

# Multiple Use Management On the Public Lands

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*A Study of the Morgan Creek  
Area of Central Idaho*

E. Bruce Godfrey



Bulletin 566  
February 1978



*Agricultural Experiment Station*

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**About this publication** — The author of this publication, E. Bruce Godfrey, formerly was associate professor of agricultural and forest economics at the University of Idaho. He is now at Utah State University. This research was supported by the Idaho Agricultural Experiment Station, the Forest, Wildlife and Range Experiment Station and by a U-I Short Term Applied Research (STAR) grant.

**Acknowledgments** — Among the many individuals who contributed to this study, special appreciation is given to personnel of the Idaho Fish and Game Department, especially Bill Davidson, Bill Hickey and Levi Mohler; personnel of the Salmon and Challis National Forests, especially Bryant Christensen, Sam Warren, Andy Finn and Gene Jensen; personnel at the Salmon District, Bureau of Land Management, especially Rex Christensen, Tim Fay and Steve Hawes; and the ranchers using the Morgan Creek allotment for their willingness to help and their insight into the problem associated with management use of the area.

25 cents per copy



**Published and distributed by the  
Idaho Agricultural Experiment Station  
R. J. Miller, Director**

**University of Idaho College of Agriculture  
Moscow 83843**



# Multiple Use Management On the Public Lands

E. Bruce Godfrey

## *A study of the Morgan Creek Area of Central Idaho*

The development and use of America's natural resources have been a matter of concern since this country was first settled. Problems of allocating use among competing factions are of relatively recent origin, however, as reflected by the conservation era of the early 1900's and the modern environmental era. Recent political pressure associated with groups such as the Sierra Club has led to the passage of laws such as the Environmental Policy Act, which have been designed to arrest environmental degradation. These factors have likewise put considerable pressure on land administrators charged with the responsibility of managing America's public lands. This has also caused questioning of the criteria used to allocate use of these lands. This problem was in mind when this study began in 1972. The reasons or purposes for the study included the following:

- (1) To review and evaluate the methods and criteria that are currently being used by managers to allocate the use of federally owned forest and range lands.
- (2) To inform the public of these methods so they can

intelligently discuss the issues raised during the public meetings held by these agencies.

- (3) To review and evaluate the application of agency planning procedures as reflected by the plan developed for the Morgan Creek area of Central Idaho.
- (4) To provide some guidelines from the present "state of the arts" that can be used by managers and citizens to evaluate alternative actions proposed in land use plans.

The following section summarizes procedures used by the Forest Service (FS) and the Bureau of Land Management (BLM). The plan developed for the Morgan Creek area in Central Idaho is summarized and evaluated in Section 2. Section 3 evaluates the procedures used by the FS and the BLM and provides some guidelines that can be used to criticize and improve the procedures being followed. Readers who are only interested in agency procedures and not some of the application problems may, therefore, want to skip Section 2 which summarizes the Morgan Creek plan.

## Federal Land Use Planning Procedures

Any person familiar with public land decision making has been exposed to the concept of multiple use. This concept has supposedly been the guiding principle used by federal land management agencies, primarily the Forest Service and the BLM, to allocate use on public lands for many years. The enactment of law specifically indicating that this was to be the guiding principle in making land decisions did not occur until 1960, however. The Multiple Use-Sustained Yield Act 1960 (MU-SY) was passed to guide FS decisions and the Multiple Use-Classification Act (MU-CL) of 1964 was enacted to guide the BLM.<sup>1</sup> The language found in the MU-SY Act is indicative of guidelines that were given by Congress.

This act defined "multiple use" to be:

"The management of all the various renewable surface resources of the national

forests so that they are utilized in the combination that will best meet the needs of the American people; making the most judicious use of the land for some or all of these resources or related services over areas large enough to provide sufficient latitude for periodic adjustments in use to conform to changing needs and conditions; that some land will be used for less than all of the resources; and harmonious and coordinated management of the various resources, each with the other without impairment of the productivity of the land, with consideration being given to the relative values of the various resources and not necessarily the combination of uses that will give the greatest dollar return or greatest unit output". (Public Law 88-517).

Words such as "will best meet the needs", "judicious use", "harmonious and coordinated management" and "consideration being given to the relative values" provide little, if any, useful guidance — except as broad platitudes — to public land managers in making daily decisions concerning the use of federal lands. As a result of this lack of guidance, the agencies have developed their own general framework to plan the use of public lands.

<sup>1</sup>The Multiple Use-Classification Act (Public Law 88-607) expired when the Public Land Law Review Commission report was filed in 1970. The BLM has not been legislatively required to manage public lands in accordance with the principle of Multiple Use since that time but they have continued, in fact, to do so. The Organic Act that is presently (1975) being debated in the U.S. Congress should provide much of the legislative guidance for the BLM that has governed the USFS.



## Agency Planning Guidelines

General as well as specific guidelines have been developed and published for use by Forest Service and BLM land personnel.<sup>2</sup> Specific guidelines vary somewhat by forest region or district but all contain certain basic elements. The method depicted below has been described as a "conflict minimization" method or model. Other methods are being developed that employ the use of computers. Wider use of computer-oriented models is anticipated in the future, but these systems will probably complement the methods currently being used rather than substitute for them. Furthermore, the procedure described below continues to be altered to some degree as experience dictates needed changes. Each of the steps listed (Fig. 1) is not always included; the steps are not always clearly identified; their sequence is sometimes different, but the basic method or procedure is generally followed, particularly by the BLM.

### Inventory

The first part of any planning procedure must be an inventory of the resources that are to be managed in the area of interest. These inventories commonly require considerable effort to obtain such data as soil, vegetative, geologic and stream conditions or profiles. These generally make up a large portion of any planning report. Detailed descriptions or inventories of the natural resources that exist in an area are essential to any planning effort, but they are only the first step.

### Production/Utilization

The second step — often part of the inventory phase — is an assessment of the production and associated use(s) that exist in an area. The multiple use acts require that the Forest Service and the BLM consider five basic uses or products: range (commonly inferred to be only domestic livestock grazing), wildlife and fish, watershed, outdoor recreation and timber. In addition, minerals are commonly included. The BLM is also required, under the various land acts (e.g., Homestead, Desert Land), to consider land development or the transfer of public land to private ownership.

An assessment of what products are being produced in the area is often obtained at the same time production data are obtained. These data, with primary inventories, provide the manager with the necessary information to determine what is as well as what might be supplied or provided by an area.

<sup>2</sup>A number of guidelines have been published. A review of all of these is beyond the scope of this study. The publication entitled "Framework for the Future" (U.S. Forest Service 1970) provides the general goals followed by the USFS. Specific guidelines have been issued by several of the regional offices of the Forest Service of which Region 3's (1972) guide to Land Use Planning is fairly indicative. The BLM's method of planning is outlined in a publication entitled "Making Multiple Use Decisions" (U.S. Department of Interior 1970). See also Pulford (1971), Alston (1972) and Dryland et al. (1974) for an extension and evaluation of some of these methods. These methods are also used in drafting environmental impact statements. For example, the allotment management and management framework plans developed using the procedures discussed here will probably be the basis for 212 impact statements that are to be drafted by the BLM.

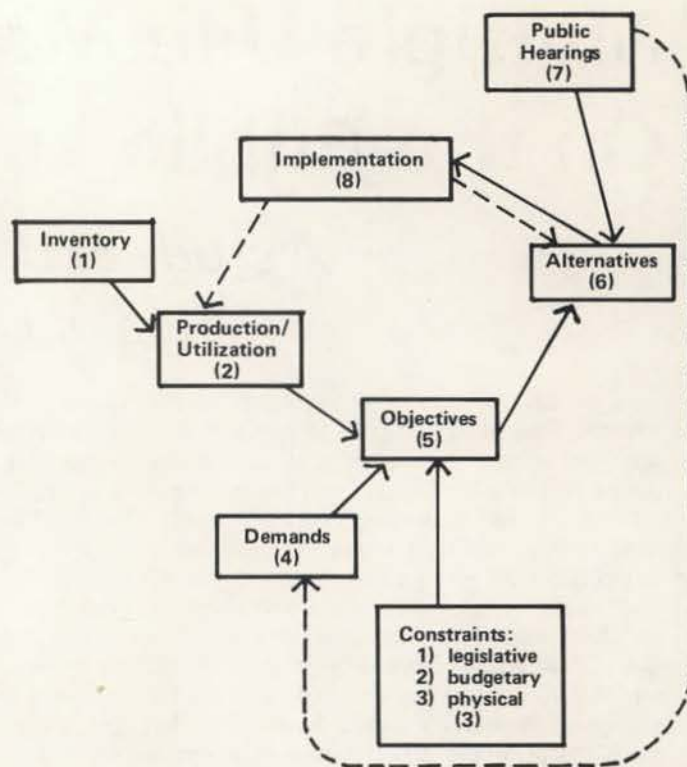


Fig. 1. Schematic summary of Forest Service and BLM planning procedures.

### Constraints

An evaluation of what constraints exist for use of an area is the third step that should be, but often is not made. These constraints may be legislative, technical or budgetary. Perhaps the most widely recognized constraints are physical and technically oriented — some things just cannot exist or occur in some areas under the present state of technology. Sometimes the constraints are legislative, such as not allowing the construction of a dam on a "wild or scenic river" or spraying DDT on forest lands.<sup>3</sup> The third major constraint is often budgetary whereby the capital or labor required to implement a plan cannot be obtained.

Some of the constraints and alternatives that need to be considered are commonly reflected or made evident as a result of the "planning team" approach that is being increasingly used by the Forest Service and the BLM. This procedure involves a team composed of persons specifically trained in each of the areas being considered (range, fish

<sup>3</sup>These legislative constraints can often be altered but generally not without considerable debate. Furthermore, the full impact of these constraints may or may not be recognized. For example, one senator from Idaho recently indicated that the designation of a wilderness area (a legislative constraint) costs a state like Idaho nothing because proposed uses (e.g., logging) do not exist in the area at the present time. This is a valid argument from one point of view but it ignores the "opportunity costs" or benefits that may be foregone by imposing this constraint and eliminating some alternative uses that might be made of the area. A thorough analysis must include estimates of all the benefits and costs incurred if the area were designated as a wilderness area. These estimated benefits and costs must then be compared to the benefits and costs associated with the use of the area if it were not a designated "wilderness" site.



and wildlife, watershed, forest and outdoor recreation). Each member of the team is expected to plan for "his use" by trying to get as much as possible from the area for the use he is considering and by ignoring the other possible uses that may exist in the area — a selfish, dominant, or "my use" approach by the team member.<sup>4</sup> These uses are commonly constrained only by technology — anything that is technically feasible can be considered. Each use is then outlined on a series of overlay maps to see where two or more uses might be in conflict. These areas of conflict identify where adjustments in use between the various competing alternatives need to be made.

### **Demands**

The fourth step in the planning process must involve some assessment of the present and anticipated need (desire) for using the resources of an area. These are generally inferred to be the desires of the people and are generally reflected by the political and economic system in the form of votes, pressure groups and willingness to pay or support particular use(s). At this point, guidance is often provided by a broader group such as a state or regional office. If a plan is being formalized for a particular ranger district, for example, then the role of that area in relation to a broader area or region is considered in the plan.

### **Objectives**

When these steps have been completed, agency planners must determine what objectives will guide the use of the area. These objectives (ends) are often stated in general terms (e.g., reduce soil erosion). The general objectives developed by team members require refinement, however, before meaningful alternatives (means) can be formulated. The clear, concise and explicit statement of the goals or objectives to be accomplished is probably the most important step in any planning process. This also is probably the most difficult and frustrating step in the planning process experienced by public land managers. The importance of this step cannot be overemphasized, because it provides the necessary guidance for the remaining steps. This is also the step where the work of the planning team becomes evident. The "my use" approach used by each team member results in several objectives — normally at least one for each type of use. These objectives as well as the alternatives suggested by team members for achieving the objectives — implied or expressed — commonly conflict when particular uses for specific areas are being considered.

### **Alternatives**

The recommendations and plans formulated by each team member must then be developed into an overall plan for the area being considered. This results in several alternative courses of action. Most of these alternatives involve trade-offs between uses. For example, a forester could propose that an area be clear cut which may result in increased sedimentation loads which would conflict with the objectives and alternatives outlined by a watershed specialist. At this point, a decision must be made that resolves such conflicts. A decision concerning alternative(s)

to be emphasized and use(s) to receive priority consideration is generally made by an area manager (BLM), a forest supervisor (FS), or occasionally by members of the planning team.<sup>5</sup>

### **Public Hearings**

After several courses of action have been formulated, the next step is to obtain public responses to these alternatives. This input is generally received by holding public meetings where the alternatives are outlined and interested parties are asked to respond. These meetings sometimes reflect some demands that were not anticipated earlier which may result in the formulation of new objectives and alternatives. Most users, interest groups and the general public have historically had their greatest impact in the planning process during these public meetings.

### **Implementation**

After the public has been given the opportunity to express their views, a decision is made on the specific alternative to be followed. This decision results in specific actions at the ground level (e.g., fence or campground construction). Implementing the chosen alternative often causes problems that were not foreseen in the planning process, however. For example, cattle may drift in a manner that was not anticipated or people may not visit a specific recreation site. Implementation problems may also identify unforeseen constraints, demands or alternatives which may require that the planning process be reimplemented.<sup>6</sup>

## **Legal Implications of Agency Planning Procedures**

The multiple use acts used by the Forest Service and BLM met with enthusiastic support by nearly all interested parties because everyone had been able to "get in his say". This enthusiasm was short-lived, however, because a careful reading of these acts leads one to the conclusion that the guidance they purportedly contain is almost nonexistent. As one legal reviewer stated "... If it (the MU-SY Act) is of major importance, it is because of the legal confusion it adds to an already confused area" (McCloskey, 1961). This confusion is made especially evident in the court decisions rendered to date.<sup>7</sup>

In the *Sierra Club vs. Hardin Case* (235 F Supp. 99), the Sierra Club sought to stop the sale of over 8 million board feet of virgin timber in the Tongass National Forest in Alaska. The Sierra Club claimed that the contract violated

<sup>4</sup>The BLM at one time allowed the team members to "hammer out" a solution, but this procedure is no longer followed. Team members continue to make many of these decisions within the Forest Service. Decisions made by planning teams are generally critically reviewed and/or altered by administrators, however.

<sup>5</sup>The planning process is commonly reimplemented after a period of time has elapsed, particularly if demands or the consequences of the action(s) chosen differ from those anticipated.

<sup>7</sup>Most of the case law has involved the Forest Service because the Classification and Multiple Use Act of 1964 (BLM) was of relatively short duration (expired after 5 years). Court decisions rendered as applicable to one agency are generally applicable to other major land management agencies, however. For further details concerning the legal implications indicated in this section see Meacham (1974).

<sup>4</sup>This approach is used primarily by specialists employed by the BLM. Members of Forest Service planning teams generally consider other uses when developing the plan for a particular use.



the MU-SY Act in nine ways. They also contended that the Forest Service was not practicing multiple use management because their management plans were predominantly for timber production and that the Forest Service had failed to properly consider recreation, watershed, wildlife and fish uses of the area. The court found, in this case, that the Forest Service was overwhelmingly committed to timber production, as opposed to other multiple use values. The court dismissed the case, however, by using the following logic:

"Congress has given no indication as to the weight to be assigned to each value (use) and it must be assumed that the decision as to the proper mix of uses within any particular area is left to the sound direction and expertise of the Forest Service."

The court further contended that "due" consideration did not mean "equal" consideration when it indicated that:

"'Due' is impossible to define and merely indicates that Congress intended the Forest Service to apply their expertise to the problem after consideration of all relevant values. In absence of a more satisfactory or objective standard, the court considered the evidence in the record of 'some' consideration was sufficient to satisfy the act absent a showing that no actual consideration was given to other uses."

The court closed the case after considering the content of the Forest Services' Multiple Use Plan for the area, with a very important statement:

"Having investigated the framework in which the decision was made, the court is forbidden to go further and substitute its decision in place of that of the Secretary."

The decision not to reverse the decision of the federal

resource managers has also been upheld in other court decisions [Dorothy Thomas Foundation Inc. vs. Hardin, 17 F. Supp. 1072 (W.P.N.C. 1970); Parker vs. United States, 307 F. Supp. 685 (D. Colo 1969); Ferry vs. Udall, 336 F. 2d 706 (9th Cir 1964)].

The courts have, however, outlined criteria that must be met whenever any decisions can be challenged. These are limited to the following: (1) when the administrator has failed to properly consider all of the required elements (as outlined in the law), considered irrelevant factors or failed to follow the self-imposed administrative procedures, or (2) when the decision is shown to be arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law.

Since the MU-SY Act allows considerable discretion on the part of the federal land administrators, showing that they have violated one of these provisions is difficult to do. In fact, there is no recorded case, to date, where the courts have overturned a multiple-use decision made by federal land administrators.

Some question may be raised concerning what level of investigation and study is sufficient to satisfy the legal requirement that all the uses be considered. The court has ruled that the normal preparation of a "multiple use plan" for a designated area is sufficient (Sierra Club vs. Hardin and Dorothy Thomas Foundation Inc. vs. Hardin). Thus, the present operating procedures of the Forest Service and BLM described in this section fulfill the legal requirements outlined by the judicial system, with no known exceptions to date.

Given this interpretation by the courts, some questions can be raised concerning the content and depth of analysis used to develop "multiple use" plans. The content and analysis used to develop one such plan, the Morgan Creek/Prairie Basin allotment management plan, are summarized in the following section.



# Morgan Creek/Prairie Basin Allotment Management Plan

The Morgan Creek/Prairie Basin allotment is located in Central Idaho near Challis (Fig. 2). Public lands within the allotment are managed by personnel with the Challis and Salmon National Forest, the Salmon District of the Bureau of Land Management, and Idaho Department of Land. Each of the multiple uses that the federal agencies must consider (range, fish and wildlife, recreation, timber and watershed) are represented in the area. In addition, limited amounts of mining activity have occurred in the area in the past.

Conflicts concerning the use of this area have periodically flared up and have been resolved by various methods. A major conflict concerning the use of this area arose when the article by Woodbury (1970) appeared in Life magazine. This article charged that use of the area by domestic livestock was a primary cause for the decline in the number of bighorn sheep using the allotment. As a result of this article and its associated publicity, area land managers received considerable pressure, primarily from environmental groups, to significantly alter historical patterns of use by livestock. This pressure was opposed by livestockmen in an effort to maintain their use. The intense conflict led the agencies involved (Forest Service, Bureau of Land Management, Idaho Department of Lands, and Idaho Fish and Game) to try to develop a multiple-use plan for the area.<sup>8</sup>

## Summary of the Plan

Development of the Morgan Creek/Prairie Basin allotment management plan varied from plans developed in other areas in one important aspect: it was not generated by a "typical" planning team on which team members represented various disciplines. Personnel from the Challis National Forest took primary leadership in developing the plan but representatives from each of the other agencies provided input. Thus, the plan considered potential conflicting uses from its inception.

## Inventory/Production

The MC/PB plan, like any other management plan, involved the collection of inventory data, including a range survey which emphasized the vegetative types found in the area. Table 1 summarizes part of this survey. The data in-

Table 1. Forage productivity estimates, Morgan Creek/Prairie Basin allotment.

Vegetation type	Estimated AUM*		Average capacity (acres/AUM)
	Usable acres	of forage available per year	
Sagebrush-grass	59,342	7,117	8.34
Shadscale	2,000	211	9.48
Conifer	1,971	489	4.03
Broadleaf	292	33	8.84
Browse-shrub	1,111	496	2.24
Grassland meadow	2,210	1,005	2.20
Total	66,926	9,351	7.15

\*Animal Unit Months

Source: Forest Service and BLM files.

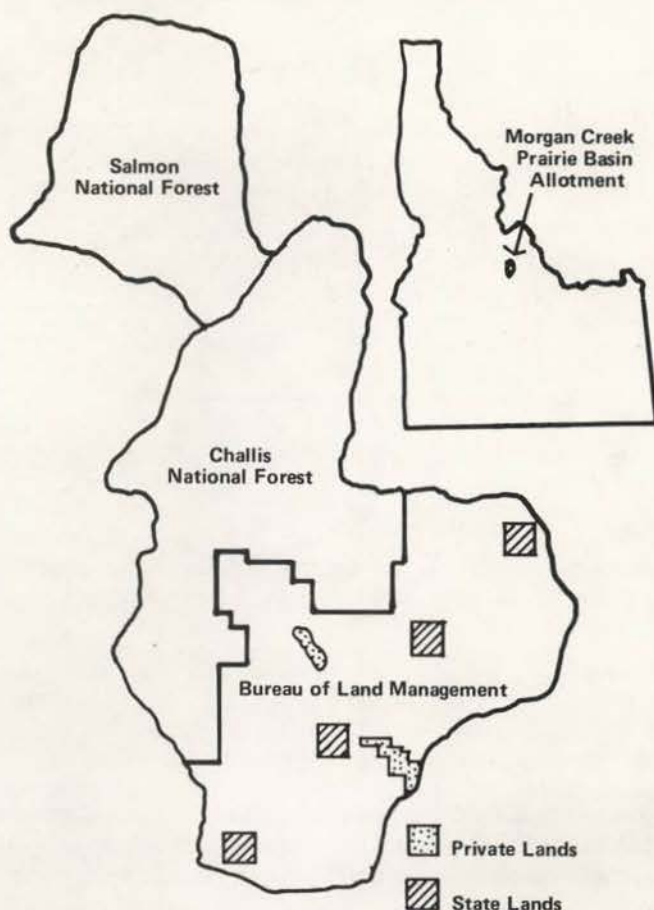


Fig. 2. Location of study area.

dicate that most of the area is dominated by sagebrush (*Artemisia*) with an understory of various grasses — primarily bluebunch wheatgrass (*Agropyron spicatum*), sandberg bluegrass (*Poa sandbergii*) and Idaho fescue (*Festuca idahoensis*). Tall larkspur (*Delphinium spp.*) is found in many of the moist stream bottoms where it threatens livestock production because of poisoning. Shadscale (*Antriplex conferti folia*) found near the Salmon River, curl leaf mountain mahogany (*Cercocarpus ledifolius*), some seedings of crested wheatgrass (*Agropyron desertorum* or *cristatum*) and various other grasses, forbs and shrubs also occur in the area.<sup>9</sup>

Condition and trend data are not available for all of the area. A field allotment analysis on the Challis National Forest in 1965 indicated, however, that of the 12, 414 acres

<sup>8</sup>Copies of the allotment management plan can be obtained from any of the land management agencies involved. Not all of the information used in developing the plan is contained in this report or the management plan. Readers interested in specific information not found in this report should read the management plan, Morgan (1970a, b, c), and consult records maintained by the agencies involved. In addition to these data, a working knowledge of the area acquired by visiting and working there is indispensable.

<sup>9</sup>A relatively complete listing of the vegetative species found near the lower portions of the allotment is found in Morgan (1970a).



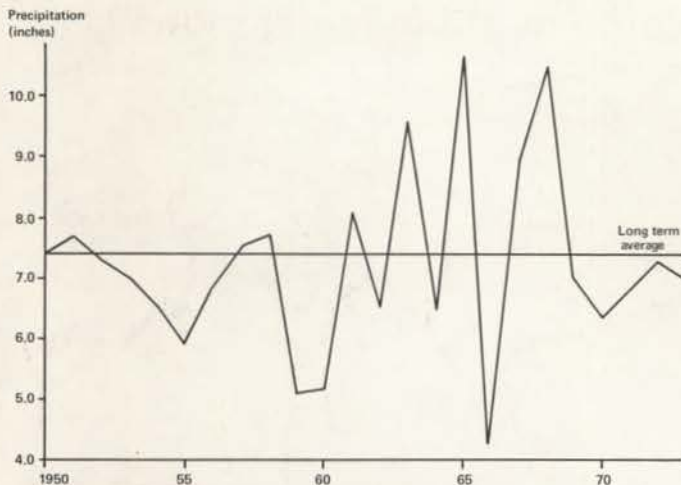


Fig. 3. Growing season precipitation at Challis station.

of primary livestock grazing lands, 572 acres were in excellent condition, 3,351 good, 6,557 fair and 1,934 acres in poor condition. Of the 1,431 acres classified as secondary use areas, 121 acres were in good condition, 1,008 fair and 302 poor.

These data suggest that vegetative growth is not particularly high in this area when compared to some areas in the west. One reason for this low forage production is the relatively small amount of precipitation received. Most of this falls either as snow during the winter or as rain during May and June. (See Appendix Table 1.) Variations in precipitation, both within and between seasons, also have a major impact on the amount of forage available during any one year (Fig. 3).

Table 2. Permitted and estimated actual use of the Morgan Creek area.\*

Year	Forest Service		BLM	
	AUM permitted	AUM actual	AUM permitted	AUM actual
1925	—	12,348	—	—
1930	—	6,654	—	—
1935	—	8,715	5,912	—
1940	13,744	10,662	—	—
1945	13,577	—	—	—
1950	11,577	9,091	—	—
1955	12,398	6,092	—	—
1958	11,126	7,671	4,614	—
1960	10,070	7,671	—	—
1962	—	—	4,365	—
1965**	10,092 (7809)	6,361 (6301)	—	—
1966	6,945	3,595	—	—
1967	6,978	5,488	—	—
1968**	10,060 (6978)	7,130 (6035)	—	—
1969**	7,035 (6983)	5,163 (5819)	—	—
1970	7,110	6,255	2,961	—
1971	7,118	5,800	2,824	—
1972	7,150	5,907	2,824	1,711

\*Data are not strictly comparable over time because allotment boundaries have been changed several times. Lack of entries (—) indicate incomplete or unavailable data, and numbers in parenthesis are from different sources provided by the agencies. The Hat Creek allotment was split from the Morgan Creek/Prairie Basin allotment in 1969. This reduced the obligation on Morgan Creek/Prairie Basin by 605 cattle and 3,025 sheep. This may account for the differences in recorded data in a particular year.

Source: Salmon District (BLM) and Challis National Forest files.

Estimates of the forage available for livestock and game animals were relatively available but no data were available on the productivity of browse species of many of the other multiple use products (e.g., thousands of board feet of timber produced per year, acre feet of water or numbers of fish).

The productivity of the game herds in the area varies from relatively high — approximately 60 calves per 100 cows for the elk herd in 1972 and 71 fawns per 100 doe deer in 1972 — to relatively low — 21 lambs per 100 ewes in the bighorn sheep herd in 1974 (see Appendix Tables 1 to 4). These productivity indicators have varied over time but the general conclusion is that the deer and elk herds have relatively high productive potential, while the bighorn herd is struggling to maintain a constant population.

### Utilization

All of the uses specified in the MU-SY Act are represented in the Morgan Creek area but they differ in importance, potential and magnitude.

### Wildlife and Fish

The Morgan Creek area contains wildlife ranging from the yellow bellied marmot to types of ungulates, snakes and eagles. Relatively small numbers of fish are found in the Morgan and Darling Creeks. Very little is known about the population of many of these species but the ungulate species have been monitored for some time.<sup>10</sup>

Deer numbers in big game management unit 36-B have varied from more than 3,000 head to less than 500 head during the period 1959 to 1972. Similarly estimated kills in the area by hunters have varied from a high of nearly 2,500 head (1969) to less than 400 head (1963). Approximately 1,500 head of deer presently use the MC/PB allotment during the winter.

The elk population in unit 36-B is relatively productive as reflected by the approximately 50 to 100 animals killed yearly by hunters. Approximately 200 animals spend a portion of their time within the boundaries of the MC/PB allotment.

A relatively small resident population of antelope, approximately 50 animals, uses lower portions of the allotment throughout the year. Hunter information indicates that about 15 animals have been killed each year.

The bighorn sheep population is the most intensively studied wildlife species using the area. Data obtained by various researchers indicate the herd has gone through stages of average to very low productivity and that the size and composition of the herd have shown considerable variation over time. Possible reasons for these wide fluctuations will be evaluated in later sections of this report. Approximately 100 animals use the area part of the year. Hunting for bighorn in this area has not occurred since the mid 1950's and it is unlikely that any will legally occur in the near future.

<sup>10</sup>The wildlife habitat management plan for the area (BLM) and Morgan (1970a) contain a list of most of the wildlife species found in the area. The appendix also contains data on the productivity, kill and herd population estimates over time for deer and elk populations in big game management unit 36-B (Morgan Creek/Prairie Basin allotment is contained within the boundaries of this unit) and herd data for antelope and bighorn sheep that use this allotment.



### Livestock

Cattle, sheep and horses have probably been grazed within the Morgan Creek allotment since the late 1800's, although records of early use are not available. Use of the area since 1925 is shown in Table 2. Data from the Forest Service indicate that estimated use has historically been less than permitted use. Furthermore, some ranchers report that use may be less than indicated because many of their animals "come home" before the time they need to be off public lands. Similar data are not available for the BLM lands, but the general pattern of use that existed for the Forest Service has probably prevailed throughout the area.

No data are available concerning livestock use of the area during the late 1800's and early 1900's.<sup>11</sup> However, the ranchers agree that use was probably heavy before passage of the Taylor Grazing Act in 1934. There is also some indication that much of this early use was by horses and sheep rather than cattle.

<sup>11</sup>In its historical appendix, the Allotment Management Plan indicates the following: "Permitted and actual use has varied greatly throughout the history of the allotment. In addition to the permitted grazing, there has been considerable unauthorized livestock (grazing) by both cattle and horses. There have been many changes in the allotment boundary and in the permitted numbers of livestock. Maximum known use was probably in the 1930's when over 2,500 head of cattle grazed in the Morgan

When BLM lands were adjudicated in 1958, permitted use decreased from 5,912 Aum's to 4,614 Aum's. Most of this decrease was achieved by delaying the season of use from early April to May 1.

Use of the area by livestock has not been uniform in the past because of distribution problems (e.g., lack of water and potential larkspur poisoning) which has caused some areas to be heavily grazed while others are not used. Furthermore, use of the area by wildlife necessitates that sufficient forage for their needs be provided by the federal land management agencies if numbers are to be maintained or increased.

### Recreation

As illustrated in Fig. 4, most of the MC/PB allotment is relatively dry with little shade. This condition has made recreational use of the area relatively low. There is some opportunity for fishing in Morgan Creek and rockhounding in some areas, but most recreational use occurs during the hunting season, generally in October, with some snowmobiling during the winter. No data are available on recreation days of use in the area, but most land managers feel that the area does not have high potential recreational use.

Creek/Prairie Basin allotment from May 16 to October 31." (Approx. 13,750 Aum's).



Fig. 4. This scene is typical of the vegetation and topography in the Morgan Creek area.



## Timber

The MC/PB allotment contains few productive timber sites since most of the area is of the sagebrush-bunchgrass habitat type. Only seven timber sales have occurred on the allotment: 604,000 board feet by the BLM; 7,184,000 board feet by the Salmon National Forest (two sales) and 4,611,000 board feet by the Challis National Forest (four sales). BLM officials indicate that all potential timber that might be harvested on their lands for some time to come has been sold. Salmon National Forest personnel indicated that approximately 7,000,000 board feet would be available for sale in the near future. Challis National Forest personnel had not completed an inventory of salable timber in 1974 but did not anticipate that a large volume would be available.

## Minerals

The extent and importance of minerals in the area are not known. There has been some mining activity in the past but no active claims exist at the present time.

The mine at Cobalt (north of the allotment) was very active during the 1940's but has been closed since the early 1950's. This mine does have some potential, however, and may be reopened in the near future. Mining activity at Cobalt did have an influence on the area since the road down Morgan Creek was the major route used by ore trucks.

## Watershed

Soils in the area were derived from the Challis volcanics and are generally shallow and not very fertile. Most of the area is subject to substantial natural erosion. Erosion is also severe at sites that have been heavily grazed or where vegetation has been lost. This is particularly true on lower elevation south slopes where the grass greens up early in the spring and use by big game animals and livestock has resulted in decreased vegetation.

No soil surveys are presently available but, judging by forage found in the area, considerable soil variation would be expected. Similarly no data are available on stream flows but most streams experience heavy run-offs in the spring with associated high turbidity, followed by low flows in the summer. Essentially all of the water flowing from the area becomes part of the Salmon River system, where primary uses are nonconsumptive (e.g., boating and fish).

## Constraints

Many constraints — legislative, budgetary, and physical — exist that limit use of the MC/PB allotment. Perhaps the most important constraints are physical, however. Most areas in the allotment are technically suitable only for grazing by livestock and wildlife.

## Demands

The demand for use of the MC/PB allotment was judged — by the managers — to be essentially equivalent to the use already being made of the area: what is being used is demanded (needed or wanted).

## Objectives of the MC/PB Plan

In April 1969, ranchers and representatives of the Idaho Department of Lands, Forest Service, Bureau of Land Management and Idaho Fish and Game Department met to discuss problems of use in the area and consider ways to resolve some of the use conflicts. This meeting led to a voluntary reduction in numbers of livestock allowed to graze in the area (Table 2). In 1970, A.L. (Gus) Hormay<sup>12</sup> was invited to inspect the area and recommend uses of the area by livestock. He suggested a three pasture rest-rotation system that ignored the administrative boundaries of the Forest Service and Bureau of Land Management. He also recommended that the "Cat Ears" area, the primary bighorn lambing area, be fenced to exclude its use by livestock. In addition, range improvements such as water developments, brush control, seedings and fencing were recommended. The alternative plans for use of the area were also formulated during this period.

The MC/PB plan had the following specific objectives:

"The management objectives of this plan are to protect and improve the resources and regulate the uses so the greatest benefit can be realized.

1. Increase the average grass composition over the usable portion of the Morgan Creek allotment 15%.
  - a. Below 6,000 foot elevation the percent composition of bluebunch wheatgrass, sandberg bluegrass and Idaho fescue will be raised from the present 20% to 35%. Transects which have been established will be used, wherever possible, as a starting point.
2. Reduce competition between deer and bighorn sheep on the spring range by established seedings of early grass for deer use on the lower areas along Darling Creek.
3. Eliminate areas of overuse such as Darling Creek and Morgan Creek.
4. Eliminate all unauthorized use by livestock on the Morgan Creek allotments.
5. Reduce stream sedimentation to an acceptable level.
6. Maintain the livestock numbers which are qualified to graze the allotment."

Why these objectives were chosen and how they were derived were not made evident to the author during discussions with people concerned with use of the area.

## Alternatives

Several alternatives for the Morgan Creek allotment were considered before deciding upon the proposed management plan. Some of these were:

- "a. Continue present system of management. A 50% reduction would be needed

<sup>12</sup>A. L. (Gus) Hormay, a nationally known and respected authority, is perhaps best known by range managers as the primary advocate of the rest-rotation system of grazing.



to eliminate overuse and maintain the soil resource. Since the present system of season long grazing does not satisfy physiological requirements of the desirable forage plants, vegetation condition will continue to decline on the most desirable areas and additional future reductions may be needed. The present system does not provide the needed forage for big game.

- "b. Divide the allotment into several separate allotments. This could be done on either existing administrative boundary lines or by combining BLM and Forest Service land and then dividing into separate allotments. An almost unlimited number of possibilities exist. The main advantage of this alternative is, that the smaller, less complex allotments would be easier to graze and easier to manage and administer. Disadvantages are, an excessive amount of fencing would be required. A rest-rotation system would still be necessary for each of the smaller allotments. The permittee reluctance to agree on a division, is also a problem.
- "c. Separate rest-rotation management systems for the BLM and Forest Service land. For several years, this, the proposed solution, and much planning was done along this line. Since some of the forest land lends itself to use with adjoining BLM land, and some BLM land to use with adjoining forest land, the artificial administrative boundary proves to be a hindrance to good range management. Combining the forest and BLM into one management unit simplifies many administrative problems. It also provides the best chance for a suitable management program that will be acceptable to the public agencies involved and to the

livestock permittees." (Supplement to the MC/PB Allotment Management Plan, Challis National Forest, pp. 5-6.)

A number of different pasture systems were also considered, but the three pasture rest-rotation system suggested by Hormay was adopted because the managers judged that it would work best in this area.

### Public Meetings

The author was not able to obtain any input that may have been obtained from public meetings concerning use of the area.

### Implementation

The plan that was implemented was not without its problems, particularly from the ranchers point of view. Larger than usual numbers of cattle were lost during the first two or three years after the plan was implemented. Ranchers also experienced some large problems in moving cattle from one pasture to another when the weather became hot and the cattle had moved into the brush and timber. Nearly every rancher also indicated that the average calf weaning weights were lower than they had been historically. Most indicated that the calves weighed from 5 to 20 pounds less — which represented a loss of income.

The management plan and grazing system has now been in operation five years. In April 1975, Bud Nelson, one of the permittees, told members of the Idaho Range Use Coordinating Committee that the system has worked well except for the third year when larkspur poisoning was a problem. Rex Christensen, area manager for the BLM, also said that plot studies established before the grazing system was started seemed to indicate that there has been an improvement in the vegetational resource (Sharp 1975). These results suggest that the plan has been implemented with minimal problems but there is some question (Meiners 1974; Fulcher 1973) whether the system chosen will accomplish the objectives specified.



# Evaluation of Planning Procedures

Whenever one tries to evaluate methods and procedures used by the federal land management agencies, one is commonly confronted with a moving target — the agencies are constantly changing parts of the planning procedures used. Any evaluation is destined to be somewhat dated.

To enable the reader to better visualize some of these problems, the Morgan Creek/Prairie Basin allotment management plan will be evaluated and used to illustrate areas where agency planning procedures can be improved. Although this evaluation involves some subjective judgment, improvements suggested will be illustrated and the effect of implementing these improvements outlined.

## Inventory, Utilization and Production

With few exceptions, personnel within the agencies are well qualified and have little difficulty with the first steps in the planning procedures — inventory, utilization and production. These steps are the “bread and butter” work of the type of scientists that the agencies have historically hired (e.g., forest and range management). There is, however, a very real tendency on the part of some managers to feel that *what is* being produced is what *should be* provided in an area. This is not necessarily true. Considerable latitude exists for varying the use(s) of an area. Managers who emphasize the *what is* aspects of an area sometimes forego benefits that might be achieved with minimal action or cost.

Agency personnel sometime feel that additional information (production, utilization, inventory) would be helpful to the planning process. However, more work at this step of the process should be resisted until the following question has been answered (often subjectively): **Is the particular data desired worth the effort required to obtain it?** Sometimes the information would be useful but prohibitively expensive to obtain. Other times it may be relatively inexpensive to obtain but would not affect subsequent decisions. In either case, the felt need for more information can justifiably be ignored. By asking the question, “Is it really needed or is it just interesting?”, one can often screen and rank in order of importance the information that is most necessary.

One problem faced by agency planners concerns an inherent bias among some laymen to overestimate (or underestimate) the potential production of an area. For example, some people believe that the west, before the advent of the white man, was a bounteous land where game animals were numerous and easy to obtain, a belief substantiated by quotes such as the following:

“On the 19th of December, 1832, Captain Bonneville and his confederate Indians raised their camp, and entered the narrow gorge made by the north fork of the Salmon River. Up this lay the secure and plenteous hunting region so temptingly described by the Indians.

“Captain Bonneville soon found that the Indians had not exaggerated the advantages of this region. Besides numerous gangs of elk, large flocks of the ahsahta or bighorn, the mountain sheep, were to be seen bounding among the precipices. These simple animals were easily circumvented and destroyed. A few hunters may surround a flock and kill as many as they please. Numbers were daily brought into camp, and the flesh of those which were young and fat, was extolled as superior to the finest mutton.” (Irving, 1843, pp. 168-169).

An opposing view of this bounteous land is painted by the Journals of Lewis and Clark. After entering the Lemhi Valley and exploring the possibility of traveling down the Salmon by boat, Clark wrote to Lewis indicating that:

“...if this expedition of the last few days could be regarded as typical, it seemed most unlikely that the party would be able to obtain food in sufficient amount to satisfy normal body requirements. He agreed with his men who, near the end of his 10-day reconnaissance, expressed the fear of ‘Starving to death in a Country (such as this) where no game of any kind except a few fish can be found.’” (Cutright, 1969, p. 186).

After rejecting the possibility that the expedition could float the Salmon, Clark wrote to Lewis (who had just entered the Lemhi Valley) and

“...urged Lewis to buy as many horses as possible from the Shoshoni. Extra ones, he stressed, would afford that much additional life insurance in case they could not live off the country.” (Cutright, 1969, p. 186).

Furthermore, the Indians were apparently no more successful that were Lewis and Clark.

“The picture drawn by Lewis and Clark of the Shoshoni reveals a nation thwarted and degraded by near starvation. The food they supplied to the explorers emphasized that point. When Lewis first encountered them, it will be recalled, he was provided with cakes made of chokecherries (*Prunus sp.*) and serviceberries (*Amelanchier alnifolia*). While with Clark on the Salmon River reconnaissance, Sergeant Gass wrote: ‘The people of these three lodges have gathered a quantity of sunflower seeds (*Helianthus sp.*) and also of the lambs-quarter (*Chenopodium sp.*) which they pound and mix with serviceberries, and make of the composition a kind of bread which appears capable of sustaining life for some time. On this bread and the fish they take out of the river, these people who appear to be the most wretched of human species, chiefly subsist.’” (Cutright, 1969, p. 188).

Lewis mentioned that the two chief meat sources of these Lemhi Valley Indians were salmon and buffalo. The



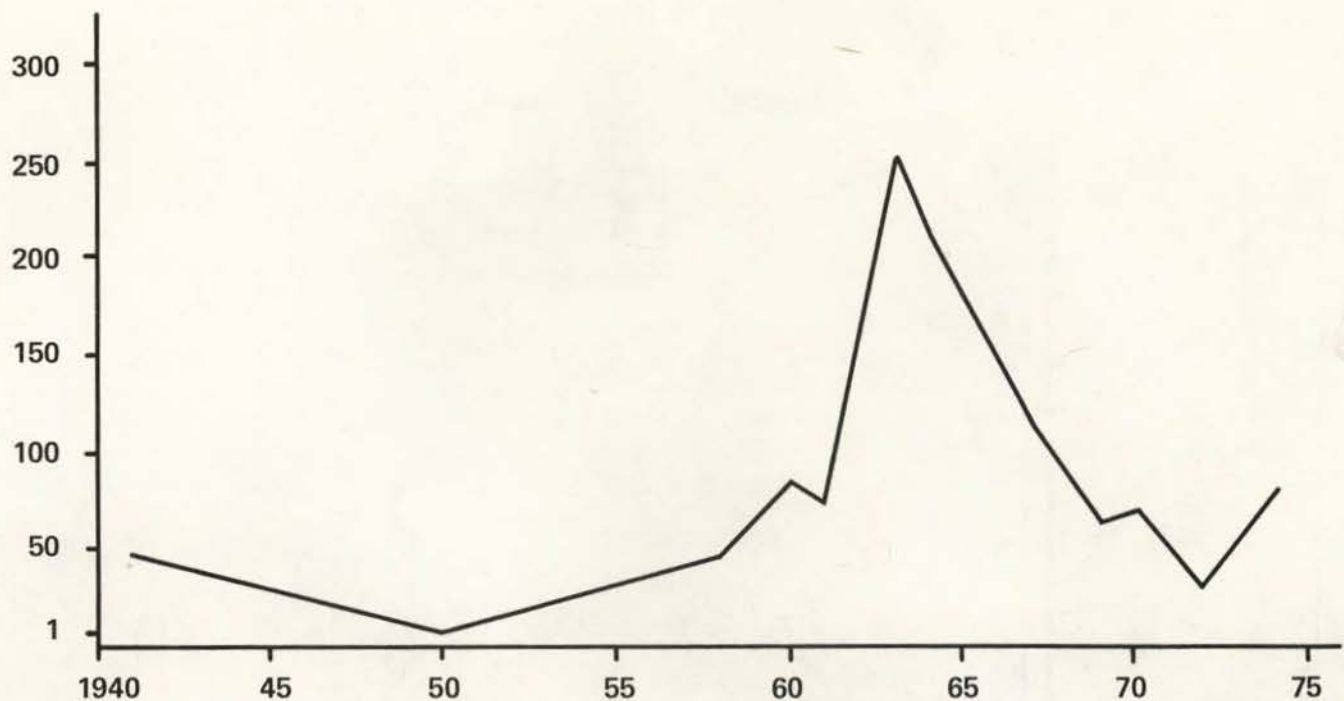


Fig. 5. Bighorn sheep population in Morgan Creek area, based on Idaho Department of Fish and Game observations.

latter, when obtainable, was the most important. Lewis also indicated that they used antelope, bighorn, deer, elk, otter, fox, muskrat, beaver, mountain goat, weasel and wolf hides for clothing. They also used elk, bighorn and buffalo for various types of implements. All of these species were of minor importance, however, with the possible exception of the antelope (Cutright, 1969).

The reader should also realize that not all of the important physical/biological relationships in an area are known. There are many ecological relationships for which there is very little or no information. For example, how would a 20% reduction in the deer herd in the MC/PB area affect the bighorn sheep population? Answers to questions such as this will require quantitative estimates involving the population of a particular species of wildlife. These estimates are particularly lacking because little quantitative work on the dynamics of wildlife herds in the Western United States has been undertaken by researchers.<sup>13</sup> One of the best examples of how little is actually known concerning ecological relationships, part of the production step in planning, is the decline in the bighorn sheep herd using the MC/PB allotment (see also Stelfox 1974).

Estimates<sup>14</sup> of the size of the bighorn herd using MC/PB have varied over time (Fig. 5, Appendix Table 2). These estimates indicate that the herd size has varied from

<sup>13</sup>The need for quantitative estimates is becoming increasingly important in environmental impact statements required by the Environmental Policy Act. Estimates of "how much" will be lost (gained) will be needed in the future if the trade-offs between alternative uses are to be evaluated.

<sup>14</sup>The reader should realize that these estimates are not very precise — particularly before 1962 when ground travel and/or fixed-wing aircraft were being used in making "game counts". This change is probably the major reason why there is such a large apparent increase in the size of the herd between 1960 and 1964 — an increase as large as the data seem to indicate is not possible, de facto, from a biological point of view.

a low of 40 animals in 1945 to a high of 254 in 1963. Considering only the 1963-1970 period when uniform counting methods were being used, questions can be raised concerning causes for the herd decline since 1963 and possible alternative means for increasing herd size. Morgan (1970a) emphasized the role of overgrazing by livestock and deer, the harvesting of large breeding rams and the lack of concern for this species by land managers.<sup>15</sup> These are by no means the only possible contributors to the decline in the Morgan Creek herd, however. Unpublished game reports and letters<sup>16</sup> from hunters who harvested bighorn in the area indicate that several diseases (e.g., scabies, lungworm, liver fluke) were present in the sheep. Predators, poaching and natural casualties (e.g., falling or being butted from cliffs) have probably also taken their toll. The possibility of homozygosis resulting from inbreeding might also affect the productivity of small herds. These factors would tend to affect herd size primarily in the long run, however. Thus, the gnawing question is what caused the sharp decline between 1963-64 and 1967 — a drop of more than 50 percent.

The weather pattern during this period (Fig. 6) shows an interesting phenomenon that might have been a major contributing factor to this decline in herd population, although no data are available to substantiate any hypothesis. The winter of 1964-65 was apparently severe as

<sup>15</sup>There is little doubt in this writer's mind that overgrazing has affected the number of bighorn and other wildlife species in the West. Leopold (1950) for example, argues that livestock grazing has been the largest contributing factor to the increase in deer numbers in the West — an estimated increase from 1,108,299 in 1959 to 1,505,000 in 1971 in the number of deer using public domain lands (U.S. Department of Interior, Public Land Statistics). Other species, probably including bighorn, have declined in number during this period.

<sup>16</sup>On file at the Salmon district office, Idaho Fish and Game Department.



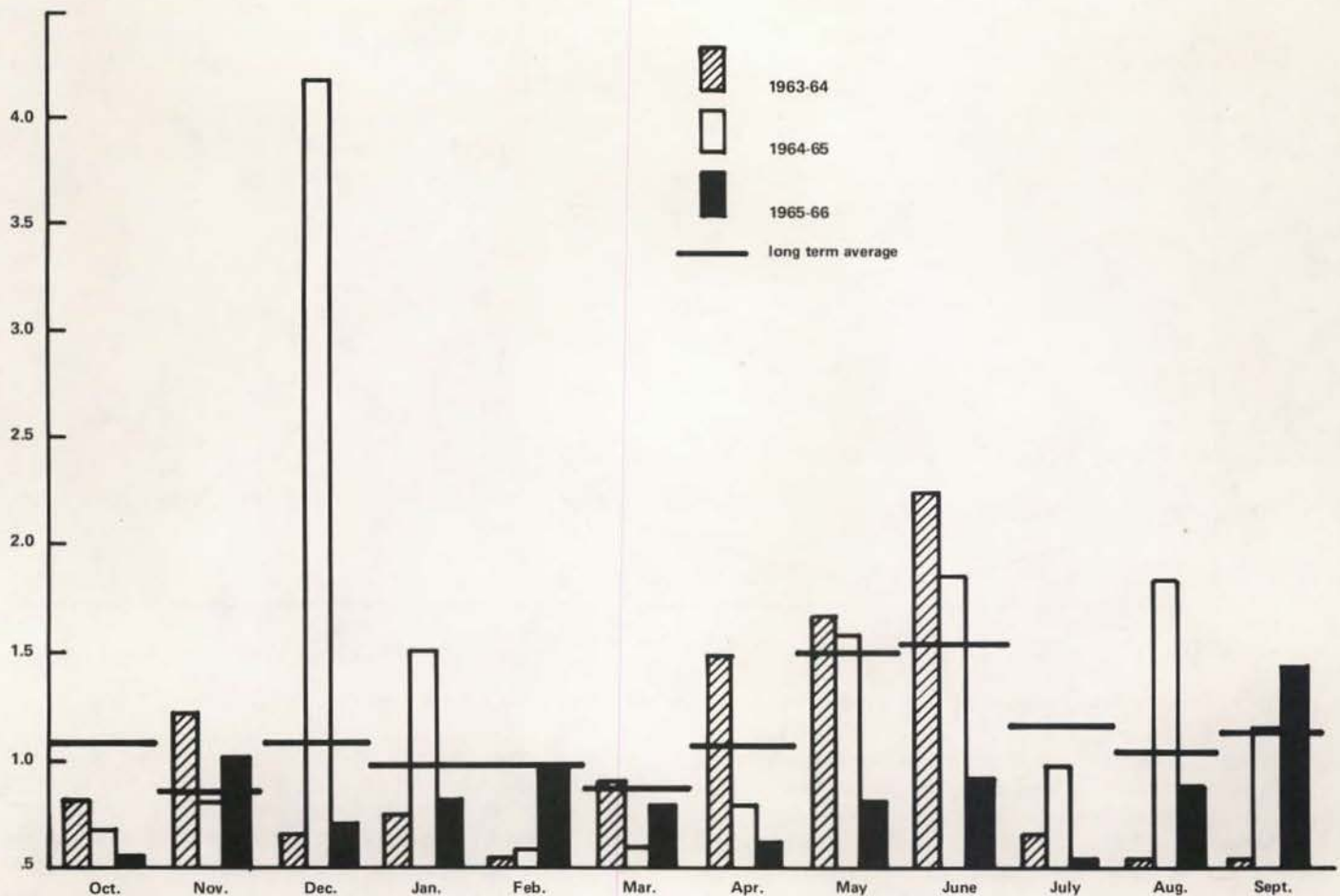


Fig. 6. Monthly precipitation at the Challis weather station, October 1963 to September 1966. (Source: Climatological Data for Idaho)

3.72 inches of precipitation fell in December 1964 and 1.04 inches in January 1965. These increases are nearly six-fold (3.72 vs .62 inches) and more than two-fold (1.04 vs. .48 inches) over the long term average precipitation recorded at the Challis station for these months. Most of this precipitation would have been snow. Thus, a severe stress would have been placed on the herd during this period because forage would have become very scarce. Given these conditions, winter kill resulting from the high snowfall and associated scarce feed may have been enough to have a large influence on this herd, particularly the anticipated lamb crop. Weather records at Challis also show the 1965-1966 crop year was relatively dry. This would have resulted in low forage production. Thus, two of the three years of large bighorn population declines involved weather patterns that would have tended to limit forage availability. If the stress on the herd was great enough that the lamb crop during these years was unusually low, a continued decline in the population would be expected.

The sudden changes in this herd's population gain more emphasis in the framework of observations made by two Idaho Fish and Game wildlife biologists in 1962 and 1963.<sup>17</sup>

"The bighorn sheep population here (Challis-Morgan Creek) may be increasing

and certainly shows continued high numbers. The number of lambs observed indicated a comparatively good lamb survival through January. Lambs made up 19 percent of the bighorns seen in the area. The observation of 35 legal rams indicates that there is a large number available for harvest (as bighorn hunting goes). And the observation of 15 younger rams (these were probably 2 and 3-year old rams) assures a future supply of legal rams for harvest. Hunting opportunity could very well be increased in this area so that a harvest of these rams could be made. Publicity of the numbers of legal rams present here would encourage hunters to harvest them, without liberalizing the hunting season." (Kindel 1962, p. 6).

"The future of this (Challis-Morgan Creek) bighorn sheep herd is very promising. With a relatively high production of lambs the past two years and a good carry over of mature animals from year to year, this area could be classified as one of the major bighorn winter-

<sup>17</sup>The reader should recognize that these observations are not the result of an intensive study such as the one conducted by Morgan (1970a). They reflect general observations that may have been significantly different if the authors had been able to study this herd intensively.



ing areas of the state. If the herd continues to increase in number, as it has the past six years, animals from this herd could be removed for transplanting into other areas of the state." (Pehrson 1963, p. 6).

These observations indicate man's ability to predict changes in game populations is less than perfect. Thus, continued study concerning the impact of various actions on animal and vegetative relationships are needed and will continue to be expressed by land planners.

## Constraints

One of the more frustrating experiences associated with the planning process involves the constraints that must be considered. Interest groups may fail to realize that all federal agencies must comply with the legal guidelines given to them by Congress (e.g., Forest Service land cannot, under present legal guidelines, be transferred to private ownership). Administrative constraints may be or may become unduly binding. When these laws or rules become too tight, changes in the law may be necessary and should be actively pursued. Budgetary constraints may be particularly troublesome and must be tackled by personnel higher up the administrative ladder and ultimately in the halls of Congress. Physical constraints, as estimated by agency personnel, are generally accepted but these constraints can occasionally be justifiably questioned. This may be particularly true with the planning team approach if a team member is overly restrictive.

Agency personnel have little trouble identifying most constraints — especially budgetary. However, the agencies have not always successfully conveyed the role of these constraints to groups concerned with the use of public lands.

## Objectives and Alternatives Considered

The MC/PB plan specified six objectives. Other objectives were probably also considered and rejected.<sup>18</sup> The MC/PB management plan, in general, gives one the impression that livestock grazing must have been a prime consideration in the minds of the planners. A number of reasons may be given for this, including the possibility that ranchers would be able to block implementation of actions detrimental to their interests. This "bias" has led environmental/wildlife groups to criticize the management plan because it does not explicitly deal with the bighorn sheep herd. These groups felt that saving or increasing the bighorn herd should have been the major objective of the plan.

Given the unknowns that must have existed within the minds of agency personnel regarding the bighorn herd and what they could do to help, the choice of the particular alternative chosen becomes more understandable. For ex-

<sup>18</sup>There is some question whether the objectives or the alternatives are formulated first in some plans. Logically, what is to be achieved (objectives) should be specified and then alternatives that would achieve these ends can be formulated. Some planners may, however, decide what they are going to do and then specify objectives that will be accomplished by these actions. If the latter procedure is followed, one alternative will likely be strongly advocated by agency personnel when public input is requested.

ample, the first alternative considered in the management plan — continue the present-historical-pattern of use — involved a 50% reduction in livestock use. This would have conflicted with the sixth objective of the plan, to maintain livestock numbers. The rest-rotation system accepted by the planners, was designed to achieve most of the objectives (increase grass composition, eliminate areas of overuse through more uniform distribution) specified in the plan.<sup>19</sup> The second objective, to reduce deer/bighorn competition during the spring, was to be accomplished by using existing range and establishing new seedings that would be used by deer.

The objectives in the MC/PB plan illustrate the general stand taken in many management plans: don't "rock the boat" by making decisions that significantly alter historical use patterns. One of the major reasons why this is the common procedure is that there are not widely accepted criteria for choosing between alternative uses (e.g., eliminate livestock use in favor of wildlife). Planners also tend to view current use as necessary or demanded use. Furthermore, most land managers are not familiar with evaluative methods and tools that are available.<sup>20</sup>

A number of methods are available to help evaluate and resolve conflicts in use (e.g., the principles of equimarginal returns, comparative advantage and bayesian analysis/decision theory). However, the training received by most agency employees does not emphasize disciplines, principally the social sciences, that explicitly consider these issues.

Two of these principles, comparative advantage and complementary/substitute demands,<sup>21</sup> are illustrated by the following reasons which could be used to justify increases in the size of the bighorn sheep herd in the MC/PB allotment. First, bighorn are not found in all areas of the U.S. as are deer and cattle. Furthermore, there are not many areas where a herd is as accessible as the Morgan Creek site.<sup>22</sup> The existence of alternative sites for the production of livestock and deer would therefore tend to favor bighorn sheep in the MC/PB area. Some would argue that bighorn sheep might also be produced at other locations (this would tend to negate these substitution arguments) but some wildlife managers feel that this is not

<sup>19</sup>There is some question in my mind whether the plan was developed to achieve the stated objectives or whether the objectives were written to conform with the action (alternative) agreed upon.

<sup>20</sup>Most of these tools are economically oriented because economics is the science that deals with the allocation of scarce resources that can be used to achieve alternative ends. One reason for this hesitancy is the need for a socially acceptable weighting system (Alston 1972) which is commonly, but not necessarily, dollars.

<sup>21</sup>Readers interested in these and other methods should consult one of the many economics texts that are available. Discussions in Anderson et al., 1971; Dyrland et al., 1974; Gregory 1972, and Krutilla 1967, also use many of these concepts in the context of natural resource oriented problems.

<sup>22</sup>This easy access has both positive and negative aspects. First, recreationists, photographers and others can "be on the area" with relative ease. This relatively easy access, compared to many other areas where bighorn sheep are found, makes this herd susceptible to harassment, poaching and other human related activities, however.



probable because of the migration and habitat patterns of bighorn sheep populations (Geist 1971).<sup>23</sup> Thus, the MC/PB allotment would likely have a comparative advantage in the production of bighorn sheep. Second, the increased number of deer in the area together with the reduced number of bighorns would, from an economic point of view and given a relatively stable demand for each, tend to make additional bighorn sheep more valuable than additional deer or cattle. If the demand for bighorns was increasing at a more rapid rate than the demand for deer or livestock, then an additional bighorn sheep would be more valuable than would additional animals of the other two species. Therefore, efforts that would favor bighorns at the expense of deer or livestock would probably be justified — given a combination of a declining population and an increasing demand for bighorn sheep.

One reason why livestock interests may have weighed heavily in the minds of agency planners involves agency directives to "stabilize the local economy". As the data in Table 3 indicate, Custer County is dominated by federally owned land (93%). These data also indicate that livestock production is the dominant agricultural enterprise in the area, including at least 75% of the farms and 74% of the value of all agricultural production.

The employment structure of the county also indicates that land oriented businesses predominate (directly or indirectly). For example, in 1972 a total of 1,293 people were employed in the county.<sup>24</sup> Of this total, 433 were employed in agriculture (33%); 41 in mining; 54 in transportation, communications, and utilities; 111 in wholesale and retail trade; 19 in finance, insurance, and real estate; 287 by government (22%); 88 by services and other miscellaneous industries; and 253 (19%) were classified as being non-agriculturally employed by self and domestic.

Custer County is sparsely populated (.6 of a person per square mile in 1970). The county's population is also relatively poor monetarily with a per capita effective buying income of \$2,192 compared to \$2,465 for the State in 1969. (Idaho's per capita income is less than the average for the United States). Nearly 30% of the county's population had incomes of less than \$3000 per year in 1969 compared to just 20% for the State. Only 16.1% of the county's population had incomes over \$10,000, compared to 19.4% statewide. Thus, the income structure of Custer County's citizens is low relative to the state in general (Nybroten 1971).

Given these characteristics and the relatively low incomes of the ranchers involved (Godfrey 1975), one can understand why the agencies strongly considered the interests of local people. If the use of public lands by livestock was greatly reduced, the returns to livestockmen would undoubtedly decrease because the size of permittee herds would have to be reduced.<sup>25</sup> This would probably

Table 3. Selected statistics for Custer county and Idaho.

	Year	Idaho	Custer county
Land area (acres)	1967	59,933,100	3,157,120
Cropland	1967	5,982,756	45,959
Cropland as % of total area	1967	11.3	1.5
Irrigated cropland (acres)	1967	2,941,426	45,902
Pasture (acres)	1967	1,450,000	53,000
Federally owned (acres)	1967	33,852,399	2,927,611
% of land area federally owned	1967	64%	92.7%
Farms by type (number)	1969	19,505	171
Cash-grain	1969	3,236	2
Field crop	1969	2,420	14
Dairy	1969	3,288	1
Livestock farms and ranches	1969	6,763	129
Livestock farms as % of total	1969	34.7	75.4
General	1969	2,983	22
Miscellaneous and other	1969	815	3
Value of agricultural products sold	1969	\$649,570,844	\$4,153,705
Crops	1969	\$295,922,016	\$1,075,433
Livestock and poultry	1969	\$352,071,808	\$3,078,272
Livestock as % of total	1969	54	74

Source: Idaho Agricultural Statistics

force some ranchers out of business and cause them to move to other areas for employment. This would violate the intent of many federal programs which are designed to arrest the flow of people from rural to more urban communities. (Movement from Custer to any other Idaho county except Clark would be a movement to a more densely populated area). Furthermore, to the degree that recreationists have higher incomes than local people, primarily ranchers,<sup>26</sup> reducing livestock use in favor of recreation would tend to benefit the rich at the expense of the poor. This would also tend to violate the intent of congressional actions, such as the progressive income taxes which are designed to redistribute income in favor of the poor.

## Demands

Perhaps the weakest part of the planning process now involves the assessment of existing demands for use of public range lands.<sup>27</sup> Most land management plans do not try to assess the willingness of users to pay for increased or decreased use. Furthermore, plans generally do not assess factors that may change the effective demand for the use of an area. For example, if gasoline prices continue to increase, the demand for recreational vehicles will probably decline.<sup>28</sup> Complementary demand factors such as this tend to change the demand for participation by recreation users

<sup>26</sup>The recreation studies (Gilmour 1973; Michalson 1973) conducted in this general area indicate that most users have relatively high incomes. In fact, those users who floated the Middle Fork of the Salmon in 1971 had average incomes of approximately \$26,000 (Peckfelder 1973).

<sup>27</sup>For example, in region three's guidelines (1972), slightly less than three pages are devoted to this step which compares to 29 pages describing the various physical/biological inventories. Some managers recognize this weakness, but others appear to disregard the social/economic impacts of decisions (Anon. 1974).

<sup>28</sup>No quantitative estimates are available to indicate the magnitude of this impact but businesses that have historically

<sup>23</sup>Sheep populations have been established at several locations in the west where populations had been eliminated in the past (e.g., Mt. Borah in Central Idaho and the Ogden/Brigham City area in Utah).

<sup>24</sup>These data emphasize those businesses which report employment to the Idaho Department of Employment. Therefore, most self-employed people (e.g., most ranchers) would be excluded.

<sup>25</sup>Further research on the size of these impacts is being conducted by the author.



— particularly those who must travel long distances. If these trends continue, other uses of public lands such as livestock grazing will likely become relatively more valuable.

The use of economic principles in helping evaluate land management decisions has generally been minor and has also resulted in a rejection of fees for many uses. For example, livestock grazing, timber and mining are the only uses now required to pay for goods and services obtained from most lands administered by the Forest Service and BLM.<sup>29</sup> Not imposing user fees can be justified in cases where the use may be judged to have social merit or the cost of collecting fees may be greater than the amount received. But land managers should explicitly recognize the distribution consequences of this policy — who benefits and who pays. For example, the agencies have stated that grazing fees are to be raised to “full market value”. If this policy is implemented, permittees will be paying for the benefits (forage for livestock) they receive while user groups such as outfitters and guides or recreationists receive benefits (forage for pack animals and recreation days) for which they do not pay. Thus, some groups are paying for benefits received while others do not — even when they may be willing and able to do so.

There are also cases where some users who do pay for use of federal lands have lower incomes than those who do not, for example, the livestock permittees vs. float boaters. (See Clawson 1975, for a general discussion of this issue.) Furthermore, in those cases where the income of non-fee user groups is higher than the general taxpayer, the poor (general taxpayer) are subsidizing the rich. None of the plans reviewed as part of this study — including plans which contained a cost/benefit analysis<sup>30</sup> — estimated distributional consequences of alternative use patterns. If these estimates were made, a major reason for strong demands by some interest groups would probably be identified. (Is the major reason why some groups ask for priority use due to the fact that they receive benefits which are being almost entirely paid for by others?)

The absence of user fees causes two related problems in states having large amounts of federal land. First, if fees were imposed for some uses that are currently free, recreation, for example, potential private developments might

become more feasible. A major reason why many private developments have not been successful is that fees charged for the use of private developments — a necessity for financial success of any private venture — results in the decreased or nonuse of private areas in favor of (free) public lands. Second, managers of state endowment land are required, by law, to maximize returns to these lands<sup>31</sup>. Thus, any allocation of lands from a paying use — grazing or timber to recreation — to a free use will diminish the returns to the endowment and violate the intent of the law.

Some evidence suggests that one of the major contributors to rapid expansion in recreation use of public lands is its relative cheapness (Clawson & Knetsch 1966). Thus, as long as fees are not imposed on some user groups, those users will continue to cry for more use while some users may be priced out of using public lands. For example, one of the ranchers using MC/PB indicated that grazing fees would not have to be raised very far before he would find it profitable to forego the use of his permit. Furthermore, if fees on all users were imposed the intensity desired use (weights) may be reflected which could be used in making resource allocation decisions. In the absence of these weights the agencies have turned to meetings in an effort to receive needed public input.

## Public Meetings

Any person who has attended a public meeting concerning the proposed use of a federally administered area recognizes that wide differences of opinion are commonly expressed.<sup>32</sup> These hearings are sometimes helpful to administrators in clarifying the issues. They do, however, represent a major problem because administrators do not know how to use the input received from conflicting parties (Hendee et al., 1973). For example, what weight should be given to local vs. outside interests or extractive type uses — mining, timber, grazing — vs. nonextractive uses such as bird watchers?

This is the step in the planning process that is commonly overlooked. This step must be taken seriously by interested parties and actively participated in, or no justifiable reason can be given for objecting to actions taken by land administrators. “Speak now or forever hold your peace” must be a guiding principle.

emphasized the sale of campers, camper trailers and mobile camping units have experienced a decline in business activity during the last 2 to 3 years.

<sup>29</sup>Some argue that recreationists also pay because they must incur costs to travel to recreation sites. This argument is not valid, however, because the other users must also travel (e.g., haul logs) to and from the site.

<sup>30</sup>There is growing evidence that many courts are or will require a cost/benefit analysis as part of all environmental impact statements (Egan 1975). This same requirement could be imposed by the courts as part of a multiple use plan because the development of an environmental impact statement follows most of the same steps outlined above.

<sup>31</sup>There is almost always some “bending” of this requirement but it can not be “too far”.

<sup>32</sup>One of the reasons why this input is not very useful is that these public meetings often result in a debate between interest groups. If a debate concerning the “worth” of particular alternatives develops between opposing interest groups, the agency involved often ends up being criticized by both groups instead of the groups arguing the merits of the alternatives being considered. As a result of this inherent potential for conflict, the BLM has recently started obtaining input from various interest groups early in the planning process. This often results in the presentation of alternatives at general public meetings which the various interest groups have basically accepted. This procedure does, however, place emphasis on the “everyday” working relationships of BLM personnel and potential interest groups.



## Conclusions

The review and evaluation of agency multiple use planning procedures have yielded the following conclusions that ought to be considered by anyone interested in the use of the public lands.

1) The procedures currently being used by personnel in the federal agencies will, if carefully applied, indicate the potential uses that an area can physically/biologically sustain. There are occasions when agency estimates should be questioned but these are generally exceptions.

2) There may be a tendency among agency personnel not to consider some justifiable alternatives if present uses weigh heavily in the minds of agency planners. The planning team approach generally identifies most viable alternatives.

3) The MC/PB management plan is fairly representative of most plans that have been developed to determine federal land uses. Whenever uses for an area conflict, a judgment must be made concerning what uses are to be foregone to enable other uses to increase. These judgments now are almost totally subjective and often reflect the biases of particular decision makers. Principles such as comparative advantage, substitute/complement uses and demand relationships and other economically oriented tools could be justifiably applied to a greater degree by most agency planners to reduce the degree of subjectivity associated with resolving user conflicts.

4) There is an evident need for the development and application of criteria for evaluating resource allocations when some uses, for example livestock and deer, are to be sacrificed in favor of another use, bighorn sheep. This will require greater efforts to obtain empirical estimates of the degree of loss or gain to be obtained. In addition, research must be initiated that can provide estimates of the value and distribution of gains and losses incurred: who is benefiting and who is paying the costs.

5) The distributional consequences associated with differences in charging for use of public lands will continue to lead some groups to demand more use while other uses may be priced out of the market. These distributional consequences may be particularly troublesome if non-fee interests (e.g., recreation) have significantly higher incomes than users who are required to pay for use of public lands.

6) The public meetings held by public agency personnel provide needed input but how or if this input can be used in the planning process is not now clear.

7) Any planning effort that emphasizes the use of a particular area without considering what role this area plays in the total is likely to result in sub-optimization (Hitch and McKean 1954). The planning procedures currently used by the federal agencies may be particularly susceptible to this problem unless input from forest, region, state and national levels is received and weighed in the planning process.

8) Planning teams receive little input from social science areas. Such input would be particularly helpful in reducing the chances of sub-optimization. Social scientists would provide planners with answers to questions such as: (1) How socially acceptable are these alternatives? (2) Are the benefits of these actions worth the costs that are being incurred? (3) Who will be benefited and who will pay the costs of the actions that are being proposed? Answers to these types of questions will be needed to a greater degree in the future as land-use decisions more and more will need to be socially justified as required by the Environmental Policy Act. These inputs will be especially useful in evaluating trade-offs between uses and users that are being incurred.

9) Planning procedures used by the agencies tend to minimize the criticism agency personnel receive. While the methods may minimize controversy, it is not clear that the most socially acceptable mix of use is being achieved.



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## Appendix

**Appendix Table 1. Antelope production, big game management unit 36-B.**

Year	Report card information				
	Number observed	Estimated population	Reported kill	Number of hunters	Number permits issued
1973	—	—	3	18	26
1972	38	50	13	36	40
1971	—	—	13	44	50
1970	—	—	15	39	46
1969	24	—	20	43	49
1968	—	—	16	—	—
1960	25	—	—	—	—

Source: Idaho Fish and Game Department.



Appendix Table 2. Bighorn sheep production, unit 36-B (Morgan, Darling, and Eddy creeks).

Year	Date	Method	Trend counts - number of observed				Productivity		
			Legal rams	Other rams, ewes & lambs	Unclassified	Total*	Estimated population	Lambs per 100 ewes	Rams per 100 ewes
1974	March 10, 11	Helicopter	8	71	—	79	50-75	21	31
1972	U**	U	—	—	—	29		18	35
1971	—	—	—	—	—	—		32	57
1970	U	U	—	—	—	70		25	24
1969	U	Helicopter	7	57	0	64	100	34	34
1968	—	—	—	—	—	—		36	39
1967	U	Helicopter	15	100	0	115		8	43.6
1964	U	Helicopter	—	—	—	210		45 40	
1963	U	Helicopter	30	224	0	254			
1962	U	Helicopter	35	113	0	148		50 40 — 40 80	
1961	April 29	Fixed Wing	—	—	—	71(96)			
1960	January 26	Fixed Wing	7	18	60	85			
1959	March 11	Fixed Wing	—	—	—	66(76)			
1958	May 2	Fixed Wing	—	—	—	46			
1950	U	U	—	—	—	7			
1945	U	U	—	—	—	—			
1942	U	U	—	—	—	21			

\*Two numbers indicate differences in the published data. The numbers not in parenthesis are considered to be the most accurate.

\*\*U = Unknown

Source: Idaho Fish and Game Department, Salmon Office, and Morgan (1970).

Appendix Table 3. Deer population data, big game management unit 36-B.

Year	Productivity		Trend counts		Report card information		
	Males* per 100 females	Fawns* per 100 females	Number observed	Method and area	Estimated total kill	Total killed	Number hunters
1972	50	71	870	Helic/Unit	—	108	—
1971	(171)45.8	(25)59	931	Helic/Challis Creek North	729	188	250
1970	(136)	(17)	1170	Helic/Morgan Creek	1612	438	538
1969	—	—	3115	Helic/Unit	2474	669	828
1968	—	—	—	—	857	276	299
1967	—	—	332	Vehicle	817	267	298
1966	—	—	999	Helic/East Fork	565	193	214
	—	—	182	Vehicle/Unit	—	—	—
1965	—	—	—	—	384	114	136
1964	—	—	—	—	—	459	569
1962	—	—	351	Unknown/Morgan, Darling & Hat Creeks	—	—	—
1959	—	—	384	—	—	—	—

\*Numbers in parenthesis are from check station data. The other sources are probably a better indication of the herd's productivity.

Source: Idaho Fish and Game Department.



Appendix Table 4. Elk production, big game management unit 36-B.

Year	Report card information		Calves * per 100 cows	Bulls * per 100 cows	Estimated number killed	Trend counts		
	Number killed	Number hunters				Number observed	Method	Area
1972	9	—	(69.2)60.7	(53.8)10	—	29	Helic	Morgan Creek
1971	11	55	69.2	(100)	37	—	—	—
1970	36	118	(22)	(60)	104	128	Helic	Unit
1969	33	109	—	—	110	—	—	—
1968	34	95	—	—	93	—	—	—
1967	26	76	—	—	65	46	Vehicle	Challis to Sunbeam
1966	19	64	—	—	51+	96	Helicopter	Challis to Sunbeam
1965	12	48	—	—	35	96	Vehicle	Challis to Sunbeam
1964	65	278	—	—	—	—	—	—
1959	—	—	—	—	—	52	Unknown	Morgan & Hat Creeks

\*Numbers in parenthesis are from check station data. The other sources are probably a better indication of the herd's productivity.

Source: Idaho Fish and Game Department.

Appendix Table 5. Monthly precipitation at Challis station, 1949-1973 crop years.\*

Year	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
1949-50	.51	.27	.12	.75	.38	.74	.17	.19	1.19	.05	.92	2.16	7.45
1950-51	.79	.40	.25	.78	.70	.34	.43	1.25	.73	.62	1.38	.01	7.68
1951-52	.31	.28	.95	.61	.68	.72	.45	.78	1.06	.94	.48	.03	7.29
1952-53	.05	.27	.60	.83	.79	.31	1.10	.83	1.70	.09	.44	.10	7.11
1953-54	.00	.30	.31	.33	.54	.30	.15	.10	1.95	1.75	.47	.37	6.57
1954-55	T	.18	.20	.47	.00	.12	.71	1.10	1.66	1.17	.02	.33	5.96
1955-56	.33	.56	1.93	.77	T	.18	.48	1.13	.46	.18	.41	.48	6.91
1956-57	.89	T	.16	.30	.40	.38	.29	3.49	.64	.47	.49	.08	7.59
1957-58	1.13	.29	.38	.52	.31	.69	.72	1.40	1.41	.40	.37	.12	7.74
1958-59	T	.17	E1.19	.03	.16	.06	T	.91	1.02	.01	.34	1.25	5.14
1959-60	.24	T	.26	.34	.73	.36	.94	.43	T	.29	.85	.84	5.28
1960-61	.19	.48	.12	.00	.44	.03	.32	2.43	1.00	.50	.72	1.89	8.12
1961-62	.15	.10	.28	.40	.33	.12	.15	3.12	.84	.35	.46	.22	6.52
1962-63	.24	.25	.23	.32	.86	.30	.96	1.02	3.83	.02	.28	1.33	9.64
1963-64	.30	E.74	.28	.27	.03	.44	1.17	1.23	1.77	.16	.02	.02	6.43
1964-65	.16	.32	3.72	1.04	.11	.10	.30	1.12	1.36	.49	1.30	.67	10.69
1965-66	.00	.57	.20	.33	.47	.32	.10	.34	.84	.00	.39	.84	4.40
1966-67	.17	.40	.61	.78	.53	.44	1.70	.35	2.18	1.07	.15	.34	8.72
1967-68	1.79	.41	.20	.50	.29	.22	.48	.87	2.21	.19	1.11	2.28	10.55
1968-69	.41	1.02	.59	1.60	.33	.25	.15	.16	1.31	.82	.10	.32	7.14
1969-70	.13	.02	.61	.57	.02	.78	.15	1.14	1.27	.79	.38	.42	6.28
1970-71	.78	.78	.48	.85	.26	.56	.66	1.05	.99	.35	.23	.28	6.77
1971-72	.52	.45	1.31	.47	.11	.38	.12	1.36	1.10	.33	.68	.53	7.36
1972-73	1.05	.57	.30	.14	.03	.22	1.42	.38	1.12	.56	.54	.66	6.99
Average	.57	.37	.62	.48	.48	.39	.58	1.02	1.05	.69	.53	.62	7.40

\*T = Trace, an amount too small to measure; E = amount is partially estimated.

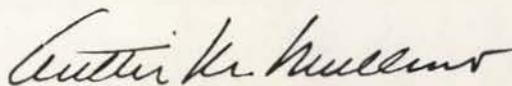
Source: Climatological data, Idaho - annual summary, various years. U.S. Department of Commerce.







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