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Report to Congressional Requesters

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RANGELAND MANAGEMENT

More Emphasis Needed on Declining and Overstocked Grazing Allotments

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The Honorable Morris K. Udall
Chairman, Committee on Interior
and Insular Affairs

The Honorable Bruce F. Vento
Chairman, Subcommittee on
National Parks and Public Lands
Committee on Interior and
Insular Affairs
House of Representatives

This report responds to your request that we provide an update on the progress the Bureau of Land Management and the Forest Service are making toward improving the condition of public rangelands and tracking the results of their range programs. As agreed, this report focuses on the agencies' progress in improving range conditions; whether the agencies' grazing levels are based on recent assessments; whether the agencies' range improvement funding is being used on the most beneficial projects; and the adequacy of the agencies' range condition inventory and monitoring systems.

Unless you publicly announce its contents earlier, we plan no further distribution of this report for 30 days from the date of this letter. At that time, we will send copies to the appropriate congressional committees, the Secretary of Agriculture, and the Secretary of the Interior. We will also make copies available to others upon request.

This work was performed under the direction of James Duffus III, Associate Director. Other major contributors are listed in appendix IV.

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Executive Summary

Purpose

The federal government allows private interests to graze livestock—primarily cattle and sheep—on over 70 percent of the 367 million acres of land the government owns in 16 western states. Because most of these lands are arid, overuse can seriously, and even permanently, damage the land. Past overgrazing has resulted in soil erosion, watershed destruction, and the loss of native grasses and other vegetation that provide food for livestock and wildlife.

The Chairmen of the House Committee on Interior and Insular Affairs and its Subcommittee on Public Lands, which is now the Subcommittee on National Parks and Public Lands, asked GAO to assess the progress that the Department of the Interior's Bureau of Land Management and the Department of Agriculture's Forest Service are making to improve public rangeland conditions. Specifically, GAO addressed, among other issues,

- condition of the public rangelands (see ch. 2),
- whether livestock grazing levels are based on recent and accurate rangeland assessments (see ch. 3),
- whether range improvement funds are used on the most beneficial projects (see ch. 4), and
- the adequacy of rangeland management and monitoring (see ch. 5).

Background

Raising cattle and sheep on western rangelands is an American tradition. In the 1800s, grazing livestock on such lands was uncontrolled and livestock numbers were not regulated. The Forest Service began regulating grazing around the turn of the century, and the Bureau began in the mid-1930s.

Today, federally owned western rangelands are divided into 31,000 livestock grazing allotments (designated areas of land available for grazing specific numbers and kinds of livestock) covering about 268 million acres. The average grazing allotment is over 8,500 acres—about 13 square miles. Given the vastness of the area to be assessed, GAO developed a detailed questionnaire that asked Bureau and Forest Service range managers their opinions on the issues GAO was addressing.

The information presented in this report was largely obtained from about 800 questionnaire responses of Bureau and Forest Service range managers. GAO verified and supplemented the information provided by the range managers by visiting 20 Bureau and Forest Service field offices.

Results in Brief

The Bureau and the Forest Service are required by law to maintain a current inventory on range conditions and trends. However, GAO found that much of the data in both agencies' inventories were more than 5 years old and may no longer represent current conditions. Both agencies' most recent reports showed that over 50 percent of the public rangelands remained in either poor or fair condition (the lower two of four categories).

GAO's survey of range managers' professional opinions showed that 19 percent of the Bureau and Forest Service grazing allotments may be threatened with further rangeland damage because authorized livestock grazing levels were higher than the land could support. The survey also showed that the condition of about 8 percent of the grazing units was actually declining. Furthermore, neither the Bureau nor the Forest Service was concentrating its management attention or resources on those grazing allotments that their range managers believed were threatened with further deterioration.

Principal Findings

Rangeland Overgrazing

Available trend information indicated that although most of the public rangelands were either stable or improving, one out of five Bureau and Forest Service grazing allotments may be threatened with further damage because more livestock were being permitted to graze than the range managers believed the land could support. However, the range managers reported to GAO that for a number of reasons no adjustments in the authorized livestock grazing levels were scheduled in 75 percent of these cases. For example, many range managers cited insufficient data as a reason for not scheduling grazing reductions.

Grazing Levels

To establish proper grazing levels, accurate assessments of the number of livestock the land can support are needed. However, GAO found that Bureau and Forest Service assessments are often old and may be outdated. For example, allotments with 20-year-old assessments are not uncommon.

Range Improvements

An alternative to reducing grazing levels is to increase the capacity of the land to support livestock through range improvements such as water

development, fencing, and seeding. GAO found that many of the range improvements funded by the Bureau and Forest Service went to projects on grazing allotments with low usage and stable-to-improving range trends. At the same time, projects on overused and declining allotments remained unfunded. The criteria for selecting which range improvements to fund include a number of factors, but neither agency was emphasizing funding for projects on declining and overstocked allotments.

Rangeland Planning and Monitoring

Both agencies prepare allotment management plans for individual allotments. These plans provide a framework for managing each allotment, identifying objectives for the allotment, determining grazing practices to be followed and needed range improvements, and establishing monitoring and evaluation schemes. GAO found that 66 percent of the Bureau and 27 percent of the Forest Service grazing allotments did not have allotment management plans. Many allotment plans were over 10 years old and may not have been sufficiently current to properly manage the allotments. GAO also found that neither agency was focusing priority attention on declining and overstocked allotments. For example, the Forest Service had a higher rate of plan development for all grazing allotments in general than it had for declining and overstocked allotments.

Recommendations

GAO recommends that the Secretaries of Agriculture and the Interior focus attention on grazing allotments that are overstocked and/or in decline when

- conducting the assessments needed to establish appropriate grazing levels,
- funding range improvement projects, and
- developing allotment management plans.

Specific details on these recommendations, as well as others, are contained in the body of the report.

Agency Comments

The Department of Agriculture's Forest Service said that it shared the concerns discussed in the report and that additional direction is being developed to ensure consistency in evaluating funding priorities and to emphasize correction of unsatisfactory range conditions. (See app. II.)

The Department of the Interior, on the other hand, was generally critical of the report. The Department stated that it firmly believed that techniques used by GAO did not support its conclusions, that GAO failed to recognize the Bureau's existing policy and program direction that address the issues and recommendations in the report, and that GAO often used a negative tone in presenting its findings. The Department acknowledged that it needs to more effectively communicate current policy and program direction to its field offices and that it is dedicated to taking steps needed to achieve this goal.

GAO believes the research techniques employed were methodologically sound and fully support the report's conclusions and recommendations. The methodology and approach used by GAO incorporated the views of Bureau officials and other rangeland professionals. GAO also believes the report appropriately recognizes the Bureau's policies and program direction and that the results of the work are presented fairly. The report recognizes that most of the Bureau's rangeland is generally stable or improving. GAO points out, however, that the report's focus is on that part of the rangeland that is declining and/or overstocked, because this is the part that is susceptible to serious and even permanent damage if corrections are not made. (See app. III.)

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Introduction

The federal government owns about 367 million acres of land in the 16 western states.[1] The government has granted permits to private interests to graze livestock on over 70 percent of this federally owned land.

Much of the rangeland on which livestock grazing is permitted is fragile and can be seriously damaged by misuse. When more livestock than the land can support are continually allowed to graze on the public rangeland, the result can be damage to and even permanent loss of range resources. It is generally recognized that overgrazing by livestock in the past has contributed to soil erosion, watershed destruction, and the loss of native grasses and other vegetation that provide forage for livestock and wildlife. Because of the generally arid condition of much of the public rangelands, recovery from past damage is slow, and in some cases recovery never occurs. Figure 1.1 provides an example of arid rangeland.

Environmental and other concerned groups have raised questions about the damage being caused by present livestock grazing on the public range. On the other hand, livestock interests maintain that public range conditions have stabilized and that present grazing levels are not contributing to further range deterioration.

The Bureau of Land Management in the Department of the Interior and the Forest Service in the Department of Agriculture administer livestock grazing on approximately 268 million acres of the western public rangeland. About 60 percent of this rangeland is administered by the Bureau and 40 percent by the Forest Service. The range is divided into approximately 31,000 grazing allotments with grazing privileges assigned to ranchers by permit or lease.[2] The allotments vary in size from less than 40 acres to more than 1 million acres. The average grazing allotment is over 8,500 acres, or about 13 square miles in area. Annually, almost 7 million cattle, horses, and sheep graze on Bureau and Forest Service western range. Today, less than 5 percent of the nation's beef cattle and 30 percent of the sheep graze on western public rangeland. However, dependence on public grazing is still significant in western states where about one-third of the beef cattle produced graze at least part of the year on public range.

[1] Arizona, California, Colorado, Idaho, Kansas, Montana, Nebraska, Nevada, New Mexico, North Dakota, Oklahoma, Oregon, South Dakota, Utah, Washington, and Wyoming.

[2] A grazing allotment is a designated area of land available for grazing a specific number and kind of livestock.

The basic legislation for the Forest Service's management and protection of the public rangeland was enacted by Congress before 1900. The 1897 Forest Reserve Act directed the Secretary of the Interior to make rules and regulations to regulate the forests' occupancy and use. In 1905 the full administration of the forests was transferred from the Department of the Interior to the Department of Agriculture. The Forest Service began issuing grazing permits and charging a grazing fee in 1906.

The Taylor Grazing Act, enacted in 1934, is the basic legislation governing the Bureau's management and protection of public rangelands. The act directed the Secretary of the Interior to stop injury to the public range by preventing overgrazing and soil deterioration; to provide for its orderly use, improvement, and development; and to stabilize the livestock industry dependent upon the public range. The act also authorized the Secretary to issue grazing permits and directed that a fee be charged for grazing.

The Multiple Use-Sustained Yield Act of 1960 directed the Forest Service to manage national forest lands for all the various surface resources, including outdoor recreation, range, timber, watershed, and fish and wildlife purposes. Multiple-use legislation for public lands managed by the Bureau came 16 years later with the passage of the Federal Land Policy and Management Act of 1976 (FLPMA). This act directed that public lands be retained in federal ownership, their resources be inventoried, their use be determined through a land-use planning process, and that they be managed under principles of multiple use and sustained yield.

In FLPMA, the Congress recognized that a substantial amount of the federal range was in deteriorating condition and that installing range improvements could arrest much of the deterioration. The act directed that one-half of the grazing fee receipts be used annually by the Bureau and Forest Service for on-the-ground range rehabilitation, protection, and improvement projects. A 10-year term was designated as the standard period for leases and permits to graze on public rangeland.

The Congress further addressed the issue of public range condition in the Public Rangelands Improvement Act of 1978. This act directed the Secretaries of Agriculture and the Interior to maintain on a continuing basis an inventory of range conditions and records of trends in range conditions, authorized additional range improvement funding, and prescribed the development and periodic review of allotment management plans tailored to improving range conditions. The act also authorized an

update land management plans, discontinue destructive grazing practices, seek assistance from livestock operators for range improvements, and keep the Congress informed about actions to improve range conditions and the effects of insufficient staffing.

In our July 1980 report entitled Changes in Public Land Management Required to Achieve Congressional Expectations (CED-80-82), we concluded that public land managers were having difficulties meeting congressional and executive department expectations of improving the condition of the range. We pointed out that legislative requirements for public participation and a growing interest in the way public lands are managed had prompted private citizens and special interest groups to become more involved and exert greater influence on Bureau decisions. We also pointed out that the Bureau's staffing and funding had not kept pace with the unprecedented number of new responsibilities and specific tasks assigned to the Bureau by legislation, executive order, and court decisions.

In an October 1982 report entitled Public Rangeland Improvement—A Slow, Costly Process in Need of Alternate Funding (GAO/RCED-83-23), we reported that Bureau assessments indicated that most of the public rangeland continued to be in an unsatisfactory condition and was producing at less than its potential. We concluded that the Bureau had made some progress in improving range conditions but lacked consistent data showing the overall effects of its management actions. We also pointed out that there was a sizable backlog of range improvement projects and a need for alternative funding sources for range improvement projects.

Objectives, Scope, and Methodology

This assignment was initiated in response to a request from the Chairmen of the House Committee on Interior and Insular Affairs and its Subcommittee on Public Lands, which is now the Subcommittee on National Parks and Public Lands. The request asked us to assess the progress the Bureau and Forest Service range management programs are making toward improving public rangeland conditions. As agreed with the requesters, we focused our work specifically on the following issues: progress in improving range conditions (see ch. 2); whether grazing levels are based on recent assessments (see ch. 3); whether range improvement funding is being used on the most beneficial projects (see ch. 4); the adequacy of range condition inventory and monitoring systems (see chs. 2 and 5); the success of the Experimental Stewardship

Program (see ch. 6); and the adequacy of protection of rangeland riparian areas (this is the subject of a concurrent GAO review that is being reported on separately).[4]

Our review covered Bureau and Forest Service management of public rangeland in the 16 western states. All of the Bureau's rangelands under livestock grazing permits are located in these states. The Forest Service grazing program extends into the eastern states; however, over 95 percent of the livestock grazing on Forest Service range occurs in the 16 western states. The National Grasslands, a separate program managed by the Forest Service, was not included in our review.

To obtain broad coverage of both agencies' range management programs, we developed an extensive questionnaire to be completed by Bureau and Forest Service range staff for a randomly selected number of livestock grazing allotments. We discussed the questionnaire with Bureau and Forest Service officials and field-tested it before it was sent to the agencies' range managers. The questionnaire approach was chosen because it was impractical to conduct on-site visits at more than a small number of the several hundred field offices where records are maintained and the staff responsible for carrying out the range management programs are located. We did, however, visit 20 Bureau and Forest Service field offices to validate questionnaire responses, to review range records, and to discuss the program with knowledgeable field staff.

The information presented in this report consists of estimates based on our analysis of questionnaire responses from a statistically valid random sample of 398 Bureau and 390 Forest Service grazing allotments. The precision of the statistical estimates was developed at the 95 percent confidence level and is shown as the lower and upper limits of the 95 percent confidence limits. This means that 95 times out of 100, the true universe value of allotments being estimated is between the lower and upper limits of the confidence interval. The limits of the 95 percent confidence interval are shown in parentheses following each statistical estimate presented in the tables of this report. Where statistical estimates are in the report text, the upper and lower limits are shown in footnotes. The statistical estimates reflect the expert opinions of government range managers directly involved in managing grazing on the public range. Because we are dealing with range managers' professional

[4]Riparian areas are heavily vegetated areas along the banks of rivers and streams and around springs, wet meadows, lakes, and ponds.

opinions, there also is a nonsampling error associated with the accuracy of the responses from the range managers, the size of which is unknown.

The Bureau maintains an inventory of its approximately 22,000 livestock grazing allotments from which we identified 3,009 allotments with a minimum active grazing level of 1,000 AUMs. From these 3,009 large allotments, we randomly selected 400, which are administered by 92 separate field offices. We limited our sample to larger allotments because more than 75 percent of the livestock grazing on Bureau range occurs on these allotments and many of the smaller allotments are scattered and rarely visited; little information is available on these smaller allotments. After examining the questionnaire responses, we reduced our final sample to 398 because one allotment was in litigation and another allotment is no longer under the Bureau's management.

We selected our Forest Service sample from a listing of livestock grazing allotments provided by Forest Service headquarters. From the listing, we randomly selected 396 grazing allotments administered by 207 field offices. Unlike the Bureau, the Forest Service does not routinely maintain a listing or inventory of its grazing allotments and we therefore did not focus on the large allotments. After examining the questionnaire responses, we reduced our final sample number to 390 to eliminate recreational and other allotments not being used primarily for livestock grazing.

Additionally, we visited 14 Bureau field offices and 6 Forest Service field offices to verify a selected number of questionnaire responses with grazing records. While at the field offices we discussed the questionnaire responses with range conservationists responsible for managing the sample allotments, discussed local management of federal rangeland with the field office manager and the range staff, and inspected several of the sample grazing allotments. We also discussed the range management program with officials at each agency's Washington, D.C., headquarters. The Offices of the Inspector General for both the Department of Agriculture and the Department of the Interior were contacted to coordinate our work with the work they have programmed and conducted in the rangeland management subject area. Our review was conducted from August 1986 to August 1987 and updated as appropriate through April 1988 in accordance with generally accepted government auditing standards.

Agency Comments and Our Evaluation

We provided a draft of this report to the Department of Agriculture's Forest Service and the Department of the Interior for their review and comment. Neither the Forest Service nor Interior commented specifically on the recommendations in this report. The Forest Service said that it shared the concerns discussed in the report and is taking steps to ensure consistency in the evaluation of funding priorities and to emphasize correction of unsatisfactory range conditions. Interior, on the other hand, stated that the research techniques we used do not support the report's conclusions. Interior also stated that we did not recognize the Bureau's existing policy and program direction that address the issues and recommendations in the report. The Department did acknowledge, however, that current policy and program direction needs to be more effectively communicated to its field offices.

We believe the approach and methodology we used were sound and fully support the conclusions and recommendations drawn. The methodology and approach considered and incorporated both Bureau and other rangeland professionals' views. We also believe the Bureau's existing policy and program direction is appropriately recognized in the report. For example, our report recognizes that 80 percent of the Bureau's rangeland is stable to improving. The report's focus, though, is on the remaining 20 percent of the rangeland that is declining and/or overstocked because, without corrections, this land is susceptible to serious or permanent damage. The Forest Service's comments are presented in appendix II, and Interior's comments are presented and evaluated in appendix III.

The Condition of Much of the Public Rangeland Is Not Reliably Known

Reported range condition and trend data for much of the public rangeland are not reliable because up-to-date monitoring data are lacking.[1] According to Bureau and Forest Service officials, much of the range condition data currently reported were collected 5 or more years ago. Agency officials stated that data on public range conditions and trends may not be reliable or current because they lack the staff resources needed to adequately monitor the condition of the vast amount of public range they manage.

Because of the questionable reliability of the range condition and trend information being reported, we asked professional staff—those who manage the public range—at both agencies' field offices for their professional opinions on present range conditions. Their responses tended to support assessments cited in the agencies' reports indicating that range conditions in recent years have been generally stable to improved. However, the responses also indicated that range conditions are declining on about 8 percent of the public rangeland. This is particularly alarming because recovery from damage to rangeland can be a slow process, and in some cases the damage is irreversible. The responses further indicated that range managers lack current knowledge of range conditions and trends for a sizable proportion of the land they manage.

Uncertain Reliability of Public Rangeland Condition and Trend Reports

By law, the Bureau and the Forest Service are required to maintain a current inventory on range conditions and trends. However, the reliability of the reports prepared on these inventories is questionable because

- use of different definitions and assessment techniques over the years makes trend comparisons between periods impractical,
- much of the reported range condition information simply repeats data that have not been updated for many years and may no longer be current, and
- both agencies' range managers in the field do not know current conditions and trends for much of their range.

According to Bureau and Forest Service officials, the range condition and trend data used for periodic reporting were derived from a variety of analytic techniques used over the years. For example, 41 percent of

[1] "Range condition" (technically referred to as ecological range condition) is a comparison of the present plant community to what the natural plant community would be if undisturbed by outside forces such as livestock grazing. "Range trend" refers to the direction of change in the health and productivity of the rangeland observed over time. It indicates whether the rangeland is moving toward or away from specific management objectives.

the public range included in the Bureau's 1986 range condition report was assessed using ecological monitoring—formal field inventory studies of types and quantities of plant life. Another 25 percent was assessed using other monitoring techniques, and the remaining 34 percent was assessed on the basis of professional judgment.

Much of the range condition information being reported by both agencies is more than 5 years old and may no longer be accurate. According to Forest Service range managers, the range condition information being reported for 40 percent of the agency's grazing allotments is based on data over 10 years old. Bureau range managers stated that much of their range condition information was obtained from one-time inventories conducted prior to 1982.

Range managers at both agencies' field offices stated they had no basis to judge the condition and trends for much of the range they manage. Bureau range managers responding to our questionnaire indicated that the condition of 28 percent of their rangeland is unknown and that trends for 26 percent are unknown. Responses from Forest Service range managers indicated they lacked knowledge of the condition for 23 percent of their rangeland; they did not express an opinion on trends for 12 percent.

Bureau and Forest Service officials agreed that the reliability of the range condition information being reported was questionable because of the varying analytical techniques used and the age of much of the reported information. They stated that they are currently working on clarifying standards for assessing and reporting range conditions and trends. However, the age of much of the data reported will likely continue to be a problem because there are approximately 31,000 grazing allotments spread over about 268 million acres of public rangeland, only a small portion of which can be formally monitored for range conditions and trends in any one year. To illustrate the magnitude of the task, the Forest Service had 561 range conservationists and technicians in 1985 to oversee 9,000 grazing allotments covering 103 million acres. On average, this means that each person oversees 16 grazing allotments covering 184,000 acres.

Bureau Range Conditions and Trends

The Bureau annually reports on public range in terms of excellent, good, fair, and poor condition.[2] The Bureau also reports whether the range trend is improving, stabilizing, or declining. The 1986 report stated that 34 percent of the Bureau's public range was in excellent or good condition and that 59 percent was in fair or poor condition. The report indicated that 15 percent of the rangeland was improving, 64 percent was stable, and 14 percent was declining. Conditions and trends were reported as unknown for 7 percent of the public range.

We asked range managers assigned to Bureau field offices for their opinions on current range conditions and trends. The responses we received indicated that in their professional opinions, conditions and trends differed somewhat from those reported in the Bureau's 1986 report. However, both the report and responses indicated that range conditions and trends were stable to improving. One significant difference was that in the range managers' opinions the range conditions and trends were unknown for a much larger percentage of the public range than the official report indicated. Another difference between the 1986 report and our questionnaire results was that range managers' responses indicated that the range condition was improving for a larger percentage of the public range.

Table 2.1 shows the range condition and trend information reported in the Bureau's 1986 report and the range managers' summarized responses to our questionnaires.

Table 2.1: Bureau Public Rangeland Conditions and Trends

Conditions			Trends		
Status	**1986 report (percent)**	**Range managers' responses (percent)**	**Status**	**1986 report (percent)**	**Range managers' responses (percent)**
Excellent	**4**	**6** (4– 8)[a]	Improving	**15**	**20** (16–24)
Good	**30**	**23** (15–30)	Stable	**64**	**47** (42–52)
Fair	**41**	**31** (26–37)	Declining	**14**	**7** (5–10)
Poor	**18**	**12** (8–15)	Unknown	**7**	**26** (22–30)
Unknown	**7**	**28** (19–38)			
Total	**100**	**100**	**Total**	**100**	**100**

[a]The numbers in parentheses are the lower and upper limits of projections to the universe at the 95 percent confidence level.

[2]Range that is 76-100 percent similar to the natural plant community is rated excellent, 51-75 percent similar is good, 26-50 percent similar is fair, and 0-25 percent similar is poor.

As shown in table 2.1, the Bureau's range managers in the field lacked knowledge of range conditions and trends for 28 and 26 percent of the range they manage, respectively. These are approximately four times the percentages of unknown conditions and trends reported in the Bureau's 1986 report. One possible explanation for this difference is that the 1986 report continued to repeat information on a given allotment even though it was outdated and/or unreliable, whereas the range managers might report the condition or trend as unknown because of the lack of current information. The range managers also believed that the condition of at least 7 percent of the Bureau's rangeland was declining.

Forest Service Range Conditions and Trends

The Forest Service has not formally reported on range conditions and trends since 1977. However, in 1986 the Forest Service directed its field offices to estimate the ecological status and trends for approximately 50 million acres of public range classified as suitable for grazing. In February 1987, the Forest Service issued a report summarizing the results of the 1986 survey. The Forest Service measures the ecological status of its rangeland in terms of social stages—which compares the similarity between the present plant community and the potential natural community (PNC) of a given site.

The potential natural community is the plant community that would ultimately become established in the absence of interference by man under the present environmental conditions. Given this, the Forest Service classifies its rangeland as follows: (1) PNC, if the present plant community is 76-100 percent of the potential natural community; (2) Late Seral, if the present community is 51-75 percent of the potential natural community; (3) Mid Seral, if the present community is 26-50 percent of the potential natural community; and (4) Early Seral, if the present community is 0-25 percent of the potential natural community.

Range managers at Forest Service field offices indicated to us that current range conditions and trends differed only slightly from those reported in the agency's 1987 report; they generally corroborated the report's conclusion that overall trends in range condition were stable to improving. There are two significant differences: (1) range managers indicated they were aware of conditions and trends for a smaller percentage of the public range than the 1987 report indicated and (2) range managers' responses indicated that the conditions were improving for a smaller percentage of the public range than the 1987 report indicated.

Table 2.2 shows the range condition and trend information summarized in the Forest Service's February 1987 report and the responses of field office range managers summarized from our questionnaire.

Table 2.2: Forest Service Public Rangeland Conditions and Trends

Conditions			Trends		
Status	**1987 report (percent)**	**Range managers' responses (percent)**	**Status**	**1987 report (percent)**	**Range managers' responses (percent)**
PNC	**15**	**14** (11–18)[a]	Improving	**44**	**30** (25–34)[a]
Late Seral	**31**	**22** (17–26)	Stable	**42**	**49** (44–54)
Mid Seral	**39**	**30** (25–35)	Declining	**14**	**9** (7–12)
Early Seral	**15**	**11** (8–13)	Unknown[b]	**0**	**12** (9–15)
Unknown[b]	**0**	**23** (17–30)			
Total	**100**	**100**	**Total**	**100**	**100**

[a]The numbers in parentheses are the lower and upper limits of projections to the universe at the 95 percent confidence level.

[b]According to Forest Service headquarters officials, the "unknown" category was not one of the options available to its staff for estimating range conditions and trends for the February 1987 report. Therefore, no range was reported as having unknown conditions or trends.

As shown in table 2.2, the Forest Service's range managers' responses indicated that they lacked knowledge of the range condition for 23 percent of the range they managed and that they did not know trends for 12 percent. The responses also indicated that the condition of at least 9 percent of Forest Service rangeland was declining.

Forest Service officials told us that the information for many of the grazing allotments reported in the February 1987 report was not based on current assessments. In fact, some of the information on which the report was based simply repeated data that were collected in the 1960s and 1970s. These data have not been updated since then. This circumstance not only helps to explain the differences in the percentage of unknown conditions and trend data between the February 1987 report and range managers' responses to our questions, but also raises questions about the reliability of the February 1987 report.

Conclusions

The Bureau and Forest Service currently lack reliable, up-to-date information on range conditions and trends for much of the public rangelands. To obtain and maintain current range condition information on approximately 31,000 grazing allotments covering about 268 million

acres would be a monumental task, and we believe it would be unrealistic to expect that the Bureau and Forest Service could maintain current in-depth information on all grazing allotments given the resources assigned to this work.

Responses from the agencies' range managers indicated that current range conditions were not known for 28 percent of the Bureau's and 23 percent of the Forest Service's public rangelands, and that trends were not known for 26 percent of the Bureau's and 12 percent of the Forest Service's rangelands. Their responses also indicated that the trend for the majority of the remaining range was generally stable or improving. More importantly, however, the range managers' responses indicated that range conditions were declining for at least 7 percent of the Bureau's rangeland and at least 9 percent of the Forest Service's rangeland. We believe that this is particularly important because once damaged, rangeland recovery to its prior condition is slow, and in some cases never occurs, resulting in a permanent loss of the resource. Chapters 3, 4, and 5 discuss specific actions we believe the Bureau and the Forest Service should take to better focus management attention on declining rangelands.

Grazing Levels Are Not Based on Recent Assessments

Overgrazing has historically been one of the most serious causes of rangeland deterioration. Overgrazing occurs when livestock forage consumption levels exceed the regenerative capacity of the natural vegetation. Establishing livestock forage consumption levels that do not overtax the land (called carrying capacity) is an important factor in preventing further deterioration of the public rangelands. To properly manage the public rangelands, accurate livestock carrying capacities are needed for each grazing allotment. However, Bureau and Forest Service range managers have not recently assessed the carrying capacity of many allotments. Allotments with 20-year-old carrying capacity assessments are not uncommon.

In the absence of recent carrying capacity assessments, we asked the two agencies' range managers for their opinions on the appropriateness of established grazing levels on the allotments they manage. They said they believe that for about 18 percent of the Bureau's allotments and for 21 percent of the Forest Service's allotments, the authorized grazing levels exceeded the carrying capacity of the allotment (a condition known as "overstocking"). The range managers also said that the range condition of many of these allotments was deteriorating.

Current Information Lacking on Livestock Carrying Capacity

To set grazing levels on allotments, range managers need current and accurate information on how much livestock grazing each allotment can sustain without damaging range resources. To obtain this information, both agencies are responsible for assessing livestock carrying capacities and adjusting permitted grazing levels as needed.

Survey responses to our questionnaire showed that range managers lacked current carrying capacity information to use in adjusting grazing levels for many allotments. As table 3.1 shows, in the last 20 years, carrying capacities have not been assessed for 30 percent of the Bureau allotments and 14 percent of the Forest Service allotments in our sample. More importantly, it also shows that for allotments that the range managers believed were overstocked and thus in danger of deterioration, 37 percent of the Bureau's allotments and 21 percent of the Forest Service's allotments have not had a carrying capacity assessment in over 20 years. Furthermore, the percentage of overstocked allotments without recent carrying capacity assessments was higher than for all allotments, suggesting that carrying capacity assessments on overstocked allotments have not received any special emphasis.

Table 3.1: Range Managers' Responses on When Carrying Capacity Was Last Assessed

	Percent of allotments			
	Bureau		Forest Service	
Last assessment	All	Only overstocked	All	Only overstocked
0 to 9 years	**55** (51–60)[a]	**49** (38–61)[a]	**57** (52–61)[a]	**53** (42–64)[a]
10 to 20 years	**11** (8–13)	**11** (4–19)	**23** (19–27)	**21** (12–30)
Over 20 years	**30** (26–34)	**37** (25–48)	**14** (11–18)	**21** (12–30)
No response	**4**	**3**	**6**	**5**
Total	**100**	**100**	**100**	**100**

[a]The numbers in parentheses are the lower and upper limits of projections to the universe at the 95 percent confidence level.

Overstocked Allotments Have Potential for Further Deterioration of Range Conditions

Range managers' survey responses showed that they believed that 18 percent of the Bureau's allotments and 21 percent of the Forest Service's allotments in our sample were overstocked.[1] This means that about one out of every five grazing allotments is potentially subject to deterioration from overstocking.

Survey responses further indicated that range managers believed that declining range condition trends were more prevalent on overstocked allotments than on other allotments. As is shown in table 3.2, survey responses indicated that four times as many overstocked allotments have declining range conditions than other allotments.

Table 3.2: Range Managers' Estimates of Allotments With Declining Range Condition Trend

	Percent of allotments with declining range conditions	
Status	Bureau	Forest Service
Overstocked	**20** (10–29)[a]	24 (14–33)[a]
All other	**5** (2- 7)	6 (3- 8)

[a]The numbers in parentheses are the lower and upper limits of projections to the universe at the 95 percent confidence level.

[1]The lower and upper limits of the 95 percent confidence interval are 14 and 21 percent for the Bureau and 18 and 25 percent for the Forest Service.

Most Allotments Identified as Overstocked Were Not Scheduled for Grazing Reductions

Range managers of both agencies disclosed that no adjustments of the number of livestock on grazing permits were scheduled for 75 percent of the allotments the range managers believed were overstocked.[2] Over half the range managers cited insufficient range monitoring data as a major reason for not scheduling grazing reductions. This is shown in table 3.3, along with other major reasons the range managers cited.

Table 3.3: Reasons for Lack of Grazing Reductions on Allotments Identified as Overstocked

	Percent responding[a]	
Reasons cited	**Bureau**	**Forest Service**
Insufficient data	**58** (45–72)[b]	**52** (40–65)[b]
Permittee resistance	**28** (16–41)	**16** (7–26)
Outside political climate	**36** (23–49)	**5** (0–10)
Agency political climate	**36** (23–49)	**3** (0– 8)
Pending range improvement	**6** (0–12)	**10** (2–17)
Permittee nonuse	**9** (1–17)	**15** (6–23)

[a]The responses do not total 100 percent because many of the range managers indicated more than one reason for not scheduling a grazing reduction.

[b]The numbers in parentheses are the lower and upper limits of projections to the universe at the 95 percent confidence level.

Range managers at the Bureau and Forest Service offices we visited acknowledged that they have been slow in adjusting grazing levels for overstocked allotments. They cited reasons similar to those shown in table 3.3 for not scheduling grazing adjustments for overstocked allotments. They told us that range monitoring data were often lacking, and thus they did not have the data needed to enforce a reduction in grazing capacity. As an alternative, they said that they had attempted to convince certain permittees to agree to reductions and that in some cases this had been successful.

During visits to the agencies' field offices, we obtained the following descriptions of five overstocked allotments along with the reasons range managers gave for not adjusting grazing levels.

1. The permit for this Bureau allotment authorized an annual grazing level of 2,927 AUMs even though a 1981 carrying capacity study concluded the allotment could support only 2,020 AUMs. The range and riparian areas were in poor condition because of overstocking and the fact that the livestock tended to concentrate their foraging in selected areas

[2]The lower and upper limits of the 95 percent confidence interval are 65 and 85 percent for the Bureau and 66 and 85 percent for the Forest Service.

(livestock distribution problems). A lack of time to assess needed management actions and permittee resistance to reductions were cited as the primary reasons that no grazing adjustment had been scheduled for the allotment.

2. The carrying capacity had not been assessed in the last 20 years for this Bureau allotment, which had an annual permitted grazing level of 9,262 AUMs. The allotment range condition was deteriorating because of overstocking, a lengthy grazing season, and livestock distribution problems. Permittee resistance and insufficient monitoring data due to a lack of staff were cited as the reasons that no grazing reduction had been scheduled for the allotment.

3. The carrying capacity for another overstocked Bureau allotment was last assessed in 1972. The range condition of the allotment, which had a permitted grazing level set at 1,218 AUMs annually, was deteriorating because of significant overstocking and livestock distribution problems. The political climate both within and external to the Bureau was cited as the reason that a grazing level reduction had not been scheduled. Specifically, the range manager said that the Bureau had not been emphasizing grazing allotment reductions at that time.

4. This Forest Service allotment had an annual permitted grazing level set at 660 AUMs, established in 1961. This level was estimated by the range manager to be more than 25 percent above what the range could support. Reasons cited for the lack of a scheduled grazing reduction included insufficient range monitoring data, limited staff to gather data, and the low management priority given the allotment because the permittee had not used the full permitted amount.

5. On another Forest Service allotment for which the permitted grazing level had been set at 950 AUMs, the range condition was declining due to overstocking and poor livestock distribution. The permitted grazing level had not been reduced because sufficient range monitoring data were lacking on which to base a reduction.

Conclusions

Grazing more livestock than the land can support can seriously and even permanently damage the public rangelands. Carrying capacity assessments determine the amount of forage consumption the land can support without damaging the resource. About 30 percent of the Bureau's assessments and 14 percent of the Forest Service's assessments were

over 20 years old and thus may no longer be valid. Furthermore, 37 percent of the Bureau's and 21 percent of the Forest Service's grazing allotments, which range managers believed were overstocked, had not been assessed in over 20 years. The fact that more overstocked allotments were without recent carrying capacity assessments than all allotments in general indicates that the agencies were not focusing attention on those allotments range managers believed were threatened with the greatest risk of deterioration.

One out of five Bureau and Forest Service grazing allotments may be threatened with rangeland damage because more livestock were permitted to graze than the range managers believed the land could support. We believe that management attention needs to be directed at allotment that field office range managers indicated were overstocked so that corrective actions can be taken before serious range damage occurs. Specif cally, we believe that current livestock carrying capacities on overstocked allotments are needed so that appropriate grazing levels can be established.

Recommendation

We recommend that the Secretaries of Agriculture and the Interior direct the Chief of the Forest Service and the Director of the Bureau of Land Management to focus management priority on completing new livestock carrying capacity assessments for grazing allotments that the range managers believe are overstocked and that therefore have the greatest potential for range deterioration. The assessments, when completed, should be used to adjust permit levels accordingly. As a start, responsible range managers should be asked to identify all allotments that they believe are currently overstocked or in declining condition.

Range Improvement Funds Should Be Better Focused on Declining and Overstocked Allotments

Damage to rangeland resources caused by overstocking can be prevented by reducing the number of livestock allowed to graze such rangeland, improving grazing management practices, or increasing the livestock carrying capacity of the land through range improvements. Generally, such improvements are financed by grazing fees collected from ranchers who graze their animals on the public range.

About half of the annual grazing fee receipts are returned to Bureau and Forest Service field offices for on-the-ground projects to improve public rangeland conditions. However, the agencies' methods for determining which range improvement projects to fund often do not concentrate funds on those grazing allotments that are most threatened with further deterioration. We found that allotments with declining range conditions received proportionally about the same range improvement funding as did all allotments in general. Considerable range improvement funding went to projects on allotments with low livestock grazing usage and to allotments with stable to improving range conditions, while projects on heavily grazed allotments with declining range conditions went unfunded.

Purpose and Type of Projects Being Funded

Range improvement projects are generally undertaken to improve livestock distribution, increase carrying capacity, and protect riparian areas from overuse. Livestock distribution is a continuing problem on the public range because cattle and other livestock, when left alone, will graze around water sources. Riparian areas around creeks, ponds, and other water sources contain only a small portion of the forage available on an allotment, yet they frequently represent a significant portion of the forage consumed. When livestock remain in riparian areas too long, long-term damage can occur to vegetation, fisheries, and even the water source itself. Because the Bureau and Forest Service riparian programs are being examined in a concurrent GAO review and are being reported on separately, this report will limit discussion of those programs.

Bureau and Forest Service range managers' responses to our survey questionnaire indicated that most range improvement funding is used to improve livestock distribution through water development or fencing projects. Table 4.1 shows the range improvement funding on our sample allotments for projects started since January 1980. The amounts shown represent the range managers' best estimates of project costs as of January 1, 1987.

Table 4.1: Types of Range Improvement Projects Being Funded According to Range Managers

	Bureau		Forest Service	
Project type	**Amount**	**Percent**	**Amount**	**Percent**
Water development	**$1,959,173**	**43** (33–54)[a]	**$572,077**	**35** (20–51)[a]
Fences	**979,703**	**22** (15–29)	**587,580**	**36** (15–29)
Seeding	**648,535**	**14** (3–26)	**29,089**	**2** (1– 3)
Brush control	**559,104**	**12** (5–20)	**219,784**	**14** (8–20)
Cattleguards[b]	**209,877**	**5** (3– 6)	**123,498**	**8** (4–12)
Other	**163,751**	**4** (1– 6)	**78,805**	**5** (1– 9)
Total	**$4,520,143**	**100**	**$1,610,833**	**100**

[a]The numbers in parentheses are the lower and upper limits of projections to the universe at the 95 percent confidence level.

[b]Devices used to keep livestock from crossing a boundary.

Both Bureau and Forest Service range managers considered range improvement projects such as those shown in table 4.1 to be important in improving livestock distribution. For example, fencing and water troughs are used to disperse livestock throughout the entire area of a grazing allotment. Figures 4.1 and 4.2 are examples of fencing and water trough improvements. Without these or other measures, livestock tend to graze on forage near available water sources. According to Bureau range managers, 83 percent of the range improvement projects started since 1980 have been of moderate or great importance in improving livestock distribution on grazing allotments. The Forest Service range managers indicated that 76 percent of their range improvements have been for this purpose.[1]

Criteria for Selecting Range Improvement Projects to Fund

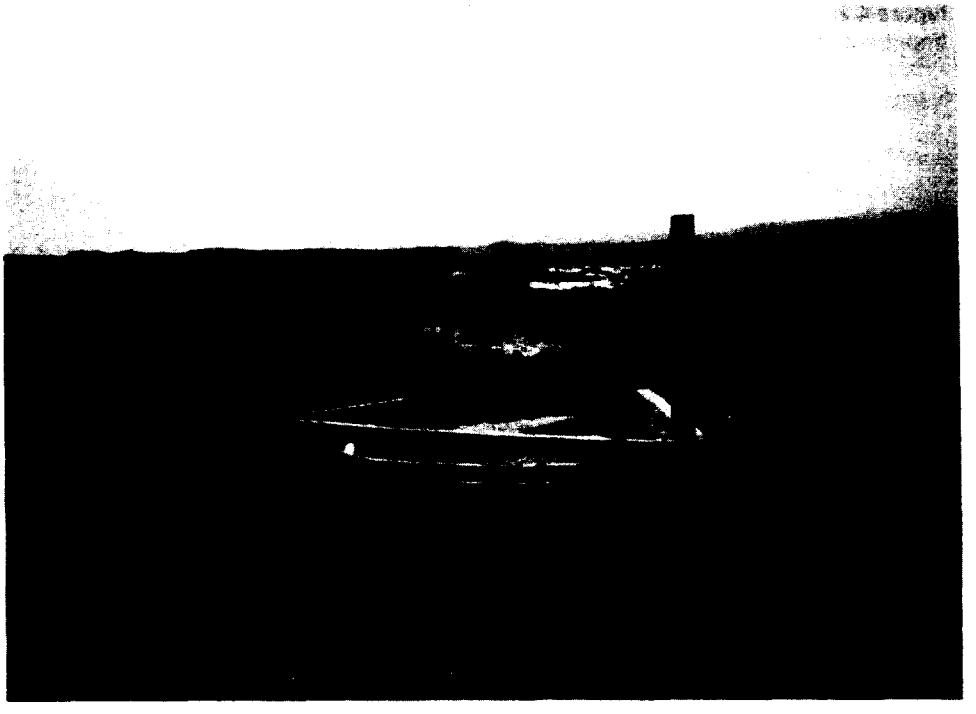
Both the Bureau and the Forest Service have guidelines for selecting range improvement projects to be funded. However, we found that, for the most part, the agencies' field offices supplemented these guidelines with their own judgments in selecting the projects.

Bureau

The Bureau has guidance for selecting which range improvement projects to fund; the guidance includes project funding considerations such as range condition and prevention of resource damage. However,

[1]The lower and upper limits of the 95 percent confidence interval are 78 and 88 percent for the Bureau and 69 and 82 percent for the Forest Service.

Figure 4.1: Water Trough Range Improvement Near Worland, Wyoming



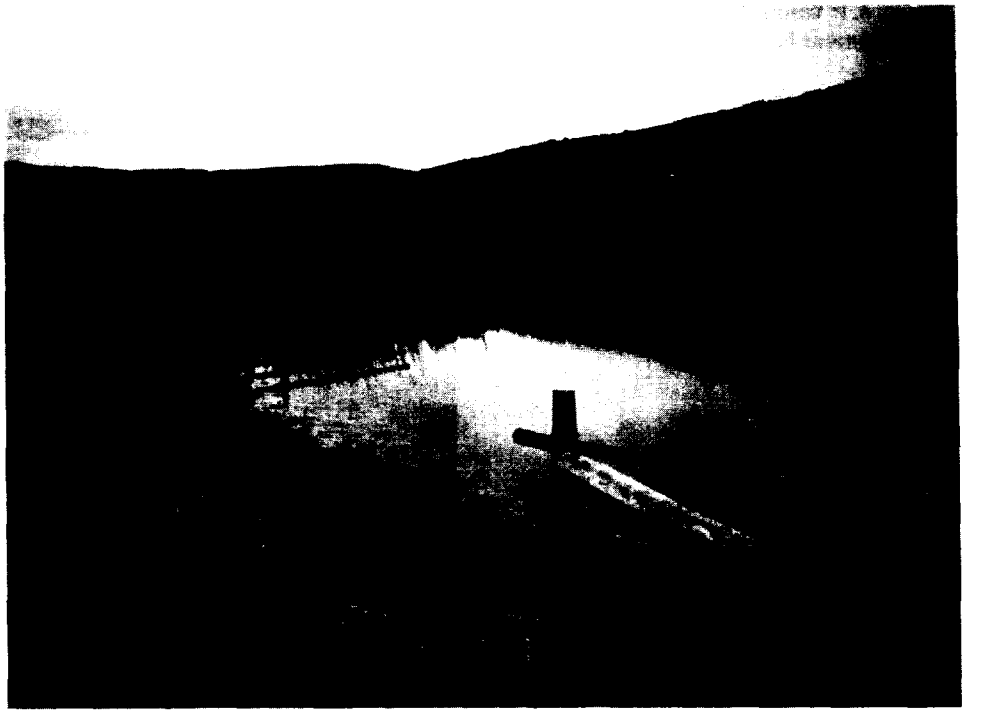
we found that the Bureau field offices we visited generally used their own informal priority systems for selecting range improvement projects. The factors taken into consideration varied considerably among the field offices. Among the factors Bureau range managers considered were (1) whether an allotment had been designated for intensive management, (2) whether an allotment had a management plan, (3) the type of project, (4) conflicting resource uses, (5) the permittee's degree of cooperation, and (6) the recommendations of local grazing advisory boards.[2]

Forest Service

The Forest Service also has a system to analyze and rank range improvement projects, but most of the agency's field offices did not use it. The ranking analysis addresses such factors as benefit-cost ratios, permittee cooperation, allotment management plan status, and the degree of anticipated range improvement if the project is completed. However, the ranking does not specifically address factors such as declining range condition and overstocking. According to Forest Service officials these factors are not broken out as separate rating elements but are indirectly considered.

[2]Advisory groups elected by local ranchers who have permits to graze on public rangelands.

Figure 4.2: Pond and Fencing Range Improvements Near Worland, Wyoming



Many Forest Service field offices did not formally rank their range improvement projects. Over half of the range managers responding to our questionnaire indicated that they did not rank projects for funding purposes. Also, range managers at three of the six Forest Service field offices we visited told us they did not rank range projects because factors affecting which projects will be funded change too frequently to develop formal listings. The factors Forest Service range managers told us they considered in funding projects were essentially the same as those cited by the Bureau's range managers.

Agencies Were Not Emphasizing Funding for Projects on Declining and Overstocked Allotments

Neither agency was placing emphasis on directing range improvement funding to allotments that were overstocked or had declining range conditions. Both agencies' range managers indicated that funding for allotments with declining range conditions and overstocked allotments was proportionally about the same as for all allotments.

Funds Expended for Projects on Allotments Where Range Conditions Were Declining

On allotments where range conditions are declining, there generally is a more immediate threat of loss of rangeland resources than on allotments where conditions are stable or improving. Therefore, it would be expected that allotments in declining condition would receive a significantly greater share of range improvement funding. This has not been the case for either agency.

As discussed in chapter 2, allotments that the agencies' range managers believed were declining represented 7 percent of the Bureau's allotments and 9 percent of the Forest Service's allotments. Table 4.2 compares allotments' range condition trend with the range improvement project funding they received. The project costs used in the chart are estimates provided by the agencies' range managers for the period January 1980 through December 1986.

Table 4.2: Distribution of Range Improvement Project Costs by Trend in Allotment Range Condition

	Bureau		Forest Service	
Trend	**Percent of allotments**	**Percent of costs**	**Percent of allotments**	**Percent of costs**
Improving	**20** (16–24)[a]	**21** (11–30)[a]	**30** (25–34)[a]	**35** (19–51)[a]
Stable	**47** (42–52)	**42** (25–58)	**49** (44–54)	**45** (28–62)
Declining	**7** (5–10)	**6** (2–10)	**9** (7–12)	**11** (.5–22)
Unknown	**26** (22–30)	**32** (18–46)	**12** (9–15)	**9** (2–15)
Total	**100**	**101**[b]	**100**	**100**

[a]The numbers in parentheses are the lower and upper limits of projections to the universe at the 95 percent confidence level.

[b]Does not total 100 percent due to rounding.

Funds Expended for Projects on Overstocked Allotments

Allotments that the agencies' range managers believed were overstocked received less funding for range improvement projects than properly stocked and understocked allotments. Since 1980, a significant portion of the Bureau's range improvement project expenditures has gone to projects on allotments that range managers indicated were understocked. These are allotments that can support more livestock than are currently allowed to graze. The range condition on understocked allotments tended to be stable or improving, and generally there was a less immediate threat of range deterioration than on other allotments, especially overstocked allotments. As shown in table 4.3, the Bureau and the Forest Service spent proportionally more range improvement funding on understocked allotments than on overstocked allotments.

Table 4.3: Range Managers' Responses on Estimated Range Improvement Costs Incurred on Understocked, Properly Stocked, and Overstocked Allotments

	Bureau		Forest Service	
Type of allotments	Percent of allotments	Percent of costs	Percent of allotments	Percent of costs
Understocked	**32** (28–36)[a]	**41** (26–57)[a]	**23** (19–27)[a]	**36** (20–5
Properly stocked	**42** (38–46)	**32** (19–46)	**48** (43–52)	**48** (30–6
Overstocked	**18** (15–21)	**20** (9–31)	**21** (17–25)	**14** (2–2
Unknown	**8** (6–11)	**7** (2–12)	**8** (7–11)	**3** (0–
Total	**100**	**100**	**100**	**101**[b]

[a]The numbers in parentheses are the lower and upper limits of projections to the universe at the 95 percent confidence level.

[b]Does not total 100 percent due to rounding.

Range improvements were being funded on understocked allotments with stable or improving range conditions; other projects on allotments being threatened with deterioration remained unfunded. For example, the Bureau range manager responsible for one allotment told us that it was understocked, that range conditions were improving, and that an estimated $95,000 had been spent on range improvements since 1980. I the same district, we identified another allotment that, in the range manager's opinion, was overstocked and had poor livestock distributior resulting in declining range condition, but had not received range improvement funding.

Backlog of Unfunded Range Improvement Projects

Funding range improvement projects on understocked allotments or allotments with stable range conditions is beneficial. However, limited funding is available, and unfunded projects on allotments where range conditions are declining represent a more immediate need. For our sample allotments, range managers said there was a $12.6 million backlog o unfunded range improvement projects, including a $1.6 million unfunded project backlog on allotments that the range managers identi fied as having declining conditions.

Table 4.4 shows the projections of the amount of unfunded range improvements from our sample to all grazing allotments administered l the Bureau and the Forest Service. As discussed in chapter 1, our samp of Bureau allotments was drawn from the 3,009 largest allotments. Ou projection is applicable to this group of allotments. However, unfundec range improvements for the remaining 19,000 Bureau allotments are n included in the projection.

Table 4.4: Projection of Unfunded Range Improvement Projects

Dollars in millions

Agency	All allotments		Declining allotments	
Bureau	**$63.0**	($ 43.5–$ 82.5)[a]	**$5.3**	($1.2–$ 9.5)[a]
Forest Service	**78.2**	(53.0– 103.3)	**16.1**	(1.8– 30.5)
Total	**$141.2**	**($109.4–$173.0)**	**$21.4**	**($6.4–$36.4)**

[a]The numbers in parentheses are the lower and upper limits of projections to the universe at the 95 percent confidence level.

Given the agencies' combined total fiscal year 1986 appropriation of about $20 million for range improvements, it would take many years to complete the projects already identified even if no new projects were added. This funding limitation points up the need for both agencies' field offices to focus available funding on grazing allotments most threatened by declining conditions.

Given the backlog of unfunded range improvement projects and the current funding level, it would take over 7 years before all declining allotments would receive range improvements that could help to reverse the declining trend they are currently experiencing. This is because declining allotments currently receive range improvement funding in about the same proportion as all allotments in general. On the other hand, if declining allotments received first priority for range improvement funding, the backlog of projects on these allotments could be eliminated in slightly more than 1 year.

Conclusions

The Bureau and the Forest Service have spent considerable funds for range improvement projects on allotments with stable or improving range conditions, while many other range improvement projects on allotments with declining range conditions in more immediate need of range improvements remain unfunded. We believe both agencies can be more effective in directing range improvement funding to allotments with the most immediate threat to range condition deterioration. This is especially important on allotments with declining conditions because damage to the fragile western rangelands can be permanent, and restoring damaged allotments to their prior condition can be a long and costly process.

Recommendation

We recommend that the Secretaries of Agriculture and the Interior direct the Chief of the Forest Service and the Director of the Bureau of

Land Management to better focus range improvement funding on allotments with declining range conditions and on overstocked allotments where range improvements can negate or limit the need to reduce the number of permitted livestock. A first step in this process would be to establish uniform, formal criteria that give priority to funding range improvements on allotments that are either declining or overstocked.

Management Attention Should Be Focused on Declining and Overstocked Grazing Allotments

Neither the Bureau nor the Forest Service has sufficient staff resources to plan detailed management for and monitor all public rangelands. Consequently, only cursory management attention can be given to most grazing allotments in any given year. For example, the Bureau and Forest Service have not developed allotment management plans (AMPs) for many of their 31,000 grazing allotments, and many grazing allotments have received monitoring visits less frequently than once a year.[1]

Both agencies have responded to their resource constraints by targeting some allotments for more intensive management than others—in theory focusing on those most in need of management attention. In practice, however, we found that neither agency is concentrating sufficient management attention on the declining and overstocked allotments that are most threatened by further deterioration. For example, the Forest Service has a higher rate of AMP development for all allotments in general than it has for declining and overstocked allotments. In other words, fewer of the allotments in need of immediate management attention have AMPs.

Staffing Constraints Limit Rangeland Management

With over 31,000 grazing allotments covering about 268 million acres, both the Bureau and the Forest Service face a formidable task in managing and monitoring their grazing allotments. Combined, they have about 1,400 people to manage their rangeland programs. On average, this means that each person is responsible for managing about 22 grazing allotments covering about 191,000 acres, or about 298 square miles.

The magnitude of the land mass each person is responsible for helps to explain why most grazing allotments do not have AMPs and are infrequently monitored. In fact, Bureau headquarters officials cited resource constraints and other higher priority projects as the chief reasons more progress has not been made in developing AMPs and in monitoring allotments. They maintain that having to complete 144 grazing environmental impact statements mandated by the National Environmental Policy Act of 1969 has strained range staff resources. This mandated workload, along with the priority given to administering grazing permits and grazing fee billings, has adversely affected monitoring efforts and work on AMPs. However, the last of the environmental impact statements are

[1] AMPs specify how livestock grazing, wildlife, and other resource uses are to be carried out to attain the management goals established for the allotment. AMPs prescribe the manner and extent to which livestock grazing is to be conducted to meet multiple use and other objectives. They should contain information on specific resource management objectives, descriptions of grazing practices, needed range improvements, and monitoring and evaluation programs for the allotment.

now being completed and Bureau officials say that more staff resources will be available in the future for monitoring and AMP development.

Range managers at the Bureau field offices we visited also cited staff resource constraints as the main factor hindering monitoring and AMP development. For example, Bureau range managers in Las Cruces, New Mexico, stated that the district office staff has decreased the past 4 years from 132 to 108. One area office in Las Cruces now has six range staff to work on 400 allotments, and another has six range staff for 240 allotments.

Forest Service range management officials cited range staffing shortage as the main factor slowing the development of AMPs and monitoring. According to Forest Service headquarters range management staff, efforts to develop AMPs for all allotments have slowed in recent years, and attention is now focusing on updating existing AMPs. Most allotments without AMPs are smaller, less actively grazed allotments that need less management attention than larger allotments.

The staff constraints both agencies are experiencing make it especially important that they set priorities among allotments so that more management emphasis can be placed on overstocked allotments and allotments with declining conditions.

Insufficient Priority on Developing AMPs for Declining and Overstocked Allotments

The Bureau and the Forest Service have resource constraints and, therefore, must choose the grazing allotments for which AMPs will be developed. However, the range managers of both agencies indicated that a relatively high percentage of declining and overstocked allotments either did not have AMPs or had AMPs that were more than 10 years old and may no longer be sufficiently current to properly guide the management of the allotment.

Bureau

The Bureau does not require an AMP for each grazing allotment; rather, it encourages its field offices to develop them for those allotments that have been designated for intensive management. This designation is made based on such factors as range condition, resource potential, and serious resource conflicts.

Range managers' responses to our survey indicated that 66 percent of all Bureau grazing allotments included in our sample did not have an

AMP (see table 5.1); an additional 16 percent of the allotments had AMPs more than 10 years old and these AMPs may no longer have been sufficiently current to properly guide the management of the allotments. Although these statistics are a matter for concern in and of themselves, such concern is exacerbated by the fact that for those allotments that Bureau range managers identified as overstocked and/or declining, 60 percent had no AMPs, and 27 percent had AMPs that were over 10 years old. Essentially, this means that not only are these allotments threatened by deterioration, but the Bureau has not been taking the necessary steps to identify, analyze, and ultimately arrest and reverse the decline.

Discussions with range managers at the 14 Bureau field offices we visited disclosed that progress in developing and implementing AMPs has been slow. For example, Bureau range managers in Las Cruces told us that two of their area offices have not developed a new AMP since 1974. Range managers in Worland, Wyoming, told us that their area offices have AMPs for only 18 of their 307 allotments, which include 205 allotments designated for intensive management.

Bureau headquarters officials told us that, nationwide, the Bureau prepares approximately 260 new AMPs each year. At this rate, it would take at least 15 years to prepare AMPs for all allotments currently designated for intensive management. In the meantime, these allotments continue to be threatened with unsatisfactory conditions.

Forest Service

Forest Service regulations require agency staff to prepare an AMP for all active grazing allotments, but 27 percent of those included in our sample had none, and another 31 percent had AMPs that were more than 10 years old.

While age alone does not necessarily mean an AMP is outdated and no longer operational, range managers at the six Forest Service field offices we visited told us that many of their AMPs were too dated to be effective. For example, at one field office we were told that only 7 of this office's 43 existing AMPs were current and operational. Range managers at four other field offices we visited considered only about 50 percent of their offices' existing AMPs to be operational.

Even more important, table 5.1 shows that a greater proportion of allotments identified by Forest Service range managers as overstocked or in

declining condition lacked AMPs (30 percent) or had AMPs over 10 years old (30 percent) than all allotments in general.

Table 5.1: Survey Responses on the Age of Allotment Management Plans

	Percent of allotments			
	All allotments		Overstocked and/or declining allotments	
Age of AMP	Bureau	Forest Service	Bureau	Forest Service
0 to 10 years	**18** (14–22)[a]	**42** (37–47)[a]	**13** (6–20)[a]	**39** (30–4
Over 10 years	**16** (12–19)	**31** (17–25)	**27** (17–36)	**30** (21–3
No AMP	**66** (61–70)	**27** (23–31)	**60** (50–71)	**30** (21–3
Total	**100**	**100**	**100**	**99**[b]

[a]The numbers in parentheses are the lower and upper limits of projections to the universe at the 95 percent confidence level.

[b]Does not total 100 percent due to rounding.

Monitoring Emphasis Needed on Declining and Overstocked Allotments

Monitoring is the orderly collection and analysis of information that should form the basis for the allotment management decisions such as revision of livestock carrying capacities, revision of livestock numbers on permits, identification of needed range improvement projects, and evaluation of progress toward satisfying objectives in allotment manage ment plans.

The Bureau and Forest Service are unable to monitor all their grazing allotments in any given year and, when conducted, the monitoring is often limited to visual observations. More importantly, the frequency and type of monitoring conducted on those allotments that range managers identified as declining and/or overstocked (and thus in need of more frequent and detailed oversight) was at about the same level as al allotments in general.

Bureau

In 1982 the Bureau adopted a 5-year monitoring cycle program. Bureau field offices were instructed to establish periodic monitoring schedules by October 1987 for collecting field data needed to support managemer decisions and assess progress for those allotments identified for intensive management. However, Bureau range managers reported to us tha 15 percent of the grazing allotments for which they were responsible have not received a monitoring visit within the last 5 years.[2] About hal of the allotments not visited were in the intensive management categor

[2]The lower and upper limits of the 95 percent confidence interval are 12 and 19 percent.

and include allotments the range managers identified as overstocked or in declining condition.

Bureau range managers at the 14 field offices we visited said that limited staff resources prevented them from monitoring all of their allotments and that they were even unable to adequately monitor all allotments targeted for intensive management. Range managers at the field offices visited made the following comments on allotment monitoring:

- Bureau range managers at the Nevada State Office told us that Bureau staff made monitoring visits to only about one-third of their allotments annually. They said that many allotments targeted for intensive management were not visited each year and that other allotments were usually not monitored due to staffing shortages.
- Bureau range managers in Boise, Idaho, told us that only 15 percent of their 585 allotments were monitored in 1986. They also stated that the present staffing level will allow them to visit only about 100 of the 174 allotments scheduled for monitoring visits during 1987.
- Bureau range managers in Miles City, Montana, told us that because of their small range staff, they could monitor only allotments targeted for intensive management that were considered high priority. Even so, they said such allotments were generally monitored only every 2 or 3 years unless a problem arose. They said other allotments not designated for intensive management were generally monitored every 10 to 15 years.

Forest Service

Forest Service range managers' responses indicated that 46 percent of the grazing allotments in our sample were visited at least annually and that over 80 percent were visited at least once every 5 years. However, the monitoring consisted of visual observations during most of these visits. According to responses, agency staff gathered formal monitoring test data for only about one-third of the allotments. Range managers' responses indicated that numerous allotments that were overstocked or had declining range conditions were among either the allotments not visited or those where only visual observations were made.

None of the six Forest Service offices we visited had developed a formal schedule for site visits to monitor allotments. Range managers at the six offices told us that they informally schedule their visits to those allotments with known problems and range improvements. They also told us that other allotments that do not have problems or ongoing range improvement projects may not be visited for years at a time.

As shown in table 5.2, survey responses indicated that at least 16 percent of the grazing allotments had not been visited in the past 5 years, including 13 percent of the allotments identified by range managers as being overstocked or in declining range condition.

Table 5.2: Forest Service Survey Responses on Frequency of Allotment Monitoring Visits

	Percent of allotments			
Frequency of visits	**All allotments**		**Overstocked and/or declining allotments**	
At least annually	**46**	(41–51)[a]	**47**	(38–57)[a]
Every other year	**15**	(11–18)	**11**	(5–17)
Once every 5 years	**21**	(17–24)	**26**	(18–35)
Not visited in last 5 years	**16**	(12–19)	**13**	(6–20)
No basis to judge	**3**	(1– 4)	**2**	(0– 3)
Total	**101**[b]		**99**[b]	

[a]The numbers in parentheses are the lower and upper limits of projections to the universe at the 95 percent confidence level.

[b]Does not total 100 percent due to rounding.

Monitoring visits consisting solely of visual observations may be appropriate for allotments with stable range conditions and where permittees are cooperative and complying with prescribed grazing practices. However, as specified in the Forest Service Rocky Mountain Region's range monitoring guidance, more precise and formal monitoring is necessary where adjustments in permittees' grazing may be needed because of overstocking or declining range conditions. As shown in table 5.3, range managers said they relied solely on visual observation for allotments that they believed were overstocked and/or declining in about the same proportion as for all allotments in general. This means that overstocked and/or declining allotments were not receiving any greater emphasis than other allotments even though they were in need of more immediate and detailed management attention.

Table 5.3: Forest Service Range Managers' Responses on Type of Allotment Monitoring Visits

	Percent of allotments			
Type of visits	**All allotments**		**Overstocked and/or declining allotments**	
Formal monitoring	**35**	(30–39)[a]	**37**	(28–47)[a]
Visual observations only	**38**	(34–43)	**35**	(26–45)
Not visited	**19**	(15–23)	**14**	(7–21)
Other	**8**	(5–11)	**13**	(6–20)
Total	**100**		**99**[b]	

[a]The numbers in parentheses are the lower and upper limits of projections to the universe at the 95 percent confidence level.

[b]Does not total 100 percent due to rounding.

Conclusions

Range management staffing levels at both agencies have limited the number of allotments that can receive intensive management attention. As a result, assigning priorities to grazing allotments for management attention is critical.

The Bureau and Forest Service had many allotments that were being grazed without the benefit of an AMP and were infrequently monitored. Some of these were overstocked and experiencing declining range conditions. AMPs and allotment monitoring are critical because they form the basis for informed management decisions on the appropriate grazing practices and levels for any given allotment. Completing AMPs and frequently monitoring allotment conditions is especially important for allotments with declining conditions in need of corrective management action to halt further damage to the rangeland resource. The processes used by the Bureau and Forest Service to assign priorities to grazing allotments for management attention can be improved to emphasize overstocked allotments and those with declining conditions.

Recommendations

We recommend that the Secretaries of Agriculture and the Interior direct the Chief of the Forest Service and the Director of the Bureau of Land Management to (1) identify those grazing allotments that their range managers believe are declining and/or overstocked and (2) concentrate management priority on monitoring and developing current allotment management plans for these allotments.

Experimental Stewardship—A Program With Limited Success to Date

The Public Rangelands Improvement Act of 1978 provided for an Experimental Stewardship Program (ESP). The primary program goal is to promote improvements in public range conditions through incentives and rewards to range users (grazing permittees) demonstrating good stewardship. Other ESP goals include exploring innovative range management practices and improving communication and cooperation between government range managers and grazing permittees. Since program inception, 16 ESP projects have been initiated. Thus far there is little documented evidence to demonstrate that program goals are being achieved. The Bureau and the Forest Service have not gathered sufficient information to show whether the projects have promoted improvement in range conditions. In addition, few truly innovative range management practices have been tried. Federal government funding for range improvements on ESP grazing allotments has been significantly higher than on allotments not in the program, but this funding increase has not been correspondingly matched by permittee contributions. On the other hand, the program has been successful in fostering better communication and cooperation between range managers and permittees.

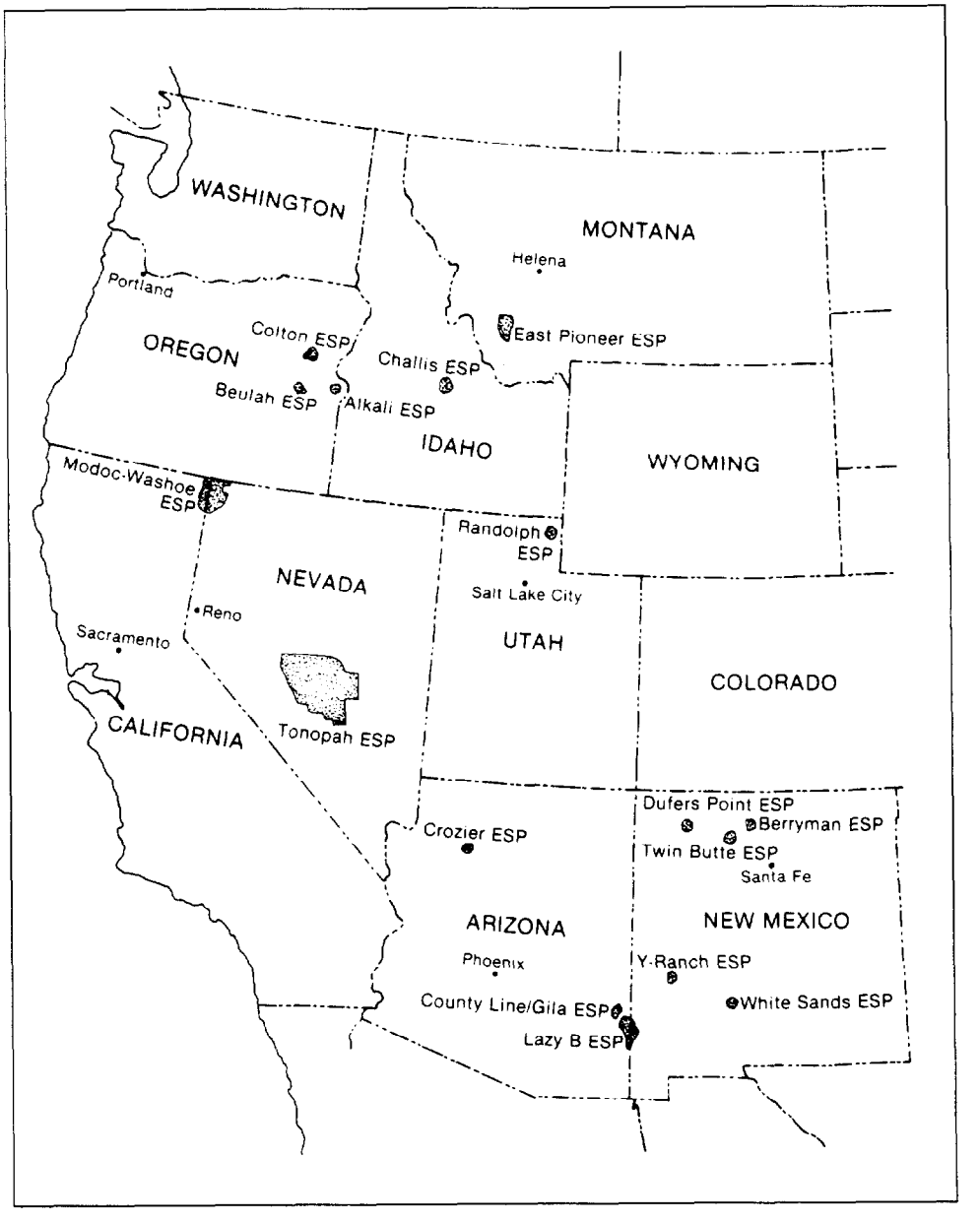
The map on the next page shows the location of the 16 ESP projects that were established in eight western states. The Bureau has participated in all 16 projects, the Forest Service in 4 projects. Grazing on ESP allotments represents only about 3.4 percent of the Bureau's grazing program and even less for the Forest Service.

Improvements in Range Conditions on ESP Grazing Allotments Are Not Documented

In 1978 ESP was mandated by the Congress to explore ways to improve the deteriorated condition of the public rangelands. The Congress also required the Secretaries of the Interior and Agriculture to report to the Congress by 1985 on the results of the program. In 1985 the Bureau and Forest Service reported back to the Congress on the program results. However, their report did not assess the extent to which range conditions had improved under the program because the range monitoring information needed to make such an assessment had not been gathered. In fact, detailed baseline information, documenting range condition at the start of the program, was generally not gathered.

Bureau headquarters officials maintained that ESP had not been operational long enough to assess its impact on improving range conditions. However, they acknowledged that range monitoring information, extremely important for evaluating ESP results, was lacking for many allotments in the program. Forest Service officials told us they lacked

Figure 6.1: Location of Experimental Stewardship Areas



sufficient range monitoring information to report on improvements in range conditions on allotments in the program.

Because formal documentation was unavailable on changes in range conditions, we asked range managers at the agencies' field offices to comment on changes in range conditions at the 16 ESP projects initiated to

date. Range managers' responses indicated that conditions had improved somewhat for nine of the projects. However, range managers indicated that documentation in support of their responses was generally lacking.

A number of range managers at field offices with an ESP project responded that no change in range conditions had resulted, and others said they could not assess the impact of the program. For example, the agencies' range managers at the large Modoc-Washoe ESP project told us they were unable to assess the impact of ESP on range conditions for many allotments for the following reasons:

- Reliable records were generally not available on allotment range conditions prior to the start of the program.
- Monitoring information was not gathered on changes in range conditions during the program for most allotments.
- It was difficult to distinguish whether changes in range condition are due to ESP efforts or other factors, such as cancelled grazing permits, extensive nonuse by permittees, or heavier than normal rainfall.

ESP Explored Few Innovative Management Practices

One program objective was to explore innovative grazing management practices. However, Bureau and Forest Service range managers could describe only a few modestly innovative practices that were tried on the 16 projects. Range managers cited grazing fee credits provided to the permittees and actual use billings as examples of innovative approaches that were explored. We were unable to evaluate whether these approaches contributed appreciably to improving range conditions because neither agency had documented the results of such approaches.

As an incentive to encourage range improvement, Bureau and Forest Service headquarters authorized permittees to substitute range improvements for up to 50 percent of their annual grazing fee. The agencies tested grazing fee credits on 3 of the 16 ESP projects. According to both agencies' range managers, permittees initially took advantage of the credits by helping to install range improvements. They said that participation, however, had declined considerably in recent years.

It is not clear that the grazing fee credits encouraged permittees to install otherwise unplanned range improvements. For example, the Bureau range manager told us that some of the credits were given for range improvements that the permittees would have installed anyway. Table 6.1 also shows that fee credits did not encourage permittees to

install more improvements. The table indicates that permittee voluntary investments in range improvements on ESP allotments were only slightly more than on allotments not in the program, even when questionable and unsupported permittee contributions were considered.

Another management approach the agencies explored under ESP to foster good permittee stewardship on public range was actual use billings. Under this approach, the agencies billed the permittees at the end of the grazing season for the amount of grazing actually used instead of billing them at the beginning of the grazing season. In effect, permittees were allowed to delay paying grazing fees until after the grazing season on the premise that it provides an incentive for good stewardship.

We reviewed the two agencies' experiences with actual use billings on the three largest ESP projects and found that information was lacking regarding its impact on permittee stewardship. In addition, we found that the two agencies encountered numerous problems in obtaining timely payments. Further, they had serious questions about the benefits of this management approach.

Bureau headquarters officials told us that although no significant innovative range management practices have resulted after almost 10 years in the program, they are hopeful some may be developed in the future. According to Bureau and Forest Service headquarters officials, no additional ESP projects are currently planned, but the Bureau has not ruled out additional projects in the future.

Investments in ESP Range Improvements

Neither the government nor ESP permittees were required to make greater investments in ESP allotments than in allotments not in the program. We calculated and compared their respective investments, however, to measure their commitment to the program in financial terms. We found that the government has invested considerably more on range improvements on ESP allotments than elsewhere. The investment by permittees, however, has only slightly increased.

Table 6.1 compares government and permittee investments in range improvements on ESP allotments with investments on all allotments in terms of investment per AUM. The most recent information available on government and permittee investments for all allotments was reported for fiscal year 1983 in a joint Bureau-Forest Service study covering the period 1980-84. Because information on ESP range improvement investments was not available in any formal report, we asked the agencies to

obtain the information through fiscal year 1986 from their field offices from program start through 1986. As shown in table 6.1, the Bureau and the Forest Service have been spending considerably more per AUM for range improvements on ESP allotments than on all allotments in general, but agency expenditures have not been matched by private interests.

Table 6.1: Comparison of Government and Permittee Investment in Range Improvements on ESP Allotments With All Allotments in General

	Amount invested per AUM	
	All allotments	ESP
Government	$.78	$1.10
Permittee	.16	.18
Total	**$.94**	**$1.28**

Furthermore, the information we obtained from the agencies on permittees' investments was in large part not documented. Because the agencies maintained only informal records on permittee investments, we were generally precluded from readily verifying the accuracy of this information. We were able to review the permittee investments for one of the larger projects, Modoc-Washoe, and found that most of the permittee contributions (totaling about $40,000) were questionable insofar as being additional investments resulting from ESP. We found that $12,000 actually came from government range betterment funds distributed through grazing advisory boards, another $13,000 was for a fence the permittee had already planned to install prior to ESP, and $15,000 was for unsupported permittee-donated materials and labor. Thus, the total claimed permittee contributions of $40,000 were either questionable or unsupported.

ESP Improved Interaction Between Permittees and the Government

According to the Bureau and Forest Service officials, prior to the ESP program there was an atmosphere of hostility and mistrust among grazing permit holders toward government range managers on allotments in the three original ESP projects. This situation existed because of the extensive grazing reductions called for in grazing environmental impact statements issued in the late 1970s. Bureau and Forest Service officials credited ESP with changing such confrontational attitudes to ones more closely associated with communication, cooperation, and coordination.

According to the agencies' range management officials, many of the concepts and processes for improving interaction with permittees developed under ESP are now being implemented in the management of allotments

not in the program. They cited the establishment of "steering committees" with representation from range managers, permittees, and local special interest groups to participate in range management planning as one concept that has been especially helpful. For example:

- The Bureau's 1986 Modoc-Washoe ESP project summary report stated that the project resulted in an atmosphere of cooperation and provided an opportunity for a wide variety of interests to come together at the local level to resolve resource conflicts. Forest Service range managers on this project also told us that their working relations with permittees have improved dramatically since ESP began.
- The 1985 project summary report for the Challis ESP project stated that the attitudes of government range managers and permittees have evolved from hostility to mutual trust, creating an atmosphere that has encouraged negotiation and accommodation. The project summary further stated that communication between range managers and permittees was at an all-time high.

It should be noted, however, that to date few grazing level adjustments—which gave rise to the hostility in the first place—have been made.

Conclusions

The extent to which the ESP program has resulted in improvements in public rangeland conditions has yet to be established. The Bureau and the Forest Service have not demonstrated that permittees in the program are taking any better care of the public range than permittees not in the program. Additionally, few innovative range management practices have been tried, and the additional funding that both agencies invested for range improvements on ESP program allotments has not promoted a corresponding investment by permittees.

The program did result in improved communication and cooperation between the agencies' range managers and permittees in several geographic areas where hostile relations previously existed. However, this must be tempered by the fact that the grazing level reductions which caused the hostilities in the first place have not occurred.

Recommendations

We recommend that the Secretaries of Agriculture and the Interior direct the Chief of the Forest Service and the Director of the Bureau of Land Management to

- not initiate any new ESP projects until it can be demonstrated that range conditions and permittee stewardship have improved under the present ESP projects and
- ensure that range monitoring information is gathered and assessed for ESP allotments in the program.

Request Letter

NINETY-NINTH CONGRESS

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June 24, 1986

The Honorable Charles A. Bowsher
Comptroller General of the United States
441 G Street, N.W.
Washington, D.C. 20548

Dear Mr. Bowsher,

Over the years the Congress has been deeply concerned with the deteriorated condition of public rangelands. In response to this concern, Congress has, through the Taylor Grazing Act, the Federal Land Policy and Management Act, and the Public Rangelands Improvement Act, given the Bureau of Land Management and the U.S. Forest Service broad authority to pursue ways to improve the range condition of public lands.

In a report to the Congress dated October 14, 1982 (GAO/RCED-83-23), you reported that most of the public rangelands remained in unsatisfactory condition; that there was a $34.7 million backlog in range improvement projects; and that the responsible agencies had no consistent method for assessing the effects of completed range improvement projects or intensified range management practices. We would like you to update us on the progress the Bureau and the Forest Service are making towards improving the condition of public rangelands and tracking the results of their range programs.

If you have any questions, please contact Russell Shay of the Committee staff at 226-7734.

Sincerely yours,

MORRIS K. UDALL
Chairman

JOHN F. SEIBERLING
Chairman, Subcommittee
on Public Lands

Comments From the Forest Service

United States Department of Agriculture | Forest Service | Washington Office | 12th & Independence SW
P.O. Box 96090
Washington, DC 20090-6090

Reply To: 1420

Date: MAR 24 1988

Mr. J. Dexter Peach
Assistant Comptroller General
Resources, Community, and Economic
Development Division
U. S. General Accounting Office
Washington, D. C. 20548

Dear Mr. Peach:

Thank you for the opportunity to comment on the draft GAO report entitled Rangeland Management: More Emphasis Needed on Declining and Overstocked Grazing Allotments.

The concerns discussed in the report are also our concerns. The resolution of concerns and the setting of priorities, including those associated with unsatisfactory range conditions, must be linked to and guided by the individual Forest's Land and Resource Management Plan. Thus range management priorities must be evaluated in concert with all other resource outputs and concerns.

The management level and resource integration of activities, including range management Forest-wide and by "Management Unit", are specific and addressed in the "Standards and Guidelines" section of each Forest Land and Resource Management Plan. Allotment management plans are then developed within the standards and guidelines of the plan. Priorities for project funding are established at the National Forest level, with project execution subsequently accomplished by the District Ranger. The Forest Land Management Plan is used to determine priorities.

Some plans may not have specific direction for gathering range resource data, developing allotment management plans, and using Range Betterment Funds. Direction is currently being developed to assure that appropriate modifications are made when these plans are amended to provide for consistency in the evaluation of priorities for funding and to emphasize correction of unsatisfactory range conditions.

Sincerely,

F. Dale Robertson

F. DALE ROBERTSON
Chief

FS-6200-28a (5/84)

Comments From the Department of the Interior

Note: GAO comments supplementing those in the report text appear at the end of this appendix.

United States Department of the Interior

OFFICE OF THE SECRETARY
WASHINGTON, D.C. 20240

MAR 30 1988

Mr. James Duffus III
Associate Director, Resources, Community,
and Economic Development Division
General Accounting Office
Washington, D.C. 20548

Dear Mr. Duffus:

We have reviewed the draft report entitled Rangeland Management: More Emphasis Needed on Declining and Overstocked Grazing Allotments, GAO/RCED-88-80, as requested. Enclosure 1 contains our general and specific comments.

Once again, it appears that GAO's writers have manipulated a professional analytical project to portray findings in an unprofessionally subjective manner. While we recognize that GAO is frequently assigned the task of analyzing issues based on a predetermined outcome, we nonetheless find this practice extremely objectionable. Such reporting neither serves the public nor presents an objective, dispassionate examination of important public land issues.

See comment 1.

It is our firm belief that the research techniques employed do not support the report's conclusions. At best, the report is a shallow patchwork of information gathered from the field held together only by the preconceived notions of the writers. It is regrettable that GAO did not consult with professionals who are better schooled in rangeland matters. However, if GAO is interested in producing a well founded, factually accurate report, we would be pleased to offer the assistance of rangeland experts who could supply GAO with the proper informational tools to do so.

See comment 2.

This draft report is most disturbing because your conclusions are generally stated in negative terms, especially in the Executive Summary, and because you fail to recognize that the Bureau of Land Management (BLM) has, in place, policy and program direction that addresses the issues and recommendations contained in your report. Greater reference to this guidance in the report is both needed and appropriate.

The BLM will acknowledge that it does need to more effectively communicate current policy and program direction to Field Offices and is dedicated to takings steps needed to achieve this goal.

2

Your recommendations for increased funding and staffing, if realized, might reduce the time needed to improve the management and condition of the rangeland resources. However, the resolution of current national fiscal issues, including reduction of the Federal deficit, requires that greater emphasis be placed on less costly range management and improvement strategies, and that BLM proceed in an orderly manner to achieve management objectives over a longer period of time with the resources that are available to it. The BLM has made substantial progress in improving range condition on public lands. Range condition in the West was recently described by Dr. Thaddis Box of the Utah State University as being better now than at any time in the past 100 years (see Enclosure 2).

See comment 3.

See comment 4.

Additionally, the GAO must place more weight on the BLM execution of the court ordered grazing environmental impact statements (EIS's) currently numbering 137 completed. This monumental task is on track and all remaining grazing EIS's will be completed in Fiscal Year 1988. Yet it prevents the BLM from moving forward on the development of allotment management plans--a truth only partially noted in the draft report.

See comment 5.

Your statement of conclusions, relying almost totally on personal opinions rather than on verifiable data, and your failure to recognize the progress made in terms of new policy guidance, budget shifts, completion of grazing EIS's, and improvement in range condition are both counterproductive and wrong.

See comment 6.

We appreciate this opportunity to comment on the draft report and the cooperation shown by your staff in trying to prepare constructive recommendations.

Sincerely,

Assistant Secretary - Land and Minerals Management

Enclosures

ENCLOSURE 1

BUREAU OF LAND MANAGEMENT (BLM) RESPONSE TO THE UNITED STATES GENERAL ACCOUNTING OFFICE (GAO) DRAFT REPORT; RANGELAND MANAGEMENT: MORE EMPHASIS NEEDED ON DECLINING AND OVERSTOCKED GRAZING ALLOTMENTS

We have carefully reviewed the draft report prepared by the GAO pertaining to the BLM's rangeland management program. Briefly stated, the draft report addresses five principal issues and the related concerns.

1. Is the condition of public rangelands improving?

2. Are livestock grazing levels based on recent and accurate rangeland assessments?

3. Are range improvement funds being used on the most beneficial projects?

4. Is the BLM sufficiently concentrating its management attention, rangeland management, and monitoring on allotments having a declining trend?

5. Has the Experimental Stewardship Program (ESP) been successful in improving range conditions?

This GAO draft report is based on information acquired through a questionnaire designed to get BLM range managers' professional opinions on the issues noted above. A series of findings and recommendations were developed, using information from the questionnaires. The Executive Summary includes a brief summary of findings on the subjects of rangelands overgrazed, grazing levels not based upon recent assessments, range improvements, rangeland management planning, monitoring, and the ESP. The chapters of the report address each of these topics in greater detail.

In summary, the findings are:

1. That livestock carrying capacity may be exceeded on approximately 20 percent of the allotments and that no changes are scheduled on approximately 75 percent of these. Adjustments are not scheduled primarily because of insufficient data.

2. That many allotments do not have up-to-date assessments of livestock carrying capacity.

3. That range improvement funds are not being specifically directed to those allotments where the need is greatest.

4. That 66 percent of the BLM allotments do not have allotment management plans (AMP) and that many existing AMP's are over 10 years old.

5. That the ESP not be expanded until monitoring data indicate that range condition and permittee stewardship have improved.

2

General Comments

See comments 1-6.

This draft report is of considerable concern to the BLM and to the Department of the Interior, particularly because of the manner or way the General Accounting Office (GAO) often uses a negative tone in highlighting areas where improvement is recommended. This camouflages the BLM's substantial improvements in range management direction and practices.

See comment 7.

See comment 8.

For example, finding number 1 could as well have been reversed. Stocking rates are at or below capacity on 80 percent of the allotments; adjustments are scheduled on an additional 5 percent of the allotments; additional information is needed to determine if and to what extent adjustments may be needed on the remaining 15 percent of the BLM allotments. It is not mentioned that there is an intensive effort underway to get the information needed through rangeland monitoring studies.

See comment 8.

Finding number 2 states that to establish proper grazing levels, accurate assessments of the number of livestock the land can support are needed for each grazing allotment. The GAO found that BLM assessments are often old and may be outdated. For example, allotments with 20-year old assessments are not uncommon.

This finding should also include the fact that BLM has developed and implemented rangeland monitoring procedures that will yield up-to-date information upon which to base management changes such as stocking rates and seasons of grazing use. The monitoring strategy is in place and budget shifts have been made within the program to fund the range studies needed to provide adequate data for decisionmaking.

See comment 9.

Finding number 3 points out that an alternative to reducing grazing levels is to increase the capacity of the land to support livestock through range improvements such as water development, fencing, and seeding. GAO found that many of the range improvements funded by the BLM had gone to projects on grazing allotments with low usage and stable-to-improving range trends. At the same time, projects on overused and declining allotments in need of improvements remained unfunded. The criteria for selecting which range improvements to fund include a number of factors, but the BLM was not emphasizing funding for projects on declining and overstocked allotments.

This finding should also recognize that there is national level policy directing Field Offices to place the priority for range improvement funding upon those allotments that are highest in priority based upon resource condition, potential for increased productivity, and the presence of conflicting demands upon the vegetation resource.

3

Finding number 4 discusses allotment management planning as follows:

> Both agencies prepare allotment management plans for individual allotments. These plans provide a detailed framework for managing each allotment, identifying management objectives for the allotment, grazing practices to be followed, needed range improvements, and monitoring and evaluation schemes.

See comment 10.

The GAO found that 66 percent of the Bureau's grazing allotments did not have allotment management plans. For those allotments with plans, many were over 10 years old and may not have been sufficiently current to properly manage the allotments. The GAO also found that the BLM was not focusing priority attention on declining and overstocked allotments.

It should be noted that BLM policy is to direct management funding and work effort to those allotments determined to be high priority because of factors such as range condition, potential for management response, and the presence of conflicting demands upon the vegetation resource. A related finding should be that BLM has been enjoined from implementing an AMP or equivalent thereof since 1978 until grazing environmental impact statements (EIS) have been completed on the planning area. The effect of the court order was to delay implementation of intensive management on millions of acres of public rangeland for up to 12 years regardless of range condition and trend, needs, conflicts, or priorities. These environmental statements (a total of 142) will be completed in 1988.

See comment 5.

Based upon these observations, an additional valid recommendation might be that BLM should more effectively communicate these national policies to the Field Offices and ensure implementation on the ground.

See comment 11.

With regard to each of the five major issue areas, our response and comments are:

1. Range Condition: The range condition and trend data used for annual reporting are derived from different range study techniques including professional judgment. It is encouraging to note that BLM reports are not significantly different from GAO's finding.

See comment 12.

Range condition is a frequently debated topic in the range management profession. It is generally agreed by range management professionals that standardization in methodology for determining range condition is necessary. The BLM is developing a standard methodology for determining and reporting range condition and trend. The proposal has been presented to, and accepted by, academia, other agencies, and a cross section of range management professionals. The methodology is currently being tested with plans to begin implementation in Fiscal Year (FY) 1989.

In the interim, the BLM is supporting an effort by the Society for Range Management to consolidate several sources of national range condition information into a standard report. This may improve the reliability of the national range condition and trend report.

4

2. Grazing Levels Are Not Based On Recent Assessments: The need for adjustments in management practices, including stocking levels and seasons of use, is ideally identified through the range studies that are included in a rangeland monitoring program.

During the past 2 years, instruction memoranda and additional guidance have been sent to the Field Offices to help improve rangeland monitoring. A Bureauwide range monitoring workshop was held to resolve misconceptions and problems regarding range management policy. This has noticeably improved the success of monitoring and management during the past field season (1987).

See comment 13.

The BLM Headquarters Office continues to provide guidance to the field reemphasizing that the "I" category allotments* are the highest priority for management adjustments and investments. If monitoring shows that the stocking rate or grazing prescription is not proper, management adjustments should be and are being made. Funding to support Field Offices in gathering up-to-date data has been increased from $4.2 million in 1985 to $6.8 million in 1988.

3. Range Improvement Funds Are Not Used On The Most Beneficial Projects: The BLM guidance has, since 1982, included the allotment categorization criterion "Present Management Situation." Unless other concerns were overriding, the question of whether present management is accomplishing the desired results should have been addressed when each allotment was categorized. The 1982 Range Improvement (RI) Policy and current manuals state that one of the purposes of categorization and rangeland investment analysis is to establish priorities for management actions, including distribution of RI funds. Recent revisions to the 4100 manual series include expanded discussion of the content of Range Program Summaries, including identification of priorities. The BLM's guidance has consistently addressed the need to prioritize "I" category allotments and use of these procedures to assure that range improvement funding be allocated first to those allotments with declining range conditions and where the potential for improvement is greatest.

See comment 14.

4. Management Attention Should Be Focused On Declining and Overstocked Grazing Allotments: The BLM has completed 137 grazing environmental impact statements through FY 1987. Five remain to be completed by the end of FY 1988. These EIS's analyze the environmental consequences of the current levels of livestock use, establish livestock grazing management objectives for the future, and identify and analyze the different management strategies that can be used to meet the objectives. This process includes placing allotments in management categories to establish future management priority. The required criteria used to group allotments into three categories are: (1) current range condition, (2) opportunity to increase resource production, (3) current conflicts between resource uses and values, (4) opportunity for an economic return on investment, and (5) opportunity for current management practices to achieve management objectives. The three categories that allotments are grouped into are: those that will require intensive management (I), those where current management will maintain the present satisfactory conditions (M), and those that have no significant resource conflicts, minimal opportunity for improved resource conditions, and little opportunity or need for intensive management, and as a result will be managed custodially (C).

See comment 15.

*See comment number 4 for discussion of "I" category allotments.

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The BLM policy directs our personnel and investment capability to the "I" category allotments that are in the poorest condition, have the greatest opportunity to increase resource production, have the largest number and most sensitive conflicts, will yield the highest return on investment, and where current management is inadequate.

5. Experimental Stewardship Projects Should be Limited to the Present Projects Until Range Improvement and Permittee Stewardship Can Be Demonstrated: Although the evidence that ESP has improved range condition or provided new and innovative range improvement practices has not yet been collected, we think it is premature to judge the benefits that will eventually evolve from ESP. You must recognize that the first three ESP areas were not designated until 1980. Following designation, committees were formed, strategies developed, plans written, and actions implemented. The management plans and operational program really did not get into full swing until late 1982.

See comment 16.

The initial indicators of a change in range condition and/or trend are very subtle and generally would not be evident in such a short period. However, we are confident that by 1992 there will be evidence that range conditions have improved in most, if not all, of the ESP areas. We are also confident that some innovative management practices will come from ESP. In particular, the Lazy B shows promise for producing range management practices that can be applied elsewhere in BLM.

We strongly believe that the improved cooperation and communication between BLM, permittees, and interest groups in the ESP areas are a positive return on the investment to date.

Specific or Detailed Comments

See comment 17.

1. Page 3, 1st sentence: Livestock grazing on public and private rangelands in the West is probably a "tradition." However, it is also an accepted practice and grazing on American rangelands has occurred continuously since the Pleistocene (see Enclosure 2).

See comment 18.

2. Page 4, 1st paragraph: What is the basis for the 5-year period in the determination that inventories may no longer be valid? While we share a concern about obtaining more complete inventory and assessment (monitoring) data, inventories over 5 years old may be quite adequate.

See comment 19.

3. Page 4, 2nd paragraph: Your report and the opinion expressed by many persons seem to reflect a belief that excellent or climax condition is "best." This is often not correct. The existence of "good" condition for a vegetation community may best serve management objectives and also be viewed as "quite desirable" by persons with differing interests and perspectives. While these comments are not the place for a technical debate on definitions of range condition, it is appropriate to note that there is substantial professional opinion that ranges are today in the best condition that they have been in for 100 years.

See comment 20.
Now on p. 10, paragraph 4, line 7.

4. Page 11, line 6: The word license should be replaced with the word lease.

See comment 20.
Now on p. 12, paragraph 2, line 6.

5. Page 13: BLM did not exist as an agency until 1946. The public lands were subject to disposal until 1976 when the Federal Land Policy and Management Act was passed. Your statement in the next to last sentence in the last paragraph is incorrect. The Taylor Grazing Act directed the Secretary of the Interior ". . . to stabilize the livestock industry dependent upon the public range . . . ." (Emphasis added.)

See comment 20.
Now on p. 14, paragraph 5, line 3.

6. Page 17, line 3: After the word financial, insert the words "and technical service."

See comment 21.
Now on p. 15, paragraph 5.

7. Page 18, paragraph 3: This paragraph provides information for calculating the Forest Service (FS) grazing program cost per animal unit month (AUM). This is calculated differently than BLM's cost on page 16. If calculated the same as BLM's, the FS cost is $4.44 per AUM:

$$\frac{\$7.3M}{\$1.35/AUM} = 5.4M \text{ AUMs}; \quad \frac{\$24M}{5.4M \text{ AUMs}} = \$4.44/AUM$$

The same method of calculation should be used for both agencies.

See comment 22.
Now on p. 22, paragraph 2.

8. Page 28, paragraph 2: Professional opinions of conditions and trends differ somewhat from the 1986 BLM report. However, the 1986 report is an aggregate of submission from professional range managers submissions. The 1986 report was based on data from ecological site inventories, other inventories and monitoring, and professional opinions.

See comment 23.
Now on p. 26, paragraph 3, last sentence.

9. Page 34, paragraph 1, last sentence: This is in error. The grazing regulations at 43 CFR 4110.3 and 4130.6-3 provide for monitoring "carrying capacity assessments" to determine the need to adjust grazing use. These regulations are currently being revised to strengthen the provisions for determining livestock use levels to meet land use plan and management objectives.

See comment 24.
Now on p. 31, paragraph 1.

10. Page 41, paragraph 1: Damage to rangeland resources caused by overstocking cannot always be prevented by simply reducing the number of livestock that is currently grazing the deteriorating areas or by increasing the livestock carrying capacity of the land through range improvements. Experience has shown that without management, damage will continue in many situations, even when numbers are reduced or when range improvements result in a carrying capacity that exceeds the current stocking level. This is because of the selective grazing habits of livestock and the sensitivity of certain areas of rangeland to grazing. For example, some areas within allotments are more sensitive to livestock grazing than others because of unique soil and vegetation characteristics. Prevention of damage to these sensitive areas requires that the soil and vegetation requirements be met while grazing is allowed. Because vegetation has certain requirements for growth and reproduction that are affected by the amount of plant growth that is grazed, limits on livestock

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grazing utilization must be established. Also, the period of the growing season that a plant is grazed may also affect plant growth and reproduction. Livestock grazing can often be deferred to the proper season, assuring that damage to the plants is avoided. In this example, damage to the sensitive rangeland area will be prevented without reducing livestock numbers or through expensive improvements.

GAO Comments

The following are GAO's comments on the Department of the Interior's letter dated March 30, 1988.

1. We disagree with Interior's view that the research techniques used to support our report's conclusions were flawed. The methodology and audit approach for our evaluation of the Bureau's rangeland management program were carefully developed considering the views of Bureau officials and other rangeland professionals.

Furthermore, our research techniques were reviewed and commented on by a University of Nevada range research scientist, the Bureau's Rangeland Resources Division Chief, and the range staff at the Bureau's Nevada State Office. The questionnaire we used was pretested at Bureau offices in three states, and many of the revisions suggested by Bureau range managers were incorporated into the questionnaire. Our questionnaire asked for detailed information on 400 individual grazing allotments (responses for 398 of these are included in our analysis). Our sample of allotments was randomly drawn and the results are projectable within the confidence intervals shown in the report. The questionnaires were completed by Bureau range managers who are directly responsible for the management of the grazing allotments involved. The questionnaire not only asked for the professional opinions of the Bureau staff most knowledgeable of the particular grazing allotments, but also sought information from the field office files for each specific allotment. The questionnaire responses we received from Bureau staff were reviewed for completeness and errors, and follow-up telephone contacts were made when necessary.

We verified and supplemented the information from the questionnaires during visits to 14 Bureau field offices. For these reasons, we believe the methodology employed was well-founded, methodologically sound, and fully supports our conclusions and recommendations. Finally, at the outset of our work, Bureau officials told us that they agreed with the validity of using a questionnaire approach to the assignment.

2. During the course of our work, we obtained, analyzed, and considered the Bureau's policy and program direction guidance. The report recognizes the Bureau's policy and program direction in chapter 1 and elsewhere. The focus of the report, however, is not the adequacy of policy and program direction but rather how well these policies were being implemented at the field office level. In this context, the Bureau acknowledged that it needs to more effectively communicate current policy and program direction to its field offices.

3. Neither the final report nor the draft reviewed by Interior recommended increased funding and staffing. Rather, the theme of the recommendations throughout the report is that the Bureau should better focus existing limited resources on those grazing allotments threatened with further deterioration and most in need of management attention.

4. In chapter 2, we recognize that it is the professional opinion of the Bureau's range managers that range conditions overall are improving. However, these same range managers believe that the information reported on range condition may not be reliable because up-to-date data on range condition are lacking for much of the public rangeland. The condition of most rangeland has not been recently assessed. For this reason, we found it necessary to obtain the views of Bureau professionals on the current condition of the rangelands through the use of a statistically valid sample of nearly 400 questionnaires. While the questionnaire results generally support the Bureau's view that, overall, rangelands are improving, they also highlight a serious problem with nearly 20 percent of the lands that are overstocked and/or declining. Professors Thadis W. Box's and John C. Malechek's paper entitled Grazing on the American Rangelands, which was enclosed with Interior's comments, is not included in this report.

5. GAO recognizes in chapter 5 of the report that staffing constraints and other priority projects—such as development of grazing environmental impact statements—are a major reason why more progress has not been made in developing AMPs and in monitoring allotments.

6. As stated in comment #1, we believe our conclusions are well supported by the factual information on which they are based. While the factual information supporting the conclusions is substantially based on questionnaire results, it should be noted that (1) the questionnaire results contained information from the Bureau's case files as well as the professional opinions of the Bureau's own range managers who were most familiar with the grazing allotments on which the responses are based; (2) we reviewed each questionnaire, and in those cases where questions arose we contacted the range manager to discuss and resolve the questions; and (3) we verified and supplemented the information provided in the questionnaires in visits to 14 Bureau field offices. Finally, on this point, it is interesting to note that while Interior questions the validity of our use of the professional opinions of its own range managers who are most familiar with the grazing allotments involved, it also relies on their opinions in reporting on range conditions. For example, as discussed in chapter 2, 34 percent of the information contained in

the Bureau's 1986 report on range conditions and trends is based on the professional opinion of Bureau staff.

With regard to new policy guidance, see comment #2.

With regard to recognizing budget shifts, we agree that a funding increase for monitoring activities will help to accelerate the rate at which monitoring objectives can be met. A longer term analysis, however, shows that within the Bureau the number of staff assigned to rangeland management is still lower today than it was in 1981, and as we point out in chapter 5, it could be 15 years before the Bureau completes allotment management plans for just the high priority grazing allotments that the Bureau has identified for "intensive management."

The completion of grazing EISs is discussed in comment #5.

Improvements in range condition are discussed in comment #4.

7. We recognize that in the opinion of the Bureau's range managers, about 80 percent of the allotments in our sample are stocked at or below carrying capacity. Our report focuses on the remaining 20 percent of the allotments that the Bureau's range managers indicate are overstocked because excessive grazing can seriously and even permanently damage the rangeland resources.

8. In chapter 5, we note that the Bureau has initiated a program to establish periodic monitoring schedules for allotments identified for intensive management.

9. We recognize in chapter 4 that the Bureau has issued policy guidance on selecting which range improvements to fund. Our concern is that in implementing the policy guidance, declining and overstocked allotments are proportionally receiving the same range improvement funding as other allotments not threatened with further deterioration.

10. In chapter 5 we recognize that the Bureau's policy is to encourage its field offices to develop allotment management plans for allotments designated for intensive management—in theory focusing on those allotments most in need of management attention. In practice, however, we found that sufficient management attention is not being concentrated on allotments which range managers have identified as overstocked and/or declining and, thus, most threatened by further deterioration. For example, of the Bureau allotments identified as overstocked and/or declining,

60 percent had no allotment management plans and 27 percent had plans that were more than 10 years old. Our point here is that a priority system that is not focusing attention on 87 percent of the allotments identified as overstocked and/or declining obviously needs some refinement.

11. Since the Bureau already recognizes the need to more effectively communicate its policies to its field offices for implementation, we see no need to make an additional recommendation.

12. We have no comment since questions are not being raised concerning our draft report.

13. Notwithstanding the guidance the Bureau has issued to field offices, range managers told us that 75 percent of the grazing allotments they identified as overstocked, and thus in greatest danger of deterioration, were not scheduled for grazing reductions. In fact, 37 percent of these same allotments had not had a carrying capacity assessment in over 20 years. While we do not take issue with the Bureau's guidance, we are concerned that in practice many allotments that are most threatened by the effects of overgrazing are not being addressed. The intent of our recommendation on this matter is to encourage the Bureau to better focus its attention on completing assessments and making appropriate adjustments on those grazing allotments most threatened by further deterioration.

14. We recognize in chapters 4 and 5 that the Bureau has categorized its allotments and designated some for intensive management. However, this categorization process has not resulted in an emphasis on funding range improvements on allotments where conditions are declining. As we point out in chapter 4, allotments in declining condition do not proportionally receive any more range improvement funding than other allotments. The intent of our recommendation on this issue is to encourage the Bureau to sharpen its range improvement funding selection criteria to better focus the limited resources available on those grazing allotments that are most threatened with further deterioration.

15. In chapter 5 we recognize that the Bureau has targeted some allotments for intensive management. We commend the Bureau for establishing a system to rank its grazing allotments for management attention. We believe that ranking allotments is essential given the vast amount of rangeland managed by the Bureau and the limitation of staff and funds. However, we believe that the Bureau's system currently does not focus

sufficient attention on declining and overstocked allotments. This is demonstrated by the information we present in chapter 3, in which the agency's range managers state that grazing adjustments are not being made on overstocked allotments because of insufficient range monitoring data. Furthermore, as we discuss in chapter 5, for those allotments that the Bureau range managers identified as overstocked and/or declining, 60 percent had no allotment management plans and 27 percent had plans that were over 10 years old. The intent of our recommendation on this matter is to encourage the Bureau to refine its management priority system to better identify and concentrate management attention on those allotments most threatened by further deterioration.

16. In chapter 6 we recognize the Bureau's comments that insufficient time has passed to determine how effective projects developed under the Experimental Stewardship Program have been in improving range conditions. We are also aware that the first three projects did not become fully operational until 1982. As we state in chapter 6, baseline information on range conditions at the start of the program generally was not gathered and monitoring information on changes in range conditions during the program was not gathered for most allotments. Without such information, we question whether the Bureau will be in a position to demonstrate that range conditions have improved by 1992.

17. No comment.

18. We agree that inventories more than 5 years old can contain information that accurately represents current range conditions. However, as we show in chapter 2, 28 percent of the Bureau's range managers indicate the range condition of grazing allotments is unknown. This raises questions as to the accuracy of at least some of the information in the Bureau's present range condition inventories.

19. It is not our intent nor does our report state that excellent or climax range condition is necessarily the best or most desirable. Our report is more concerned with range in declining condition and especially range that is being threatened with further deterioration because of overstocking. We are concerned with preventing further deterioration on range regardless of whether the Bureau has classified the range as excellent, good, fair, or poor.

20. We have made the suggested change.

21. The information on program cost, cost per AUM, and grazing fee receipts presented is that provided to GAO by Forest Service economists. The information along with similar information obtained from the Bureau is unaudited and was used as background information only.

22. We agree. In chapter 2 we disclose that the Bureau's 1986 range condition and trend report was derived from a variety of sources, including ecological monitoring, other monitoring, and professional judgment.

23. Sentence deleted.

24. We agree with the Bureau that improving grazing management can help prevent damage to range resources. The manner and season in which grazing is conducted can reduce the impact of grazing on plants and soils. Therefore, the manner in which grazing on an allotment is managed is a critical consideration in establishing an allotment's livestock carrying capacity. This fact is now recognized in the report.

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