF

TABLE 3
APPROACHES FOR ALLOCATION BETWEEN GROUPS continued

Approach	Description	Level of Development	Source	Example Locations Used
Value-based Shares	Judgments are made about the relative social value of recreation opportunities provided by each group, and shares of use are assigned accordingly to ensure adequate opportunities for each	Proposed for discussion	B, N, I	none identified
Relative Resource Impact	Each group is assigned shares of use according to their relative contribution to total impact based on an analysis of use levels and impact levels	Published theoretical & proposed for discussion	B, N, D, O	none identified
Test cases ^c	Develop a test case resource area and determine relative demand between groups for use in an unregulated situation, then use those shares to determine use allocation in other areas	Published theoretical	D	none identified
Public Opinion ^c	Allot shares to groups according to public opinion process that would determine public preferences	Published theoretical	B, D	none identified
Spatial Zoning ^c	Assign use to groups in specific areas rather than by shares of use over the entire area	Published theoretical	B, C, D	none identified
Temporal Zoning ^c	Assign use to groups for specific times of year, rather than by shares of use over the entire area	Published theoretical	B, C, D	none identified
Legislative Direction ^c	Assign use according to legislative mandate of shares for each group	Published theoretical	B, D	none identified

TABLE 3

APPROACHES FOR ALLOCATION BETWEEN GROUPS continued

Approach	Description	Level of Development	Source	Example Locations Used
Economic Impact ^f	Assign use according to economic impact of groups to local communities adjacent to resource area	Published theoretical	D	none identified
Even-Pool Variation ^f	Variation of Even-Split technique, but unused portions of shares to be made available to other groups, with annual default to 50/50 (if two groups)	Published theoretical	B, C, D	none identified
Percentage Disappointment	Allot use each year such that by a given date the number of applicants for each sector (group) is known and an equal proportion of each sector receives a permit resulting in an equal percentage of denials, or disappointment, to each group	Published theoretical	D, B, C	none identified
Freedom of Choice ^d	Does not allocate use between groups, but requires all users to gain a permit, then the individual chooses whether to use the services of an outfitter or go on their own	Published theoretical, awaiting application	B, C, O, Q, R	Flathead River, Flathead NF
No Allocation with Equal Opportunity ^e	Does not allocate use between groups and allows equal opportunity to all users with equal management prescriptions; outfitters are permitted but are not allocated priority use days, do not have reserved camps or grazing permits - essentially treated the same as the nonoutfitted public and must comply with the same regulations	Proposed for discussion	S	none identified

TABLE 3

APPROACHES FOR ALLOCATION BETWEEN GROUPS continued

Notes:

- ^a Often used within a broader carrying capacity/allocation framework, such as the techniques show in Table 2.
- ^b Objective Analysis & Subjective Decision includes "objective" analysis of a variety of defined factors. While it is referred to as "objective", the author recognizes there are subjective aspects of the objective component of this approach -- such as decisions made regarding what data to collect, and interpretation by individuals while collecting data.
- ^c Developed with intended application being river use.
- ^d While Freedom of Choice is not a method to allocate use between groups, it is included in the discussion because it achieves the same ultimate objective of regulating access and use of the resource, between outfitted and nonoutfitted users.
- ^e No Allocation with Equal Opportunity is not an approach to allocate use between groups, but is included since similar to Freedom of Choice, it achieves the same ultimate objective of regulated access and use of the resource between outfitted and nonoutfitted users.

Sources:

- A Beaverhead NF, 1986
- B Wallace, undated
- C Cruz and Jiron, 1994
- D McCool and Utter, 1981
- E Tongass NF, 1991
- F Shelby, 1991
- G Barker, undated
- H Dillon RA, 1993
- I Targhee NF, 1992
- J Payette NF, undated
- K Jicarilla RD, undated
- L Richter, 1985
- M personal discussion with Dick Barrett, University of Montana Professor of Economics, September 27, 1995
- N proposed by University of Montana Wilderness Institute, personal correspondence, August 31, 1995
- O personal discussion with Bill Chaloupka, University of Montana Professor of Political Science, September 28, 1995
- P Penner, 1985
- Q Stokes, 1991
- R Leaper, 1991
- S proposed by Jerry Burns, Lincoln Ranger District, Helena NF, personal correspondence, received September 7, 1995

Chapter 4 of this text discusses the advantages and disadvantages of the approaches evaluated for potential use in the BMWC, in terms of their ability to achieve allocation goals.

Conclusion

While significant discussion and debate has occurred regarding recreational use allocation, disagreement continues over some topic areas, while others are still relatively unexplored. In the absence of developed theoretical approaches for allocating recreation opportunities between groups, public land management agencies have made decisions based on the best available information. As the literature indicates, additional research and testing of possible methods for allocation must answer difficult questions regarding the management of public recreational resources so that public and, therefore, agency resource management objectives may be met.

CHAPTER 3
RESEARCH METHODOLOGY

A procedure is required to comparatively evaluate the relative success of alternative allocation approaches in their ability to achieve allocation goals for the BMWC. The evaluation procedure must consider numerous factors, including:

- (1) the multiple goals to be achieved by the allocation of recreational use, and
- (2) the multiple alternative allocation approaches that could be employed in making the allocation decisions.

In addition, in this case of recreational use allocation in the BMWC, two more factors complicate the process:

- (3) multiple individual managers must be involved in the decision-making process, and
- (4) public opinion regarding the allocation of recreational use opportunities must be considered and appropriately incorporated.

To complete this complex task, a two-phased research procedure has been developed that includes:

- (1) an overall framework for generating background information to evaluate alternatives that incorporates input from managers as well as the public, and
- (2) a multicriterion decision-making model that evaluates alternatives utilizing the background information.

To systematically explain this two-phased research methodology, this chapter describes the overall procedural framework used in this project to provide the background information. It also includes a description of the evaluation model used to identify the preferred allocation approach.

Six individual tasks comprise the procedural framework, including the evaluation model. They are:

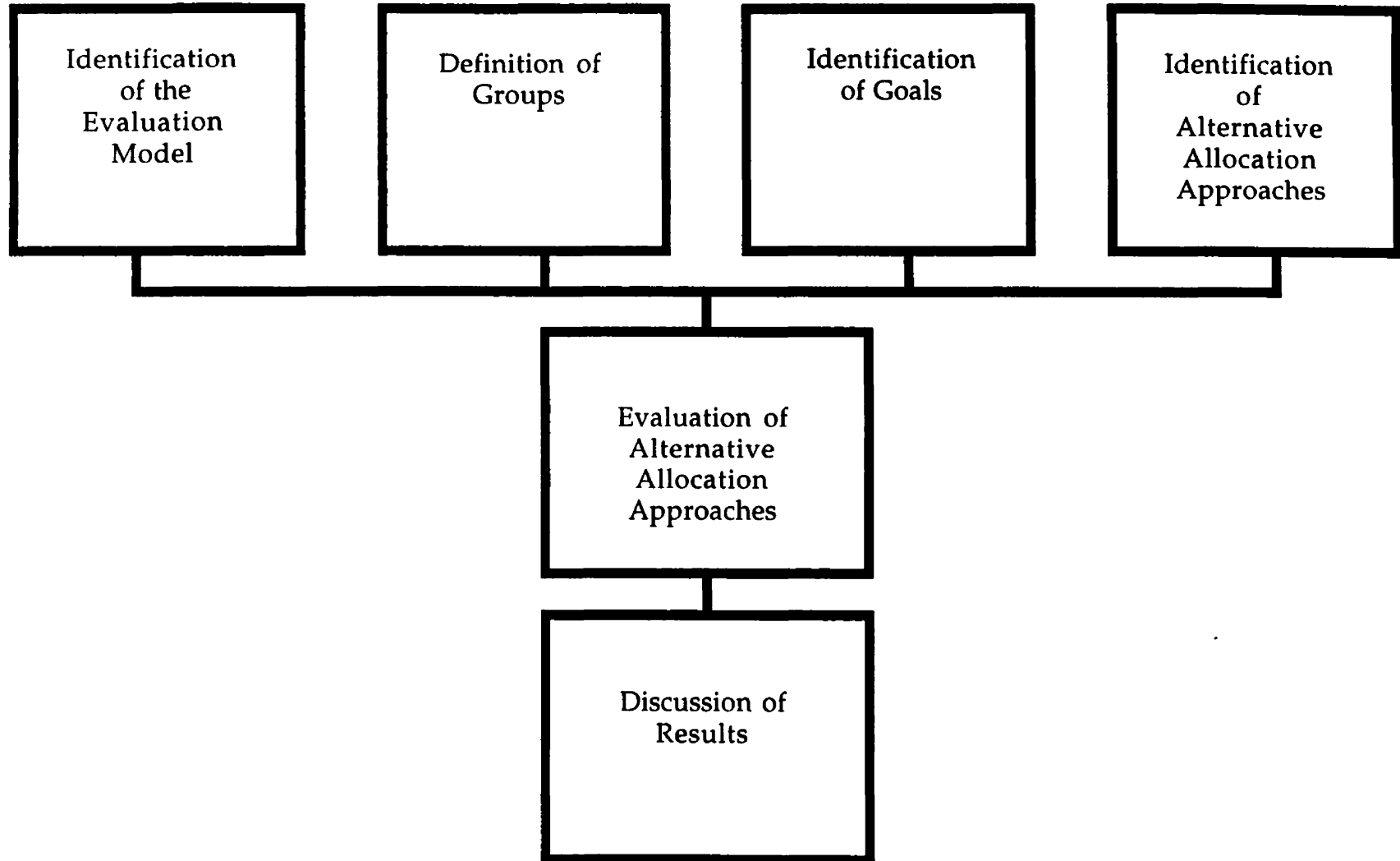
- identification of the specific model to be used to evaluate the alternative allocation approaches;
- definition of the groups to be allocated recreational use opportunities and their membership characteristics;
- identification of goals for the allocation of recreational use opportunities between the groups;
- identification of the alternative allocation approaches to be evaluated;
- evaluation of the selected alternative allocation approaches;
- discussion of the evaluation results.

The first four tasks were conducted simultaneously, and the last two tasks conducted sequentially. Figure 2 indicates the relationship between the tasks and their sequence of completion.

The methodology used in this study to complete the above-listed tasks includes both objective and subjective procedures. As defined in more detail below, those tasks that involve subjective decision-making are conducted according to a process that relies upon the discretion of Forest Service wilderness managers that are members of the Project Team. One representative from each of the five Forest Service Ranger Districts with

FIGURE 2

PROJECT METHODOLOGY



responsibility for management of the BMWC is included in the Project Team and shares responsibility for the decision-making requirements of this project. The organization of the Forest Service members of the Project Team is shown in Appendix B. In making their decisions, input from a variety of sources is considered, with the final decision resting with the managers' collective professional judgment, referred to in this context as "informed management discretion".

Identification of the Evaluation Model

Identification of the evaluation model used to compare the alternative allocation approaches began with a review of recreation management and other literature to identify examples of evaluation models used in similar studies that address multi-goal, multi-alternative resource management issues. Additionally, recognized experts in the field, including university professors and other researchers, were interviewed to identify potentially applicable evaluation models. The identified models were compiled and distributed to the Project Team for review. Each Project Team member then identified their three preferred evaluation models, in ranked order, to be used based on their professional experience, their understanding of the project, and their personal judgment regarding appropriate application to the project and Forest Service purposes. The individual Project Team member preferences were then compiled and analyzed. Evaluation models that were not preferred, or only preferred by one individual Project Team member, were

eliminated from further consideration. Of the remaining options, the advantages and disadvantages of each were reviewed. In cooperation with the Project Team, one model to be used to evaluate the alternative allocation methods was selected. The selected model, Arrow and Raynaud's (1986) multicriterion decision-making approach as explained by Troster (1988), is described in detail below in a subsection of this *Research Methodology* section titled *Evaluation of Alternatives*, beginning on page 35. Appendix C includes a list of the evaluation models considered for use.

Definition of Groups

In defining the groups to be allocated recreational use opportunities, the first step was to compile and review existing definitions of the National Forest System user groups included in the official Forest Service Manual and Handbook. To provide further clarification to the Forest Service definitions, the BMWC managers group draft interim institutional outfitter policy was reviewed for information pertinent to group definitions and membership characteristics (a copy of the draft interim institutional outfitter policy is included in Appendix D). Based on the Forest Service definitions and the BMWC draft interim policy, the terms commercially outfitted, institutionally outfitted and nonoutfitted publics are defined. These definitions are included later in Chapter 4 in the subsection titled *Definition of the Commercially Outfitted, Institutionally Outfitted, and Nonoutfitted Groups* beginning on page 42.

Identification of Goals

Identification of the goals for the allocation of recreational use opportunities between groups in the BMWC was based on the informed management discretion approach. As defined above, this approach involves wilderness managers considering several sources of information when formulating their allocation goals. The sources of information reviewed by the Forest Service members of the Project Team include:

- (1) example allocation goals from existing recreational use allocation systems in other national forests and national parks,
- (2) example allocation goals (both theoretical and applied) from the recreational management literature,
- (3) overall wilderness management goals for the BMWC as defined by the *BMWC Recreation Management Direction* – a document that defines management prescriptions for the BMWC,
- (4) a list of questions formulated by the Forest Service members of the Project Team used to define the recreational use allocation issue in the BMWC (included in Appendix E), and
- (5) allocation goals identified by the public in response to a request for comments conducted specifically for this study.

These five sources of information were used in a goal identification process that included several sequential steps. The first step was to compile examples of allocation goals from other wilderness recreational use allocation programs in national parks and national forests, as well as in the recreation management literature (information sources 1 and 2 above). These examples were then distributed to members of the Project Team along with the *BMWC*

Recreation Management Direction (source 3) and the list of questions defining the recreational use allocation issue specifically in the BMWC (source 4). Each Forest Service member of the Project Team then created individual lists of goals for the recreational use allocation process to be employed in the BMWC. The individual goal lists were then reviewed and compiled into one comprehensive interim list. In the last step, goals identified by the public were introduced (source 5). The public goals resulted from a content analysis of comments received in response to a news release requesting public input regarding the study (a copy of the news release and a summary of the public comments received is included in Appendix F). After further Project Team review and discussion, final adjustments were made to the interim list of goals for the allocation process considering public input and resulting in a final list of goals created according to informed management discretion. The final list of goals is included in Chapter 4 in the subsection titled *Recreational Use Allocation Goals in the Bob Marshall Wilderness Complex*, beginning on page 43.

Identification of Alternative Allocation Approaches to Evaluate

To identify the alternative allocation approaches to be evaluated, a list of potential alternatives identified through the literature review was prepared and circulated to the Project Team. Each Forest Service Project Team member was instructed to eliminate alternatives that were unacceptable for further consideration because of the method's

implementation feasibility or suitability based on specific exclusionary criteria. Exclusionary criteria include factors that would make the alternative clearly impossible to implement due to: operational feasibility; current law, national or regional Forest Service policy; political feasibility; suitability for a land-based wilderness; defined, specific administrative constraints (Chapter 4, page 48 includes the exclusionary criteria used to eliminate unsuitable approaches). The lists of alternatives to be eliminated were then compiled and further discussed by the Project Team, resulting in a final list of alternative allocation approaches to be evaluated. The final list of alternatives is included in Chapter 4 in the subsection titled *Alternative Allocation Approaches to be Evaluated*, beginning on page 45.

Evaluation of Alternatives

The evaluation of alternative approaches for allocating recreational use opportunities was conducted using a multicriterion decision-making model as explained by Trosper (1988) and based on the work of Arrow and Raynaud (1986). This evaluation model was selected by the Project Team using the methodology described above in the *Identification of the Evaluation Model* sub-section. In their book *Social Choice and Multicriterion Decision Making*, Arrow and Raynaud (1986) explain the difficulty in making multi-goal, multi-alternative decisions and the need for mathematically sound evaluation models. Due to human cognitive limitations, simultaneous analysis of multiple alternatives for achieving multiple goals is not possible (Arrow and

Raynaud, 1986). Through the development of models to assist in the evaluation of alternatives, decision-makers are able to resolve multi-attribute problems. Also, Arrow and Raynaud argue that, "The current models used in operations research for the ranking of a finite set of alternatives often lack firm (mathematical) foundations (p. 1)." Further, they provide the foundations for their proposed mathematically-sound model, which is then further developed and explained by Trospier (1988), resulting in the multicriterion decision-making model used in this analysis. The model⁵ includes three steps and four assumptions each shown below.

The model includes the following three sequential steps:

- (1) ranking alternative allocation approaches in their ability to achieve the allocation goals (called the "preliminary ranking"),
- (2) creating a matrix to compare the relative success of each alternative in its ability to achieve the goals (called an "outranking matrix"), and
- (3) identifying, in ranked sequential order from best to worst, the relative success of the alternative allocation approaches in achieving the goals (called the "final ranking").

A general explanation of these three steps and the process used to conduct them is shown below.

In addition to the steps, this application of the Trospier/Arrow and Raynaud model assumes that: (1) there is equal "distance"⁶ between each of

⁵ Throughout the remainder of the text this model is referred to as the Trospier/Arrow and Raynaud model.

⁶ "Distance" refers to the qualitative space between alternatives in the rankings. For example, in a sequential ranking from best to worst, each successive alternative is an equal amount worse than the previous ranked alternative.

the ranked alternatives in both the preliminary and final rankings; (2) the goals are independent from each other; (3) no goal is paramount over the others or must be achieved by an alternative for it to be further considered; (4) all goals are equally important. The model as explained by Trospen includes the option to weight the alternatives to indicate their relative importance. It was decided by the Forest Service members of the Project Team, however, to not weight the alternatives in this analysis and consider them to all be of equal importance.

Preliminary Ranking of Alternatives

To begin the evaluation of alternatives, each allocation approach was ranked according to its relative ability to achieve each unweighted goal. As instructed by Trospen (1988, p. 829), each alternative was ranked according to each of the goals by “try[ing] to make assumptions which seem reasonable or seem to reflect commonly held beliefs...” The preliminary ranking of each alternative allocation method was defined according to informed management discretion that utilized input from:

- two institutional outfitters,
- two commercial outfitters,
- two members of the nonoutfitted public, and
- two academics, one involved in recreational use allocation studies and another in studies of biodiversity.

The opinions of these reviewers were collected and considered to provide examples of various perspectives of how alternative allocation approaches should be ranked as part of the informed management discretion approach. Their opinions are not intended to be representative of their entire respective groups or professions; rather they are recognized as example opinions reflecting the perspective of each individual.

The specific steps used in the informed management discretion approach to rank the alternatives for their ability to achieve the goals were as follows. One preliminary set of rankings, prepared by the author of this text, was based on understanding of allocation issues in general, as well as specific to the BMWC, gained through research completed for this project. In addition to conducting the ranking of alternatives for each goal, an accompanying text was prepared that explained the rationale behind each ranking. Next, each of the reviewers (as defined above) independently reviewed the preliminary rankings and the accompanying rationale, then recommended revisions based on their perspective of the issues and their understanding of the situation. Their recommended revisions were compiled and summarized. The Forest Service members of the Project Team (the "managers") then reviewed the preliminary rankings, the rationale for the rankings, and the recommended revisions provided by the reviewers. Based on this information, the managers modified the original preliminary rankings based on their professional judgment, resulting in a final preliminary ranking used for the remainder of the evaluation.

The individuals that reviewed and commented on the preliminary rankings (the “reviewers”) were chosen according to the following criteria and process. Each member of the Project Team nominated individuals in each of the four categories shown above based on their personal and professional experience. Nominations included an explanation of the recommended individual’s qualifications for participation. The criteria used for qualification included:

- knowledge and experience in the field of recreational use allocation or with the current recreational use allocation system in the BMWC;
- demonstrated ability in either professional or public forums to consider and evaluate, in a constructive manner, proposed alternatives;
- membership in one of the categories of institutional outfitter, commercial outfitter, nonoutfitted public or academic.

The nominations were compiled and the qualified individuals contacted and interviewed to determine participation interest, expertise, and availability. Based on the results of the interviews, eight of these individuals were identified to review and comment on the preliminary rankings. Selected individuals represented a diversity of opinions and perspectives regarding the recreational use allocation issue.

Creation of the Matrix

Following the preliminary ranking of each alternative approach in its ability to achieve each goal, the results were entered into a matrix indicating

the relative success of each alternative in its competition against the other alternatives (similar to a round-robin tournament format). The alternatives comprise both the columns and rows of the matrix. The number of times that each alternative is successful in being ranked higher than each other alternative at achieving the goals is summed and entered in the appropriate location in the matrix. The completed matrix summarizes the results of each competition for achieving each goal, between each of the alternatives. An example of the matrix used in the evaluation of alternatives for this report as well as a detailed explanation of how it is prepared is included in the Chapter 4 subsection titled *Preparation of the Outranking Matrix*, beginning on page 61.

Final Ranking of Alternatives

Following the creation of the matrix, a final ranking reflecting the overall success of each alternative allocation approach in achieving all the goals was prepared. The Trosper/Arrow and Raynaud process is based on identifying and ranking the alternatives with the largest number of successful contests over the other alternatives. To do this, the largest maximum values in each row of the matrix are identified and alternatives are removed from the matrix in the order of lowest to highest maximum value (indicating the least to most successful alternatives). The sequence in which the alternatives are removed becomes the final ranking. The specific steps used in Trosper/Arrow and Raynaud model to create the final ranking of alternatives

is explained in detail in the Chapter 4 subsection titled *Final Ranking of Alternatives* beginning on page 63, and shows the preparation of the final ranking conducted for this project.

Discussion of Results

The final task completed in the research methodology is the discussion of the evaluation results. Based on the final ranking, each alternative's relative success or failure is reviewed and discussed

CHAPTER 4

EVALUATION

This chapter includes each step in the evaluation of the alternative allocation approaches. Input information used in the multicriterion decision-making model, as well as the analysis of the alternatives, is provided. The first three sections include: the formal definitions of the three groups to be allocated recreational use in the BMWC, the allocation goals for the BMWC, and the selected alternatives that will be evaluated. Next, the preliminary ranking of alternatives is discussed and followed by an analysis of alternatives. Included in the analysis section are the outranking matrix and the resultant final ranking of alternatives. This chapter's conclusion discusses the results of the evaluation of alternatives.

Definition of the Commercially Outfitted, Institutionally Outfitted, and Nonoutfitted Groups

For the purposes of this text, the recognized Forest Service definitions of user groups apply. The three categories include persons that are:

- (1) commercially outfitted,
- (2) institutionally outfitted, and
- (3) nonoutfitted.

Nonoutfitted visitors to wilderness (or the "do-it-yourselfers") enter, use, and exit the area on their own, without the assistance of a guide or an outfitter.

The outfitted visitor utilizes the area with the assistance of either an institutional or commercial outfitter. Complete definitions of these terms are provided in the *Literature Review* section beginning on page 9. Additionally, further description of the outfitted categories may be found in the draft *Institutional Outfitter Policy, Bob Marshall Wilderness Complex* included in this text as Appendix D. This policy provides additional guidance to BMWC managers in applying the definitions.

Additionally, for the purposes of this text, and for the allocation of recreational use in the BMWC, the term “outfitter” refers to outfitter and guides assisting visitors into the wilderness, rather than those only supplying equipment.

Recreational Use Allocation Goals in the Bob Marshall Wilderness Complex

The following eight recreational use allocation goals have been identified by the Forest Service members of the Project Team for the BMWC.

The allocation approach should:

1. Ensure protection of wilderness resource values, including, but not limited to, LAC standards.⁷
2. Allow for a diverse range of wilderness-dependent recreational activities for all users in a variety of settings and at various times.

⁷ LAC standards refer to the “Limits of Acceptable Change” management strategy used in the BMWC. The LAC system requires management of the wilderness according to prescriptions intended to achieve desired resource conditions. Additional information regarding LAC standards can be found in the *Bob Marshall, Great Bear, and Scapegoat Wildernesses Recreation Management Direction* published by the Flathead, Lolo, Helena, and Lewis & Clark National Forests (1987).

3. Establish use shares for the commercially outfitted and the institutionally outfitted publics.
4. Provide the opportunity for high quality wilderness dependent recreational experiences for all users, as is defined by the LAC standards.
5. Take into consideration the public need⁸ for outfitting services.
6. Consider historic use levels.
7. Be flexible and dynamic in response to public need.
8. Conform with the principle of minimum regulation.⁹

These goals were used to evaluate allocation approaches and served as the basis for comparison of the alternatives. As discussed in the *Literature Review* under the subsection regarding allocation goals, the BMWC managers were unable to transfer the theoretical allocation goal of distributive justice directly to practical applied terms. While they attempted to include a goal striving to achieve fairness, they were unable to define such a goal. As an alternative, the managers decided that the eight allocation goals shown above considered collectively result in a "fair" allocation system. In

⁸ It is important to distinguish the difference between public need and public demand. One Forest Service wilderness manager (Barker) defines "public need" as "need identified by the Forest Service which is deemed essential or required for the well-being of the public and in order to meet the intent of the Forest's mission to manage and protect wilderness resources, provide for public safety, and provide high quality public recreation services." Public demand is considered to be one component of public need and reflects public requests for outfitting services (from *Outfitter and Guide Needs Assessment* paper included in Appendix G).

⁹ The "principle of minimum regulation" refers to one of twelve wilderness management principles used by the Forest Service throughout the National Wilderness Preservation System. The exact wording of the principle is, "Control and reduce the adverse physical and social impacts of human use in wilderness through education or minimum regulation (United States Forest Service, 1987).

addition, each of the following goals corresponds to a criterion of distributive justice (an abbreviated description of the goal and the corresponding criteria of distributive justice is indicated):

- Goal 2 Allow for a diverse range... of activities for all users... (equality);
- Goal 4 Provide the opportunity for high quality... experiences for all users (equality);
- Goal 5 Take into consideration the public need... (need).

As is indicated by the above list of eight goals, political acceptability is not included as a goal to be achieved by the allocation system. The managers decided not to consider political acceptability until after the completion of this evaluation -- other than in the preliminary screening for feasibility and suitability of the alternatives discussed in the next section

Alternative Allocation Approaches to be Evaluated

The following eleven allocation approaches have been selected by the BMWC managers group for evaluation in this study.

- Historical Use
- Even-Split
- Needs Assessment
- Objective Analysis and Subjective Decision
- Public Opinion
- Spatial Zoning

- Temporal Zoning
- Economic Impact
- Even-Pool Variation of an Even-Split
- Freedom of Choice
- No Allocation with Equal Opportunity

A definition of each of these approaches, the source of the method, and example locations of its implementation are included in Table 3 located in Chapter 2 of this text and beginning on page 23. Table 4 lists each selected approach and its definition. As indicated by Table 4, the alternative allocation approaches, deliberately defined only conceptually, are not specifically or procedurally defined to allow their ranking and evaluation strictly according to their ability to achieve the goals. As demonstrated by the BMWC managers when conducting the preliminary rankings shown in the next section, discussions involving detailed definitions led to hypothetical, and potentially inaccurate, predictions of how each alternative would be implemented in the BMWC and the broader implications of such implementation. Based on these unproven predictions, the alternatives' ranking began to be influenced by implementation-related outcomes, rather than an alternative's ability to achieve goals. Therefore, the alternative's definitions are kept abstract and conceptual to avoid biases and inaccurate rankings.

TABLE 4
SELECTED APPROACHES

APPROACH	REF. CODE	DESCRIPTION
Historical Use	A1	Assignment made according to historical use of the area based on a variety of formulas, for example: average of 2 highest years of annual actual use during last five years (often combined with needs assessment)
Even-Split	A2	Use is evenly split between groups, for example, 50/50 when there are 2 groups, or 33/33/33 when there are 3 groups
Needs Assessment	A3	Public need for use by different groups is determined according to assessment of various criteria, for example: resource protection, education, skills & equipment, knowledge, safety, management objectives
Objective Analysis & Subjective Decision	A4	Based on objective analysis of a variety of defined factors, a managerial decision is made regarding use assigned to a group or each group
Public Opinion	A5	Allot shares to groups according to a public opinion process that would determine public preferences
Spatial Zoning	A6	Assign use to groups in specific areas rather than by shares of use over entire area
Temporal Zoning	A7	Assign use to groups for specific times of year rather than by shares of use over the entire area
Economic Impact	A8	Assign use according to economic impact of groups to local communities adjacent to resource area
Even-Pool Variation	A9	Variation of Even-Split technique, but unused portions of shares to be made available to other groups, with annual default to 50/50 (if two groups)
Freedom of Choice	A10	Does not allocate use between groups, but requires all users to gain a permit, then the individual chooses whether to use the services of an outfitter or to go on their own
No Allocation with Equal Opportunity	A11	Does not allocate use between groups and allows equal opportunity to all users with equal management prescriptions; outfitters are permitted but are not allocated priority use days, do not have reserved camps or grazing permits – essentially treated the same as the nonoutfitted public and must comply with the same regulations

As explained in Chapter 3, the above listed approaches were selected because they were not eliminated by the exclusionary criteria. The exclusionary criteria include:

- Feasibility: the method must be
 - (1) operationally feasible (possible to implement);
 - (2) legal according to federal and state laws as well as federal and national Forest Service policy;
 - (3) politically feasible (possible to implement without insurmountable political obstacles);
 - (4) administratively feasible (administratively possible to implement considering current constraints on budgets, personnel, facilities, etc.).
- Suitability: the method must be
 - (5) suitable for implementation in a land based wilderness area (rather than a river), such as the BMWC.

A "no" answer to any of the above five criteria for a particular approach eliminated the alternative from further consideration.

The following six methods were eliminated from further consideration and the alternatives' elimination criterion were:

- Marketplace: operationally impossible;
- Value-based Shares: not politically feasible;
- Relative Resource Impact: operationally and administratively impossible;
- Test Cases: operationally impossible;
- Legislative Direction: not legal, not politically feasible;

- Percentage Disappointment: operationally impossible, not politically feasible.

Complete description and explanation of each of these methods may also be found in Table 3 beginning on page 23.

Preliminary Ranking of Alternative Allocation Approaches

The following section includes a review of each recreational use allocation goal and a sequential ranking of each alternative's ability to achieve each goal, relative to the abilities of the other competing alternatives. Table 4 includes each alternative approach to be ranked and its respective reference code. Throughout the rankings, the following notation is used to indicate the relative success of the alternatives in their contests against each other, or pairwise competitions:

- > the alternative (indicated by its reference code) to the left of the sign is more successful than (greater than) the alternative to the right of the sign in its ability to achieve the goal;
- = the alternatives (indicated by their reference codes) on the left and the right of the sign are equivalent (equal to) in their ability to achieve the goal.

In addition to the sequential ranking of alternatives for each goal, a narrative discussion explains the justification for each set of rankings.

When creating the rankings, attention focuses solely on the ability of each alternative to achieve each goal. Other features of the alternatives not directly related to achieving the goal under consideration are not taken into

account. Additionally, rankings are based strictly on the characteristics of the alternative, not on potential side-effects or other results of various implementation scenarios. For example, if an approach requires that a use level be set to utilize the approach for allocating use between groups, any desirable or undesirable results associated with setting a use level are not reflected in the rankings of the alternative approaches. Only the characteristics of the allocation alternative are considered in the ranking.

For many of the goals, the ranking of alternatives reflects whether the goal is a factor or criterion considered by, or included in, the approach. For most goals, each alternative approach includes:

- direct consideration of the goal,
- the potential for the goal to be considered, or
- no consideration of the goal.

The individual rankings most often reflect the varying degrees to which the goals are incorporated into the alternative approaches. A summary list of the goals and the preliminary ranking of alternatives is included in Table 5 at the end of this subsection.

Goal 1: Ensure protection of wilderness resource values, including, but not limited to, LAC standards.

$$A4 > A3 > A6 = A7 = A5 > A1 = A2 = A8 = A9 = A10 = A11$$

The ranking of the alternative approaches in their ability to ensure the protection of resource values reflects the alternative's ability of to allow for considering this goal in making allocation decisions. Some alternatives, by design, include the opportunity to consider a variety of factors, while others only consider their defining characteristic. For example, the *Objective Analysis and Subjective Decision (A4)*¹⁰ and *Needs Assessment (A3)* alternatives consider various factors and potentially include protection of resource values. These are ranked first and second, respectively, with *Objective Analysis and Subjective Decision (A4)* being slightly higher as this alternative provides more flexibility when considering management objectives such as resource protection. In contrast, the alternatives all tied for last, *Historical Use (A1)*, *Even-Split (A2)*, *Economic Impact (A8)*, *Even-Pool Variation (A9)*, *Freedom of Choice (A10)*, and *No Allocation with Equal Opportunity (A11)*, do not include consideration of any factors other than the sole criteria used to allocate. For example, *Historical Use (A1)*, considering only historic use of the area, makes no provision for considering the

¹⁰ Throughout the remainder of this text, when an alternative is referred to by name -- such as *Objective Analysis and Subjective Decision* -- it is italicized so that it is easily recognized as an alternative allocation approach.

protection of resource values when allocating use. The remaining middle ranked alternatives provide the opportunity to consider the protection of resource values, but do not guarantee such consideration. Tied for third are *Spatial Zoning (A6)* , *Temporal Zoning (A7)* , and *Public Opinion (A5)* .

Goal 2: Allow for a diverse range of wilderness dependent recreation activities for all users in a variety of settings and at various times.

$$A10 = A11 > A3 = A4 > A2 = A5 = A9 > A1 > A6 = A7 = A8$$

The ranking of alternative approaches in their ability to meet this diversity objective is based on the ability of each alternative to take this goal into consideration when allocation decisions are made. The two alternatives tied for first, *Freedom of Choice (A10)* and *No Allocation with Equal Opportunity (A11)*, both provide for the greatest potential diversity of use opportunities since neither approach includes limitations placed on any type of user based on activity, location, or timing. Any such restrictions would result from site specific management actions, not the allocation of use opportunities. Next, *Needs Assessment (A3)* and *Objective Analysis and Subjective Decision (A4)* are tied for second since these alternatives allow for the diversity goal to be included in the allocation decision-making process. The *Even-Split (A2)*, *Public Opinion (A5)*, and *Even-Pool Variation (A9)* alternatives follow since they neither deliberately allow for diversity, nor do

they exclude it from occurring. The seventh ranked alternative is *Historical Use (A1)*. This approach does not allow for consideration of diversity; however, whatever range of opportunities historically available would continue to be available when allocation decisions are made. The lowest ranked options, *Spatial Zoning (A6)*, *Temporal Zoning (A7)*, and *Economic Impact (A8)* deliberately do not include assurance of diversity in their approach to allocation decision-making.

Goal 3: Establish relative use shares for the commercially outfitted and the institutionally outfitted publics.

$$A1 = A2 = A3 = A4 = A5 = A8 = A9 > A6 = A7 = A10 = A11$$

There is a clear distinction between the alternatives in their ability to establish relative use shares for the commercially and the institutionally outfitted publics -- either they provide the opportunity to do so, or they do not. *Historical Use (A1)*, *Even-Split (A2)*, *Needs Assessment (A3)*, *Objective Analysis and Subjective Decision (A4)*, *Public Opinion (A5)*, *Economic Impact (A8)*, and *Even-Pool Variation (A9)* all have the potential to result in defined use shares for each group. *Spatial Zoning (A6)*, *Temporal Zoning (A7)*, *Freedom of Choice (A10)*, and *No Allocation with Equal Opportunity (A11)* do not.

Goal 4: Provide the opportunity for high quality wilderness dependent recreational experiences for all users, as is defined by the LAC standards.

$$A3 = A4 > A6 = A7 > A1 = A2 = A5 = A8 = A9 = A10 > A11$$

The *Needs Assessment (A3)* and *Objective Analysis and Subjective Decision (A4)* alternative approaches are both ranked first in their ability to provide high quality wilderness-dependent recreational experiences for all users. By design, the goal of providing high quality experiences can be included in the decision-making process. Tied for third place are *Spatial Zoning (A6)* and *Temporal Zoning (A7)* since the provision of opportunities for high-quality experiences varies and can be directly included and adjusted for in making zoning decisions. The *Historical Use (A1)*, *Even-Split (A2)*, *Public Opinion (A5)*, *Economic Impact (A8)*, *Even-Pool Variation (A9)*, and *Freedom of Choice (A10)* alternatives are ranked next, since these options may or may not allow for high quality experiences to occur and since it is not a criteria included in the decision-making process. The *No Allocation with Equal Opportunity (A11)* option is ranked last since no provisions guarantee any users being given the opportunity for a high quality wilderness experience.

Goal 5: Take into consideration the public need for outfitting services.

$$A3 = A4 > A5 > A1 = A8 > A2 = A6 = A7 = A9 > A10 = A11$$

The ranking of the alternative approaches in their ability to consider the public need for outfitting services is reflected by whether the public need is directly considered in the decision-making process, is indirectly included by the alternative, or is not considered at all. The most open to consideration are the first two ranked alternatives, *Needs Assessment (A3)* and *Objective Analysis and Subjective Decision (A4)*. Each of these alternatives, by design, allows for outfitting need to be considered and incorporated into the decision-making process. The third-ranked option, *Public Opinion (A5)* also provides the opportunity to consider public need, however, not as deliberately, nor as guaranteed, as with the first two. Next ranked are the two alternatives tied for fourth. *Historical Use (A1)* and *Economic Impact (A8)* reflect the contribution public need has made to the amount of evolved use, including the level of outfitting services and the economic impact of the outfitting services to local communities. *Even-Split (A2)*, *Spatial Zoning (A6)*, *Temporal Zoning (A7)*, and *Even-Pool Variation (A9)*, all provide for the outfitted user group to be guaranteed a share of use, and are therefore considerate of the public need for outfitting services, although only generally. The final two, *Freedom of Choice (A10)* and *No Allocation with Equal Opportunity (A11)* provide the option for the user to utilize an outfitter at

their choice, but the public need for outfitting services is not taken into consideration by the design of the approaches.

Goal 6: Consider historic use levels.

$$A1 > A3 = A4 > A8 > A5 > A2 = A9 > A6 = A7 = A10 = A11$$

The goal of considering historic use levels is reflected in the ranking by whether the alternative approach includes historic use as a factor to be considered in the allocation decision-making process, indirectly reflects historic use, has the potential for historic use to be considered, or is not considered at all. First ranked is the *Historical Use (A1)* alternative since historic use is the only factor considered. *Needs Assessment (A3)* and *Objective Analysis and Subjective Decision (A4)*, are next due to historic use being a potential factor to be considered in the decision-making process. *Economic Impact (A8)* is ranked next, since the economic relationship of each group to local communities reflects historic use levels. *Public Opinion (A5)* is ranked fifth since this approach also provides for consideration of historic use levels, but does not assured such consideration. *Even-Split (A2)* and *Even-Pool Variation (A9)* reflect the historic existence of each group allocated use, although the relative group size is not considered. The remaining alternatives, *Spatial Zoning (A6)*, *Temporal Zoning (A7)*, *Freedom of Choice*

(A10), and *No Allocation with Equal Opportunity*, do not take historic use into consideration and are all tied for last.

Goal 7: Be flexible and dynamic in response to public need.

$$A10 = A11 > A9 > A3 = A4 = A5 > A6 = A7 > A1 = A2 = A8$$

The two alternative approaches tied for first, *Freedom of Choice* (A10) and *No Allocation with Equal Opportunity* (A11), are most flexible and dynamic since neither incorporates specific shares assigned to groups. The third ranked option is the *Even-Pool Variation* (A9). In this alternative, equal shares are assigned to each group; but unused portions of shares are made available to other groups and it includes some flexibility to accommodate change in public need. Next ranked are *Needs Assessment* (A3), *Objective Analysis and Subjective Decision* (A4), and *Public Opinion* (A5) due to the design of the alternatives that could allow for allocation decisions to be re-evaluated and modified at regular intervals in response to changes in public need. Tied for sixth position, *Spatial Zoning* (A6) and *Temporal Zoning* (A7) can also be modified at intervals to reflect changes in public need, however, not as significantly as the higher-ranked alternatives. The last ranked alternatives include *Historical Use* (A1), *Even-Split* (A2), and *Economic Impact* (A8). These alternatives result in fixed shares and do not incorporate modification flexibility in response to public need.

Goal 8: Conform with the principle of minimum regulation.

$$A11 > A3 = A4 = A5 > A1 = A2 = A8 = A10 > A6 = A7 = A9$$

The ranking of alternative approaches in their ability to conform with the principle of minimum regulation reflects the degree to which the approach imposes regimentation or restrictions on the wilderness users in regard to allocation of use and access to the resource. The *No Allocation with Equal Opportunity* (A11) approach is the least restrictive because this alternative does not require allocation or use limits. Next, *Needs Assessment* (A3), *Objective Analysis and Subjective Decision* (A4), and *Public Opinion* (A5), are ranked equally for second. Each of these alternatives allows for varying levels of regulation depending upon the results of the decision-making process. Tied for fifth and ranked equally are four alternatives which reflect that these approaches will result in limited regulation for some or all visitors. These alternatives are *Historical Use* (A1), *Even-Split* (A2), *Economic Impact* (A8), and *Freedom of Choice* (A10). The group of alternatives ranked last include *Spatial Zoning* (A6), *Temporal Zoning* (A7), and *Even-Pool Variation* (A9). Each of these require some type of regulation specifically limiting or controlling the users' access to the wilderness resource and therefore clearly impose significant regulation on the visitor.

TABLE 5
SUMMARY OF GOALS AND PRELIMINARY RANKING

*Goal 1: Ensure protection of wilderness resource values, including, but not limited to, LAC standards.**

$$A4 > A3 > A5 = A6 = A7 > A1 = A2 = A8 = A9 = A10 = A11$$

Goal 2: Allow for a diverse range of wilderness dependent recreational activities for all users in a variety of settings and at various times.

$$A10 = A11 > A3 = A4 > A2 = A5 = A9 > A1 > A6 = A7 = A8$$

Goal 3: Establish relative use shares for the commercially outfitted and the institutionally outfitted publics.

$$A1 = A2 = A3 = A4 = A5 = A8 = A9 > A6 = A7 = A10 = A11$$

Goal 4: Provide the opportunity for high quality wilderness dependent recreational experiences for all users, as is defined by the LAC standards.

$$A3 = A4 > A6 = A7 > A1 = A2 = A5 = A8 = A9 = A10 > A11$$

Goal 5: Take into consideration the public need for outfitting services.

$$A3 = A4 > A5 > A1 = A8 > A2 = A6 = A7 = A9 > A10 = A11$$

Goal 6: Consider historic use levels.

$$A1 > A3 = A4 > A8 > A5 > A2 = A9 > A6 = A7 = A10 = A11$$

Goal 7: Be flexible and dynamic in response to public need.

$$A10 = A11 > A9 > A3 = A4 = A5 > A6 = A7 > A1 = A2 = A8$$

Goal 8: Conform with the principle of minimum regulation.

$$A11 > A3 = A4 = A5 > A1 = A2 = A8 = A10 > A6 = A7 = A9$$

* See footnote 7 on page 43 for explanation of LAC standards.

Analysis of Alternative Allocation Approaches

The preliminary ranking of alternative allocation approaches discussed above is the basis for further analysis of the alternatives in the Trosper/Arrow and Raynaud multicriterion decision-making model and is used to determine overall success of the alternatives for achieving all goals. To select the most successful alternative, the preliminary rankings are entered into a matrix (called an "outranking matrix" by Trosper/Arrow and Raynaud) that includes scores indicating the relative success of each alternative over the others in their pairwise competitions. The alternatives are then removed from the matrix in increasing order of success (called an increasing algorithm by Trosper/Arrow and Raynaud¹¹). This process results in a final ranking that indicates the most successful to the least successful alternatives. As with the preliminary rankings, it is possible for alternatives to have tie scores, and this is reflected in their final rankings. The process establishes the final ranking and the results of this process are explained in detail below.

¹¹ Trosper also describes the methodology for using a decreasing algorithm that removes alternatives in decreasing order of success, beginning with the most successful and progressing to the least successful alternative. In this situation, use of the decreasing algorithm produces unsatisfactory results due to the frequent occurrence of ties in the preliminary rankings. Conversely, the increasing algorithm does not present this problem and is therefore the preferred method of analysis.

Preparation of the Outranking Matrix

An empty matrix is prepared that includes all the alternatives, in sequential order, as row and column headings. The successful alternatives (or Project Favored) in each competition between alternatives comprise the rows, and the unsuccessful alternatives (or Project Disfavored) comprise the columns. The matrix is an 11 x 11 square, with 121 boxes -- one box to record the results of each pairwise competition between the eleven alternatives. Each box that corresponds to the row and column intersection of the same alternative is filled with an "X" rather than a score to indicate that there is no contest between the alternative and itself.

To identify the pairwise score for each contest between alternatives, the number of times are tallied and totaled that an alternative is ranked higher than another alternative in its ranking to achieve each goal. For example, by reviewing the preliminary rankings for each goal (shown in Table 5 on page 60), alternative A1 is shown to rank higher than A2 twice (for goal 5 and goal 6). Therefore, "2" is entered into the matrix box at the intersection of row A1 and column A2. This process is completed for each pairwise competition between alternatives until the matrix is filled. The completed outranking matrix utilizing the preliminary rankings of alternative allocation approaches is shown below in Figure 3.

FIGURE 3
OUTRANKING MATRIX*

Project Disfavored

	A1	A2	A3	A4	A5	A6	A7	A8	A9	A10	A11
A1	X	2	1	1	1	5	5	2	3	3	4
A2	1	X	0	0	0	4	4	1	1	3	4
A3	6	7	X	0	5	8	8	7	6	6	5
A4	6	7	1	X	5	8	8	7	6	6	5
A5	5	5	0	0	X	6	6	5	4	5	5
A6	3	3	0	0	1	X	0	3	2	2	3
A7	3	3	0	0	1	0	X	3	2	3	3
A8	0	2	0	0	1	4	4	X	3	3	4
A9	2	1	1	1	1	4	4	2	X	3	4
A10	2	2	2	2	2	3	3	2	3	X	1
A11	3	3	3	3	3	3	3	3	3	1	X

Project
Favored

*Matrix format from Trospen, 1988

Final Ranking of Alternatives

Following completion of the outranking matrix, the steps below identify the alternatives in their final ranked order and remove them in the proper sequence from the outranking matrix:

1. Identify the highest number in each row (or the maximum value).
2. Select the alternative (or row) with the lowest maximum value and remove it from the matrix. This is the lowest ranked alternative. If two or more alternatives have equivalent lowest maximum values then both are removed from the matrix and are tied for the lowest ranked alternative.
3. Eliminate the removed alternative's row and column entries from further consideration and re-identify the maximum value in each row. Removing the alternative's row and column entries re-starts the selection process using only the remaining alternatives.
4. Select again the alternative with the lowest maximum value and remove it from the matrix. This alternative (or alternatives, if there is a tie) is the next to last ranked alternative.
5. Repeat the process of eliminating the selected alternatives' row and column entries, re-identification of the maximum value in each row, and removal of alternatives until all alternatives have been selected and removed from the matrix producing a final ranking.

Completion of the above process on the matrix shown in Figure 3 on page 63 results in the following final ranking of alternatives (the same notation, ">" and "=", to indicate the relative position of alternatives, as explained on page 49, is used):

$$A4 > A3 > A5 > A1 > A8 > A9 > A2 > A6 = A7 = A10 = A11$$

Another format to express the same final ranking lists the alternatives numerically from first to last positions and follows:

1st	Objective Analysis and Subjective Decision (A4),
2nd	Needs Assessment (A3)
3rd	Public Opinion (A5)
4th	Historical Use (A1)
5th	Economic Impact (A8)
6th	Even-Pool Variation (A9)
7th	Even-Split (A2)
8th (tie)	Spatial Zoning (A6), Temporal Zoning (A7), Freedom of Choice (A10), No Allocation with Equal Opportunity (A11)

Appendix G includes the sequential steps using the matrix that led to the final ranking of alternatives.

Discussion of Results

The following discussion reviews the final ranking of the alternative allocation approaches for their ability to achieve the recreational use allocation goals. For ease of reference, a summary list of goals and the preliminary ranking of alternatives for their ability to achieve each goal is provided in Table 5 on page 59. Alternatively, Table 6 beginning on page 70 includes a review of the preliminary ranking listed by alternative, rather than by goal.

The final ranking of alternatives indicates that *Objective Analysis and Subjective Decision* is the alternative most successful in its ability to achieve the allocation goals. Additional review of the preliminary ranking indicates that the *Needs Assessment* alternative holds a very close second place overall ranking -- being only one position behind *Objective Analysis and Subjective Decision* for one goal. These first and second place finishes reflect the consistently high ranking of these alternatives over all the others by being ranked in the top three positions for all goals. This result reflects the high frequency with which these alternatives will achieve, or will provide opportunity to achieve each goal compared to the other alternatives. By design, they do not prevent the potential achievement of any of the goals. They are highest ranked for achieving goals 3 (establishing relative use shares), 4 (providing the opportunity for providing high quality experiences), and 5 (taking into consideration public need). They finish in second place for goals 2 (allowing for a diverse range of wilderness dependent recreational activities), 6 (considering historic use levels), and 8 (conformity with the principle of minimum regulation). Their poorest score, third position, is for goal 7 (being flexible and dynamic in response to public need). The only difference in the performance between the two alternatives is for goal 1 (ensuring the protection of wilderness resource values), where *Objective Analysis and Subjective Decision* is placed one position higher (first) than *Needs Assessment* (second). These two alternatives are ranked first and second for more goals than any other alternative.

Additionally, regarding the achievement of the overall theoretical allocation objective, the *Objective Analysis and Subjective Decision* and *Needs Assessment* alternatives finish in first or second place for each of the three goals reflecting distributive justice. Specifically, they finish first for goals 4 (providing the opportunity for providing high quality experiences) and 5 (taking into consideration public need) and second for goal 2 (allowing for a diverse range of wilderness dependent recreational activities).

The overall third place position in the final ranking is held by the *Public Opinion* alternative. The overall performance of this alternative was significantly less than the first and second ranked options (indicated in Table 5, page 59, by the reduced number of first and second place finishes for the individual goals). However, its performance was slightly better than the next four ranked alternatives. *Public Opinion* received a first place finish only for goal 3 (establishing relative use shares). This goal, however, results in either a "yes" or "no" answer regarding each alternative's ability to achieve it. Unlike the other goals, it does not result in a qualitative assessment, from better to worse. Therefore, not as clear a distinction exists between the alternatives abilities to achieve this goal as with the other goals. Accordingly, while this is a first place finish for the *Public Opinion* alternative, it is a first place shared with six other alternatives. Another important point is the similarity of this alternative to the *Needs Assessment* and the *Objective Analysis and Subjective Decision* alternatives. The design of the *Public Opinion* alternative provides the opportunity to achieve each allocation goal,

although this outcome is not guaranteed and is less likely to occur than with the first and second ranked options. Since the *Public Opinion* approach is based on public preferences, these goals would be achieved only if they were reflected in the preferences of those persons participating in the *Public Opinion* process.

The goals ranked fourth through seventh show a mixture of middle-range finishes for their ability to achieve the individual goals. Unlike the higher ranked alternatives, each of these is unable to achieve at least one of the allocation goals due to its design. Specifically, *Historical Use*, *Economic Impact*, *Even-Pool Variation* and *Even-Split* all fail to achieve goal 7 (being flexible and dynamic in response to public need). *Economic Impact* is also inadequate at achieving goal 2 (allowing for a diverse range of wilderness dependent recreational activities). *Even-Pool Variation* and *Even-Split* fail in achieving goal 6 (considering historic use levels).

The remaining alternatives, tied for last position in the final ranking (8th), show a range from doing well at achieving the individual goals to doing poorly. Each has at least one last place finish. *Freedom of Choice* and *No Allocation with Equal Opportunity* are ranked first for goals 2 (allowing for a diverse range of wilderness dependent recreational activities) and 7 (being flexible and dynamic in response to public need). *No Allocation with Equal Opportunity* also finishes first for goal 8 (conformity with the principle of minimum regulation). These first place finishes, however, are balanced by neither alternative being able to achieve goals 1, 3, 4, 5, and 6. Similarly,

Spatial Zoning and *Temporal Zoning* combine high scores for some goals with being unable to achieve others. They do well on goals 1 (ensuring protection of wilderness resource values) and 4 (providing the opportunity for high quality experiences). However, they do poorly or are unable to achieve the remaining goals (2, 3, 5, 6, 7, and 8).

The final ranking of alternatives shows another interesting result. The highest ranked alternatives, *Needs Assessment*, *Objective Analysis and Subjective Decision*, and *Public Opinion*, are all the most flexible in their design and outcome. In the case of the first two, the application of these alternatives vary greatly depending upon the situation. They are not systematic in that they follow a defined formula or procedure -- similar to the remaining lower ranked alternatives. Existing examples of implementation of the *Needs Assessment* and *Objective Analysis and Subjective Decision* alternatives show great variation in how they are conducted and in their results (Barker, undated; Dillon RA, 1993; Targhee NF, 1992; Payette NF, undated; Jicarilla NF, undated). Similarly, *Public Opinion* is subject to a variety of implementation methodologies and to the preferences of the involved public. Both the methodology used and public preferences may vary from situation to situation.

Finally, it is worthwhile to recognize the potential for variability in the final ranking. As is noted earlier in Chapter 3 *Research Methodology*, the Trospen/Arrow and Raynaud model incorporates both subjective and objective processes. While the outranking matrix and the steps used to create

the final ranking are systematic and entirely objective, the definition of the goals and the preliminary ranking of alternatives are entirely subjective -- in this situation, subject to the discretion of the BMWC Forest Service managers. Although great effort was made to include outside, non-Forest Service input, final decisions are based on the managers' preferences. If this process were repeated for another wilderness, or if the BMWC managers chose to modify their goals or preliminary rankings, the results of the analysis of alternatives may vary from those reached here.

TABLE 6
REVIEW OF PRELIMINARY RANKING RESULTS

This table shows the rank of each alternative for each of the goals. The alternative is listed by name, then its position in the preliminary ranking and the goals for which it received that ranked position. For example, the first entry shows that the *Objective Analysis and Subjective Decision* alternative was ranked in first place in the preliminary ranking for four goals: Ensure protection of wilderness resource values, Establish relative use shares, Provide the opportunity for high quality wilderness dependent recreational experiences, and Take into consideration the public need for outfitting services.

Alternative	Prelim. Ranked Position	Goal
Objective Analysis and Subjective Decision & Needs Assessment	1st	Ensure protection of wilderness resource values... (Objective Analysis and Subjective Decision only) Establish relative use shares... Provide the opportunity for high quality wilderness dependent recreational experiences... Take into consideration the public need for outfitting services.
	2nd	Ensure protection of wilderness resource values... (Needs Assessment only) Allow for a diverse range of wilderness dependent recreational activities... Consider historic use levels. Conform with the principle of minimum regulation.
	3rd	Be flexible and dynamic in response to public need.
Public Opinion	1st	Establish relative use shares...
	2nd	Take into consideration the public need for outfitting services. Conform with the principle of minimum regulation.
	3rd	Ensure protection of wilderness resource values... Allow for a diverse range of wilderness dependent recreational activities... Provide the opportunity for high quality wilderness dependent recreational experiences...
	4th	Be flexible and dynamic in response to public need. Consider historic use levels.

TABLE 6
REVIEW OF PRELIMINARY RANKING RESULTS continued

Alternative	Prelim. Ranked Position	Goal
Historical Use	1st	Consider historic use levels.
	3rd	Establish relative use shares... Provide the opportunity for high quality wilderness dependent recreational experiences... Take into consideration the public need for outfitting services.
	4th	Conform with the principle of minimum regulation.
	5th	Ensure protection of wilderness resource values... Allow for a diverse range of wilderness dependent recreational activities... Be flexible and dynamic in response to public need.
Even-Pool Variation and Even-Split	1st	Establish relative use shares...
	2nd	Be flexible and dynamic in response to public need. (Even-Pool Variation only)
	3rd	Allow for a diverse range of wilderness dependent recreational activities... Provide the opportunity for high quality wilderness dependent recreational experiences... Conform with the principle of minimum regulation. (Even-Split only)
	4th	Ensure protection of wilderness resource values... Take into consideration the public need for outfitting services.
	5th	Conform with the principle of minimum regulation. (Even-Pool Variation only) Consider historic use levels. Be flexible and dynamic in response to public need. (Even-Split only)
Spatial Zoning and Temporal Zoning	2nd	Establish relative use shares... Provide the opportunity for high quality wilderness dependent recreational experiences...
	3rd	Ensure protection of wilderness resource values...
	4th	Take into consideration the public need for outfitting services.
		Be flexible and dynamic in response to public need. Conform with the principle of minimum regulation.
	5th	Allow for a diverse range of wilderness dependent recreational activities...
	6th	Consider historic use levels.

TABLE 6
 REVIEW OF PRELIMINARY RANKING RESULTS continued

Alternative	Prelim. Ranked Position	Goal
Freedom of Choice and No Allocation with Equal Opportunity	1st	Allow for a diverse range of wilderness dependent recreational activities... Be flexible and dynamic in response to public need. Conform with the principle of minimum regulation. (No Allocation with Equal Opportunity only)
	2nd	Establish relative use shares...
	3rd	Provide the opportunity for high quality wilderness dependent recreational experiences... (Freedom of Choice only) Conform with the principle of minimum regulation. (Freedom of Choice only)
	4th	Ensure protection of wilderness resource values... Provide the opportunity for high quality wilderness dependent recreational experiences... (No Allocation with Equal Opportunity only)
	5th	Take into consideration the public need for outfitting services.
	6th	Consider historic use levels.

CHAPTER 5

CONCLUSION

This final chapter includes a recommendation for implementing an allocation approach based on the results of the evaluation of alternatives. Also, and in conclusion, the need for additional research regarding the allocation of recreational use in wilderness is discussed.

Recommendation

This analysis of the alternative allocation approaches has resulted in the *Objective Analysis and Subjective Decision* alternative being ranked in first place overall and the *Needs Assessment* alternative in a very close second place. They are the two most successful alternatives at achieving the goals. These first and second place alternatives are followed by one alternative in each of the third through seventh positions and a four-way tie for last. This ranking provides a clear sequence of preferred alternatives in the order of their ability to achieve the goals.

Based on these results and in consideration of the factors explained below, the *Needs Assessment* approach is recommended for use in allocating recreational use in the Bob Marshall Wilderness Complex (BMWC). This alternative, while being ranked slightly below the *Objective Analysis and Subjective Decision* approach, offers the ability to achieve all eight allocation

goals, while incorporating several other desirable features not shared by the first ranked alternative.

Needs Assessment is ranked one position below the first place finisher, *Objective Analysis and Subjective Decision*, for only one goal. Despite its slightly lower ranking, *Needs Assessment* is recommended over the *Objective Analysis and Subjective Decision* alternative for three reasons: (1) the ease of incorporating public opinion into the allocation process, (2) its ability to coordinate with the existing Limits of Acceptable Change (LAC) program, and (3) its compatibility with specific language included in the Wilderness Act of 1964 (16 U.S.C. § 1131).

Regarding the first reason, the *Objective Analysis and Subjective Decision* alternative involves internal analysis and decision-making by Forest Service managers. It is defined earlier in this text as, "Based on objective analysis of a variety of defined factors, a managerial decision is made regarding use assigned to each group." (page 23) By design, this internal process does not incorporate public input. Essentially, managers assess the situation and make allocation decisions using their best judgment. In contrast, the *Needs Assessment* alternative is defined as, "Public need for use by different groups is determined according to assessment of various criteria, for example: resource protection, skills & equipment, knowledge, safety, management objectives" (page 23). *Needs Assessment*, while still in its developmental stages within the Forest Service when applied to recreational use allocation, provides the opportunity for public involvement when

defining evaluation criteria and assessing public need. This characteristic coordinates with the history of public involvement in management of the BMWC.

Additionally, the *Needs Assessment* alternative coordinates with the LAC management program in its style and approach. LAC, conceptually based on identifying acceptable resource conditions in the wilderness, then develops management strategies to maintain or improve those conditions. Similarly, the *Needs Assessment* alternative is a parallel process by which public need for a variety of recreational opportunities (including outfitted and nonoutfitted opportunities) is identified; and allocation decisions are made, utilizing that information. Through the incorporation of public involvement and the systematic assessment of public need, the *Needs Assessment* alternative to recreational use allocation in the BMWC should result in defensible, well-justified allocation decisions. Implementation of the *Needs Assessment* alternative in the BMWC using a well-defined systematic methodology responsive to public opinion would exemplify responsible use of the method to resolve a critical management issue, while building on the history and foundation of the LAC management program.

Finally, the *Needs Assessment* alternative is compatible with the Wilderness Act's special provision allowing commercial services to be performed within wilderness. The Wilderness Act states that, "Commercial services may be performed within the wilderness areas designated by this Act to the extent necessary for activities which are proper for realizing the

recreational or other wilderness purposes of the areas.” [sec. 4. (d)(6)] This provision is the legal basis for allowing commercial outfitting to occur in the BMWC. The *Needs Assessment* alternative supports the Act’s direction by determining the appropriate level of outfitter services to be provided to “the extent necessary” or needed.

The lower-ranked alternatives, including *Public Opinion*, *Historical Use*, *Economic Impact*, *Even-Split* and *Even-Pool Variation* are not recommended for general implementation due to their serious limitations in achieving one or more of the allocation goals. In some situations, however, they may be useful for limited application or for incorporation into the *Needs Assessment* alternative. For example, the *Historical Use* alternative assesses historic use patterns and then allocates use according to those historic trends. While this alternative is not appropriate for use over the entire complex, it may be incorporated into a needs assessment since historical use is a reflection, although limited, of past public need for outfitting services.

Another example utilizes the *Even-Pool Variation* on a limited basis for site specific management of heavily impacted or overused locations. Specifically, if it is necessary to restrict access to an area due to perpetual inability to achieve LAC standards for social conditions or physical, the *Even-Pool Variation* may be used to regulate access to the area. This alternative would achieve many of the site specific goals for allocation in this situation, while failing to achieve other goals in only the affected area. The tradeoff of addressing and resolving acute problems in a particular location at the

expense of other goals would be acceptable in this situation. Table 7 further illustrates this point. Other applications of the lower ranked alternatives can be identified by managers of the BMWC utilizing the information provided in Table 6 located on page 70 as specific locations with particular issues needing to be addressed are identified.

In conclusion, the *Needs Assessment* alternative should be implemented for the complex as a whole, with use of other alternatives for site specific management of particular problems. As previously indicated, the *Needs Assessment* alternative requires additional development to be utilized consistently as an effective tool for allocating recreational use in wilderness.

Table 7. --Example Use of Even-Pool Variation Approach for Site Specific Management

Goals Achieved	Goals Not Achieved
<p>Establish relative use shares for the commercially outfitted and the institutionally outfitted publics.</p> <p>Be flexible and dynamic in response to public need.</p> <p>Allow for a diverse range of wilderness dependent recreational activities for all users in a variety of settings and at various times.</p> <p>Provide the opportunity for high quality wilderness dependent recreational experiences for all users...</p>	<p>Ensure protection of wilderness resource values...</p> <p>Take into consideration the public need for outfitting services.</p> <p>Conform with the principle of minimum regulation.</p> <p>Consider historic use levels.</p>

To supplement the conceptual definition of a *Needs Assessment* provided in this text, Appendix H includes a discussion of possible *Needs Assessment* methodologies and examples of its use in other locations.

Need for Additional Research

The alternative allocation approaches evaluated in this text offer a wide variety of options for allocating recreational use in wilderness. As indicated in the *Literature Review* however, many of these methods are not fully developed procedures, and only offer general guidance for approaching the allocation issue. Even those that are fully developed methods often do not achieve satisfactory results. The many shortcomings of the methods reviewed are indicated in the *Discussion of Results* subsection in Chapter 4. While this study has selected a preferred alternative from those available, a well-developed, theoretically-grounded method for the allocation of recreational use in wilderness is clearly lacking. These findings result in two specific needs for additional research.

First, additional research into and development of an allocation method specifically designed for use in land-based wildernesses that achieves the goals of distributive justice would contribute to the options available to land managers. This challenge, however, is significant since development of suitable methods for any resource allocation project is difficult and few methodologies have been developed in any discipline that are universally satisfactory to all persons being allocated use.

Second, since the best of the current options available for implementation in the BMWC has been identified as the *Needs Assessment* alternative, this alternative should be further developed and procedurally defined. While a few allocation pioneers have created and used defined methodologies for conducting a *Needs Assessment* for allocating recreational use in wilderness, there is great variability in the scope and quality of the assessments conducted. Until a better method is developed, *the Needs Assessment* alternative holds great potential for becoming a standardized, yet flexible, approach for allocating recreational use. However, additional development of the idea is required with standardization in the methodology used in order to develop consistency and quality across the range of locations and situations where it may be applied.

REFERENCES

- Allredge, R. B. 1973. "Some Capacity Theory for Parks and Recreation Areas." *Trends* 10 (Oct.-Dec.): 20-29.
- Arrow, K. J. and H. Raynaud. 1986. *Social Choice and Multicriterion Decision-Making*. Cambridge, Massachusetts: The MIT Press. 127pp.
- Ashley National Forest. 1996. *DRAFT High Uintas Wilderness Outfitting and Guiding "Public Need" Analysis*. USDA Forest Service, Ashley National Forest. 6pp.
- Barker, M. F. Undated. *Allocation and Public Need*. USDA Forest Service, Shoshone National Forest.
- Barrett, R. 1991. Permit Systems for River Use: Efficiency versus Equity for All." *Western Wildlands Winter*, 1991:13-17.
- Beaverhead National Forest. 1986. *Beaverhead National Forest Outfitter and Guide Policy*. USDA Forest Service, Beaverhead National Forest. 20pp.
- Becker, R. H., A. Jubenville, and G. W. Burnett. 1984. "Fact and Judgment in the Search for a Social Carrying Capacity." *Leisure Sciences* 6 (4): 475-486.
- Burch, W. R. Jr. 1984. "Much Ado About Nothing - Some Reflection on the Wider and Wilder Implications of Social Carrying Capacity." *Leisure Sciences* 6 (4): 487-496.
- Chilman, K., D. Foster, and A. Everson. 1990. Updating the Recreational Carrying Capacity Process: Recent Refinements. *Managing America's Enduring Wilderness Resource*. St. Paul, Minnesota: Minnesota Agricultural Experiment Station. 234-238.
- Cordell, H. K. 1981. Pricing for Allocating Low-Density Recreational Use Between Private and Commercial Users of Natural Areas. *Recreation Use Allocation*. Edited by L. J. Buist. Nevada Agricultural Experiment Station, University of Nevada Reno. 77-103.
- Cullen, R. 1985. "Rationing Recreation Use of Public Land." *Journal of Environmental Management* 21: 213-224.

- Cullen, R. and H. R. Familton. 1987. "Transferable Recreation Permits: a Quasi-property Approach to the Management of Commercial Recreation on Public Land." *Journal of Environmental Management* 24: 237-245.
- Cruz, P. E. and T. Jiron. 1994. *Chetco Wild and Scenic River Analysis of Public Use*. USDA Forest Service, Siskiyou National Forest. 31pp.
- Dasmann, R. F. 1964. *Wildlife Biology*. New York: John Wiley and Sons.
- DeGraffe, E. P. 1983. *An Analysis of Wilderness Permit Administration for Rationing Use on the Inyo National Forest*. USDA Forest Service, Inyo National Forest. 54pp.
- Deutsch, M. 1975. "Equity, Equality, and Need: What Determines Which Value Will Be Used as the Basis of Distributive Justice?" *Journal of Social Issues* (31) 3: 137-149.
- Dillon Resource Area. 1993. *Dillon Resource Area Outfitter Management Guidelines*. USDI Bureau of Land Management, Butte District Office, Dillon Resource Area. 58pp.
- Dustin, D. L. and R. C. Knopf. 1988. "Equity Issues in Outdoor Recreation." In *Outdoor Recreation Benchmark 1988: Proceedings from the National Outdoor Recreation Forum*, Tampa, Florida. USDA Forest Service, Southeast Forest Experiment Station, GTR SE-52. 467-471.
- Fisher, A. C. and J. V. Krutilla. 1972. "Determination of Optimal Capacity of Resource-Based Recreation Facilities." *Natural Resources Journal* 12: 417-444.
- Flathead, Lolo, Helena, and Lewis and Clark National Forests. 1987. *The Bob Marshall, Great Bear and Scapegoat Wildernesses Recreation Management Direction*. USDA Forest Service. 67pp.
- Graefe, A. R., J. J. Vaske, and F. R. Kuss. 1984. "Social Carrying Capacity: An Integration and Synthesis of Twenty Years of Research." *Leisure Sciences* (6) 4: 395-431.
- Hennessy, M. B. 1991. "Limiting Use in Wilderness Areas: Internal and External Controls." *Western Wildlands* Winter, 1991: 18-22.
- Higgs, E. S. 1987. "Changing Value Perspectives in Natural Resource Allocation: From Markets to Ecosystem." *Transactions of the American Fisheries Society* 116: 525-531.

- Homans, G. C. 1961. *Social Behavior, Its Elementary Forms*. New York: Harcourt, Brace & World, Inc. 404pp.
- Jackson Ranger District. Undated. *A Process for Determining Recreational Use Limits*. USDA Forest Service, Bridger-Teton National Forest, Jackson Ranger District. 7pp.
- Jicarilla Ranger District. Undated. *Environmental Assessment for the Determination of Outfitter/Guide Capacity*. USDA Forest Service, Carson National Forest, Jicarilla Ranger District. 16pp.
- Leeper, E. 1991. "Rationing Recreational River Use: A Question of Equality and Freedom of Choice." *Western Wildlands* Winter, 1991: 10-14.
- Linford, D. 1987. "Guides, Outfitters and Regulation: An Historical Perspective." *Western Wildlands* Winter 1987: 2-6.
- Manning, R. E., D. W. Lime and W. A. Freimund. In press. "Crowding Norms at Frontcountry Sites: A Visual Approach to Setting Standards of Quality."
- Manning, R. E., D. W. Lime, M. Hof, and W. Freimund. 1995. "The Visitor Experience and Resource Protection (VERP) Process: The Application of Carrying Capacity to Arches National Park." *The George Wright Forum* 12 (3): 41-55.
- McCool, S. F. and J. L. Ashor. 1984. "Politics and Rivers: Cresting Effective Citizen Involvement in Management Decisions." Presented at the National River Recreation Symposium. Oct. 31-Nov. 2; Baton Rouge, Louisiana.
- McCool, S. F. and J. Utter. 1981. "A Process for Allocating Public Recreation Resources." *Recreation Use Allocation*. Edited by L. J. Buist. Nevada Agricultural Experiment Station, University of Nevada Reno. 60-76.
- Mitchell, C. C. 1994. *Mountain Lakes Wilderness Outfitter and Guiding "Public Need" Analysis*. USDA Forest Service, Winema National Forest, Klamath Ranger District. 8pp.
- Morton, Steve. 1996. Personal conversation, April 8, 1996.
- Northern Region, USDA Forest Service. 1996. *DRAFT Guidebook on Outfitter-Guide Administration*. USDA Forest Service, Northern Region. 40pp.

- Payette National Forest. Undated. *Projected Recreation Use (PAOT-DAYS)*. USDA Forest Service, Payette National Forest.
- Penner, S. P. 1985. *The Proposed Freedom of Choice Allocation System on the Flathead Wild and Scenic River*. Professional Development Paper, Clemson University. 56pp.
- Peterson, G. L. 1983. "Rationing and Redistribution of Recreational Use of Scarce Resources with Limited Carrying Capacity". In *Recreation Management and Planning*. Edited by S. R. Leiber and D. R. Fesenmaier. Venture Publishing, State College Pennsylvania. 286-302.
- Regier, H. A. and A. P. Grima. 1985. "Fishery Resource Allocation: An Exploratory Essay." *Canadian Journal of Fisheries and Aquatic Sciences* 42: 845-859.
- Richter, F. 1985. *Bridgeport Ranger District Wilderness Capacity and Outfitter Guide Policy Environmental Assessment*. USDA Forest Service, Toiyabe National Forest, Bridgeport Ranger District. 38pp.
- Roggenbuck, J. W., D. R. Williams, S. P. Bange, and D. J. Dean. 1991. "River Float Trip Encounters: Questioning the Use of the Social Norms Concept." *Journal of Leisure Research* (23) 2: 133-137.
- Roosevelt Ranger District. 1995. *High Uintas Wilderness, Internal Review Draft*. USDA Forest Service, Ashley National Forest, Roosevelt Ranger District.
- Schreyer, R. 1984. "Social Dimensions of Carrying Capacity: An Overview." *Leisure Sciences* (6) 4: 387-393.
- Shelby, B. 1981. "Allocation Issues Identified in Recreation Research." *Recreation Use Allocation*. Edited by L. J. Buist. Nevada Agricultural Experiment Station, University of Nevada Reno. 35-50.
- _____. 1991. "Allocation of Public Access Rights on Western Rivers." *Western Wildlands Winter, 1991*: 8-12.
- Shelby, B., and T. A. Heberlein. 1984. "A Conceptual Framework for Carrying Capacity Determination." *Leisure Sciences* (6) 4: 433-451.
- _____. 1986. *Carrying Capacity in Recreation Settings*. Corvallis, Oregon: Oregon State University Press.
- Shelby, B., D. Whittaker, and M. Danley. 1989. "Idealism Versus Pragmatism in User Evaluations of Allocation Systems." *Leisure Sciences* 11: 61-70.

- Skibeness, Shannon. 1995. *Carrying Capacity Study for National Forest System Lands in the Vicinity of Sixmile Creek*. USDA Forest Service, Chugach National Forest, Seward Ranger District. 35pp.
- Soderberg, Barb. 1995. Personal conversation, September 25, 1995.
- Stankey, G. H. 1980. "Wilderness Carrying Capacity: Management and Research Progress in the United States." *Landscape Research* (5) 3: 6-11.
- Stankey, G. H. and J. Baden. 1977. *Rationing Wilderness Use: Methods Problems, and Guidelines*. USDA Forest Service Research Paper INT-192, Intermountain Forest and Range Experiment Station, Ogden, Utah. 20 pp.
- Stankey, G. H., D. N. Cole, R. C. Lucas, R. C., and S. S. Frissell. 1985. *The Limits of Acceptable Change (LAC) System for Wilderness Planning*. USDA Forest Service General Technical Report INT-176, Intermountain Forest and Range Experiment Station, Ogden, Utah. 37 pp.
- Stankey, G. H., and S. F. McCool. 1984. "Carrying Capacity in Recreational Settings: Evolution, Appraisal, and Application." *Leisure Sciences* (6) 4: 453-473.
- Stankey, G. H., S. F. McCool, and G. L. Stokes. 1990. "Managing for Appropriate Wilderness Conditions." *Wilderness Management*, by J. C. Hendee, G. H. Stankey, and R. C. Lucas. Golden, Colorado; North American Press. 215-239.
- Stokes, G. L. 1991. "New Wildland Recreation Strategies: The Flathead Experience." *Western Wildlands Winter, 1991*: 23-27.
- Targhee National Forest. 1992. *Analysis of the Management Situation, Outfitter and Guide, Targhee National Forest*. USDA Forest Service, Targhee National Forest. 10pp.
- Tongass National Forest. 1991. *Tongass Land Management Plan Revision - Supplement to the Draft Environmental Impact Statement - Proposed Revised Forest Plan*. USDA Forest Service, Tongass National Forest.
- Trosper, R. L. 1988. "Multicriterion Decision-Making in a Tribal Context." *Policy Studies Journal* (16) 4: 826-842.
- United States Forest Service. 1987. *An Enduring Resource of Wilderness, Management Principles*. Washington Office.

- Vaske, J. J., M. P. Donnelly, R. M. Doctor, and J. P. Petruzzi. 1994. *Social Carrying Capacity at the Columbia Icefield: Applying the Visitor Impact Management Framework*. Department of Natural Resource Recreation and Tourism, Human Dimensions in Natural Resources Unit. Fort Collins, Colorado: Colorado State University. 50 pp.
- Wallace, J. P. Undated. *Chattooga River Recommended Management Objectives, Maximum Use Limits, Rationing Techniques*. USDA Forest Service, Sumter National Forest, Andrew Pickens Ranger District. 67pp.
- Wagar, J. A. 1964. *The Carrying Capacity of Wild Lands for Recreation*. Washington, D.C.: Society of American Foresters, Forest Science Monograph. 24pp.
- Washburne, R. F. 1981. "Carrying Capacity Assessment and Recreational Use in the National Wilderness Preservation System." *Journal of Soil and Water Conservation* (36) 3: 162-166.
- _____. 1982. "Wilderness Recreational Carrying Capacity: Are Numbers Really Necessary?" *Journal of Forestry* 80 (Nov): 726-728.
- Whittaker, D. 1991. "Recreation Allocation Issues in Alaska: Use Limits in the Last Frontier." *Western Wildlands* Winter, 1991:28-30.
- Winema National Forest. 1994. *Mountain Lakes Wilderness Outfitting & Guiding "Public Need" Analysis*. USDA Forest Service, Winema National Forest. 8pp.

APPENDIX A

RECREATIONAL USE CARRYING CAPACITY AND RATIONING:
ADDITIONAL INFORMATION**Carrying Capacity**

The carrying capacity concept and its applications in recreation management has been widely discussed and debated. It has been the subject of significant research efforts as well as numerous applied studies of its effectiveness. Within the over 2,000 published papers regarding carrying capacity (Stankey et al., 1990^{*}) and since the well-recognized monograph by Wagar in 1964, which heralded the interest in applying the carrying capacity concept to recreation management (Manning et al., in press), there has been much said about carrying capacity as well as abundant disagreement regarding many aspects of the concept and its application. Considering the extensive body of research conducted regarding the concept, some argue that important progress has been made (Graefe et al., 1984; Shelby and Heberlein, 1984; Stankey and McCool, 1984) while others claim little of significance has been accomplished (Becker et al., 1984; Burch, 1984; Roggenbuck et al., 1991). Three of the limited issues on which there is significant agreement, however, are:

- the original definition of the concept,
- how it has been transferred from the field of natural resource management to applications in recreation management, and
- the difficulties in making that transition.

* References are listed in the *References* section of this text beginning on page 80.

A detailed history of the development of carrying capacity theory and its application in recreation management is not offered here, but excellent reviews can be found in Manning et al. (in press), Stankey and McCool (1984), Stankey et al. (1990), and Stankey (1980).

After nearly thirty years of research into the application of carrying capacity theory to recreation management, various divergent options for the specific methodology can be used in practical application (Alldredge, 1973; Chilman et al., 1990; Manning et al., 1995; Shelby and Heberlein, 1986; Stankey et al., 1985; Vaske et al., 1994). Additionally, there are also arguments doubting the scientific validity of the concept and its use in recreation management. Specifically, Burch (1984) goes so far as to argue that carrying capacity theory has simply provided a justification for a priori management decisions regarding the regulation of recreational use. Although significant time and effort have been dedicated to the topic, little evidence suggests that a singular carrying capacity paradigm has emerged in the professional realm. Some models have, however, become generally accepted by each of the federal land management agencies. For example, the Forest Service often uses the Limits of Acceptable Change (LAC) planning process while the National Park Service is more likely to use Visitor Experience and Resource Protection (VERP) model.

Some authorities in the recreation management field would not label the contemporary frameworks as "carrying capacity models" and prefer that they were considered alternatives to the carrying capacity approach.

However, these models address and attempt to overcome the same issues of overuse and impact. They may offer more contemporary approaches to the management of wilderness visitors and resources, but they essentially deal with the same conceptual approach of managing use and impact to maintain acceptable social and resource conditions and are therefore referred to as carrying capacity models.

Despite the controversy and lack of consensus about how to best apply the carrying capacity framework, the approach has clearly caught on at the conceptual and practical levels. Its intuitive appeal continues to drive managers and theorists to find the best methodology to meet their needs. For those that have accepted the usefulness of carrying capacity theory and models as valuable management tools in recreation management, various descriptions of the concept overlap and extend along the range of divergent opinions by different authors. Its supporters generally recognize that the theories of recreational carrying capacity are highly complex (Stankey and McCool, 1984) and sophisticated in grappling with an issue that includes multiple dimensions of wildlands recreation management (Shelby and Heberlein, 1984). Additionally, agreement has been reached that carrying capacity is not an inherent fixed value for any particular area (such as the specific maximum number of users allowed); but instead includes a range of values that must be related to specific, defined, and measurable management objectives (Graefe et al., 1984; Stankey et al., 1990). Several authors point out that those management objectives must be framed within both descriptive (or

factual and objective) and evaluative (or prescriptive and subjective) components (Shelby and Heberlein, 1984; Graefe et al., 1984; Stankey et al., 1990).

Authors also widely recognize that carrying capacity has several important factors. Most commonly, carrying capacity is divided into a minimum of ecological (or environmental) and social aspects (Graefe et al., 1984; Stankey and McCool, 1984). However from other perspectives, some combination of managerial, physical, and facility factors must also be included (Alldredge, 1973; Shelby and Heberlein 1984). The social component of carrying capacity theory has clearly dominated the developmental effort and its perceived importance is reflected in most contemporary models. Rather than physical, ecological, managerial or facility factors, the social aspects are commonly seen as the limiting factor in recreational carrying capacity and also the most difficult to assess (Alldredge, 1973; Shelby and Heberlein, 1984).

Finally, the significant role and necessity of value judgments, as well as the examination of multiple contexts, in the formulation of a carrying capacity assessment is generally accepted (Stankey et al., 1990; Washburne, 1981). Schreyer (1984, p. 389) effectively states this point and says "while disagreeing on the nature of the beast, authors have been universal in pointing out that there is no technical solution to the problem, but rather it has to fit in a context in which human values and subjective evaluations of desirable conditions are to be formally recognized." Universally in the models, value judgments are pursued through the use of normative theory

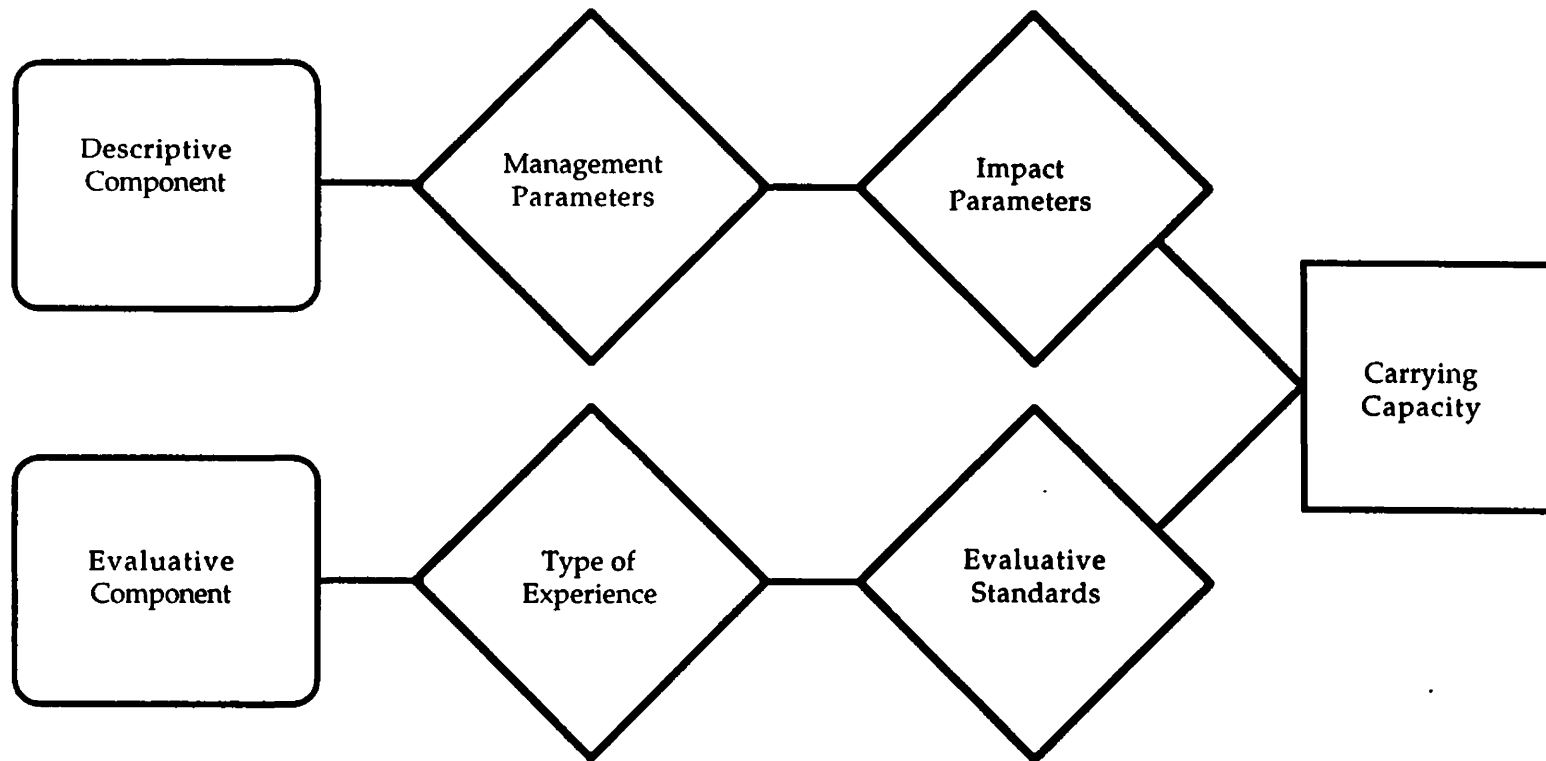
that seeks to determine standardized social judgments about acceptable conditions (called norms and standards) for recreational use levels and limits. Although there is not complete agreement that social norms in outdoor recreation exist (Roggenbuck et al., 1991), acceptance of this two-pronged approach -- (1) pursuing social judgments to define the acceptability of various impacts and (2) description of the relationship between specific conditions of use and the associated impacts (Graefe et al., 1984) -- is widespread.

Carrying Capacity Models

Beyond these basic fundamental areas of agreement, contemporary theories and the corresponding models of carrying capacity develop their own specific variations. Two general categories of models emerge: (1) those that attempt to arrive at a specific use level where carrying capacity is reached, and (2) others that instead try to develop a system to control various impacts to an area through prescribed management of recreational use - without defining a specific maximum use level. The carrying capacity literature has clearly indicated the latter as the favored approach, with the majority of discussion focused on the refinement and application of models in the second category. Due to the lack of conclusive success of a particular approach or specific model, discussion of the most common models and both approaches is warranted in this text.

The first category of models, including those proposed by Alldredge (1973), Fisher and Krutilla (1972), and Shelby and Heberlein (1986), are designed to determine a numerical recreational use carrying capacity. Shelby and Heberlein (1984, p. 434) state their understanding as "carrying capacity is ultimately a number, usually a number of individuals or groups expressed in relation to time and area dimensions. We refer to this as use level...". Their approach to determining this number (referred to as the Carrying Capacity Assessment Process; see Figure A: The C-CAP Process) utilizes two parallel paths of analysis; one developing a descriptive component while the other path seeks evaluative information. The two paths are eventually integrated to determine of the recreational use carrying capacity for the specific area under review. While several aspects of the model proposed by Shelby and Heberlein have been well-received and incorporated into the content of other competing models, its objective of defining a specific number is not common to many other approaches. A supplemental aspect of their model transcending the scope of most others, includes consideration of what to do if the resulting numerical carrying capacity requires deliberate allocation of use. Their approach defines a system for determining the carrying capacity number, and also provides basic discussion of available common options to allocate that capacity when, and if, rationing is required (Shelby and Heberlein, 1986). Those methods are included in Table B beginning on page 99 of this appendix.

FIGURE A
THE C-CAP PROCESS



The approaches offered by Alldredge (1973) and Fisher and Krutilla (1972) are also designed to numerically assess carrying capacity, but from an economic perspective. Both models include as their goal the maximization of total public enjoyment through an area's ability to provide specific types and amounts of recreational experiences. While utilizing the language of economics instead of recreation management, they incorporate many of the same components of the other models including consideration of physical, facilities, and social components of recreational settings and experiences. Although conceptually intriguing, neither Alldredge's nor Fisher and Krutilla's approaches seem to have been further developed or implemented in many areas as reflected by their lack of subsequent reference in the literature on the topic or examples of application in the field. A possible reason for their lack of continued use is explained by Deutsch (1975). He argues that in nonmarket issues related to justice and equity, it is natural in a society where economic values tend to pervade all aspects of social life to pursue economic solutions. "Nevertheless, it is a limiting perspective since it is obvious that issues of justice may arise in noneconomic social relations... and may be decided in terms of values which are unrelated to input-output ratios" (p. 137). Higgs (1987) supports Deutsch's conclusion by saying that, "There are certain types of social questions [referring to resource allocation] which cannot be fully considered by appeal to economic mechanisms" (p. 527).

Within the second category of models, those that try to develop an impact management system instead of a specific numerical carrying capacity, four leading approaches have emerged and include:

- Limits of Acceptable Change (LAC) frequently utilized by the United States Forest Service,
- Quality Upgrading and Learning (QUAL), a simplified and less resource intensive version of LAC, employed by various federal land management agencies in different areas,
- Visitor Experience and Resource Protection (VERP) employed by the National Park Service (NPS), and
- Visitor Impact Management (VIM) also implemented by the NPS.

Each of these frameworks shares a fundamentally similar and parallel approach but includes variation in the particular methodology used in applying their models to specific areas. A comparison of the steps used in each process is provided in Table A. This table shows a parallel listing of the steps taken by each model and allows comparison to be made regarding the similarity of approaches taken. Stankey et al. (1990, p. 218) define the common thread between the theories as, "They share a common focus on the identification of measurable objectives regarding desired conditions and on the distinction between steps involving objective description and analysis and those involving judgmental evaluations."

These models used to manage for carrying capacity concerns are all built on the foundation explained by Washburne (1982) in his article titled, "Wilderness Recreational Carrying Capacity: Are Numbers Really

**TABLE A
IMPLEMENTATION STEPS IN LAC, QUAL, VERP, AND VIM**

Limits of Acceptable Change - LAC (Stankey et al., 1985)

<u>Step 1:</u>	-->	<u>Step 2:</u>	-->	<u>Step 3:</u>	-->	<u>Step 4:</u>	-->	<u>Step 5:</u>	-->	<u>Step 6:</u>	-->	<u>Step 7:</u>	-->	<u>Step 8:</u>	-->	<u>Step 9:</u>
Identify Area Concerns & Issues		Define & Describe Opportunity Classes		Select Indicators of Resource & Social Conditions		Inventory Resource & Social Conditions		Specify Standards for Resource & Social Indicators		Identify Alternative Opportunity Class Allocations		Identify Management Actions for Each Alternative		Evaluate & Select an Alternative		Implement Actions & Monitor Conditions

Quality Upgrading and Learning - QUAL (Chilman et al., 1990)

<u>Step I:</u>		-->	<u>Step II:</u>		-->	<u>Step III:</u>	-->	<u>Step IV:</u>		-->	<u>Step V:</u>
Management Goal: Quality Recreation (definitions & consensus)			Inventory Existing Conditions			Analysis of Alternatives		Objective- Setting & Implementation			Monitoring & Evaluation

Visitor Experience and Resource Protection - VERP (Manning et al., 1995)

<u>Step 1:</u>	-->	<u>Step 2:</u>	-->	<u>Step 3:</u>	-->	<u>Step 4:</u>	-->	<u>Step 5:</u>	-->	<u>Step 6:</u>	-->	<u>Step 7:</u>	-->	<u>Step 8:</u>	-->	<u>Step 9:</u>
Assemble Project Team		Develop Statements of Purpose, Significance, Themes		Map & Analyze Resources & Visitor Experiences		Establish Range of Desired Resource & Social Conditions		Use Zoning to Identify Proposed Plan & Alternatives		Select Quality Indicators & Standards for each Zone		Compare Desired Conditions to Existing Conditions		I.D. Probable Causes of Discrepancies (Desired & Existing Conditions)		Develop/ Refine Management Strategies to Address Discrepancies (and monitoring)

Visitor Impact Management - VIM (Vaske et al., 1994)

<u>Step 1:</u>	-->	<u>Step 2:</u>	-->	<u>Step 3:</u>	-->	<u>Step 4:</u>	-->	<u>Step 5:</u>	-->	<u>Step 6:</u>	-->	<u>Step 7:</u>	-->	<u>Step 8:</u>
Preassessment Database Review		Review of Management Objectives		Selection of Key Impact Indicators		Selection of Standards for Key Impact Indicators		Comparison of Standards & Existing Conditions		Identify Probable Causes of Impacts		Identify Management Strategies		Implementation (and monitoring)

Necessary?" Apparently this was the proper question to ask at the time and the subsequent developments in recreation use carrying capacity theory, especially when applied to wilderness, reflect a response to his question. Washburne's conclusion is that through monitoring for desired wilderness conditions instead of focusing strictly on use levels, management systems can be put in place that allow an alternative to the established numerically oriented carrying capacity approach. In his alternative approach, numerical capacity is calculated only when management prescriptions have failed to manage for desired conditions (Washburne, 1982). This approach postpones the need for managers to grapple with a numerically defined recreational use carrying capacity (and in some situations the manipulation of use levels or rationing) while management efforts are instead placed on defining, monitoring, and evaluating compliance with desired wilderness conditions and characteristics. Stankey and McCool (1984, p. 458) support this conclusion and say, "... carrying capacity is a management system directed toward maintenance or restoration of ecological and social conditions defined as acceptable and appropriate in area management objectives; carrying capacity is not a system directed toward manipulation of use levels per se."

Carrying Capacity in the Bob Marshall Wilderness Complex

The Bob Marshall Wilderness Complex (BMWC) is an area that exemplifies many of the characteristics that define Wilderness and that have

motivated this society to protect those values. It contains valuable recreational, wildlife, historical, cultural, and spiritual assets.

Several of the above listed planning frameworks would be applicable for addressing carrying capacity in the BMWC. The need to develop a coordinated approach to management of the BMWC (which includes five ranger districts in four National Forests) prompted managers to select LAC as the framework to develop their plan. Through a lengthy transactive planning process, one that directly involves those affected by the decisions made (McCool and Ashor, 1984), the first comprehensive LAC process was conducted, and then implemented in the BMWC (Stankey et al., 1990). This four year planning process conducted from 1983 through 1987 led to the establishment of the recreation management direction for the BMWC which delineates general and specific management strategies and actions to be conducted in order to control unacceptable human impacts to the area. In this situation, the primary objective of the LAC process in the BMWC was to develop a strategy that would control human induced impacts to the areas contributing to the long-term preservation of the wilderness (Stankey et al., 1990). The LAC process, resulting in the recreation management direction, is still in use in BMWC and continues to provide information regarding the level of change due to human impact in the complex.

Rationing Recreational Use

Methods used to assign use to individuals users (decision levels 4 & 5 on Figure 1 in the main text, page 15) are well developed and have been implemented and evaluated in many locations and by many authors (including, but not limited to Barrett, 1991; Cordell, 1981; Cullen, 1985; Hennessy, 1991; Leaper, 1991; Peterson, 1983; Shelby, 1981; Shelby et al., 1989; Shelby and Heberlein, 1986; Stankey and Baden, 1977; Wallace, undated). While the methods vary in their level of complexity as well as success, there is abundant discussion and documentation of the various approaches.

Due to the dramatic increase in the recreational use of rivers in the 1960s and 1970s and the need to ration access, river management has provided the testing ground for the development and refinement of these techniques (Linford, 1987). The literature, however, primarily leads to methods for limiting use and assigning opportunities to individuals in the nonoutfitted public, not between individual commercial or institutional outfitters. Methods discussed below are conceptually applicable to both, in many situations. The methods most frequently include those listed in Table B. This table provides a definition of each method, its level of development (theoretical or applied), the source of the method, and examples of locations where it has been used, if applicable. Some of these methods require a permit system (whereby only a specific limited number of recreation opportunities are allocated and users must obtain a permit to enter the system), while others do not. Currently, only river recreation programs use the lottery

TABLE B

METHODS FOR ASSIGNING LIMITED USE OPPORTUNITIES TO INDIVIDUALS

Approach	Description	Level of Development	Source	Example Locations Used
Lotteries*	Random selection of those individuals who have indicated their desire to use a resource	Published theoretical and applied	1, 2, 3, 4, 5, 6, 7	Salmon River, San Juan River, Selway River, Snake River (Barrett, 1991)
Queuing*	Awards resource access to those who are sequentially in line (often combined with reservation system)	Published theoretical and applied	1, 2, 3, 4, 5, 7, 8	Colorado River, Grand Canyon National Park (Barrett, 1991); Smith River
Reservation*	Individuals request access to the resource in advance, and are assigned a share until all designated opportunities are assigned, usually on a "first come, first serve" basis	Published theoretical and applied	2, 3, 4, 5, 7, 8, 9	Inyo NF for various wildernesses (DeGraff, 1983); Enchantment Lakes Wilderness, Wenatchee NF
Merit*	Access to the resource is allowed to those that possess a required skill, level of experience, or specific knowledge	Published theoretical	2, 3, 4, 5	none identified
Pricing*	A monetary amount is charged to gain access to the resource, thus eliminating those that do not pay	Published theoretical	1, 2, 3, 4, 5, 7, 8, 10, 11	none identified
Effort	Requires input of effort by the individual to gain access to the resource, such as difficult travel to a trailhead, therefore only those who put in the additional effort gain access	Published theoretical	1	none identified
Zoning	Allows only certain types of activities in designated areas, allowing only those individuals that participate in a certain activity to gain access	Published theoretical	1	none identified

TABLE B

METHODS FOR ASSIGNING LIMITED USE OPPORTUNITIES TO INDIVIDUALS continued

* A permit system is most often required with this method

Sources:

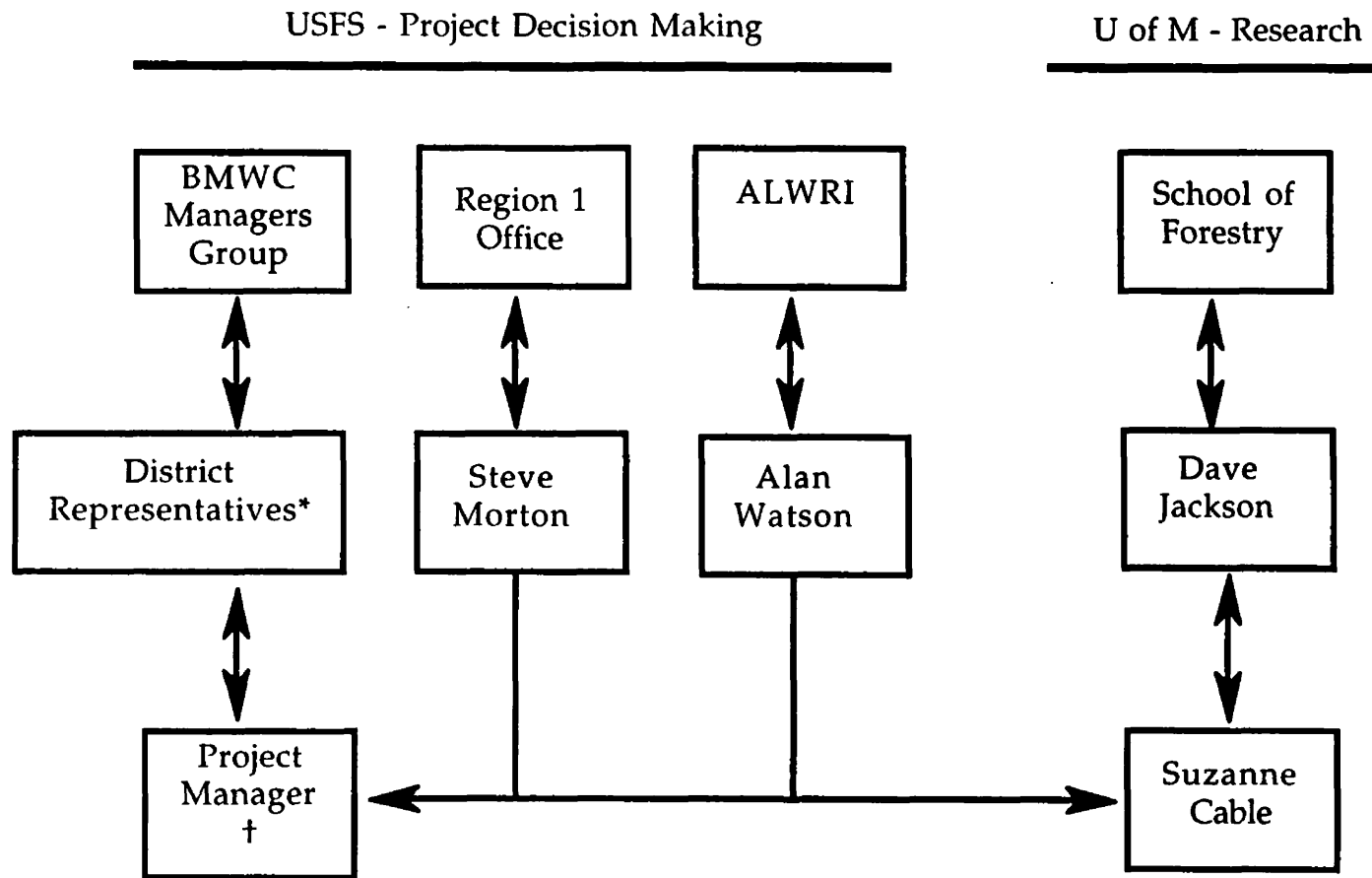
- 1 Cullen, 1985
- 2 Shelby et al., 1989
- 3 Stankey and Baden, 1977
- 4 Shelby and Heberlein, 1986
- 5 Shelby, 1981
- 6 Leaper, 1991
- 7 Wallace, undated
- 8 Peterson, 1983
- 9 Hennessy, 1991
- 10 Cordell, 1981
- 11 Barrett, 1991

system, while North American land-based programs most often utilize reservations, queuing or often a combination of both (Hennessy, 1991).

APPENDIX B

PROJECT TEAM ORGANIZATION AND MEMBERS

RECREATIONAL USE ALLOCATION: PROJECT TEAM ORGANIZATION AND MEMBERS



* District Representatives include one person from each of the five ranger districts with responsibility for management of the BMWC: Fred Flint, Hungry Horse District; Charlie Hester, Lincoln District; Dale Luhman, Spotted Bear District; Bruce Johnson, Seeley Lake District; Patti Johnston, Rocky Mountain District.

† The Project Manager in 1995 was Al Christophersen, Hungry Horse District and in 1996 was Gilbert Zepeda, Lincoln District.

APPENDIX C

POTENTIAL EVALUATION MODELS

The following review of potential evaluation models was distributed to the Project Team in preparation for the selection of the preferred evaluation model.

S. Cable
October 15, 1995

Through review of literature, discussion with researchers, and professors at the University of Montana, the following evaluation models have been identified as potentially applicable for use in this project. They have been considered applicable because each model is suitable for use in evaluations that include multiple objectives. Each evaluation model is named and a brief, simplified description of the basic approach provided. For several of the methods, supporting documentation with a more detailed explanation or an example of its use is attached [*not included in this appendix*]. The attached documentation is only intended to provide further information regarding the method used to evaluate the alternatives, not the actual alternatives to be evaluated.

Multicriterion Decision-Making:

- compares alternatives by ranking each alternative according to its ability to achieve each of the identified goals using a "round-robin approach" resulting in an "outranking matrix";
- does not require the use a common measuring criteria;
- goals may or may not be weighted;
- analysis of the outranking matrix provides an overall ranking of the alternatives.

References: *Multicriterion Decision-making in a Tribal Context*, Ronald L. Trostler, Policy Studies Journal, Vol. 16, No. 4, 1988 - see attachment A; *Social Choice and Multicriterion Decision-Making*, Kenneth Arrow and Herve Raynaud, 1986 by MIT Press, Cambridge, Massachusetts.

Weighted goals with specific criterion and ranking of alternatives:

- includes identification and definition of each goal which is then weighted to indicate relative importance to other goals, criteria are defined to assist in evaluating the ability of each alternative to meet each goal, each alternative is scored (either numerically or by some other qualitative measurement) and then given a hierarchical rating;

- alternatives may be rated comparatively to each other, or to an absolute standard;
- minimum requirements or a threshold for acceptability may be defined;
- scoring of the alternative may be conducted according to a variety of approaches.

References: This type of approach is used in the *Dillon Resource Area's Outfitter Management Guidelines* for determination of need for outfitting services and to allocate use between individual outfitters - see attachment B, selections from Dillon's guidelines. This approach is also called the Analytical Hierarchy Process, but I have not yet been able to obtain a copy of the reference: *Decision Making for Leaders, The Analytic Hierarchy Process for Decisions in a Complex World*, by Thomas Saaty. A simplified approach using statistical analysis of scoring is shown by S. R. McCool in "A Process for Allocating Public Recreation Resources," from *Recreation Use Allocation*, edited by L. J. Buist, 1981, University of Nevada: Reno, pages 60-76 and selections are included in attachment C. An even further simplified approach is provided in attachment D with selections from R. Cullen's "Rationing Recreation Use of Public Land", from the *Journal of Environmental Management*, 1985, vol. 21, pages 213-224.

Non-technical critical analysis:

- includes description of the alternatives most often used through interviews with persons experienced in the use of the alternative or by expert opinion;
- evaluates how the alternatives function according to each identified goal;
- reports the advantages and disadvantages (or results and consequences) of each alternative in a systematic and critical manner.

References: See attachment E including selections from *Rationing Wilderness Use: Methods Problems, and Guidelines* by G. H. Stankey and J. Baden, 1977, USDA Forest Service Research Paper INT-192. See also attachment F, *An Economic Evaluation of Alternative Methods of Fishery Regulation*, by J. A. Crutchfield from the *Journal of Law and Economics*.

Survey of management preferences/interpretive essay:

- qualitative or quantitative survey of manager's experience with each alternative and its ability to meet objectives;
- descriptive essay of past experience and potential applicability of alternatives to new settings.

Reference: See attachment G, selections from University of Montana Master's thesis titled The Effectiveness of Limiting Use in Wilderness Areas, by M. B. Hennessy, 1990.

Efficiency analysis:

- economic analysis of alternatives to determine which would be most effective at maximizing economic efficiency based on empirical or theoretical grounds;
- requires use of common measurement unit, most commonly dollar value.

Linear Programming or Goal Programming:

- development of economic optimization models that specify objectives and constraints and apply weights;
- designed to maximize objective function to satisfy goals;
- objectives must be quantifiable and require a common measuring unit.

Benefit Cost Analysis:

- converts all goals to a common numerical scale in order to produce a benefit-cost ratio comparing alternative methods to achieve goals.

APPENDIX D

DRAFT INTERIM INSTITUTIONAL OUTFITTER POLICY FOR THE BOB
MARSHALL WILDERNESS COMPLEX

INSTITUTIONAL OUTFITTING IN THE
BOB MARSHALL WILDERNESS COMPLEX

BACKGROUND

There is an increasing demand for institutional outfitting use in the BMWC. The BMWC Recreation Management Direction (4/87, which is an amendment to the Flathead, Helena, Lolo and Lewis and Clark Forest Plans) directs that there is to be no expansion of outfitting use until an environmental assessment is completed. For the past several years, managers have been struggling to resolve the conflict between demand for institutional use and the language in the Recreation Management Direction. Through 1993, managers rejected all requests for this type of use. This course of action was not acceptable. In 1994 and 1995, at the direction of the Forest Supervisors, managers attempted to evaluate each request on a case by case basis. Applicants were placed only in areas where Limits of Acceptable Change (LAC) standards were not exceeded. This action was also less than acceptable. No upper limit was imposed on these new institutional outfitters while existing commercial operators remained under a strict use limit. Managers also voiced concerns about a large number of groups gaining access to new "historic" use in the BMWC.

During the week of July 24, 1995 Supervisors, Rangers and Resource Assistants had extensive discussions on the institutional outfitting situation. Supervisors felt some of the institutional outfitters had actually established historic use at the time commercial operators were placed under use limitations in 1980. They also felt a strong need to accommodate some level of institutional outfitting in the BMWC until the overall question of total use allocation is resolved. The Supervisors recognized the need to place some overall limits on the amount of institutional outfitting in the complex. The need is driven, in part, by a desire to be equitable with commercial operators and, in part, by the need to avoid developing a large number of institutional outfitters with new "historic" use that may have to be recognized in some future allocation decision. At the end of the discussions the Supervisors provided a series of guidelines to develop a new policy for institutional outfitters:

1. Those institutional outfitters with historic use at the time commercial operators were limited in 1980 should be recognized and allowed to operate in the BMWC within existing resource constraints. Their base use level will be the same as the base level for commercial operators (the highest annual actual use during the period 1978-80).
2. Applications from institutional outfitters that do not meet the criteria for historic use will be considered on a case by case basis. The following criteria will be used to evaluate these applications:
 1. Purpose of the trip
 2. Potential for conflicts with other outfitters
 3. Season of use
 4. Resource conditions relative to LAC standards
 5. Wilderness dependence of the trip

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3. Managers will establish a new interim maximum capacity for total institutional outfitter use in the BMWC. The capacity will be divided by resource area. It will be based on manager's best estimates using existing information and professional judgement. The interim capacity will remain in effect until the use allocation process is completed. When the allocation process is completed, institutional outfitter use may be expanded, reduced or eliminated entirely.
4. Resource Assistants Patti Johnston and Fred Flint were directed to develop a more detailed policy for managing institutional outfitter use based on the guidelines set forth above. The draft policy will be returned to the Supervisors and Rangers for review.

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BOB MARSHALL WILDERNESS COMPLEX

- 1. This policy applies only to overnight backpacking institutional outfitter operations. Day use institutional operations will be evaluated on a case by case basis, however due to the separate capacity and impact issues involved, this policy does not address day use. Stock supported institutional operations will be addressed within the Allocation Study. During this interim period stock supported institutional operations will not be approved.
- 2. The interim capacity for overnight backpack institutional outfitter operations in the BMWC is 1855 service days. This use is subdivided by Resource Area as follows:

District	Resource Area	Client Days
SB	South Fork	200
	Middle Fork	100
	Spotted Bear River	100
HH	Middle Fork	200
L	Scapegoat	350
SL	Scapegoat	180
RM	Scapegoat	400
	Bob Marshall	150
	Bob Marshall Addition	175

- A. The interim capacity will remain the maximum level of overnight backpack institutional outfitting use within the BMWC by resource area until the allocation process is completed.
- B. The interim capacity will include ALL overnight backpack institutional outfitter use, including historic use and current requests.
- C. There is no guarantee the permits will be issued beyond one year.
- D. All overnight institutional outfitter use will be authorized by temporary (one year) permits. Priority use will not be assigned to institutional outfitters.
- E. Institutional outfitter permits will not be approved during hunting seasons due to conflicts with existing outfitters. Permits may be issued from 5/1 - 8/31 in areas with an early general hunting season and from 5/1 - 9/30 in areas with a general hunting season starting in late October. In areas without a hunting season, permits may be approved from 5/1 - 11/30. Permits will not be issued during the winter season (12/1 - 4/30) due to a strong interest on the part of commercial outfitters to expand into this as yet unallocated season of use. No outfitter use of any type will be permitted in the winter season until the use allocation process is completed.

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- F. Institutional outfitter permits will not be issued for floating use on the Wild River portions of the South Fork and Middle Fork of Flathead (USF, CSF, UMF) as the Recreation Management Direction for the Wild and Scenic River provides very specific direction for dealing with institutional outfitting.
3. Allocation of the interim institutional outfitter capacity.
- A. PRIORITY 1 - Allocate available use to those applicants who can demonstrate actual use in the BMWC in 1980.
1. Applicants must demonstrate actual use in 1980 to the line officer's satisfaction. The claim of actual use must be documented in writing using records, brochures, statements from clients, etc.
 2. Authorize use up to the highest annual level of actual use during the period of 1978-80.
 3. There is no guarantee use will be approved in the same areas it was allocated in the 1978-80 period.
 4. The historic use is a subpart of the interim overnight institutional outfitter capacity, not in addition to it.
- B. PRIORITY 2 - Allocate remaining use first to other institutional outfitters who will operate on an intermittent and irregular basis not to exceed 150 service days every other year.
- C. PRIORITY 3 - Allocate any remaining service days to outfitters covered in PRIORITY 1 that wish to expand beyond historic use levels. This additional use will be temporary and evaluated on a yearly basis if days are available.
4. Assignment of institutional outfitting use:
- A. Determine if the applicant represents a commercial or institutional group using "Decision Criteria for Sorting Outfitter Applications" (Attachment #1).
- B. If the applicant qualifies as an institutional group, determine if a permit is required using "Decision Criteria for Sorting Outfitter Applications" (Attachment #1).
- C. If the applicant qualifies as an institutional outfitter and if a permit is required, evaluate the purpose and potential impacts of the trip. If the applicant falls in Priority 1, approve use if all the following criteria are met:
1. The proposed use is within the interim maximum capacity for institutional outfitter use.

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2. The proposed use is within the time frame specified in paragraph 2.E. above. 112
3. Proposed use is in an area where resource conditions are within LAC standards, or where the proposed use will not cause further degradation of resource conditions.

If the applicant falls in Priority 2 or 3, approve use if all the following criteria are met:

1. The proposed use is within the interim capacity for institutional outfitter use.
2. The proposed use is within the time frame specified in paragraph 2.E. above.
3. The proposed use is wilderness dependent. (See Attachment #2, Guidelines for Determining Wilderness Dependence).
4. Proposed use is in an area where resource conditions are within LAC standards, or where the proposed use will not cause further degradation of resource conditions.
5. The proposed use does not cause conflicts with existing outfitters operations.
6. Assignment of use for Priority 2 will not exceed 150 service days per year nor will use be assigned to the same group in consecutive years.

5. Policy on Institutional Outfitters and Work Projects

Groups classed as institutional outfitter operations may perform volunteer, service or challenge cost share projects in the BMWC. These projects will be authorized by the appropriate agreement (Volunteer, Challenge Cost Share, Memorandum of Understanding, etc.) They will not be approved under the Institutional Outfitting Permit. The primary purpose of these agreements is to perform needed work rather than provide for a recreational/educational experience. While under agreement, individuals are expected to perform under a normal work schedule (i.e., 8 hrs/day, 5 days per week). Recreational activities are appropriate only during times that would be considered "off duty" periods for seasonal work crews. Bona fide work projects will not be combined with outfitted recreational/educational trips authorized under the Institutional Outfitter permit.

Date _____

X
Forest Supervisor
Flathead National Forest

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X
Forest Supervisor
Helena National Forest

Date _____

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X
Forest Supervisor
Lewis and Clark National Forest

Date _____

X
Forest Supervisor
Helena National Forest

Date

..

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ATTACHMENT 1

DECISION CRITERIA FOR SORTING OUTFITTER APPLICATIONS

COMMERCIAL GROUPS	INSTITUTIONAL GROUPS	
COMMERCIAL OUTFITTER PERMIT REQUIRED	INSTITUTIONAL OUTFITTER PERMIT REQUIRED	PERMIT NOT REQUIRED
<p>1. Use is sponsored by a commercial business or a group that is not formally chartered as a public service organization</p> <p>2. Clientele is not limited</p> <p>3. Trips broadly advertised</p>	<p>A group is organized for a public or social purpose (church, school, youth, fraternal, service, social club) May include groups directly operated by state or local governments.</p> <p>A. The group or its sponsoring organization must be formally organized with a charter, bylaws, etc.</p> <p>B. School classes must be recognized as a part of a curriculum focused on wildland management</p> <p>Clientele is limited by one or more of factors including but not limited to those shown below:</p> <p>A. Requires membership or enrollment to participate (4-H, Boy Scouts, clubs, schools, universities)</p> <p>or</p> <p>B. Limited constituency. Group limited to a specific segment of society (physical condition, income, etc.)</p> <p>or</p> <p>C. Requires adherence to a specific set of beliefs or philosophy (religious, political groups, etc.)</p> <p>or</p> <p>D. Common interest group (Wilderness Society, Native Plant Society, etc.)</p> <p>Trips advertised and promoted beyond the local level. (Newspapers, brochures that go beyond local members)</p>	<p>If an organized group, it is local in nature (i.e., a single Scout or church group).</p> <p>Clientele may be limited as described for Institutional Outfitter Permits</p> <p>Trips not advertised or promoted beyond the local level (i.e., news letters to local members)</p>

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4. Leaders paid or compensated	Leaders may be paid or compensated	Leaders not paid or compensated. Compensation includes incentives such as reduced costs, food, gratuities, gifts, etc.
5 Expenses are borne by the client	Expenses are borne by the client or are not equally shared.	There is a bona fide and equal sharing of trip expenses by all members of the group including leaders
6. Costs and fees exceed actual trip costs.	Costs and fees may exceed actual trip costs	Costs and fees do not exceed actual trip costs.
7. Equipment and supplies provided by the outfitter	Equipment and supplies may be provided by the sponsoring organization or by members of the group.	Equipment and supplies provided by individuals within the group.
8. Use typically involves multiple trips per year over a period of several years	Use may or may not be intermittent or irregular.	Use is intermittent and irregular

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GUIDELINES
FOR DETERMINING
WILDERNESS DEPENDENCE

1. TRIPS THAT ARE TYPICALLY WILDERNESS DEPENDENT
 - A. Educational trips focusing on a specific resource or condition found only in wilderness (i.e., geology of BMWC caves)
 - B. Trips in which solitude and unconfined, primitive recreation are the central components of the experience.

2. TRIPS THAT ARE NOT TYPICALLY WILDERNESS DEPENDENT
 - A. Educational trips focusing on general resources or conditions available outside wilderness (i.e., general geology of the Flathead valley)
 - B. Trips promoting general skills training that can be accomplished outside wilderness (backpacking, low impact camping, orienteering, etc.)
 - C. Trips in which the "wilderness connection" is merely a marketing ploy or "hook" to attract customers to a base program not related to wilderness.

3. ITEMS THAT SHOULD NOT BE CONSIDERED IN DETERMINING WILDERNESS DEPENDENCE
 - A. Convenience to the applicant
 - B. Marketability of the trip if wilderness use is not approved

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APPENDIX E

DEFINITION OF THE WILDERNESS ALLOCATION ISSUE

from January 30, 1995 meeting of the Project Team and follow-up meeting on March 29, 1995; revised April 3, 1995

The wilderness allocation issue, as it applies to the BMWC, is defined as the need to develop a procedure to deliberately divide and distribute recreational use opportunities between the outfitted (including those services provided by commercial and institutional outfitters) and non-outfitted segments of the public.

There are several specific questions that are related to the resolution of the wilderness allocation issue, and they include:

1. How can the allocation procedure be designed so that it is complementary to the LAC system used in the BMWC?

This question is to be resolved in consideration of:

- LAC Opportunity Classes,
- monitoring standards and the relative impacts of the outfitted and non-outfitted public,
- resource needs of different groups, and
- the impacts of different types and patterns of use.

2. How is the appropriate level (quantity and type) of outfitter services to be provided going to be determined in order to allocate their portion of total use?

This question is to be resolved in consideration of:

- the public's need for an outfitter as compared to the convenience of having one (in terms of the level of service that is commensurate with the wilderness objectives),
- the true demand for outfitters versus the stimulated demand through marketing,
- their historic role in wilderness,
- new interest in different types of outfitting services,
- economic importance of outfitting (and different types of outfitting) to local communities,
- terrain and vegetation impacts and recovery, and
- separation of concern for the outfitting business rather than outfitting service.

3. How will outfitters be placed into institutional and commercial categories?
4. How will administrative use be allocated and impact monitored?
5. How will local and non-local demand for the BMWC be accounted for and the opportunity cost to the general public of allocated use be taken into consideration?
6. How will the comparative satisfaction of visit and quality of experience between outfitted and nonoutfitted public be taken into consideration in the allocation procedure?
7. How should unused allocated use be dealt with?

OTHER IMPORTANT POINTS TO BE KEPT IN MIND, BUT NOT DIRECTLY RELATED TO THE DEFINITION OF THE ISSUE:

- The procedure must include a method to monitor the system, then change or adjust the allocation.
- The legal requirement and policy guidelines regarding allocation must be defined and considered.
- Equitable restrictions must be applied to all groups.
- The allocation must be designed to fluctuate with changes in the permits.
- The allocation must be across restricted and non-restricted use (i.e. the allocation procedure must apply to the outfitted and the nonoutfitted public).

ISSUES REMOVED FROM LIST TO BE CONSIDERED BY ALLOCATION PROJECT

The following issues deal with carrying capacity ("defining the size of the pie") and other management policy issues, rather than specifically with allocation of (or the procedure used to allocate) recreational use:

- Do we want every drainage to be easily utilized by the public (outfitted and nonoutfitted)?
- Do we want to maximize wilderness use or allocate so that the "carrying capacity" is not reached?
- Do we continue to reassign outfitter camps after natural occurrences such as fire, and if so, do we need open and unused areas left available for this purpose?
- How does actual use relate to allocated use/allocation?

- Should there be a piece of the pie (the "carrying capacity") that should not be used?
- Determination of the appropriate level of use for the outfitted and nonoutfitted publics
- Should there be a minimum skill/qualification for access?
- Use impact vs. user numbers

APPENDIX F

USDA FOREST SERVICE NORTHERN REGION NEWS RELEASE
REGARDING RECREATIONAL USE ALLOCATION IN THE
BOB MARSHALL WILDERNESS COMPLEX
AND
SUMMARY OF RESPONSES RECEIVED

from the Forest Service

U.S. Department of Agriculture * Forest Service * Northern Region * Federal Building * Missoula, Montana 59807 * (406) 329-3011

July 10, 1995

FOR IMMEDIATE RELEASE

News Contact: Suzanne Cable
Telephone: (406) 329-3227

Public Comments Requested

On Allocation of Recreational Use

In Bob Marshall Wilderness Complex

MISSOULA, MT---The USDA Forest Service's Northern Region, in cooperation with the University of Montana School of Forestry, is reviewing the question of wilderness recreational use allocation in the Bob Marshall Wilderness Complex (BMWC) of western Montana.

One of the early phases of the study involves a request for public comments, elements to be considered, opinions on the topic, and suggestions on allocation of recreational use in the 1,535,986 wilderness acres in the Bob Marshall, Great Bear and Scapegoat Wildernesses along the Continental Divide in the Flathead, Lewis & Clark, Helena and Lolo National Forests.

Currently, recreational use in this wilderness complex falls into two categories: (1) people that utilize the wilderness with the assistance of outfitters/guides, and (2) those that visit the wilderness without the assistance of outfitters/guides. The Forest Service permits two types of outfitters and guides in the wilderness complex: commercial outfitters and guides who provide the service for a fee and institutional guides and outfitters. The institutional outfitters/guides include youth groups, educational groups, religious organizations, conservation organizations, science-study organizations and other similar organizations.

(OVER)

Applicants for all U.S. Department of Agriculture programs will be given equal consideration without regard to race, color, sex, creed, or notional origin.



In this wilderness complex, allocation of recreational use between outfitted and non-outfitted publics is currently determined by the fixed amount of permitted use assigned to commercial outfitters and guides. The allowed level of non-outfitted use is not limited, except that group sizes may not exceed 15 people.

The objective of this wilderness recreation study is to evaluate alternative methods for making allocation decisions. The determination will be based on a thorough understanding of all relevant aspects of the issue.

To investigate possible methods for modifying the current system in use, the cooperative study is seeking/inviting public responses to these three fundamental questions:

- (1) From your perspective, what issues need to be addressed regarding allocation of recreational use between the outfitted and nonoutfitted publics in the BMWC?
- (2) What specific factors should be considered by the Forest Service in reviewing recreational use allocations in the BMWC?
- (3) What should be the goals of a recreational use allocation system in the BMWC?

Comments on any other issues regarding recreational use allocation in BMWC are also welcome.

Responses to the above three questions, or requests for additional information, should be mailed to: Suzanne Cable, c/o Wilderness, Recreation, and Heritage Programs, U.S. Forest Service, P.O. Box 7669, Missoula, Montana, 59807. Comments will be accepted until September 1, 1995.

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SUMMARY OF RESPONSES

From the document titled Public Comments Regarding Recreational Use Allocation in the Bob Marshall Wilderness Complex, dated December 8, 1995; prepared by Suzanne Cable and Nancy Trotter, USDA Forest Service, Region One, Missoula, Montana.

Two hundred and thirteen responses or inquiries to the news release have been recorded. However, not all of the responses included comments that fit the four categories of information requested in the news release and subject to review for this summary. One hundred and sixty-eight responses have been recorded that relate specifically to the categories of interest here and are included in the Comments section [*not included in this appendix*].

Of the 213 responses, the large majority came from within Montana (approximately 83%). One or a few responses were received from each of the following 15 states: California, Colorado, District of Columbia, Florida, Idaho, Kentucky, Massachusetts, Minnesota, New York, Ohio, Oklahoma, Oregon, Pennsylvania, Washington, and Wisconsin.

The large majority of the respondents with comments that were in regard to categories included in this report were recorded as being unaffiliated members of the public (127 letters or 75%). Several letters were received from students of a local school that apparently responded to the news release as a class project (16 letters). Also, several responses were recorded from the following three groups (about 7 letters each):

- former members of the LAC task force,
- special interest organizations, and

- commercial outfitters with a permit to operate in the BMWC.

One response each was recorded from an institutional outfitter with a permit to operate in the BMWC, an institutional outfitter wanting a permit, and a state agency.

At least half of the letters received were based on misinformation due to inaccurate reporting of the news release by the press or other misunderstanding of the project. Two common themes of misunderstanding were shown by the letters. First, many people thought that the Forest Service was proposing to implement a permit system for access to the BMWC. Second, a common misperception was that the Forest Service was proposing to require that all visitors to the BMWC had to be accompanied by an outfitter.

The comments recorded in response to the four categories related to the news release ranged widely and are all included in Comments section and summarized below. A diverse spectrum of perspectives was shown. Due to the large majority of responses being from one category of respondent, the unaffiliated public, analysis of response trends according to the category of the respondent is inappropriate.

Allocation Goals

Regarding the goals of the allocation system, numerous different goals were included. Many reflected a perspective appreciating the broad range of

users of the BMWC, while others were focused on the interests of particular groups. Variations of the following goals were most commonly stated:

- the allocation system should ensure protection of the wilderness resource from degradation;
- that recreational opportunities should be provided to all members of the public;
- that the quality of the wilderness should be protected and also the quality of the wilderness experience;
- the allocation system should be fair to all users.

Allocation Issues

In response to the question asking for allocation issues needing to be addressed, an equally wide variety of issues were stated. The most commonly indicated issues to be addressed included:

- the balance of use and access between the outfitted and nonoutfitted users;
- the resource and social impacts due to overuse and crowding;
- the relative resource impacts caused by different activities and types of use;
- consideration of need for, and suitability of, user fees and permit systems;
- the need to define and allocate use to all groups, especially including institutional outfitters;
- consideration of historical use patterns and activities in the allocation system.

Allocation Factors

The respondents also identified numerous specific factors that should be considered by the Forest Service in reviewing the allocation of recreational use in the BMWC. A sample of the factors stated include:

- LAC standards,
- size of camps,
- trail conditions,
- area of use,
- use trends, and
- group sizes.

Allocation Characteristics

The final group of comments, those referring to the characteristics of the allocation system for recreational use allocation in the BMWC, were even more diverse than the previous three categories. Many comments included in this characteristics category are in response to false impressions of Forest Service management intentions based on inaccurate reporting of the news release by the press. In reaction to the false impressions, many strong comments were submitted that most often argued for the interests of one particular type of user, at the expense of the interests of other user groups. Most commonly, strong opposition was stated against implementation of a permit system or any restriction of use to only the outfitted public. In

contrast, a few of the respondents argued in favor of implementation of a permit system.

Overall, many responses were received that indicated strong interest in the management of the BMWC and in the allocation study. Many people submitted letters that showed their love and appreciation for wilderness, and in particular the BMWC, as well as for the opportunity to visit it. Many strongly defended their right to access wilderness and public lands when they thought it was being threatened. In the process of protesting, most indicated their strong support for wilderness and interest in its care and protection.

APPENDIX G

REMOVAL OF ALTERNATIVES FROM THE OUTRANKING MATRIX

The following sequence of matrices shows the successive identification and removal of all alternatives from the outranking matrix using an increasing algorithm as explained by Trosper (1988). The steps used to identify and remove alternatives are explained in detail in the Chapter 4 subsection of this document titled *Final Ranking of Alternatives* beginning on page 63.

Abbreviated instructions are as follows:

1. Identify the maximum coefficient in each row
2. Eliminate the alternative with the smallest maximum coefficient
3. Remove that alternative's row and column
4. Re-identify the maximum coefficient in each row
5. Eliminate the alternative with the smallest maximum coefficient
6. Repeat the process until all alternatives are eliminated

APPENDIX H

NEEDS ASSESSMENT: ADDITIONAL INFORMATION

As indicated in the main body of this text, the Needs Assessment approach to recreational use allocation in wilderness requires additional definition and development before becoming an effective decision-making tool. This appendix offers additional information regarding the Needs Assessment approach and includes example needs assessments conducted in other public wildland areas. This information is provided only as an example of processes used by other jurisdictions in conducting needs assessments. It is not intended as a recommendation of how a needs assessment should be conducted in the BMWC.

Six sources of information regarding needs assessments follow:

- A selection from the *Dillon Resource Area Outfitter Management Guidelines*, 1993, prepared by the Dillon Resource Area of the Bureau of Land Management (BLM). It includes a procedure and criteria to be used for the determination of need for outfitter assistance.
- *Outfitter and Guide Needs Assessment* notes, prepared by Linda Merigliano of the Jackson District, Bridger-Teton National Forest and Steve Morton, USFS Northern Region, in early 1996. These notes outline basic definitions regarding needs assessment, agency objectives, decisions to be made via a needs assessment, and procedural guidance for conducting one.
- Selections from the *DRAFT Guidebook on Outfitter-Guide Administration*, 1996, prepared by the USFS Northern Region staff. This information provides guidance regarding

needs assessments, general procedures for conducting one, and evaluation criteria to be used.

- A paper titled *Allocation and Public Need* by Monte Barker, Shoshone National Forest, undated, including an explanation of assessing public need for outfitting services and an example needs analysis completed for the Shoshone National Forest.
- Two example "Public Need" analyses -- one from the Mountain Lakes Wilderness, Winema National Forest, completed in 1994 and a draft analysis from the High Uintas Wilderness, Ashley National Forest, completed in 1995. Both these analyses use evaluation criteria based the BLM document described above.

The following definition and evaluation criteria are included in the above information.

Definition of Public Need

The Needs Assessment approach essentially defines "public need" for outfitting services. As defined by Barker, public need is a need identified by the Forest Service which is deemed essential or required for the well-being of the public and in order to meet the intent of the Forest's mission to manage and protect wilderness resources, provide for public safety, and provide high quality public recreation services. He goes on to state that public need is not determined by an outfitter's desire for a permit, nor market generated demand by a potential outfitter applicant. Instead, he argues that public need is based on the particular forest or area's mission, goals, objectives and resource capabilities.

Evaluation Criteria

The Dillon Area Outfitter Management Guidelines offer the following criteria for use in assessing the need for outfitters:

- special skills and equipment for participation in activities in the resource area are required,
- special knowledge of the resource area is required to enjoy recreational opportunities in the area,
- special skills and equipment are needed to ensure a reasonable level of safety of visitors to the area,
- special management objectives or other issues exist that require the assistance of an outfitter to achieve,
- the extent to which existing outfitter permits are utilized, and
- the existing level of use in an area and levels of conflict between users.

In contrast, the *DRAFT Guidebook on Outfitter-Guide Administration* includes the following components to be assessed in conducting a needs assessment:

- agency mission,
- opportunities,
- land capability,
- social capacity, and
- demand/supply.

Proper review of these criteria requires reference to the following material.

U.S. Department of the Interior
Bureau of Land Management

FINAL

**DILLON RESOURCE AREA
OUTFITTER MANAGEMENT GUIDELINES**

March 1993

Butte District Office
Dillon Resource Area

III. DETERMINATION OF NEED FOR OUTFITTER ASSISTANCE

A. The Outfitters's Role

An essential beginning point in developing criteria to determine the need for outfitter assistance is to define the outfitter's role on public lands. The Forest Service's R-1 Outfitter Policy Task Force, on which BLM participated, stated in the report, "Partnerships for the Future" (Page 16) that, "From the agency perspective, the outfitting industry is needed to provide certain recreational experience on the National Forests, particularly to people who have neither the skill nor the resources to provide the experience on their own... It is important to understand the definition of the term 'partnership' as used in this context. The partnership envisioned is the effort to **jointly ensure that quality recreational opportunities are provided on public lands to the segment of the public which requires outfitter services.** It is not an arrangement with the outfitting industry which provides special privileges or which reserves an inappropriate share of public land recreation opportunities for guided clients."

Outfitters generally agree with the above definition of their role, but they also feel their clients are members of the general public, and should enjoy the same privileges as the nonguided sector of the public to recreate where and when they desire.

In response, some members of the nonguided sector have expressed the view that the role of the public agency should be to promote and to encourage the general public to develop the outdoor recreational skills necessary to enjoy public lands, and that such activity on public lands will promote the physical and mental well-being of the nation's citizens. In their view, excessive outfitter activity unfairly competes with their rights as American citizens to enjoy their public lands.

There are a number of issues which contributed to the views expressed above:

- Increased competition between all sectors of the public — residents, nonresidents, outfitters.
- Incompatible development and/or high levels of use on public lands which have reduced the level of quality in recreation opportunities desired by the public.
- Lack of legal public access to a substantial amount of public lands.
- The difficulty in managing an activity in which there are two seemingly disparate aspects — commercial profit and public benefits.

Resolution of the issues between the guided and nonguided sectors ultimately depends on public understanding and agreement on the outfitter's role, as defined by the Outfitter Policy Task Force. And that the real issue is **how to equitably manage use and resolve conflicts between two methods for providing public recreation opportunities where...**

- **The outfitter provides skills and equipment** needed by the guided sector to have a reasonable opportunity to enjoy a quality recreation experience.
- **The nonguided sector has the skills and equipment** necessary to enjoy a similar experience.

In this document, the role of the outfitter is defined as a "partnership" with public agencies to assist in providing enjoyable recreation experiences. For the "partnership" to be fully successful, certain conditions must occur...

- The permit area delineated should be suitable for the activity involved
- Conflicts among outfitters and between the guided and nonguided sectors should be minimal
- There should exist a "need" for outfitter assistance

In this type of setting, there is a better opportunity for an outfitter's client, who is a member of the public, to be assured a quality recreation experience. Any use restrictions imposed on the outfitter to maintain such settings are intended to provide a better recreation experience for the "client" and other members of the public. However, when pursuing this objective, there should be equal treatment of both the guided and nonguided sectors in regard to use restrictions.

B. The Concept of "Need" for Outfitter Assistance

When there is a high demand by all sectors of the public for a limited supply of recreation resources or opportunities, it eventually becomes necessary to impose use assignment levels in order to provide for, and to sustain the quality of the resource and the level of recreation experiences desired by the public. It is under these circumstances that the need arises to apportion recreation use in a manner which is fair to the guided, as well as the nonguided sectors.

The premise for apportioning recreation use in this document is based on the concept of "need" for outfitter assistance. This concept directly relates to and supports the "partnership" role of the outfitter to assist public agencies by removing barriers to recreation opportunities encountered by some members of the public. The level of opportunity barriers can vary from those which obviously require outfitter assistance due to the high level of skills, expensive equipment, etc., involved, to activities for which the level of skills and equipment are not a serious barrier to participation by the nonguided sector. Outfitter clients can also vary from those who clearly need assistance to recreate, to those that could recreate on their own, but having sufficient time and money choose to use an outfitter.

As based on the discussions above, the justification for issuing additional outfitter permits will be proportional to the public's "need" for outfitter assistance. Where there is a high need for outfitter assistance, there will be relatively more justification for assigning outfitters a greater share of use opportunities. If the "need" for outfitter assistance is low, there will be relatively less justification to assign new or additional outfitter use opportunities, especially where total use is exceptionally heavy and use conflicts are intense.

The concept of the outfitter's role in providing recreation opportunities on public lands is illustrated in Figure 1. Figure 1 illustrates how the concept of "need" will be used to assign use, but does not represent how outfitter use assignments will actually be apportioned in the Dillon Resource Area.

In Figure 1, the relative need for outfitter assistance ranges from low to high. The highest "need" defined for recreation activities occurs when there is a substantial need for outfitter assistance. This category involves activities in which significant portions of the public would not be able to participate in without outfitter assistance, due to the level of skill, type of equipment required, safety considerations, etc. Examples of activities in this category would include whitewater floating, extended horse pack trips into backcountry, and mountain climbing.

The next category, characterized as a moderate need for outfitter assistance, would involve activities where, in most instances, the type of equipment, level of skills, etc., required are important, but would not impose substantial barriers to public participation. However, the public is provided with important benefits from outfitter assistance. Included in the list of benefits would be the opportunity to learn recreation skills, develop conservation ethics, and practice low impact techniques when recreating. One important benefit of outfitter service in this category involves the outfitter's responsibility to insure clients adhere to game laws and other rules. Activities in this category would include nonwhitewater floating/fishing, end of road guided hunting camps, fly fishing, etc.

The last category is defined as a low need for outfitter services. Perhaps the most extreme example of this category would involve an outfitter whose only role was to transport a hunter from his motel to and from a well-known, very accessible, and heavily used hunting area in a two-wheel drive pickup.

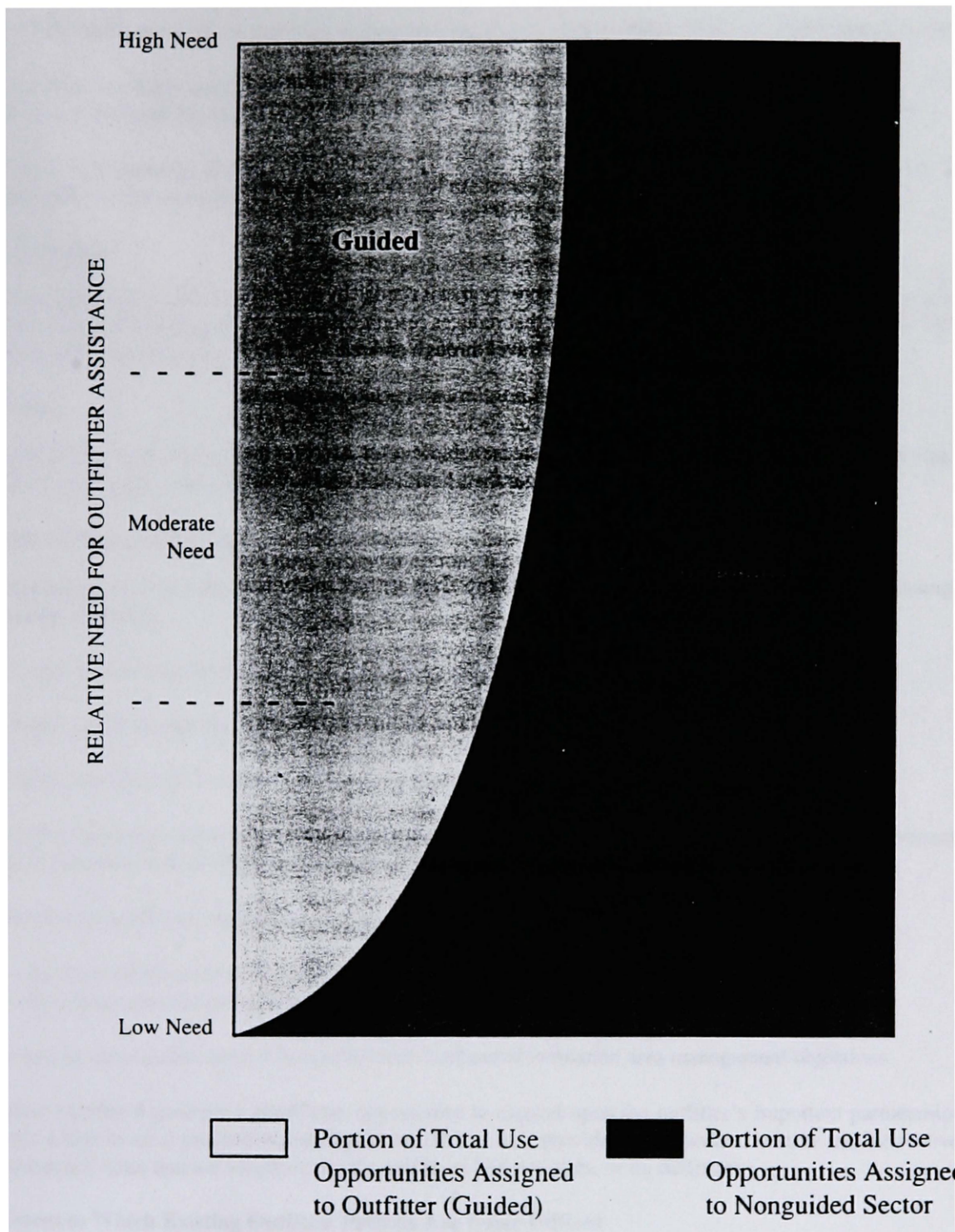
Many activities will not fit cleanly into one of the three categories, but may overlap the boundary between two categories. For example, some equipment could fit into the high need category due to the high cost of equipment involved, such as, the cost of a rubber raft or dory for nonwhitewater floating and fishing. While the activity involved, fishing, would otherwise be in the moderate need category.

Absence of use by the nonguided sector in a specific area is not justification, by itself, to allow outfitter use. Proposals from outfitters must still be evaluated in accordance with the "need" for such assistance, the extent to which existing outfitter permits are being utilized, and the existing level of use and use conflicts.

C. Evaluation Criteria for Determining Need for Outfitter Services

It is with the above thoughts in mind that the following criteria will be used as a basis to evaluate the "need" for outfitter assistance.

Figure 1
OUTFITTER'S ROLE ON PUBLIC LANDS



1. Skills and Equipment

Outfitter skills and equipment are needed by a portion of the public because of one or more of the following:

- a. Specific skills required for activities appropriate for an area require substantial time and/or talent to learn.
- b. Learning necessary skills and participating in the activity requires acquisition and consistent use of expensive, specialized equipment for which the public could not, or normally would not, expend the dollars or time.
- c. The skills required are so unique that use of an outfitter is almost a prerequisite if the public is to have any opportunity to participate in, and enjoy the activity.

2. Knowledge

Outfitter knowledge of the recreational resource and the activity area is needed by the public, and especially nonresidents, in order to enjoy recreational opportunities in a manner that reduces resource damage and user conflicts. This includes knowing where and by what method to best access and travel through an area.

3. Safety

An outfitter's special skills and equipment are needed for a reasonable level of safety for the participants. Without outfitter assistance, members of the public could seriously endanger their health or lives.

4. Special Management Objectives and/or Issues

Outfitter assistance is needed to insure special management objectives are met and/or issues resolved. Examples would include the following:

- a. Provide recreational opportunities for the handicapped.
- b. Protect fragile resources, including endangered flora and fauna, cultural values, etc.
- c. Provide environmental education and interpretive information.
- d. Assist in reducing critical resource impacts and/or conflicts between users in areas with extremely important resource values (wilderness, area of critical environmental concern, etc.)
- e. Provide for additional recreational opportunities that...
 - Increase the diversity of recreational activities and public enjoyment.
 - Encourage innovation in the outfitter industry.

... as long as the activities are not in conflict with land use or recreation area management objectives.

Criterion number 4 presents a significant opportunity to expand upon the outfitter's important partnership role, but requires a high level of professionalism by the outfitter. It also provides opportunities for new and innovative types of recreation activities that are identified by the public, public agencies, or by outfitters.

5. Extent to Which Existing Outfitter Permits Are Being Utilized

If a significant portion of outfitters in the resource area (BLM and Forest Service) use less than 70 percent of the assigned level of user days 3 out of 5 years during the previous 5-year period, public demand for additional outfitters is not sufficient, by itself, to justify analyzing the need to raise use assignment levels or to issue additional outfitter permits. Under these requirements, a decision will be made whether or not to reduce use for permittees who have used less than 70 percent of their use assignment level during the previous 5-year period. Before any reductions are made, other factors will be considered, including the general market and other economic fluctuations, the availability of state hunting licenses, weather and other natural phenomena which may adversely affect the ability of the permit holder to make full use of assigned user days.

If a significant portion of outfitters in an area have consistently used 70 percent or more of their assigned use, the need for raising existing use levels and/or issuing new permits will be analyzed.

6. Levels of Use and Use Conflict

Any decision to issue an additional outfitter permit or to change assigned use levels on an existing permit, etc., must take into account the relationship between the existing total use level (guided and nonguided sectors) and the level of conflict now occurring, if any, between outfitters, or between the guided and nonguided sectors. (Use conflict is defined under Use Level Assignments, item 4, page 15.) As previously discussed in regard to the role of the outfitter, an appropriate balance of use must be maintained between the two sectors to insure all users have a reasonable opportunity to enjoy a quality recreational experience. Any analysis of use levels will also involve an examination of use trends for the activity in question. For example, is use expected to increase? What does this mean in regard to existing or potential use conflicts?

IV. PROCESS TO EVALUATE "NEED" FOR OUTFITTER ASSISTANCE IN COORDINATION WITH USE MANAGEMENT

Under the present system, BLM evaluates outfitter permits on an application-by-application basis. Under the new evaluation process, BLM will not respond to each individual application. Instead, BLM will evaluate the "need" for outfitter assistance for all activities throughout the resource area during scheduled review periods. If the evaluation results in a determination that additional assistance is needed, BLM will issue a guide and outfitter prospectus to solicit permit applications from all interested parties.

The evaluation process involves three different options for scheduling outfitter permit reviews...

Five Year Review

Every five years, a comprehensive review of the Dillon Resource Area's outfitter permit program will be completed. The review will be coordinated with the Montana Outfitter Board, the Beaverhead National Forest, and other affected entities. The management guidelines and criteria described in this document will be used to evaluate the need for any additional outfitter permits, and, if needed, for adjusting (up or down) the assigned use levels for all existing outfitter permittees. The intent of this review is to anticipate the "need" for outfitter assistance over the next five-year period, and to make the necessary adjustments.

Interim Review

If it becomes obvious during a five year period that conditions have substantially changed, and adjustments to the permit program are urgently needed, a decision could be made to re-evaluate and adjust the program before the next five year review. The management guidelines and criteria used would be the same as for the five year review.

Special Project Review

It is anticipated that, infrequently, permit applications may be submitted for one-time, short-duration, nationally or regionally important outfitter activities. Applications of this type would be reviewed to insure they do not create unacceptable resource or user impacts to existing outfitter or nonguided recreation activities.

Although BLM will not respond to individual permit applications, the applications will serve as one of several important information sources in the evaluation process. Within 30 days of the application filing date, or within 15 days of the desired use date, whichever is earliest, the applicant will be informed about the evaluation process, and which of the three review schedule options will be used to evaluate the activity(ies) proposed by the applicant.

The process to determine the need for outfitter assistance must take into account and be coordinated with actions required to manage use and resolve use conflicts. Use management involves defining...

- The purpose for assigning use (management objectives)
- Where use will be distributed (permit area)
- The type and level of use assigned
- The guidelines used to monitor and control use.

OUTFITTER AND GUIDE NEEDS ASSESSMENT by Merigliano and Morton

Some Basics

How is "need" defined? Public need is identified by the Forest Service with input from citizens and identifies the types of outfitted services needed to meet agency objectives. Market generated demand or applications for conducting outfitting do not constitute need.

Basis for doing "needs assessment". Forest Service policy states that:

- a As identified in forest land and resource management plans, provide for commercial outfitting and guiding services that address concerns of public health and safety and that foster small business.
- b Encourage skilled and experienced individuals and entities to conduct outfitting and guiding activities in a manner that protects environmental resources and ensures that national forest visitors receive high quality services.

The Wilderness Act states that "commercial services may be performed to the extent necessary for activities which are proper for realizing the recreational or other purposes of the Act".

The National Environmental Policy Act requires disclosure of the "purpose and need" for any proposed action (e.g. issuing additional outfitted use).

Agency Objectives (public need is based on these types of wildland objectives)

- 1 Conservation/stewardship of natural and cultural resources - air, water, soil, vegetation, wildlife, cultural. Promote responsible use so that natural systems are sustained for future generations.
- 2 Public service - enable people to obtain benefits such as personal growth, family/friend bonding, spiritual re-connection, stress relief/personal reflection, physical exercise, challenge, learning/mental stimulation, etc.
- 3 Visitor safety - enable people to experience wildland settings in a manner that they perceive the risk is within their control.
- 4 Retain lands in the public domain so people of all races, gender, and economic categories have the opportunity to re-connect with nature and experience their common heritage.
- 5 Contribute to the people's quality of life and economic sustainability in communities - foster small business, provide clean water and air, add beauty to people's lives, etc.

Decisions made via Needs Assessments.

Needs assessments are the analysis that supports the following types of decisions. Both types of decisions require NEPA analysis and involve value-based judgments, thus public participation is essential.

Programmatic level (forest plan): Decision on role ("need") for outfitted services and the amount of use to be allocated to the outfitted public sector. (Basically, establish a framework that will help project managers evaluate proposals for new or additional outfitted use. In defining the amount of use to be allocated to outfitted publics, a specific amount or range of outfitted use may be set or, if more flexibility is desired, a clear set of criteria can be developed for evaluating additional use).

Project level: Decision on whether or not to issue a new permit or additional use to an existing outfitter and if so, what stipulations will be required in the permit.

There are three separate steps in developing a framework for assessing the "public need" and allocation for outfitted services (programmatic level) or evaluating an individual application for new or additional use (project level).

- 1 **Public need for outfitted services - identification of the types of outfitted services that will help meet agency objectives.**
- 2 **Capacity - estimate of total number of people who can use an area during defined time period based on resource and setting capability (i.e. meeting management desired conditions and standards).**
- 3 **Allocation - division of total capacity estimate among difference sectors of the public (e.g., commercial outfitted, institutional outfitted, non-outfitted publics)**

NEEDS ASSESSMENTS - A Checklist of Considerations

I PUBLIC NEED (types of outfitted services needed to meet agency objectives)

(Note: Recognize that many people today are choosing to go on an outfitted trip to enrich their experience by going with someone who is very knowledgeable about the area, thus outfitters are not just serving people who can't access the area on their own). Helpful to get outfitter and other public input on ways outfitted services can help meet agency objectives.

Step 1: Determine what types of activities are appropriate and needed.

1. Provide opportunities to experience wildlands and learn skills - some people do not have the skills, equipment or knowledge to experience wildlands on their own or have special needs that require extra assistance (e.g. some disabled people).

Within your area, what activities require specialized skills, equipment, or knowledge to safely and responsibly visit the area? What activities occur or could occur that are difficult to learn in a responsible and safe manner without instruction? Are these activities appropriate given existing laws, regulations, and desired setting/ROS classification (from forest plan)?

Step 2: For the activities you identified, what role can outfitters play to further meet agency objectives (value-added aspect of outfitting)

1. Enrich appreciation of area - through interpretation of the area's natural and cultural history, guides can increase the appreciation of area for people they are serving.

Within your area, what do you want visitors to know about the area that outfitters might best be able to convey?

2. Promote development of conservation ethic - it is primarily through direct contact with wildland settings that people can re-connect with their roots in nature and begin to develop their own sense of the human role and responsibility within the larger community of life.

Within your area, what role can outfitters play in helping people develop their own conservation ethic?

3. Build constituency for public lands and their stewardship - it is said that "people will conserve only what they love, and love only what they understand". Our system of public wildlands exists because people love and support them but we cannot take this for granted. Public wildlands must continue to be viewed as relevant to people and our society, or we will lose them.

In your area/region, does a strong constituency exist for public lands and their stewardship - if not, what role can outfitters play in helping build this constituency?

4. Resource protection - outfitters can help with resource stewardship by clearing/maintaining trails, monitoring conditions, sponsoring educational clinics, reporting illegal activity, restoring campsites, assisting with search and rescue efforts, etc.

Within your area, what are key resource needs that outfitters could assist with?

5. Contribute to rural economies - the sustainability of rural communities is dependent on creating a diverse economic base. Small businesses such as outfitting can help in this endeavor.

Within your area, what role does outfitting play in the economy and how can this role be enhanced - i.e. keep more money circulating within local area?

PRODUCT: List of specific activities and ways outfitters can meet "public needs" within your area.

II. CAPACITY DETERMINATION (Estimates of capacity can be done for the entire area or for each separate management area. Capacity estimates should also be separated by season - e.g. winter vs. summer/fall)

1. Assessment of Demand/Supply/Opportunities

Step 1: Determine current services available

- * *What are the current services offered, # permits, # of service days - summer, fall, winter? What is the current utilization of existing permits?*

Current Outfitted Services

Outfitted Service	Mode of travel	# of permits	# of priority days	% utilization	Areas of operation	
Ex. treatment of at-risk youth	foot - backpacking	2	500	75%	Moonshine Creek, Green Lakes	
Ex. fishing, cultural history	horse - progressive camps	3	1000	80%	Happy Creek..... Jack	

- * For each of the current services offered, assess whether the service is consistent with identified "public needs" (from I). If a service is identified as not meeting a public need, phase it out. Services that meet public needs but are not being fully utilized suggests that there is no need for additional use in these categories.

Step 2: Determine desired future services to meet public need. (Note: it is helpful to get outfitter and other public input on desired future services)

- * *What types of activities or opportunities are being requested (either via special use applications or via phone calls from public)? Include requests for institutional outfitting.*
- * *What is anticipated future mix of activities/opportunities given recreational trends (including institutional outfitting)? Does the area offer some unique opportunities that could be met by outfitted services?*

PRODUCT: Table displaying current services offered. List of services to be phased out. List of services where no additional use is warranted. List of desired future services to meet public need.

2. Identification of areas of concern - resource capability

Step 1: Identify objectives and standards that establish resource and "social" limits (from Forest Plan or other documents containing direction for geographic area).

Shade areas on map in red that meet these criteria (areas where all outfitted activity is discouraged)

- * *Are there areas where private land, parking space or other access problems warrant discouraging regular, additional use?*

Winter Capacity:

- * *Are there areas of winter range where winter human presence would be detrimental?*

Summer/Fall Capacity:

- * *Are there areas where wildlife, fish, or plant species concern or other critical resource concern warrants discouraging human activity?*

Shade areas on map in yellow that meet these criteria (areas where certain types or amounts of outfitted activity should be restricted)

- * *Are there areas where recreational stock grazing isn't advised due to range conditions/forage utilization standards?*
- * *Are there areas where terrain or lack of suitable campsites make it inappropriate for overnight activities?*
- * *Are there areas where encounter standards or other "experience" standards are not being met or are showing declining trend?*
- * *Are there areas where the concentration of existing outfitters is causing problems between outfitters or between outfitted and non-outfitted publics?*
- * *Are there areas where State big game population objectives are not being met suggesting need for less hunting pressure?*
- * *Are there areas where soil types do not support trails that can be maintained to an acceptable standard?*

Shade areas on map in green that meet the following criteria (areas where additional outfitted use would be beneficial)

- * *Are there areas where State big game population objectives are being exceeded suggesting a need for greater harvest levels?*
- * *Are there areas where illegal activities are occurring that might be deterred with regular presence by outfitted publics?*
- * *Are there areas where potential resource or safety concerns suggest that visitation by outfitted publics (whose use can be managed fairly closely by the agency) would be better than visitation by non-outfitted, non-permitted publics?*

PRODUCT: Map showing areas where outfitted use should not be allowed, areas where outfitted use should be restricted, and areas where outfitted use might be beneficial

3. Estimate total capacity using resource limiting factors

The goal here is to come up with a ballpark estimate of total capacity (expressed in terms of people at one time) for a defined season of use. This estimate should be based on the factor that ultimately limits people's use. Some possible limiting factors are:

Number of acceptable campsites

Number of boats that can launch or take-out at ramps

Parking lot size

Tolerance of sensitive wildlife species

Desired setting - Recreation Opportunity Class (ROS) coefficients

Recommended ranges for capacity coefficients for ROS settings are:

Primitive setting — .002 - .025 people at one time/acre

Semi-primitive, non-motorized setting — .008 - .083 people at one time/acre

Semi-primitive, motorized setting — .008 - .083 people at one time/acre

Roaded natural setting — .083 - 2.50 people at one time/acre

Specific coefficients can be adjusted based on different ecological environments or other local conditions.

Coefficient x number of suitable/useable acres x season of use = estimated capacity

Warning - don't fall in love with the numbers you generate - they are only estimates. If your estimate seems ludicrous, it probably is - go back and try another approach.

Example using number of acceptable campsites as limiting factor:

a Determine number of potential campsites by:

Taking management area acreage (minus acreage shaded in red or yellow from #2 if applicable) and determining acreage of suitable camping habitat (e.g. less than x% slope and within y feet of water source).

Then divide acreage of suitable camping habitat by acceptable density of sites (e.g. 1 site/x acres)

OR, assume that most of the campsites that really would be used have been used and just identify number of acceptable (based on standards) campsites within management area (minus area shaded in red or yellow from #2 if applicable).

b Determine number of campsites that can be occupied in any one night without seeing or hearing other parties (or other occupancy standard you might have).

c Multiply the number of campsites that can be occupied in any one night by the average party size = estimated people at one time (PAOT) capacity

d PAOT capacity x Season of Use = Estimated season capacity

PRODUCT: Estimated total capacity for season in terms of number of people

III. ALLOCATION

Options

1. Split Allocation

* Based on historical use

* Even split (i.e 50-50)

* Even pool (if outfitted or non-outfitted did not use 50% on any one day, remainder would go to other sector)

- * Fixed percentage based on trends and anticipated future need

2. Non-split Allocation

- * Time/Location Zoning (i.e. "tee-off" times) Applicable to rivers
- * Freedom of Choice

Unless you are in a situation where estimated capacity has been reached and equity issues regarding allocation of use are a major issue, it is recommended to start with this approach.

- 1 For existing outfitted services that meet public need and are consistently using close to 100% of capacity, consider allocating additional use.
- 2 For existing outfitted services that meet public need but are only being utilized 70-95%, continue current number of permits and priority days but don't allocate additional use.
- 3 For existing outfitted services that meet public need but are consistently using less than 70% of priority use, reduce number of priority days and re-allocate extra use to meet other public needs.
- 4 For existing outfitted services that don't meet public need, terminate permits as opportunities arise and re-allocate use to services that better meet public need.
- 5 Determine estimate of % of total use historically outfitted. Multiply this percent by estimated capacity determined in section II(3) = estimated outfitted allocation. Subtract existing priority days to determine growth potential. Allocate this remaining capacity to services consistently using close to 100% of capacity (#1 above) or allocate to new services that are identified as needed to meet anticipated future public needs. Don't allocate all remaining capacity all at once, but phase in slowly so that adjustments can be made if monitoring reveals problems. Use the bid and prospectus process to obtain the most qualified permittees and allocate enough service days per business so that each is economically viable.

Permit stipulations: Identify permit stipulations based on resource capability items noted in section #2 and stipulations needed to ensure permittee meets identified public needs.

Administrative workload: Adjust the number of permits issued down if number can not be administered in a quality manner OR determine a way to more effectively/efficiency administer permits.

UNITED STATES DEPARTMENT OF AGRICULTURE
FOREST SERVICE

GUIDEBOOK ON OUTFITTING AND GUIDING

The purpose of this guidebook is to provide standardized guidance to agency permit administrators and to outfitter-guides. The ultimate aims are to foster a high standard of public service to National Forest visitors and superb care of forest resources, recognizing outfitter-guides as valuable recreation service providers and partners with the Forest Service.

Prepared by the Staff of the Northern Region, USDA Forest Service

CHAPTER 2 - THE ANALYSIS PROCESS

A. Introduction

This chapter provides guidance in analyzing the Forest and/or District opportunities for outfitting services, both in kind and amount. Topics covered include Forest Plan direction, "needs assessment", National Environmental Policy Act (NEPA) requirements, and allocation. See also the Appendix for examples of some techniques.

B. Forest Plan Direction

Most Forest Plans do not provide thorough direction on outfitting opportunities, needs, allocations, forest-wide goals and/or management area standards and guidelines. Lacking these decisions, Ranger Districts are frequently faced with moratoriums on outfitting (or additional authorizations), or having to conduct case-by-case analysis on an increasing number of applications.

It is Forest Service policy to use the Forest Plan as the vehicle to address these issues. Forest Plans lacking this direction should be revised or amended at the earliest possible date to provide it. This entails an assessment of the overall resource goals for the Forest, with specific emphasis on the availability of recreation opportunities. Included is an analysis of the availability of outfitted services and an allocation of an appropriate amount of the total use to the outfitted public. For some of the specific considerations see the "needs assessment" section below. The result is a number of service days, either by Management Area (or combination of Management Areas), preferably by type of use, to be available to the outfitted public for the planning period. At minimum, the use can be allocated to a pool or "bucket" and distributed as necessary to respond to opportunities. As actual use is monitored the Forest Plan assignment may be amended, upward or downward as the situation changes.

C. Needs Assessment

The basis on which any new use or additional use is permitted is the Forest Service's determination of public (agency) need for such services or additional services. This determination must include an analysis of resource capability to sustain such use, analysis of social carrying capacities to handle such additional use, and many other factors.

The determination of need can be a complex issue and subject to many factors. The analysis should not be made any more complex than necessary, however. It is important for the agency to do it professionally and in an unbiased manner, keeping in mind that most clients of a good outfitter consider their visit to the National Forest a highly memorable experience. While it is not uncommon during the scoping of these decisions to receive input opposing the extension of outfitted use into an area or for a new activity, the decision maker must look beyond local interests to a broader constituency to achieve a balanced fairness in use.

Figure 1 displays many of the components of a needs determination which must be thought through. Experience has shown that any of the individual factors can be cause for choosing a "no need" outcome. The agency must avoid predetermining that result simply on an attitudinal bias against outfitted use.

Upon legal challenge the decision may well not be sustained if it is arbitrary. It must be able to stand the scrutiny of an objective analysis rather than being based on primarily subjective factors. On the other hand, once the appropriate level of balanced opportunities are made available, the objective of fostering business viability will dictate prudence in authorizing further competition. In most cases, the result will be that at least a modest capacity for outfitted opportunities exist for most of the activities sought on the National Forests.

Factors Affecting Determination of Need for Outfitters



The analysis must be documented in a "Needs Assessment" or "Analysis of Need". This assessment fulfills the National Forest Management Act (NFMA) portion of the analysis process. If the findings of this assessment are negative, i.e. there is no need for an outfitter to accommodate access needs for the target audience, the process is ended.

If the analysis indicates the need for an outfitter, the findings are used to construct a proposal which initiates the NEPA process.

Reasons for initiating an analysis include, but are not limited to:

1. Agency planning/analysis that discloses an opportunity.
2. Application to outfit.
3. Public request for service.
4. Area or unit analysis/assessment of all resource needs including recreation.
5. Vacation or abandonment of an existing permit/ permitted area/ license.
6. Known or suspected illegal/unauthorized activity in non-outfitted area not previously analyzed for permitted outfitter operations.
7. Mixed or "checkerboard" ownership, and one or more of the landowners currently are, or are considering permitting outfitting.
8. A state agency level initiated analysis involving outfitting (includes coordination under State/Forest Service Memorandum of Understanding)
9. Identification of sensitive habitats, species, or settings which require interpretation and/or protection, best visited with a knowledgeable guide.

Outfitter-guide special uses are permitted in order to facilitate experiences on National Forest lands. These experiences are realized through the pursuit of recreational and educational activities in preferred settings or surroundings.

The job of Forest Service managers is to provide for various kinds of settings, managed to produce quality outdoor opportunities appropriate to the National Forest role, leading to the visitor's understanding, appreciation, and protection of resources.

Because of the large land base, the Forest Service will generally focus on providing opportunities for an unconfined type of outdoor recreation, free of the urban influence. Examples of such opportunities might include hiking, boating, caving, mountaineering, hunting, fishing, snowmobiling, horseback riding, cross-country skiing, mountain-biking, dog-sledding, ATV riding, etc..

The complexity of a needs assessment is dependent upon site-specific factors such as the management situation and the specific proposal involved. Therefore, the relative importance and usefulness of the following factors may vary among assessments.

For those who will use the methodology at the broadest scales, it is also useful to keep in mind that activities vary in importance over time, and new

activities develop. Therefore, opportunity assumptions which are currently valid may not be in the future. This necessarily renders the needs assessment valid only over an intermediate length time frame. The more systematic it is at the outset, the easier it will be to maintain its currency through minor alterations in assumptions.

A "needs assessment" has identifiable components, whether at the Forest Plan level or at the case-by-case assessment level. These can be grouped into five headings: agency mission, opportunities, land capability, social capacity, and demand/supply. Each of these components should be briefly addressed in the assessment.

1. Agency Mission: Some of the discussion points include the goals of education and interpretation for visitors, protection of sensitive resources, building positive National Forest constituencies, business viability, fostering access to opportunities, and curbing illegal outfitting. This category goes beyond looking at "does the public need this outfitted opportunity?", to considering "does the agency need this opportunity to help fulfill its' mission to care for the land and serve people?"

2. Opportunities: This category looks at the Forest/District outfitting opportunities based on the historical, current, and potential picture. Include both the common pursuits and the unique opportunities. Some may be identified by the agency and some by proponents. What are the opportunities which may contribute to rural area development and the economy of formerly commodity-based areas. Are there opportunities for unique publics? Do intermingled landownership patterns offer possibilities? Describing the opportunities in detail will be more helpful than just listing possible activities.

3. Land Capability: Lands and waters are capable of sustaining varying amounts of use depending on management objectives for the different types of areas. As one moves along the Recreation Opportunity Spectrum (ROS) from the developed end to the primitive end the management objectives change from higher density use to low density use. Management objectives may also include factors recognizing resource concerns other than recreation, such as threatened and endangered plants and animals, protection of unique habitats, water quality, vegetation, soils, etc.. Availability of campsites, how current use is distributed, high and low periods of use, and if intermingled private lands are present should be considered. If Limits of Acceptable Change (LAC) standards are present, what does monitoring indicate? Can an outfitter contribute to the protection of land through his/her educational emphasis?

4. Social Capacity: The social capacity is normally more constraining than the resource capability, particularly if LAC standards are in place. Judgements of social capacity can be quite subjective and no single method of determining it has emerged as the cure-all. The assessment requires some knowledge of current use levels, historical levels of outfitted use, some thought given to whether the area is approaching an optimum level of total use, and a sense of fairness and balance in allocating an appropriate amount to both the outfitted and non-outfitted public. If periods of concentrated use occur, coordinated efforts to limit total use during those periods may be necessary, i.e. enlisting the cooperation of other agencies such as State wildlife departments, or even the users themselves.

5. Demand/Supply: This category assesses the current availability of outfitted service in an area. Does the public who needs the specialized knowledge, skill, and equipment provided by the outfitter have access to it?

Are there requests for appropriate new and different, non-consumptive, non-traditional experiences? What is their availability to unique publics of all ages, abilities, or disabilities? Are there interpretive opportunities which an outfitter can supply, such as viewing fire recovery, or other natural phenomenon. Are current outfitted assignments booked or over-booked, indicating a larger interest in the service?

The "needs assessment" process is not a perfect one which guarantees a perfect result. It should be good enough, however, to show the agency approached the subject with an open, fair-minded analysis, using the best objective information available.

b. Outfitting Analysis and the National Environmental Policy Act (NEPA)

1. Forest Plans and Service Days - Forests that have Forest Plans that establish numbers of allocated service days by Management Area, geographic areas or drainages will have to consider making an amendment to the Forest Plan when a change is needed. A change in allocated service days normally will not be a significant change in the Forest Plan and a nonsignificant amendment is appropriate. Forest Service Manual 1922.5 and Forest Service Handbook 1909.12 Chapter 5.32 provide direction for determining when an amendment is significant or not significant. An analysis of the need for a change and the reasons for making the change should be documented and made a part of the Forest Plan record.

Currently, there is no category available in Forest Service Handbook 1909.15 to make a categorical exclusion for NEPA purposes on Forest Plan (service day) changes. If the change in service days is part of a proposed new outfitter-guide permit (project level decision), then an Environmental Assessment (EA) is needed (36 CFR 215.3).

A decision to make a nonsignificant amendment to the Forest Plan is subject to appeal under 36 CFR 215 if it is part of a project decision. A decision on a nonsignificant amendment that is not included as part of a decision on a proposed project action remains subject to 36 CFR 217.

2. Reissuance - Permits with a site specific campsite - This type of outfitter-guide permit has, as the controlling factor for site specific analysis, the camp site. Without a campsite, the holder is unable to use the adjacent area. For NEPA purposes, use category 31.2 number 3h to do a categorical exclusion for reissuance of the permit, unless the camp site may have an adverse effect on extraordinary circumstances, 30.3 number 2 (FSH 1909.15). If the situation exists where several permits in the same geographic area are up for reissuance and there are potential effects on threatened and endangered species from the activity, then preparation of one EA for reissuance of all the permits is appropriate to determine effects/mitigation and provide for consultation with the US Fish and Wildlife Service.

3. Issuance of a New Outfitter-Guide Permit for a New Use - For a permit involving a camp site, the use of category 31.2 number 3 may be appropriate as explained above. However, an EA may be needed if a Forest Plan amendment changing service days is part of the action to issue the new permit. See also 31.1b, number 8 for approval of new uses on an annual basis. These generally do not require a case file nor a Decision Memo.

4. Consideration of Extraordinary Circumstances - One of the extraordinary circumstances listed is Wilderness (FSH 1909.15, 30.3, number 2d.). The mere presence of an outfitter-guide campsite inside a Wilderness does not preclude

Common Components of a Needs Assessment

Agency Mission

Education and interpretation for visitors
 Protection of sensitive resources
 Building positive constituencies
 Business viability
 Curbing illegal outfitting

Opportunities

Identified by agency
 Identified by proponent
 For rural area development/economy
 For unique publics
 Land ownership patterns
 New and different

Land Capability

Other resource constraints
 LAC standards
 Carrying capacity
 How use is distributed
 Intermingled ownership

Social Capacity

Current use levels
 Current outfitted use (%)
 LAC standards
 Carrying capacity
 Fairness and balance

Demand/Supply

Current availability of service
 Specialized knowledge, skills,
 equipment
 Unique publics
 Specific requests
 Access to opportunities

ALLOCATION AND PUBLIC NEED by Barker

ALLOCATION DEFINITION: Allocation is an apportionment of the type and amount of use or activity by geographic area based on an assessment of potential opportunities available, public demand for various types of activity or use, the capability of the land (resources) to support the use or activity, potential conflicts between other uses or users, as well as any identified Agency needs for concessionaire services or assistance.

Public demand
 Opportunities available
 Capability of the land
 Potential conflicts
 Agency need

NEEDS ANALYSIS & DETERMINATION DEFINITION: Need = agency need = public need = management need. A needs assessment and determination is a methodology for determining if in fact there is a "need" for private enterprise to assist the Agency, as well as to determine the amount of concessionaire assistance required to provide access, facilities, accommodations, products, services and/or other assistance for the using public in order to properly manage recreation on public lands. This determination is made by the Agency.

Need (also called public need or management need) for concessionaire assistance works on the premise that concessionaires are public service agents, and the numbers will be limited to the number and type that are needed to achieve identified goals and objectives of the Agency while assuring economically viable operations. It is based on identified (or demonstrated) needs for access, facilities, accommodations, products, services, & assistance as well as identified needs for resource protection, public safety, and public education based upon stated objectives. A needs determination can be initiated internally, or externally via an application.

The needs analysis is the basis for approving or denying applications for providing concessionaire services. If there is no need, there can be no allocation, and applications are denied.

A prospective outfitters desire for a permit does not constitute public demand or a public need, nor does market generated demand (solicited calls/letters) by a potential applicant constitute public demand or a public need.

RECREATION USE ALLOCATION DEFINITION: Recreation Use Allocation is an apportionment of the type and amount of recreation use between assisted and nonassisted users by geographic area based on an assessment of potential opportunities available, public demand for various types of activity or use, the capability of the land (resources) to support the use or activity, potential conflicts between other uses or users, as well as any identified Agency needs for concessionaire services or assistance.

The Forest Plan process is usually the mechanism for making major land and use allocations, and is the basis for documenting both "land" and "use" allocations. Land allocation decisions relating to concessionaire facilities (2700-5 term permits) are much more complex than use allocation decisions as such allocations are for long periods (20+ years), permit "essentially" exclusive use, may convey "rights", and may be compensable.

Major land allocation decisions should be addressed as part of the Forest Plan revision process or via a project specific ID team, and will usually require a significant Forest Plan amendment.

In many situations, Outfitting activities are interdependent and intertwined (e.g. ice-fishing is dependent on over the snow vehicle transport, or wildlife viewing in remote wilderness is dependent upon primitive transport and overnight camping).

Activities can be viewed as:

Primary - the major purpose of the trip or the primary focus (This is why one is going, what one is doing, or why one booked the trip.)

Incidental - activities in which one participates "by choice" in addition to the primary activity, or in which a permittee can specialize. These are often viewed as the "gimmick" or specialty of the permittee and/or the client can do these activities on their own based upon their own personal interest once they are there. e.g. if on a pack trip (primary activity) incidental activities include fishing, photography, gathering, hiking, nature study, gold-panning, primitive skills practice (camp set-up, dutch oven or open fire cooking, horsepacking, primitive tools use, etc.)

Interdependent - activities in which participates (without a choice) when participating in a primary activity. e.g. one cannot participate in a backcountry pack trip with horses without being involved and participating in camping, viewing, trailriding, and some level of education and training.

The same activity (e.g. camping) can be a primary, incidental, or interdependent activity depending upon the situation.

The following factors are assumed to apply to all activities, all permits, and all permittees:

- No trace concepts, techniques, practices, & equipment being applied
- Quality service provided
- Health & safety requirements met
- Customer expectations met
- Educational & interpretative (value-added) services provided
- ADA requirements met

So long as there is a wide range of assisted opportunities available Forest-wide, we are not obligated to provide for every activity on every acre. It is not our charge to maximize or accommodate demand for commercial opportunities. THE LARGER THE AREA ADDRESSED IN A NEEDS ANALYSIS, THE MORE DIVERSE THE OPPORTUNITIES AND EXPERIENCES THAT ARE AVAILABLE (and the fewer the number of concessionaires required to provide such services). In addition, each outfitter has the ability to tailor their trips (customized trips) to meet individual expectations and experience requirements.

For activities that are not site dependent, SO LONG AS ALL PRESENTLY ALLOCATED USE IS NOT BEING USED, THERE IS NO NEED FOR ADDITIONAL CONCESSIONAIRES FOR THAT USE -- DISTRIBUTION OF USE IN TIME & SPACE, AND INCREASED FLEXABILITY FOR EXISTING OUTFITTERS (TO INCREASE THE OPPORTUNITIES RANGE AVAILABLE IN ANY ONE AREA) IS THE PROBLEM TO BE ADDRESSED.

Permits can be either:

Permissive - very general, not specific - e.g. touring on the forest. Allows maximum flexibility, but also opens Pandoras box as far as what is permitted or not, and permitting of "new" activities.

Restrictive - very specific as to activity, season, area, mode of transport, etc. - e.g. summer progressive horsepack touring in no-name unit. Allows little flexibility, is more easily tracked and administered, and shuts the door on applications for "new" types of activities for every incidental use.

Use pools are a simple mechanism to allow flexibility. Several types of pools are available:

Closed Pool - where used is assigned to individual permittees, and can be traded via a pool.

Open Pool - where use is not assigned to individuals, but is set aside in a pool where all permittees have equal access to it. Access may be via drawing, first-come first-serve, or whatever. Institutional permits can be allocated and administered by an open pool set-aside.

Limited Pool - where access to the pool is limited to a certain group of permittees (e.g. existing permittees on a certain area).

Unlimited Pool - where access to the pool is not limited except by type of user (e.g. institutional applicants).

Site specific opportunities (ice-climbing on soso waterfall, trailriding from noname resort, etc.) need to be analyzed based on the specific site.

Outfitting activities can be lumped or split based based on many criteria, but the major factors are mode of transport, season of use, type of use, duration of use, major focus of trip, secondary or incidental activities, whether or not the experience is directly dependent upon mode of travel, and the degree of experience or expertise required to participate in the activity.

If the activity is the main focus of the trip or the destination primary activity, that should be the permitted activity. If the activity is incidental it should not be a separate activity. The key to responding to applications for "new" uses is the determination of whether or not it is truly a new primary activity, or whether it is just emphasizing an incidental or secondary use. In many instances, permitting of a new use is in reality just allowing an existing "primary activity" permittee flexibility in season of use, type of use (allowing to stay overnight instead of just during the day), or mode of transport for the same primary activity.

Mode of transport can be generally categorized as primitive, mechanized, or motorized.

Primary Activity	Method of Transport	Duration of Permit	Season of Use	Type of Use
Hunting	Human	Temp	Spring	Day-use
Fishing	Horses	Longterm	Summer	Overnight - Progressive
Mountaineering	Vehicle		Fall	Overnight - Base camp
Touring	Dog-sled		Winter	
Camping	Horse drawn wagon			
Boating	Horse drawn sleigh			
	Llama			
	Goat			
	Dog			
	Helicopter			

This list is not a complete list.

The above table can best be viewed as "available opportunities" matrix from which to choose.

Can prioritize potential rec opportunities based upon the following criteria:

- Expressed interest (high or low)
- Magnitude of potential resource impacts (high or low)
- Magnitude of potential social impacts (high or low)
- Political reality/in-house pressure (high or low)

Can then rough screen to prioritize those for public needs analysis

Do not need to take further action because there is no need for additional permits as existing permittees can fill the need

Do not need to take further action because no opportunities exist, there is no public demand, there is no applicant interest, major conflicts are apparent, it is not a primary activity, etc.

Need to complete more in-depth public needs analysis.

Much of the above does not make much sense unless related to a specific piece of land or a real situation -- then the concepts become much clearer.

A public needs analysis/determination can vary from a very simple process -- just a narrative statement of documentation in those situations where no opportunity exists, where there is no public demand, there is no applicant interest, where potential unacceptable conflicts are apparant, or the need is presently being, or can easily satisfied via existing concessionaires -- to a very in-depth process evaluating potential opportunities, existing use-related problems, potential conflicts (includes social) and environmental impacts, as well as analysis of national and area specific objectives and strategies for attainment of those objectives.

The following constitutes a "preliminary needs analysis" for outfitting activities on the Shoshone National Forest, whose purpose is to identify those activities where there is no need for assistance from outfitters, those activities where there in no need for assistance from "additional" outfitters, and to identify those activities where there appears to be a need for new or additional assistance from outfitter concessionaires to provide new or additional "primary" services. This analysis will serve as the basis for making decisions relating to activities requiring in-depth needs analysis, and setting priorities for completing those analyses.

DETERMINATION OF NEED FOR ASSISTANCE FOR HUNTING ON THE SHOSHONE NF

The permitted activity of HUNTING can be disaggregated based upon season (spring, fall, winter), type of use (day-use or overnight base camp), permit duration (temporary "spike camp" authorization or long-term permit), method of transport (wheeled vehicle, snowmobile, horses, llamas, etc.), and species being hunted (elk, deer, bear, lion, moose, etc.).

There are presently dozens (over 60) of hunting outfitters on the Shoshone National Forest. The majority of permits are of long-term nature and opportunities exist for hunting of all legal big-game, trophy, and predatory species during all legal seasons of the year. Modes of transport vary from primitive (horseback, horsedrawn wagon, etc.) to modern vehicle including wheeled vehicles & snowmobiles. Modes of transport are not specified in many areas thus allowing the permittee much flexibility to adapt to clients desires, weather conditions, and game movement.

Most base camps (of which most allow hunting) were allocated in the Forest Plan, and the ones that were not included in the Forest Planning process were allocated via the total allocation process (Tayo Park which included hunting & Belknap which did not include hunting). The allocation of day-use hunting has been dealt with on a District by District basis except for the nonwilderness south zone area of the Washakie District. Temporary authorizations are allowed for sheep, goat, moose, and mountain lion under a statewide "spike camp" policy. The State Board of Outfitters & Professional Guides has indicated that they do not see a "need" for additional outfitters on National Forests.

Therefore, as there has never been any complaints that hunting outfitters are not available, as existing allocations are not presently being fully used, as the existing permittees can handle the demand for a wide range of hunting opportunities for accommodating a diverse range of visitor expectations, and as allowing additional permittees would cause major conflicts with other uses and users as well as decreasing the sustainability and economic viability (thus decreasing the quality of services) of existing permittees; **THERE IS NO NEED OR ADDITIONAL HUNTING OUTFITTERS EXCEPT IN THE SOUTH ZONE NONWILDERNESS PORTION OF THE FOREST ON THE WASHAKIE DISTRICT**, and this need can best be met by including it as a permitted activity in conjunction with the Louis Lake Resort prospectus.

DETERMINATION OF NEED FOR ASSISTANCE FOR FISHING ON SHOSHONE NF

The permitted activity of FISHING can be disaggregated based upon season (spring/summer/fall or winter ice-fishing), type of use (usually day-use as it is an incidental activity intertwined with other activities on progressive trips or base camps), and method of transport (primitive or motorized). Existing permittees are not restricted to modes of travel for day-use fishing nor are they restricted based upon the differing tackle or techniques (wet flies, dry flies, bait, lures, etc.) or the differing types of fishing (trolling from a boat, lake fishing, stream fishing, etc.). This allows the permittee maximum flexibility in accommodating clients wishes, client experience and physical condition as well as changing water conditions.

There are presently dozens of fishing outfitters permitted on the Shoshone Forest. Most resort outfitters, hunting outfitters, summer overnight outfitters, and snowmobiling outfitters on the forest have day-use fishing privileges. Day-use fishing was addressed in 1984 with implementation of the "new policy"; again in 1988 on the three northern districts, and in 1994 on the Wind River District.

Ice fishing on the South zone is an activity which is already provided or can be provided by the existing snowmobile outfitters on the Lander and Wind River Trail systems.

The only ice fishing opportunity in the north zone is on the nonwilderness portion of the Beartooths due to the lack of accessible lakes in the remainder of the zone. Ice fishing in the Beartooth should be addressed in the prioritization of needs for programmed action along with other winter activities in the Beartooth.

Therefore, as existing allocations are not presently being fully used, as the existing permittees can handle the demand for a wide range of fishing opportunities for accommodating a diverse range of visitor expectations, and as allowing additional permittees would cause major conflicts with other uses and users as well as decreasing the sustainability and economic viability (thus decreasing the quality of services) of existing permittees; **THERE IS NO NEED FOR ADDITIONAL FISHING OUTFITTERS ON THE SHOSHONE NF, EXCEPT POSSIBLY ASSISTANCE FOR ICE FISHING IN THE BEARTOOTH.**

DETERMINATION OF NEED FOR ASSISTANCE FOR SUMMER BACKCOUNTRY TOURING VIA PRIMITIVE METHODS

Backcountry touring via primitive methods has been a major activity historically on the Shoshone Forest. Initially, horsepacking was the predominant mode of transport, but in the 60's backpacking became an important use, especially in the Wind Rivers and the Beartooths. In the seventies and eighties limited llama & goatpacking began to occur. Horsepacking is still the dominant mode of transport in the Washakie, North Absaroka, and Dunoir areas, due primarily due to terrain more suited to horse travel, the long distances, and the presence of grizzly bears. Due to the granitic composition of the Wind Rivers and Beartooths which contribute to the presence of many lakes and great fishing, and the lack of good horse camping sites, backpacking is probably the dominant use in these areas presently.

Many other activities are dependent upon backcountry touring including:

interdependent (one cannot participate in the backcountry tour without being involved and participating in the following activities) - camping, viewing, trailriding (if a horse trip), education, interpretation, training,

incidental - (these are often viewed as the "gimmick" or specialty of the concessionaire and/or the user can do these activities on their own based upon their own personal interest once they are in the backcountry)

fishing, photography, gathering, hiking, nature study, primitive skills practice (camp set-up, dutch oven or open fire cooking, packing, primitive tools use, etc.), etc.

There are presently dozens of summer progressive touring outfitters on the Shoshone Forest offering a wide range of opportunities. Backcountry touring outfitters are sufficient in number to offer an extremely wide range of opportunities and experiences ranging from horse related, to llamas & goats, to backpacking; and specialties and customized services range from wildlife photography to primitive skills training. **THE ONLY AREA OF THE FOREST IN WHICH A NEED HAS BEEN IDENTIFIED IS THE DRY FORK AREA OF THE FITZPATRICK, AND THE NEED RELATES TO HORSE RELATED OVERNIGHT SERVICES.**

DETERMINATION OF NEED FOR ASSISTANCE FOR SUMMER MOTORIZED (AUTOMOBILE) TOURING

There is presently a tremendous amount of motorized touring occurring on the Shoshone National Forest in the form of organized tours via buses & vans -- to the tune of 100's of vehicles per day. Most do not require permits as they remain primarily on roads outside of Forest Service jurisdiction (Federal highways, State highways, or County roads). Many existing resort and outfitting permittees do have day-use auto touring privileges on their permits.

There has been several inquiries over the years relative to overnight touring opportunities on Forest roads, but it was determined that there was not a need for additional commercial operators for that purpose.

Therefore, as the existing permittees and commercial operators on public highways can handle the demand for a wide range of touring opportunities for accommodating a diverse range of visitor expectations, and as allowing additional permittees would cause major conflicts with other uses and users as well as decreasing the sustainability and economic viability (thus decreasing the quality of services) of existing permittees; THERE IS NO NEED FOR ADDITIONAL MOTORIZED TOURING OUTFITTERS ON THE SHOSHONE NF.

DETERMINATION OF NEED FOR ASSISTANCE FOR RIVER/LAKE BOATING

BOATING (Primary activity) (Includes floaters, innertubes, kayaks, canoe,

DETERMINATION OF NEED FOR ASSISTANCE FOR WINTER MOTORIZED OVER THE SNOW TOURING

A. CONTINENTAL DIVIDE SNOWMOBILE TRAIL:

The CDST permits issued out of Dubois and Lander were issued as a result of public scoping, NEPA documentation and allocation of days in conjunction with Region 4 (Pinedale, Buffalo, and Jackson Ranger Districts), the BLM, and the State of Wyoming. The intent of the processes was to issue permits for outfitter guide services along the length of the trail. The method of travel is presently via traditional snowmobile but throughout the process it was agreed that if the presently permitted outfitters wished to use other motorized over-the-snow devices such as snow coaches the present permits would allow this. The intent being that the number of people in or on a particular machine would not matter, as long as the operations were within the allocated service days.

During the CDST permit process it was also discussed and agreed upon that if some winter base camps (hut's, yurts, tents, or other "temporary" shelters were deemed necessary along the trail (particularly for client safety), then this would also be within the scope of the present permits and would be analyzed on a case by case basis. We need to keep in mind that the CDST permits are not synonomous with the individual district trail system permits, although on the Washakie District all three CDST permittees also fill the needs for outfitting on the District trail system. On the Wind River District, one of the three CDST permittees is also permitted to operate on the district trail system.

It is important to note the intent of the CDST permits was NOT for a primary activity like dog sledding, but that incidental cross country skiing, snowshoeing, snow caving, along the trail, supported by snow coaches/snowmobiles would be acceptable. Ice fishing would not be acceptable because there are no lakes right on the trail, but in the case of the Lander permits and one on the Wind River District which have the Lander trails included in them, ice fishing would be acceptable.

Therefore, as the total issuance process was completed to provide for concessionaire assistance for touring on the CDST in 1992, and an intergral part of the decision mandated review of the permits and associated activities, and revision and reissuance as appropriate (based on identified problems and needs during the trial period), THERE IS NO NEED FOR ADDITIONAL MOTORIZED OVER THE SNOW OUTFITTERS ON THE CDST ON THE SHOSHONE NF.

THERE IS A PUBLIC NEED FOR WINTER BASE CAMPS IN ASSOCIATION WITH THE PERMITS FOR THE CDST for public safety purposes, and to allow for overnight use when traveling long distances along the trail.

B. SNOWMOBILING, GENERAL: (System trails)

The south zone has three permits for system trails in Lander and two permits for system trails in Dubois as well as overlaps with several permits from the Bridger-Teton Pinedale, Buffalo districts. This is a complete allocation of days on the south zone.

The north zone has essentially no snowmobile trail systems except the Beartooth which will be addressed separately (see needs for programmed action/prioritization)

DETERMINATION OF NEED FOR FACILITIES FOR DOWNHILL SKIING

DOWNHILL SKIING: (Primary Activity)

Presently down hill skiing is being served on the north end of the forest by the Sleeping Giant Ski Area on the Shoshone, The Antelope Ski Area in the Bighorn Forest, and the Redlodge Ski Area on the Custer National Forest. Over the years there have been application/interest in providing down hill skiing in the Lander area) Sinks Canyon and Louis Lake) as well as the Dubois (Togwotee area). At present the permits in Jackson (SnowKing and Teton Village) have been serving the South end needs.

The does not appear to be additional opportunities for ski areas on the Forest, the public demand is being satisfied, there is no real applicant interest, and the permitting of downhill ski areas involves a major "land use" allocation process. Therefore there is not a public need for additional ski area facilities or concessionaire assistance for downhill skiing on the Shoshone Forest.

DETERMINATION OF NEED FOR RESORT FACILITIES TO SUPPORT TRADITIONAL WESTERN
ACTIVITIES &/or WINTER ACTIVITIES

WESTERN RESORT:

There are presently 15 traditional western resorts on the Shoshone National Forest providing facilities, products, services, and assistance on their resort areas. In addition, many of these resorts have additional authorizations for providing outfitting services and assistance away from the resort area.

Opportunities for suitable resort locations are limited, existing resorts can handle existing public demand in most cases, off-forest resorts can meet most future needs, and the permitting of new resorts would most likely result in unacceptable conflicts at most locations.

There appears to be one historical resort location on the Forest where there is presently a need for yearlong resort facilities and services. Limited operating seasons of the past presented unsurmountable economic viability problems, but with greatly increased interest in winter activities in the area and the fact that the location is on the CDST, the resort could provide yearlong accommodations and services. Both summer and winter opportunities exist, scoping in the recent past indicated a public demand for a resort and associated activities, conflicts with other uses/users would be minimal, and the Agency has a need relative to public safety (especially during the winter), opportunities for physically challenged during the winter, and for education and interpretation services yearlong.

This area adjacent to Louis Lake on the Washakie District provides a unique opportunity relative to providing facilities, products, services, and assistance yearlong both for local use as well as in conjunction with Continental Divide Snowmobile Trail. There appears to be a need for lodging (30 max), restaurant, small store providing basic grocery and gasoline, and the associated services.

Other opportunities and the associated need for concessionaire assistance also exist in the immediate area of Louis Lake, and in order to assure a viable resort operation, the assistance to capitalize upon these opportunities can best be provided in conjunction with the resort. Assistance is needed regarding day-use hunting, day-use fishing, limited trailrides, possibly dogsledding, guided winter touring, both winter and summer rentals (boats, canoes, trailbikes, snowmobiles, x-country ski equipment, etc.) as well as upkeep of a winter trails system. Concessionaire management of the adjacent campground could easily be worked into the operation also.

DETERMINATION OF NEED FOR ASSISTANCE FOR PRIMITIVE OVER THE SNOW ACTIVITY**B. X-COUNTRY SKIING, SNOWBOARDING (SNOWFIELDS/GLACIERS):**

This recreation activity could become an issue in the future but at the present time there is no expressed interest.

C. DOG-SLEDDING

There are presently 2 "day-use" dog sledding outfitters on the Shoshone, both on the Wind River District. There appears to be additional opportunities in the Wind River area, the Lander area, and on the Beartooth Plateau portion of the Clarksfork District. Public demand appears to be increasing, there appears to be some interest, but there are some inherent conflicts when both dogs and motorized over the snow vehicles are concentrated in the same area.

THE NEED FOR ADDITIONAL CONCESSIONAIRES ASSISTANCE RELATIVE TO DOGSLEDDING SHOULD BE ANALYZED IN DEPTH -- ESPECIALLY IN THE LANDER AND BEARTOOTH AREAS.

THERE IS A NEED FOR WINTER BASE CAMPS AND PROGRESSIVE TRAVEL IN ASSOCIATION WITH DOG-SLEDDING OUTFITTING as non-impacting (if all facilities are temporary only) and non-conflicting opportunities exist for prolonged touring and for accommodation of incidental activities such as winter camping, x-country skiing, and snowshoing. By allowing overnight use by dogsledding outfitters, public safety is enhanced and existing conflicts between dogsledders and other winter users are greatly reduced.

DETERMINATION OF NEED FOR WINTER BASE CAMPS FOR BOTH MOTORIZED/PRIMITIVE TOURS

Winter assigned sites for either snowmobile/coach or ski/snowshoe permits are not an activity or opportunity in and of themselves. They would be tied to an existing permit. Therefore in relation to winter base camps for snowmobile/coach permits which already exist in Lander and Dubois, the need for winter base camps would be on a case by case basis. Since no commercial nordic ski permits exist in either zone at this time, base camps themselves would be a mute point. The need for nordic ski permits will be addressed in the process for needs for program action.

A. MOUNTAINEERING NORTH ZONE: (Primary activity)

Mountaineering in the north zone (rock climbing, snow climbing, winter climbing, ice climbing, sport climbing, bouldering) need not have any action taken at this time (EXCEPT ICE CLIMBING) due to lack of interest or inappropriate geology.

South Fork Shoshone - winter ice climbing

Beartooth: ???Status?

Absorkas no good rock, some potential for winter mountaineering.

B. MOUNTAINEERING, SOUTH ZONE: (primary activity????)

Mountaineering (rock climbing, snow climbing, winter climbing, ice climbing, sport climbing, bouldering) are all covered under existing permits.

DETERMINATION OF NEED FOR ASSISTANCE FOR SUMMER MOUNTAIN BIKE TOURING

There may be a need for concessionaire assistance for this activity. The Wapiti District has one outfitter who has this activity permitted, an application has been received on the Lander District, and in 1990 the Washakie District processed an application and completed NEPA, but the applicant never followed through for a permit. This activity NEEDS A MORE IN-DEPTH NEEDS ANALYSIS.

DETERMINATION OF NEED FOR ASSISTANCE FOR SPELUNKING

Due to a lack of caves on the Shoshone there is little opportunity and therefore the Agency has NO NEED FOR CONCESSIONAIRE ASSISTANCE for this activity.

DETERMINATION OF NEED FOR ASSISTANCE FOR SCUBA DIVING

Due to lack of opportunity, no public demand, and no concessionaire interest, the Agency has NO NEED FOR CONCESSIONAIRE ASSISTANCE for this activity.

SECONDARY ACTIVITIES

WILDLIFE VIEWING/PHOTOGRAPHY/SCENERY VIEWING: (Secondary activity)

Viewing and photography of wildlife and/or scenery opportunities on the forest is and can be handled under the existing permits whether they be backpacking, climbing, llama, goat, or horse type permits.

LIST OF ACTIVITIES (& PRIORITIES) REQUIRING ADDITIONAL NEEDS ANALYSIS OR OTHER ALLOCATION ACTION ¹⁷⁰

1. Louis Lake Lodge (Jennifer, Carl, Pat, & Gary) - total prospectus process
2. Mountain Biking on Wind River (Skip)
3. Winter Base Camps on Wind River & CDST (
 - Dogsledding (Monte)
 - Snowmobiling CDST
 - Snowmobiling Washakie & Wind River Districts
 - Nordic Skiing)
4. Day-use Trailrides on Wind River (Monte) - total prospectus process
5. Dry Creek overnight horse use (Monte)
6. CDST review & issuance (
7. Beartooth Winter Activities - total allocation/prospectus
 - Snowmobiling
 - Dogsledding
 - Nordic Skiing
 - Ice Fishing

MOUNTAIN LAKES WILDERNESS
OUTFITTING & GUIDING "PUBLIC NEED" ANALYSIS
WINEMA NATIONAL FOREST

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PREPARED BY
CLIFFORD C. MITCHELL, RESOURCE ASSISTANT
KLAMATH RANGER DISTRICT
October 20, 1994

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I INTRODUCTION

This document is an analysis of the "public need" for commercial outfitting and guiding (hereafter written as O&G) services in Mountain Lakes Wilderness located on the Klamath Ranger District, Winema National Forest. The District received a detailed formal application for a permit on April 28, 1993 from Dan Applebaker who operates Wilderness Mule Packing. There are 3 other individuals who have contacted the District about getting an outfitter and guide permit for either the Mountain Lakes or Sky Lakes Wildernesses. Discussions with Mr. Applebaker about the timing of analysis allowed it to be postponed to fiscal year 1994/early 1995.

This document is written in a manner to provide information for readers who are not familiar with Forest Service policy and direction concerning the analysis of "public need" as a component of issuing outfitting & guiding permits. This is NOT an Environmental Analysis (EA) of the effects of outfitting & guiding in the Mountain Lakes Wilderness.

II OUTFITTING & GUIDING ON NATIONAL FOREST SYSTEM LANDS

The Forest Service issues outfitter and guide permits in order to respond to a management (public) need to provide high quality public services and assistance to the recreating public user on National Forest System lands.

Permits are issued to:

1. Assure that a service we require is provided in order to meet our mission relative to providing public services, protecting public health and safety and helping to attain management goals and objectives.

Outfitter permittees exist because the Forest desires their assistance in accomplishing our management goals and objectives. They are not a user, they are an agent to provide services to the public. The relationship between the Forest Service and an outfitter is one of a "partnership".

Issuance of an O&G permit requires a 5 step process:

1. Determination of a demonstrated public need has been completed and documented by the Forest Service.
2. The issuance proposal has been fully evaluated and the appropriate NEPA analysis/documentation had been completed.
3. The analysis and decision has been documented and linked to the Forest plan.
4. The bid prospectus process has been followed for solicitation for applicants, evaluating competition and providing required documentation/information on applicants.
 - a. Applicant has proven financial capability and possesses adequate experience/expertise to operate a successful sustainable business.
 - b. The most highly qualified applicant(s) has been selected via a formal documented applicant selection/use allocation process.

5. The permit is issued consisting of:
 - a. The basic permit
 - b. Operating plan; this is for the tenure of the permit
 - c. Annual itinerary (annual operating plan)

General direction on the issuance of O&G permits is contained in Forest Service Handbook (FSH) 2709.11 and Forest Service Manual (FSM) 2320.13g.

FSH 2709.11, 41.53a states that we should issue and administer permits for outfitter and guide activities to:

1. Meet general public recreation service needs identified through forest land and resource management planning.

FSM 2323.13 states that issuance of outfitter and guide permits should be consistent with management as wilderness where they are necessary to help segments of the public use and enjoy wilderness areas for recreational or other wilderness purposes.

FSM 2323.13g - States that we should address the need for and role of outfitters in the Forest plan. We must ensure that outfitter and guides provide service in a manner compatible with use by other visitors and which maintains the wilderness resource.

FSM 2712.2 states that a permit may be issued when there is a demonstrated public need for the service.

III Winema NF Plan Direction

The 1990 Winema National Forest Plan provides direction concerning wilderness management and issuance of outfitting and guide permits in the Mountain Lakes Wilderness.

Forest-wide Wilderness Desired Future Condition:

The desired future condition is an area that has retained its primeval character without permanent alterations of human habitation. The area appears to have been affected primarily by the forces of nature; evidence of human intrusion is substantially unnoticeable. Vegetation is the result of natural succession. The area provides outstanding opportunities for solitude and a primitive type of recreation experience. Isolation from the sights and sounds of others is likely, as is the experience of independence, closeness to nature, tranquility, and self-reliance.

Standards and Guidelines

1. Areas shall be managed to meet objectives for each wilderness resource spectrum (WRS) class in accordance with FSM 2320, R-6 Supplement 81.

2. The limits of acceptable change (LAC) system shall be used to establish measurable resource and social factors to define the maximum limit of negative change allowed by WRS class for each wilderness.

3. Resource limits on damage due to human activity and social limits on visitor use by WRS class common to all three wildernesses are shown in table 4-28.

Specific to Mountain Lakes Wilderness, Standard and Guideline #6, page 4-127 states "Outfitter-guide permits may be issued, but only one party per day shall be permitted.

The March 1990 Mountain Lakes Wilderness Management Plan has direction specific to O&Gs.

Item #4 states that O&G's are permitted; no more than one permit for any one day (including large groups not associated with outfitter guides) will be issued. Outfitter guides must adhere to the 10 people/stock combination group size limitation.

IV Determination of Public Need

What is "public need"??

Public need is a need identified by the Forest Service which is deemed essential or required for the well-being of the public and in order to meet the intent of the Forest's mission to manage and protect wilderness resources, provide for public safety, and provide high quality public recreation services (Barker, 1993).

Barker (1993) states that a prospective outfitter's desire for a permit does not constitute a public need, nor does market generated demand (solicited calls/letters) by a potential applicant constitute a public need. The Forest must determine the need based on its mission, goals, and objectives and resource capability. Commercial use of public lands is permitted only to help achieve the mission of the Forest Service.

Evaluation Criteria used for determining the need for outfitter assistance in the management of the Mountain Lakes Wilderness were established following the criteria used by the BLM for the Dillon Resource Area in Montana (Dillon Resource Area Outfitter Management Guidelines - BLM, March 1993).

1. Skills and Equipment - outfitter skills and equipment are needed by a portion of the public because of one or more of the following:

a. Specific skills required for activities appropriate for the area require substantial time and/or talent to learn.

b. Learning necessary skills and participating in the activity requires acquisition and consistent use of expensive, specialized equipment for which the public could not, or normally would not, expend the dollars or time.

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 c. The skills required are so unique that use of an outfitter is almost a prerequisite if the public is to have any opportunity to participate in and enjoy the activity.

2. Knowledge - outfitter knowledge of the recreational resource and the activity area is needed by the public, and especially nonresidents, in order to enjoy recreational opportunities in a manner that reduces resource damage and user conflicts. This includes knowing where and by what method to best access and travel through an area.
3. Safety - an outfitter's special skills and equipment are needed for a reasonable level of safety for the participants. Without outfitter assistance, members of the public could seriously endanger their health or lives.
4. Special Management Objectives and/or Issues - outfitter assistance is needed to insure special management objectives are met and/or issues resolved. Examples could include:
 - a. Provide recreational opportunities for the handicapped.
 - b. Protect fragile resources.
 - c. Provide environmental education and interpretive information
 - d. Assist in reducing critical resource impacts and/or conflicts between users
 - e. Provide for additional recreational opportunities that...
 - Increase the diversity of recreational activities and public enjoyment
 - Encourage innovation in the outfitter industry.

...as long as the activities are not in conflict with land use or area management objectives.
5. Extent to Which Existing Outfitter Permits are Being Utilized.
6. Level of Use and Conflict - conflicts between all types of users, private and commercial in the wilderness.

Application of Criteria to Mountain Lakes Wilderness

1. Skills and Equipment

About 15 to 20 percent of the visitors to this wilderness use livestock to assist with their trip. Many of the local repeat visitors who use stock have the necessary equipment to conduct a trip without the use of an outfitter. The majority of these users conduct day-use trips without camping overnight. The skills required are not so unique that an outfitter is almost a prerequisite if the public is going to participate in the activity. The Klamath District has not been asked by non-residents for names of outfitters that might be operating in Mountain Lakes Wilderness.

2. Knowledge of the Area

The Mountain Lakes Wilderness is a relatively small wilderness. It is one square township, approximately 23,071 acres in size. It is a collapsed volcanic peak. Three trailheads provide access into the loop trail that circles the old rim. Total trail mileage in the Wilderness is 24.1 miles. Several lakes provide destination spots for visitors.

The small size and simple trail system allow visitors to easily access the area. Basically, all a person needs is a Wilderness map in order know where to go. The situation is simple enough that even without a map, visitors can easily visit the area.

3. Safety

The District is not aware of any search and rescue events associated with visitors with livestock in this wilderness. The public is visiting the wilderness using livestock in a safe manner.

4. Special Management Objectives

There are currently no special management objectives or considerations that an outfitter could assist in accomplishing. Current wilderness management guidelines establish restrictions needed to meet resource protection objectives.

There is a need to increase the knowledge of wilderness regulations and low impact use skills in the public. This should be accomplished outside the wilderness before visitors plan and pack up for a trip. The annual packing clinic held in Klamath Falls contacts a significant number of visitors who use livestock. Any educational effort should emphasize contact and training outside the wilderness to assist potential visitors in planning and preparing for a visit.

5. Extent to Which Existing Outfitter Permits are Being Utilized

There are currently no existing outfitter permittees in Mountain Lakes Wilderness.

The adjacent Sky Lakes Wilderness also provides wilderness recreation opportunities to the public. There are 2 commercial outfitter and guide permittees and one semi-public permittee operating in the Sky Lakes Wilderness. The two commercial permittees have been allocated 50 service days annually as a minimum. Only one year, 1990, in the past 4 have these two permittees used more than 50 service days. Average commercial outfitter use for the past 4 years (1990-1993) in Sky Lakes Wilderness has been 29 Service Days. In 1993 the use was 24 and 16 Service Days for the two commercial operations.

6. Level of Use and Conflict With Other Users

Since there are no commercial operators currently in the wilderness there are no past conflicts. However, the two most popular lakes in the Wilderness, Harriette and Como, have special use restrictions due to past impacts and the potential for increased impacts. No oversize parties are allowed at anytime at either of these lakes.

Conclusion

Based on the limited size of this wilderness, excellent public access facilities, the lack of the need for special services (ie. disabled users, assisting troubled youth, etc.), lack of special management objectives that an outfitter could assist in accomplishing, and lack of expressed public interest, the use of outfitter and guide services is not essential to the stewardship of this wilderness.

/s/Clifford C. Mitchell
Resource Assistant

BIBLIOGRAPHY

Barker, Monte F. 1993. Barker's Bible on Outfitting, Comprehensive Compilation of Direction Pertaining to Outfitting On National Forest System Lands. USDA Forest Service, Region 1.

U.S. Department of the Interior, Bureau of Land Management. 1993. Dillon Resource Area Outfitter Management Guidelines. Dillon Resource Area, Montana

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**HIGH UINTAS WILDERNESS
OUTFITTING & GUIDING "PUBLIC NEED" ANALYSIS
ASHLEY NATIONAL FOREST**

Draft

PREPARED BY

ASHLEY NATIONAL FOREST

1995

I. INTRODUCTION

This document is an analysis of the "public need" for commercial outfitting and guiding (hereafter written as O&G) services in High Uintas Wilderness located on the Roosevelt and Duchesne Ranger Districts, Ashley National Forest, and the Mountain View, Evanston, and Kamas Ranger Districts of the Wasatch-Cache National Forest.

The Ashley and Wasatch/Cache National Forests are in the process of developing a management plan for the High Uintas Wilderness. A moratorium on authorizing any new outfitter/guide permits was established for this planning period. Both Forests see this planning effort as the appropriate time to complete a basic "needs analysis" for outfitter/guiding in the High Uintas Wilderness.

This document is written in a manner to provide information for readers who are not familiar with Forest Service policy and direction concerning the analysis of "public need" as a component of issuing outfitting & guiding permits. This is NOT an Environmental Analysis (EA) of the effects of outfitting & guiding in the High Uintas Wilderness.

II. OUTFITTING & GUIDING ON NATIONAL FOREST SYSTEM LANDS

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Issuance of an O&G permit requires a 5 step process:

1. Determination of a demonstrated public need has been completed and documented by the Forest Service.
2. The analysis and decision has been documented and linked to the Forest plan.
3. The issuance proposal has been fully evaluated and the appropriate NEPA analysis/documentation had been completed.
4. The bid prospectus process has been followed for solicitation for applicants, evaluating competition and providing required documentation/information on applicants.
 - a. Applicant has proven financial capability and possesses adequate experience/expertise to operate a successful sustainable business.

b. The most highly qualified applicant(s) has been selected via a formal documented applicant selection/use allocation process.

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- a. The basic permit
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FSM 2323.13g - States that we should address the need for and role of outfitters in the Forest plan. We must ensure that outfitter and guides provide service in a manner compatible with use by other visitors and which maintains the wilderness resource.

FSM 2712.2 - States that a permit may be issued when there is a demonstrated public need for the service.

III. High Uintas Wilderness Management Plan Direction

(CHANGE THIS MATERIAL TO THE DIRECTION AND GUIDELINES OF THE WILDERNESS PLAN)

The 1986 Ashley National Forest Plan provides direction concerning wilderness management and issuance of outfitting and guide permits in the High Uintas Wilderness.

Forest-wide Wilderness Desired Future Condition:

The desired future condition of the High Uintas Wilderness is described in the Management Plan which will amend the Ashley and Wasatch/Cache Forest Plans.

Standards and Guidelines

1. Limit special use permits for commercial hunting and fishing operations to a maximum of 5 between July 1 and the end of the fall season.

2. Restrict outfitter from establishing camp in areas where heavy recreation pressures exist and/or hors feed is minimal. Only temporary camps will be allowed in these areas.
3. Permit no camping at trailheads.
4. Limit camp size to a minimum of 15 people with no more than 20 horses per camp.
5. Limit camp size in the North Fork of the Duchesne River to a maximum of 12 people with no more than 12 horses per camp.
6. Limit stay to 14 days per camp.
7. Issue new commercial permits if:
 - A. There is a demonstrated public need for the service.
 - B. National Forest resources and programs will not be unacceptably damaged or impaired.

IV. Determination of Public Need

What is "public need"??

Public need is a need identified by the Forest Service which is deemed essential or required for the well-being of the public and in order to meet the intent of the Forest's mission to manage and protect wilderness resources, provide for public safety, and provide high quality public recreation services (Barker, 1993).

Barker (1993) states that a prospective outfitter's desire for a permit does not constitute a public need, nor does market generated demand (solicited calls/letters) by a potential applicant constitute a public need. The Forest must determine the need based on its mission, goals, and objectives and resource capability. Commercial use of public lands is permitted only to help achieve the mission of the Forest Service.

Evaluation Criteria used for determining the need for outfitter assistance in the management of the High Uintas Wilderness were established following the criteria used by the BLM for the Dillon Resource Area in Montana (Dillon Resource Area Outfitter Management Guidelines - BLM, March 1993).

1. Skills and Equipment - outfitter skills and equipment are needed by a portion of the public because of one or more of the following:
 - a. Specific skills required for activities appropriate for the area require substantial time and/or talent to learn.
 - b. Learning necessary skills and participating in the activity requires acquisition and consistent use of expensive, specialized equipment for which the public could not, or normally would not, expend the dollars or time.

- c. The skills required are so unique that use of an outfitter is almost a prerequisite if the public is to have any opportunity to participate in and enjoy the activity.
2. Knowledge - outfitter knowledge of the recreational resource and the activity area is needed by the public, and especially nonresidents, in order to enjoy recreational opportunities in a manner that reduces resource damage and user conflicts. This includes knowing where and by what method to best access and travel through an area.
 3. Safety - an outfitter's special skills and equipment are needed for a reasonable level of safety for the participants. Without outfitter assistance, members of the public could seriously endanger their health or lives.
 4. Special Management Objectives and/or Issues - outfitter assistance is needed to insure special management objectives are met and/or issues resolved. Examples could include:
 - a. Provide recreational opportunities for the handicapped.
 - b. Protect fragile resources.
 - c. Provide environmental education and interpretive information.
 - d. Assist in reducing critical resource impacts and/or conflicts between users.
 - e. Provide for additional recreational opportunities that...
 - Increase the diversity of recreational activities and public enjoyment
 - Encourage innovation in the outfitter industry.

...as long as the activities are not in conflict with land use or area management objectives.
 5. Extent to Which Existing Outfitter Permits are Being Utilized.

Ashely N.F. - There are presently ___ livestock outfitter/guide permits utilizing ___ service days and ___ non-livestock outfitter/guide permits utilizing ___ service days within the Wilderness on the Ashely National Forest.

Wasatch-Cache N.F. - There are presently ___ livestock outfitter/guide permits utilizing ___ service days and ___ non-livestock outfitter/guide permits utilizing ___ service days within the Wilderness on the Wasatch-Cache National Forest.

6. Level of Use and Conflict - conflicts between all types of users, private and commercial in the wilderness.

Application of Criteria to High Uintas Wilderness

1. Skills and Equipment

Livestock - About 15 to 20 percent of the visitors to this wilderness use livestock to assist with their trip. Many of the local repeat visitors who use stock have the necessary equipment to conduct a trip without the use of an outfitter. Some of the local and many of the non-local visitors who use stock do not have the necessary equipment to conduct a trip without the use of an outfitter. For those visitors that do not have the desire or capability to obtain the skills and equipment for livestock trips an outfitter is almost a prerequisite for them to have this opportunity. The districts have been asked by non-residents for names of outfitters that might be operating in the High Uintas Wilderness.

Non-livestock - About 80 to 85 percent of the visitors to this wilderness do not use livestock to assist with their trip. Most of the present non-livestock outfitter/guide use is from non-local visitors.

2. Knowledge of the Area

The High Uintas Wilderness is a large wilderness. It encompasses 460,000 acres and is the largest wilderness in Utah. ___ trailheads provide access into the wilderness. Total trail mileage in the wilderness is ___ miles. Many lakes provide destination spots for visitors.

The large size and complex trail system makes it difficult for untrained visitors to easily access the area. Extended visits or treks deep into the wilderness could be difficult and dangerous for many people without a knowledgeable outfitter/guide (livestock and non-livestock use).

3. Safety

Some segments of the public would not have the opportunity to visit the wilderness without the help of a trained outfitter/guide.

4. Special Management Objectives

Current wilderness management guidelines establish restrictions needed to meet resource protection objectives. There is a need to increase the knowledge of wilderness regulations and low impact use skills in the public. This should be accomplished outside as well as inside the wilderness. Issuing outfitter/guide permits forms partnerships to help teach wilderness ethics, maintain the trail system, and interpret nature and the history of the area.

5. Extent to Which Existing Outfitter Permits are Being Utilized

There are currently ___ existing outfitter/guide permittees in High Uintas Wilderness.

The wilderness is characterized by the north and south slopes of the Uinta mountains.

The area of the North Slope is characterized by _____. There are presently __ outfitter/guide permits with ___ service days allocated to the north slope.

The area on the South Slope is characterized by _____. There are presently __ outfitter/guide permits with ___ service days allocated to the south slope.

The average outfitter/guide actual use for the past _ years (199_-199_) in the High Uintas Wilderness has been ___ Service Days.

6. Level of Use and Conflict With Other Users

The only conflict occurring between commercial users and other users of the Wilderness is in areas where the public use is already too high. This conflict can be resolved by restricting commercial use in certain areas, restricting party size, and coordinating timing of use.

Conclusion

Based on the large size of this wilderness, complicated trail system, the need for special services (ie. disabled users, assisting troubled youth, etc.), need for special management objectives that an outfitter could assist in accomplishing, and the expressed public interest, the use of outfitter and guide services is essential to the stewardship of the High Uintas Wilderness.

Present outfitter/guide operations in the Wilderness are limited to the summer season. For an outfitter/guide business to provide high quality service it must have quality employees and equipment. The business must have a decent profit margin. To have a decent profit margin the business must attract enough paying clients. A key factor in sustaining quality business partnerships with outfitter/guides is not issuing more permits than is needed to meet the broad spectrum of opportunities desired.

BIBLIOGRAPHY

Barker, Monte F. 1993. Barker's Bible on Outfitting, Comprehensive Compilation of Direction Pertaining to Outfitting On National Forest System Lands. USDA Forest Service, Region 1.

U.S. Department of the Interior, Bureau of Land Management. 1993. Dillon Resource Area Outfitter Management Guidelines. Dillon Resource Area, Montana