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EFFECTS OF LIVESTOCK GRAZING ON WILDLIFE, WATERSHED, RECREATION AND OTHER RESOURCE VALUES IN NEVADA

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United States Department
of the Interior
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DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

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FEBRUARY 1975

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INTRODUCTION

Following an April 1973 Washington Office evaluation of the various resource management programs in Nevada, a team was designated to conduct an analysis of the range management program and its conflicts with other resources. A preliminary paper was completed in April 1974, which has served as the basic working document for this report.

An evaluation is a review of activities to assess conformance with Bureau policies and procedures and to identify situations and problems requiring action or guidance.

Typically, an evaluation report is an internal document used by an agency as a management tool. However, a request for public review of the preliminary paper resulted in its widespread distribution. This final report will be treated similarly. Format has been changed to reduce duplication of material and to conform to that typically used for evaluations. A second field review of conditions in Nevada was made during October 1974. This was done primarily to consider the effects of drought conditions and improve the report's comprehensiveness and analysis.

Due to the distribution the report will receive, it includes some features not typically found in an evaluation. These are:

I. Glossary of terms

II. Public land grazing history

III. Nevada drought condition - 1973-1974

IV. Major report modifications

I. GLOSSARY OF WORDS AND PHRASES USED IN THIS EVALUATION REPORT a/

Adjudication (or range adjudication) - The allocation of grazing areas of use or allotments, season of grazing use, numbers and class of livestock to qualified livestock operators.

Allotment - An area of land where one or more individuals graze their livestock. It generally consists of National Resource Lands but may include parcels of private or state owned lands. The number of livestock and season of use are stipulated for each allotment. An allotment may consist of several pastures or be only one pasture.

Allotment Management Plan (AMP) - A concisely written program of livestock grazing management, including supportive measures, if required, designed to attain specific management goals in a grazing allotment.

Animal Unit Month (AUM) - The amount of forage required to sustain the equivalent of one cow or five sheep for one month.

Browse - As a verb, to consume, or feed or eat on (a plant); as a noun, the tender shoots, twigs, and leaves of trees and shrubs often used as food by cattle, deer, elk and other animals.

Carrying Capacity - In its true sense, the maximum number of individual animals that can survive the greatest period of stress each year on a given land area. It does not refer to sustained production. In range management, the term has become erroneously synonymous with grazing capacity. See grazing capacity.

Cfs - Cubic feet per second - a measure of volume of moving water in a stream.

Changing Season of Use - Adjusting the time of livestock grazing on a range area based on type of vegetation or stage of vegetation growth.

Class of Livestock - Kinds of domestic livestock grazing on a range - cattle, horses, sheep or goats, or a combination of these. May be broken into greater detail such as cows with calves, yearlings, steers, ewes, ewes with lambs, lambs, etc.

Class I Qualifications - The amount of grazing privileges (AUMs) granted to a livestock operator based on the average annual amount of forage customarily and properly utilized from the National Resource Lands during portions of the five-year period prior to passage of the Taylor Grazing Act. The grazing privileges granted would be the lesser of the (1) capability of privately owned or controlled base property to sustain the number of livestock for a specified time period, or (2) the average annual amount of forage customarily and properly utilized on National Resource Lands.

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a/ A variety of definitions exists for many of the words and phrases used in this report, particularily in grazing administration. A conscious effort has been made to avoid legalistic and unduly complicated meanings. Some definitions may have limited utility outside of this report.

Class II License - Grazing privileges granted on the basis of forage being produced on National Resource Lands that is in excess of the amount needed to sustain the number of livestock allowed for Class I Qualifications.

Climax Vegetation - The final vegetative community which emerges after a series of successive vegetational stages and perpetuates itself indefinitely unless disturbed by outside forces.

Crested Wheatgrass - (Agropyron desertorum) (Fisch.) Schult. Formerly known as Agropyron cristatum. A grass species introduced from the Old World that has proved useful for regrassing northerly areas of the western rangelands. It is a valuable livestock forage species.

Critical Wildlife Habitat - That portion of the living area of a wildlife species that is essential to the survival and perpetuation of the species either as individuals or as a population.

Custodial Management - Livestock grazing where only numbers and class of animals and the grazing season are specified by the BLM. Livestock are allowed free access to any part of the range area throughout the grazing season and use of the area follows the same general pattern each grazing season. This does not include areas under AMP.

Environmental Analysis Record (EAR) - An analysis of environmental impacts of proposed actions and the development of alternatives and mitigating measures. A recommendation will be made from an EAR that an EIS is or is not necessary.

Environmental Impact Statement (EIS) - An analysis of environmental impacts of proposed actions and the development of alternatives and mitigating measures.

Forage - Vegetative material produced by plants that is used as food by animals.

Forb - A broadleaved plant providing forage for animals.

Ft./sec. - Feet per second. A measure of velocity of moving water.

Grass Tetany - An extreme irritability of the neuromuscular system which in severe cases results in convulsions and possibly death.

Grazing Capacity - The maximum stocking rate possible without inducing damage to vegetation or related resources, expressed in AUMs in this report.

Grazing System - A systematic sequence of grazing use and nonuse of an area, which is designed to achieve established objectives.

Habitat - Food, cover, water and space used by animals.

Habitat Management Plan (HMP) - A BLM plan to manage the various components of the habitat to predetermined goals and objectives for individual or groups of species. The plan is implemented in a specific geographical location. Components of the habitat include food, water, cover and space requirements for the wildlife species. Goals and objectives are normally defined through the BLM planning process. Methods are identified and included within the plan for reaching objectives. Evaluation procedures are established within the plan for measuring progress toward achieving objectives. These plans are coordinated with the state wildlife agency who are responsible for species management.

Herbicide - Any chemical used to eliminate or partially eliminate an unwanted plant.

License - An authorization which permits the grazing of a specified number and class of livestock on a designated area of grazing district lands for a period of time, not in excess of one year.

License, Temporary (Temporary Nonrenewable License)- A nonrenewable license issued for a period not to exceed one grazing season. As referenced in this report, it usually is the licensing of grazing use in addition to that permitted in a regular license.

Litter - A surface layer of loose organic debris consisting of freshly fallen or slightly decomposed organic material.

Management Framework Plan (MFP) - Land use plan for National Resource Lands which provides a set of goals, objectives and constraints for a specific planning area to guide the development of detailed plans for the management of each resource.

Meadow - An area of moist low-lying grassland usually along a watercourse supporting a more dense stand of grasses and forbs and perhaps dwarf shrubs as compared to adjacent more arid uplands.

Meadow, Dry - An area where during the spring, early summer, and in some open winters there is a greenup of succulent vegetation. These areas are relatively few in number and highly important for sustaining animal populations within whose habitat these meadows exist. During the summer and fall there is normally dry vegetation.

Meadow, Wet - A perennial wet area where the water table is maintained at or close to the ground surface to maintain shallow rooted water dependent vegetative complexes.

National Resource Lands (NRL) - Public lands administered by the Bureau of Land Management.

Nonuse, Regular - Is the waiver of grazing use at the request of the operator and approved by the authorized officer.

Nonuse, Suspended - Is that portion of grazing qualifications which are held in suspense and cannot be activated until the Bureau has determined through studies that additional livestock forage is available while satisfying other demands for the forage resource. Suspended nonuse is the difference between the current grazing capacity and the estimated productive potential expressed in AUMs.

Overgrazing - Consumption of vegetation beyond the endurance of a plant to survive its normal life span.

Permit - An authorization which allows grazing of a specified number and class of livestock on a designated area during specified seasons of the year.

pH - A numerical measure of the acidity or hydrogen ion activity. The neutral point is ph 7.0. All pH values below 7.0 are acid and all above 7.0 are alkaline.

Plant Succession - The process of vegetational development whereby an area becomes successively occupied by different plant communities of a higher ecological order. This can occur naturally or be man caused.

Predator - An animal that preys on one or more other animals

Productive Potential - Estimated increased grazing capacity potential of an area resulting from rehabilitation and management practices. It should represent a practical management goal or objective, attainable after a reasonable period of time (usually 15-25 years for most ranges).

Range Survey (Forage Production Survey) - A method of measuring or estimating the grazing capacity of the NRL for livestock and wildlife. Exact accuracy is difficult to obtain and being within 10% of actual grazing capacity is considered acceptable.

Riparian Vegetation - Plants adapted to moist growing conditions found along waterways and shorelines. They are frequently important as wildlife habitat because of their greater density and succulence.

Seral Vegetation - A stage or level of plant succession which occurs prior to the vegetation reaching climax.

Stocking Rate - The degree to which a grazing unit is stocked with livestock, usually expressed in AUMs.

Unit Resource Analysis (URA) - A comprehensive display of physical resource data and an analysis of current use, production, condition and trend, potentials and opportunities within a planning area. It includes the resource classes of lands, minerals, recreation, wildlife, forests, range and watershed and a profile of ecological values.

Utilization - The proportion of current year's forage production that is consumed or destroyed by grazing animals. Usually expressed as percentage.

Velocity - A rate of speed. Velocity of the stream is 2.3 Ft./sec. means the water is moving 2.3 feet (distance) per second (time).

II. PUBLIC LAND GRAZING HISTORY

Before the settlers arrived in the western United States, natural ecosystems existed throughout the area. Within some of these ecosystems were large herds of herbivores such as bison, antelope and elk. There were no man-made barriers to restrict their free movement and, as a consequence, these animals moved at will. When food or water became scarce in an area or seasonal climatic changes dictated, the animals moved to a new range or suffered increased mortality.

The ecosystems of the western United States have developed under grazing and trampling pressure of ungulates that have consistently been a component of these ecosystems. During the exploration period of the West, the western rangelands were recognized as having a great potential for livestock production. As a result, many large-scale livestock operations created significant vegetative changes in the range ecosystems. The transition from wildlife to domestic livestock upset the natural ecosystem, not because of the difference in the grazing animals, but because of the increased numbers, wrong seasons of use, confinement and losses in available grazing areas caused by homesteading, urban expansion and other development.

During the 19th and 20th centuries, as the human population increased and settlement expanded westward, numbers of livestock in the West also increased replacing the native herbivores in the ecosystem. Bison populations were sometimes deliberately decimated to reduce their competition with livestock and also to eliminate food sources of those Indians dependent on wildlife for their existence.

The range ecosystems that once supported an incredibly vast number of large herbivores as well as sm ller wildlife forms underwent some drastic changes in vegetation composition because of the grazing habits and the confinement of the domestic livestock within man-made barriers. In addition, thousands of acres of the range ecosystems were being converted to farmland, thereby significantly reducing the size of the original range ecosystems. For example, nearly 200 million acres of the tall grass prairie were converted.

Through the various activities of man, many ecosystems underwent deterioration because of the loss of the productive topsoil through accelerated wind and water erosion. By 1900, the productive capacity of the area that was to become the National Resource Lands of today had been greately reduced.

The expansion of the railroads into the western United States helped supply increased demands for meat in the East. The railroads expanded the marketability of western beef and increased the interest in livestock production on western rangelands.

During this period, there was a growing concern among the users of the western rangelands over the destructive use being made of the lands. Migrant sheep herds were moved from range to range and were often in direct competition with local sheep and cattle for forage of the National Resource Lands. The local stockmen, through homesteads and other land and water acquisitions, had established operations with designated geographic areas and attempted to exert control of the National Resource Lands through registration of water rights, herding laws and the like. Insufficient rangeland and inadequate forage production failed to sustain the livestock industry that had developed. Also, though it may have helped little in view of the competitive relationships that existed at that time, the level of knowledge about man's impact by livestock grazing on the range ecosystem was limited during this period. Related research was nonexistent.

Rangeland conditions became critical during the early 1930's, and in 1934, the Taylor Grazing Act was enacted by Congress. The purpose of this Act was to stop injury to the National Resource Lands resulting from unrestricted grazing; to provide for their orderly use, improvement and development; and to stabilize the livestock industry depending on the National Resource Lands.

To implement the Taylor Grazing Act, a Division of Grazing was established within the Department of the Interior. Regulations to put the Taylor Grazing Act in force became known as the Federal Range Code.

The initial job of the 47 field personnel in the Grazing Service was to divide the National Resource Lands for use by established livestock operators in accordance with historic grazing use. With minimal funds and manpower to administer the Federal range during the early years of the Grazing Service, the District Advisory Boards that were organized pursuant to the Act provided valuable assistance to field personnel in matters affecting grazing administration. Livestock operators contributed time and money to bring about orderly administration and to develop range improvements.

With initial emphasis on basic allocation of grazing privileges, there was little attempt during this period to adjust grazing use to the ability of the land to sustain grazing. The extent of the grazing privileges issued was based primarily on the use made by the livestock operator during the 5 years prior to the passage of the Taylor Grazing Act and on the applicant's control of either private land or water.

There was little broad public interest in the condition of western rangelands at that time. Minimal congressional funding to implement the Taylor Grazing Act was proof of this public apathy. In addition, Grazing Service officials played down the need for realistic funding.

The Grazing Service and the General Land Office were combined to form the present Bureau of Land Management (BLM) in 1946.

Increasing awareness of resource management needs, as a result of studies revealing the extent of poor condition of the land, led to increasing emphasis for better management. By 1950, appropriations had increased sufficiently to allow BLM to hire additional professional range conservationists for the range management program. Inventory of the range forage resource began for the first time which enabled the range manager to calculate the number of livestock that could properly graze an area.

Based on these studies, ranchers were allocated certain areas with a given number of animals during a given season of use. These decisions often conflicted with the rancher's historic use of the range and required a reduction in livestock use, which did not always stop range deterioration. It was, however, a first step in management; a beginning point. This range adjudication process often resulted in lengthy legal proceedings during which the grazing continued.

By 1965, the majority of range adjudications were complete and BLM management efforts were directed toward the development of a more intensive form of livestock grazing management. This was the beginning of the allotment management plan program which today has gained broad acceptance by livestock operators, game management agencies and conservation groups.

District Advisory Boards played an important role in the history of public land grazing. They were established by the Taylor Grazing Act. The basic composition of these Boards consists of not more than 13 members -- 12 to be elected livestock users and one wildlife representative. The wildlife representative is appointed by the State Director.

Through the years, the Advisory Boards' utility in assisting the Bureau in grazing matters has declined. It should be recognized that at the time advisory boards were established, the shortage of grazing service personnel coupled with the charge to implement the Taylor Grazing Act required this type of assistance. This is particularly true when recommendations regarding stockmen's areas of prior use and numbers of livestock were under consideration.

The Advisory Boards review transfers of grazing privileges, applications for grazing use and permits for private construction of improvements on public lands, grazing capacities and other matters. Applications from individuals are received by BLM who then presents them to the Board. Presentations typically include a discussion of the factors involved. Information that the Board may have is discussed and a recommendation voted. The Boards do not initiate applications for grazing use or for facilities for livestock use, but rather make recommendations for approval or rejection of applications. In some instances, they also review and make recommendations on other matters when the district manager feels their input would assist him in making a decision.

III. NEVADA DROUGHT CONDITIONS - 1973-1974

Terrain, storm patterns and information from only three weather stations (Winnemucca, Ely, and Las Vegas) do not give a complete picture but the records do tell part of the story of the recent drought situation in Nevada. Precipitation data are plotted in Illustration 5.

Total precipitation is one significant factor in forage production. The effectiveness of precipitation is influenced by its intensity, frequency, the time of year and wind velocities. With the exception of southern Nevada, precipitation during March, April and May in Nevada in the Intermountain Basin province is considered to have the most marked effect on current year forage production.

The three stations mentioned began to receive moisture at the mean or below beginning in September 1973 and continuing through spring and summer of 1974. This was the general trend except for minor recordings above the mean. These low precipitation events coupled with winds in the spring of 1974 led to the drought condition observed in the districts in Nevada. Drought is not an unknown event in the western states, but this one is critical because it has come at a time when livestock prices are low and hay and grain prices are high. These conditions are thought to be a factor in the utilization of forage and observed condition of ranges; however, specific measurements are unknown. Local boards have been established to review applications for drought relief.

IV. REPORT MODIFICATIONS

In this evaluation, as in most others, the final findings, recommendations, problems and informational content are somewhat different than initial writings. Additions, deletions and changes occur for several reasons. These include: availability of new information; assessment of significance of items;

relationship to the scope of the evaluation; lack of specific supporting facts and simple error.

The more significant differences occur in the general categories of planning, organization, vegetative inventory, conversion of class of livestock and season of use and fencing and antelope migration. These are discussed briefly below.

Planning

Multiple use planning, individual activity (resource) planning, and specificity of MFP's are not specifically discussed in this final report. Inasmuch as MFP's are peripheral to the scope of the evaluation, no further references have been made.

Data Storage and Retrieval

There is an ongoing contract which when completed will report on BLM's automation requirements. Since it should provide guidance in the matter of aggregating and storing resource data this evaluation will defer recommendations in that area to the contractor.

BLM Organization

A preliminary recommendation to reorganize within Districts by eliminating the resource area manager concept and establishing a dual staff -- one for technical input and one for administrative duties has been deleted. An indepth analysis of organizational structure was not undertaken by the evaluation team whereas, District organization has been the subject of an intensive study under the leadership of the Division of Management Research. That study, initiated in mid-1972, involved 26 District Offices in ten states and included 849 interviews and 1,126 questionnaires.

Final results of studies in Wyoming and Utah and interim reports confirm the soundness of the Area Manager organizational concept and arrive at two fundamental conclusions:

1) There is a need for interdisciplinary skills at the District level to accomplish the varied BLM resource management responsibilities, and,

2) Area management use supervision and regulation enforcement must be particularily geared toward multiple-use considerations.

Emphasis toward supervision and regulation and interdisciplinary considerations are emphasized in a November 27, 1974 BLM Director's instruction memorandum to all BLM management officials (Appendix 1). Efficiencies in use supervision and management may be expected of the organization through adoption of the major considerations for change in the grazing regulations as highlighted in Appendix 2.

Vegetative Inventory

New vegetative inventories are not discussed as such in this report but are related to findings concerning allocations of forage for wildlife and data gathering for evaluating effects of grazing.

The objectives to be realized from new inventories are believed to be largely attainable in other ways. These include: a) actual use and forage utilization studies; b) integrated range condition studies described in recent instruction memoranda; and c) review of prior range surveys through sampling.

Conversion of Class of Livestock and Season of Use

There was not sufficient data to document the premise of conflict between historical antelope use and the conversion of winter sheep use to spring-summer-fall cattle use.

Fencing/Antelope Migration

Certain fence designs and location can interfere with the migration of antelope; however, no such specific problems were identified in Nevada, and this discussion has been deleted.

Form 1240-7
(July 1967)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

EVALUATION WORK SHEET

Date	Work Sheet Number
11-1-74	1 of 11
Office: Nevada	
Type of Evaluation: Special	
By (office): Washington	
Activity: Range	

Findings

With existing manpower it is not possible to provide adequate livestock grazing supervision on the National Resource Lands in Nevada.

(Continued)

Recommendations

Initiate a study to see what necessary data gathering, supervision and evaluation processes could possibly be contracted to individuals or universities or accomplished with temporary personnel.

FINAL REVIEWING OFFICER	Date 2/4/75	Signature George L. Turnbull

FOLLOWUP

Assigned to (office): Nevada State Office

Date assigned: 2-4-75	Completion deadline (60 days)
Date completed	Action officer

* U.S. Government Printing Office: 1973-784-257/2156 Region 8

In three districts visited limited manpower does not allow adequate supervision of the Range program or other resource activities. A summary of personnel, including area managers, available for range supervision is as follows:

District	Range Supervision Personnel	Approx. Ac. Administered	Ave. Percent Office Time 1/	Ave. Percent Field Time 1/
Winnemucca	9	8,500,000	65%	35%
Ely	8	8,200,000	70%	30%
Las Vegas	5	12,300,000	70%	30%

1/ Based on estimates obtained during interviews

When supervision is available, it is limited in nature. Some of the major factors contributing to this problem are:

a) long distances between areas;

b) restricted speed limits;

c) GSA mileage limitations; and

d) inadequate travel funding

Minimal supervision is extended to custodial management areas. Greater supervision is applied to allotments under grazing management plans or allotment management plans. This more intensive management and closer supervision has resulted in considerable vegetative improvement in many allotments, but overall, supervision is still inadequate.

Numerous events are occurring that indicate supervision is inadequate and necessary corrective action is not being taken. The following statements are extracted from various case files:

> Rye Patch Allotment: "Broke system last of April, 1970, the first year of the plan. Broke system in 1971 by putting cattle into the rest field at turn out time."

Mustang Allotment: "On March 9-11, 1971, cattle were in all pastures except the south pasture. Cattle were weak and forage heavily utilized." The writer recommended change in the grazing system and closer supervision.

Sand Springs Allotment: April 5, 1972. "Cattle have not been moved into Pasture No. 1." The user had been notified on February 26 and again on March 17, to move the cattle. In the same allotment a large number of cattle were in the northwest pasture on March 9-11 when they should have been out by February 1, as the pasture was slated for rest that season.

The problems of grazing supervision are compounded by the short tenure of personnel in one location. Few area managers or personnel under their supervision remain in place longer than 3 years which is inadequate to become very familiar with an area.

In large, complex resource areas, a resource manager's development and knowledge of the land takes many years. Under the existing short tenure situation, lack of time and familiarization with the area preclude the correction of many of the complex problems.

Form 1240–7
(July 1967)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

EVALUATION WORK SHEET

Date 11-1-74	Work Sheet Number 2 of 11
Office Nevada	
Type of Evaluation Special	
By *(office)* Washington	
Activity Range	

Findings

Generally, funds for the range and watershed improvement have not been used to mitigate the effects of these programs on other resource values.

(Continued)

Recommendations

A. Mitigating measures are an integral part of range improvements and should be funded as such by the initiating activity.

B. Washington Office should formalize policy regarding use of funds for mitigating measures.

FINAL REVIEWING OFFICER	Date 2/4/75	Signature George L. Turcott

FOLLOWUP

Assigned to *(office)*

A. Assigned to Nevada State Office — B. Assigned to Asst. Dir., Administration

Date assigned 2/4/75	Completion deadline *(60 days)*
Date completed	Action officer

GPO 836

Historically, most project funding in Nevada has been directed toward range and watershed programs where resource problems and range management needs were identified. In the past, both in Nevada and Bureauwide the concept of fund utilization was very restrictive in the sense that range/watershed funds could only be used for items that were directly related to these programs. Practices such as fencing spring developments and reservoirs, adding browse seed to benefit wildlife in seeding projects, and including bird ladders in watering tanks were usually considered to benefit only wildlife and therefore did not qualify for range or watershed funding. These factors, and a dearth of wildlife biologists until 1974, resulted in a dominance of both range/watershed funding and project development.

An apparent imbalance continues to exist today as does a lack of understanding of what use is now permitted with various funds. The following table illustrates FY 1975 funding requests within the cost targets provided to two districts.

District	Range Projects	Watershed Projects	Wildlife Projects
Winnemucca	73,500	107,000	3,500
Ely	91,000	65,000	-0-
Total	$164,500	$172,00	$3,500

The disparity between the range/watershed and wildlife funding need not necessarily result in an adverse impact upon wildlife. Mitigating and/or complementary wildlife project features should be included and expenses borne by range/watershed project funding. Similarly the archeological evaluations that are prerequisite to project development should continue to be funded by the initiating activity.

Although the range/watershed projects may be fewer in number or smaller in size as a result of the expense associated with mitigating measures, funds should be used for these purposes. However, funds made available for one resource activity cannot be used to initiate or carry out the activity plans for another resource.

Form 1240–7
(July 1967)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

EVALUATION WORK SHEET

Date	Work Sheet Number
11-1-74	3 of 11

Office: Nevada

Type of Evaluation: Special

By (*office*): Washington

Activity: Range

Findings

Range and livestock management outside of intensive management (AMP) areas is insufficient to sustain the forage required for wildlife, livestock, wild horses and ground cover for watershed protection.

(Continued)

Recommendations

A. Those areas of declining vegetative conditions due to livestock grazing should be identified and corrective action initiated. This should be done in a manner that gives priority to areas where impacts are/will be having the greatest effect.

FINAL REVIEWING OFFICER	Date 2/4/75	Signature George L. Turcott

FOLLOWUP

Assigned to (*office*): Nevada State Office

Date assigned 2/4/75	Completion deadline (*60 days*)
Date completed	Action officer

* U.S. Government Printing Office: 1973-784-257/2156 Region

1974			
Allotments Not Under AMP's	783	Acres Not Under AMP's	41,598,363
Allotments Under AMP's	88	Acres Under AMP's	5,731,000
Total Allotments	871	Total Acres	47,329,363

Three levels or degrees of livestock grazing management are being exercised on allotments. These are:

(1) Intensive-type management such as that under allotment management plans (AMP's). The AMP is a formal, signed plan of operation. In Nevada it is usually a system of rest-rotation grazing. Some of the 88 AMP's which have been initiated are not fully implemented because of lack of fencing and/or needed water developments;

(2) A second level or degree of grazing management is provided by grazing management plans. These are less formal than AMP's and usually do not define objectives.

(3) "Custodial management" has been used to identify allotments where neither an AMP or a grazing management plan has been initiated by BLM with licensee/permittee cooperation. On these allotments, grazing licenses are issued specifying a certain number and kind of animals, months of use and area of use. Allotments are usually used on a continuous year after year basis with no consideration for the physiological requirements of the vegetation. Most areas in Nevada are under "custodial management".

Under the grazing use described under "custodial management" above, plant cover is thinned, undesirable vegetation increases or invades, and soil erosion occurs. These events are caused by selective grazing due to varying palatability of plants, location of or lack of water, variation in terrain and accessibility, and uneven distribution of livestock. This condition is widespread on custodial management areas observed in Nevada.

The lack of grazing management systems in custodial areas provides inadequate protection for forage and soil resources. Uncontrolled or unregulated use of rangelands results in animals remaining in certain areas until the scarcity

of food forces them to move. As a result, historic use areas around permanent waters such as streambanks, reservoirs, and springs are in critical to severe erosion classification. Steeper slopes and lesser used areas away from water are classified as slight to moderate (Paradise URA and Rock Creek AMP). Concentrated use results in the removal of riparian vegetation and causes streambank cave-ins. High water causes sediment flush and results in increased suspended-sediment load and water quality degradation.

Data from the watershed rating system indicates that at the present 60% of the land is in a stable to slight erosion condition class (Illustration 3). Forty percent is in moderate, critical or severe condition. If there is no change in management over the next 15 years, approximately 44% (a 14% decrease) of the land will be in the stable or slight erosion condition class; 56% (a 14% increase) will be in moderate, critical or severe erosion condition.

The Duckwater area illustrates the case quite well. The range survey shows a carrying capacity of 33,652 AUM's within the allotment, yet only 15,695 AUM's were licensed in 1972. This is less than half of the capacity determined by the range survey. At the same time, the only cattle observed were immediately north of the Indian reservation in an area which has virtually nothing but the poisonous halogeton plant. Though only 50% use is being made, the cattle continue to graze the area which is in the most critical watershed condition.

Invasion of undesirable vegetative species into former grass and shrub areas was frequently observed in many of the areas. Illustration 2 indicates the acreage within each vegetative subtype. The majority of critical and severe

watershed conditions occur where brush encroachment is present.

Summary of Critical & Severe
Watershed Erosion Condition a/

Code No.	Vegetative Type	Acres Critical or Severe	% of Critical or Severe
041-044	Sagebrush	591,043	(35%)
091	Pinon-Juniper	239,939	(14%)
011	Creosote Brush	215,487	(12%)
131	Shadscale	121,704	(7%)
141	Greasewood	199,584	(12%)
	Subtotal	1,367,757	80%
	All Other	336,139	20%
	Total	1,703,896	100%

a/ Approximately 55% of inventory completed.

In the 20 years between 1954 and 1974, aerial photos of the Ely Springs Allotment indicate that the pinon-juniper type has moved three miles. With this rate of spread, at least in the more susceptible areas, we will be hard-pressed to keep from losing additional watershed protective cover and forage for wild and domestic animals.

The successional changes which occur are as follows:

> "Grass cover is weakened through some cause, natural or man-made, and sagebrush invades into the former grassland as a frontal or spot invasion. The sagebrush then adds more competition to the already weakened grasslands resulting in additional losses of grass density. As sagebrush becomes dominant barren niches are left within the stand, juniper takes advantage of these and becomes established. As the juniper enlarges, it overtops and shades out sagebrush growing in close proximity and pinon pine becomes established here. The final step is for the pinon to crowd out the juniper through moisture competition, and other factors, and become a closed canopy of pinon with very little ground cover understory remaining and only an occasional juniper. (Caliente URA.)

This process is going on today particularly where the pinon-juniper has become a closed canopy on the ridge tops and sagebrush occupies the swales between the pinon-juniper stands. If the swales were treated today to restore a good competitive grassland, the area may not change to a closed pinon stand.

One district covering 8 million acres estimates that there are 2.5 million acres of pinon-juniper within their jurisdiction. They also estimate 50-60% of the pinon-juniper type or some 1.25 million acres are currently unusable by domestic livestock for forage because of rugged terrain and/or closed or near closed canopy stands with little or no understory vegetation. Established areas of pinon-juniper will continue to thicken on the remaining usable acreage. Treatments such as chainings, seedings and controlled burning will be needed to restore other areas, particularly those now dominated by pinon-juniper. Wildfires, which years ago destroyed pinon-juniper, have been better controlled in recent years and the species has flourished.

In some areas under rest-rotation grazing management, such as the Sagehen Allotment, desirable perennial grasses are replacing shrub species. Many areas still having a remnant understory of perennial grasses could be similarly managed and restored to productiveness with no treatment other than careful grazing management.

With proper management practices that maintain rangeland plants in a near climax or seral state, there is, for the most part, no conflict with wildlife. In those few instances where there is direct competition between live-

stock and bighorn sheep or elk, and some wetland conditions, livestock grazing is in conflict with wildlife habitat management. Proper management can minimize these conflicts as long as the specific habitat requirements of these animals are recognized and taken into consideration when the management plan for a specific area is developed and implemented.

In a majority of cases, properly managed grazing enhances and improves the sustaining capabilities of rangeland for wildlife. Most wild ungulates, particularly deer and antelope, are not grazers but depend primarily on forbs and shrubs to satisfy their food requirements. Conversely, cattle prefer grasses. This compatibility is predicated on the condition that the delicate balance is maintained ensuring continued growth of both classes of vegetation.

Continued grazing of preferred plants promotes encroachment of invader or less desirable plants and causes the reduction of preferred species. A stage is reached where preferred grasses cannot provide the necessary forage that domestic livestock require. Then, out of necessity, they will turn to browse plants for forage. Livestock then become direct competitors with wildlife for available forage.

In discussing plant succession caused by grazing Daubenmire (1968) states:

> When a number of herbivores are confined in a unit of vegetation not previously subjected to heavy grazing pressure, succession is initiated mainly because the balance of competition among the plant species is soon upset. Each kind of herbivore has its distinctive food preferences when offered a given mixture of plant species, and this results in considerable damage to those plants which are most palatable. Heavy and repeated removal of foliage reduces photosynthetic capacity and food reserves, and in turn dwarfs root systems, so that grazed plants are weakened and their populations dwindle. Many changes in both soil and atmospheric conditions are affected by close grazing, and these environmental changes usually permit other species to gain foothold on the area. The net effect of

heavy grazing or browsing is to bring about a change from a community in which some or all of the plants species furnish food for the herbivores, to a new community in which the plants are relatively unpalatable or unavilable owing to growth form or phenology, or are remarkably capable of rapid regeneration when grazed. In limited areas trampling may be so excessive that even this community is destroyed.

Daubenmire, Rexford, Plant Communities; A Texbook on Plant Synecology Harper and Row, Publishers, New York, N.Y. 1968 300 pages. Pg. 174-5.

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UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

EVALUATION WORK SHEET

Date	Work Sheet Number
11-1-74	4 of 11
Office: Nevada	
Type of Evaluation: Special	
By (office): Washington	
Activity: Range	

Findings

Most allotment management plans (AMP's) that are now operational were designed and initiated prior to 1970. Most of the AMP's did not consider the requirements of other resources that would be directly affected by the application of the grazing system.

(Continued)

Recommendations

A. Review all allotment management plans (AMP's) in detail.

B. Revise them as necessary to be consistent with the principles of intensive grazing management. Do this so that the plans will achieve the objectives established for the allotment.

C. Provide for orientation of the livestock operators to the principles of intensive grazing management.

D. Insure that the Nevada multidiscipline review and approval process of AMP's continues to be used.

FINAL REVIEWING OFFICER	Date 2/4/75	Signature George L. Turnbull

FOLLOWUP

Assigned to (office): Nevada State Office

Date assigned: 2-4-75	Completion deadline (60 days)
Date completed	Action officer

GPO 836

Bureau Manual 4112.15B3 states:

> Although the AMP is basically a grazing management plan, the livestock use made of an area is influenced by the use and development of other resources. Needs of watersheds, wildlife habitat, frail lands, recreation and forested areas will be considered on the basis of existing information. The needs of other resources may impose constraints upon livestock use and influence the grazing system developed. Grazing use may be modified as additional resource data becomes available.

The majority of 23 AMP's reviewed either did not adequately identify or specifically provide for nonlivestock resource needs.

In many instances a system designed to improve important grass species was in direct conflict with browse production potential. For example, studies of bitterbrush have shown that a two-year cycle of rest is necessary for reproduction. The bitterbrush produces seed on the previous year's growth. In most grazing system designs reviewed, bitterbrush plants are not allowed the opportunity to reproduce.

In the Goldbanks AMP, Winnemucca District, wildlife values considered in the statement of objectives cannot be fulfilled because of the design of the grazing system.

Within several AMP's reviewed there were conflicts between objectives and other statements within the AMP. An example of these are within the Geyser, Sand Springs and Mustang AMP's. These three AMP's all had statements of objectives dealing with the desire to increase the total ground cover of living plus dead plant material.

Within these same AMP's were statements such as:

> "livestock can remain in open pastures after the seed ripe date as long as there is feed left" or,
>
> "these pastures will be utilized to the fullest extent possible. The limiting factors will be the condition of the livestock as determined by the range user" or,
>
> "under this plan, grazing.....should be as heavy as possible."

The amount of flexibility allowed in some AMP's results in uncertain, if not inadequate, resource protection. The following is one example of flexibility which appears to have adverse effects on the amount of litter remaining on the land.

Murray Creek Allotment:

> "Flexibility will be allowed the operator in the White Cloud Wash Area, to move his livestock between pastures when weather conditions make holding livestock impractical. This flexibility will be at the discretion of the operator and he will determine when weather conditions warrant livestock movement."

AMP's formulated since 1970 have more of a multiple use orientation and are more likely to enhance and maintain the public values of the national resource lands. The districts visited are reviewing the flexibility allowed in the plans with the intention of making revisions where appropriate.

The design of the grazing system and stocking rate applied to the range should be such that during average and above average years of vegetative growth a sufficient amount of litter is left for soil protection and enhancement. This insures maximum microbial activity within the soil and helps minimize soil compaction and sediment production resulting from grazing.

Although allotments being managed under a grazing management plan or an allotment management plan are in considerably better condition than allotments under custodial management, shortcomings exist on some of these more intensively managed areas.

For the most part, these areas are being managed under the principles of rest-rotation grazing. Several grazing plans reveal either incomplete knowledge of these principles or improper application of them. In summary, the following deficiencies, though not common to all grazing plans, were frequently encountered:

1. Usually only grasses are identified as key vegetative species. Palatable and nutritious shrubs such as cliffrose, bitterbrush, winterfat and fourwing saltbush are common in Nevada, but their capability of providing the food requirements of livestock and wildlife usually has not been taken into consideration in designing the grazing plan.
2. Failure to provide a sufficient number of treatments to meet the varying physiological requirements of a mixed vegetative composition.
3. The sequential arrangement of various treatments are sometimes wrong.
4. The necessary vegetative growth and reproductive information are often inadequate or lacking.
5. Allotments are divided into pastures of unequal grazing capacities.

6. Allotments are divided into pastures not having approximately equal amounts of low, medium and high elevation areas in each pasture.
7. The production and accumulation of litter is important in increasing soil fertility and water infiltration rates and reducing soil compaction and erosion. This factor seldom receives consideration in the design or operation of the grazing management plan.
8. Many plans permit too much flexibility at the initiation of the plan regarding amount of livestock grazing use, season of use, and numbers of livestock.
9. Many livestock operators appear to lack understanding of the principles and procedures involved in rest-rotation grazing management and as a result they are reluctant to abide by the grazing plan.

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UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

EVALUATION WORK SHEET

Date	Work Sheet Number
11-1-74	5 of 11
Office: Nevada	
Type of Evaluation: Special	
By (office): Washington	
Activity: Range	

Findings

Data gathered is insufficient to serve as a base for accurately evaluating the effects of custodial grazing management, grazing management plans or allotment management plans on other resources.

(Continued)

Recommendations

A. Grazing management plan and allotment management plan studies - Intensify and expand studies being accomplished to provide for wildlife and watershed vegetative condition and trend.

B. Custodial management areas - Develop and implement integrated condition and trend evaluation procedures for all vegetative resources.

FINAL REVIEWING OFFICER	Date 2/4/75	Signature George L. Turnbull

FOLLOWUP

Assigned to (office): Nevada State Office

Date assigned: 2-4-75	Completion deadline (60 days)
Date completed	Action officer

GPO 836-774

In the range program, only fragmented evaluation studies, field notations and occasional photos exist for areas under custodial management. In areas of AMP's, many studies initiated at the inception of the grazing plan have not always been updated in accordance with the established schedules. In some cases, no photos were taken to establish a forage base prior to initiating the grazing plan. With so little data available, it is difficult, if not impossible, to analyze existing conditions or determine range trend. The existing range studies generally do not provide for determining the condition or trend of wildlife habitat and watershed conditions.

Inadequate studies are due to lack of manpower and higher priority tasks rather than negligence or attitude on the part of BLM personnel.

A recent Washington Office Instruction Memo No. 74-327, "Integration of Range, Wildlife and Watershed Procedures", should provide more efficient use of manpower. Specialists in any one of the three disciplines can gather vegetative information usable by all.

A new procedure for range condition classification is in the final developmental stages. This procedure will utilize watershed and vegetative data and provide needed detailed information concerning range condition of the National Resource Lands. Much of the data gathered by watershed condition inventories in Nevada in the last three years will be used in this procedure.

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UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

EVALUATION WORK SHEET

Date	Work Sheet Number
11-1-74	6 of 11
Office: Nevada	
Type of Evaluation: Special	
By (office): Washington	
Activity: Range	

Findings

There have been no formal allocations of forage for wild horses and burros in Nevada other than a small amount (1,819 AUM's) which was allocated during a mid-1960's adjudication. It involved an area in the Carson City District where available forage exceeded the Class I grazing qualification of the livestock operator.

(Continued)

Recommendations

Initiate population control methods and make forage allocations to meet the requirements of the Wild Horse and Burro Act. This needs to be accomplished as soon as possible to provide for reasonable numbers of wild horses and burros that will not damage vegetative and other resource values on National Resource Lands.

FINAL REVIEWING OFFICER	Date 2/4/75	Signature George L. Turcott

FOLLOWUP

Assigned to (office)
Nevada State Office

Date assigned	Completion deadline (60 days)
2-4-75	
Date completed	Action officer

* U.S. Government Printing Office:1973-784-257/2166 Region 8

Public Law 92-195, December 15, 1971, directs the Bureau to protect and manage wild free-roaming horses and burros for their public interest values.

The program to meet the objectives of the Act includes:

1) inventory to determine animal numbers and location
2) processing claims for animals believed to be privately owned
3) determination of the number of aminals existing when the Act passed as it determines the minimum population
4) going through the planning and public participation process to determine where and how animals will be managed
5) removal of excess numbers as necessary
6) studies necessary to carry out provisions of the Act

The Bureau has not previously been required to set aside forage for wild horse and burro needs. Prior to enactment of this legislation, 1,819 AUM's had been allocated for use by these animals. 1/ No additional allocations have been made since passage of the protective law and no reductions in domestic livestock grazing have been made because of wild horse or burro numbers. It is reasonable to assume some of the regular nonuse taken by some livestock operators is because the forage has already been consumed by wild horses and burros and is not available.

Most recent estimates of wild horses and burros in Nevada are shown in the table below. These estimates include 7,300 animals which have been claimed.

	Battle Mtn.	Carson City	Elko	Ely	Las Vegas	Winnemucca	Total
Horses	3,550	2,500	2,600	3,550	900	7,200*	20,300
Burros	15	70	0	0	540	125	750

* Results of nearly completed aerial count, October 1974.

1/ The amount of forage available exceeded the Class I grazing qualifications of a livestock operator. Excess forage was allocated to the horses. Had excess forage not been available, it is unlikely a forage allocation would have been made for the horses.

Most of the figures shown on the table are based on estimates. When counting is completed statewide, the total number of horses may be as high as 25,000 head. This number would have a forage requirement of at least 300,000 AUM's annually. Aerial observations indicate horse populations in many areas are apparently increasing at an average of about 20 percent per year.

Current and predictable increases in consumption of forage by horses and burros represents a demand for which no provision has been made. As a result serious deterioration of range condition is occurring in some areas and will be accelerated if action is not taken to bring the grazing use in balance with available forage.

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EVALUATION WORK SHEET

Date	Work Sheet Number
11-1-74	7 of 11
Office: Nevada	
Type of Evaluation: Special	
By (office): Washington	
Activity: Range	

Findings

Under the present compilation of AUM's, vegetative material being produced is inadequate to meet the forage requirements of livestock active and regular non-use licenses, wild horses and burros, wildlife and the needs of other resource values on Nevada National Resource Lands.

(Continued)

Recommendations

Do not activate regular non-use taken for conservation and protection or activate suspended non-use unless there is assurance that the needs of other resources can be met at the proposed stocking rate. Similarly, do not issue temporary non-renewable or Class II licenses without having made this same assurance.

FINAL REVIEWING OFFICER	Date 2/4/75	Signature George L. Turnbull

FOLLOWUP

Assigned to (office)
Nevada State Office

Date assigned 2-4-75	Completion deadline (60 days)
Date completed	Action officer

* U.S. Government Printing Office: 1973-784-257/2196 Region 1

Class I livestock grazing qualification demand is 2,938,621 AUM's and exceeds established livestock grazing capacity of 2,428,104 AUM's by 510,517 AUM's (Figure 1, p. 41). The difference is accounted for, in part, by 426,541 AUM's that were placed in suspended non-use during adjudications. The other part, 83,976 AUM's, is recognized demand in excess of established grazing capacity. This amount may or may not have been compensated for with increased forage resulting from seedings, chainings and herbicide applications.

Suspended non-use was imposed on livestock operators in areas where there was a lack of forage. The amount of suspended non-use imposed was the difference between the grazing capacity and the estimated productive potential of the range as determined by the district manager.

Regular non-use in 1972 (652,938 AUM's) was greater than suspended non-use (426,541 AUM's). Non-use totals 1,079,479 AUM's or 55% of 1972 licensed active use. To take regular non-use an operator may apply for it on an annual basis for reasons of (1) annual fluctuation in his operation, (2) conservation and protection or (3) financial or other reasons. Based on reports in Public Land Statistics for the ten year period 1963 through 1972, Nevada livestock operators carry the highest average amount of regular non-use among BLM states. Twenty-seven percent of the allowed licensed use in Nevada is carried in non-use compared with a Bureauwide average of 17 percent.

As with suspended non-use, it is likely much of the regular non-use is being taken because of a lack of forage. It is recognized that, of itself, non-use is not necessarily a problem. In fact, non-use is preferred to over-utilization.

The importance of the discussion given to non-use in this evaluation centers on:

(1) the relatively large amount of non-use that represents a demand if forage becomes available;

(2) the desire of operators to fully utilize Class I qualifications;

(3) the need to allocate additional forage, as it becomes available, to non-livestock uses as well as livestock use.

Recognition of these latter needs, particularly watershed protection and wildlife and wild horse and burro forage requirements, must be a primary consideration when converting non-use to active use.

Similar concern exists with respect to the issuance of temporary non-renewable and Class II licenses. In 1972 they totaled 83,934 AUM's. Heavy utilization that left little plant material for watershed protection or wildlife was observed on several allotments that had temporary non-renewable licenses.

Wildlife forage allocation problems seem apparent. The number of AUM's reserved for wildlife during range survey and adjudication processes totaled 198,324. Public Land Statistics, 1966-1973 show an eight year average big game population in Nevada as:

	Number	AUM's 1/
Antelope	3,625	8,700
Mtn Sheep	1,250	3,750
Deer	151,750	364,225
Elk	180	1,080
TOTAL	N/A	377,755

1/ Converted to cattle AUM's on the basis of 5 antelope, 4 mountain sheep, 5 deer or 2 elk consuming forage equal to that of 1 cow.

Assuming these animals graze on NRL 75% of the time there would be a forage requirement of approximately 283,000 AUM's. The range survey allocated 198,000 AUM's, therefore, there is an approximate 85,000 AUM deficit for wildlife.

Licensed 1972 livestock use and estimated wild horse and burro and big game use totals 2,536,238 AUM's or, 92,009 AUM's less than the estimated grazing capacity of 2,628,247 AUM's. In spite of present grazing use being less than the established grazing capacity, on the areas observed the vegetation was commonly heavily grazed under the present stocking rate. Reasons for this may include: (1) decrease in the amount of forage since the establishment of the grazing capacity; (2) trespass use variously estimated between 50,000 and 200,000 AUM's; or, (3) fluctuations in forage due to weather conditions.

The above information concerning livestock use does not include regular and suspended nonuse forage demand earlier identified as 1,079,479 AUM's. Including this amount, Figure 1 shows the total estimated forage demand to fulfill the needs of livestock, wild horses and burros and big game species to be 3,615,717 AUM's. It does not include vegetative production that should remain for aesthetics and satisfaction of the living requirements of wildlife other than big game species.

FIGURE 1

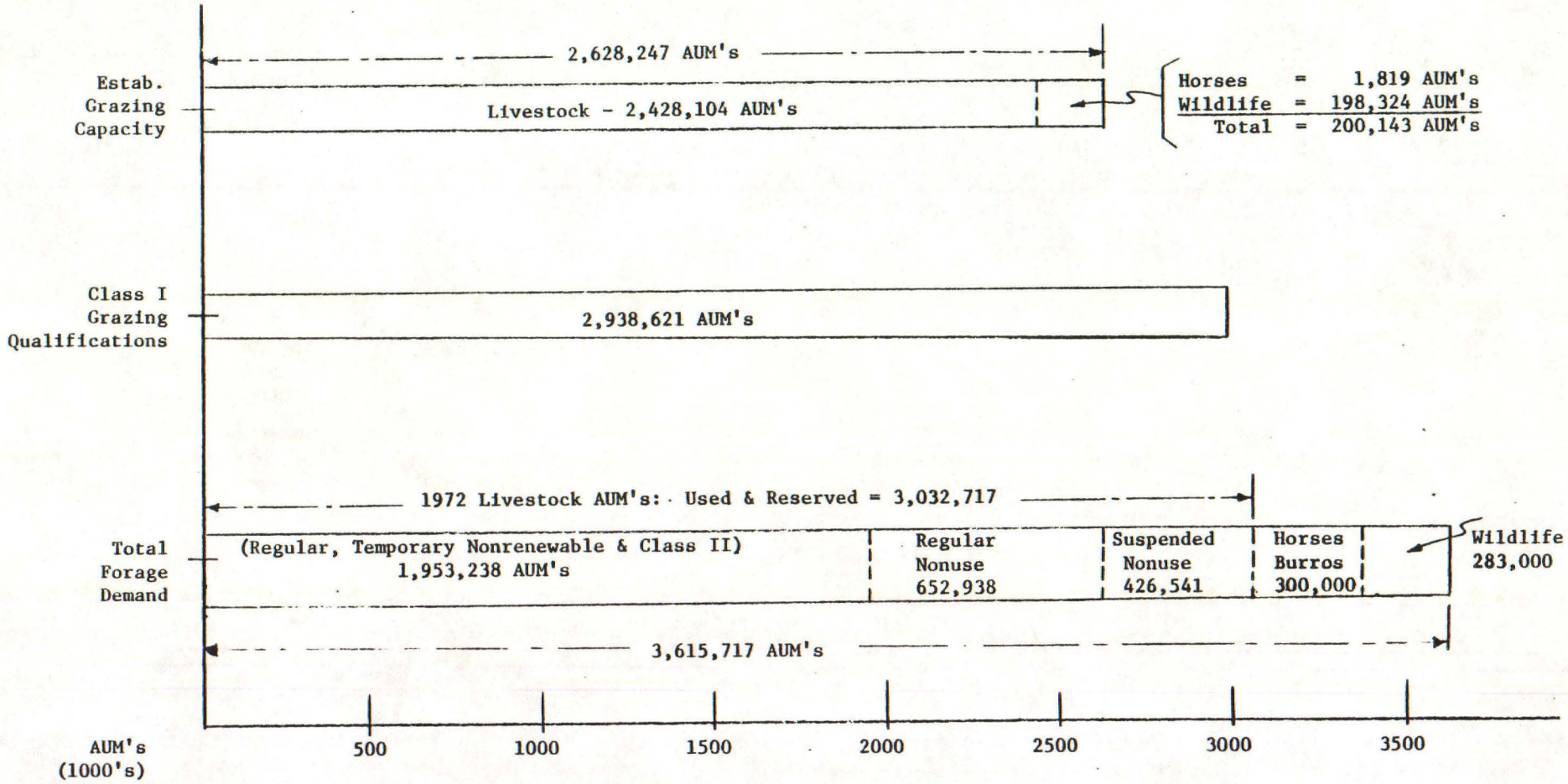

Figure 1. The use and need of forage from Nevada national resource lands. The established grazing capacity; Class I livestock grazing qualifications; and the total forage demand based on livestock grazing use, regular nonuse and suspended nonuse in 1972 and the needs of current estimated numbers of horses, burros and big game animals.

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UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

EVALUATION WORK SHEET

Date	Work Sheet Number
11-1-74	8 of 11

Office: Nevada

Type of Evaluation: Special

By (office): Washington

Activity: Range

Findings

In the past, lack of initial grazing management on many vegetative improvement projects reduced benefits to livestock, wildlife and watershed. Management practices today usually provide for plant protection in new vegetative improvement projects. However, frequent observations were made of heavy utilization which was reducing benefits to livestock, wildlife and watershed.

(Continued)

Recommendations

A. Review management objectives or establish them where they do not exist for revegetated areas. Incorporate multiple use considerations as appropriate.

B. Reassess utilization permitted to insure it is consistent with objectives.

FINAL REVIEWING OFFICER	Date 2/4/75	Signature George L. Turcott

FOLLOWUP

Assigned to (office): Nevada State Office

Date assigned	2-4-75	Completion deadline (60 days)
Date completed		Action officer

GP 42 -774

Vegetative modifications have been accomplished on approximately 750,000 acres by chemical treatment, chaining, cabling, plowing and seeding. Primarily, crested wheatgrass has been planted in areas that have been seeded. In the past, treated areas have not always received the grazing management necessary to sustain them in a productive state from a watershed, livestock and wildlife forage standpoint.

District records indicate some seedings are not used for the purposes intended at the time they were initiated. e.g. quoting the Wilson Creek URA:

> "These seedings were originally established to provide spring and fall use for livestock as they travelled back and forth between the mountains and dry lake valley. However, over the years the use on these seedings has changed to where they are now used from 5/1 through 10/31 each year."

Ten of sixteen seedings observed have been heavily utilized. Within these heavily used crested wheatgrass fields there is little or no litter remaining at the end of the grazing season. As a result there is very little soil protection for spring snow melt periods. Watershed protection is derived from both live and dead plant material while soil fertility stems from decadent plant materials. In many of the seedings viewed plant density is good, sometimes better than ungrazed seedings, but virtually no litter is left, thereby causing a reduction in total soil protection. If the observed utilization rate continues, a lowering of soil fertility will occur. Soil compaction and its associated lower moisture infiltration rates can also be expected. Another problem, grass tetany, may also result from the heavy use of these seedings as pointed out in the Wilson Creek URA.

> "In certain years grass tetany is a problem when cattle are first put into crested wheatgrass seedings. Experience has shown that losses can be greatly reduced if some dry grass is left standing for spring when cattle come into the green seedings."

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EVALUATION WORK SHEET

Date 11-1-74	Work Sheet Number 9 of 11
Office Nevada	
Type of Evaluation Special	
By (office) Washington	
Activity Range	

Findings

Wildlife forage allocations made during range adjudication were not tied to specific geographic locations. As a result, full consideration was not given to wildlife in the subsequent development of range management plans and facilities.

Review of office records and discussions with employees in field visits indicated that allocations made for wildlife at the time of adjudication were not tied to specific geographic areas. In addition requirements for wildlife for food, cover and space were not being met. In effect, procedures employed during the period when most of the adjudications took place (1945-1969) did not give consideration to

(Continued)

Recommendations

Define wildlife requirements by specific areas and reserve sufficient forage to adequately provide for their habitat requirements.

FINAL REVIEWING OFFICER	Date 2/4/75	Signature George L. Turcott

FOLLOWUP

Assigned to (office) Nevada State Office	
Date assigned 2-4-75	Completion deadline (60 days)
Date completed	Action officer

* U.S. Government Printing Office:1973-784-257/2186 Region

critical wildlife areas such as those valuable for deer winter browse, riparian habitat, deer fawning grounds, sage grouse booming grounds, mountain meadows and escape cover near water sources.

Generally, wildlife AUM's were allocated as a percentage of the total AUM's in the area of range survey. In some areas, the allocation to wildlife was related to areas identified as unusable by domestic livestock. This would include areas too steep or rocky for cattle and sheep or too far from water. In Nevada, about 3 million acres out of 47 million acres administered by BLM are considered unusable by livestock.

Because allocations for wildlife were not geographically identified, measures to provide proper use and protection of wildlife values have not been taken during the design of most plans and development of facilities. The result of not tying wildlife AUM's specifically to geographic areas and the resultant lack of wildlife considerations are discussed in a memorandum from the State Director to the Elko District Manager (Appendix 3). This memorandum identifies the following wildlife habitat deficiencies in a draft Allotment Management Plan:

(1) riparian habitat of a stream was not mentioned.

(2) antelope habitat identified in the planning system was not mentioned.

(3) meadows reported to be in a deteriorating condition were not mentioned.

The AMP did not provide a management method for the protection of these wildlife values. Identification of wildlife requirements by specific area would have assisted in the proper consideration of wildlife values. In this instance, the Nevada AMP review process served to identify the wildlife values in the area.

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EVALUATION WORK SHEET

Date	Work Sheet Number
11-1-74	10 of 11

Office: Nevada

Type of Evaluation: Special

By (*office*): Washington

Activity: Range

Findings

Livestock grazing is adversely impacting riparian habitat.

In a pre-evaluation questionnaire Nevada District offices identified 883 miles of streambank riparian habitat upon which livestock grazing is having an adverse affect. Riparian habitat includes plants such as willows, sedges and wild rose which are critical habitat components for numerous wildlife and fish species. This is especially critical in desert areas where there are limited water areas having riparian vegetation. Game and non-game birds, amphibians, reptiles and mammals are dependent upon riparian

(Continued)

Recommendations

A. Intensive inventories should be made of riparian habitat. Determine which streams have potential for improvements and how the improvements should be brought about (i.e. management systems and/or structures). Specific needs of wildlife which can be satisfied should be done so in the following priority.

   1. Endangered Species
   2. Other game and non-game wildlife

B. Where hydrologic parameters are not known, investigations should precede the implementation of improvements. Exceptions may be appropriate where construction of improvements is essential to the survival of a species in imminent danger of extinction.

FINAL REVIEWING OFFICER	Date 2/4/75	Signature George L. Turnbull

FOLLOWUP

Assigned to (*office*): Nevada State Office

Date assigned	Completion deadline (*60 days*)
2-4-75	
Date completed	Action officer

GPO 74

habitat to supply a major component in their life cycle. For example, within the Las Vegas District 82 of 325 bird species have been identified as having direct association with riparian habitat.

When the riparian vegetation is reduced, the stream is exposed to water pollution. The results are an increase in water temperature, sediment production and a change in chemical composition of the stream environment. Flash floods are another factor which affects the capability of streams to maintain fish life. Floods may also alter the water course leaving previous fishery habitat useless. The full potential for fish production cannot be realized until these conditions are reduced or eliminated. Good riparian vegetation will help stream bank stability, reduce stream velocity, lessen the chance of the stream course changing due to floods, and increase fish production.

An example of adverse impact by livestock occurs on a potential fishery along Water Canyon Creek in the Ely District. This small perennial stream is located within the White Rock and Copper Flat Allotments. At the present time the riparian habitat is badly overgrazed because of a mid canyon drift fence which holds cattle until they are moved. Presently there is a draft allotment management plan developed for this area which does not mention the stream. However, the draft prescribes a lower and upper fence for the stream which could protect riparian vegetation in the Canyon. The stream has been identified in a Nevada State Fish and Game EAR as a potential transplant site for the endangered Utah cutthroat trout (Salmo Clarki Utah.) It was classified as endangered by the Fish and Wildlife Service in 1968. Water Canyon is described as having a fishable length of 4.5 miles, a summer flow of 1.6 cfs and velocity of 2.3 ft./sec., summer temperatures of 55° - 65° F., and a

pH of 8.4. Presently it is a poor quality fish habitat with poor spawning potential and no fish.

For several years the condition of the Goshute Creek watershed (Ely District) has been debated. The report by Mr. John Trimmer, BLM Hydrologist in the Nevada State Office, and the letter from Mr. Frank Dodge, Fishery Biologist, Nevada State Fish and Game Department, differ in their opinion of the upper watershed conditions. (Appendices 4 and 5, respectively.) The Goshute Creek Habitat Management Plan states "The overall condition of the habitat area is only fair, primarly due to over-utilization by deer, sheep and cattle, and the encroachment of pinon-juniper. This is evidenced by overgrazed vegetative species on the watershed, unsatisfactory watershed conditions, and relatively poor wildlife habitat conditions in Goshute Creek". Goshute Creek contains an unnamed trout once thought to be the Utah cutthroat trout. It is believed that when named, this trout will justify classification as an endangered wildlife species as defined in the 1973 Endangered Species Act. This trout is discussed at length in a June of 1973 report prepared by R.J. Behnke, a leading fish taxonomist with the Colorado Cooperative Fishery Unit. He considers it to be a subspecies of the Utah cutthroat.

The trout in Goshute Creek were transplanted from Pine Creek in 1960 by the Nevada Department of Fish and Game. In 1969 the stream supported 291 fish per mile. Average fish length was 2.66 inches. By 1972 the population had increased to a level of 733 fish per mile and an average fish length had increased to 3.79 inches. The Goshute Creek Habitat Management Plan was completed in 1971. The plan called for fencing the stream, upper watershed protection fences and certain water structures to be placed in the stream to improve habitat conditions for the trout. Some of the stream structures were constructed in 1972 and 1973 and fences are presently being constructed

in the upper portion of the stream area to prevent livestock overgrazing of riparian habitat. In the past many factors, including questions of water rights, contributed to the inability of the district to accomplish the protective fencing. In the spring of 1973, excessive runoff from the watershed occurred causing a reduction in fish population numbers to 272 per mile with an average fish length of 6.03 inches. During the severe runoff, as noted in Dodge's report, large sediment loads were deposited in the lower stream area. This caused the stream to alter its course and spread across unchanneled areas during the high water period. A decision was reached to alter the original lower half of the water course where the majority of the instream structures were located and where limited riparian vegetation existed. Water was diverted to a historical course where no riparian vegetation exists. This rendered all of the instream structures useless. This new water course does not have any streamside vegetative protection. Without protection from livestock grazing, vegetation needed to provide fishery habitat will not develop. Nevada Department of Fish and Game has identified the major problem as being livestock grazing on riparian habitat (Appendix 6).

LaRivers, Fish and Fisheries of Nevada, indicates that within historical times there were no game fish in many of the closed basin creeks of Nevada, e.g., Goshute, Egan, Steptoe, Water Canyon, Ellison Creek and others. This would tend to indicate that streams in portions of Nevada may be marginal fisheries. Until recent years both Goshute Creek and Water Canyon Creek were reported to be good to excellent fishing creeks following stocking. High intensity floods occur periodically on Goshute Creek and completely destroy the fish population. Similarly, intense cloud bursts have centered over Water Canyon.

The climatic pattern may account for the absence of game fish prior to early settlement.

This factor should be a consideration in determining potential use of the creeks either as game fisheries or as endangered species habitat. In either case, however, poor riparian habitat limits alternatives and diminishes the chances for fish survival during high intensity storms.

Mahogany Creek, in the Winnemucca District, is one of the last remaining streams supporting a pure population of the endangered Lahontan cutthroat trout free of whirling disease, an affliction which causes loss of equilibrium and eventually results in death. This pure population is in demand for fish hatchery operations. The Fish and Wildlife Service annually collects the eggs of this species from upper Mahogany Creek on National Resource Lands and transfers them to their hatchery on Summit Lake.

Overgrazing by livestock has adversely affected Mahogany Creek's streambank vegetation to the extent that large amounts of silt and pollutants are being deposited in an alluvial fan in Summit Lake. This alluvial fan continues to build to the point that in many years upstream fish migration is blocked for spawning purposes. When this blockage occurs, the Fish and Wildlife Service digs a passageway in the fan to permit upstream migration of the endangered fish to their spawning beds on National Resource Lands. Reduction of riparian habitat and streambank sloughing also results in siltation of spawning areas. The spawning areas are covered by silt and rendered useless for reproduction purposes. In many instances silt covers the deposited eggs causing them to die from lack of exygen.

There has been no action taken to date on National Resource Lands to protect the endangered species habitat. In addition to the areas discussed, the Sonoma Unit Resource Analysis in the Winnemucca District identified many of the streams where riparian vegetation is being adversely affected by livestock grazing: Pole Creek; Rock Creek; Clear Creek (this stream had the most severe abuse); Sonoma Creek; Thomas Creek; Star Creek; Coyote Creek; and Indian Creek.

Form 1240-7
(July 1967)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

EVALUATION WORK SHEET

Date	Work Sheet Number
11-1-74	11 of 11
Office: Nevada	
Type of Evaluation: Special	
By (office): Washington	
Activity: Range	

Findings

Protection and Enhancement of Wildlife, Aesthetic, Recreation and Cultural Values have not had sufficient emphasis in the past during range improvement construction.

(Continued)

Recommendations

A. Continue and intensify efforts made to evaluate and provide for the needs of wildlife, recreation and other resource values during the planning of range improvements.

B. Washington Office should provide more precise guidelines on cultural resources clearance for range, fire rehabilitation and other improvement project work.

C. A landscape architect should be consulted in the design of land treatment projects.

D. The districts should take positive steps to provide adequate protection and designations for primitive and natural areas identified in MFP's including obtaining protective withdrawals where needed.

E. Existing projects should be updated to include other resource enhancing measures, e.g. bird and small mammal watering facilities and escape ramps.

FINAL REVIEWING OFFICER	Date 2/4/75	Signature George L. Turnbull

FOLLOWUP

Assigned to (office)
A.B.C.D.&E. Assigned to Nevada State Office B. Assigned to Asst. Dir., Administration

Date assigned 2-4-75	Completion deadline (60 days)
Date completed	Action officer

GPO 774

Range improvement projects, such as fencing, water development, vegetative manipulation projects and roads, have had an adverse effect on wildlife, aesthetic, recreation and cultural values. In the past, little consideration has been given to values other than range resource in the development and management of these improvements. Present policies are correcting most of these deficiencies. However, water development practices remain the single largest problem for which wildlife considerations are not apparent. Based on Winnemucca district records, the first intensive effort to correct this problem will occur in FY 1976.

The majority of the revegetation projects have been seeded only to crested wheatgrass which has little value to wildlife except for early spring and late fall use for deer, antelope and elk. More recent seedings such as Horse Thief and two observed on the Enterprise Allotment have included browse species.

In many instances, the seedings were established because the native range could not support Class I livestock grazing demand. Many of the native ranges associated with these seedings were in deteriorating condition; examples are the Cattle Camp and White Rock Allotments. Crested wheatgrass seedings were established in these two allotments and 100% of the Class I qualifications were restored.

Implications of overgrazing are documented in a recently completed Nevada State University 10 year study titled "Management Guidelines for Selected Deer Habitats in Nevada." The report identifies declining deer habitat conditions in certain locations where competition occurrs between livestock and deer.

In some instances, the practice of spraying sagebrush has destroyed habitat that historically has been used by sage grouse. Sprayings prior to 1969 generally did not provide for food and cover requirements of sage grouse by leaving unsprayed strips or "islands". Present Bureau policy conforming to NEPA should insure that sage grouse habitats will be protected in all future spray projects.

The construction and management of most reservoirs and other watering sources viewed indicate a lack of consideration for wildlife. The following observations made in the field verify this assertion:

1. Reservoir shoreline and streambank vegetation trampled out
2. Spring flows reduced or shut off via collector systems
3. Water piped, usually without outlets for wildlife, to troughs without bird or small mammal ladders or floating devices
4. Wells operated only during the livestock use season leaving no water for wildlife at other times.

Most water systems are operated and maintained by livestock operators. Until such time as the Bureau or others are willing to underwrite the costs for development, maintenance, and operation of these water systems it is unlikely that wildlife water will be available during the remainder of the year.

In the early 1960's the BLM State wildlife biologist prepared a brochure which described various bird ladders and floating devices that could be used in stock watering tanks. They provide access to the water and a means of escape should the animal fall in the tanks. Various numbers and types of these devices have been reported installed; however, only one of 12 water troughs observed was equipped with such a device.

The reduction of water at its source through collector systems reduces succulent vegetation, often destroying entire meadows, and reduces the amount of free water available to wildlife. In many instances the habitat associated with springs and seeps is altered to the extent that wildlife species in the area can no longer exist within their historic habitat.

The construction of range improvements has had an adverse effect on historic and archeological values. The magnitude of the destruction of cultural values is difficult to document. However, there are factors which would lead one to believe that the impacts may have been substantial.

In all likelihood, destruction of archeological values occurred at many of the 1,236 spring developments on Bureau lands within the state. Surface disturbances resulting from the development of head boxes, collector lines, distribution pipelines, etc., at these spring sites have undoubtedly destroyed archeological values. There are no data available concerning the number of cultural sites damaged by spring development. However, the

frequency of occurrence of archeological sites associated with springs gives some indication of probable damage. Three recent contracts for surveying archeological values at spring sites developed the following information.

District	Archeological Values Observed	No Archeological Values Observed	Total Sites
Winnemucca	7	22	29
Las Vegas	10	5	15

Several archeologists were consulted concerning the frequency of observations and the variations between the two districts. The archeologists believed the high ratio of spring sites lacking archeological value in the Winnemucca District was unusual. Based on the experience of the archeologists contacted 70-80% of the sites should have had archeological remains. Prehistoric people who inhabited this arid country most certainly hunted, camped and lived near water sources. The following reasons were offered for the infrequent Winnemucca observations:

1. The investigator may not have ranged far enough away from the springs to pick up the archeological sites. The prehistoric Indian frequently camped far enough away from the spring so as not to disturb wildlife use of the spring.

2. The original artifacts may have been collected by artifact hunters.

3. It may have been an unusual situation where surface artifacts were just not present.

The Bureau has treated approximately 400,000 acres of land by mechanical means in Nevada. Historically, the areas treated have been productive for herbs, edible plants, nuts and game animals. Therefore, there is a high probability that prehistoric people inhabited these areas and that the artifacts they left behind were plowed under, damaged or removed from their original settings or that the surface was altered to the point where scientific evidence was destroyed. The magnitude of the damage is a matter of conjecture. Archeological surveys of two proposed chaining areas in the Ely District came up with a negative finding on a total of 2,700 acres--only two obsidian flakes and one chert flake were found. Archeologists point out that in many cases a negative find of this nature is as important as a positive find in putting the puzzle together concerning prehistoric use of the area. Again, experience of Nevada archaeologists indicates that a higher percentage of positive finds should have been expected in the areas where mechanical treatment have taken place.

There are hundreds of closed basins in Nevada which prehistorically were dotted with lakes. Many of these ancient lakeshores were inhabited by early man. Information about these early inhabitants is extremely limited; therefore, any sites associated with them are important. Today these shorelines are crisscrossed by fences to control livestock and other constructions such as pipelines, roads, etc., for other purposes. The construction of pipelines and roads is particularly destructive to archeological values since it involves

considerable surface disturbance. Early day fence construction which included "dropping the blade" to clear the fenceline, was likewise very destructive to archeological sites. The practice of clearing the fenceline with bulldozers is no longer allowed.

A secondary impact from construction programs of all types is looting by survey and construction crews. Another secondary effect of range improvements is the concentration of livestock at certain locations such as at developed water supplies and along fencelines. Heavy trampling and overgrazing at these locations results in major surface disturbances which damage archeological values.

Streambank erosion resulting from overgrazing of riparian vegetation and poor watershed conditions are a potential hazard to archeological and historical sites. Streambank erosion existed along most of the waterways visited. There is a high probability for archeological sites along these waterways and consequently a high probability that many sites may have been destroyed through accelerated erosion.

It should be emphasized that prior to the late 1960's, little direction was given to field personnel concerning protection of archeological and historical values. Even now, on a national level, direction is vague concerning what practices must be followed in clearing archeological and historical values prior to construction of range improvement. The Nevada State Office has provided adequate direction to all district offices in Instruction Memo No. NSO-74-140 and 74-140, Change 1 dated

August 2 and 19, 1974, which instructs all districts to perform archeological clearance for all projects which result in surface disturbance. The Bureau has no detailed procedures to be used in these surveys, therefore, in some cases the results are questioned by other archeologists.

Range improvements observed during the field trips have had both a positive and negative effect on the aesthetic values. Aesthetic values have enhanced in most of the areas which have been plowed and reseeded. Green grass (yellow during the dormanent season) provides a pleasant variety in color and texture compared to what is most often a monotone visual environment. However, the straight lines created by the boundaries in many of the seedings are not harmonious with the natural environment. Seedings which are completely grazed off, as observed im many areas during the field visit, create an eyesore which distracts from the visual environment.

The most severe adverse visual effect observed during the field tours was that created by pinon-juniper chainings. This largely is the result of two factors: first, most of the chainings are located in areas of relatively high scenic values. This was verified by the high scenic rating given these areas in the URA's including the Caliente and Pony Springs (draft). Secondly, these chainings created a highly visible inharmonious contrast in the visual environment. Up close, the rubble is a marked contrast to the order and unity of the natural environment.

At distances of 1 mile or greater, the rubble tends to blend together but the harsh contrast between the form, color and texture within the chaining still results in substantial visual pollution. Boundaries forming straight lines or lines which do not conform with the natural setting are very evident in older chainings but the more recent ones have created irregular boundaries which tend to minimize the visual impact.

Other projects such as roads, fences, wells, pipelines and spring developments have had a lesser but widespread effect on the visual environment; especially the long straight lines created by fences, pipelines and roads. Fenceline contrast between pastures which are overgrazed on one side and in good condition on the other were prevalent in many areas, especially along major highways where the ungrazed right-of-way is contrasted with adjacent overgrazed fields. This tends to emphasize the adverse visual effect of these straight lines. The practice of "dropping the blade" to clear the route for fences and pipelines has been a major contributor to visual pollution in the areas visited.

The areas around most livestock waters and water courses visited in the three districts were denuded of vegetation and trampled by livestock. This is particularly damaging from an aesthetic point of view since the riparian vegetation along water courses add variety, color and vertical dimension to what is frequently a rather monotone landscape. Another

factor contributing to the severity of this problem is that access roads frequently parallel water courses, which tends to intensify the exposure of these areas.

Range improvement work has had a widespread effect on natural and primitive values. Over a long period of time (100 years plus), the mining interests, livestock industry and the Bureau have constructed roads, fences, pipelines, and other structures which have infringed on the primitive and natural values of Bureau lands within the state. Until recently, "conquering of the wild West" was of paramount importance and little policy direction was given for protection of primitive and natural values. The result is that few areas remain in Nevada where man-made improvements are not evident. This was verified during the reconnaissance flights taken by the team in the three districts.

Approximately 10 years ago the districts in Nevada identified research natural areas. The protection offered these areas has been good. Districts generally have done a good job in identifying primitive and natural values as part of the Bureau planning system. However, there has been little follow through to offer these areas protection through such actions as withdrawals. This is partly due to:

1. Timing (i.e., there has not been adequate time to initiate these actions since completion of the MFP's).

2. Local publics are opposed to primitive classifications. An example of this is the negative reaction received at the public hearing for the Blue Lake primitive classification in the Winnemucca District.

Because of potential government liability none of the spring or well developments visited by the team were designed to provide water for human use. If the Bureau provides water for human consumption, it has the responsibility to insure that the water quality meets minimum public health standards for such use. Districts claim they just do not have the manpower available to test the water monthly as required by Instruction Memo No. 73-454. However, water for human use is available at most of the developed spring sites. It frequently is awkward to get to and its fitness for human consumption may be questionable. However, the quality of the water coming from developed sites is probably much better than that from open springs where livestock and wildlife have wallowed.

There has been some loss of pine nut collecting opportunities due to pinon-juniper chaining. This loss is fairly insignificant compared to the total available. There are more than 4.5 million acres (Illustration 2, item 091) of pinon-juniper in Nevada. Only 47,000 acres 1/ or a little more than 1% has been removed by chaining or other practices.

As far as the team could ascertain, the impact of range improvements on rock, mineral and other collectable species has probably been more beneficial than detrimental. Plowing, chaining, etc., tends to expose more collectable items.

1/ May 16, Special Job Documentation Report file printout.

The development and maintenance of roads and trails for range purposes has provided the means for many thousands of people to use the many resources on the National Resource Lands for recreational purposes. This is probably one of the major positive impacts that has resulted from the range program. Unlike many other states, blocking of access by ranchers does not seem to be a problem in Nevada.

INFORMATION SUMMARY
DATA FURNISHED BY NEVADA DISTRICTS

DISTRICT	Elko	Winnemucca	Carson City	Ely	Las Vegas	Battle Mtn.	STATE TOTAL
1. ACRES							
Usable by livestock	7,134,656	6,926,384	4,546,865	8,097,744	9,756,258	7,879,403	44,331,310
Unusable by livestock	125,125	1,606,924	857,304	- 0 -	172,944	235,756	2,998,053
TOTAL	7,259,781	8,533,308	5,404,169	8,097,744	9,929,202	8,115,159	47,329,363
2. AUM's							
A. Range surveyd carrying capacity							
cattle and sheep	324,141	- 0 -	31,802	233,824	- 0 -	- 0 -	589,767
sheep	7,780	39,822	79,578	66,048	16,499	59,652	269,379
cattle	442,180	302,603	160,702	163,300	97,017	403,156	1,568,958
Subtotal	774,101	342,425	272,082	463,172	113,516	462,808	2,428,104
wildlife	39,599	12,307	53,204	50,802	9,302	33,110	198,324
wild horses and burros	- 0 -	- 0 -	1,819	- 0 -	- 0 -	- 0 -	1,819
TOTAL	813,700	354,732	327,105	513,974	122,818	495,918	2,628,247
B. Qualifications, licensed, reductions and allocations							
Class I Qualifications	894,351	521,972	232,342	557,237	182,484	550,235	2,938,621
Class I Reductions	8,888	5,442	320	12,253	- 0 -	- 0 -	26,903
Class I Restorations	1,300	- 0 -	- 0 -	8,983	- 0 -	510	10,793
Active Use	677,044	304,193	160,830	259,744	117,892	349,601	1,869,304
Class II Licensed	997	4,299	- 0 -	- 0 -	400	832	6,528
Temporary Nonrenewable License	19,746	35,583	2,031	10,236	187	9,623	77,406
TOTAL USE	697,787	344,075	162,861	269,980	118,479	360,056	1,953,238

Illustration 1, pg. 1 of 4

DISTRICT	Elko	Winnemucca	Carson City	Ely	Las Vegas	Battle Mtn.	STATE TOTAL
2. AUM's (cont'd.)							
Regular Nonuse	112,685	76,715	68,286	232,264	33,046	135,942	658,938
Suspended non-use	101,896	92,731	3,303	71,482	59,159	97,970	426,541
TOTAL NON-USE	214,581	169,446	71,589	303,746	92,205	233,912	1,085,479
Wildlife Allocation	39,799	12,307	53,060	50,802	9,032	20,386	185,386
Wild Horsea and Burros Allocation	-0-	-0-	1,819	-0-	-0-	-0-	1,819
3. ALLOTMENT NUMBERS							
Individual	173	64	127	117	98	51	630
Community	57	42	26	29	54	24	232
TOTAL	230	106	153	146	152	75	862
Seasonal use	229	58	135	122	84	25	652
Yearlong use	1	48	18	24	68	50	209
TOTAL	230	106	153	146	152	75	862
With adequate fencing	175	42	105	56	32	13	423
Needing boundary fences	52	42	49	97	96	62	398
With adequate cross fencing and live stream	10	20	4	9	-0-	6	49
Adequately watered	59	26	62	19	5	1	172
Inadequately watered	173	80	91	134	128	74	680
With crucial wildlife areas	158	6	30	59	41	60	354

DISTRICT	Elko	Winnemucca	Carson City	Ely	Las Vegas	Battle Mtn.	STATE TOTAL
4. FENCING MILES OR NATURAL BARRIERS							
A. Existing							
Allotment boundary	3,193	958	697	1,003	2,242	1,403	9,496
Natural barriers	179	157	246	443	453	102	1,580
B. Needed							
Allotment boundary	430	800	397	1,598	2,652	1,412	7,289
Cross fencing	120	526	78	51	106	318	1,199
TOTAL	550	1,326	475	1,649	2,758	1,730	8,488
C. Trespass							
Issued in:							
1972	13	4	- 0 -	26	11	1	55
1971	16	8	3	9	9	2	47
1970	15	2	1	13	14	3	48
1969	9	8	2	4	-0-	3	26
1968	12	-0-	-0-	8	4	3	27
TOTAL	65	22	6	60	38	12	203
Trespass resolved							
1. Removal of livestock	65	22	2	37	3	12	141
2. Issuance of lease, license or permit	-0-	-0-	4	21	36	-0-	61
3. Show cause	-0-	-0-	-0-	1	-0-	-0-	1
5. AMP's							
With wildlife objectives	12	44	-0-	6	-0-	-0-	62
With other than grazing objectives	24	44	12	15	7	7	109
With critical browse where key species is grass	5	19	3	7	1	4	39
Developed prior to MFP	24	38	12	16	7	7	104
Developed after MFP	-0-	6	-0-	-0-	-0-	-0-	6
Updated after MFP	-0-	39	-0-	-0-	-0-	1	40

DISTRICT	Elko	Winnemucca	Carson City	Ely	Las Vegas	Battle Mtn.	STATE TOTAL
6. RECREATION							
Completed 6230-2 (Antiquities Site Inventory Form)	41	9	18	51	122	31	272
7. HMP's, CRUCIAL AREAS, ETC.							
Unimplemented due to livestock control	1	4	5	3	0	1	14
With livestock objectives	0	3	7	1	1	1	13
Without livestock objectives	5	2	1	5	4	2	19
TOTAL	5	5	8	6	5	3	32
Wildlife and Crucial areas	7	2	10	52	0	22	93
Withdrawn or special designation	1	1	1	1	0	3	7
8. STREAM MILES							
Grazed with declining habitat	460	229	14	53	0	127	883

Watershed Erosion Condition Printout by Code Number and Subtype

State: Nevada

Code No.	Subtype	PRESENT					FUTURE				
		Stable	Slight	Moderate	Critical	Severe	Stable	Slight	Moderate	Critical	Severe
011	Short Grass		8387	760	1020		1170	5270			
012	Mid-Grass (Bunch)	241795	331979	61896	5752	1004	138388	67481	970		
013	Mid-Grass (Sod)		14560	640			940				
021	Wet Meadow	1040					940				
022	Dry Meadow	15462	2520				17982				
031	Perennial Forbs	775	2095				775	2095			
041	Big Sagebrush	872735	3547946	2266911	2820 2	707	1079604	1380666	71840	9405	
042	Low Sagebrush	120971	578496	579031	196156		77300	270694	35251		
043	Black Sagebrush	33975	1126629	808062	99788	2232	214642	1143422	137169	1204	
044	Other Sagebrush	16462	137762	133975	10098		26359	103888	6471		
045	Rabbitbrush	60762	297657	46143	4708		157504	219040	5378		
052	Manzanita	12053	65784	24529	3400		6224	66560	7402		
053	Ceanothus	2872	28023	10668	7493		1710	6562	1448		
056	Mountain Mahogany		46102	781				46883			
057	Bitterbrush	1320		15060	6020		1320				
058	Oakbrush			6964					1404		
059	Other Mountain Shrub		13942	11367			6171	19138			
062	Ponderosa Pine		21055	7196							
064	Spruce-Fir		16343	1310				16343	1310		
065	Other Conifer		210					210			
073	Steep		2840								
074	Rocky		110								
075	Steep and Rocky	5142	8400	3428							
076	Steep & Dense Veg.		7808								
081	Dry Lake Bed										
082	Saline Flat										
083	Sand Dune										
084	Rock Outcrop										
087	Other										
091	Pinon-Juniper	142006	2069019	2101358	235719	4220	396703	2124821	429098	46300	
101	Aspen	780	701				1481				
102	Oak			4920							
111	Creosote Bush	15643	567118	691019	202479	13008	21243	604632	390722	66570	
121	Mesquite	2219	881	5499			2219	881	5499		

State: Nevada

Code No.	Subtype	PRESENT					FUTURE				
		Stable	Slight	Moderate	Critical	Severe	Stable	Slight	Moderate	Critical	Severe
131	Shadscale	180950	1331496	1025190	103614	18090	143665	695406	138258		
132	Nuttall Saltbush	240	843	823			240	1120	546		
133	Mat Saltbush	5710	1712	428			5710	1712	428		
134	Fourwing Saltbush		5059	26457	1401			3137	1922	6492	
135	Other Saltbushes		17046	6101	2551			17046	3192		
141	Black Greasewood	141524	465943	538865	191914	7670	112932	307963	147789	24937	
151	Winterfat	22371	280703	152940	26496		52541	270718	10551		
161	Blackbrush		118466	415001	76162	12678		5396	4071		
162	Cactus	18528	74870	29406	16709		11732	22847	32405		
163	Joshua Tree	11154	499360	332002	44807	13244	68694	520200	176278	11723	
164	Other Desert Shrubs	23516	767542	645565	65554	1350	29484	616838	312592	3892	
171	Snakeweed		18575	5316				7061	4308		
174	Other Half Shrubs	5196	21638	6320			5196	25055	2903		
181	Cheatgrass	81986	31081	33088	26930		16327	24775			
182	Other Annual Grasses			1580				1580			
183	Annual Forbs	4850	9290	16889	18860		6940	1320			

Illustration 2
Page 2 of 2

EROSION CONDITION CLASSES

DIST.	TIME	STABLE ACRES	%	SLIGHT ACRES	%	MODERATE ACRES	%	CRITICAL ACRES	%	SEVERE ACRES	%
01	PSSF	173,196	13.2	760,341	58.0	363,854	27.7	14,376	1.1	0	0
	FOSSF	173,196	13.2	650,751	49.6	454,463	34.6	30,096	2.3	3,261	0.2
	FMSSF	240,894	18.4	834,386	63.6	230,463	17.6	6,024	0.5	0	0
	FPSSF	257,824	19.7	846,391	64.5	201,528	15.4	6,024	0.5	0	0
02	PSSF	45,910	1.6	1,330,334	45.6	1,320,431	45.3	212,112	7.3	6,113	0.2
	FOSSF	17,983	0.6	1,112,200	38.2	1,395,527	47.9	378,830	13.0	103	0.4
	FMSSF	50,991	1.7	1,623,098	55.7	120,217	38.4	116,804	4.0	3,790	0.1
	FPSSF	63,040	2.2	1,799,208	61.7	943,045	32.4	105,817	3.6	3,790	0.1
03	PSSF	139,157	20.4	459,169	67.3	73,364	10.8	10,757	1.6	0	0
	FOSSF	139,195	20.4	453,042	66.4	78,685	11.5	7,682	1.1	3,843	0.6
	FMSSF	169,551	24.8	459,292	67.3	45,148	6.6	7,688	1.1	768	0.1
	FPSSF	216,474	31.7	433,756	63.6	24,529	3.6	7,688	1.1	0	0
04	PSSF	239,051	4.1	2,618,863	44.8	2,705,180	46.2	286,091	4.9	2,281	< 0.1
	FOSSF	215,279	3.7	1,869,346	31.9	3,241,946	55.4	505,954	8.6	18,941	0.3
	FMSSF	258,414	4.4	3,322,850	56.8	2,152,316	36.8	117,886	2.0	0	0
	FPSSF	275,413	4.7	4,713,348	80.5	792,269	13.5	70,436	1.2	0	0
05	PSSF	38,051	1.2	1,639,327	50.5	1,435,475	44.3	130,798	4.0	0	0
	FOSSF	13,529	0.4	1,090,952	33.6	1,735,098	53.5	397,815	12.3	6,257	0.2
	FMSSF	26,047	0.8	1,738,772	53.6	1,294,331	39.9	184,501	5.7	0	0
	FPSSF	26,047	0.8	1,818,089	56.1	1,215,014	37.5	184,501	5.7	0	0
06	PSSF	220,667	3.9	4,170,726	73.1	1,216,378	21.3	89,166	1.6	9,814	0.2
	FOSSF	75,686	1.3	2,852,849	50.0	2,486,317	43.5	277,724	4.9	20,175	0.4
	FMSSF	817,997	14.3	4,187,368	73.4	678,692	11.9	22,694	0.4	0	0
	FPSSF	1,162,854	20.4	3,952,617	69.3	577,016	10.1	14,264	0.2	0	0
STATE TOTALS	PSSF	856,032	4.3	10,978,760	55.7	7,114,682	36.1	743,300	3.8	18,208	0.1
	FOSSF	634,868	3.2	8,029,140	40.7	9,386,036	47.6	1,598,101	8.1	62,837	0.3
	FMSSF	1,563,894	7.9	12,165,766	61.7	5,521,167	28.0	455,597	2.3	4,558	< 0.1
	FPSSF	2,001,652	10.2	13,563,409	68.8	3,753,401	19.0	388,730	2.0	3,790	< 0.1

PSSF - Present erosion condition.

FOSSF - Predicted erosion condition class without change in management.

FMSSF - Predicted erosion condition class with land use change.

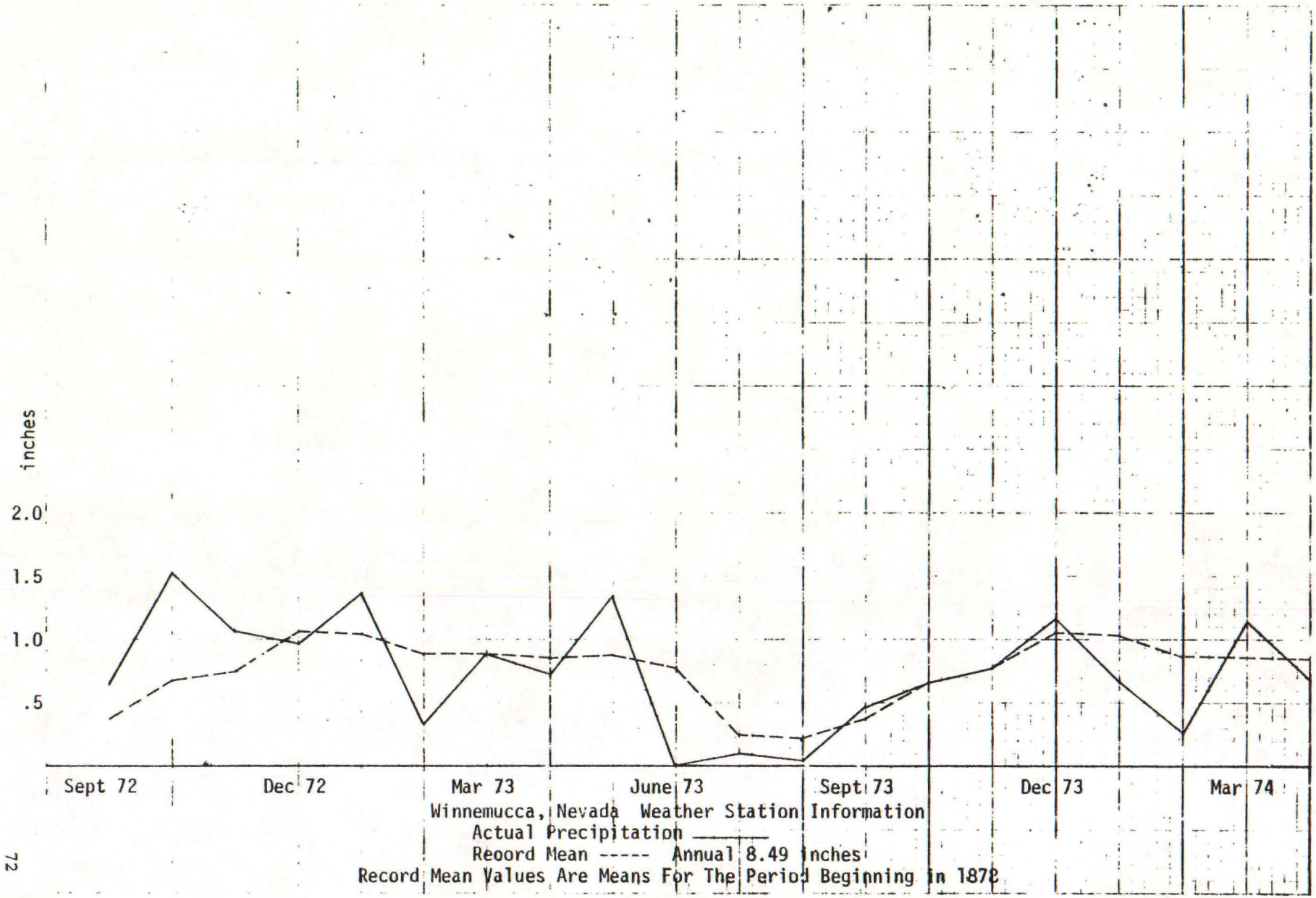
FPSSF - Predicted erosion condition class with land use change and additional treatments.

Source - Phase I watershed rating system, 1972 through present.

Stable Acres, Present and Future as Shown Within the JREM065 Program of the WC&D Data System.

Dist.	Total Acres Inventoried	Present Stable Acres	Future W.O. Change in Management	Future With Change of Management	Future With Add. Practices
01	1,311,850	1,096,857	1,066,867	1,154,523	1,175,293
02					
03	3,597,786	2,750,134	2,661,216	2,909,569	2,968,873
04	5,852,397	4,406,556	4,224,823	4,684,547	5,163,550
05	3,244,019	2,439,955	2,201,074	2,490,474	2,511,389
06	5,707,427	4,728,008	4,282,111	5,114,999	5,228,634
State Totals	19,713,479	15,421,510	14,496,091	16,354,112	17,047,739

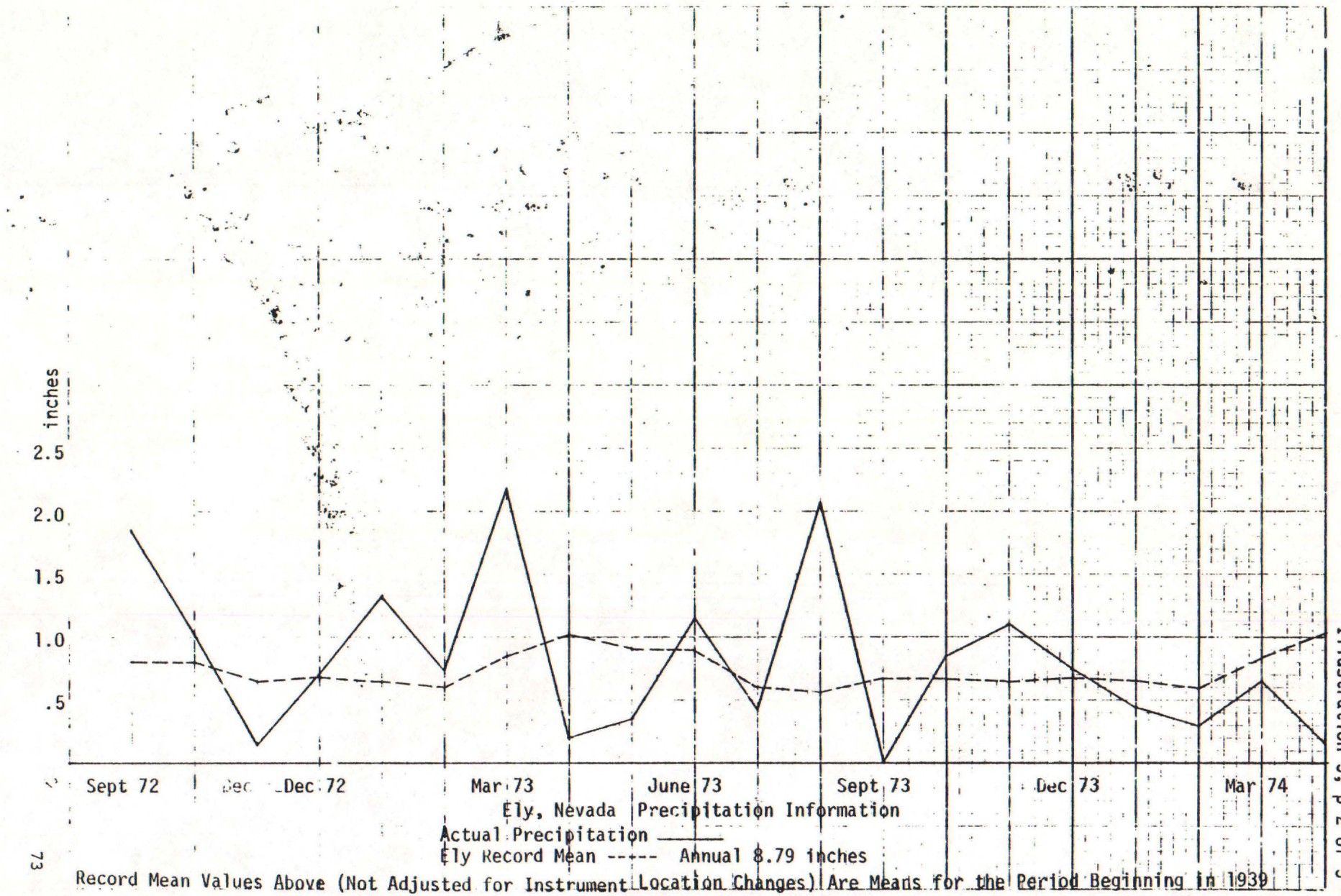
Without change we will have 925,419 less stable acres.
With change we can have 932,602 more stable acres.
With change in management plus additional treatment we can have 1,626,229 more stable acres.



Winnemucca, Nevada Weather Station Information
Actual Precipitation ———
Reoord Mean ----- Annual 8.49 inches
Record Mean Values Are Means For The Period Beginning in 1872

Illustration 5, p 1 of 3

72



Ely, Nevada Precipitation Information

Actual Precipitation ——

Ely Record Mean ----- Annual 8.79 inches

Record Mean Values Above (Not Adjusted for Instrument Location Changes) Are Means for the Period Beginning in 1939

Ely Airport Weather Station

Illustration 5, p 2 of 3

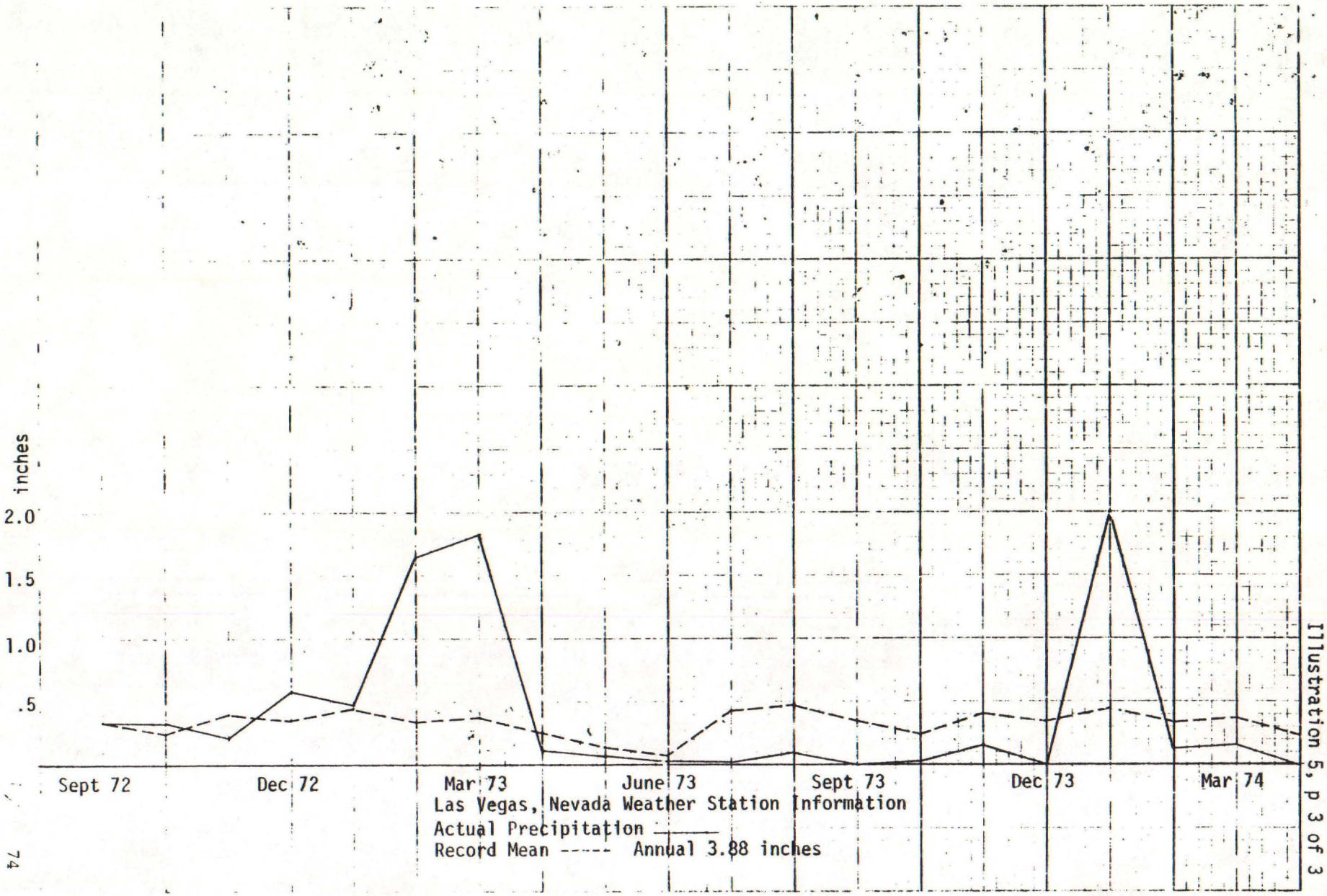


Illustration 5, p 3 of 3

74

United States Department of the Interior

4100 (330)

BUREAU OF LAND MANAGEMENT
WASHINGTON, D.C. 20240

September 27, 1974

Instruction Memo No. 74-397
Expires : 12/31/74 (Extended to 6/30/75)

To: Directorate, State Directors, Service Center Director, and WO Division Chiefs

From: Director

Subject: Grazing Administration FD 10/25/74

The impact of unregulated livestock grazing affecting other multiple uses on BLM lands was most recently addressed by the special Nevada evaluation conducted in April of this year. Several findings brought out by this and other evaluations conducted in several States over the last few years lead me to the conclusion that there are Bureauwide grazing administration deficiencies that require prompt initiation of corrective actions. We must take immediate corrective action on a Bureauwide basis on all those items that are ministerial in nature. There are other range management problems that require us to intensify grazing management practices on the ground which, if properly applied, will result in improved rangeland conditions for the benefit of all related values. You should initiate action now on these latter items that will bring about solutions over the next few years.

Under State Office direction, Districts where livestock grazing is a part of the resource management program will review and redirect their program to follow the grazing regulations for the public lands as outlined below.

1. Ministerial action to be implemented immediately:

   (a) All applications for grazing authorizations will be reviewed for compliance with regulations. Authorized use will not exceed adjudicated use except as provided under 43 CFR 4111.4-2. Authorization will not allow use in excess of the recognized grazing capacity. See 4111.3-1 and 4115.2-1(e)(3) of the regulations.

   (b) Temporary nonrenewable licenses will be used only for the intended purpose described in 4115.2-1(a) of the regulations, and 4115.21A7 of the BLM Manual. Nonrenewable

licenses will not be issued on the justification that forage conditions are above average for a given year. Section 4413.11 of the Manual will be revised to clarify issuance of nonrenewable licenses on AMP's.

(c) Increased emphasis on range use supervision as necessary to insure compliance with use authorizations and the regulations.

2. Actions to be initiated immediately for accomplishment in the near term:

(a) Applications for grazing use will be weighed against competing demands for forage by wildlife and wild horses and burros. Based on URA-MFP data on populations of wild horses and burros, populations of wildlife, and wildlife habitat requirements, adjustments in livestock numbers will be made as outlined in Sections 4111.3-1, 4111.4-3, 4115.2-1(d),(e), and 4712.1-3 of the regulations.

(b) Existing allotment management plans will be updated and redesigned as necessary to meet Manual requirements including the identification of objectives and establishment of methods to protect and improve wildlife habitat and other resource values attainable through intensive livestock management. Multi-discipline input in design and evaluation of AMP's is essential in this effort.

All AMP's are to receive necessary supervision to insure that the grazing formula is followed and to insure timely remedial action to protect the resource base if the grazing formula needs modification. Flexibility must be explicitly described in the AMP to prevent misunderstanding and to ensure that Bureau responsibilities are not neglected. Establishment of a grazing system by decision may be necessary if adequate cooperation is not forthcoming from the range user to intensify management efforts in an allotment management plan. Section 4112.15C6 of BLM Manual will be revised to clarify this direction. Evaluations required by BLM Manual 4413 will be conducted on all AMP's. Permanent increases in AUM's on AMP's will not be allowed unless documented by an evaluation. Such increases must adequately consider other resource needs.

(c) The undertaking of any rangeland rehabilitation project must be based on the premise of total resource considerations and adequate management following project completion. Planning of rangeland rehabilitation projects will include provisions for protecting the resource until grazing authorizations under proper management can be exercised. Such projects

will be accomplished only after it has been determined that resource objectives cannot be achieved by management within a reasonable time frame. All rangeland rehabilitation projects will consider the wild horse and burro activity, and wildlife needs including protection of riparian habitat.

(d) All management and supportive measures utilized in connection with the livestock grazing program must provide for the protection of cultural values. Refer to Instruction Memorandum 74-290 which pertains to this subject.

(e) Adjust livestock water projects to meet wildlife needs. Include bird ramps in open troughs, and wildlife waters off pipelines. In rested pastures insure that water is available for wildlife. Insure that extension of livestock waters for increased livestock distribution does not create new conflicts between wildlife and livestock for limited forage resources.

(f) To avoid or reduce potential conflicts arising from base property transfers, prospective purchasers of ranch operations utilizing Federal range should be candidly advised of intensive management criteria that will be implemented on the grazing allotment as manpower and funds permit. This includes the obligation of the livestock operator to cooperate in range management plans, including construction and maintenance of improvement projects. Prospective purchasers are to be informed, as matter of record, the actual use authorized as compared to qualifications, active nonuse, and suspended nonuse presently recognized.

Completion of questionnaires from lending companies will include pertinent information affecting the grazing allotment.

(g) Drought conditions, fire, and other natural forces must be recognized, and requirement of nonuse for protection of the resource base must be given adequate attention when authorizing active use or activating nonuse requests under these conditions.

(h) Stocking rates for Exchange-of-Use Agreements and percent use authorizations must be based on forage inventories. Exchange-of-use agreements that would work to the detriment of the district program should be rejected.

(i) Change in class of livestock (e.g. sheep to cattle) will be allowed only after careful review to insure that the proposed change will not unduly affect other multiple-use values

within the allotment. In addition, no change in class of livestock will be authorized that confers grazing privileges in excess of the present usable carrying capacity for the designated livestock. See Section 4112.22 of BLM Manual.

(j) Supplemental feeding which results in site deterioration will not be authorized on the public lands except in emergency situations where the District Manager determines that loss of livestock is imminent.

3. AWP Revisions. State Directors will intensively review present AWP's and submit proposed revisions to maximize accomplishing the directives of this memorandum within the limits of currently available resources. In making proposed revisions, accomplishment of ministerial action (Item 1) will be considered of equal priority to established non-energy OPS objectives. This means for example, that 1220 inputs to inventory and planning should be reduced, in favor of accomplishing Item 1 directives, to the minimum level essential to meeting your established OPS objective for MFP's. As a part of your proposed revision, adjustments between MLR subactivities may be proposed to make more 1220 man-months available. However, no additional permanent personnel can be provided.

As established in Item 1 first priority in making revisions is to provide for correcting deficiencies related to grazing authorizations in excess of recognized grazing capacity and to insuring adequate use supervision. For particular problem areas identified by the SD, District personnel, or outside groups, this effort will include special action by the SD to assign personnel to conduct resource inventories and complete other related work which will result in the proper allocation and management of livestock grazing in those areas. Actions required in Item 2 are second priority but significant initial effort is required in FY 1975.

Proposed AWP revisions will be submitted to the Director (510) by no later than October 25, 1974. Revisions will be accompanied by a complete narrative describing the new accomplishments planned, the other work foregone, and the extent to which your proposed revisions will correct presently identified deficiencies.

This office is aware of the severe limitations on manpower and funds required to accomplish the desired level of range management needed. We are making every effort to obtain essential funding. However, I must emphasize that many deficiencies exist that can be corrected with existing capability. I intend to follow up this direction on a continuing basis to assure the Secretary and myself that we are making positive strides in this important charge.

I would appreciate your views on additional ways we can improve our range management efforts.

Ernest Berkland

Major Considerations for Changes in The Grazing Regulations
Bureau of Land Management
Curt Berklund, Director
January 15, 1975

In 1934 Congress passed the Taylor Grazing Act to regulate livestock grazing on the national resource lands, ending a 50-year period of competitive use of the range. Regulations were adopted to adjudicate livestock use allowances to qualified ranch operations and to designate grazing allotments. The objectives of these regulations were essentially accomplished by the mid-1960's. With changing times and with intensified use of the national resource lands by a variety of users, the old regulations have not only fulfilled their usefulness but have also become outdated.

For several years the Bureau of Land Management has been working on a draft of suggested regulations which would modernize livestock grazing administration under the Taylor Grazing Act. A number of important areas of change are being considered to meet the modern-day needs for more intensive management of the national resource lands. Emphasis on the environment and considerations for other resource uses in the issuance of grazing permits need to be strengthened and incorporated into the regulations. Multiple use and environment are basic and viable objectives of the grazing management program as are sustained yield of forage and community and livestock operator stability.

Changes under consideration would:

1. Make the text of the regulations easier to read and to understand because the material is better organized than in the present regulations and the language is less formal.

2. Combine the regulations pertaining to land outside grazing districts (Section 15) with regulations pertaining to grazing districts (Section 3), providing common principles and practices for both types of land.

3. Provide for improvement and maintenance of environmental quality and tie the range management activity procedures to the Bureau's resource planning system.

4. Provide for the recognition and accommodation of other uses of national resource lands under the principles of multiple use (watershed, wild horses and burros, recreation, wildlife, etc.).

5. Retain existing preferences and base property control requirements for livestock use on the national resource lands to provide for orderly use and stabilization of the livestock industry.

6. Eliminate specific forage crop production requirements and allow for livestock operation flexibility whenever the national resource lands are under intensive management.

7. Require more intensive management of national resource lands involving grazing systems based on the biological needs of range plants. Grazing systems, incorporated into allotment management plans, would prescribe the pattern of livestock grazing use that would help achieve multiple use and environmental objectives.

8. Clarify range improvement construction policy and specify the kinds of range improvement construction that would be allowed and those that would be prohibited.

9. Allot at least 50 percent of the total grazing fee (Section 3) for range improvement activities.

10. Strengthen the means of coping with unauthorized livestock use and provide for increased penalties.

11. Reduce the office administrative workload.

The changes in the grazing regulations highlighted above are under review by the Department of the Interior. Regulations reflecting these changes are scheduled for publication as proposed rulemaking some time later this year.

APPENDIX 3

4115
4133
(N-930.7)

Nevada State Office
Room 3008 Federal Building
300 Booth Street
Reno, Nevada 89502

District Manager, Elko (N-010)

State Director, Nevada

Jackpot Allotment Management Plan

The subject plan has been reviewed by the Division of Resources and we have the following comments:

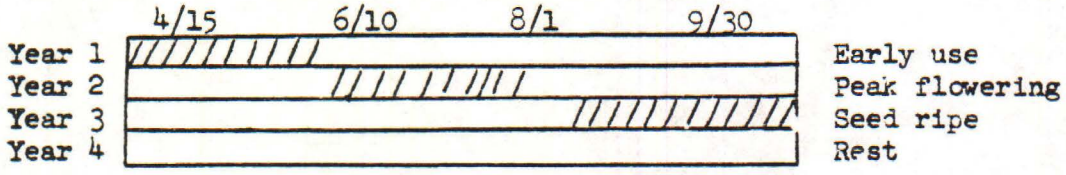
1. The plan outline follows BLM Manual guidelines.

2. Qualifications are ---------- 6406 AUM's (page 6)
   Carrying capacity ---------- 8065 AUM's (page 12)
   Normal operation
   9.5 months X 1,250 AU X 92% -------- 10050 AUM's (page 18)
   Flexibility allowance
   9.5 months X 1,250 AU X 92% -------- 10925 AUM's (page 19)

   What is the basis of raising the 1940 range survey AUM's by 55% on the Brown's Bench Area, 33% on the Grassy Mountain Area and 10% on th Rhone Pasture (page 12, last paragraph)? Why increase the operation by allowing 100 head of livestock as additional flexibility prior to proven available forage not needed for other uses?

3. Page 13, first paragraph, talks about a seeding in the fall of 1974 in the Snake Pasture. There is no mention of this seeding in the proposed project section nor does it show on the map. What is the purpose of the seeding? There was no problem identified in the general information section nor was it an objective to increase AUM's above Class I qualifications. It also appears that the production of additional imbalance in the forage production between pastures of the system.

4. Pages 13, 15, 16 - Shoshone System



Page 15 - The peak flowering treatment is to provide for seedling establishment, plant growth, and improved plant vigor.

To accomplish this, (1) seed would have to be planted in Year 1, which is not true; (2) plants would have to be rested until root reserves are replenished (seed ripe) for plant growth and increased vigor. This is not true, as plants would be grazed during this period.

5. The Brown's Bench and Grassy Mountain systems are not related to plant phenology - (page 14)

6. The Grassy Mountain system does not allow rest for the Cottenwood and Windmill pastures - (page 14)

7. Sandblow-Idavada system allows no rest for plants on a yearlong basis.

8. Page 18 discusses the normal operation as April 15 - January 31. If this is the normal operation, why are the grazing systems shown as ending the season on:

Shoshone ----------9/30
Brown's Bench------11/15
Grassy Mtn. -------11/30
Sandblow - Ida ----12/15

On page 19 under flexibility, the operator is authorized to stay as long as he wants to in the fall - does this mean January 31? Is this fall use?

9. There is no reference to the Salmon Falls HMP anywhere in this AMP. Seems like this would be good to notify the user, and good cross-reference for coordination of activity plans.

10. The Objectives make no reference to the Salmon Falls River as fish habitat, nor do they provide an objective towards good vegetation management on the stream banks or riparian habitat so vital to manage for trout stream habitat management.

11. The District's Planning System identifies a "crucial area" for antelope in this proposed AMP; however, no reference or mention is made anywhere in this AMP to this other important resource use, nor does the vegetation management system account for managing vegetation for antelope compatible with livestock use.

12. There are sage grouse in this area and there are meadows reported to be in deteriorated condition; however, no mention is made of this anywhere in the AMP, nor does the proposed management strive to improve these deteriorated meadows.

13. Regarding Section IV, it is recommended that a paragraph be added to state that this plan on national resource lands must consider and be consistnet with objectives of other resource activities on a multiple use basis.

14. Considering the number of pastures in the total operation, we believe that grazing systems could be designed to meet more specific multiple use objectives as well as comply with the basic concepts of plant phenology.

/s/ E. I. Rowland

REF arric:mc 2/25/74

Appendix # 4

UNITED STATES GOVERNMENT

Memorandum

DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

6620
(N-941.2)

Nevada State Office
Room 3008 Federal Building
300 Booth Street
Reno, Nevada 89502

DATE: DEC 14 1973

TO : Chief, Division of Resources (N-930)

FROM : Chief, Division of Technical Services

RECEIVED
DEC 1 1973
Bureau of Land Management
Ely, Nev.

SUBJECT: Hydrological Investigation of Goshute Creek

John Trimmer, Hydrologist of my staff, made a preliminary feasibility study of the Goshute Watershed, as requested by District Manager - Ely. The report of the Hydrological Investigation is enclosed.

James A. Yoakum, Wildlife Specialist, Nevada State Office, said that Goshute Creek is a good stream for the rearing of the fish. This is evidenced by the fish production over the past years.

The Hydrological Investigation of Goshute Creek Watershed of September 1973 shows the stream channel being in a deteriorating condition.

The following recommendations and suggestions reflect the thinking that this area is a good fishery and should be maintained.

1. The Goshute Creek Channel should be stabilized in the canyon at canyon dam to prevent the headcut from moving through alluvium into the upper canyon. To accomplish this: (1) an appropriately engineered structure must be designed to lower the water flows 10'-15' over the headcut and without damage to the downstream channel. The design of the structure should allow the passage of sediment from the upper watershed. (2) Upstream from the stream recorder another structure should be designed and installed. (3) Deposition of sediment in the stream channel downstream from canyon dam can be accomplished by planting vegetation along the stream banks and by properly designed and constructed structures.

2. The portion of the channel degrading from the stream recorder to the alluvial fan will start aggrading by deposition of sediment trapped by vegetation on the channel banks. To speed up the process, additional small structures appropriate for this need may also be desirable, although if used, every precaution must be taken to insure that the structures act in harmony with what we wish to accomplish.

3. The report reveals that the upper watershed is in good condition (SSF 40-41). Therefore, the upper watershed is quite stable. The opportunities to reduce uncontrolled runoff and sediment production are limited.

   Among the most important are:

   a. Continue or establish good vegatative management of the upper watershed. (Lower SSF if possible to 20.)
   b. The substandard roads be erosion proofed by waterbars, location change, seeding, etc.
   c. Spring source areas be protected and water for livestock furnished away from these locations.

4. The flood frequency curve developed for this area reflects that there is a wide variation in the peak (cfs) of yearly runoff. While we are not certain of the frequency of runoff that was experienced May 1973, the odds are about 1 chance in 10 of getting a runoff of this magnitude in the next 5 years and about 1 to 2 of getting runoff that would cause some damage in the next 5 years.

5. Diverting water from the "new" channel to the "original" channel can be accomplished. Some items to consider are: (1) Additional water loss to the ground watertable. (2). An energy dissipation device near the county road must be provided. (3) Attention must be paid to the method of making the initial diversion to prevent damage to the stream channel.

   Because of the nature of the alluvial fan, diverting water into the original channel may be advantageous from a fisheries standpoint. The "original" water course through the alluvial fan is deeper and has formed some meanders that will cause alternate pools and riffles which are more desirable for the fish.

6. The Goshute Creek Habitat Management Plan should be modified because measures (structural) contained in the report are not compatable with the physical nature of the stream and watershed.

   Functional requirements must be developed to identify specific needs that must be met to maintain this creek as a fishery. The water uses that depend on this creek must be considered. Functional requirements should be developed for these uses, and included in the overall plan.

   After the functional requirements are developed, the feasibility study can be completed. The results of the feasibility study will then furnish the information to update the Habitat Management Plan.

sgd Ralph S. Dunn

Appendix # 5

FIELD TRIP REPORT

Location: Goshute Creek

Date: October 26, 1973

Personnel: Frank Dodge, Nevada Fish and Game Dept.
Don Cain, Bureau of Land Management
Pardee Bardwell, Bureau of Land Management

Purpose: Population Inventory

Sample Area	Fork Length in Inches 2	3	4	5	6	7	8	9	10	Avg. Size	Fish/ Mile
A	Not shocked										
B	2			5	8		1	2		5.21	760
C				7	1	4	1	1		6.14	591
D				5						5.00	211
E				3	2					5.40	211
F						1				7.00	42
G					2			1	1	7.75	169
H						1				7.00	42
I				2	5		3			6.40	422
Totals	2			22	18	6	5	4	1	6.03	272

The table above is a summary of the electro shocking. The table below shows how the data compares with past years.

Year	Fork Length in Inches 2	3	4	5	6	7	8	9	10	11	12	Avg. Size	Fish/ Mile
1969	56						1	5				2.66	291
1970				24	14	5	2	6	1			6.13	244
1971	12		1	3	5	14	12	8	3			6.36	272
1972	104	7		1	7	8	9	14	5		1	3.79	733
1973	2			22	18	6	5	4	1			6.03	272

The inventory revealed a very unsuccessful hatch again in 1973. This can be attributed to the very high spring run-off which did considerable damage to the stream channel and fish habitat. In some sections of the stream especially on the lower bench area the cutthroat population was possibly annihilated from the high water.

The stream bottom near the mouth of the canyon was lowered by at least three feet and many sections of the mid-canyon showed that the stream bottom had been scoured out to a two-foot depth. The lower B.L.M. pond in mid-canyon had a channel cut through it that varied from 5 to 12 feet in depth.

This tremendous load of gravel and silt was carried out of the canyon and deposited about half way down the bench in Steptoe Valley. The stream spread out over the lower bench into many channels. When the high water receded, the stream channel in which Sample Area A was located was left high and dry.

That the fish survived in any part of the stream is testimony to their adaptability to the most severe conditions. In fact, the population showed an increase in fish five inches and over in length. Had there been a successful hatch and good survival of young-of-the-year fish the population would be at a high level.

The poor condition of the upstream watershed due to continued overuse by livestock remains as the key factor influencing the condition of the Goshute Creek fishery. Fencing projects scheduled by the B.L.M. have not as yet been initiated.

Prepared by: Frank H. Dodge, Jr.
Fish and Game Agent II

November 28, 1973

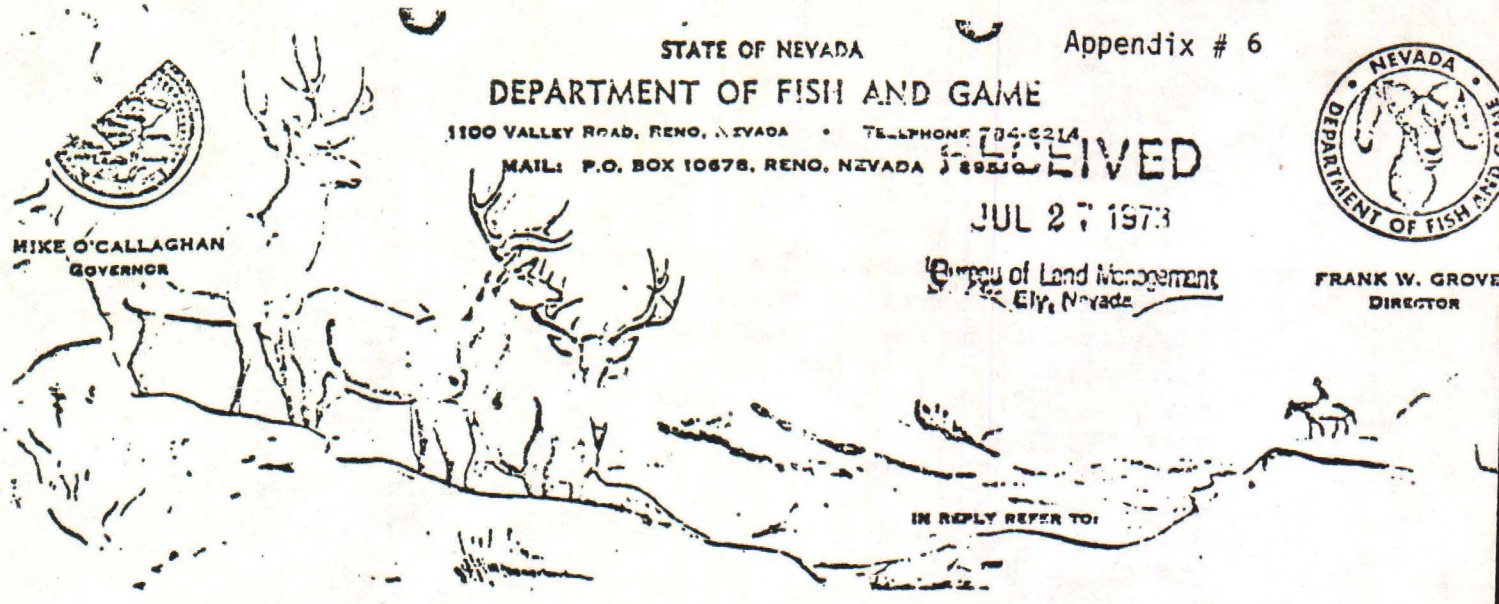
cc: B.L.M.
Elko Office

STATE OF NEVADA
DEPARTMENT OF FISH AND GAME
1100 VALLEY ROAD, RENO, NEVADA • TELEPHONE 784-6214
MAIL: P.O. BOX 10678, RENO, NEVADA 89510

MIKE O'CALLAGHAN
GOVERNOR

FRANK W. GROVE
DIRECTOR

Appendix # 6



IN REPLY REFER TO:

27 July 1973

Robert Schultz
District Manager
Bureau of Land Management
United States Dept. of Interior
Pioche Star Route
Ely, Nevada 89301

Dear Bob:

Last week I met with two of your staff and Bill Lear and Pete Cordano at Goshute Creek to discuss problems concerning the water use. Mr. Lear stated that he wanted to divert the water down the south diversion ditch to irrigate some meadow land and this would also allow some hay fields farther north to dry up so that he could begin haying operations in two to three weeks. The south diversion ditch is the one that begins about 3/8 mile above the county road and crosses the county road about 150 yards south of the present main channel.

At first, I was very much in disfavor of him diverting the water as it would adversely affect the cutthroat population from that point on down. However, further investigation brought several things to light of which I had been unaware.

1. The main Goshute Creek stream channel is 100 to 200 yards north of the present stream channel.

2. This old channel was dammed off about 3/4 mile above the county road in the Spring of 1952 and the water ditched down an old road which ran straight down the bench. This has been the creek channel since then but the stream does not want to follow this man-made route. Even under normal flow the stream has a tendency to leave its banks and spread into

several small streams. This has created a bad situation for the rare cutthroat trout that we have in this stream. We have tried to remedy the situation by the installation of trash catcher stream improvement devices but they have been only limitedly successful and in some cases may have aggravated the situation even further. The situation is further aggravated by the continued poor condition of the Goshute Creek watershed due to livestock abuse. The watershed is in such condition that a accumulated snow or heavy rains come down in a rush doing even more damage to the stream channel and depositing a heavy load of silt and gravel on the bench area.

I estimate that over 90% of the cutthroat were lost on the bench area during high spring run-off this year. A large load of gravel was deposited on the bench, forcing the water to spread and follow several small channels.

When I considered that only a very few cutthroat remained alive on the lower bench area, I withdrew my objection to Mr. Lear diverting the water down the southern diversion ditch and even assisted him in doing so on July 18, 1973. After the water was diverted I was successful in rescuing 58 cutthroat from the several small drying channels and transplanted them in the stream above the mouth of the canyon. According to Mr. Lear, this diversion will be necessary for 3 to 4 weeks or until he can complete haying operations on the ranch.

From a fisheries standpoint I would like to see the stream returned to the original channel from which it was diverted in 1952. It is a large enough channel so that it should be able to keep the stream contained and it should form its own pools for fish habitat. If the stream is returned to its present channel we can expect continued trouble even in below normal runoff years and the stream will continue to jump its banks high up on the bench.

If the stream is put into the old original channel it will not be an end to our Goshute Creek problems. It will only make them less severe and less frequent. High water years will continue to bring large loads of silt and gravel which will be dumped somewhere. It is my belief the original channel will carry this load to a point about 1/4 mile above the county road in the vicinity of the south west corner of an old abandoned field and be dropped there. At that point there is an existing diversion ditch which could return the water to the channel presently used. The stream could go under the road in the existing culvert or a larger one if the county would put one in.

In any event, I don't think it will make much difference what we do out there, we are going to continue to have problems until the watershed is improved. Livestock use in the upper basin must be reduced by fencing to get rid of trespass stock and I still feel the area should be given total rest for several years.

If it is decided to put the stream back in the old original stream channel it would be necessary to move the proposed fence line on the north side of the stream about 100 yards further to the north. I feel that these fences should be put in at the earliest possible time to protect the stream banks. If the stream is put back into the original north channel I would recommend the planting of willows or other vegetation along the banks to establish cover for the cutthroat and to help control erosion.

Sincerely,

Frank H. Dodge, Jr.
Fish and Game Agent II

FHD:gp

cc: Region II HQs

Slide Narration

The following 37 slides and captions provide a photographic record of some of the conditions discussed in the evaluation report "Effects of Livestock Grazing on Wildlife, Watershed, Recreation and Other Resource Values in Nevada." Slides are arranged according to related findings. All findings could not be portrayed pictorially.

Title Slide

Finding 3. Range and livestock management outside of intensive management (AMP) areas are insufficient to sustain the forage required for wildlife, livestock, wild horses and ground cover for watershed protection.

Slide 1 In areas where allotment management plans do not exist and where range is grazed year after year without rest or seasonal deferment, an undesirable change or succession of plants usually takes place. This may be illustrated by the invasion or spread of the pinon-juniper type. Pinon-juniper invasion from the mountainous areas and ridge tops has advanced to the swale in the center of the picture. Sagebrush and grass are being crowded out and replaced by trees.

Slide 2 Note the small pinon tree in the sagebrush indicative of invasion. Las Vegas District.

Slide 3 The tall plants with light colored stems are bitterbrush which is in poor condition due to repeated heavy grazing. They no longer are capable of supporting the number of deer they once did on this critical deer winter range in the Ely District. The area is in an advanced stage of invasion by undesirable pinon trees and juniper. Potential of the site for producing wildlife and livestock forage as well as watershed protection is rated good. Note the good growth on top of the bitterbrush plants where cattle and deer have not been able to eat.

Slide 4 Closed stand of pinon-juniper forest in Nevada. This plant community provides virtually no forage for livestock, wildlife, or wild horses and burros. Watershed protection value is limited.

Slide 5 Pinon-juniper invasion allowed to go unchecked will give the landscape a general appearance similar to that of this stand in the Las Vegas District. No doubt not all of the area seen here is due to invasion. At this stage, chemical, mechanical, fire or other means are needed to get rid of the pinon-juniper and provide a productive plant community for wildlife, livestock and watershed protection.

Slide 6 — In areas where intensive grazing management systems do not exist and the physiological requirements of plants are not met, adverse affects show up in other ways. Heavy and repeated removal of foliage by animals reduces the capacity of plants to grow, and in turn dwarfs root systems so that grazed plants are weakened and populations dwindle. Less valuable forage and watershed protective plants become established. This is believed to be the sequence of events that occurred in the area pictured. What may have been a meadow with vegetation capable of withstanding concentrated flows of water now is primarily sagebrush which has given way to accelerated erosion. Contributing to what is seen here is unsatisfactory upland watershed conditions which do not slow the flow of runoff. Undoubtedly a road or livestock or game trail began the process of accelerated erosion where the gully now is located. Properly designed and operated intensive grazing management plans could prevent this from occurring. Structures of some type as well as management will now be necessary to remedy this situation. Winnemucca District.

Slide 7 — Without management, livestock return to the same areas year after year compounding already poor conditions. This picture was taken during April in the Duckwater area of the Ely District. Halogeton, a plant poisonous to livestock, is the primary vegetation.

Slide 8 — This picture taken in the same Duckwater area portrays the result of poor watershed conditions. Good ground cover is not available to slow water runoff and hold soil. Large gullies result.

Finding 6. — There have been no formal allocations of forage for wild horses and burros in Nevada other than a small amount (1,819 AUM's) which was allocated during a mid-1960 adjudication. It involved an area in the Carson City District where available forage exceeded Class I grazing qualifications of the livestock operator. (See glossary in the evaluation report for a definition of "adjudication" and "Class I grazing qualifications.")

Slide 9 — Wild horse and burro inventory map for the Las Vegas District in Southern Nevada. Las Vegas is near the lower center of the picture. Each dot indicates a herd of horses or burros.

Slide 10 — Wild horses on an open range in the Winnemucca District. Their forage requirements were not identified when range was allocated for livestock uses. Horse numbers have been increasing at a rate of about 20% per year since passage of the Wild Horse and Burro Act.

Slide 11 Wild horses in the Ely District. Uncontrolled yearlong use adversely affects riparian vegetation.

Finding 10. Livestock grazing is adversely impacting riparian habitat.

Slide 12 Riparian habitat in poor condition due to heavy grazing use. Water Canyon. Ely District.

Slide 13 Fence line contrast. Riparian habitat in poor condition on the side being grazed. The non-use side is improving. Water Canyon. Ely District.

Slide 14 Heavy grazing of riparian habitat. Goshute Creek. Ely District.

Slide 15 Nevada State Department of Fish and Game closed Goshute Creek to fishing. BLM continues to allow grazing in the immediate area of the creek thus affecting riparian vegetation. Goshute Creek contains a subspecies of Utah cutthroat trout expected to be classified as endangered. Ely District.

Slide 16 Erosion and lowered water table has all but eliminated riparian vegetation at this stream gauging site. Upper Goshute Creek. Ely District.

Slide 17 Goshute Creek was diverted at this site to facilitate a haying operation downstream. The steambed now being followed lacks riparian vegetation.

Slide 18 This dry section of Goshute Creek once carried water capable of supporting trout.

Slide 19 This trash catcher structure has been rendered useless because of the Goshute diversion. It was intended to create a small pool of water downstream in which fish could rest. Riffles would develop upstream.

Slide 20 Typical streamside scene in Nevada. There is heavy utilization of forage and a lack of riparian vegetation. Intensive inventories are needed to determine which streams or stream sections are most valuable for fish and wildlife. Relief from grazing pressure will have to be obtained through fencing or rest of one or more years in grazing systems in order to improve the riparian habitat. Duration of rest would depend upon the plant species desired; two or more years for willows; one year for certain meadow grasses and sedges. Winnemucca District.

Slide 21 Riparian vegetation is absent along this stream in the Winnemucca District. Salt for livestock is located unnecessarily close to water near the center of the picture. A more distant location might improve livestock distribution.

Slide 22 Riparian vegetation cannot become established if it is heavily utilized by livestock every year. Winnemucca District.

Finding 11. Protection and enhancement of wildlife, aesthetic, recreation and cultural values have not had sufficient emphasis in the past during range improvement construction.

Slide 23 Spring development resulting in meadow destruction and poor aesthetics. Las Vegas District.

Slide 24 Development of this spring has captured all of the water in the headbox in the center of the picture. The small meadow area downhill has been destroyed and probably will not recover because water is no longer available in historic quantities. Las Vegas District.

Slide 25 This spring development in the Ely District has surface water within a fenced area of about one acre and water piped outside. Seeding of mixed browse and grass and excluding livestock provides excellent wildlife habitat in this example of a good spring development.

Slide 26 This reservoir development in the Winnemucca District was not fenced with a provision for piping water outside. Livestock use prevents wildlife cover and riparian habitat from becoming established.

Slide 27 Unfenced livestock reservoir. Winnemucca District.

Slide 28 Fenced spring and reservoir development providing for wildlife habitat in the Winnemucca District.

Slide 29 Water trough with no bird or small animal ladders or floating device to allow birds or animals to get out of troughs if they should fall in.

Slide 30 Roads along fences and clearing fence lines by "dropping the blade" prior to construction causes adverse visual impacts. This practice is no longer allowed. Winnemucca District.

Slide 31 Mid-1960's sagebrush spraying in the Winnemucca District. Unsprayed strips or leave strips that would provide habitat for sagehen and other wildlife were not included in this project. Current Bureau policy should now assure consideration for wildlife within sprayings.

Slide 32 — The majority of revegetation projects have been seeded only to crested wheatgrass which has little value to wildlife except for early spring and late fall use for deer, antelope, and elk. Deer can be seen in this April picture taken in the Ely District on part of a ranching operation which has some 50,000 acres of crested wheatgrass seedings. More recent seedings in Nevada have included a variety of browse species to benefit wildlife.

Slide 33 — Vegetative treatments in the 1960's usually did not provide for wildlife or aesthetic values. They most often had straight edges, no leave strips and cleared drainages such as in this picture. Las Vegas District.

Slide 34 — Straight edged seedings with no leave strips lend little to aesthetics or wildlife values. Ely District.

Slide 35 — Vast areas of chaining, plowing, and spraying reduce wildlife useability and affect aesthetic value. Ely District.

Slide 36 — Chainings can be designed to blend in with landscape. Ely District.

Slide 37 — Good blend of chaining and seeding with good cover remaining for wildlife. Ely District.

This slide series is a part of the BLM special evaluation team report entitled "Effects of Livestock Grazing on Wildlife, Watershed, Recreation and Other Resource Values in Nevada", and can be found in the BLM Washington, D. C. Office. Cost prohibits including slides or prints with each copy of the report.

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