APPENDIX A
FUNDAMENTALS OF RANGELAND HEALTH AND STANDARDS AND GUIDELINES FOR GRAZING ADMINISTRATION (43 CFR 4180)

§ 4180.1 Fundamentals of rangeland health.

The authorized officer shall take appropriate action under subparts 4110, 4120, 4130, and 4160 of this part as soon as practicable but not later than the start of the next grazing year upon determining that existing grazing management needs to be modified to ensure that the following conditions exist.

(a) Watersheds are in, or are making significant progress toward, properly functioning physical condition, including their upland, riparian-wetland, and aquatic components; soil and plant conditions support infiltration, soil moisture storage, and the release of water that are in balance with climate and landform and maintain or improve water quality, water quantity, and timing and duration of flow.

(b) Ecological processes, including the hydrologic cycle, nutrient cycle, and energy flow, are maintained, or there is significant progress toward their attainment, in order to support healthy biotic populations and communities.

(c) Water quality complies with State water quality standards and achieves, or is making significant progress toward achieving, established BLM management objectives such as meeting wildlife needs.

(d) Habitats are, or are making significant progress toward being, restored or maintained for Federal threatened and endangered species, Federal Proposed, Category 1 and 2 Federal candidate and other special status species.

§ 4180.2 Standards and guidelines for grazing administration.

(a) The Bureau of Land Management State Director, in consultation with the affected resource advisory councils where they exist, will identify the geographical area for which standards and guidelines are developed. Standards and guidelines will be developed for an entire state, or an area encompassing portions of more than 1 state, unless the Bureau of Land Management State Director, in consultation with the resource advisory councils, determine that the characteristics of and area are unique, and the rangelands within the area could not be adequately protected using standards and guidelines developed on a broader geographical scale.

(b) The Bureau of Land Management State Director, in consultation with affected Bureau of Land Management resource advisory councils, shall develop and amend State or regional standards and guidelines. The Bureau of Land Management State Director will also coordinate with Indian tribes, other State and Federal land management agencies responsible for the management of lands and resources with in the region or area under consideration, and the public in the development of State or regional standards and guidelines. Standards and guidelines developed by the Bureau of Land Management State Director must provide for conformance with the fundamentals of § 4180.1. State or regional standards or guidelines developed by the Bureau of Land Management State Director may not be implemented prior to their approval by the Secretary. Standards and guidelines made effective under paragraph (f) of this section may be modified by the Bureau of Land Management State Director, with approval of the Secretary, to address local ecosystems and management practices.

(c) The authorized officer shall take appropriate action as soon as practicable but not later than the start of the next grazing year upon determining that existing grazing management practices or levels of grazing use on public lands are significant factors in failing to achieve the standards and conform with the guidelines that are made effective under this section. Appropriate actions means implementing actions pursuant to subparts 4110, 4120, 4130, and 4160 of this part that will result in significant progress toward fulfillment of the standards and significant progress toward conformance with the guidelines. Practices and activities subject to standards and guidelines include the development of grazing-related portions of activity plans, establishment of terms and conditions of permits, leases and other grazing authorizations, and range improvement activities such as vegetation manipulation, fence construction and development of water.

(d) At a minimum. State or regional standards developed under paragraphs (a) and (b) of this section must address the following:

(1) Watershed function;

(2) Nutrient cycling and energy flow;

(3) Water quality;

(4) Habitat for endangered, threatened, proposed, Candidate 1 or 2, or special status species; and

(5) Habitat quality for native plant and animal populations and communities.

(e) At a minimum, State or regional guidelines developed under paragraphs (a) and (b) of this section must address the following:

(1) Maintaining or promoting adequate amounts of vegetative ground cover, including standing plant material and litter, to support infiltration, maintain soil moisture storage, and stabilize soils;

(2) Maintaining or promoting subsurface soil conditions that support permeability rates appropriate to climate and soils;

(3) Maintaining, improving or restoring riparian-wetland functions including energy dissipation, sediment capture, groundwater recharge, and stream bank stability;

(4) Maintaining, or promoting stream channel morphology (e.g., gradient, width/depth ratio, channel roughness and sinuosity) and functions appropriate to climate and landform;

(5) Maintaining or promoting the appropriate kinds and amounts of soil organisms, plants and animals to support the hydrologic cycle, nutrient cycle, and energy flow;

(6) Promoting the opportunity for seedling establishment of appropriate plant species when climatic conditions and space allow;

(7) Maintaining, restoring or enhancing water quality to meet management objectives, such as meeting wildlife needs;

(8) Restoring, maintaining or enhancing habitats to assist in the recovery of Federal threatened and endangered species;

(9) Restoring, maintaining or enhancing habitats of Federal Proposed, Category 1 and 2 Federal candidate, and other special status species to promote their conservation;

(10) Maintaining or promoting the physical and biological conditions to sustain native populations and communities;

(11) Emphasizing native species in the support of ecological function; and

(12) Incorporating the use of non-native plant species only in those situations in which native species are not available in sufficient quantities or are incapable of maintaining or achieving properly functioning conditions and biological health;

(f) In the event that State or regional standards and guidelines are not completed and in effect by February 12, 1997, and until such time as State or regional standards and guidelines are developed and in effect, the following standards provided in paragraph (f)(1) of this section and guidelines provided in paragraph (f)(2) of this section shall apply and will be implemented in accordance with paragraph (c) of this section.

(1) Fallback standards.

(i) Upland soils exhibit infiltration and permeability rates that are appropriate to soil type, climate and landform.

(ii) Riparian-wetland areas are in properly functioning condition.

(iii) Stream channel morphology (including but not limited to gradient, width/depth ratio, channel roughness and sinuosity) and functions are appropriate for climate and landform.

(iv) Healthy, productive and diverse populations of native species exist and are maintained.

(2) Fallback guidelines.

(i) Management practices maintain or promote adequate amounts of ground cover to support infiltration, maintain soil moisture storage, and stabilize soils;

(ii) Management practices maintain or promote soil conditions that support permeability rates that are appropriate to climate and soils;

(iii) Management practices maintain or promote sufficient residual vegetation to maintain, improve or restore riparian-wetland functions of energy dissipation, sediment capture, groundwater recharge and stream bank stability.

(iv) Management practices maintain or promote stream channel morphology (e.g., gradient, width/depth ratio, channel roughness and sinuosity) and functions that are appropriate to climate and landform;

(v) Management practices maintain or promote the appropriate kinds and amounts of soil organisms, plants and animals to support the hydrologic cycle, nutrient cycle, and energy flow;

(vi) Management practices maintain or promote the physical and biological conditions necessary to sustain native populations and communities;

(vii) Desired species are being allowed to complete seed dissemination in 1 out of every 3 years (Management actions will promote the opportunity for seedling establishment when climatic conditions and space allow.);

(viii) Conservation of Federal threatened or endangered, Proposed, Category 1 and 2 candidate, and other special status species is promoted by the restoration and maintenance of their habitats;

(ix) Native species are emphasized in the support of ecological function;

(x) Non-native plant species are used only in those situations in which native species are not readily available in sufficient quantities or are incapable of maintaining or achieving properly functioning conditions and biological health;

(xi) Periods of rest from disturbance or livestock use during times of critical plant growth or regrowth are provided when needed to achieve healthy, properly functioning conditions (The timing and duration of use periods shall be determined by the authorized officer.);

(xii) Continuous, season-long livestock use is allowed to occur only when it has been demonstrated to be consistent with achieving healthy, properly functioning ecosystems;

(xiii) Facilities are located away from riparian-wetland areas wherever they conflict with achieving or maintaining riparian-wetland function;

(xiv) The development of springs and seeps or other projects affecting water and associated resources shall be designed to protect the ecological functions and processes of those sites; and

(xv) Grazing on designated ephemeral (annual and perennial) rangeland is allowed to occur only if reliable estimates of production have been made, an identified level of annual growth or residue to remain on site at the end of the grazing season has been established, and adverse effects on perennial species are avoided.

This Table contains a list of decisions from BLM's Resource Management Plans in New Mexico that relate to the County, Proposed and Fallback standards and guidelines in Chapter 2. The table include determinations on what happens to existing decisions in the RMPs if the standards and guidelines are adopted under the various alternatives. Only those decisions which would be modified or replaced are shown. RMPs needing modifications under one or more of the alternatives include: Rio Puerco, Farmington, White Sands, Taos, Carlsbad, and Roswell. RMPs not needing to be modified include Socorro and Mimbres. Most decisions from the RMPs would not be modified or changed as those existing decisions conform with the standards and guidelines. Decisions not modified can be reviewed in each Resource Area or District Office, they remain part of the RMP and are used with the standards and guidelines.

RIO PUERCO RMP

EXISTING RMP DECISION/OBJECTIVE	How S&Gs Will Affect Decision		
	County S&G	**RAC S&G**	**Fallback S&G**
ACCESS/TRANSPORTATION/ORV **Decision**: Permitted competitive events such as the "Oh My God 100" will continue to be authorized as not limited to existing roads and trails. p. 81 **Objective**: To provide areas for motor bikes to hold competitive events on a limited basis.	Modify both the decision and objective. They would read: Decision: *Permitted competitive events such as the "Oh My God 100" will be evaluated on a case by case basis and limited to existing roads and trails.* Objective: *To evaluate areas for motor bikes to hold competitive events on a case by case basis.*	Decision and objective would be replaced as shown for the County alternative.	Decision and objective would be replaced as shown for the County alternative.
Decision: Another area has been designated for competitive dune buggy events using existing routes (Map 16). p. 81 **Objective**: To provide a designated area for dune buggy competitive events.	Decision and/or objective would be modified to read: Decision: *Competitive dune buggy events will be evaluated on a case by case basis and limited to existing roads and trails.* Objective: *To evaluate dune buggy competitive events on a case by case basis.*	Decision and/or objective would be modified with the same wording shown for the County alternative.	Decision and/or objective would be modified with the same wording shown for the County alternative.

WHITE SANDS RMP - LAS CRUCES FIELD OFFICE

EXISTING RMP DECISION	How S&Gs Will Affect Decision		
	County S&G	RAC S&G	Fallback S&G
White Sands RMP - 1986 Lands Decision L-3 Land Tenure Adjustment (...New rangeland developments, vegetation treatments, and access will not be proposed in land tenure adjustment areas.)	Decision would be modified by adding the following to the decision: areas)*, unless it is determined that the development or treatment is necessary to keep the lands in compliance with the New Mexico Standards for Healthy Range.*	Decision would be modified with the same wording shown for the County alternative.	Decision would be modified with the same wording shown for the County alternative.

FARMINGTON RMP

EXISTING RMP DECISION	How S&Gs Will Affect Decision		
	County S&G	RAC S&G	Fallback S&G
Issue #6 - Vegetative Uses - Set the correct levels of vegetative use based on a 5 year monitoring plan. Re-examine the Grazing Memorandum of Understanding between the BLM, BIA, and Navajo Nation to expand the agreement for allotments in the exchange zone and cancel the agreement for allotments in the retention and acquisition zones and in allotments wholly or partially within designated wilderness. (pg 2-3)	Decision would be modified by changing the first sentence to read as follows: Set the levels of vegetative use *to achieve resource function commensurate with the Public Land health standards.*	Decision would be modified with the same wording shown for the County S&G alternative.	Decision would be modified with the same wording shown for the County S&G alternative.

TAOS RMP

EXISTING RMP DECISIONS	How S&Gs Will Affect Decision		
	County S&G	RAC S&G	Fallback S&G
Wildlife The objective of the wildlife program is to maintain, improve, and expand wildlife habitat on the public lands for both consumptive and non-consumptive use. This program is also responsible for the protection and recovery of federal and state listed and candidate threatened and endangered plant and animal species. National legislation has directed the BLM to improve wildlife habitat. There are increasing demands on the wildlife resource for both consumptive and non-consumptive uses, as well as increasing competition with other resource uses, such as recreation, grazing, and fuelwood harvesting. Technical publications, studies, reports, and inventory data are used to update the Taos Resource Area with respect to management objectives and techniques.	The first sentence of the Decision would be modified to read: *The objective of the wildlife program is to maintain, improve, and expand wildlife habitat on the public lands for both consumptive and non-consumptive use, balanced with the conservation of cultural/historic opportunities for communities and individuals.* This program is also responsible for.....	Decision would not be modified under this alternative.	Decision would not be modified under this alternative.

EXISTING RMP DECISIONS	How S&Gs Will Affect Decision		
	County S&G	RAC S&G	Fallback S&G
Transportation 1. OR use on all public lands retained in Federal ownership are limited to existing roads and trails. There are two area which have special designations for OR use; Rio Chama is closed to OR use; and Fun Valley is open to OR use with Special Stipulations for Cultural and Paleontological values.	Decision would not be modified under this alternative.	Decision would not be modified under this alternative.	Decision would be modified to read: *OR use on all public lands retained in Federal ownership are limited to existing roads and trails. There are two areas which have special designations for OR use; Rio Chama is closed to OR use; and Fun Valley is open to OR use with Special Stipulations for cultural, Paleontological and vegetative resource values.*
Fun Valley Special Management Area Primary use of the Fun Valley SMA will be off-road vehicle use. Individual OR use and organized race events will be directed to this area. As a result, special consideration will be given to the paleontological and cultural resources in the area. Secondary uses will be grazing and mineral material sales.	Decision would not be modified under this alternative.	The first three sentences of the Decision would be modified to read: *One of the uses in the Fun Valley SMA will be off-road vehicle use. Individual OR use and organized race events will be directed to this area. As a result, special consideration will be given to the paleontological, cultural and vegetative resources in the area.* Secondary uses will be.....	Decision would be modified with the same wording shown for the RAC alternative.

CARLSBAD RMP

EXISTING RMP DECISION	How S&Gs Will Affect Decision		
	County S&G	RAC S&G	Fallback S&G
Vegetation (p. 4 RMP ROD) *Vegetation treatments will be applied to approximately 62,000 acres, or 6% of the total federal acreage, west of the Pecos River. Approximately 95% will be treated with prescribed fire, while the remainder will be treated chemically.	Decision would be replaced with the following wording: *Vegetation treatments may be applied as needed to achieve health rangeland standards.*	Decision would be modified with the same wording shown for the County alternative.	Decision would be modified with the same wording shown for the County alternative.
Livestock Grazing **Livestock management east of the Pecos will be in accordance with East Eddy-Lea MFP grazing decisions (p.1 Carlsbad RMP)** 1.1 Revise 14 existing AMP's to maximize livestock forage on a sustained basis, and to incorporate rest periods to meet the physiological needs of key forage plants.	Decision would be replaced with the following wording: *Revise 14 existing AMPs so that livestock forage is available on a sustained basis, commensurate with public land health standards, and to incorporate rest periods to meet the physiological needs of key forage plants.*	Decision would be modified with the same wording shown for the County alternative.	Decision would be modified with the same wording shown for the County alternative.
1.3 Develop grazing systems on 42 allotments to maximize livestock forage on a sustained basis, and to incorporate rest periods to meet the physiological needs of key forage plants.	Decision would be replaced with the following wording: *Develop grazing systems on 42 allotments designed to affect the objectives of the New Mexico Standards for Public Land Health and Guidelines for Livestock Grazing Management.*	Decision would be modified with the same wording shown for the County alternative.	Decision would be modified with the same wording shown for the County alternative.

ROSWELL RMP

EXISTING RMP DECISION - Roswell Resource Management Plan	How S&Gs Will Affect Decision		
	County S&G	RAC S&G	Fallback S&G
Appendix 19. Decisions from Previous Planning Documents 2.) All allotments will be classified as suitable for yearlong grazing unless future activity plans specify a need to change the season of use. (West Roswell MFPA/EIS Record of Decision)	Decision would not be modified under this alternative.	Decision would be modified to read: *All allotments will be classified as suitable for yearlong grazing unless resource conditions reflect a need to change the season of use necessary to meet the standards and guidelines.*	Decision would be modified with the same wording shown for the RAC alternative.
Appendix 19. Decisions from Previous Planning Documents 3.) Develop Allotment Management Plans (AMPs) for allotments where intensive management appears feasible. Grazing schedules incorporated in AMP's should be designed to achieve upward trend and fair or better condition in 6 TO 8 years and maximum sustained carrying capacity in 15 to 20 years. (East Chaves Framework Plan, initially)	Decision would not be modified under this alternative.	Decision would be modified to read: *Develop Allotment Management Plans (AMPs) as consistent with the grazing guidelines, to implement management actions needed to move toward achieving the standards and to respond to requests for plan development by individual permittees/lessees.*	Decision would be modified with the same wording shown for the RAC alternative.
Appendix 19. Decisions from Previous Planning Documents 7.) Documented grazing programs and/or cooperative management plans (CMPs') will be implemented on "I" category allotments. Specific programs and plan will be applied to individual allotments on a priority basis beginning with those allotments with the highest potential for improvement. (West Roswell MFPA/EIS Record of Decision)	Decision would not be modified under this alternative.	Decision would be modified to read: *Documented grazing programs and/or management plans will be implemented on allotments consistent with the grazing guidelines and to respond to requests by permittees/lessee for plan development and implementation.*	Decision would be modified with the same wording shown for the RAC alternative.

EXISTING RMP DECISION - Roswell Resource Management Plan	How S&Gs Will Affect Decision		
	County S&G	RAC S&G	Fallback S&G
Appendix 19. Decisions from Previous Planning Documents 8.) Revise AMP's that have been implemented and are not showing improvement. Revise or develop grazing schedules designed to achieve an improving trend and fair or better condition in 6 to 8 years and maximum sustained carrying capacity in 15 to 20 years.	Decision would not be modified under this alternative.	Decision would be modified to read: *Revise AMP's that have been implemented and are not consistent with the Standards & Guidelines.*	Decision would be modified with the same wording shown for the RAC alternative.
Appendix 19. Decisions from Previous Planning Documents 9.) The following allotments do not require prescribed grazing management by BLM. Proper grazing use through the efforts of the rancher and the Soil Conservation Service should be encouraged for these allotments. "C" CATEGORY ALLOTMENTS 5001, 5002, 5003, 5004, 5006, 5008, 5009, 5011, 5013, 5014, 5015, 5016, 5017, 5022, 5023, 5026, 5027, 5030, 5031, 5033, 5035, 5039 (SHERMAN CATTLE), 5039 (RED TANK CORP.), 5042, 5045, 5052, 5054, 5056, 5059, 5060, 5061, 5064, 5070, 5071, 5081, 5093 (East Chaves Management Framework Plan, initially).	Decision would not be modified under this alternative.	Decision would be dropped under this alternative.	Decision would be dropped under this alternative.

EXISTING RMP DECISION - Roswell Resource Management Plan	How S&Gs Will Affect Decision		
	County S&G	RAC S&G	Fallback S&G
Appendix 19. Decisions from Previous Planning Documents 12.) Implementation of rangeland improvement projects will be in accordance with the Final Rangeland Improvement Policy (Washington Office Instruction Memorandum 83-27). In allocating rangeland improvement funds, BLM procedures for evaluating, ranking, and budgeting range improvements will be applied. Appropriated funds available for investment in rangeland improvements will be allocated as follows: a. First, to the maintenance of improvements that continue to serve a valid purpose or objective and for which the BLM has maintenance responsibility. b. Second, for the design, construction and maintenance of new rangeland improvements that conform with a specific development plan for the area. Such plans may be Cooperative Management Plans (CMPs) -now Allotment Management Plans (AMPs), Habitat Management Plans (HMPs), Herd Management Plans (HMAPs) or other plans providing a rational decision-making framework for meeting multiple-use management objectives. c. Additional range improvements will be evaluated and implemented when the need is identified. (West Roswell MFPA/EIS Record of Decision)	Decision would be modified to read: *Implementation of rangeland improvement projects and treatments will be consistent with current laws, regulations, policies, land use plans and budgetary priorities. Rangeland improvements and treatments will be designed and implemented in a manner that is consistent and will promote rangeland health and achieve the standards and guidelines.*	Decision would be modified with the same wording shown for the County alternative.	Decision would be modified with the same wording shown for the County alternative.

EXISTING RMP DECISION - Roswell Resource Management Plan	How S&Gs Will Affect Decision		
	County S&G	RAC S&G	Fallback S&G
Appendix 19. Decisions from Previous Planning Documents 15.) Provisions should be made for planning revegetation of land to a level which is suitable for livestock production on land simultaneous with or upon abandonment of a site. Mining areas, oil and gas roads and pads, mineral sites should be protected either through stipulations or by Bureau action prior to disturbance. (East Chaves Management Framework Plan)	Decision would not be modified under this alternative.	Decision would be modified to read: *The land will be revegetated to a level which is suitable to promote diversity and ground cover on land simultaneous with or upon abandonment of a site. Mining areas, oil and gas roads and pads, mineral sites will be protected either through stipulations or by Bureau action prior to disturbance.*	Decision would be modified with the same wording shown for the RAC alternative.

EXISTING RMP DECISION - Roswell Resource Management Plan	How S&Gs Will Affect Decision		
	County S&G	RAC S&G	Fallback S&G
Chapter 2 PRMP/EIS, pg. 2-42 - 43 LIVESTOCK GRAZING MANAGEMENT			
Goal: Provide effective and efficient management of allotments to maintain, improve, and monitor range conditions.	Goal would not be modified under this alternative.	Goal would not be modified under this alternative.	Goal would not be modified under this alternative.
Allotment categorization and initial grazing use allocations made in the East Roswell Grazing Environmental Impact Statement (1979) and the Roswell Resource Area Management Framework Plan Amendment/Environmental Impact Statement (1984) would be used as the basis for continued livestock grazing. Changes in use allocations would continue to be made on the basis of monitoring data. Livestock grazing management decisions from previous land use plans, and the disposition of those decisions, are discussed in Appendix 19.	Proposed wording in the PRMP/EIS would not be modified under this alternative.	Proposed wording in the PRMP/EIS would be modified under this alternative to read: *Livestock grazing management decisions made in the East Roswell Grazing Environmental Impact Statement (1979) and the Roswell Resource Area Management Framework Plan Amendment/Environmental Impact Statement (1984) would be used as the basis for continued livestock grazing. Changes in use allocations would continue to be made on the basis of monitoring data. These decisions are discussed in Appendix 19.*	Proposed wording in the PRMP/EIS would be modified with the same wording shown for the RAC alternative.
Within the Macho WHA, new internal pasture fences constructed of netwire would not be allowed across public lands on allotments that currently support pronghorn or on allotments in the WHA with the potential to provide suitable pronghorn habitat. Future changes in class of livestock would necessitate reconsidering the fencing standard to be used in each situation. Exceptions to this requirement are: - The grazing permittee agrees to the construction of pronghorn passes on proposed interior fences; - The grazing pemittee agrees to allow the BLM to modify fences; - Netwire would be used in the construction of small traps or holding pens; - Netwire would be used in security fences around facilities such as microwave sites.	Proposed wording in the PRMP/EIS would be modified under this alternative to read: *Within portions of the Macho WHA meeting the antelope suitability criteria, new internal pasture fences constructed of netwire would not be allowed accross public lands on allotments that currently support pronghorn or on allotments in the WHA with the potential to provide suitable pronghorn habitat. Exceptions to this requirement are:* *- The grazing permittee agrees to the construction of pronghron passes on proposed interior fences;* *- The grazing pemittee agrees to allow the BLM to modify fences;* *-Netwire would be used in the*	Proposed wording in the PRMP/EIS would be modified under this alternative with the same wording shown for the County alternative.	Proposed wording in the PRMP/EIS would be modified under this alternative with the same wording shown for the County alternative.

EXISTING RMP DECISION - Roswell Resource Management Plan	How S&Gs Will Affect Decision		
	County S&G	RAC S&G	Fallback S&G
	- The grazing permittee agrees to allow the BLM to modify fences; - Netwire would be used in the construction of small traps or holding pens; *- Netwire would be used in security fences around facilities such as microwave sites.* *Future changes in class of livestock would necessitate reconsidering the fencing standard to be used in each situation.*		
Chapter 2 PRMP/EIS, pg. 2-69 Special Status Species Habitat Management Goal: Provide protection and recovery for all federal and state listed species. Manage occupied and potential habitat for federal and state-listed species on public land to maintain or enhance populations. Manage habitat for federal candidate species to avoid degrading habitat and further listing by either state or federal governments while allowing for mineral production and development, livestock grazing and other uses. Refer to Appendix 17 for listing of Special Status Species occurring or potentially occurring in the Roswell Resource Area.	*Goal statement would not be modified under this alternative.* *The following wording would be added as a paragraph following the paragraph after the goal statement. It would read: Affected permittees/lessees will be offered the opportunity to participate in the development of recovery plans and to participate in Section 7 consultations.*	*Goal statement would not be modified under this alternative.* *Wording would not be modified under this alternative.*	*Goal statement would not be modified under this alternative.* *Wording would not be modified under this alternative.*

This Table contains a few decisions from BLM's Resource Management Plans in New Mexico not needing to be amended but related to the Proposed, County and Fallback standards and guidelines in chapter 2 possibly needing maintenance. Plan Maintenance is used to keep the data base and planning current. Plan Maintenance is used to clarify a decision without actually changing the overall decision. No formal notice or public involvement required in the maintenance process. The tables shows how RMP decisions could be maintained as provided for in 1610.5-4 of the planning regulations. The decisions would not need to be amended but could be maintained to include language based on the approval of standards and guidelines to be included with all existing decisions. The decisions listed here is only a sampling of decisions that could be maintained for this action once the planning is completed. Decisions shown for maintenance include a sample from Rio Puerco, Farmington, White Sands, and Carlsbad RMPs. Decisions from Socorro, Taos, Roswell and Mimbres RMPs could also be maintained as provided for in 1610.5-4 for the planning regulations but no samples of their decisions were included here. Existing RMP decisions can be reviewed at the FOs where the RMP was prepared. It is not known how many decisions from the RMPs would have maintenance done on them following a decision of the standards and guidelines to be used in New Mexico. The standards and guidelines approved would be used in conjunction with existing RMP decisions as well as those amended through this RMPA/EIS process.

RIO PUERCO RMP

EXISTING RMP DECISION/OBJECTIVE	**. . . . . How S&Gs Will Affect Decision**		
	County S&G	**Proposed S&G**	**Fallback S&G**
Decision: Specific management prescriptions to resolve the identified resource conflicts will continue to be developed in Allotment Management Plans (AMPs). They will be prepared in consultation, cooperation and coordination with affected permittees and/or affected parties (PRIA Section 8). p. 46 **Objective**: To ensure that all resource needs are considered and how livestock grazing will be conducted.	Decision and/or objective could be maintained by adding: *commensurate with Public Land health standards and guidelines.*	Decision and/or objective could be maintained with the same wording shown for the County alternative.	Decision and/or objective could be maintained with the same wording shown for the County alternative.
Decision: Future rangeland improvements will be designed and constructed to meet the management objectives in the RMP. The extent, location and timing would depend on improvements needed for each allotment, allottee contributions, BLM funding, and other resource uses. All improvements will be subjected to economic analysis. This analysis will determine priority ranking. p. 49-51 **Objective**: Range improvement funds will be used in the highest priority allotments.	Decision and/or objective could be maintained by adding: *commensurate with Public Land health standards and guidelines.*	Decision and/or objective could be maintained with the same wording shown for the County alternative.	Decision and/or objective could be maintained with the same wording shown for the County alternative.

Decision: Animal damage control activities on public lands will be guided by Department of the Interior (DOI) policy. p. 54 **Objective**: Implement the current BLM-USDA animal damage control master memorandum of understanding.	Decision and/or objective could be maintained by adding: *commensurate with Public Land health standards and guidelines.*	Decision and/or objective could be maintained with the same wording shown for the County alternative.	Decision and/or objective could be maintained with the same wording shown for the County alternative.
Decision: Develop a comprehensive watershed plans by 1990 for the Governor, Trechado, Monte Seco, and San Jose watersheds as specified in the Divide MFP. p. 41 **Objective**: To reduce erosion and improve water quality. 1 - Commensurate with Public Land health standards and guidelines.	Decision and/or objective could be maintained by adding: *commensurate with Public Land health standards and guidelines.*	Decision and/or objective could be maintained with the same wording shown for the County alternative.	Decision and/or objective could be maintained with the same wording shown for the County alternative.
Decision: Public lands will be designated as "open", "limited", or "closed" for ORV use. p. 86 **Objective**: To determine which areas are best suited for ORV use in the RPRA based on environmental factors such as soil and vegetation.	Decision and/or objective could be maintained by adding: *commensurate with Public Land health standards and guidelines.*	Decision and/or objective could be maintained with the same wording shown for the County alternative.	Decision and/or objective could be maintained with the same wording shown for the County alternative.
Decision: The RPRA will prepare a Transportation Management Plan during FY 87. p. 115 **Objective**: A comprehensive road inventory is needed to identify type, maintenance needs, and if we plan to abandon road or upgrade it.	Decision and/or objective could be maintained by adding: *commensurate with Public Land health standards and guidelines.*	Decision and/or objective could be maintained with the same wording shown for the County alternative.	Decision and/or objective could be maintained with the same wording shown for the County alternative.

WHITE SANDS RMP

EXISTING RMP DECISION	HOW S&Gs WILL AFFECT DECISION		
	County S&G	Proposed S&G	Fallback S&G
Southern Rio Grande Grazing EIS - 1982 Rangeland Management - From Southern Rio Grande EIS Objective: To concentrate management and rangeland improvement efforts on those allotments that have a good potential for improvement and resolution of conflicts.	Objective would not need to be maintained under this alternative.	Objective could be maintained by adding the following at the end of the objective: conflict***, striving for healthy, productive and diverse populations of native species as defined by the NRCS Range Site Descriptions and consistent with a multiple use concept.***	Objective could be maintained by adding the following at the end of the objective: conflict***, striving for healthy, productive and diverse populations of native species as defined by the NRCS Range Site Descriptions and consistent with a multiple use concept.***

EXISTING RMP DECISION	HOW S&Gs WILL AFFECT DECISION		
	County S&G	Proposed S&G	Fallback S&G
White Sands RMP - 1986 <u>Rangeland Management - WSRA (Except McGregor Range)</u> Objectives: 1. A threatened, endangered, State-listed, or sensitive species clearance will be conducted by BLM prior to the beginning of any project. If a "may affect" determination is made, consultation will be undertaken with the agency (Fish and Wildlife Service, New Mexico Department of Game and Fish, or the New Mexico State Heritage Program) listing the species which may be affected. The results of the consultation will determine the course of action necessary to avoid adverse effects on listed species (Endangered Species Act and BLM Manual 6840).	Objective could be maintained by adding after the end if the second sentence following...the species which may be affected. ***In addition, consultation with the affected permittee will take place pursuant to New Mexico's Wildlife Conservation Act.***	Objective would not need to be maintained under this alternative.	Objective would not need to be maintained under this alternative.
2. Rangeland improvements will be designed to provide for wildlife needs. Livestock water developments will be designed to permit use and escape by wildlife species. Where BLM controls the water source, water will be available yearlong.	Objective would not need to be maintained under this alternative.	Objective 2 could be maintained by adding after the end of the third sentence the following...water will be available yearlong. ***New and existing facilities will be modified or located away from riparian-wetlands, where*** *they conflict with achieving desired future riparian condition*	Objective 2 could be maintained by adding after the end of the third sentence the following...water will be available yearlong. ***New and existing facilities will be modified or located away from riparian-wetlands, where*** *they conflict with achieving desired future riparian condition.*
Decisions: RM-3 Rangeland Monitoring Program "...The monitoring studies would provide information to establish the proper stocking rates, grazing treatments, rangeland development developments, and vegetation treatments necessary to properly manage the renewable resource of the Planning area."	Decision would not need to be maintained under this alternative.	Decision could be maintained by adding***...to properly manage the renewable resources of the Planning Area, striving for healthy, productive and diverse populations of native species as defined by NRCS Range Site Descriptions and consistent with the multiple use concept.***	Decision could be maintained by adding***...to properly manage the renewable resources of the Planning Area, striving for healthy, productive and diverse populations of native species as defined by NRCS Range Site Descriptions and consistent with the multiple use concept.***

EXISTING RMP DECISION	HOW S&Gs WILL AFFECT DECISION		
	County S&G	Proposed S&G	Fallback S&G
RM-5 Through land treatment projects (chemical, mechanical, and burning) on 241,576 acres, forage production will increase by 20,006 AUMs in the long-term. Seeding is planned for 1,597 acres. RM-6 It is estimated that the following rangeland developments will be constructed in the short-term: 142.9 miles of pipeline, 124.25 miles of fence, 34 wells with pumps or windmills, 36 storage tanks (20,000 gallons each), 148 drinking troughs, 16 dirt tanks, 74 erosion control dikes, and 1 catchment.	Decision would not need to be maintained under this alternative. Decision would not need to be maintained under this alternative.	Decision could be maintained by adding the following sentence. ***Seeding, using native species where possible and desirable is planned.*** Decision could be maintained by adding the following sentence. ***New and existing facilities will be modified or located away from riparian-wetlands, where*** *they conflict with achieving desired future riparian condition*	Decision could be maintained by adding the following sentence. ***Seeding, using native species where possible and desirable is planned.*** Decision could be maintained by adding the following sentence. ***New and existing facilities will be modified or located away from riparian-wetlands, where*** *they conflict with achieving desired future riparian condition*
White Sands RMP <u>Rangeland Management - McGregor Range</u> Mc/G-7 19 wells, 77 water troughs, 39 water storage tanks, and 5 dirt tanks will be constructed.	Decision would not need to be maintained under this alternative.	Decision could be maintained by adding the following sentence. ***The objective is for Riparian-Wetland areas to be in properly functioning condition as defined in BLM Tech Reference 1737-9 1993.***	Decision could be maintained by adding the following sentence. ***The objective is for Riparian-Wetland areas to be in properly functioning condition as defined in BLM Tech Reference 1737-9 1993.***
White Sands RMP - 1986 <u>Soils and Water Resources</u> Objectives: 2. The policy given in Manual 6740-Wetland-Riparian Area Protection and Management will provide the basis for management of all riparian areas.	Objective would not need to be maintained under this alternative.	Objective could be maintained by adding the following: ***The objective is for Riparian-Wetland areas to be in properly functioning condition as defined in BLM Tech Reference 1737-9 1993.***	Objective could be maintained by adding the following:***The objective is for Riparian-Wetland areas to be in properly functioning condition as defined in BLM Tech Reference 1737-9 1993.***

EXISTING RMP DECISION	HOW S&Gs WILL AFFECT DECISION		
	County S&G	Proposed S&G	Fallback S&G
White Sands RMP Amendment for McGregor Range - 1990 <u>Livestock Grazing</u> Objective: The Objectives of the grazing management program on McGregor Range are to maintain the present rangeland condition which is the desired plant community and maintain the trend on acres having good to excellent ecological condition and stable to improving trend, and stabilize or improve the trend in other areas; and increase the forage production from 49,877 animal unit months (AUMs) to 60,000 AUMs for utilization by cattle, deer, and pronghorn antelope.	Objective would not need to be maintained under this alternative.	Objective could be maintained by adding the following to the middle of the objective ...improve the trend in other areas ***with native species as the primary component of the desired plant community***; and increase the forage production...	Objective could be maintained by adding the following to the middle of the objective ...improve the trend in other areas ***with native species as the primary component of the desired plant community***; and increase the forage production...
MG-7 19 wells, 77 water troughs, 39 water storage tanks, and 5 dirt tanks will be constructed.	Decision would not need to be maintained under this alternative.	Decision could be maintained by adding the following: ***The objective is for Riparian-Wetland areas to be in properly functioning condition as defined in BLM Tech Reference 1737-9 1993.***	Decision could be maintained by adding the following: ***The objective is for Riparian-Wetland areas to be in properly functioning condition as defined in BLM Tech Reference 1737-9 1993.***
MG-8 3 corrals will be constructed.	Decision would not need to be maintained under this alternative.	Decision could be maintained by adding the following: ***The objective is for Riparian-Wetland areas to be in properly functioning condition as defined in BLM Tech Reference 1737-9 1993.***	Decision could be maintained by adding the following: ***The objective is for Riparian-Wetland areas to be in properly functioning condition as defined in BLM Tech Reference 1737-9 1993.***

EXISTING RMP DECISION	HOW S&Gs WILL AFFECT DECISION		
	County S&G	Proposed S&G	Fallback S&G
<u>Wildlife</u> Objectives: 3. The NMDGF, the New Mexico State Forestry Resource Conservation Division, and the USFWS will be consulted prior to implementing projects that may affect listed species or their habitat. Management activities in habitat for threatened, endangered, or sensitive species will be designed to benefit those species, or at least minimize any potential adverse influence of the activity on the species.	Objective would not need to be maintained under this alterative.	Decision could be maintained by adding the following: ...activity on the species***, and to be consistent with multiple use concepts and other Statutory requirements.***	Decision could be maintained by adding the following: ...activity on the species***, and to be consistent with multiple use concepts and other Statutory requirements.***

FARMINGTON RMP

EXISTING RMP DECISION	HOW S&Gs WILL AFFECT DECISION		
	County S&G	Proposed RAC S&G	Fallback S&G
Issue #1 - Land Ownership Adjustments - Actively pursue consolidated land ownership patterns by acquiring non-BLM lands in acquisition zones including special management areas, exchanging public lands out of BLM administration in the exchange zone, and disposing of land parcels specifically listed in the RMP. (pg 2-3)	Decision could be maintained by changing the decision as follows: Actively pursue consolidated land ownership patterns *capable of attaining resource functions commensurate with Public Land health standards* by acquiring non-BLM lands in acquisition zones including special management areas, exchanging public lands out of BLM administration in the exchange zone, and disposing of land parcels specifically listed in the RMP.	Decision could be maintained with the same wording shown for the county S&G alternative.	Decision could be maintained with the same wording shown for the county S&G alternative.
Issue #2 - Home Use Fuel Sources - Allow greenwood cutting in order to salvage trees scheduled for clearing in areas proposed for surface mining and land improvement projects. Allow collection of dead and down fuelwood Resource Area wide except in Special Management Areas prohibiting this activity. Examine domestic use license applications on a case-by-case basis. (pg 2-3)	Decision could be maintained by changing the first sentence to read as follows: Allow greenwood cutting in order to salvage trees scheduled for clearing in areas proposed for surface mining and *as* land improvement projects *to enhance resource functions commensurate with Public Land health standards.*	Decision could be maintained with the same wording shown for the county S&G alternative.	Decision could be maintained with the same wording shown for the county S&G alternative.

EXISTING RMP DECISION	HOW S&Gs WILL AFFECT DECISION		
	County S&G	Proposed RAC S&G	Fallback S&G
Issue #3 - Special Management Areas - Strive to achieve the land allocation management goal stated for each SMA and *resource function commensurate with Public Land health standards in (*1)* the management objectives identified in future activity plans. Implement the management prescriptions for each SMA. Assess future proposals for SMA designation based on existing representation in the SMA spectrum and the need for intensive management attention above that afforded by normal operations. Complete ACEC implementation plans by FY 90. (pg 2-3)	Decision could be maintained by changing the first sentence to read as follows: Strive to achieve the land allocation management goal stated for each SMA and *resource function commensurate with Public Land health standards in* the management objectives identified in future activity plans.	Decision could be maintained with the same wording shown for the county S&G alternative.	Decision could be maintained with the same wording shown for the county S&G alternative.
Guidance: Minerals - The objective of the minerals program is to provide for the public use of leasable, locatable, and saleable minerals consistent with the laws that govern these activities and to minimize environmental damage. (pg 2-8)	Decision could be maintained by changing it to read as follows: The objective of the minerals program is to provide for the public use of leasable, locatable, and saleable minerals consistent with the laws that govern these activities and to minimize environmental damage *to preserve natural functions commensurate with Public Land health standard.*	Decision could be maintained with the same wording shown for the county S&G alternative.	Decision could be maintained with the same wording shown for the county S&G alternative.
Issue #5 - Transportation - Complete ORV designation implementation plans according to BLM manual 8341 by FY 90 and begin monitoring. Acquire easements as needed. (pg 2-3)	Decision could be maintained by changing the first sentence to read as follows: Complete ORV designation implementation plans according to BLM manual 8341 by FY 90 and begin monitoring *to preserve natural functions within acceptable limits of Public Land health standard.*	Decision could be maintained with the same wording shown for the county S&G alternative.	Decision could be maintained with the same wording shown for the county S&G alternative.

EXISTING RMP DECISION	HOW S&Gs WILL AFFECT DECISION		
	County S&G	Proposed RAC S&G	Fallback S&G
Issue #7 - Rights-of-Way Corridors and Windows- Examine applications for Right-of-Way Corridors on a case-by-case basis. (pg 2-3)	Decision could be maintained by changing it to read as follows: Examine applications for Right-of-Way Corridors on a case-by-case basis, *preserve resource function commensurate with Public Land health standard.*	Decision could be maintained with the same wording shown for the county S&G alternative.	Decision could be maintained with the same wording shown for the county S&G alternative.

APPENDIX C-1
LETTER ON SECTION 7 CONSULTATION TO USF&WS

United States Department of the Interior

BUREAU OF LAND MANAGEMENT
New Mexico State Office
1474 Rodeo Road
P. O. Box 27115
Santa Fe, New Mexico 87502-011

IN REPLY REFER TO:
(931) 1610/6840 OCT 23 1996

Ms. Jennifer Fowler-Propst
Field Supervisor
Ecological Services State Office
U.S. Fish and Wildlife Service
2105 Osuna NE,
Albuquerque, NM 87113

Dear Ms. Fowler-Propst,

The Bureau of Land Management, New Mexico State Office (BLM, NMSO) is beginning the preparation of an Environmental Impact Statement (EIS) concerning the implementation of the new grazing regulations, resulting from the 1994 Rangeland Reform effort. We will specifically be selecting a set of standards, for public land health and guidelines for livestock grazing, from a range of alternatives that would guide management on BLM managed public lands in New Mexico. In the process, each of the eight (8) Resource Management Plans (one in each Resource Area, and the Farmington District) would be amended to incorporate these standards.

An initial draft of the EIS (Chapter 1, Purpose and Need) is attached to provide more information regarding the EIS. A team composed of BLM specialists from various offices has been assembled to prepare this document. J.W. Whitney, in the BLM, NMSO is the team leader. Mike Howard, in the Las Cruces District, has been assigned responsibility to complete the Vegetation and Special Status Species Sections, and the Biological Assessment. In addition, it is possible that a group of individuals representing the State of New Mexico will assist in development of the EIS. The EIS is scheduled to be completed in early August 1997. Preparation is on an extremely tight time frame.

At this time we would like to initiate Informal Section 7 Consultation and request an official list of listed, proposed and category 1 species to be considered in this effort. We

would appreciate having separate lists of species on public lands for each county of New Mexico.

If you have any questions regarding the project, please contact Mike Howard at (505) 525-4248, or J.W. Whitney at 505 438-7438.

Sincerely.

s/ Bill Overbaugh for

Richard A. Whitley
Deputy State Director
Resource, Planning,
Use and Protection

1 Enclosure:
Draft EIS Chapter 1 (6 pp)

cc:
NM (03000, Mike Howard)
NM (93100, J.W. Whitney)

APPENDIX C-2
LETTER ON SECTION 7 CONSULTATION FROM USF&WS

United States Department of the Interior

FISH AND WILDLIFE SERVICE
New Mexico Ecological Services Field Office
2105 Osuna NE
Albuquerque, New Mexico 87113
Phone: (505) 761-4525 Fax: (505) 761-4542

November 8, 1996

Cons. #2-22-97-l-049

Memorandum

To: Deputy State Director, Bureau of Land Management, Santa Fe, New Mexico

From: Field Supervisor, New Mexico Ecological Services Field Office, U.S. Fish and Wildlife Service, Albuquerque, New Mexico

Subject: Request for Species List

This responds to your October 23, 1996, memorandum requesting a list of species federally listed or proposed to be listed as endangered or threatened. The proposed project is preparation of an Environmental Impact Statement concerning the implementation of new grazing regulations resulting from the 1994 Rangeland Reform effort. As requested, a list of endangered, threatened, and candidate species, and species of concern for each county in New Mexico is attached. Under the Endangered Species Act, it is the responsibility of the Federal action agency or its designated representative to determine whether the proposed action "may affect" any listed or proposed species.

Candidates are those species for which the U.S. Fish and Wildlife Service (Service) has sufficient information on their biological status and threats to propose them as endangered or threatened, but for which issuance of a proposed rule is precluded by work on higher priority species. Species of concern include those for which further biological research and field study are needed to resolve their conservation status. Candidate species and species of concern have no legal protection under the Endangered Species Act and are included in this document for planning purposes only. However, the Service is concerned and would appreciate receiving any status information that is available or gathered on these species.

We suggest you contact the New Mexico Department of Game and Fish and the New Mexico Energy, Minerals, and Natural Resources Department, Forestry and Resources Conservation Division for information concerning fish, wildlife, and plants of State concern.

If we can be of further assistance, please contact Sonja Jahrsdoerfer at (505) 761-4525.

s/Jennifer Fowler-Propst

Attachment

cc: (wo/attch)
Director, New Mexico Department of Game and Fish, Santa Fe, New Mexico
Director, New Mexico Energy, Minerals, and Natural Resources Department, Forestry and Resources Conservation Division, Santa Fe, New Mexico

July 8, 1996

NEW MEXICO COUNTY LIST
ENDANGERED, THREATENED, AND CANDIDATE SPECIES
AND SPECIES OF CONCERN

Bernalillo

Arizona black-tailed prairie dog, Cynomys ludovicianus arizonensis, SC
Big free-tailed bat, Nyctinomops macrotis (= Tadarida m., T. molossa), SC
Black-footed ferret, Mustela nigripes, E
Fringed myotis, Myotis thysanodes, SC
Long-legged myotis, Myotis volans, SC
New Mexican meadow jumping mouse, Zapus hudsonius luteus, SC
Occult little brown bat, Myotis lucifugus occultus, SC
Pale Townsend's (=western) big-eared bat, Plecotus townsendii pallescens, SC
Pecos River muskrat, Ondatra zibethicus ripensis, SC
Small-footed myotis, Myotis ciliolabrum, SC
Spotted bat, Euderma maculatum, SC
Yuma myotis, Myotis yumanensis, SC
American peregrine falcon, Falco peregrinus anatum, E
Arctic peregrine falcon, Falco peregrinus tundrius, T (S/A)
Baird's sparrow, Ammodramus bairdii, SC
Bald eagle, Haliaeetus leucocephalus, T
Black tern, Chlidonias niger, SC
Ferruginous hawk, Buteo regalis, SC
Loggerhead shrike, Lanius ludovicianus, SC
Mexican spotted owl, Strix occidentalis lucida, T w/CH
Mountain plover, Charadrius montanus, C
Northern goshawk, Accipiter gentilis, SC
Southwestern willow flycatcher, Empidonax traillii extimus, E w/PCH
Western burrowing owl, Athene cunicularia hypugea, SC
White-faced ibis, Plegadis chihi, SC
Whooping crane, Grus americana, E
Flathead chub, Platygobio (= Hybopsis) gracilis, SC
Rio Grande silvery minnow, Hybognathus amarus, E w/PCH
Texas horned lizard, Phrynosoma cornutum, SC
Millipede, Toltecus chihuanus, SC

Catron

Allen's (Mexican) big-eared bat, Idionycteris (= Plecotus) phyllotis, SC
Big free-tailed bat, Nyctinomops macrotis (= Tadarida m., T. molossa), SC
Black-footed ferret, Mustela nigripes, E
Cave myotis, Myotis velifer, SC
Greater western mastiff bat, Eumops perotis californicus, SC
Fringed myotis, Myotis thysanodes, SC
Long-eared myotis, Myotis evotis, SC
Long-legged myotis, Myotis volans, SC
Occult little brown bat, Myotis lucifuqus occultus, SC
Pale Townsend's (= western) big-eared bat, Plecotus townsendii pallescens, SC
Southwestern Otter, Lutra canadensis sonorae, SC
Small-footed myotis, Myotis ciliolabrum, SC
Spotted bat, Euderma maculatum, SC
Yuma myotis, Myotis yumanensis, SC
American peregrine falcon, Falco peregrinus anatum, E
Arctic peregrine falcon, Falco peregrinus tundrius, T (S/A)
Baird's sparrow, Ammodramus bairdii, SC
Bald eagle, Haliaeetus leucocephalus, T
Brown pelican, Pelecanus occidentalis, E
Ferruginous hawk, Buteo regalis, SC
Interior least tern, Sterna antillarum, E
Loggerhead shrike, Lanius ludovicianus, SC
Mexican spotted owl, Strix occidentalis lucida, T w/CH
Mountain plover, Charadrius montanus, C
Northern goshawk, Accipiter gentilis, SC
Southwestern willow flycatcher, Empidonax trailli extimus, E w/PCH
Western burrowing owl, Athene cunicularia hypugea, SC
Chihuahua catfish, Ictalurus sp.*, SC
Desert sucker, Catostomus clarki, SC
Gila chub, Gila intermedia, SC
Gila trout, Oncorhynchus gilae, E
Loach minnow, Rhinichthys cobitis, T
Longfin dace, Agosia chrysogaster, SC
Roundtail chub, Gila robusta, SC
Sonora sucker, Catostomus insignis, SC
Speckled dace, Rhinichthys osculus (Gila drainage), SC
Spikedace, Meda fulgida, T
Arizona southwestern toad, Bufo microscaphus microscaphus, SC
Chiricahua leopard frog, Rana chiricahuensis, SC
Lowland leopard frog, Rana yavapaiensis, SC
Mexican garter snake, Thamnophis eques, SC
Narrowhead garter snake, Thamnophis rufipunctatus, SC
Blumer dock, Rumex orthoneurus, C

Catron, continued

Gila groundsel, Senecio quaerens, SC
Goodding's onion, Allium gooddingii, C
Hess' fleabane, Erigeron hessii, SC
Mogollon clover, Trifolium longipes var. neurophyllum, SC
Santa Fe cholla, Opuntia viridiflora, SC
Zuni (= rhizome) fleabane, Erigeron rhizomatus, T

Chaves

Arizona black-tailed prairie dog, Cynomys ludovicianus arizonensis, SC
Black-footed ferret, Mustela nigripes, E
Cave myotis, Myotis velifer, SC
Desert pocket gopher, Geomys bursarius arenarius, SC
Fringed myotis, Myotis thysanodes, SC
Long-eared myotis, Myotis evotis, SC
Long-legged myotis, Myotis volans, SC
Occult little brown bat, Myotis lucifugus occultus, SC
Pale Townsend's (= western) big-eared bat, Plecotus townsendii pallescens, SC
Pecos River muskrat, Ondatra zibethicus ripensis, SC
Small-footed myotis, Myotis ciliolabrum, SC
Swift fox, Vulpes velox, C
Yuma myotis, Myotis yumanensis, SC
American peregrine falcon, Falco peregrinus anatum, E
Arctic peregrine falcon, Falco peregrinus tundrius, T (S/A)
Baird's sparrow, Ammodramus bairdii, SC
Bald eagle, Haliaeetus leucocephalus, T
Black tern, Chlidonias niger, SC
Brown pelican, Pelecanus occidentalis, E
Ferruginous hawk, Buteo regalis, SC
Interior least tern, Sterna antillarum, E
Loggerhead shrike, Lanius ludovicianus, SC
Mountain plover, Charadrius montanus, C
Northern aplomado falcon, Falco femoralis septentrionalis, E
Northern goshawk, Accipiter gentilis, SC
Southwestern willow flycatcher, Empidonax traillii extimus, E w/PCH
Western burrowing owl, Athene cunicularia hypugea, SC
White-faced ibis, Plegadis chihi, SC
Arkansas River shiner, Notropis girardi, PE w/CH
Headwater catfish, Ictalurus lupus, SC
Pecos bluntnose shiner, Notropis simus pecosensis, T w/CH
Pecos gambusia, Gambusia nobilis, E
Pecos pupfish, Cyprinodon pecosensis, C
Plains minnow, Hybognathus placitus*, SC
Rio Grande shiner, Notropis jemezanus, SC
Dunes sagebrush lizard, Sceloporus arenicolus, SC
Texas horned lizard, Phrynosoma cornutum, SC
Koster's tryonia (springsnail), Tryonia kosteri, C
Noel's amphipod, Gammarus desperatus, SC
Pecos assiminea snail, Assiminea pecos, C
Roswell springsnail, "Fontelicella" roswellensis, C
Kuenzler hedgehog cactus, Echinocereus fendleri var. kuenzleri, E
Puzzle sunflower, Helianthus paradoxus, C
Wright's marsh thistle, Cirsium wrightii, SC

Cibola

Big free-tailed bat, Nyctinomops macrotis (= Tadarida m., T. molossa), SC
Black-footed ferret, Mustela nigripes, E
Cebolleta southern pocket gopher, Thomomys umbrinus paquatae, SC
Fringed myotis, Myotis thysanodes, SC
Long-eared myotis, Myotis evotis, SC
Long-legged myotis, Myotis volans, SC
Occult little brown bat, Myotis lucifuqus occultus, SC
Small-footed myotis, Myotis ciliolabrum, SC
Spotted bat, Euderma maculatum, SC
Yuma myotis, Myotis yumanensis, SC
American peregrine falcon, Falco peregrinus anatum, E
Arctic peregrine falcon, Falco peregrinus tundrius, T (S/A)
Bald eagle, Haliaeetus leucocephalus, T
Ferruginous hawk, Buteo regalis, SC
Loggerhead shrike, Lanius ludovicianus, SC
Mexican spotted owl, Strix occidentalis lucida, T w/CH
Mountain plover, Charadrius montanus, C
Northern goshawk, Accipiter gentilis, SC
Southwestern willow flycatcher, Empidonax traillii extimus, E w/PCH
Western burrowing owl, Athene cunicularia hypugea, SC
Zuni bluehead sucker, Catostomus discobolus yarrowi, SC
Texas horned lizard, Phrynosoma cornutum, SC
Acoma fleabane, Erigeron acomanus, SC
Cinder phacelia, Phacelia serrata, SC
Gypsum phacelia, Phacelia sp. nov./ined., SC
Puzzle sunflower, Helianthus paradoxus, C
Santa Fe cholla, Opuntia viridiflora, SC
Zuni (=rhizome) fleabane, Erigeron rhizomatus, T

Colfax

Black-footed ferret, Mustela nigripes, E
Fringed myotis, Myotis thysanodes, SC
Long-eared myotis, Myotis evotis, SC
Long-legged myotis, Myotis volans, SC
New Mexican meadow jumping mouse, Zapus hudsonius luteus, SC
Occult little brown bat, Myotis lucifugus occultus, SC
Swift fox, Vulpes velox, C
American peregrine falcon, Falco peregrinus anatum, E
Arctic peregrine falcon, Falco peregrinus tundrius, T (S/A)
Baird's sparrow, Ammodramus bairdii, SC
Bald eagle, Haliaeetus leucocephalus, T
Black tern, Chlidonias niger, SC
Loggerhead shrike, Lanius ludovicianus, SC
Ferruginous hawk, Buteo regalis, SC
Mexican spotted owl, Strix occidentalis lucida, T w/CH
Mountain plover, Charadrius montanus, C
Northern goshawk, Accipiter gentilis, SC
Piping plover, Charadrius melodus, T
Southwestern willow flycatcher, Empidonax traillii extimus, E w/PCH
Western burrowing owl, Athene cunicularia hypugea, SC
White-faced ibis, Plegadis chihi, SC
Flathead chub, Platygobio (= Hybopsis) giracilis, SC
Plains minnow, Hybognathus placitus, SC
Texas horned lizard, Phrynosoma cornutum, SC
Dwarf milkweed, Asclepias uncialis var. uncialis, SC

Curry

Black-footed ferret, Mustela nigripes, E
Swift fox, Vulpes velox, C
American peregrine falcon, Falco peregrinus anatum, E
Arctic peregrine falcon, Falco peregrinus tundrius, T (S/A)
Baird's sparrow, Ammodramus bairdii, SC
Bald eagle, Haliaeetus leucocephalus, T
Ferruginous hawk, Buteo regalis, SC
Loggerhead shrike, Lanius ludovicianus, SC
Western burrowing owl, Athene cunicularia hypugea, SC
Texas horned lizard, Phrynosoma cornutum, SC

DeBaca

Black-footed ferret, Mustela nigripes, E
Swift fox, Vulpes velox, C
American peregrine falcon, Falco peregrinus anatum, E
Arctic peregrine falcon, Falco peregrinus tundrius, T (S/A)
Baird's sparrow, Ammodramus bairdii, SC
Bald eagle, Haliaeetus leucocephalus, T
Ferruginous hawk, Buteo regalis, SC
Interior least tern, Sterna antillarum, E
Loggerhead shrike, Lanius ludovicianus, SC
Mountain plover, Charadrius montanus, C
Southwestern willow flycatcher, Empidonax traillii extimus, E w/PCH
Western burrowing owl, Athene cunicularia hypugea, SC
White-faced ibis, Plegadis chihi, SC
Flathead chub, Platygobio (= Hybopsis) gracilis, SC
Headwater catfish, Ictalurus lupus, SC
Pecos bluntnose shiner, Notropis simus pecosensis, T w/CH
Plains minnow, Hybognathus placitus*, SC
Rio Grande shiner, Notropis jemezanus, SC
Texas horned lizard, Phrynosoma cornutum, SC

Doña Ana

Big free-tailed bat, Nyctinomops macrotis (= Tadarida m., T. molossa), SC
Black-footed ferret, Mustela nigripes, E
Desert pocket gopher, Geomys bursarius arenarius, SC
Fringed myotis, Myotis thysanodes, SC
Greater western mastiff bat, Eumops perotis californicus, SC
Long-legged myotis, Myotis volans, SC
Occult little brown bat, Myotis lucifugus occultus, SC
Organ Mountains Colorado chipmunk, Eutamias quadrivittatus australis, SC
Pale Townsend's (= western) big-eared bat, Plecotus townsendii pallescens, SC
Pecos River muskrat, Ondatra zibethicus ripensis, SC
Small-footed myotis, Myotis ciliolabrum, SC
Spotted bat, Euderma maculatum, SC
White Sands woodrat, Neotoma micropus leucophaea, SC
Yuma myotis, Myotis yumanensis, SC
American peregrine falcon, Falco peregrinus anatum, E
Arctic peregrine falcon, Falco peregrinus tundrius, T (S/A)
Baird's sparrow, Ammodramus bairdii, SC
Bald eagle, Haliaeetus leucocephalus, T
Black tern, Chlidonias niger, SC
Ferruginous hawk, Buteo regalis, SC
Interior least tern, Sterna antillarum, E
Loggerhead shrike, Lanius ludovicianus, SC
Mexican spotted owl, Strix occidentalis lucida, T w/CH
Northern aplomado falcon, Falco femoralis septentrionalis, E
Southwestern willow flycatcher, Empidonax traillii extimus, E w/PCH
Western burrowing owl, Athene cunicularia hypugea, SC
White-faced ibis, Plegadis chihi, SC
Whooping crane, Grus americana, E
Texas horned lizard, Phrynosoma cornutum, SC
Anthony blister beetle, Lytta mirifica, SC
Doña Ana talussnail, Sonorella todseni, SC
Alamo beardtongue, Penstemon alamosensis, SC
Desert night-blooming cereus, Cereus greggii var. greggii, SC
Mescalero milkwort, Polygala rimulicola var. mescalerorum, SC
Nodding rock-daisy, Perityle cernua, SC
Organ Mountain evening-primrose, Oenothera organensis, SC
Organ Mountain figwort, Scrophularia laevis, SC
Sand prickly pear, Opuntia arenaria, SC
Sandhill goosefoot, Chenopodium cycloides, SC
Sneed pincushion cactus, Coryphantha sneedii var. sneedii, E
Standley whitlow-grass, Draba standleyi, SC

Eddy

Arizona black-tailed prairie dog, Cynomys ludovicianus arizonensis, SC
Big free-tailed bat, Nyctinomops macrotis (= Tadarida m., T. molossa), SC
Black-footed ferret, Mustela nigripes, E
Cave myotis, Myotis velifer, SC
Fringed myotis, Myotis thysanodes, SC
Gray-footed chipmunk, Tamias canipes, SC
Guadalupe southern pocket gopher, Thomomys umbrinus guadalupensis, SC
Long-legged myotis, Myotis volans, SC
Occult little brown bat, Myotis lucifugus occultus, SC
Pale Townsend's (= western) big-eared bat, Plecotus townsendii pallescens, SC
Pecos River muskrat, Ondatra zibethicus ripensis, SC
Small-footed myotis, Myotis ciliolabrum, SC
Swift fox, Vulpes velox, C
Yuma myotis, Myotis yumanensis, SC
American peregrine falcon, Falco peregrinus anatum, E
Arctic peregrine falcon, Falco peregrinus tundrius, T (S/A)
Baird's sparrow, Ammodramus bairdii, SC
Bald eagle, Haliaeetus leucocephalus, T
Black tern, Chlidonias niger, SC
Brown pelican, Pelecanus occidentalis, E
Ferruginous hawk, Buteo regalis, SC
Interior least tern, Sterna antillarum, E
Loggerhead shrike, Lanius ludovicianus, SC
Mexican spotted owl, Strix occidentalis lucida, T w/CH
Northern aplomado falcon, Falco femoralis septentrionalis, E
Northern goshawk, Accipiter gentilis, SC
Southwestern willow flycatcher, Empidonax traillii extimus, E w/PCH
Western burrowing owl, Athene cunicularia hypugea, SC
White-faced ibis, Plegadis chihi, SC
Blue sucker, Cycleptus elongatus, SC
Headwater catfish, Ictalurus lupus, SC
Pecos bluntnose shiner, Notropis simus pecosensis, T w/CH
Pecos gambusia, Gambusia nobilis, E
Pecos pupfish, Cyprinodon pecosensis, C
Plains minnow, Hybognathus placitus*, SC
Rio Grande shiner, Notropis jemezanus, SC
Dunes sagebrush lizard, Sceloporus arenicolus, SC
Texas horned lizard, Phrynosoma cornutum, SC
Ovate vertigo (snail), Vertigo ovata, SC
Pecos springsnail, “Fontelicella” pecosensis, SC
Texas hornshell (mussel), Popenaias popei, SC
Few-flowered jewelflower, Streptanthus sparsiflorus, SC
Glass Mountain coral-root, Hexalectris nitida, SC
Guadalupe rabbitbrush, Chrysothamnus nauseosus var. texemsis, SC

Eddy, continued

Gypsum wild-buckwheat, Eriogonum gypsophilum, T w/CH
Kuenzler hedgehog cactus, Echinocereus fendleri var. Kuenzleri, E
Lee pincushion cactus, Coryphantha sneedii var. leei, T
Lloyd's hedgehog cactus, Echinocereus lloydii, E
Mat leastdaisy, Chaetopappa hersheyi, SC
Tharp's blue-star, Amsonia tharpii, SC
Wright's water-willow, Justicia wrightii, SC

Grant

Black-footed ferret, Mustela nigripes, E
Cave myotis, Myotis velifer, SC
Fringed myotis, Myotis thysanodes, SC
Greater western mastiff bat, Eumops perotis californicus, SC
Long-eared myotis, Myotis evotis, SC
Long-legged myotis, Myotis volans, SC
Mexican gray wolf, Canis lupus baileyi, E
Occult little brown bat, Myotis lucifugus occultus, SC
Pale Townsend's (= western) big-eared bat, Plecotus townsendii pallescens, SC
Small-footed myotis, Myotis ciliolabrum, SC
Spotted bat, Euderma maculatum, SC
White-sided jackrabbit, Lepus callotis gaillardi, SC
Yuma myotis, Myotis yumanensis, SC
American peregrine falcon, Falco peregrinus anatum, E
Arctic peregrine falcon, Falco peregrinus tundrius, T (S/A)
Baird's sparrow, Ammodramus bairdii, SC
Bald eagle, Haliaeetus leucocephalus, T
Brown pelican, Pelecanus occidentalis, E
Ferruginous hawk, Buteo regalis, SC
Loggerhead shrike, Lanius ludovicianus, SC
Mexican spotted owl, Strix occidentalis lucida, T w/CH
Northern aplomado falcon, Falco femoralis septentrionalis, E
Northern goshawk, Accipiter gentilis, SC
Northern gray hawk, Buteo nitidus maximus, SC
Southwestern willow flycatcher, Empidonax traillii extimus, E w/PCH
Whooping crane, Grus americana, E
Beautiful shiner, Cyprinella formosa, T
Chihuahua chub, Gila nigrescens, T
Desert sucker, Catostomus clarki, SC
Gila chub, Gila intermedia, SC
Gila topminnow, Poeciliopsis occidentalis, E
Gila trout, Oncorhynchus gilae, E
Loach minnow, Rhinichthys cobitis, T
Longfin dace, Agosia chrysogaster, SC
Roundtail chub, Gila robusta, SC
Sonora sucker, Catostomus insignis, SC
Speckled dace, Rhinichthys osculus (Gila drainage), SC
Spikedace, Meda fulgida, T
Mexican garter snake, Thamnophis eques, SC
Narrowhead garter snake, Thamnophis rufipunctatus, SC
Texas horned lizard, Phrynosoma cornutum, SC
Arizona southwestern toad, Bufo microscaphus microscaphus, SC
Chiricahua leopard frog, Rana chiricahuensis, C
Lowland leopard frog, Rana yavapaiensis, SC

Grant, continued

Gila springsnail, “Fontelicella” gilae, C
New Mexico hotspring snail, “Fontelicella” thermals, C
Shortneck snaggletooth (snail), Gastrocopta dalliana dalliana, SC
Desert night-blooming cereus, Cereus greggii var greggii, SC
Dwarf milkweed, Asclepias uncialis var. uncialis, SC
Parish's alkali grass, Puccinellia parishii, PE
Pinos Altos fameflower, Talinum humile, SC
Porsild's starwort, Stellaria porsildii, SC
San Carlos wild-buckwheat, Eriogonum capillare, SC
Slender spiderflower, Cleome multicaulis, SC
Wright's dogweed, Adenophyllum wrightii var. wrightii, SC

Guadalupe

Black-footed ferret, Mustela nigripes, E
Pecos River muskrat, Ondatra zibethicus ripensis, SC
Small-footed myotis, Myotis ciliolabrum, SC
Spotted bat, Euderma maculatum, SC
Swift fox, Vulpes velox, C
American peregrine falcon, Falco peregrinus anatum, E
Arctic peregrine falcon, Falco peregrinus tundrius, T (S/A)
Baird's sparrow, Ammodramus bairdii, SC
Bald eagle, Haliaeetus leucocephalus, T
Brown pelican, Pelecanus occidentalis, E
Ferruginous hawk, Buteo regolis, SC
Loggerhead shrike, Lanius ludovicianus, SC
Mountain plover, Charadrius montanus, C
Southwestern willow flycatcher, Empidonax traillii extimus, E w/PCH
White-faced ibis, Plegadis chihi, SC
Flathead chub, Platygobio (= Hybopsis) gracilis, SC
Plains minnow, Hybognathus placitus*, SC
Rio Grande shiner, Notropis jemezanus, SC
Texas horned lizard, Phrynosoma cornutum, SC
Puzzle sunflower, Helianthus paradoxus, C
Wright's marsh thistle, Cirsium wrightii, SC

Harding

Black-footed ferret, Mustela nigripes, E
Swift fox, Vulpes velox, C
American peregrine falcon, Falco peregrinus anatum, E
Arctic peregrine falcon, Falco peregrinus tundrius, T (S/A)
Baird's sparrow, Ammodramus bairdii, SC
Bald eagle, Haliaeetus leucocephalus, T
Ferruginous hawk, Buteo regalis, SC
Loggerhead shrike, Lanius ludovicianus, SC
Mountain plover, Charadrius montanus, C
Southwestern willow flycatcher, Empidonax traillii extimus, E w/PCH
Western burrowing owl, Athene cunicularia hypugea, SC
White-faced ibis, Plegadis chihi, SC
Arkansas River shiner, Notropis girardi, PE w/CH
Flathead chub, Platygobio (= Hybopsis) gracilis, SC
Plains minnow, Hybognathus placitus, SC
Texas horned lizard, Phrynosoma cornutum, SC
Santa Fe cholla, Opuntia viridiflora, SC
Spellenberg's groundsel, Senecio spellenbergii, SC

Hidalgo

Arizona shrew, Sorex arizonae, SC
Big free-tailed bat, Nyctinomops macrotis (= Tadarida m., T. molossa), SC
Black-footed ferret, Mustela nigripes, E
California leaf-nosed bat, Macrotus californicus, SC
Cave myotis, Myotis velifer, SC
Fringed myotis, Myotis thysanodes, SC
Greater western mastiff bat, Eumops perotis californicus, SC
Lesser long-nosed bat, Leptonycteris curasoae yerbabuenae, E
Long-legged myotis, Myotis volans, SC
Mearns' southern pocket gopher, Thomomys umbrinus mearnsi, SC
Mexican gray wolf, Canis lupus baileyi, E
Mexican long-nosed bat, Leptonycteris nivalis, E
Mexican long-tongued bat, Choeronycteris mexicana, SC
Occult little brown bat, Myotis lucifuqus occultus, SC
Pale Townsend's (= western) big-eared bat, Plecotus townsendii pallescens, SC
Small-footed myotis, Myotis ciliolabrum, SC
Spotted bat, Euderma maculatum, SC
White-sided jackrabbit, Lepus callotis gaillardi, SC
Yellow-nosed cotton rat, Sigmodon ochrognathus, SC
Yuma myotis, Myotis yumanensis, SC
American peregrine falcon, Falco peregrinus anatum, E
Arctic peregrine falcon, Falco peregrinus tundrius, T (S/A)
Baird's sparrow, Ammodramus bairdii, SC
Bald eagle, Haliaeetus leucocephalus, T
Ferruginous hawk, Buteo regalis, SC
Loggerhead shrike, Lanius ludovicianus, SC
Mexican spotted owl, Strix occidentalis lucida, T w/CH
Northern aplomado falcon, Falco femoralis septentrionalis, E
Northern goshawk, Accipiter gentilis, SC
Northern gray hawk, Buteo nitidus maximus, SC
Southwestern willow flycatcher, Empidonax traillii extimus, E w/PCH
Western burrowing owl, Athene cunicularia hypugea, SC
Desert sucker, Catostomus clarki, SC
Loach minnow, Rhinichthys cobitis, T
Longfin dace, Agosia chrysogaster, SC
Roundtail chub, Gila robusta, SC
Sonora sucker, Catostomus insignis, SC
Spikedace, Meda fulgida, T
Canyon (giant) spotted whiptail, Cnemidophorus burti, SC
Gray-checkered whiptail, Cnemidophorus dixoni, SC
Mexican garter snake, Thamnophis eques, SC
Narrowhead garter snake, Thamnophis rufipunctatus, SC
New Mexican ridge-nosed rattlesnake, Crotalus willardi obscurus, T w/CH
Texas horned lizard, Phrynosoma cornutum, SC

Hidalgo, continued

Arizona southwestern toad, Bufo microscaphus microscaphus, SC
Chiricahua leopard frog, Rana chiricahuensis, C
Lowland leopard frog, Rana yavapaiensis, SC
Animas minute moss beetle, Limnebius aridus, SC
Hacheta Grande woodlandsnail, Ashmunella hebardi, SC
Shortneck snaggletooth (snail), Gastrocopta dalliana dalliana, SC
Chiricahua mudwort, Limosella publiflora, SC
Contra yerba, Pediomelum pentaphyllum, SC
Coppermine milk-vetch, Astracgalus cobrensis var. maguirei, SC
Desert night-blooming cereus, Cereus greggii var. greggii, SC
Griffith's saltbush, Atriplex griffithsii, SC
Gypsum hotspring aster, Machaeranthera gypsitherma, SC
Limestone rosewood, Vauquelinia californica ssp. pauciflora, SC
Ornate paintbrush, Castilleja ornata, SC
Parish's alkali grass, Puccinellia parishii, PE
San Carlos wild-buckwheat, Eriogonum capillare, SC

Lea

Black-footed ferret, Mustela nigripes, E
Cave myotis, Myotis velifer, SC
Swift fox, Vulpes velox, C
American peregrine falcon, Falco peregrinus anatum, E
Arctic peregrine falcon, Falco peregrinus tundrius, T (S/A)
Baird's sparrow, Ammodramus bairdii, SC
Bald eagle, Haliaeetus leucocephalus, T
Ferruginous hawk, Buteo regalis, SC
Loggerhead shrike, Lanius ludovicianus, SC
Northern aplomado falcon, Falco femoralis septentrionalis, E
Western burrowing owl, Athene cunicularia hypugea, SC
Dunes sagebrush lizard, Sceloporus arenicolus, SC
Texas horned lizard, Phrynosoma cornutum, SC

Lincoln

Arizona black-tailed prairie dog, Cynomys ludovicianus arizonensis, SC
Black-footed ferret, Mustela nigripes, E
Cave myotis, Myotis velifer, SC
Fringed myotis, Myotis thysanodes, SC
Gray-footed chipmunk, Tamias canipes, SC
Long-legged myotis, Myotis volans, SC
New Mexican meadow jumping mouse, Zapus hudsonius luteus, SC
Occult little brown bat, Myotis lucifugus occultus, SC
Organ Mountains Colorado chipmunk, Eutamias quadrivittatus australis, SC
Pale Townsend's (= western) big-eared bat, Plecotus townsendii pallescens, SC
Pecos River muskrat, Ondatra zibethicus ripensis, SC
Small-footed myotis, Myotis ciliolabrum, SC
Yuma myotis, Myotis yumanensis, SC
American peregrine falcon, Falco peregrinus anatum, E
Arctic peregrine falcon, Falco peregrinus tundrius, T (S/A)
Baird's sparrow, Ammodramus bairdii, SC
Bald eagle, Haliaeetus leucocephalus, T
Ferruginous hawk, Buteo regalis, SC
Loggerhead shrike, Lanius ludovicianus, SC
Mexican spotted owl, Strix occidentalis lucida, T w/CH
Mountain plover, Charadrius montanus, C
Northern aplomado falcon, Falco femoralis septentrionalis, E
Northern goshawk, Accipiter gentilis, SC
Southwestern willow flycatcher, Empidonax traillii extimus, E w/PCH
Longfin dace, Agosia chrysogaster*, SC
White Sands pupfish, Cyprinodon tularosa, SC
Sacramento mountain salamander, Aneides hardii, SC
Texas horned lizard, Phrynosoma cornutum, SC
Bonita diving beetle, Deronectes neomexicana, SC
Goodding's onion, Allium gooddingii, C
Kuenzler hedgehog cactus, Echinocereus fendleri var. kuenzleri, E
Sierra Blanca cliffdaisy, Chaetopappa elegans, SC
Wright's marsh thistle, Cirsium wrightii, SC

Los Alamos

Big free-tailed bat, Nyctinomops macrotis (= Tadarida m., T. molossa), SC
Black-footed ferret, Mustela nigripes, E
Goat Peak pika, Ochotona princeps nigrescens, SC
Long-legged myotis, Myotis volans, SC
New Mexican meadow jumping mouse, Zapus hudsonius luteus, SC
Occult little brown bat, Myotis lucifugus occultus, SC
Spotted bat, Euderma maculatum, SC
American peregrine falcon, Falco peregrinus anatum, E
Arctic peregrine falcon, Falco peregrinus tundrius, T (S/A)
Bald eagle, Haliaeetus leucocephalus, T
Ferruginous hawk, Buteo regalis, SC
Mexican spotted owl, Strix occidentalis lucida, T w/CH
Loggerhead shrike, Lanius ludovicianus, SC
Northern goshawk, Accipiter gentilis, SC
Southwestern willow flycatcher, Empidonax traillii extimus, E w/PCH
White-faced ibis, Plegadis chihi, SC
Whooping crane, Grus americana, E
Flathead chub, Platygobio (= Hybopsis) gracilis, SC
Jemez Mountains salamander, Plethodon neomexicanus, SC

Luna

Black-footed ferret, Mustela nigripes, E
Cave myotis, Myotis velifer, SC
Desert pocket gopher, Geomys bursarius arenarius, SC
Fringed myotis, Myotis thysanodes, SC
Greater western mastiff bat, Eumops perotis californicus, SC
Long-legged myotis, Myotis volans, SC
Mexican gray wolf, Canis lupus baileyi, E
Pale Townsend's (= western) big-eared bat, Plecotus townsendii pallescens, SC
Spotted bat, Euderma maculatum, SC
White-sided jackrabbit, Lepus callotis gaillardi, SC
American peregrine falcon, Falco peregrinus anatum, E
Arctic peregrine falcon, Falco peregrinus tundrius, T (S/A)
Baird's sparrow, Ammodramus bairdii, SC
Bald eagle, Haliaeetus leucocephalus, T
Ferruginous hawk, Buteo regalis, SC
Loggerhead shrike, Lanius ludovicianus, SC
Mountain plover, Charadrius montanus, C
Northern aplomado falcon, Falco femoralis septentrionalis, E
Northern gray hawk, Buteo nitidus maximus, SC
Southwestern willow flycatcher, Empidonax traillii extimus, E w/PCH
Western burrowing owl, Athene cunicularia hypugea, SC
Whooping crane, Grus americana, E
Beautiful shiner, Cyprinella formosa, T
Longfin dace, Agosia chrysogaster, SC
Chiricahua leopard frog, Rana chiricahuensis, C
Texas horned lizard, Phrynosoma cornutum, SC
Cook's Peak woodlandsnail, Ashmunella macromphala, SC
Florida mountainsnail, Oreohelix florida, SC
Shortneck snaggletooth (snail), Gastrocopta dalliana dalliana, SC
Desert night-blooming cereus, Cereus greggii var. greggii, SC
Sand prickly pear, Opuntia arenaria, SC

McKinley

Black-footed ferret, Mustela nigripes, E
Fringed myotis, Myotis thysanodes, SC
Long-eared myotis, Myotis evotis, SC
Long-legged myotis, Myotis volans, SC
Occult little brown bat, Myotis lucifuqus occultus, SC
Small-footed myotis, Myotis ciliolabrum, SC
Spotted bat, Euderma maculatum, SC
American peregrine falcon, Falco peregrinus anatum, E
Arctic peregrine falcon, Falco peregrinus tundrius, T (S/A)
Bald eagle, Haliaeetus leucocephalus, T
Black tern, Chlidonias niger, SC
Ferruginous hawk, Buteo regalis, SC
Loggerhead shrike, Lanius ludovicianus, SC
Mexican spotted owl, Strix occidentalis lucida, T w/CH
Northern goshawk, Accipiter gentilis, SC
Southwestern willow flycatcher, Empidonax traillii extimus, E w/PCH
Western burrowing owl, Athene cunicularia hypugea, SC
White-faced ibis, Plegadis chihi, SC
Zuni bluehead sucker, Catostomus discobolus yarrowi, SC
Acoma fleabane, Erigeron acomanus, SC
Arizona leatherflower, Clematis hirsutissima var arizonica, C
Goodding's onion, Allium gooddingii, C
Parish's alkali grass, Puccinellia parishii, PE
Sivinski's fleabane, Erigeron sivinskii, SC
Zuni (=rhizome) fleabane, Erigeron rhizomatus, T

Mora

Black-footed ferret, Mustela nigripes, E
Fringed myotis, Myotis thysanodes, SC
Long-legged myotis, Myotis volans, SC
New Mexican meadow jumping mouse, Zapus hudsonius luteus, SC
Occult little brown bat, Myotis lucifugus occultus, SC
Pale Townsend's (= western) big-eared bat, Plecotus townsendii pallescens, SC
Spotted bat, Euderma maculatum, SC
Swift fox, Vulpes velox, C
Yuma myotis, Myotis yumanensis, SC
American peregrine falcon, Falco peregrinus anatum, E
Arctic peregrine falcon, Falco peregrinus tundrius, T (S/A)
Baird's sparrow, Ammodramus bairdii, SC
Bald eagle, Haliaeetus leucocephalus, T
Ferruginous hawk, Buteo regalis, SC
Loggerhead shrike, Lanius ludovicianus, SC
Mexican spotted owl, Strix occidentalis lucida, T w/CH
Mountain plover, Charadrius montanus, C
Northern goshawk, Accipiter gentilis, SC
Southwestern willow flycatcher, Empidonax traillii extimus, E w/PCH
Western burrowing owl, Athene cunicularia hypugea, SC
White-faced ibis, Plegadis chihi, SC
Arkansas River shiner, Notropis girardi, PE w/CH
Flathead chub, Platygobio (= Hybopsis) gracilis, SC
Texas horned lizard, Phrynosoma cornutum, SC

Otero

Arizona black-tailed prairie dog, Cynomys ludovicianus arizonensis, SC
Big free-tailed bat, Nyctinomops macrotis (= Tadarida m., T. molossa), SC
Black-footed ferret, Mustela nigripes, E
Cave myotis, Myotis velifer, SC
Desert pocket gopher, Geomys bursarius arenarius, SC
Fringed myotis, Myotis thysanodes, SC
Gray-footed chipmunk, Tamias canipes, SC
Greater western mastiff bat, Eumops perotis californicus, SC
Guadalupe southern pocket gopher, Thomomys umbrinus guadalupensis, SC
Long-legged myotis, Myotis volans, SC
New Mexican meadow jumping mouse, Zapus hudsonius luteus, SC
Occult little brown bat, Myotis lucifugus occultus, SC
Pale Townsend's (= western) big-eared bat, Plecotus townsendii pallescens, SC
Small-footed myotis, Myotis ciliolabrum, SC
White Sands woodrat, Neotoma micropus leucophaea, SC
American peregrine falcon, Falco peregrinus anatum, E
Arctic peregrine falcon, Falco peregrinus tundrius, T(S/A)
Baird's sparrow, Ammodramus bairdii, SC
Bald eagle, Haliaeetus leucocephalus, T
Black tern, Chlidonias niger, SC
Ferruginous hawk, Buteo regalis, SC
Interior least tern, Sterna antillarum athalassos, E
Loggerhead shrike, Lanius ludovicianus, SC
Mexican spotted owl, Strix occidentalis lucida, T w/CH
Northern aplomado falcon, Falco femoralis septentrionalis, E
Northern goshawk, Accipiter gentilis, SC
Southwestern willow flycatcher, Empidonax traillii extimus, E w/PCH
Western burrowing owl, Athene cunicularia hypugea, SC
White-faced ibis, Plegadis chihi, SC
White Sands pupfish, Cyprinodon tularosa, SC
Sacramento mountain salamander, Aneides hardii, SC
Texas horned lizard, Phrynosoma cornutum, SC
Alamo beardtongue, Penstemon alamosensis, SC
Desert night-blooming cereus, Cereus greggii var. greggii, SC
Goodding's onion, Allium gooddingii, C
Guadalupe rabbitbrush, Chrysothamnus nauseosus var. texensis, SC
Gypsum scalebroom, Lepidospartum burgessii, SC
Kuenzler hedgehog cactus, Echinocereus fendleri var. kuenzleri, E
Sacramento Mountains thistle, Cirsium vinaceum, T
Sacramento prickly poppy, Argemone pleiacantha ssp. pinnatisecta, E
Sierra Blanca cliffdaisy, Chaetopappa elegans, SC
Todsen's pennyroyal, Hedeoma todsenii, E
Villard's pincushion cactus, Escobaria villardii, SC
Wright's marsh thistle, Cirsium wrightii, SC

Quay

Black-footed ferret, Mustela nigripes, E
Swift fox, Vulpes velox, C
American peregrine falcon, Falco peregrinus anatum, E
Arctic peregrine falcon, Falco peregrinus tundrius, T (S/A)
Baird's sparrow, Ammodramus bairdii, SC
Bald eagle, Haliaeetus leucocephalus, T
Black tern, Chlidonias niger, SC
Ferruginous hawk, Buteo regalis, SC
Loggerhead shrike, Lanius ludovicianus, SC
Mountain plover, Charadrius montanus, C
Southwestern willow flycatcher, Empidonax traillii extimus, E w/PCH
Western burrowing owl, Athene cunicularia hypugea, SC
White-faced ibis, Plegadis chihi, SC
Arkansas River shiner, Notropis girardi, PE w/CH
Arkansas River speckled chub, Hybopsis aestivalis tetranemus, SC
Flathead chub, Platygobio (= Hybopsis) gracilis, SC
Plains minnow, Hybognathus placitus, SC
Texas horned lizard, Phrynosoma cornutum, SC

Rio Arriba

Big free-tailed bat, Nyctinomops macrotis (= Tadarida m., T. molossa), SC
Black-footed ferret, Mustela nigripes, E
Goat Peak pika, Ochotona princeps nigrescens, SC
Long-eared myotis, Myotis evotis, SC
Long-legged myotis, Myotis volans, SC
New Mexican meadow jumping mouse, Zapus hudsonius luteus, SC
Occult little brown bat, Myotis lucifugus occultus, SC
Pale Townsend's (= western) big-eared bat, Plecotus townsendii pallescens, SC
Small-footed myotis, Myotis ciliolabrum, SC
Southwestern otter, Lutra canadensis sonorae, SC
Spotted bat, Euderma maculatum, SC
Yuma myotis, Myotis yumanensis, SC
American peregrine falcon, Falco peregrinus anatum, E
Arctic peregrine falcon, Falco peregrinus tundrius, T (S/A)
Baird's sparrow, Ammodramus bairdii, SC
Bald eagle, Haliaeetus leucocephalus, T
Black tern, Chlidonias niger, SC
Ferruginous hawk, Buteo regalis, SC
Harlequin duck, Histrionicus histrionicus, SC
Interior least tern, Sterna antillarum athalassos, E
Loggerhead shrike, Lanius ludovicianus, SC
Mexican spotted owl, Strix occidentalis lucida, T w/CH
Northern goshawk, Accipiter gentilis, SC
Southwestern willow flycatcher, Empidonax traillii extimus, E w/PCH
White-faced ibis, Plegadis chihi, SC
Whooping crane, Grus americana, E
Colorado squawfish, Ptychocheilus lucius, E
Flathead chub, Platygobio (= Hybopsis) gracilis, SC
Roundtail chub, Gila robusta, SC
Boreal western toad, Bufo boreas boreas, C
Jemez Mountains salamander, Plethodon neomexicanus, SC
Arizona willow, Salix arizonica, SC
Ripley milk-vetch, Astragalus ripleyi, SC

Roosevelt

Black-footed ferret, Mustela nigripes, E
Swift fox, Vulpes velox, C
American peregrine falcon, Falco peregrinus anatum, E
Arctic peregrine falcon, Falco peregrinus tundrius, T (S/A)
Baird's sparrow, Ammodramus bairdii, SC
Bald eagle, Haliaeetus leucocephalus, T
Ferruginous hawk, Buteo regalis, SC
Loggerhead shrike, Lanius ludovicianus, SC
Western burrowing owl, Athene cunicularia hypugea, SC
Whooping crane, Grus americana, E
Dunes sagebrush lizard, Sceloporus arenicolus, SC
Texas horned lizard, Phrynosoma cornutum, SC
Sandhill goosefoot, Chenopodium cycloides, SC

Sandoval

Big free-tailed bat, Nyctinomops macrotis (= Tadarida m., T. molossa), SC
Black-footed ferret, Mustela nigripes, E
Fringed myotis, Myotis thysanodes, SC
Goat Peak pika, Ochotona princeps nigrescens, SC
Long-eared myotis, Myotis evotis, SC
Long-legged myotis, Myotis volans, SC
New Mexican meadow jumping mouse, Zapus hudsonius luteus, SC
Occult little brown bat, Myotis lucifugus occultus, SC
Pale Townsend's (= western) big-eared bat, Plecotus townsendii pallescens, SC
Small-footed myotis, Myotis ciliolabrum, SC
Spotted bat, Euderma maculatum, SC
Yuma myotis, Myotis yumanensis, SC
American peregrine falcon, Falco peregrinus anatum, E
Arctic peregrine falcon, Falco peregrinus tundrius, T (S/A)
Baird's sparrow, Ammodramus bairdii, SC
Bald eagle, Haliaeetus leucocephalus, T
Ferruginous hawk, Buteo regalis, SC
Loggerhead shrike, Lanius ludovicianus, SC
Mexican spotted owl, Strix occidentalis lucida, T w/CH
Mountain plover, Charadrius montanus, C
Northern goshawk, Accipiter gentilis, SC
Southwestern willow flycatcher, Empidonax traillii extimus, E w/PCH
Western burrowing owl, Athene cunicularia hypugea, SC
White-faced ibis, Plegadis chihi, SC
Whooping crane, Grus americana, E
Flathead chub, Platygobio (= Hybopsis) gracilis, SC
Rio Grande silvery minnow, Hybognathus amarus, E w/PCH
Jemez Mountain salamander, Plethodon neomexicanus, SC
Gypsum phacelia, Phacelia sp. nov./ined., SC
Gypsum townsendia, Townsendia gypsophila, SC
Knight's milk-vetch, Astragalus knightii, SC
Parish's alkali grass, Puccinellia parishii, PE

San Juan

Big free-tailed bat, Nyctinomops macrotis (= Tadarida m., T. molossa), SC
Black-footed ferret, Mustela nigripes, E
Fringed myotis, Myotis thysanodes, SC
Long-eared myotis, Myotis evotis, SC
Long-legged myotis, Myotis volans, SC
Occult little brown bat, Myotis lucifugus occultus, SC
Pale Townsend's (= western) big-eared bat, Plecotus townsendii pallescens, SC
Small-footed myotis, Myotis ciliolabrum, SC
Spotted bat, Euderma maculatum, SC
Yuma myotis, Myotis yumanensis, SC
American peregrine falcon, Falco peregrinus anatum, E
Arctic peregrine falcon, Falco peregrinus tundrius, T (S/A)
Baird's sparrow, Ammodramus bairdii, SC
Bald eagle, Haliaeetus leucocephalus, T
Black tern, Chlidonias niger, SC
Brown pelican, Pelecanus occidentalis, E
Ferruginous hawk, Buteo regalis, SC
Loggerhead shrike, Lanius ludovicianus, SC
Mexican spotted owl, Strix occidentalis lucida, T w/CH
Mountain plover, Charadrius montanus, C
Northern goshawk, Accipiter gentilis, SC
Southwestern willow flycatcher, Empidonax traillii extimus, E w/PCH
Western burrowing owl, Athene cunicularia hypugea, SC
White-faced ibis, Plegadis chihi, SC
Colorado squawfish, Ptychocheilus lucius, E
Razorback sucker, Xyrauchen texanus, E
Roundtail chub, Gila robusta, SC
Arizona leatherflower, Clematis hirsutissima var. arizonica, C
Beautiful gilia, Gilia formosa, SC
Bisti fleabane, Erigeron bistiensis, SC
Brack's fishhook cactus, Sclerocactus cloveriae var. brackii, SC
Goodding's onion, Allium gooddingii, C
Knowlton cactus, Pediocactus knowltonii, E
Mancos milk-vetch, Astragalus humillimus, E
Mesa Verde cactus, Sclerocactus mesae-verdae, T
Parish's alkali grass, Puccinellia parishii, PE
Santa Fe cholla, Opuntia viridiflora, SC

San Miguel

Black-footed ferret, Mustela nigripes, E
Fringed myotis, Myotis thysanodes, SC
Long-eared myotis, Myotis evotis, SC
Long-legged myotis, Myotis volans, SC
New Mexican meadow jumping mouse, Zapus hudsonius luteus, SC
Occult little brown bat, Myotis lucifugus occultus, SC
Pale Townsend's (= western) big-eared bat, Plecotus townsendii pallescens, SC
Pecos River muskrat, Ondatra zibethicus ripensis, SC
Small-footed myotis, Myotis ciliolabrum, SC
Spotted bat, Euderma maculatum, SC
Swift fox, Vulpes velox, C
Yuma myotis, Myotis yumanensis, SC
American peregrine falcon, Falco peregrinus anatum, E
Arctic peregrine falcon, Falco peregrinus tundrius, T (S/A)
Baird's sparrow, Ammodramus bairdii, SC
Bald eagle, Haliaeetus leucocephalus, T
Black tern, Chlidonias niger, SC
Brown pelican, Pelecanus occidentalis, E
Ferruginous hawk, Buteo regalis, SC
Loggerhead shrike, Lanius ludovicianus, SC
Mexican spotted owl, Strix occidentalis lucida, T w/CH
Mountain plover, Charadrius montanus, C
Northern goshawk, Accipiter gentilis, SC
Southwestern willow flycatcher, Empidonax traillii extimus, E w/PCH
Western burrowing owl, Athene cunicularia hypugea, SC
White-faced ibis, Plegadis chihi, SC
Whooping crane, Grus americana, E
Arkansas River shiner, Notropis girardi, PE w/CH
Flathead chub, Platygobio (= Hybopsis) gracilis, SC
Plains minnow, Hybognathus placitus, SC
Texas horned lizard, Phrynosoma cornutum, SC
Dwarf milkweed, Asclepias uncialis var. uncialis, SC
Holy Ghost ipomopsis, Ipomopsis sancti-spritus, E

Santa Fe

Black-footed ferret, Mustela nigripes, E
Fringed myotis, Myotis thysanodes, SC
Long-legged myotis, Myotis volans, SC
New Mexican meadow jumping mouse, Zapus hudsonius luteus, SC
Occult little brown bat, Myotis lucifugus occultus, SC
Pale Townsend's (=western) big-eared bat, Plecotus townsendii pallescens, SC
Small-footed myotis, Myotis ciliolabrum, SC
Spotted bat, Euderma maculatum, SC
Yuma myotis, Myotis yumanensis, SC
American peregrine falcon, Falco peregrinus anatum, E
Arctic peregrine falcon, Falco peregrinus tundrius, T (S/A)
Baird's sparrow, Ammodramus bairdii, SC
Bald eagle, Haliaeetus leucocephalus, T
Ferruginous hawk, Buteo regalis, SC
Loggerhead shrike, Lanius ludovicianus, SC
Mexican spotted owl, Strix occidentalis lucida, T w/CH
Mountain plover, Charadrius montanus, C
Northern goshawk, Accipiter gentilis, SC
Southwestern willow flycatcher, Empidonax traillii extimus, E w/PCH
White-faced ibis, Plegadis chihi, SC
Whooping crane, Grus americana, E
Flathead chub, Platygobio (= Hybopsis) gracilis, SC
Texas horned lizard, Phrynosoma cornutum, SC
Santa Fe cholla, Opuntia viridiflora, SC

Sierra

Arizona black-tailed prairie dog, Cynomys ludovicianus arizonensis, SC
Black-footed ferret, Mustela nigripes, E
Fringed myotis, Myotis thysanodes, SC
Greater western mastiff bat, Eumops perotis californicus, SC
Long-eared myotis, Myotis evotis, SC
Long-legged myotis, Myotis volans, SC
Occult little brown bat, Myotis lucifugus occultus, SC
Organ Mountains Colorado chipmunk, Eutamias quadrivittatus australis, SC
Pale Townsend's (= western) big-eared bat, Plecotus townsendii pallescens, SC
Southwestern otter, Lutra canadensis sonorae, SC
Small-footed myotis, Myotis ciliolabrum, SC
Spotted bat, Euderma maculatum, SC
White Sands woodrat, Neotoma micropus leucophaea, SC
Yuma myotis, Myotis yumanensis, SC
American peregrine falcon, Falco peregrinus anatum, E
Arctic peregrine falcon, Falco peregrinus tundrius, T (S/A)
Baird's sparrow, Ammodramus bairdii, SC
Bald eagle, Haliaeetus leucocephalus, T
Black tern, Chlidonias niger, SC
Brown pelican, Pelecanus occidentalis, E
Ferruginous hawk, Buteo regalis, SC
Loggerhead shrike, Lanius ludovicianus, SC
Mexican spotted owl, Strix occidentalis lucida, T w/CH
Northern aplomado falcon, Falco femoralis septentrionalis, E
Northern goshawk, Accipiter gentilis, SC
Southwestern willow flycatcher, Empidonax traillii extimus, E w/PCH
Western burrowing owl, Athene cunicularia hypugea, SC
White-faced ibis, Plegadis chihi, SC
Whooping crane, Grus americana, E
Desert sucker, Catostomus clarki, SC
Gila trout, Oncorhynchus gilae, E
Longfin dace, Agosia chrvsogaster*, SC
Sonora sucker, Catostomus insignis, SC
Speckled dace, Rhinichthys osculus (Gila drainage), SC
White Sands pupfish, Cyprinodon tularosa, SC
Arizona southwestern toad, Bufo microscaphus microscaphus, SC
Chiricahua leopard frog, Rana chiricahuensis, C
Texas horned lizard, Phrynosoma cornutum, SC
Mineral Creek mountainsnail, Oreohelix pilsbryi, SC
Duncan's cory cactus, Coryphantha duncanii, SC
Pinos Altos fameflower, Talinum humile, SC
Sandhill goosefoot, Chenopodium cycloides, SC
Todsen's pennyroyal, Hedeoma todsenii, E w/CH

Socorro

Allen's (Mexican) big-eared bat, Idionycteris (= Plecotus) phyllotis, SC
Arizona black-tailed prairie dog, Cynomys ludovicianus arizonensis, SC
Black-footed ferret, Mustela nigripes, E
Desert pocket gopher, Geomys bursarius arenarius, SC
Fringed myotis, Myotis thysanodes, SC
Long-eared myotis, Myotis evotis, SC
Long-legged myotis, Myotis volans, SC
New Mexican meadow Jumping mouse, Zapus hudsonius luteus, SC
Occult little brown bat, Myotis lucifugus occultus, SC
Organ Mountains Colorado chipmunk, Eutamias quadrivittatus australis, SC
Pale Townsend's (= western) big-eared bat, Plecotus townsendii pallescens, SC
Pecos River muskrat, Ondatra zibethicus ripensis, SC
Small-footed myotis, Myotis ciliolabrum, SC
Spotted bat, Euderma maculatum, SC
Yuma myotis, Myotis yumanensis, SC
American peregrine falcon, Falco peregrinus anatum, E
Arctic peregrine falcon, Falco peregrinus tundrius, T (S/A)
Baird's sparrow, Ammodramus bairdii, SC
Bald eagle, Haliaeetus leucocephalus, T
Black tern, Chlidonias niger, SC
Ferruginous hawk, Buteo regalis, SC
Interior least tern, Sterna antillarum, E
Loggerhead shrike, Lanius ludovicianus, SC
Mexican spotted owl, Strix occidentalis lucida, T w/CH
Mountain plover, Charadrius montanus, C
Northern aplomado falcon, Falco femoralis septentrionalis, E
Northern goshawk, Accipiter gentilis, SC
Piping plover, Charadrius melodus, T
Southwestern willow flycatcher, Empidonax traillii extimus, E w/PCH
White-faced ibis, Plegadis chihi, SC
Whooping crane, Grus americana, E w/CH
Flathead chub, Platygobio (= Hybopsis) gracilis, SC
Longfin dace, Agosia chrysogaster*, SC
Rio Grande silvery minnow, Hybognathus amarus, E w/PCH
Arizona southwestern toad, Bufo microscaphus microscaphus, SC
Texas horned lizard, Phrynosoma cornutum, SC
Chiricahua leopard frog, Rana chiricahuensis, SC
Socorro isopod, Exosphaeroma thermophilus, E
Alamosa springsnail, Tryonia alamosae, E
Chupadera springsnail, “Fontelicella” chupaderae, C
Socorro springsnail “Fontelicella” neomexicana, E
Fugate's blue-star, Amsonia fugatei, SC
Sandhill goosefoot, Chenopodium cycloides, SC

Taos

Black-footed ferret, Mustela nigripes, E
Fringed myotis, Myotis thysanodes, SC
Long-eared myotis, Myotis evotis, SC
Long-legged myotis, Myotis volans, SC
New Mexican jumping mouse, Zapus hudsonius luteus, SC
Occult little brown bat, Myotis lucifugus occultus, SC
Pale Townsend's (= western) big-eared bat, Plecotus townsendii pallescens, SC
Small-footed myotis, Myotis ciliolabrum, SC
Southwestern otter, Lutra canadensis sonorae, SC
Spotted bat, Euderma maculatum, SC
Yuma myotis, Myotis yumanensis, SC
American peregrine falcon, Falco peregrinus anatum, E
Arctic peregrine falcon, Falco peregrinus tundrius, T (S/A)
Baird's sparrow, Ammodramus bairdii, SC
Bald eagle, Haliaeetus leucocephalus, T
Ferruginous hawk, Buteo regalis, SC
Harlequin duck, Histrionicus histrionicus, SC
Loggerhead shrike, Lanius ludovicianus, SC
Mexican spotted owl, Strix occidentalis lucida, T w/CH
Mountain plover, Charadrius montanus, C
Northern goshawk, Accipiter gentilis, SC
Southwestern willow flycatcher, Empidonax traillii extimus, E w/PCH
White-faced ibis, Plegadis chihi, SC
Whooping crane, Grus americana, E
Flathead chub, Platygobio (= Hybopsis) gracilis, SC
Cockerell's striate disc (snail), Discus shemeki cockerelli, SC
Sangre de Cristo peaclam, Pisidium sanguinichristi, SC
Arizona willow, Salix arizonica, SC
Ripley milk-vetch, Astragalus ripleyi, SC

Torrance

Arizona black-tailed prairie dog, Cynomys ludovicianus arizonensis, SC
Black-footed ferret, Mustela nigripes, E
Fringed myotis, Myotis thysanodes, SC
Long-legged myotis, Myotis volans, SC
Occult little brown bat, Myotis lucifugus occultus, SC
Spotted bat, Euderma maculatum, SC
American peregrine falcon, Falco peregrinus anatum, E
Arctic peregrine falcon, Falco peregrinus tundrius, T (S/A)
Baird's sparrow, Ammodramus bairdii, SC
Bald eagle, Haliaeetus leucocephalus, T
Black tern, Chlidonias niger, SC
Ferruginous hawk, Buteo regalis, SC
Loggerhead shrike, Lanius ludovicianus, SC
Mexican spotted owl, Strix occidentalis lucida, T w/CH
Mountain plover, Charadrius montanus, C
Southwestern willow flycatcher, Empidonax traillii extimus, E w/PCH
Northern goshawk, Accipiter gentilis, SC
Texas horned lizard, Phrynosoma cornutum, SC

Union

Black-footed ferret, Mustela nigripes, E
Fringed myotis, Myotis thysanodes, SC
Long-legged myotis, Myotis volans, SC
Pale Townsend's (= western) big-eared bat, Plecotus townsendii pallescens, SC
Small-footed myotis, Myotis ciliolabrum, SC
Swift fox, Vulpes velox, C
Yuma myotis, Myotis yumanensis, SC
American peregrine falcon, Falco peregrinus anatum, E
Arctic peregrine falcon, Falco peregrinus tundrius, T (S/A)
Baird's sparrow, Ammodramus bairdii, SC
Bald eagle, Haliaeetus leucocephalus, T
Ferruginous hawk, Buteo regalis, SC
Loggerhead shrike, Lanius ludovicianus, SC
Mountain plover, Charadrius montanus, C
Northern goshawk, Accipiter gentilis, SC
Western burrowing owl, Athene cunicularia hypugea, SC
White-faced ibis, Plegadis chihi, SC
Whooping crane, Grus americana, E
Arkansas River shiner, Notropis girardi, PE w/CH
Flathead chub, Platygobio (= Hybopsis) gracilis, SC
Plains minnow, Hybognathus placitus, SC
Texas horned lizard, Phrynosoma cornutum, SC
Dwarf milkweed, Asclepias uncialis var. uncialis, SC

Valencia

Arizona black-tailed prairie dog, Cynomys ludovicianus arizonensis, SC
Big free-tailed bat, Nyctinomops macrotis (= Tadarida m., T. molossa), SC
Black-footed ferret, Mustela nigripes, E
Fringed myotis, Myotis thysanodes, SC
Long-eared myotis, Myotis evotis, SC
Long-legged myotis, Myotis volans, SC
New Mexican jumping mouse, Zapus hudsonius luteus, SC
Occult little brown bat, Myotis lucifugus occultus, SC
Pecos River muskrat, Ondatra zibethicus ripensis, SC
Small-footed myotis, Myotis ciliolabrum, SC
Spotted bat, Euderma maculatum, SC
Yuma myotis, Myotis yumanensis, SC
American peregrine falcon, Falco peregrinus anatum, E
Arctic peregrine falcon, Falco peregrinus tundrius, T (S/A)
Baird's sparrow, Ammodramus bairdii, SC
Bald eagle, Haliaeetus leucocephalus, T
Ferruginous hawk, Buteo regalis, SC
Loggerhead shrike, Lanius ludovicianus, SC
Mexican spotted owl, Strix occidentalis lucida, T w/CH
Mountain plover, Charadrius montanus, C
Northern goshawk, Accipiter gentilis, SC
Southwestern willow flycatcher, Empidonax traillii extimus, E w/PCH
Western burrowing owl, Athene cunicularia hypugea, SC
White-faced ibis, Plegadis chihi, SC
Whooping crane, Grus americana, E
Flathead chub, Platygobio (= Hybopsis) gracilis, SC
Rio Grande silvery minnow, Hybognathus amarus, E w/PCH
Puzzle sunflower, Helianthus paradoxus, C

Index

E = Endangered
PE = Proposed Endangered
PE w/CH = Proposed Endangered with critical habitat
T = Threatened
PT = Proposed Threatened
PT w/CH = Proposed Threatened with critical habitat
PCH = Proposed critical habitat
C = Candidate Species
SC = Species of Concern
S/A = Similarity of Appearance
* = Introduced population

TABLE A. Federally listed, proposed,and candidate species with status, presence, taxonomy, habitat, distribution, and biome information.

Species	Scientific Name	Status	Potentially Present On Public Land	Plant & Animal Class or Order	Habitat	Distribution	Biome

Note - Table is split purposely to allow sorting for analysis....Table is to be sorted by columns 3 and 1 to place in Status and Species order then joined.

Chiricauhua Leopard Frog	Rana chiricahuensis	Candidate	X	Amphibian	Wetland/Riparian/ Aquatic		Aquatic/ Woodland
Lesser Long-Nosed Bat = Sanborns Longnosed Bat	Leptonycteris curasoae yerbabuenae	Endangered	X	Bat	Desert Scrub		Desert
Mexican Long Nosed Bat	Leptonycteris nivalis	Endangered	X	Bat	Desert Scrub		Desert
American Peregrine Falcon	Falco peregrinus anatum	Endangered	X	Bird	Mountain Cliffs - Wetland/Riparian/ Aquatic		Conif. Forest/ Woodland/ Grassland/ Desert/ Aquatic
Arctic Peregrine Falcon	Falco peregrinus tundrius	Threatened	X	Bird	General - Wetland/Riparian/ Aquatic		Conif. Forest/ Woodland/ Grassland/ Desert/ Aquatic
Bald Eagle	Haliaeetus leucocephalus	Threatened	X	Bird	Wetland/Riparian/ Aquatic in part		Aquatic/ Conif. Forest/ Woodland/ Grassland
Interior Least Tern	Sterna antillarum	Endangered	X	Bird	Wetland/Riparian/ Aquatic		Aquatic
Mexican Spotted Owl	Strix occidentalis lucida	Threatened w/CH	X	Bird	Mixed Conifer		Conif. Forest/ Woodland
Mountain Plover	Charadrius montanus	Candidate	X	Bird	Grasslands		Grassland
Northern Aplomado Falcon	Falco femoralis septentrionalis	Endangered	X	Bird	Desert Grassland		Grassland

Piping Plover	Charadrius melodus	Threatened	X	Bird	Wetland/Riparian/ Aquatic		Aquatic
Southwestern Willow Flycatcher	Empidonax traillii extimus	Endangered w/Proposed CH	X	Bird	Wetland/Riparian/ Aquatic		Woodland/Aquatic
Jaguar	Panthera onca	Proposed Endangered	X	Carnivore	Mountain Scrub/PJ Woodland-Wetland/Riparian/ Aquatic		Woodland/ Aquatic
Mexican Wolf	Canis lupus baileyi	Endangered	X	Carnivore	Mixed Conifer/PJ Woodland/Desert Grassland		Conif. Forest
Swift Fox	Vulpes velox	Candidate	X	Carnivore	Grasslands/ Scrub		Grassland/ Desert
Arkansas River Shiner	Notropis girardi	Proposed Endandered w/CH	X	Fish	Wetland/Riparian/ Aquatic		Aquatic
Beautiful Shiner	Cyprinella formosa	Threatened	X	Fish	Wetland/Riparian/ Aquatic		Aquatic
Colorado Squawfish	Ptychocheilus lucius	Endangered w/CH	X	Fish	Wetland/Riparian/ Aquatic		Aquatic
Loach Minnow	Rhinichthys cobitis	Threatened	X	Fish	Wetland/Riparian/ Aquatic		Aquatic
Pecos Bluntnose Shiner	Notropis simus pecosensis	Threatened w/CH	X	Fish	Wetland/Riparian/ Aquatic		Aquatic
Pecos Gambusia	Gambusia nobilis	Endangered	X	Fish	Wetland/Riparian/ Aquatic		Aquatic
Pecos Pupfish	Cyprinodon pecosensis	Candidate	X	Fish	Wetland/Riparian/ Aquatic		Aquatic
Razorback Sucker	Xyrauchen texanus	Endangered w/CH	X	Fish	Wetland/Riparian/ Aquatic		Aquatic
Rio Grande Silvery Minnow	Hybognathus amarus	Endangered w/Proposed CH	X	Fish	Wetland/Riparian/ Aquatic		Aquatic

Spikedace	Meda fulgida	Threatened	X	Fish	Wetland/Riparian/ Aquatic		Aquatic
Koster's Tryonia	Tryonia kosteri	Candidate	X	Gastropod	Wetland/Riparian/ Aquatic	Endemic	Aquatic
Pecos Assiminea	Assiminea pecos	Candidate	X	Gastropod	Wetland/Riparian/ Aquatic	Endemic	Aquatic
Roswell Springsnail (Pyrg)	Fontelicella roswellensis = Pyrgulopsis roswellensis	Candidate	X	Gastropod	Wetland/Riparian/ Aquatic	Endemic	Aquatic
Gypsum Wild Buckwheat	Eriogonum gypsophilum	Threatened w/CH	X	Plant	Desert Scrub	Endemic	Desert
Knowltons Catctus	Pediocactus knowltonii	Endangered	X	Plant	Desert Scrub	Endemic	Desert
Kuenzlers Hedgehog Cactus	Echinocereus fendleri var. Kuenzleri	Endangered	X	Plant	PJ Woodland		Woodland
Lloyds Hedgehog Cactus	Echinocereus lloydii	Endangered	X	Plant	Desert Scrub		Desert
Manco Milkvetch	Astragalus humillimus	Endangered	X	Plant	Desert Scrub	Endemic	Desert
Mesa Verde Cactus	Sclerocactus mesae-verdae	Threatened	X	Plant	Great Basin Desert Scrub	Endemic	Desert
Parishs Alkali Grass	Puccinellia parishii	Proposed Endangered	X	Plant	Wetland/Riparian/ Aquatic		Desert+ Aquatic Emergent
Puzzle Sunflower	Helianthus paradoxus	Candidate	X	Plant	Wetland/Riparian/ Aquatic		Aquatic Emergent0
Sacramento Prickly Poppy	Argemone pleiacantha ssp.pinnatisecta	Endangered	X	Plant	Desert Scrub/Desert Grassland/ Arroyo	Endoemic	Woodland/ Desert
Sneeds Pincushion Cactus	Coryphantha sneedii var. sneedii	Endangered	X	Plant	Desert Scrub	Endemic	Desert
Todsens Pennyroyal	Hedeoma todsenii	Endangered w/CH	X	Plant	PJ Woodland	Endemic	Woodland
Zuni Fleabane	Erigeron rhizomatus	Threatened	X	Plant	PJ Woodland	Endemic	Woodland

Table B. BLM Sensitive, FWS Species of Concern, and State Listed Species for New Mexico with status, presence, taxonomy, habitat, and distribution information.

Common Name	Scientific Name	Status	Potentially Present On Public Land	Plant & Animal Class or Order	Habitat	Distribution	Biome

Note - Table is split purposely to allow sorting for analysis....Table is to be sorted by columns 3 and 1 to place in Status and Species order then joined.

Crested Coral Root	Hexalectris spicata	SE	X	Plant	Madrean Evergreen Woodland		Woodland
Arizona southwestern toad	Bufo microscaphus microscaphus	BLM Sensitive	X	Amphibian	Wetland/Riparian/Aquatic		Aquatic
Colorado River Toad	Bufo alvarius	SEII	X	Amphibian	Chihuahuan Desert Scrub	Bootheel	Desert
Great Plains Narrowmouth Toad	Gastrophryne olivacea	SEI	X	Amphibian	Chihuahuan Desert Grassland		Grassland
Jemez Mountain salamander	Plethodon neomexicanus	BLM Sensitive	X	Amphibian	Mixed Conifer		Conif. Forest
Lowland leopard frog	Rana yavapaiensis	BLM Sensitive	X	Amphibian	Wetland/Riparian/Aquatic	Bootheel	Aquatic/ Woodland
Spotted Chrous Frog	Pseudacris clarkii	SEI	X	Amphibian	Plains Grassland/ Wetland/Riparian/ Aquatic		Grassland/ Aquatic
Allen's (Mexican) big-eared bat	Idionycteris (=Plecotus) phyllotis	BLM Sensitive	X	Bat	Mixed Conifer/PJ Woodland/Riparian		Conif. Forest/ Woodland
Big Free-tailed Bat	Nyctinomops macrotis	BLM Sensitive	X	Bat	Mixed Conifer/PJ Woodland/ Wetland/Riparian/Aquatic		Conif. Forest/ Woodland
California leaf-nosed bat	Macrotus californicus	BLM Sensitive	X	Bat	Chihuahuan Desert Scrub/Great Basin Desert Scrub	Bootheel	Desert

Cave myotis	Myotis velifer	BLM Sensitive	X	Bat	Chihuahuan Desert Grasslands/Great Plains Grasslands/ Chihuahuan Desert Scrub Wetland/Riparian/ Aquatic		Desert/ Grassland/ Woodland/ Aquatic
Fringed myotis	Myotis thysanodes	BLM Sensitive	X	Bat	Great Plains Grassland/Chihuah uan Desert Grassland/Great BasinDesert Scub/pj Woodland/Mixed Conifer/Madrean Evergreen Woodland/Riparian		Grassland/ Desert/ Woodland
Greater western mastiff bat	Eumops perotis californicus	BLM Sensitive	X	Bat	Madrean Evergreen Woodland	Bootheel	Woodland
Long-eared myotis	Myotis evotis	BLM Sensitive	X	Bat	Mixed Conifer/PJ Woodland/Riparian		Conif. Forest/ Woodland
Long-legged myotis	Myotis volans	BLM Sensitive	X	Bat	Mixed Conifer/PJ Woodland/Riparian		Conif. Forest/ Woodland
Mexican long-tongued bat	Choeronycteris mexicana	BLM Sensitive	X	Bat	PJ Woodland/Chihuah uan Desert Scrub/Interior Chaparral	Bootheel	Woodland/ Desert
Occult little brown bat	Myotis lucifugus occultus	BLM Sensitive	X	Bat	Mixed Conifer/PJ Woodland/Riparian		Conif. Forest/ Woodland
Pale Townsend's big-eared bat	Plecotus townsendii pallescens	BLM Sensitive	X	Bat	Mixed Conifer/PJ Woodland/Madrean Evergreen Woodland/Great Plains Grassland/Chihuah uan Desert Grassland/Great Basin Desert Scrub/Riparian		Conif. Forest/ Woodland/ Grassland/ Desert

Small-footed myotis	Myotis ciliolabrum	BLM Sensitive	X	Bat	Mixed Conifer/PJ Woodland/Great Plains Grassland/Chihuahuan Desert Grassland		Conif. Forest/ Woodland/ Grassland
Spotted bat	Euderma maculatum	BLM Sensitive	X	Bat	Mixed Conifer/PJ Woodland/Chihuahuan Desert Scrub/Chihuahuan Desert Grassland/Riparian		Conif. Forest/ Woodland/ Desert/ Grassland
Western Yellow Bat	Lasiurus xanthinus	SEII	X	Bat	Wetland/Riparian/ Aquatic	Bootheel	Woodland/Aquatic
Yuma myotis	Myotis yumanensis	BLM Sensitive	X	Bat	Great Plains Grassland/Chihuahuan Desert Grassland/Mixed Conifer/PJ Woodland/Great Basin Desert Scrub		Grassland/ Conif Forest/ Woodland/ Desert
Abert's Towhee	Pipilo aberti	SEII	X	Bird	Mixed Conifer/Madrean Evergreen Woodland/ Wetland/Riparian/ Aquatic		Conif. Forest/ Woodland/ Aquatic
Arizona Grasshopper Sparrow	Ammodramus savannarum ammolegus	SEII	X	Bird	Chihuahuan Desert Grassland/Chihuahuan Desert Scrub	Bootheel	Desert/Grassland
Baird's sparrow	Ammodramus bairdii	BLM Sensitive	X	Bird	Chihuahuan Desert Grassland/Great Plains Grassland		Grassland/ Desert
Bell's Vireo	Vireo bellii	SEII	X	Bird	Wetland/Riparian/ Aquatic		Woodland/Aquatic
Black tern	Chlidonias niger	BLM Sensitive	X	Bird	Wetland/Riparian/Aquatic		Aquatic
Boreal Owl	Aegolius funereus	SEII	X	Bird	Mixed Conifer		Forest
Broad-billed Hummingbird	Cynanthus latirostris	SE II	X	Bird	Wetland/Riparian/ Aquatic	Bootheel	Woodland/Aquatic

Buff-collared Nightjar	Caprimulgus ridgwayi	SEI	X	Bird	Chihuahuan Desert Scrub	Bootheel	Desert
Common Ground Dove	Columbina passerina	SEI	X	Bird	Chihuahuan Desert Scrub/ Chihuahuan Desert Grassland/ Wetland/Riparian/ Aquatic		Desert/ Grassland/ Woodland/Aquatic
Common Black-hawk	Buteogallus anthracinus anthracinus	SEII	X	Bird	Wetland/Riparian/ Aquatic		Woodland/ Aquatic
Costa's Hummingbird	Calypte cosae	SEII	X	Bird	Madrean Evergreen Woodland	Bootheel	Woodland
Elegant Trogon	Trogon elegans	SEII	X	Bird	Mixed Conifer/Madrean Evergreen Woodland/ Wetland/Riparian/ Aquatic	Bootheel	Conif. Forest/ Woodland/ Aquatic
Ferruginous hawk	Buteo regalis	BLM Sensitive	X	Bird	Great Plains Grassland/Great Basin Grassland/Great Basin Desert Scrub/Chihuahuan Desert Grassland/Chiuhuahuan Desert Scrub/ PJ Woodland		Grassland/ Desert/ Woodland
Fulvous whistling duck	Dendrocygna bicolor	BLM Sensitive	X	Bird	Wetland/Riparian/Aquatic		Aquatic
Gila Woodpecker	Melanerpes uropygialis	SEII	X	Bird	Wetland/Riparian/ Aquatic		Woodland/Aquatic
Gould's Wild Turkey	Meleagris gallopavo mexicana	SEII	X	Bird	Mixed Conifer/Madrean Evergreen Woodland/PJ Woodland	Bootheel	Forest/Woodland
Gray Vireo	Vireo vicinior	SEII	X	Bird	PJ Woodland/Mt Scrub/Interior Chaparral		Woodland

Harlequin duck	Histrionicus histrionicus	BLM Sensitive	X	Bird	Wetland/Riparian/Aquatic		Aquatic
Lessert Prairie Chicken	Tympanuchus pallidicinctus	BLM Sensitive	X	Bird	Great Plains Grassland/Plains Sand Scrub		Grassland/ Woodland-Brushland
Loggerhead shrike	Lanius ludovicianus	BLM Sensitive	X	Bird	Great Basin Desert Scrub/Chiuahuan Desert Scrub/Great Plains Grassland/Riparian		Desert/ Grassland/ Woodland
Lucifer Hummingbird	Calothorax lucifer	SEII	X	Bird	Chihuahuan Desert Scrub/Madrean Evergreen Woodland		Desert/ Woodland
Neotropic Cormorant	Phalacrocorax basiianus	SEII	X	Bird	Wetland/Riparian/ Aquatic		Aquatic
Northern goshawk	Accipiter gentilis	BLM Sensitive	X	Bird	Mixed Conifer/Riparian		Conif. Forest/ Woodland
Northern gray hawk	Buteo nitidus maximus	BLM Sensitive	X	Bird	Chihuahuan Desert Grassland/Riparian	Bootheel	Grassland/ Woodland
Northern Beardless-tyrannulet	Camptostoma imberbe	SEI	X	Bird	Wetland/Riparian/ Aquatic	Bootheel	Woodland/ Aquatic
Thick-billed Kingbird	Tyrannus crassirostris	SEI	X	Bird	Wetland/Riparian/ Aquatic	Bootheel	Woodland/Aquatic
Varied Bunting	Passerina vesicolor	SEII	X	Bird	Chihuahuan Desert Scrub/ Wetland/Riparian/ Aquatic		Desert/ Woodland/Aquatic
Violet-Crowned Hummingbird	Amazilia violiceps	SEII	X	Bird	Wetland/Riparian/ Aquatic	Bootheel	Woodland/Aquatic
Western burrowing owl	Athene cunicularia hypugea	BLM Sensitive	X	Bird	Great Plains Grassland/Chihuahuan Desert Grasslands/Chihuahuan Desert Scrub/Great Basin Desert Scrub/ PJ Woodland/Montane Grassland	Often Associated with Prairie Dog Towns	Grassland/ Desert/ Woodland

White-faced ibis	Plegadis chihi	BLM Sensitive	X	Bird	Wetland/Riparian/Aquatic		Aquatic
White-eared Hummingbird	Hylocharis leucotis	SEII	X	Bird	Madrean Evergreen Woodland/ Wetland/Riparian/ Aquatic/ Mixed Conifer	Bootheel	Woodland/Aquatic/ Forest
Yellow-Eyed Junco	Junco phaeonotus	SEII	X	Bird	Mixed Conifer/PJ Woodland/Mtn Scrub/Madrean Evergreen Woodland		Forest/ Woodland
Sangre de Cristo peaclam	Pisidium sanguinichristi	BLM Sensitive	X	Bivalve	Wetland/Riparian/Aquatic	Endemic	Aquatic
Southwestern otter	Lutra canadensis sonorae	BLM Sensitive	X	Carnivore	Wetland/Riparian/Aquatic		Aquatic
Noel's amphipod	Gammarus desperatus	BLM Sensitive	X	Crustacean	Wetland/Riparian/Aquatic	Endemic	Aquatic
Millipede (no common name)	Toltecus chihuanus	BLM Sensitive	X	Diplopod	Unknown	Bernalillo Co.	Unknown
Bigscale Logperch	Percina macrolepida	SEI	X	Fish	Wetland/Riparian/ Aquatic		Aquatic
Blue sucker	Cycleptus elongatus	BLM Sensitive	X	Fish	Wetland/Riparian/Aquatic		Aquatic
Desert sucker	Catostomus clarki	BLM Sensitive	X	Fish	Wetland/Riparian/Aquatic		Aquatic
Flathead chub	Platygobio (=Hybopsis) gracilis	BLM Sensitive	X	Fish	Wetland/Riparian/Aquatic		Aquatic
Gila chub	Gila intermedia	BLM Sensitive	X	Fish	Wetland/Riparian/Aquatic		Aquatic
Gray Redhorse	Moxostoma congetum	SEII	X	Fish	Wetland/Riparian/ Aquatic		Aquatic
Greenthroat Darter	Etheostoma lepidum	SEII	X	Fish	Wetland/Riparian/ Aquatic		Aquatic
Longfin dace	Agosia chrysogaster	BLM Sensitive	X	Fish	Wetland/Riparian/Aquatic		Aquatic

Mexican Tetra	Astyanax mexicanus	SEII	X	Fish	Wetland/Riparian/ Aquatic		Aquatic
Plains minnow	Hybognathus placitus*	BLM Sensitive	X	Fish	Wetland/Riparian/A quatic		Aquatic
Rio Grande shiner	Notropis jemezanus	BLM Sensitive	X	Fish	Wetland/Riparian/A quatic		Aquatic
Roundtail chub	Gila robusta	BLM Sensitive	X	Fish	Wetland/Riparian/A quatic		Aquatic
Sonora sucker	Catostomus insignis	BLM Sensitive	X	Fish	Wetland/Riparian/A quatic		Aquatic
Speckled dace	Rhinichthys osculus (Gila drainage)	BLM Sensitive	X	Fish	Wetland/Riparian/A quatic		Aquatic
Zuni bluehead sucker	Catostomus discobolus yarrowi	BLM Sensitive	X	Fish	Wetland/Riparian/A quatic	Endemic	Aquatic
Cockerell's striate disc (snail)	Discus shemeki cockerelli	BLM Sensitive	X	Gastropod	Mixed Conifer		Conif. Forest/Aquatic
Cook's Peak woodlandsnail	Ashmunella macromphala	BLM Sensitive	X	Gastropod	Unknown	Endemic	Woodland?
Cornudas Mtns Land Snail	Ashmunella amblya cornudasensis	BLM Sensitive	X	Gastropod	Montane Scrub	Endemic	Woodland
Dona Ana talussnail	Sonorella todseni	BLM Sensitive	X	Gastropod	Interior Chaparral	Endemic	Woodland
Hacheta Grande woodlandsnail	Ashmunella hebardi	BLM Sensitive	X	Gastropod	PJ Woodland	Endemic/ Bootheel	Woodland
Pecos springsnail (Pyrg)	Fontelicella pecosensis = Pyrgulopsis pecosensis	BLM Sensitive	X	Gastropod	Wetland/Riparian/A quatic		Aquatic
Animas minute moss beetle	Limnebius aridus	BLM Sensitive	X	Insect	Unknown	Bootheel	Woodland?
Anthony blister beetle	Lytta mirifica	BLM Sensitive	X	Insect	Unknown		Desert?
Arizona shrew	Sorex arizonae	BLM Sensitive	X	Insectivore	Mixed Conifer/Madrean Evergreen Woodland		Conif. Forest/ Woodland

Least Shrew	Cryptotis parva	SEII	X	Insectivore	Wetland/Riparian/ Aquatic		Woodland/Grassland/Aquatic
Acoma fleabane	Erigeron acomanus	BLM Sensitive	X	Plant	PJ Woodland		Woodland
Alamo beardtongue	Penstemon alamosensis	BLM Sensitive	X	Plant	Chihuahuan Desert Scrub, Chihuahuan Desert Grassland	Endemic	Desert/ Grassland
Aztec gilia	Gilia formosa	BLM Sensitive	X	Plant	Great Basin Desert Scrub		Desert
Bisti fleabane	Erigeron bistiensis	BLM Sensitive	X	Plant	Great Basin Desert Scrub	Endemic	Desert
Brack's Cactus	Sclerocactus cloveriae subsp. brackii	SE	X	Plant	PJ Woodland/ Great Basin Desert Scrub		Woodland/ Desert
Chiricahua mudwort	Limosella publiflora	BLM Sensitive	X	Plant	Wetland/Riparian/Aquatic		Aquatic
Cinder phacelia	Phacelia serrata	BLM Sensitive	X	Plant	PJ Woodland/Mixed Conifer Forest	substrate Specialist	Conif. Forest/ Woodland
Contra yerba	Pediomelum pentaphyllum	BLM Sensitive	X	Plant	Chihuahuan Desert Grassland	Bootheel	Grassland
Desert night-blooming cereus	Cereus greggii var. greggii	BLM Sensitive	X	Plant	Chihuahuan Desert Scrub		Desert
Duncan's cory cactus	Coryphantha duncanii	BLM Sensitive	X	Plant	Chihuhuahuan Desert Scrub	Restricted, substrate specialist	Desert
Duncans Pincushion Cactus	Escobaria duncanii	SE/ BLM Sensitive	X	Plant	Chihuahuan Desert Scrub		Desert
Dwarf milkweed	Asclepias uncialis var. uncialis	BLM Sensitive	X	Plant	Great Plains Grassland/Great Basin Grassland		Grassland
Fugate's blue-star	Amsonia fugatei	BLM Sensitive	X	Plant	Chihuahuan Desert Scrub		Desert
Glass Mountain coral-root = Shining Coral Root	Hexalectris nitida	BLM Sensitive	X	Plant	Madrean Evergreen Woodland		Woodland

Grama grass cactus	Pediocactus papyracanthus	BLM Sensitive	X	Plant	Chihuahuan Desert Grassland/PJ Woodland/GreatBasin Desert Grassland/Short Grass Steppe		Grassland/ Woodland-Scrubland/ Desert
Griffith's saltbush	Atriplex griffithsii	BLM Sensitive	X	Plant	Chihuahuan Desert Scrub		Desert
Guadalupe smooth aster	Aster laevis var. guadalupensis	BLM Sensitive	X	Plant	Madrean Evergreen Woodland/Riparian		Woodland
Gypsum scalebroom	Lepidospartum burgessii	BLM Sensitive	X	Plant	Chihuahuan Desert Scrub	Endemic	Desert
Gypsum hotspring aster	Machaeranthera gypsitherma	BLM Sensitive	X	Plant	Wetland/Riparian/Aquatic		Aquatic Emergent
Gypsum townsendia	Townsendia gypsophila	BLM Sensitive	X	Plant	PJ Woodland/Great Basin Desert Scrub	Endemic?	Woodland/ Desert
Knight's milk-vetch	Astragalus knightii	BLM Sensitive	X	Plant	PJ Woodland		Woodland
Limestone rosewood	Vauquelinia californica ssp. pauciflora	BLM Sensitive	X	Plant	Interior Chaparral	Bootheel	Woodland
Nodding rock-daisy	Perityle cernua	BLM Sensitive	X	Plant	Mountain Scrub		Woodland
Organ Mtn. Pincushion Cactus	Escobaria organensis	SE	X	Plant	PJ Woodland/Interior Chaparral		Woodland
Organ Mountain evening-primrose	Oenothera organensis	BLM Sensitive	X	Plant	Wetland/Riparian/Aquatic		Aquatic/ Emergent
Organ Mountain figwort	Scrophularia laevis	BLM Sensitive	X	Plant	Mixed Conifer/PJ Woodland	Endemic	Conif. Forest/ Woodland
Pinos Altos fameflower	Talinum humile	BLM Sensitive	X	Plant	PJ Woodland/Interior Chaparral		Woodland
Ripley milk-vetch	Astragalus ripleyi	BLM Sensitive	X	Plant	PJ Woodland/Mixed Conifer/Montane Scrub		Conif. Forest/ Woodland

Sand prickly pear	Opuntia arenaria	BLM Sensitive	X	Plant	Chihuahuan Desert Grassland	substrate specialist	Grassland
Sandhill goosefoot	Chenopodium cycloides	BLM Sensitive	X	Plant	Plains-Mesa Broadleaf Sand Scrub		Desert-Woodland-Grassland
Santa Fe cholla	Opuntia viridiflora	BLM Sensitive	X	Plant	PJ Woodland		Woodland
Scheer's Pincushion Cactus	Coryphantha Scheeri var. scheeri	SE	X	Plant	Chihuahuan Desert Scrub		Desert
Scheer's Pincushion Cactus	Coryphantha Scheeri var. scheeri	SE	X	Plant	Chihuahuan Desert Scrub, Chihuahuan Desert Grassland		Desert/ Grassland
Sivinski's fleabane	Erigeron sivinskii	BLM Sensitive	X	Plant	PJ Woodland	Endemic	Woodland
Slender spiderflower	Cleome multicaulis	BLM Sensitive	X	Plant	Wetland/Riparian/Aquatic-Chihuahuan Desert Lowland Swale Grassland		Aquatic Emergent/ Grassland
Spellenberg's groundsel	Senecio spellenbergii	BLM Sensitive	X	Plant	Great Plains Grassland		Grassland
Tharp's blue-star	Amsonia tharpii	BLM Sensitive	X	Plant	Chihuahuan Desert Scrub		Desert
Villard's pincushion cactus	Escobaria villardii	BLM Sensitive	X	Plant	Chihuahuan Desert Grassland	Endemic	Grassland
Wilcox Pincushion Cactus	Mammillaria wrightii var wilcoxii	SE	X	Plant	Chihuahuan Desert Grassland		Grassland
Wright's water-willow	Justicia wrightii	BLM Sensitive	X	Plant	Chihuahuan Desert Scrub	Restricted?	Desert
White-sided jackrabbit	Lepus callotis gaillardi	BLM Sensitive	X	Rabbit	Chihuahuan Desert Grassland/Chihuahuan Desert Scrub	Bootheel	Desert/ Grassland
Arid Land Ribbon Snake = Western Ribbon Snake	Thamnophis proximus	SEII	X	Reptile	Wetland/Riparian/ Aquatic		Aquatic

Blotched Water Snake = Plain Bellied Water Snake	Nerodia erythrogaster	SEI	X	Reptile	Wetland/Riparian/ Aquatic		Aquatic
Canyon (giant) spotted whiptail	Cnemidophorus burti	BLM Sensitive	X	Reptile	Madrean Evergreen Woodland/Riparian	Bootheel	Woodland
Dunes sagebrush lizard	Sceloporus arenicolus	BLM Sensitive	X	Reptile	Plains&Mesa Sandscrub	substrate specialist	Woodland-Brushland
Gray-checkered whiptail	Cnemidophorus dixoni	BLM Sensitive	X	Reptile	Chihuahuan Desert Grassland/Chihuahuan Desert Scrub	Bootheel	Desert
Mexican garter snake	Thamnophis eques	BLM Sensitive	X	Reptile	Wetland/Riparian/Aquatic		Aquatic/ Woodland
Mottled Rock Rattlesnake	Crotalus lepidus lepidus	SEII	X	Reptile	PJ Woodland/Mtn Scrub		Woodland
Narrowhead garter snake	Thamnophis rufipunctatus	BLM Sensitive	X	Reptile	Wetland/Riparian/Aquatic		Aquatic/ Woodland
Reticulate Gila Monster	Heloderma suspectum suspectum	SEI	X	Reptile	Chihuahuan Desert Scrub		Desert
Texas horned lizard	Phrynosoma cornutum	BLM Sensitive	X	Reptile	Great Plains Grassland/Chihuahuan Desert Scrub/Chihuahuan Desert Grassland/PJ Woodland/		Grassland/ Desert/ Woodland
Western River Cooter	Pseudemys gorzugi	SEII	X	Reptile	Aquatic		Aquatic
Arizona black-tailed prairie dog	Cynomys ludovicianus arizonensis	BLM Sensitive	X	Rodent	Chihuahuan Dessert Grassland/Great Plains Grassland		Grassland
Cebolleta southern pocket gopher	Thomomys umbrinus paquatae	BLM Sensitive	X	Rodent	PJ Woodland/Great Basin Desert Scrub		Woodland/ Desert
Desert pocket gopher	Geomys bursarius arenarius	BLM Sensitive	X	Rodent	Chihuahuan Desert Grassland/Chihuahuan Desert Scrub		Desert
Goat Peak pika	Ochotona princeps nigrescens	BLM Sensitive	X	Rodent	Rock Outcrop in Mixed Conifer		Conif. Forest

Gray-footed chipmunk	Tamias canipes	BLM Sensitive	X	Rodent	Mixed Conifer/PJ Woodland		Conif. Forest/ Woodland
Guadalupe southern pocket gopher	Thomomys umbrinus guadalupensis	BLM Sensitive	X	Rodent	PJ Woodland/Madrean Evergreen Woodland		Woodland
Mearns' southern pocket gopher	Thomomys umbrinus mearnsi	BLM Sensitive	X	Rodent	PJ Woodland/Chihuahuan Desert Grassland	Bootheel	Woodland/ Grassland
New Mexican jumping mouse	Zapus hudsonius luteus	BLM Sensitive	X	Rodent	Wetland/Riparian/Aquatic		Aquatic/ Woodland
Organ Mountains Colorado chipmunk	Tamias quadrivittatus australis	BLM Sensitive	X	Rodent	Mixed Conifer/PJ Woodland/Madrean Evergreen Woodland	Endemic	Conif. Forest/ Woodland
Pecos River muskrat	Ondatra zibethicus ripensis	BLM Sensitive	X	Rodent	Wetland/Riparian/Aquatic		Aquatic
Southern Pocket Gopher	Thomomys umbrinus emotus	SEII	X	Rodent	PJ Woodland/Madrean Evergreen Woodland/Mixed Conifer	Bootheel/Endemic	Forest/Woodland
White Sands woodrat	Neotoma micropus leucophaea	BLM Sensitive	X	Rodent	Chihuahuan Desert Grassland/ Chihuahuan Desert Scrub	Restricted	Grassland/ Desert
Yellow-nosed cotton rat	Sigmodon ochrognathus	BLM Sensitive	X	Rodent	Montane Scrub/PJ Woodland/Madrean Evergreen Woodland&Forest/ Chihuahuan Desert Grassland	Bootheel	Woodland/ Grassland
Desert Bighorn Sheep	Ovis canadensis mexicana	SEI	X	Ungulate	PJ Woodland/Chihuahuan Desert Scrub/Mtn Scrub/Interior Chaparral		Woodland/Desert

Note - Table is split purposely to allow sorting for analysis....Table is to be sorted by columns 3 and 1 to place in Status and Species order then joined.

Codes:
BLM Senesitive = Species designated by BLM as sensistive. By policy these include FWS species of concern occurring on Public Land.
SOC = Species of Concern (Former Category 2 Candidates)
SE = State Endangered Plants
SEI = State Endangered Animals Group 1 (Endangered)
SEII = State Endangered Animals Group 2 (Threatened)
X = Potentially Present on BLM Lands

Final Report

APPENDIX D

FINANCIAL THRESHOLD ANALYSIS

Of the

IMPACTS OF THE PROPOSED BLM STANDARDS & GUIDELINES FOR GRAZING

Submitted to:

Cooperating Counties & New Mexico State Team

Prepared by:

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Southwest Center for Resource Analysis
Western New Mexico University

June 23, 1998
Revised
May 19, 1999

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FINANCIAL THRESHOLD ANALYSIS
Of the
IMPACTS OF THE PROPOSED
BLM STANDARDS & GUIDELINES FOR GRAZING

A. PURPOSE

The purpose of this report is to determine the current financial conditions of BLM dependent ranches that may be affected by impacts of the proposed BLM Standards and Guidelines for Grazing, Chapter 3 of the Environmental Impact Statement (EIS), Affected Environment. These conditions are then used as a baseline for comparison of the impacts of the three proposed alternatives in Chapter 4 of the EIS, Environmental Consequences.

B. METHODOLOGY

The analysis in this report is based on:

Tables and other information describing typical ranches by size and class in the five ranching areas in New Mexico, as published in the annual report, Range Livestock Cost and Return Estimates for New Mexico, by L. Allen Torell and Jerry M. Hawkes, of the Agricultural Experiment Station at New Mexico State University,

Ten-year average budgets of typical ranches by size and class in the five ranching areas in New Mexico as developed specifically for this EIS, by John Fowler, Ph.D., and Nick Ashcroft of New Mexico State University, and

Tables of cost and revenues changes for each typical ranch by size and class in the five ranching areas in New Mexico, as affected by each of the alternatives, as developed specifically for this EIS, by John Fowler, Ph.D., and Nick Ashcroft of New Mexico State University.

Using the above sources of information, each typical ranch was analyzed to determine in the Affected Environment:

Percentage of dependency on BLM grazing, and other lands, and

Financial thresholds for production, overhead and owner salary in terms of AUMs.

And in Environmental Consequences:

Impacts on financial thresholds by each of the three alternatives (plus the No-Action alternative), as well as both a 20 percent reduction in BLM AUMs under each of the alternatives, and the cost to the rancher of paying the cost of required improvements under each of the alternatives; and

Affects on current standards of living under each of the alternatives.

C. ASSUMPTIONS

Rates of revenue/AUM were held constant at all levels of production prior to management changes.

Variable cost functions for varying levels of production prior to management changes varied with changes in the number of AUMs, and changes in the amount of land grazed. As a result, the slope of the variable cost function (and subsequently the total cost function) was different for each type of grazing land, with abrupt increases/decreases at the points where they intersected.

None of the non-BLM grazing lands have had, or will have, management changes that will affect production.

BLM AUMs are the marginal units (last ones produced) for these typical ranches.

D. DEFINITION OF TERMS:

Variable Production Costs: These are expenses that vary with production levels, and consist of leases, grazing fees, supplemental feed, livestock expenses, hired labor, and other miscellaneous ranch expenses. The cost driver for some of the expenses is the actual number of AUMs (livestock) in production (i.e. grazing fees, feed, per head taxes, etc.). The cost driver for some of the other expenses (i.e. fuel and repairs, maintenance, etc.) is the amount and type of land being used for production and the costs associated with that land independent of the number of AUMs at any given time period. For this reason, some costs decrease/increase directly with the number of AUMs, others decrease/increase directly with the amount and type of land being used.

Fixed or Overhead Costs: These are expenses that do not vary with the level of production. They include electricity, telephone, butane, oil, gas and wood products for heating, insurance, depreciation, and taxes on land, dwellings, and equipment. These costs must be paid even if production is reduced to zero.

Total Costs: These are the sum of Variable Production Costs and Fixed Overhead Costs (for Small and Extra-Small ranches), and include Owner's Salary (for Medium, Large, and Extra-Large ranches).

Gross Revenues: These are derived from the total sales of livestock and/or feed program payments.

Gross Margin: This is the amount of gross revenues (ranch income) remaining after all variable production costs have been paid. In order for a business to remain in operation, this number must be positive.

Owner Salary: This is the value of the owner's management and labor for the given typical ranch. It varies by size and ranching area.

Financial Threshold for Production (FTPd): This is the minimum number of AUMs required for the given typical ranch to meet all variable production costs. It is determined by graphing the gross revenue and variable production cost functions to locate the initial point of intersection.

Financial Threshold for Risk (FTR): This is the minimum number of AUMs required for the given typical ranch to meet all variable production costs plus all fixed overhead costs. For extra-small and small ranches, this does not include much, if any, owner salary, as most ranches in these size classes are dependent on significant off-ranch family income, either part-time or full-time. For medium, large and extra-large ranches, dependency on off-ranch income to pay the owner's salary is less likely due to the increased amount of time required by the owner to manage ranches of these sizes. Therefore, the amount of the owner's salary is not included in the FTR for extra-small and small ranches, but is included in the FTR for medium, large and extra-large ranches. This threshold is determined by either of the following methods: 1) graphing the gross revenue and total cost functions to locate the point(s) of intersection, or 2) using the following formulae at different levels of production:

Gross revenue/AUM (minus)
Variable Production Costs/AUM = Gross margin/AUM

$$\frac{\text{Total Fixed Overhead Costs}^{1}}{\text{Gross Margin/AUM}} = \text{Financial Threshold for Risk in AUMs}$$

BLM permit: A permit for grazing on federal land issued by the Bureau of Land Management, for a given number of AUMs on a given allotment, paid for by a determined amount per AUM for the actual number of AUMs grazed.

USFS permit: A permit for grazing on federal land issued by the United States Forest Service, for a given number of AUMs on a given allotment, paid for by a determined amount per AUM for the actual number of AUMs grazed.

State Lease: A permit for grazing on New Mexico State Trust Land issued by the New Mexico State Land Office, on a given allotment for a given number of acres. Payment is based on the amount of an accepted bid by the permitee for the allotment, and is independent of the actual number of AUMs grazed.

Maximum production capacity: An estimated maximum number of AUMs based on the maximum herd size for the given size and type of ranch and its current available resources. Operation beyond this point would require shifting to the next higher size classification, and a change in all revenue and cost functions.

New Mexico Ranching Areas: The analysis for this report includes five ranching areas in New Mexico. These areas were determined by the sources of information described previously. The following is a summary of the typical ranches for each area.

AFFECTED ENVIRONMENT

1. Central Mountain Region

a. Extra-Small Cow/Calf Ranch

The typical ranch in this category has 53 head of livestock, 40 of which are brood cows, for a total of 636 AUMs. Approximately 27 percent of the ranch grazing is a BLM permit, most of the remainder is a USFS permit. At this level of production, the revenues from ranching pay all of the variable production costs and about one-half of the fixed overhead costs. The remainder of the fixed overhead costs, approximately $6,300, is paid for by off-ranch income.

Based on the ten-year-average budget for this typical ranch, the FTPd is approximately 250 AUMs, well within the current production level of the ranch. The FTR is not achieved until approximately 1,430 AUMs, well beyond the potential maximum production capacity of the ranch (assuming a maximum capacity of 900 to 950 AUMs), and well beyond the current level of production of this ranch.

This ranch can not hope to pay all of its fixed overhead costs or any of its owner salary costs from ranching revenues, without expanding to a larger ranch size. But, as long as it does pay a portion of fixed overhead costs, it is financially better off to remain in operation. Its most profitable level is at or above current production levels.

b. Small Cow/Calf Ranch

[1] Includes owner's salary for medium, large, and extra-large ranches.

This typical ranch has 133 head of livestock, 100 of which are brood cows, for a total of 1,596 AUMs. Approximately 12 percent of the ranch grazing is a BLM permit, most of the remainder is a USFS permit. At this level of production, the revenues from ranching pay all of the variable production costs, and all of the fixed overhead costs, with a residual return to investment of $420 towards the owner's salary or other family needs.

Based on the ten-year-average budget, the FTPd is approximately 510 AUMs, well within the current production level of the ranch. The FTR is not achieved until approximately 1,550 AUMs, which is well within the potential maximum production capacity of the ranch (assuming a maximum capacity of between 1600 and 1700 AUMs), and within the current level of production.

This ranch can not hope to pay its owner a full salary without expanding to a larger ranch size. But as long as it does pay at least a portion of the fixed overhead costs, it is financially better off remaining in production, as these costs must be paid even if production is zero. Its most profitable levels are at or above current levels of production.

c. Medium Cow/Calf Ranch

This typical ranch has 284 head of livestock, 225 of which are brood cows, for a total of 3,408 AUMs. Approximately 21 percent of the ranch grazing is a BLM permit, 16 percent is a USFS permit, 13 percent is a State lease, and the remaining 50 percent is private grazing. At this level of production, the revenues from ranching pay all of the variable production costs, all of the fixed overhead costs, all of the owner's salary, and has a residual return to investment of approximately $4,100.

Based on the ten-year-average budget, the FTPd is approximately 375 AUMs, well within the current production level of the ranch. The FTR is not achieved until approximately 3,100 AUMs, which is within the current level of production and well within the potential maximum production capacity of the ranch (assuming a maximum production capacity of 4,500 to 4,650 AUMs), but occurs only with the inclusion of the BLM permit. At lower levels of production that exclude the BLM grazing, all variable production costs can be covered, but there is a decreasing ability to pay the owner's salary, and in some cases, none of the owner's salary is paid. At levels below 1,875 AUMs, the ranch is no longer paying all fixed overhead costs (exclusive of the owner's salary). This is significant, in that a medium-sized ranch requires the full-time attention of the owner, with little or no opportunity for off-ranch income pursuits by the owner.

This ranch would, under normal circumstances, provide for the owner's salary as well as a residual return to investment. Its most profitable level of production is at current levels or above.

d. Large Cow/Calf Ranch

This typical ranch has 485 head of livestock, 385 of which are brood cows, for a total of 5,826 AUMs. Approximately 20 percent of the ranch grazing is a BLM permit, 15 percent is a USFS permit, 13 percent is a State lease, and the remaining 52 percent is private grazing. At this level of production, the revenues from ranching pay all of the variable production costs, all of the fixed overhead costs, all of the owner's salary, and has a residual return to investment of approximately $6,600.

Based on the ten-year-average budget, the FTPd is approximately 750 AUMs, well within the current production level of the ranch. The FTR is not achieved until 5,300 AUMs, which is within the current level of production and well within the potential maximum production capacity of the ranch (assuming a maximum production capacity of 7,250 to 7,560 AUMs), but occurs only with the inclusion of the BLM permit. At lower levels of production that exclude the BLM grazing, all variable production costs can be covered, but there is a decreasing ability to pay the owner's salary, and in some cases, none of the owner's salary is paid. As levels of

production continue to decrease, the ability to pay fixed overhead costs decreases. At levels below 2,950 AUMs, the ranch is no longer able to pay all fixed overhead costs (exclusive of the owner's salary). This is significant, in that a large ranch requires the full-time attention of the owner, with little or no opportunity for off-ranch income pursuits by the owner.

This ranch would, under normal circumstances, provide for the owner's salary as well as a residual return to investment. Its most profitable level of production is at current levels or above.

2. Northeast Region

This region was not analyzed due to the small number of BLM permits, none of which would be affected by management changes proposed in this EIS.

3. Northwest Region

a. Extra-Small Cow/Calf Ranch

The typical ranch in this category has 20 – 21 head of livestock, 16 of which are brood cows, for a total of 249 AUMs. Approximately 68 percent of the ranch grazing is a BLM permit, most of the remainder is a USFS permit. At this level of production, the revenues from ranching pay all of the variable production costs and about 84 percent of the fixed overhead costs. The remainder of the fixed overhead costs, approximately $380, is paid for by off-ranch income.

Based on the ten-year-average budget for this typical ranch, the FTPd is achieved at two different production levels. The first level, which includes private grazing and the USFS permit, is achieved at 10 AUMs and continues until the BLM permit is added, at 79 AUMs. The ranch then falls below the FTPd until a production level of 90 AUMs is achieved, well within the current production level of the ranch. The FTR is not achieved until approximately 295 AUMs, well within the potential maximum production capacity of the ranch (assuming a maximum capacity of 900 to 950 AUMs), but beyond the current level of production.

This ranch could potentially expand from its current level of production to pay all of its fixed overhead costs, and possibly even part or all of its owner salary costs (if resources are available) without expanding to a larger ranch size. But, at its current level of production, as long as it does pay a portion of fixed overhead costs, it is better off, financially, to remain in operation. Its most profitable level is at or above current production levels.

b. Small Cow/Calf Ranch

This typical ranch has 109 head of livestock, 83 of which are brood cows, for a total of 1,309 AUMs. Approximately 47 percent of the ranch grazing is a BLM permit, most of the remainder is a USFS permit. At this level of production, the revenues from ranching pay all of the variable production costs, and about 61 percent of the fixed overhead costs. The remainder of the fixed overhead costs, approximately $4,940, is paid for by off-ranch income.

Based on the ten-year-average budget for this typical ranch, the FTPd is achieved at two different levels of production. The first level, which includes private grazing and the USFS permit, is achieved at 345 AUMs and continues until the BLM permit is added, at 697 AUMs. The ranch then falls below the FTPd until a production level of 800 AUMs is achieved, well within the current production level of the ranch. The FTR is not achieved until 2,151 AUMs, well beyond the current level of production as well as the potential maximum production capacity of the ranch (assuming a maximum capacity of between 1,600 and 1,700 AUMs).

This ranch can not hope to pay all of its fixed overhead costs, or any portion of its owner salary costs, without

expanding to a larger ranch size. But as long as it does pay at least a portion of the fixed overhead costs, it is financially better off remaining in production, as these costs must be paid even if production is reduced to zero. Its most profitable levels are at or above current levels of production.

c. Medium Cow/Calf Ranch

This typical ranch has 301 head of livestock, 223 of which are brood cows, for a total of 3,616 AUMs. Approximately 26 percent of the ranch grazing is a BLM permit, 26 percent is a USFS permit, 25 percent is a State lease, and the remaining 23 percent is private land grazing. At this level of production, the revenues from ranching pay all of the variable production costs, all of the fixed overhead costs, and approximately 61 percent of the owner salary costs. The remainder of the owner's salary, approximately $6,210 is paid from off-ranch income.

Based on the ten-year-average budget, the FTPd is achieved at all levels of production above 100 AUMs, well within the current production level of the ranch. The FTR is not achieved until 4,284 AUMs, which is well within the potential maximum production capacity of the ranch (assuming a maximum production capacity of 4,500 to 4,650 AUMs), but beyond the current level of production.

This ranch could potentially expand to provide for the full owner's salary, as well as a residual return to investment (if resources are available) without expanding to a larger ranch size. But, at its current level of production, as long as it does pay a portion of fixed costs, it is financially better to remain in production. Its most profitable level of production is at current levels or above.

d. Extra-Large Cow/Calf Ranch

This typical ranch has 657 head of livestock, 501 of which are brood cows, for a total of 7,880 AUMs. Approximately 23 percent of the ranch grazing is a BLM permit, 23 percent is a USFS permit, 18 percent is a State lease, and the remaining 36 percent is private land grazing. At this level of production, the revenues from ranching pay all variable production costs, all of the fixed overhead costs, and all of the owner salary costs, with a residual return to investment of approximately $10,370.

Based on the ten-year-average budget, the FTPd is achieved at all levels of production above 1,000 AUMs, well within the current production level of the ranch. The FTR is not achieved until 6,739 AUMs, which is within the current production level of the ranch and well within the potential maximum production capacity of the ranch (assuming a maximum capacity of 19,000 to 20,000 AUMs), but occurs only with the inclusion of the BLM permit. At lower levels of production that exclude the BLM grazing, all variable production costs can be covered, but there is a decreasing ability to pay the owner's salary, and at some levels, none of the owner's salary is paid. As levels of production continue to decrease, the ability to pay fixed overhead costs decreases as well. At production levels below 3,600 AUMs, the ranch is no longer able to pay all fixed overhead costs (exclusive of the owner's salary).

This ranch would, under normal circumstances, provide for the owner's salary, as well as a residual return to investment. Its most profitable level of production is at current levels or above.

4. Southeast Region

a. Extra-Small Cow/Calf Ranch

The typical ranch in this category has 53 head of livestock, 40 of which are brood cows, for a total of 636 AUMs. Approximately 45 percent of the ranch grazing is a BLM permit, 30 percent is a State lease, and the remaining 25 percent is private land grazing. At this level of production, the revenues from ranching pay all of the variable production costs, and about 74 percent of the fixed overhead costs. The remainder of the fixed overhead costs, approximately $2,910, is paid for by off-ranch income.

Based on the ten-year-average budget for this typical ranch, the FTPd is achieved at all levels of production above 40 AUMs, well within the current production level of the ranch. The FTR is not achieved until 856 AUMs, which is within the potential maximum production capacity of the ranch (assuming a maximum capacity of 900 to 950 AUMs), but beyond the current level of production.

This ranch could potentially expand from its current level of production to pay all of its fixed overhead costs, and possibly even part of its owner salary costs (if resources are available), without expanding to a larger ranch size. But, at its current level of production, as long as it does pay a portion of fixed overhead costs, it is financially better off to remain in operation. Its most profitable level of production is at current levels or above.

b. Small Cow/Calf Ranch

This typical ranch has 102 head of livestock, 72 of which are brood cows, for a total of 1,221 AUMs. Approximately 58 percent of the ranch is a BLM permit, 23 percent is a State lease, and the remaining 19 percent is private land grazing. At this level of production, the revenues from ranching pay all of the variable production costs, and about 75 percent of the fixed overhead costs. The remainder of the fixed overhead costs, approximately $5,530, is paid for by off-ranch income.

Based on the ten-year-average budget for this typical ranch, the FTPd is achieved at all levels of production above 40 AUMs, well within the current production level of the ranch. The second threshold, the FTR, is not achieved until approximately 1,637 AUMs, which is within the potential maximum capacity of the ranch (assuming a maximum capacity of between 1,600 and 1,700 AUMs), but beyond the current level of production.

This ranch could expand to pay all of its fixed overhead costs and possibly a portion of its owner's salary (if resources were available), but could not hope to pay its owner a full salary without expanding to a larger ranch size. However, at its current level of production, as long as it pays at least a portion of fixed overhead costs, it is better off, financially, to remain in operation. Its most profitable level is at or above the current level of production.

c. Medium Cow/Calf Ranch

This typical ranch has 260 head of livestock, 185 of which are brood cows, for a total of 3,124 AUMs. Approximately 45 percent of the ranch grazing is a BLM permit, 31 percent is a State lease, and the remaining 24 percent is private land grazing. At this level of production, the revenues from ranching pay all of the variable production costs, all of the fixed overhead costs, and all of the owner salary costs, with a residual return to investment of approximately $8,480.

Based on the ten-year-average budget, the FTPd is achieved at all levels of production above 130 AUMs, well within the current production level of the ranch. The FTR is not achieved until 2,491 AUMs, which is within the current level of production, and well within the potential maximum production capacity of the ranch (assuming a maximum capacity of 4,500 to 4,650 AUMs), but occurs only with the inclusion of the BLM permit. At lower levels of production that exclude the BLM permit, all variable production costs can be covered, but only a portion of the owner's salary is paid. As levels of production continue to decrease, the ability to pay fixed overhead costs also decreases. At levels below 1,300 AUMs, the ranch is no longer able to pay all fixed costs (exclusive of the owner's salary).

Under normal circumstances, this ranch would provide for the owner's salary, as well as a residual return to investment. Its most profitable level of production is at or above the current level.

d. Large Cow/Calf Ranch

This typical ranch has 473 head of livestock, 342 of which are brood cows, for a total of 5,671 AUMs. Approximately 45 percent of the ranch grazing is a BLM permit, 30 percent is a State lease, and the remaining 25 percent is private land grazing. At this level of production, the revenues from ranching pay all variable production costs, all fixed overhead costs, and all of the owner salary costs, with a residual return to investment of about $32,980.

Based on the ten-year-average budget, the FTPd is achieved at all levels of production above 50 AUMs, well within the current production level of the ranch. The FTR is not achieved until 3,231 AUMs, which is within the current level of production, and well within the potential maximum production capacity of the ranch (assuming a maximum capacity of 7,250 to 7,560 AUMs), and occurs only with the inclusion of the BLM permit. At lower levels of production that exclude the BLM grazing, all variable costs can be covered, but there is a decreasing ability to pay the owner's salary, and at some levels, none of the owner's salary is paid. As levels of production continue to decrease, the ability to pay fixed overhead costs decreases as well. At production levels below 1,800 AUMs, the ranch is no longer able to pay all fixed overhead costs (exclusive of the owner's salary).

This ranch would, under normal circumstances, provide for the owner's salary, as well as a residual return to investment. Its most profitable level of production is at current levels or above.

e. Extra-Large Cow/Calf Ranch

This typical ranch has 741 head of livestock, 537 of which are brood cows, for a total of 8,895 AUMs. Approximately 45 percent of the ranch grazing is a BLM permit, 30 percent is a State lease, and the remaining 25 percent is private land grazing. At this level of production, the revenues from ranching pay all of the variable production costs, all of the fixed overhead costs, and all of the owner salary costs, with a residual return to investment of approximately $60,550.

Based on the ten-year-average budget, the FTPd is achieved at all levels of production above 100 AUMs, well within the current level of production. The FTR is achieved at two levels of production. The first occurs at 4,345 AUMs, assuming only the private land and State lease are in production, and continues until the BLM permit is added at 4,894 AUMs. At this level, the ranch falls below the FTR until 5,600 AUMs are in production, which is within the current level of production, and well within the potential maximum production capacity of the ranch (assuming a maximum capacity of 19,000 to 20,000 AUMs). This is the only BLM dependent ranch category in New Mexico that can achieve full profitability without the BLM permit.

This ranch would under normal circumstances, provide for the owner's salary, as well as a residual return to investment. As mentioned previously, this is the only ranch in this analysis that can achieve profitability without the BLM permit.

5. Southwest Region

a. Extra-Small Cow/Calf Ranch

The typical ranch in this category has 21 head of livestock, 16 of which are brood cows, for a total of 259 AUMs. Approximately 63 percent of the ranch is a BLM permit, 18.5 percent is a New Mexico State Trust Land Lease, and the remaining 18.5 percent is private grazing.

Based on the sources of information, this typical ranch category 10-year-budget had an extremely large feed program payment. While other ranches in the area receive feed program payments of $.47 to $.65 per AUM, this

category received $10.08 per AUM in the source analysis. However, it is possible in the future that this typical ranch may receive lower payments consistent with the other ranches in the area. For purposes of this analysis, the feed program payment was adjusted to $.47 per AUM.

At the current level of production, the revenues from ranching pay all of the variable production costs, and about 80 percent of the fixed overhead costs. The remainder of the fixed overhead costs, approximately $520, is paid by off-ranch income.

Based on the ten-year-average budget for this typical ranch (with the adjustment mentioned above), the FTPd is approximately 12 AUMs, well within the current production level of the ranch. The FTR is approximately 325 AUMs, above the current level of production, but within the potential maximum production capacity of the ranch (assuming a maximum capacity of 900 to 950 AUMs).

This ranch could expand to pay all of its fixed overhead costs and possibly a portion of its owner's salary from ranching revenues (if resources are available). However, at the current level of production, as long as it pays a portion of fixed overhead costs, it is better off, financially, to remain in operation. Its most profitable level is at or above the current production level.

b. Small Cow/Calf Ranch

This typical ranch has 100 head of livestock, 76 of which are brood cows, for a total of 1204 AUMs. Approximately 62 percent of the ranch grazing is a BLM permit, 26 percent is a State lease, and the remaining 12 percent is private grazing. At this level of production, the revenues from ranching pay all of the variable production costs, and about 75 percent of the fixed overhead costs. The remaining $3,100 of overhead costs is paid by off-ranch income.

Based on the ten-year-average budget, the FTPd occurs at three different levels of production for this ranch. The first level occurs at approximately 35 AUMs, assuming only the private grazing is in production. When the State lease is added, at 146 AUMs, the ranch drops below the FTPd until the level of 260 AUMs is in production. When the BLM permit is added, at 460 AUMs, the ranch again drops below the FTPd until the level of 650 AUMs is in production, which is within the current level of production. The second threshold, the FTR, is not achieved until approximately 1625 AUMs are in production, which is beyond the current level of production for this ranch, but within the potential maximum production capacity of the ranch (assuming a maximum capacity of between 1600 and 1700 AUMs).

This ranch could expand (if resources are available) to pay all of its fixed overhead costs and possibly a portion of its owner's salary, but could not hope to pay its owner a full salary without expanding to a larger ranch size. However, at the current level of production, as long as it pays a portion of fixed overhead costs, it is better off, financially, to remain in operation. Its most profitable level is at or above the current level of production.

c. Medium Cow/Calf Ranch

This typical ranch has 231 head of livestock, 182 of which are brood cows, for a total of 2,777 AUMs. Approximately 64 percent of the ranch grazing is a BLM permit, 27 percent is a State lease, and the remaining 9 percent is private grazing. At this level of production, the revenues from ranching pay all of the variable production costs, all of the fixed overhead costs, and about 50 percent of the owner's salary.

Based on the ten-year-average budget, the FTPd occurs at two different levels of production for this ranch. The first level occurs at approximately 25 AUMs, assuming only the private grazing is in production. When the State lease is added, at 246 AUMs, the ranch drops below the FTPd until approximately 450 AUMs are in

production. The ranch maintains the FTPd at all levels of production above 450 AUMs, including the BLM permit, which is within the current level of production. The second threshold, the FTR is not achieved until approximately 3,580 AUMs are in production, which is beyond the current level of production, but within the potential maximum production capacity of the ranch (assuming a maximum capacity of 4,500 to 4,650 AUMs). At lower levels of production that exclude the BLM grazing permit, all variable production costs can be covered, but there is a decreasing ability to pay the owner's salary, and in some cases, none of the owner's salary is paid. As levels of production continue to decrease, the ability to pay fixed overhead costs decreases. At levels below 2225 AUMs, the ranch is no longer paying all fixed overhead costs (exclusive of the owner's salary).

This ranch could expand to pay all of its owner's salary, and possibly earn a residual return to investment (if resources are available). The most profitable level of production for this ranch is at the current level or above.

d. Large Cow/Calf Ranch

This typical ranch has 425 head of livestock, 235 of which are brood cows, for a total of 5,103 AUMs. Approximately 62 percent of the ranch grazing is a BLM permit, 26 percent is a State lease, and the remaining 12 percent is private grazing. At this level of production, the revenues from ranching pay all of the variable production costs, all of the fixed overhead costs, and about 74 percent of the owner's salary.

Based on the ten-year-average budget, the FTPd is achieved at three different levels of production. The first level occurs at approximately 15 AUMs, assuming only the private grazing is in production. When the State lease is added, at 597, the ranch drops below the FTPd until approximately 1,100 AUMs are in production. When the BLM permit is added at 1,922 AUMs, the ranch again drops below the FTPd until approximately 2,520 AUMs are in production. The ranch maintains the FTPd at all levels above 2520 AUMs, which is within the current level of production. The second threshold, the FTR, is not achieved until approximately 5,500 AUMs are in production, which is beyond the current level of production, but well within the potential maximum production capacity of the ranch (assuming a maximum capacity of 7250 to 7560 AUMs). At lower levels of production that exclude the BLM grazing, all variable production costs can be covered, but there is a decreasing ability to pay the owner's salary, and in some cases, none of the owner's salary is paid. As levels of production continue to decrease, the ability to pay fixed overhead costs decreases. At levels below 4,275 AUMs, the ranch is no longer paying all fixed overhead costs (exclusive of the owner's salary).

This ranch could expand to pay all of its owner's salary, and possibly earn a residual return to investment (if resources are available). The most profitable level of production for this ranch is at the current level or above.

e. Extra-Large Cow/Calf Ranch

This typical ranch has 1,264 head of livestock, 995 of which are brood cows, for a total of 15,166 AUMs. Approximately 62 percent of the ranch grazing is a BLM permit, 10 percent is a State lease, and the remaining 28 percent is private grazing. At this level of production, the revenues from ranching pay all of the variable production costs, all of the fixed overhead costs, and approximately 87 percent of the owner's salary.

Based on the ten-year-average budget, the FTPd is achieved at two different levels of production. The first level occurs at approximately 1,000 AUMs, assuming only the private grazing is in production. The ranch continues above the FTPd with the inclusion of the State lease. However, when the BLM permit is added, at 5,712 AUMs, the ranch drops below the FTPd until approximately 7,130 AUMs are in production. The ranch maintains the FTPd at all levels above 7,130 AUMs, which is within the current level of production. The second threshold, the FTR, is not achieved until approximately 15,630 AUMs are in production, which is beyond the current level of production, but well within the potential maximum production capacity of the ranch (assuming a maximum capacity of 19,000 to 20,000 AUMs). At lower levels of production that exclude the BLM permit, all variable

production costs can be covered, but none of the owner's salary is paid, and only a portion of the fixed overhead costs (excluding the owner's salary) is paid. This is significant, in that an extra-large ranch requires the full time attention of the owner, with little or no opportunity for off-ranch income pursuits by the owner.

This ranch could expand to pay all of its owner's salary, and possibly earn a residual return to investment (if resources are available). The most profitable level of production for this ranch is at the current level or above.

ENVIRONMENTAL CONSEQUENCES

A NO ACTION ALTERNATIVE

1 Central Mountain Region

For detailed information on this section, refer to Table 1 in Section III of this report.

a. Extra-Small Cow/Calf Ranch

Based on the sources of information, before management changes, this typical ranch meets the FTPd, but not the FTR. This typical ranch pays for all of the variable production costs, and half of the fixed overhead costs. Off-ranch income pays the other half of fixed overhead costs, about $6,300. This ranch cannot increase production enough to pay all fixed overhead costs without expanding to a larger ranch size.

b. Small Cow/Calf Ranch

Based on the sources of information, before any management changes, this typical ranch meets both the FTPd and the FTR. However, if resources are available, it could increase production to meet the FTR. This typical ranch could pay all variable production costs and all fixed overhead costs, with a $420 residual return to investment to pay towards the owner's salary.

c. Medium Cow/Calf Ranch

Based on the sources of information, before any management changes, this typical ranch meets both the FTPd and the FTR. This typical ranch pays for all the variable production costs, all of the fixed overhead costs, all of the owner's salary, and has a residual return to investment of about $4,100.

d. Large Cow/Calf Ranch

Based on the sources of information, before any management changes, this typical ranch meets both the FTPd and the FTR. This typical ranch pays for all of the variable production costs, all of the fixed overhead costs, all of the owner's salary, and has a residual return to investment of about $6,600.

e. Conclusion

Under this alternative, all affected ranches in the four typical ranch size categories would continue to meet the FTPd. Three of the typical ranch sizes (small, medium, and large) would also continue to meet the FTR. Local governments and agencies would continue to receive revenues from these ranch operations as described under Affected Environment, at their current rates.

2 Northeast Region

This region was not analyzed due to the small number of BLM permits, none of which would be affected by management changes proposed in this EIS.

3 Northwest Region

For detailed information on this section, refer to Table 2 in Section III of this report.

a. Extra-Small Cow/Calf Ranch

Based on the sources of information, before management changes, this typical ranch meets the FTPd, but not the FTR. However, if resources are available, it could increase production to meet the FTR. This ranch currently pays for all of the variable production costs and 84 percent of the fixed overhead costs. Off-ranch imcome pays the other 16 percent of fixed overhead costs, about $380.

b. Small Cow/Calf Ranch

Before management changes, this typical ranch meets the FTPd, but not the FTR. This ranch currently pays for all of the variable production costs and 61 percent of the fixed overhead costs. Off-ranch income pays the other 39 percent of fixed overhead costs, about $4,940. This ranch cannot increase production enough to pay all fixed overhead costs without expanding to a larger ranch size.

c. Medium Cow/Calf Ranch

Before any management changes, this typical ranch meets the FTPd, but not the FTR. However, if resources are available, it could increase production to meet the FTR. This ranch currently pays for all of the variable production costs, all of the fixed overhead costs, and 61 percent of the owner's salary. Off-ranch income pays the other 39 percent of the owner's salary, about $6,210.

d. Extra-Large Cow/Calf Ranch

Before any management changes, this typical ranch meets the FTPd and the FTR. This typical ranch currently pays for all of the variable production costs, all of the fixed overhead costs, all of the owner's salary, and has a residual return to investment of about $10,370.

e. Conclusion

Under this alternative, all affected ranches in the four typical ranch size categories would continue to meet the FTPd. One of the typical ranch sizes (extra-large) would also continue to meet the FTR. Local governments and agencies would continue to receive revenues from these ranch operations as described under Affected Environment, at their current rates.

4 Southeast Region

For detailed information on this section, refer to Table 3 in Section III of this report.

a. Extra-Small Cow/Calf Ranch

Based on the sources of information, before management changes, this typical ranch meets the FTPd, but not the FTR. However, if resources are available, it could increase production to meet the FTR. This typical ranch currently pays all of the variable production costs, and 74 percent of the fixed overhead costs. Off-ranch income pays the other 26 percent of fixed overhead costs, about $2,910.

b. Small Cow/Calf Ranch

Before any management changes, this typical ranch meets the FTPd, but not the FTR. However, if resources are available, it could increase production to meet the FTR. This typical ranch currently pays all of the variable production costs, and 75 percent of the fixed overhead costs, about $5,530.

c. Medium Cow/Calf Ranch

Before any management changes, this typical ranch meets the FTPd and the FTR. This ranch currently pays for all of the variable production costs, all of the fixed overhead costs, and all of the owner's salary, with a residual return to investment of about $8,480.

d. Large Cow/Calf Ranch

Before any management changes, this typical ranch meets both the FTPd and the FTR. This ranch currently pays for all of the variable production costs, all of the fixed overhead costs, and all of the owner salary costs, with a residual return to investment of about $32,980.

e. Extra-Large Cow/Calf Ranch

Before any management changes, this typical ranch meets both the FTPd and the FTR. This ranch currently pays for all of the variable production costs, all of the fixed overhead costs, and all of the owner salary costs, with a residual return to investment of about $60,550.

f. Conclusion

Under this alternative, all affected ranches in the five typical ranch size categories would continue to meet the FTPd, and three of the ranch sizes (medium, large, and extra-large) would also continue to meet the FTR. Local governments and agencies would continue to receive revenues from these ranch operations, as described under Affected Environment, at their current rates.

5 Southwest Region

For detailed information on this section, refer to Table 4 in Section III of this report.

a. Extra Small Cow/Calf Ranch

Based on the sources of information, before management changes this typical ranch meets the FTPd, but not the FTR. However, if resources are available, it could increase production to meet the FTR. This typical ranch

pays for all of the variable production costs, and 80 percent of the fixed overhead costs. Off-ranch income pays the other 20 percent of fixed overhead costs, about $520, and all of the owner's salary.

b. Small Cow/Calf Ranch

Before any management changes, this typical ranch meets the FTPd, but not the FTR. However, if resources are available, it could increase production to meet the FTR. This typical ranch pays for all of the variable production costs, and 75 percent of the fixed overhead costs. Off-ranch income pays the other 25 percent of fixed overhead costs, about $3,080, and all of the owner's salary.

c. Medium Cow/Calf Ranch

Before any management changes, this typical ranch meets the FTPd, but not the FTR. However, if resources are available, it could increase production to meet the FTR. This typical ranch pays for all of the variable production costs, all of the fixed overhead costs, and 50 percent of the owner's salary. Off-ranch income pays the other 50 percent of the owner's salary, about $7,350.

d. Large Cow/Calf Ranch

Before any management changes, this typical ranch meets the FTPd, but not the FTR. However, if resources are available, it could increase production to meet the FTR. This typical ranch pays for all of the variable production costs, all of the fixed overhead costs, and 74 percent of the owner's salary. Off-ranch income pays the other 26 percent of the owner's salary, about $4,600.

e. Extra Large Cow/Calf Ranch

Before any management changes, this typical ranch meets the FTPd, but not the FTR. However, if resources are available, it could increase production to meet the FTR. This typical ranch pays for all of the variable production costs, all of the fixed overhead costs, and 87 percent of the owner's salary. Off-ranch income pays the other 13 percent of the owner's salary, about $6,500.

f. Conclusion

Under this alternative, all affected ranches in the five typical ranch size categories would continue to meet the FTPd. None of the five typical ranches would meet the FTR. Local governments and agencies would continue to receive revenues from these ranch operations, as described under Affected Environment, at their current rates.

B RAC ALTERNATIVE

1. Central Mountain Region

For details under this section, refer to Tables 5a and 5b in Section III of this report.

a. Extra-Small Cow/Calf Ranch

The management changes under this alternative would result in over a 100 percent loss of ranch income (gross margin) due to a negative gross margin. The ranch can no longer meet the FTPd or the FTR, and the rancher can no longer pay variable production costs or fixed overhead costs. The ranch would be financially better off to discontinue grazing the BLM permit, at least in the short term. If the ranch has other, non-BLM grazing, the ranch could continue to operate on that basis only, provided that the remaining number of AUMs is above the FTPd, or 250 AUMs. If the ranch does not have non-BLM grazing, the ranch operation would have to cease, and all fixed overhead costs would have to be paid from off-ranch income, as well as maintaining their current standard of living.

The cost of the rancher paying for the cost of improvements required under this alternative is an additional $850 per year over a ten year period. A 20 percent reduction in BLM AUMs is not relevant under this alternative, as the ranch is worse off financially to use any part of the BLM permit.

b. Small Cow/Calf Ranch

The management changes under this alternative would result in an 80 percent loss of ranch income (gross margin). The ranch still meets the FTPd, but not the FTR. It is not possible for this ranch to increase production enough to meet the FTR without expanding to a larger ranch size. The ranch can still pay all of the variable production costs, but only 18 percent of fixed overhead costs, and all residual return to investment is lost. The ranch family will need to secure other grazing, or an additional $13,300 of off-ranch income to pay all fixed overhead costs, and $13,720 to maintain their current standard of living (includes residual return to investment). When compared to lower levels of production excluding the BLM permit, the amount of gross margin available to pay fixed overhead costs would be greater when the permit is excluded, under this alternative. This ranch would be worse off, financially, to continue grazing on the BLM permit, at least in the short term.

The cost of the rancher paying for the cost of improvements required under this alternative is an additional $700 per year over a 10 year period. If a 20 percent reduction in BLM AUMs is added to the management changes, ranch income (gross margin) will be reduced by an additional $400.

c. Medium Cow/Calf Ranch

Management changes under this alternative would result in over a 34 percent loss or ranch income (gross margin). The ranch still meets the FTPd, but not the FTR. The ranch can still pay all variable production costs and fixed overhead costs, but only one-third of the owner's salary. The ranch will need to secure other grazing, or the family will need $10,300 of off-ranch income to pay the remainder of the owner's salary, or $14,400 to maintain their current standard of living (includes residual return to investment lost). When compared to lower levels of production excluding the BLM permit, the amount of gross margin available to pay fixed overhead costs would be greater when the permit is excluded, under this alternative. This ranch would be worse off, financially, to continue grazing on the BLM permit, at least in the short term.

If a 20 percent reduction in BLM AUMs is added to the management changes, these figures are $12,050 and $16,050 respectively. The cost of the rancher paying for the cost of improvements required under this alternative is an additional $1,550 per year over a 10 year period.

d. Large Cow/Calf Ranch

Management changes under this alternative would result in nearly a 22 percent loss of ranch income (gross margin). The ranch still meets the FTPd, but not the FTR. The ranch can still pay all variable production costs and fixed overhead costs, but only 60 percent of the owner's salary. The ranch will need to secure other grazing, or the family will need $8,200 of off-ranch income to pay the remainder of the owner's salary, or $14,900 to maintain their current standard of living (includes residual return to investment lost). This is approximately equal to the level of profitability if the ranch were to stop grazing the BLM permit.

The cost of the rancher paying for the cost of improvements required under this alternative is an additional $1,450 per year over a 10 year period. If a 20 percent reduction in BLM AUMs is added to the management changes, the off-ranch income (gross margin) will need to increase to $11,300 and $18,000. With the addition of either the cost of improvements or the reduction in grazing, the ranch would be more profitable to discontinue grazing the BLM permit, at least in the short term.

e. Conclusion

As a result of management changes under this alternative, all financial activity from all of the affected BLM permits on extra-small, small, and medium ranches would most likely stop. Only the affected large ranches would probably continue financial activity associated with the BLM permit, and only if there are no reductions in AUMs, and the rancher does not have to bear the cost of improvements himself.

Local governments and agencies could potentially lose: per head livestock taxes; fees and expenses from reduced numbers of livestock on affected BLM permits; maintenance of and new investments in capital improvements of facilities on affected BLM grazing land; and taxable base from owned improvements on affected BLM grazing land. If there are any extra-small affected ranches that are exclusively dependent on BLM grazing, local governments could also lose the taxable base on the private property, as a business, as well.

2. Northeast Region

This region was not analyzed due to the small number of BLM permits, none of which would be affected by management changes proposed in this EIS.

3. Northwest Region

For details under this section, refer to Tables 6a and 6b in Section III of this report.

a. Extra-Small Cow/Calf Ranch

The management changes under this alternative would result in a 78 percent loss of ranch income (gross margin). The ranch still meets the FTPd, but not the FTR. It is not possible for this ranch to increase production enough to meet the FTR without expanding to a larger ranch size. The ranch can still pay all of the variable production costs, but only 19 percent of the fixed overhead costs. The ranch family will need to secure other grazing, or an additional $1,950 of off-ranch income to pay all fixed overhead costs, or $1,570 to maintain their current standard of living. When compared to lower levels of production excluding the BLM permit, the amount of gross margin available to pay fixed overhead costs would be greater when the permit is excluded, under this alternative. This ranch would be worse off, financially, to continue grazing on the BLM permit, at least in the short term.

The cost of the rancher paying for the cost of improvements under this alternative is an additional $330 per year over a 10 year period. If a 20 percent reduction in BLM AUMs is added to the management changes, ranch

income (gross margin) will be reduced by an additional $290.

b. Small Cow/Calf Ranch

The management changes under this alternative would result in over a 100 percent loss of ranch income (gross margin) due to a negative gross margin. The ranch can no longer pay variable production costs or fixed overhead costs. The ranch would be financially better off to discontinue grazing the BLM permit, at least in the short term. If the rancher has other non-BLM grazing, the ranch could continue to operate on that basis only, provided that the remaining number of AUMs is above the FTPd, or 345 AUMs. If the ranch does not have BLM grazing, the ranch operation would have to cease, and all fixed overhead costs would have to be paid from off-ranch income, as well as maintaining their current standard of living.

The cost of the rancher paying for the cost of improvements required under this alternative is an additional $930 per year over a ten year period. A 20 percent reductin in BLM AUMs is not relevant under this alternative, as the ranch is worse off financially to use any part of the BLM permit.

c. Medium Cow/Calf Ranch

The management changes under this alternative would result in a 49 percent loss of ranch income (gross margin). The ranch still meets the FTPd, but not the FTR. It is not possible for this ranch to increase production enough to meet the FTR without expanding to a larger ranch size. The ranch can still pay all of the variable production costs, but only 6 percent of the fixed overhead costs, and none of the owner's salary. The ranch family will need to secure other grazing, or an additional $22,640 of off-ranch income to pay all fixed overhead costs and the owner's salary, or $16,430 to maintain their current standard of living. When compared to lower levels of production excluding the BLM permit, the amount of gross margin available to pay fixed overhead costs would be greater when the permit is excluded, under this alternative. This ranch would be worse off, financially, to continue grazing on the BLM permit, at least in the short term.

The cost of the rancher paying for the cost of improvements under this alternative is an additional $1,150 per year over a 10 year period. If a 20 percent reduction in BLM AUMs is added to the management changes, ranch income (gross margin) will be reduced by an additional $2,190.

d. Extra-Large Cow/Calf Ranch

The management changes under this alternative would result in a 50 percent loss of ranch income (gross margin). The ranch still meets the FTPd, but not the FTR. The ranch can still pay all of the variable production costs, but only 10 percent of the fixed overhead costs, none of the owner's salary, and all residual return to investment is lost. The ranch family will need to secure other grazing, or an additional $25,645 of off-ranch income to pay all fixed costs and the owner's salary, or an additional $36,015 to maintain their current standard of living (includes loss of residual return to investment). When compared to lower levels of production excluding the BLM permit, the amount of gross margin available to pay fixed overhead costs would be greater when the permit is excluded, under this alternative. This ranch would be worse off, financially, to continue grazing on the BLM permit, at least in the short term.

The cost of the rancher paying for the cost of improvements under this alternative is an additional $3,390 per year over a 10 period. If a 20 percent reduction in BLM AUMs is added to the management changes, ranch income (gross margin) will be reduced by an additional $4,880.

e. Conclusion

As a result of management changes under this alternative, all financial activity from all of the affected BLM permits on all four size category ranches in this region would most likely stop.

Local governments and agencies could potentially lose: per head livestock taxes; fees and expenses from reduced numbers of livestock on affected BLM permits; maintenance of and new investments in capital improvements of facilities on affected BLM grazing land; and taxable base from owned improvements on affected BLM grazing land. If there are any small affected ranches that are exclusively dependent on BLM grazing, local governments could also lose the taxable base on the private property, as a business, as well.

4. Southeast Region

For details under this section, refer to Tables 7a and 7b in Section III of this report.

a. Extra-Small Cow/Calf Ranch

The management changes under this alternative would result in a 68 percent loss of ranch income (gross margin). The ranch still meets the FTPd, but not the FTR. It is not possible for this ranch to increase production enough to meet the FTR without expanding to a larger ranch size. The ranch can still pay all of the variable production costs, but only 24 percent of the fixed overhead costs. The ranch family will need to secure other grazing, or an additional $8,670 of off-ranch income to pay all fixed overhead costs, or $5,760 to maintain their current standard of living. When compared to lower levels of production excluding the BLM permit, the amount of gross margin available to pay fixed overhead costs would be greater when the permit is excluded, under this alternative. This ranch would be worse off, financially, to continue grazing on the BLM permit, at least in the short term.

The cost of the rancher paying for the cost of improvements under this alternative is an additional $630 per year over a 10 year period. If a 20 percent reduction in BLM AUMs is added to the management changes, ranch income (gross margin) will be reduced by an additional $630.

b. Small Cow/Calf Ranch

The management changes under this alternative would result in a 60 percent loss of ranch income (gross margin). The ranch still meets the FTPd, but not the FTR. It is not possible for this ranch to increase production enough to meet the FTR without expanding to a larger ranch size. The ranch can still pay all of the variable production costs, but only 29 percent of the fixed overhead costs. The ranch family will need to secure other grazing, or an additional $15,360 of off-ranch income to pay all fixed overhead costs, or $9,830 to maintain their current standard of living. When compared to lower levels of production excluding the BLM permit, the amount of gross margin available to pay fixed overhead costs would be greater when the permit is excluded, under this alternative. This ranch would be worse off, financially, to continue grazing on the BLM permit, at least in the short term.

The cost of the rancher paying for the cost of improvements under this alternative is an additional $1,000 per year over a 10 year period. If a 20 percent reduction in BLM AUMs is added to the management changes, ranch income (gross margin) will be reduced by an additional $1,350 per year.

c. Medium Cow/Calf Ranch

The management changes under this alternative would result in a 48 percent loss of ranch income (gross

margin). The ranch still meets the FTPd, but not the FTR. The ranch can still pay all of the variable production costs and fixed overhead costs, but only 26 percent of the owner's salary and has lost all residual return to investment. The ranch will need to secure other grazing, or an additional $11,550 to pay the remainder of the owner's salary, or $20,030 to maintain their current standard of living (includes residual return to investment lost). When compared to lower levels of production excluding the BLM permit, the amount of gross margin available to pay fixed overhead costs would be greater when the permit is excluded, under this alternative. This ranch would be worse off, financially, to continue grazing on the BLM permit, at least in the short term.

The cost of the rancher paying for the cost of improvements under this alternative is an additional $1,910 per year over a 10 year period. If a 20 percent reduction in BLM AUMs is added to the management changes, ranch income (gross margin) will be reduced by an additional $3,130.

d. Large Cow/Calf Ranch

The management changes under this alternative would result in a 42 percent loss of ranch income (gross margin). The ranch still meets both the FTPd and the FTR, but the residual return to investment has been reduced to less than $700. The ranch will need to secure other grazing or an additional $32,280 of off-ranch income to maintain their current standard of living. When compared to lower levels of production excluding the BLM permit, the amount of gross margin available to pay fixed overhead costs would still be greater if the permit is included, under this alternative. This ranch would be better off, financially, to continue grazing the BLM permit, at least in the short term.

The cost of the rancher paying for the cost of improvements under this alternative is an additional $3,350 per year over a 10 year period. If a 20 percent reduction in BLM AUMs is added to the management changes, ranch income (gross margin) will be reduced by an additional $4,880. With the addition of either the cost of improvements or the 20 percent reduction in BLM grazing, the ranch would be better off to discontinue grazing on the BLM permit, at least for the short term.

e. Extra-Large Cow/Calf Ranch

The management changes under this alternative would result in a 36 percent loss of ranch income (gross margin). The ranch still meets both the FTPd and the FTR, but the residual return to investment has been reduced to $17,480. The ranch will need to secure other grazing or an additional $43,070 of off-ranch income to maintain their current standard of living. When compared to lower levels of production excluding the BLM permit, the amount of gross margin available to pay fixed overhead costs would still be greater if the permit is included, under this alternative. This ranch would be better off, financially, to continue grazing the BLM permit, at least in the short term.

The cost of the rancher paying for the cost of improvements under this alternative is an additional $3,915 per year over a 10 year period. If a 20 percent reduction in BLM AUMs is added to the management changes, ranch income (gross margin) will be reduced by an additional $10,480. With the addition of either the cost of improvements or the 20 percent reduction in BLM grazing, the ranch would still be better off to continue grazing on the BLM permit.

f. Conclusion

As a result of management changes under this alternative, all financial activity from all of the affected BLM

permits on extra-small, small, and medium ranches would most likely stop. Only the affected large and extra-large ranches would probably continue financial activity associated with the BLM permit. If there is either a 20 percent reduction in the BLM permit, or the rancher is required to pay the cost of improvements, all financial activity from all the affected BLM permits on large ranches would also most likely stop.

Local governments and agencies could potentially lose: per head livestock taxes; fees and expenses from reduced numbers of livestock on affected BLM permits for extra-small, small, medium, and possibly large ranches; maintenance of and new investments in capital improvements of facilities on affected BLM grazing land for extra-small, small, medium, and possible large ranches; and taxable base from owned improvements on affected BLM grazing land on extra-small, small, medium, and possibly large ranches.

5. Southwest Region

For details under this section, refer to Tables 8a and 8b in Section III of this report.

a. Extra Small Cow/Calf Ranch

Based on the sources of information, the management changes under this alternative would result in over a 55 percent loss of ranch income (gross margin).The ranch still meets the FTPd, but only at levels above 185 AUMs when the BLM permit is included. The ranch can still pay all of the variable production costs, but only 33 percent of the fixed overhead costs. The family will need to secure other grazing, or an additional $1,650 of off-ranch income to pay the remaining fixed overhead costs, or an additional $1,130 to maintain the current standard of living. When compared to lower levels of production excluding the BLM permit, the amount of gross margin available to pay fixed overhead costs would be greater when the permit is excluded, under this alternative. This ranch would be worse off, financially, to continue grazing on the BLM permit, at least in the short term.

The cost of the rancher paying for the cost of improvements required under this alternative is an additional $390 per year over a 10 year period. If a 20 percent reduction in BLM AUMs is added to the management changes, ranch income (gross margin) will be reduced by an additional $285.

b. Small Cow/Calf Ranch

The management changes under this alternative would result in a 60 percent loss of ranch income (gross margin). The ranch still meets the FTPd, but only at levels above 810 AUMs when the BLM permit is included. It is not possible for this ranch to increase production enough to meet the FTR without expanding to a larger ranch size. The ranch can still pay all of the variable production costs, but only 30 percent of the fixed overhead costs. The family will need to secure other grazing, or $8,390 of off-ranch income to pay remaining costs, or an additional $5,310 to maintain the current standard of living. However, when compared to lower levels of production excluding the BLM permit, the amount of gross margin available to pay fixed overhead costs is slightly higher than when the permit is excluded, under this alternative. This ranch would be better off, financially, to continue grazing on the BLM permit, at least in the short term.

The cost of the rancher paying for the cost of improvements required under this alternative is an additional $590 per year over a 10 year period. If a 20 percent reduction in BLM AUMs is added to the management changes, ranch income (gross margin) will be reduced by an additional $285.

c. Medium Cow/Calf Ranch

Management changes under this alternative would result in a 46 percent loss of ranch income (gross margin).

The ranch still meets the FTPd, but only at levels above 1375 AUMs when the BLM permit is included. It is not possible for this ranch to increase production enough to meet the FTR without expanding to a larger ranch size. The ranch can still pay all variable production costs, but only 75 percent of the fixed overhead costs, and none of the owner's salary. The ranch will need to secure other grazing, or the family will need $18,980 of off-ranch income to pay remaining costs, or an additional $11,630 to maintain the current standard of living. However, when compared to lower levels of production excluding the BLM permit, the amount of gross margin available to pay fixed overhead costs is higher than when the permit is excluded, under this alternative. This ranch would be better off, financially, to continue grazing on the BLM permit, at least in the short term.

The cost of the ranch paying for the cost of improvements required under this alternative is an additional $1,305 per year over a 10 year period. If a 20 percent reduction in BLM AUMs is added to the management changes, ranch income (gross margin) will be reduced by an additional $3,575. This ranch would still be better off, financially, to continue grazing the BLM permit if the rancher pays the cost of improvements, and, if the BLM permit is reduced by 20 percent, at least in the short term.

d. Large Cow/Calf Ranch

Management changes under this alternative would result in a 31.5 percent loss of ranch income (gross margin). The ranch still meets the FTPd, but only at levels above 3480 AUMs when the BLM permit is included. The ranch can still pay all variable production costs and fixed overhead costs, but only 4 percent of the owner's salary. The ranch will need to secure other grazing, or the family will need $16,590 of off-ranch income to pay the remaining costs, or an additional $12,000 to maintain the current standard of living. However, when compared to lower levels of production excluding the BLM permit, the amount of gross margin available to pay fixed overhead costs is considerably higher than when the permit is excluded, under this alternative. This ranch would be better off, financially, to continue grazing on the BLM permit, at least in the short term.

The cost of the rancher paying for the cost of improvements required under this alternative is an additional $2,300 per year over a 10 year period. If a 20 percent reduction in BLM AUMs is added to the management changes, ranch income (gross margin) will be reduced by an additional $8,090, and no longer pays all of the fixed overhead costs. However, this ranch would still be better off, financially, to continue grazing the BLM permit if the rancher pays the cost of improvements, and, if the BLM permit is reduced by 20 percent, at least in the short term.

e. Extra Large Cow/Calf Ranch

Management changes under this alternative would result in over a 22 percent loss of ranch income (gross margin). The ranch still meets the FTPd, but only at levels above 8040 AUMs when the BLM permit is included. The ranch can still pay all of the variable production costs and fixed overhead costs, but only 35 percent of the owner's salary. The ranch will need to secure other grazing, or the family will need $33,320 of off-ranch income to pay the remaining costs, or an additional $26,820 to maintain the current standard of living. However, when compared to lower levels of production excluding the BLM permit, the amount of gross margin available to pay fixed overhead costs is considerably higher than when the permit is excluded, under this alternative. This ranch would be better off, financially, to continue grazing on the BLM permit, at least in the short term.

The cost of the rancher paying for the cost of improvements required under this alternative is an additional $5,000 per year over a 10 year period. If a 20 percent reduction in BLM AUMs is added to the management changes, ranch income (gross margin) will be reduced by an additional $25,150, and no longer pays all fixed overhead costs. However, this ranch would still be better off, financially, to continue grazing the BLM permit if the rancher pays the cost of improvements, and, if the BLM permit is reduced by 20 percent, at least in the short term.

f. Conclusion

As a result of management changes under this alternative, all financial activity from all of the affected BLM permits on extra small ranches would most likely discontinue in the short term. If a 20 percent reduction in BLM AUMs is added to the management changes, all financial activity from all of the affected BLM permits on small ranches would also most likely discontinue in the short term. Financial activity from affected BLM permits on medium, large and extra large ranches would most likely continue, even if a 20 percent reduction in BLM AUMs is implemented, or if the ranchers pay for the cost of required improvements.

Local governments and agencies could potentially lose: per head livestock taxes on all affected BLM permits on extra small ranches, and possibly small ranches; fees and expenses from reduced numbers of livestock on affected BLM permits of extra small, and possibly small, ranches; maintenance of and new investments in capital improvements of facilities on affected BLM grazing land on extra small, and possibly small, ranches; and taxable base from owned improvements on affected BLM grazing land on extra small, and possibly small, ranches.

C. FALLBACK ALTERNATIVE

1. Central Mountain Region

For details under this section, refer to Tables 9a and 9b in Section III of this report.

a. Extra-Small Cow/Calf Ranch

Based on the sources of information, the management changes in this alternative would result in over a 100 percent loss of ranch income (gross margin) due to a negative gross margin. This ranch no longer meets the FTPd or the FTR. The rancher can no longer pay variable production costs or fixed overhead costs. The ranch would be better off, financially, to discontinue grazing on the BLM permit, at least in the short term. If the ranch has other, non-BLM grazing or can secure other grazing, the ranch could continue to operate on that basis only, provided that the remaining number of AUMs is above the FTPd, or 250 AUMs. If the ranch does not have non-BLM grazing or cannot secure other grazing, the ranch operation would have to cease, and all fixed overhead costs would have to be paid from off-ranch income, as well as maintaining their current standard of living.

The cost of the rancher paying for the cost of improvements required under this alternative is an additional $650 per year over a 10 year period. A 20 percent reduction in BLM AUMs is not relevant under this alternative, as the ranch is worse off using any part of the BLM permit.

b. Small Cow/Calf Ranch

Based on the sources of information, the management changes under this alternative would result in an 82.5 percent loss of ranch income (gross margin). The ranch still meets the FTPd, but not the FTR. It is not possible for this ranch to increase production enough to meet the FTR without expanding to a larger ranch size. The ranch can still pay all of the variable production costs, but only 18 percent of fixed overhead costs, and all residual return to investment is lost. The ranch family will need to secure other grazing, or an additional $13,700 of off-ranch income to pay all fixed costs, and $14,100 to maintain their current standard of living (includes lost residual return to investment). When compared to lower levels of production excluding the BLM permit, the amount of gross margin available to pay fixed overhead costs would be greater when the permit is excluded, under this alternative. This ranch would be worse off, financially, to continue grazing on the BLM permit, at least in the short term.

The cost of the rancher paying for the cost of improvements required under this alternative is an additional $750

per year over a 10 year period. If a 20 percent reduction in BLM AUMs is added to the management changes, ranch income (gross margin) will be reduced by an additional $300.

c. Medium Cow/Calf Ranch

Based on the sources of information, the management changes under this alternative would result in a loss of ranch income (gross margin) of over 44 percent. The ranch still meets the FTPd, but not the FTR. It is not possible for this ranch to increase production enough to meet the FTR without expanding to a larger ranch size. The ranch can still pay all of the variable production costs and all of the fixed overhead costs, but only contributes $1,000 to the owner's salary, and all residual return to investment is lost. The ranch will need to secure other grazing, or the family will need $14,550 of off-ranch income to pay the remainder of the owner's salary, or $18,650 to maintain their current standard of living (includes residual return to investment lost). When compared to lower levels of production excluding the BLM permit, the amount of gross margin available to pay fixed overhead costs would be greater when the permit is excluded, under this alternative. This ranch would be worse off, financially, to continue grazing on the BLM permit, at least in the short term.

The cost of the rancher paying for the cost of improvements required under this alternative is an additional $1,550 per year over a 10 year period. If a 20 percent reduction in BLM AUMs is added to the management changes, the ranch can no longer pay all of the fixed overhead costs, and pays nothing for the owner's salary. The off-ranch income needs increase by $200 to pay remaining fixed overhead costs, $16,100 to pay overhead and owner's salary, and $20,200 to maintain their current standard of living.

d. Large Cow/Calf Ranch

Based on the sources of information, management changes under this alternative would result in a loss of ranch income (gross margin) of about 31 percent. The ranch still meets the FTPd, but not the FTR. The ranch can still pay all of the variable production costs and fixed overhead costs, but only 40 percent of the owner's salary and has lost all residual return to investment. The ranch will need to secure other grazing, or the family will need $14,500 of off-ranch income to pay the remainder of the owner's salary, or $21,200 to maintain their current standard of living (includes residual return to investment lost). Under this alternative, the ranch would be more profitable to discontinue grazing the BLM permit, at least in the short term.

The cost of the rancher paying for the cost of improvements required under this alternative is an additional $1,450 per year over a 10 year period. If a 20 percent reduction in BLM AUMs is added to the management changes, the off-ranch income needs increase to $17,400 and $24,000, respectively.

e. Conclusion

As a result of management changes under this alternative, all financial activity from all of the affected BLM permits on all four typical ranch sizes would most likely stop. Local governments and agencies could potentially lose: per head livestock taxes, fees and expenses from reduced numbers of livestock on affected permits; maintenance and investments in capital improvements of facilities on affected BLM grazing land; and taxable base from owned improvements on affected BLM grazing land. If there are any extra-small affected ranches that are exclusively dependent on BLM grazing land, local governments could also lose the taxable base on the private property, as a business, as well.

2. Northeast Region

This region was not analyzed due to the small number of BLM permits, none of which would be affected by

management changes proposed in this EIS.

3. Northwest Region

For details under this section, refer to Tables 10a and 10b in Section III of this report.

a. Extra-Small Cow/Calf Ranch

The management changes under this alternative would result in over a 100 percent loss of ranch income (gross margin) due to a negative gross margin. This ranch no longer meets the FTPd or the FTR. The rancher can no longer pay variable production costs or fixed overhead costs. The ranch would be better off, financially, to discontinue grazing on the BLM permit, at least in the short term. If the ranch has other, non-BLM grazing or can secure other grazing, the ranch could continue to operate on that basis only, provided that the remaining number of AUMs is above the FTPd, or 10 AUMs. If the ranch does not have non-BLM grazing or cannot secure other grazing, the ranch operation would have to cease, and all fixed overhead costs would have to be paid from off-ranch income, as well as maintaining their current standard of living.

The cost of the rancher paying for the cost of improvements required under this alternative is an additional $330 per year over a 10 year period. A 20 percent reduction in BLM AUMs is not relevant under this alternative, as the ranch is worse off using any part of the BLM permit.

b. Small Cow/Calf Ranch

The management changes in this alternative would result in over a 100 percent loss of ranch income (gross margin) due to negative gross margin. This ranch no longer meets the FTPd or the FTR. The rancher can no longer pay variable production costs or fixed overhead costs. The ranch would be better off, financially, to discontinue grazing on the BLM permit, at least in the short term. If the ranch has other, non-BLM grazing or can secure other grazing, the ranch could continue to operate on that basis only, provided that the remaining number of AUMs is above the FTPd, or 345 AUMs. If the ranch does not have non-BLM grazing or cannot secure other grazing, the ranch operation would have to cease, and all fixed overhead costs would have to be paid from off-ranch income, as well as maintaining their current standard of living.

The cost of the rancher paying for the cost of improvements required under this alternative is an additional $930 per year over a 10 year period. A 20 percent reduction in BLM AUMs is not relevant under this alternative, as the ranch is worse off using any part of the BLM permit.

c. Medium Cow/Calf Ranch

The management changes under this alternative would result in a 67 percent loss of ranch income (gross margin). The ranch still meets the FTPd, but not the FTR. It is not possible for this ranch to increase production enough to meet the FTR without expanding to a larger ranch size. The ranch can still pay all of the variable production costs, but only 46 percent of the fixed overhead costs and none of the owner's salary. The ranch family will need to secure other grazing, or an additional $28,710 of off-ranch income to pay all fixed overhead costs and the owner's salary, or $22,500 to maintain their current standard of living. When compared to lower levels of production excluding the BLM permit, the amount of gross margin available to pay fixed overhead costs would be greater when the permit is excluded, under this alternative. This ranch would be worse off, financially, to continue grazing on the BLM permit, at least in the short term.

The cost of the rancher paying for the cost of improvements required under this alternative is an additional

$1,160 per year over a 10 year period. If a 20 percent reduction in BLM AUMs is added to the management changes, ranch income (gross margin) will be reduced by an additional $1,870.

d. Extra-Large Cow/Calf Ranch

The management changes under this alternative would result in a 71 percent loss of ranch income (gross margin). The ranch still meets the FTPd, but not the FTR. It is not possible for this ranch to increase production enough to meet the FTR without securing additional non-BLM grazing. The ranch can still pay all of the variable production costs, but only 54 percent of the fixed overhead costs, none of the owner's salary, and all residual return to investment is lost. The ranch family will need to secure other grazing or an additional $40,225 of off-ranch income to pay all fixed overhead costs and the owner's salary, or $50,600 to maintain their current standard of living. When compared to lower levels of production excluding the BLM permit, the amount of gross margin available to pay fixed overhead costs would be greater when the permit is excluded, under this alternative. This ranch would be worse off, financially, to continue grazing on the BLM permit, at least in the short term.

The cost of the rancher paying for the cost of improvements under this alternative is an additional $3,390 per year over a 10 year period. If a 20 percent reduction in BLM AUMs is added to the management changes, ranch income (gross margin) will be reduced by an additional $4,015.

e. Conclusion

As a result of management changes under this alternative, all financial activity from all of the affected BLM permits on all four typical ranch sizes would most likely stop. Local governments and agencies could potentially lose: per head livestock taxes, fees and expenses from reduced numbers of livestock on all affected permits; maintenance and investments in capital improvements of facilities on affected BLM grazing land; and taxable base from owned improvements on all affected BLM grazing land. If there are any extra-small and small ranches that are exclusively dependent on BLM grazing land, local governments could also lose the taxable base on the private property of these ranches, as a business, as well.

4. Southeast Region

For details under this section refer to Tables 11a and 11b in Section III of this report.

a. Extra-Small Cow/Calf Ranch

The management changes under this alternative would result in a 93 percent loss of ranch income (gross margin). The ranch still meets the FTPd, but not the FTR. It is not possible for this ranch to increase production enough to meet the FTR without expanding to a larger ranch size. The ranch can still pay all of the variable production costs, but only five percent of the fixed overhead costs. The ranch family will need to secure other grazing, or an additional $10,780 of off-ranch income to pay all fixed overhead costs, or $7,870 to maintain their current standard of living. When compared to lower levels of production excluding the BLM permit, the amount of gross margin available to pay fixed overhead costs would be greater when the permit is excluded, under this alternative. This ranch would be worse off, financially, to continue grazing on the BLM permit, at least in the short term.

The cost of the rancher paying for the cost of improvements under this alternative is an additional $630 per year over a 10 year period. If a 20 percent reduction in BLM AUMs is added to the management changes, ranch income (gross margin) will be reduced by an additional $440.

b. Small Cow/Calf Ranch

The management changes under this alternative would result in a 75 percent loss of ranch income (gross margin). The ranch still meets the FTPd, but not the FTR. It is not possible for this ranch to increase production enough to meet the FTR without expanding to a larger ranch size. The ranch can still pay all of the variable production costs, but only 18 percent of the fixed overhead costs. The ranch family will need to secure other grazing or an additional $17,800 of off-ranch income to pay all fixed overhead costs, or $12,270 to maintain their current standard of living. When compared to lower levels of production excluding the BLM permit, the amount of gross margin available to pay fixed overhead costs would be greater when the permit is excluded, under this alternative. This ranch would be worse off, financially, to continue grazing on the BLM permit, at least in the short term.

The cost of the rancher paying for the cost of improvements required under this alternative is an additional $1,040 per year over a 10 year period. If a 20 percent reduction in BLM AUMs is added to the management changes, ranch income (gross margin) will be reduced by an additional $1,040.

c. Medium Cow/Calf Ranch

The management changes under this alternative would result in a 77 percent loss of ranch income (gross margin). The ranch still meets the FTPd, but not the FTR. It is not possible for this ranch to increase production enough to meet the FTR without expanding to a larger ranch size. The ranch can still pay all of the variable production costs, but only 54 percent of the fixed overhead costs, and none of the owner's salary, and all residual return to investment is lost. The ranch family will need to secure other grazing, or an additional $23,740 of off-ranch income to pay all fixed overhead costs and owner salary costs, or $32,220 to maintain their current standard of living (includes lost residual return to investment). When compared to lower levels of production excluding the BLM permit, the amount of gross margin available to pay fixed overhead costs would be greater when the permit is excluded, under this alternative. This ranch would be worse off, financially, to continue grazing on the BLM permit, at least in the short term.

The cost of the rancher paying for the cost of improvements under this alternative is an additional $2,650 per year over a 10 year period. If a 20 percent reduction in BLM AUMs is added to the management changes, ranch income (gross margin) will be reduced by an additional $2,100.

d. Large Cow/Calf Ranch

The management changes under this alternative would result in a 64 percent loss of ranch income (gross margin). The ranch still meets the FTPd, but not the FTR. It is not possible for this ranch to increase production enough to meet the FTR without expanding to a larger ranch size. The ranch can still pay all of the variable production costs and all of the fixed overhead costs, but only 17 percent of the owner's salary and all residual return to investment is lost. The ranch family will need to secure other grazing or an additional $16,380 of off-ranch income to pay the remainder of the owner's salary, or $49,360 to maintain their current standard of living (includes residual return to investment). When compared to lower levels of production excluding the BLM permit, the amount of gross margin available to pay fixed overhead costs would be greater when the permit is excluded, under this alternative. This ranch would be worse off, financially, to continue grazing on the BLM permit, at least in the short term.

The cost of the rancher paying for the cost of improvements under this alternative is an additional $4,650 per year over a 10 year period. If a 20 percent reduction in BLM AUMs is added to the management changes, ranch income (gross margin) will be reduced by an additional $4,160.

e. Extra-Large Cow/Calf Ranch

The management changes under this alternative would result in a 68 percent loss of ranch income (gross margin). The ranch still meets the FTPd, but not the FTR. The ranch can still pay all of the variable production costs and all of the fixed overhead costs, but only 19.6 percent of the owner's salary, and all residual return to investment is lost. If resources are available, this ranch could increase production enough to meet the FTR. The ranch family will need to secure other grazing, or an additional $20,235 to pay the remainder of the owner's salary, or $80,785 to maintain their current standard of living. When compared to lower levels of production excluding the BLM permit, the amount of gross margin available to pay all costs would be greater when the permit is excluded, under this alternative. This ranch would be worse off, financially, to continue grazing on the BLM permit, at least in the short term.

The cost of the rancher paying for the cost of required improvements under this alternative is an additional $5,340 per year over a 10 year period. If a 20 percent reduction in BLM AUMs is added to the management changes, ranch income (gross margin) will be reduced by an additional $7,395.

f. Conclusion

As a result of management changes under this alternative, all financial activity from all of the affected BLM permits on all five typical ranch sizes would most likely stop. Local governments and agencies could potentially lose: per head livestock taxes, fees and expenses from reduced numbers of livestock on all affected permits; maintenance and investments in capital improvements of facilities on all affected BLM grazing land; and taxable base from owned improvements on all affected BLM grazing land.

5. Southwest Region

For details under this section, refer to Tables 12a and 12b in Section III of this report.

a. Extra Small Cow/Calf Ranch

Based on the sources of information, the management changes under this alternative would result in over an 89 percent loss of ranch income (gross margin). The ranch still meets the FTPd, but only at levels above 190 AUMs when the BLM permit is included. It is not possible for this ranch to increase production enough to meet the FTR without expanding to a larger ranch size. The ranch can still pay all of the variable production costs but only 7 percent of the fixed overhead costs. The family will need to secure other grazing, or $2,350 of off-ranch income to pay remaining costs, or an additional $1,830 to maintain the current standard of living. When compared to lower levels of production excluding the BLM permit, the amount of gross margin available to pay fixed overhead costs would be greater when the permit is excluded, under this alternative. This ranch would be worse off, financially, to continue grazing on the BLM permit, at least in the short term.

The costs of the rancher paying for the costs of improvements required under this alternative is an additional $390 per year over a 10 year period. If a 20 percent reduction in BLM AUMs is added to the management changes, ranch income (gross margin) will be reduced by an additional $200.

b. Small Cow/Calf Ranch

The management changes under this alternative would result in over a 100 percent loss of ranch income (gross margin) due to a negative gross margin. This ranch no longer meets the FTPd when the BLM permit is included.

The ranch can longer pay the variable production costs or fixed overhead costs. The ranch would be better off, financially, to discontinue grazing on the BLM permit, at least in the short term. If the ranch has other, non-BLM grazing or can secure other grazing, the ranch could continue to operate on that basis only, provided that the remaining number of AUMs is above the FTPd (35 AUMs for private grazing only, 260 AUMs with State lease). If the ranch does not have non-BLM grazing or cannot secure other grazing, the ranch operation would have to discontinue, and all fixed overhead costs would have to be paid from off-ranch income, as well as maintaining their current standard of living.

The costs of the rancher paying for the cost of improvements required under this alternative is an additional $700 per year over a 10 year period. A 20 percent reduction in BLM AUMs is not relevant under this alternative, as the ranch is worse off grazing any part of the BLM permit.

c. Medium Cow/Calf Ranch

Management changes under this alternative would result in a 91 percent loss of ranch income (gross margin). The ranch still meets the FTPd, but only at levels above 2,460 AUMs when the BLM permit is included. It is not possible for this ranch to increase production enough to meet the FTR without expanding to a larger ranch size. The ranch can still pay all variable production costs, but only 12 percent of the fixed overhead costs, and none of the owner's salary. The ranch will need to secure other grazing, or the family will need $23,480 of off-ranch income to pay the remaining costs, or an additional $16,130 to maintain the current standard of living. However, when compared to lower levels of production excluding the BLM permit, the amount of gross margin available to pay fixed overhead costs is slightly higher than when the permit is excluded, under this alternative. The ranch would be better off, financially, to continue grazing on the BLM permit, at least in the short term.

The cost of the rancher paying for the cost of improvements required under this alternative is an additional $1,300 per year over a 10 year period. If a 20 percent reduction in BLM AUMs is added to the management changes, ranch income (gross margin) will be reduced by an additional $2,140. This ranch would be worse off, financially, to continue grazing the BLM permit if the rancher pays the cost of improvements, or, if the BLM permit is reduced by 20 percent, at least in the short term.

d. Large Cow/Calf Ranch

Management changes under this alternative would result in an 84 percent loss of ranch income (gross margin). The ranch still meets the FTPd, but only at levels above 4,390 AUMs when the BLM permit is included. It is not possible for this ranch to increase production enough to meet the FTR without expanding to a larger ranch size. The ranch can still pay all variable production costs, but only 24 percent of the fixed overhead costs, and none of the owner's salary. The ranch will need to secure other grazing, or the family will need $36,500 of off-ranch income to pay remaining costs, or an additional $31,900 to maintain the current standard of living. When compared to lower levels of production excluding the BLM permit, the amount of gross margin available to pay fixed overhead costs is considerably higher if the BLM permit is excluded, under this alternative. This ranch would be better off, financially, to discontinue grazing on the BLM permit, at least in the short term.

The cost of the rancher paying for the cost of improvements required under this alternative is an additional $2,550 per year over a 10 year period. If a 20 percent reduction in BLM AUMs is added to the management changes, ranch income (gross margin) will be reduced by an additional $5,600.

e. Extra Large Cow/Calf Ranch

Management changes under this alternative would result in an 80 percent loss of ranch income (gross margin). The ranch still meets the FTPd, but only at levels above 12,300 AUMs when the BLM permit is

included. It is not possible for this ranch to increase production enough to meet the FTR without acquiring other non-BLM grazing land. The ranch can still pay all of the variable production costs, but only 32 percent of fixed overhead costs, and none of the owner's salary. The ranch will need to secure other grazing, or the family will need $102,480 of off-ranch income to pay the remainder of fixed overhead costs and the owner's salary, or $95,980 to maintain the current standard of living. When compared to lower levels of production excluding the BLM permit, the amount of gross margin available to pay fixed overhead costs is considerably higher when the BLM permit is excluded, under this alternative. This ranch would be better off, financially, to discontinue grazing on the BLM permit, at least in the short term.

The cost of the rancher paying for the cost of improvements required under this alternative is an additional $5,300 per year over a 10 year period. If a 20 percent reduction in BLM AUMs is added to the management changes, ranch income (gross margin) will be reduced by an additional $16,670.

f. Conclusion

As a result of management changes under this alternative, all financial activity from all of the affected BLM permits on four ranch sizes would most likely discontinue in the short term. Only the affected medium sized ranches would continue grazing their BLM permits. If a 20 percent reduction in BLM AUMs was added to the management changes, the result would be that all financial activity from all five of the ranch sizes of the affected BLM permits would most likely discontinue in the short term. If ranches must bear the cost of improvements required under this alternative, the result would be the same as the reduction conditions mentioned above.

Local governments and agencies could potentially lose: per head livestock taxes on affected BLM permits of four, and possibly all five, ranch sizes; fees and expenses from reduced numbers of livestock on all affected BLM permits of four, and possibly all five, ranch sizes; maintenance of and new investments in capital improvements of facilities on all affected BLM grazing land on four, and possibly all five, ranch sizes; and taxable base from owned improvements on all affected BLM grazing land on four, and possibly all five, ranch sizes.

D. COUNTY ALTERNATIVE

1. Central Mountain Region

For details under this section, refer to Tables 13a and 13b in Section III of this report.

a. Extra-Small Cow/Calf Ranch

Based on the sources of information, the management changes under this alternative would result in a 69 percent loss of ranch income (gross margin). This ranch would still meet the FTPd, but not the FTR. It is not possible for this ranch to increase production enough to meet the FTR without expanding to a larger ranch size. The ranch could still pay all variable production costs and about 14 percent of fixed overhead costs. If the ranch cannot secure other grazing the off-ranch income will need to increase by $3,500 to pay all fixed overhead costs for a total of $9,800. When compared to lower levels of production excluding the BLM permit, the amount of gross margin available to pay fixed overhead costs is slightly higher when the permit is excluded.

The cost of the rancher paying for the cost of improvement required under this alternative is an additional $600 per year over a 10 year period. If a 20 percent reduction in BLM AUMs is added to the management changes, ranch income (gross margin) will be reduced an additional $300, requiring a total of $10,100 in off-ranch income to pay all fixed overhead costs and maintain their current standard of living.

b. Small Cow/Calf Ranch

Based on the sources of information, the management changes under this alternative would result in a 38 percent loss of ranch income (gross margin). This ranch still meets the FTPd, but not the FTR. It is not possible for this ranch to increase production enough to meet the FTR without expanding to a larger ranch size. The ranch can still pay all of the variable production costs, but will need to secure other grazing, or $6,150 of off-ranch income to pay all fixed overhead costs, and $6,570 to maintain their current standard of living. When compared to lower levels of production excluding the BLM permit, the amount of gross margin available to pay fixed overhead costs would be greater when the permit is excluded, under this alternative. This ranch would be worse off, financially, to continue grazing on the BLM permit, at least in the short term.

The cost of the rancher paying for the cost of improvements required under this alternative is an additional $750 per year over a 10 year period. If a 20 percent reduction of BLM AUMs is added to management changes, ranch income (gross margin) will be reduced by an additional $520.

c. Medium Cow/Calf Ranch

Based on the sources of information, the management changes under this alternative would result in a loss of ranch income (gross margin) of about 23 percent. The ranch still meets the FTPd, but not the FTR. If resources are available, this ranch could expand production enough to meet the FTR without expanding to a larger ranch size. The ranch can still pay all of the variable production costs and fixed overhead costs, but only two-thirds of the owner's salary. The ranch would have to secure other grazing, or the family will need off-ranch income of $5,600 to pay the remainder of the owner's salary, or $9,700 to maintain their current standard of living. When compared to lower levels of production excluding the BLM permit, the amount of gross margin available to pay fixed overhead costs would be about the same when the permit is excluded, under this alternative.

The cost of the rancher paying for the cost of improvements required under this alternative is an additional $1,150 per year over a 10 year period. If a 20 percent reduction in BLM AUMs is added to the management changes, only one-half of the owner's salary is paid, and the family will need $7,500 and $11,600, respectively. If either the grazing is reduced, or the rancher must pay for the costs of improvements, this ranch would be worse off, financially, to continue grazing on the BLM permit, at least in the short term.

d. Large Cow/Calf Ranch

Based on the sources of information, management changes under this alternative would result in a loss of ranch income (gross margin) of 8.3 percent. The ranch still meets the FTPd, and the FTR. The ranch can still pay all variable production costs, fixed overhead costs, and owner's salary with a residual return to investment of $1,000. Under this alternative, the ranch would be more profitable to continue using the BLM permit.

The cost of the ranch paying for the cost of improvements required under this alternative is an additional $850 per year over a 10 year period. If a 20 percent reduction in BLM AUMs is added to the management changes, the ranch can pay on 85 percent of the owner's salary, but is still more profitable to continue grazing the BLM permit. The off-ranch income needs are $2,300 to pay the remainder of the owner's salary, or $5,800 to maintain their current standard of living. With both conditions, reduction of BLM AUMs and cost of improvements, the ranch is still better off, financially, to continue grazing the BLM permit.

e. Conclusion

As a result of management changes under this alternative, all financial activity from all of the affected extra-

small and small ranch permits would most likely stop. Financial activity on the affected medium ranches would continue provided the ranch does not have to bear the cost of improvements or suffer a 20 percent reduction in BLM AUMs. Financial activity on all affected large ranches would most likely continue.

Local governments and agencies could potentially lose: per head livestock taxes, fees and expenses from affected extra-small, small and possibly medium ranches on reduced numbers of livestock; maintenance and new investments in capital improvements of facilities on BLM grazing land on affected extra-small, small and possibly medium ranches; and taxable base from owned improvements on BLM grazing land on affected extra-small, small and possibly medium ranches.

2. Northeast Region

This region was not analyzed due to the small number of BLM permits, none of which would be affected by management changes proposed in this EIS.

3. Northwest Region

For details under this section, refer to Tables 14a and 14b in Section III of this report.

a. Extra-Small Cow/Calf Ranch

The management changes under this alternative would result in a 52.5 percent loss of ranch income (gross margin). The ranch still meets the FTPd, but not the FTR. If resources are available, it is possible for this ranch to increase production enough to meet the FTR without expanding to a larger ranch size. The ranch can still pay all of the variable production costs, but only 40 percent of the fixed overhead costs. The ranch family will need to secure other grazing, or an additional $1,440 of off-ranch income to pay all fixed overhead costs, or $1,060 to maintain their current standard of living. When compared to lower levels of production excluding the BLM permit, the amount of gross margin available to pay fixed overhead costs would be slightly greater when the permit is included, under this alternative. This ranch would be better off, financially, to continue grazing on the BLM permit, at least in the short term.

The cost of the rancher paying for the cost of improvements required under this alternative is an additional $330 per year over a 10 year period. If a 20 percent reduction in BLM AUMs is added to the management changes, ranch income (gross margin) will be reduced by an additional $350. If the rancher must pay for improvements, or a reduction of AUMs is added to the management changes, the amount of gross margin available to pay for fixed overhead costs will be less than if the BLM permit were excluded. This ranch would be worse off, financially, to continue grazing on the BLM permit under either of these scenarios, at least in the short term.

b. Small Cow/Calf Ranch

The management changes under this alternative would result in a 75 percent loss of ranch income (gross margin). The ranch still meets the FTPd, but not the FTR. It is not possible for this ranch to increase production enough to meet the FTR without expanding to a larger ranch size. The ranch can still pay all of the variable production costs, but only 15 percent of the fixed overhead costs. The ranch family will need to secure other grazing, or an additional $10,720 of off-ranch income to pay the remainder of fixed overhead costs, or $5,780 to maintain their current standard of living. When compared to lower levels of production excluding the BLM permit, the amount of gross margin available to pay fixed overhead costs would be greater when the permit is excluded, under this alternative. This ranch would be worse off, financially, to continue grazing on the BLM permit, at least in the short term.

The cost of the rancher paying for the cost of improvements under this alternative is an additional $825 per year over a 10 year period. If a 20 percent reduction in BLM AUMs is added to the management changes, ranch income (gross margin) will be reduced by an additional $1,100.

c. Medium Cow/Calf Ranch

Management changes under this alternative would result in a 26 percent loss of ranch income (gross margin). This ranch still meets the FTPd, but not the FTR. It is not possible for this ranch to increase production enough to meet the FTR without expanding to a larger ranch size. The ranch can still pay all of the variable production costs and fixed overhead costs, but only 4 percent of the owner's salary. The ranch family will need to secure other grazing, or an additional $15,040 of off-ranch income to pay all fixed overhead costs, or $8,830 to maintain their current standard of living. When compared to lower levels of production excluding the BLM permit, the amount of gross margin available to pay all costs is about even with or without the permit. This ranch would probably continue grazing the BLM permit, at least in the short term.

The cost of the rancher paying for the cost of improvements under this alternative is an additional $1,160 per year over a 10 year period. If a 20 percent reduction in BLM AUMs is added to the management changes, ranch income (gross margin) will be reduced by an additional $2,590. If the rancher must pay for improvements, or a reduction in AUMs is added to the management changes, the amount of gross margin available to pay all costs is greater when the BLM permit is excluded. This ranch would be worse off, financially, to continue grazing the BLM permit under either of these scenarios, at least in the short term.

d. Extra-Large Cow/Calf Ranch

The management changes under this alternative would result in a 27 percent loss of ranch income (gross margin). The ranch still meets the FTPd, but not the FTR. If resources are available, this ranch could increase production enough to meet the FTR. The ranch can still pay all of the variable production costs and all of the fixed overhead costs, but only 59 percent of the owner's salary, and all residual return to investment is lost. The ranch family will need to secure other grazing, or an additional $9,160 of off-ranch income to pay the remainder of the owner's salary, or $19,530 to maintain their current standard of living (includes residual return to investment lost). When compared to lower levels of production excluding the BLM permit, the amount of gross margin available to pay all costs is much greater if the permit is excluded, under this alternative. This ranch would be worse off, financially, to continue grazing on the BLM permit, at least in the short term.

The cost of the rancher paying for the cost of improvements required under this alternative is an additional $3,390 per year over a 10 year period. If a 20 percent reduction in BLM AUMs is added to the management changes, ranch income (gross margin) will be reduced by an additional $5,430.

e. Conclusion

As a result of management changes under this alternative, all financial activity from all of the affected small and extra-large ranch permits would most likely stop. Only financial activity on the extra-small and medium ranches would continue, and only if these ranchers are not required to pay for required improvements, or suffer a 20 percent reduction in BLM AUMs.

Local governments and agencies could potentially lose: per head livestock taxes, fees and expenses from small and extra-large ranches (and possibly all ranches) on reduced numbers of livestock; maintenance and new investments in capital improvements of facilities on BLM grazing land on affected small and extra-large ranches (and possibly all ranches); and taxable base from owned improvements on BLM grazing land on affected small and

extra-large ranches (and possibly all ranches).

4. Southeast Region

For details under this section, refer to Tables 16a and 16b in Section III of this report.

a. Extra-Small Cow/Calf Ranch

Management changes under this alternative would result in a 53 percent loss of ranch income (gross margin). The ranch still meets the FTPd, but not the FTR. It is not possible for this ranch to increase production enough to meet the FTR without expanding to a larger ranch size. The ranch can still pay all of the variable production costs, but only 35 percent of the fixed overhead costs. The ranch family will need to secure other grazing, or an additional $7,410 of off-ranch income to pay the remainder of fixed overhead costs, or $4,500 to maintain their current standard of living. When compared to lower levels of production excluding the BLM permit, the amount of gross margin available to pay fixed overhead costs would be greater when the permit is excluded, under this alternative. This ranch would be worse off, financially, to continue grazing on the BLM permit, at least in the short term.

The cost of the rancher paying for the cost of improvements required under this alternative is an additional $630 per year over a 10 year period. If a 20 percent reduction in BLM AUMs is added to the management changes, ranch income (gross margin) will be reduced by an additional $750.

b. Small Cow/Calf Ranch

Management changes under this alternative would result in a 33 percent loss of ranch income (gross margin). The ranch still meets the FTPd, but not the FTR. It is not possible for this ranch to increase production enough to meet the FTR without expanding to a larger ranch size. The ranch can still pay all of the variable production costs, but only 50 percent of the fixed overhead costs. The ranch family will need to secure other grazing, or an additional $10,955 of off-ranch income to pay all fixed overhead costs, or $5,425 to maintain their current standard of living. When compared to lower levels of production excluding the BLM permit, the amount of gross margin available to pay fixed overhead costs is greater when the permit is included, under this alternative. This ranch would be better off, financially, to continue grazing on the BLM permit, at least in the short term.

The cost of the rancher paying for the cost of improvements required under this alternative is an additional $1,000 per year over a 10 year period. If a 20 percent reduction in BLM AUMs is added to the management changes, ranch income (gross margin) will be reduced by an additional $1,855. This ranch would still be better off, financially, to continue grazing the BLM permit if either, or both, of these conditions were added to the management changes.

c. Medium Cow/Calf Ranch

Management changes under this alternative would result in a 19 percent loss of ranch income (gross margin). The ranch still meets the FTPd and the FTR. The ranch can still pay all costs, but the residual return to investment has been reduced to $410. The ranch family would need an additional $8,070 to maintain their current standard of living. When compared to lower levels of production excluding the BLM permit, the amount of gross margin available to pay all costs is considerably greater when the BLM permit is included, under this alternative. This ranch would be better off, financially, to continue grazing on the BLM permit.

The cost of the rancher paying for the cost of improvements required under this alternative is an additional $1,910 per year over a 10 year period. If a 20 percent reduction in BLM AUMs is added to the management

changes, ranch income (gross margin) will be reduced by an additional $4,200. This ranch would still be better off, financially, to continue grazing the BLM permit if either, or both, of these conditions were added to the management changes.

d. Large Cow/Calf Ranch

Management changes under this alternative would result in a 19 percent loss of ranch income (gross margin). The ranch still meets the FTPd and the FTR. The ranch can still pay all costs, but the residual return to investment has been reduced to $18,620. The ranch family would need an additional $14,360 to maintain their current standard of living. When compared to lower levels of production excluding the BLM permit, the amount of gross margin available to pay all costs is considerably greater when the BLM permit is included, under this alternative. This ranch would be better off, financially, to continue grazing on the BLM permit.

The cost of the rancher paying for the cost of improvements required under this alternative is an additional $3,350 per year over a 10 year period. If a 20 percent reduction in BLM AUMs is added to the management changes, ranch income (gross margin) will be reduced by an additional $7,200. This ranch would still be better off, financially, to continue grazing the BLM permit if either, or both, of these conditions were added to the management changes.

e. Extra-Large Cow/Calf Ranch

Management changes under this alternative would result in a 17 percent loss of ranch income (gross margin). The ranch still meets the FTPd and the FTR. The ranch can still pay all costs, but the residual return to investment has been reduced to $39,900. The ranch family would need an additional $20,650 to maintain their current standard of living. When compared to lower levels of production excluding the BLM permit, the amount of gross margin available to pay all costs is considerably greater when the BLM permit is included, under this alternative. This ranch would be better off, financially, to continue grazing on the BLM permit.

The cost of the rancher paying for the cost of improvements required under this alternative is an additional $3,910 per year over a 10 year period. If a 20 percent reduction in BLM AUMs is added to the management changes, ranch income (gross margin) will be reduced by an additional $12,300. This ranch would still be better off, financially, to continue grazing the BLM permit if either, or both, of these conditions were added to the management changes.

f. Conclusion

As a result of management changes under this alternative, all financial activity from all of the affected extra-small ranch permits would most likely stop. However, all financial activity on the remaining four typical ranch size permits would most likely continue, even if the rancher is required to pay for required improvements and the BLM permits are reduced by 20 percent.

Local governments and agencies could potentially lose: per head livestock taxes, fees and expenses from affected extra-small ranches on reduced numbers of livestock; maintenance and new investments in capital improvements of facilities on BLM grazing land on affected extra-small ranches; and taxable base from owned improvements on BLM grazing land on affected extra-small ranches.

5. Southwest Region

For details under this section, refer to Tables 17a and 17b in Section III of this report.

a. Extra Small Cow/Calf Ranch

The management changes under this alternative would result in a 37 percent loss of ranch income (gross margin). The ranch still meets the FTPd, but only at levels above 155 AUMs when the BLM permit is included. If resources are available, it is possible for this ranch to increase production enough to meet the FTR without expanding to a larger ranch size. The ranch can still pay all of the variable production costs, but only 50 percent of the fixed overhead costs. The family will need to secure other grazing, or $1,290 of off-ranch income to pay remaining costs, or an additional $770 to maintain the current standard of living. When compared to lower levels of production excluding the BLM permit, the amount of gross margin available to pay fixed overhead costs would be greater when the permit is excluded, under this alternative. This ranch would be worse off, financially, to continue grazing on the BLM permit, at least in the short term.

The cost of the rancher paying for the cost of improvements required under this alternative is an additional $390 per year over a 10 year period. If a 20 percent reduction in BLM AUMs is added to management changes, ranch income (gross margin) will be reduced by an additional $330.

b. Small Cow/Calf Ranch

The management changes under this alternative would result in a 52.5 percent loss of ranch income (gross margin). The ranch still meets the FTPd, but only at levels above 720 AUMs when the BLM permit is included. It is not possible for this ranch to increase production enough to meet the FTR without expanding to a larger ranch size. The ranch can still pay all of the variable production costs, but only 35 percent of fixed overhead costs. The family will need to secure other grazing, or $7,750 of off-ranch income to pay remaining costs, or an additional $4,670 to maintain the current standard of living. However, when compared to lower levels of production excluding the BLM permit, the amount of gross margin available to pay fixed overhead costs is higher than when the permit is excluded, under this alternative. Therefore, this ranch would be better off, financially, to continue grazing on the BLM permit, at least in the short term.

The cost of the rancher paying for the cost of improvements required under this alternative is an additional $590 per year over a 10 year period. If a 20 percent reduction in BLM AUMs is added to the management changes, ranch income (gross margin) will be reduced by an additional $1,350. Therefore, this ranch would be better off, financially, to continue grazing the BLM permit under either of these conditions, but not both conditions, at least in the short term.

c. Medium Cow/Calf Ranch

Management changes under this alternative would result in a 43 percent loss of ranch income (gross margin). The ranch still meets the FTPd, but only at levels above 1,280 AUMs when the BLM permit is included. It is not possible for this ranch to increase production enough to meet the FTR without expanding to a larger ranch size. The ranch can still pay all variable production costs, but only 78 percent of the fixed overhead costs, and none of the owner's salary. The ranch will need to secure other grazing, or the family will need $18,370 of off-ranch income to pay the remaining costs, or an additional $11,020 to maintain the current standard of living. However, when compared to lower levels of production excluding the BLM permit, the amount of gross margin available to pay fixed overhead costs is considerably higher than when the permit is excluded, under this alternative. Therefore, this ranch would be better off, financially, to continue grazing on the BLM permit, at least in the short term.

The cost of the rancher paying for the cost of improvements required under this alternative is an additional $1,300 per year over a 10 year period. If a 20 percent reduction in BLM AUMs is added to the management

changes, ranch income (gross margin) will be reduced by an additional $3,690. Therefore, this ranch would be better off, financially, to continue grazing the BLM permit under either of these conditions, or even under both conditions combined, at least in the short term.

d. Large Cow/Calf Ranch

Management changes under this alternative would result in a 29 percent loss of ranch income (gross margin). The ranch still meets the FTPd, but only at levels above 3,150 AUMs when the BLM permit is included. If resources are available, it is possible for this ranch to increase production enough to meet the FTR without expanding to a larger ranch size. The ranch can still pay all variable production costs and fixed overhead costs, but only 10 percent of the owner's salary. The ranch will need to secure other grazing, or the family will need $15,570 to pay the remaining costs, or an additional $10,970 to maintain the current standard of living. However, when compared to lower levels of production excluding the BLM permit, the amount of gross margin available to pay fixed overhead costs is considerably higher than when the permit is excluded, under this alternative. Therefore, this ranch would be better off, financially, to continue grazing on the BLM permit, at least in the short term.

The cost of the rancher paying for the cost of improvements required under this alternative is an additional $2,300 per year over a 10 year period. If a 20 percent reduction in BLM AUMs is added to the management changes, ranch income (gross margin) will be reduced by an additional $8,210. Therefore, this ranch would be better off, financially, to continue grazing on the BLM permit under either of these conditions, or even under both conditions combined, at least in the short term.

e. Extra Large Cow/Calf Ranch

Management changes under this alternative would result in a 20 percent loss of ranch income (gross margin). The ranch still meets the FTPd, but only at levels above 7,870 AUMs when the BLM permit is included. If resources are available, it is possible for this ranch to increase production enough to meet the FTR. The ranch can still pay all of the variable production costs and fixed overhead costs, but only 41 percent of the owner's salary. The ranch will need to secure other grazing, or the family will need $30,290 of off-ranch income to pay the remainder of the owner's salary, or $23,790 to maintain the current standard of living. However, when compared to lower levels of production excluding the BLM permit, the amount of gross margin available to pay fixed overhead costs is considerably higher than when the BLM permit is excluded, under this alternative. This ranch would be better off, financially, to continue grazing on the BLM permit, at least in the short term.

The cost of the rancher paying for the cost of improvements required under this alternative is an additional $5,000 per year over a 10 year period. If a 20 percent reduction in BLM AUMs is added to the management changes, ranch income (gross margin) will be reduced by an additional $25,510. Therefore, this ranch would be better off, financially, to continue grazing on the BLM permit under either of these conditions, or even under both conditions combined, at least in the short term.

f. Conclusion

As a result of management changes under this alternative, financial activity from all of the affected BLM permits on extra-small ranches would most likely discontinue in the short term. The affected small, medium, large and extra large ranches, however, would most likely continue grazing on their BLM permits. If a 20 percent reduction was added to the management changes, the small, medium, large and extra large ranches would still be better off, financially, and would most likely continue grazing on the BLM permits. If affected ranchers must bear the cost of improvements required under this alternative, these same ranch categories (small, medium, large and extra large) would also be better off, financially, and would most likely continue grazing on the BLM permits. However, if both the 20 percent reduction and the cost of improvements were added to the management changes

under this alternative, all financial activity from all of the affected BLM permits on small ranches would also most likely discontinue in the short term.

Local governments and agencies could potentially lose per head livestock taxes on all affected BLM permits of all extra small, and possibly small, ranches; fees and expenses from reduced number of livestock on all affected BLM permits on extra small, and possibly small, ranches; maintenance of and new investments in capital improvements of facilities on all affected BLM grazing land on extra small, and possibly small, ranches; and taxable base from owned improvements on all affected BLM grazing land on extra small, and possibly small, ranches.

E. TABLES

This section contains tables and charts used in the analysis.

Table 1. Central Mountain Region
Current Conditions/No Action Alternative

	Extra-Small Cow/Calf Ranch	Small Cow/Calf Ranch	Medium Cow/Calf Ranch	Large Cow/Calf Ranch
Typical Ranch AUMs*	636	1596	3408	5826
Percent BLM	26.73%	11.78%	20.98%	20.01%
Gross Revenues*	$15,040	$39,760	$84,570	$137,900
Gross Returns/AUM	$23.73	$24.91	$24.82	$23.67
Variable Production Costs*	$10,000	$22,680	$42,470	$69,240
Variable Production Costs/AUM	$15.72	$14.21	$12.46	$11.88
Gross Margin/AUM	$7.93	$10.70	$12.36	$11.79
Fixed Overhead Costs*	$11,350	$16,670	$38,030	$62,010
Financial Threshold for Production	250 AUMs	510 AUMs	375 AUMs	750 AUMs
Financial Threshold for Risk	Not possible	1550 AUMs	3100 AUMs	5260 AUMs
Amount of additional income to pay Fixed Overhead Costs*	$6,300	$0	$0	$0

* Based on ten-year-average budgets developed by John Fowler, Ph.D., and Nick Ashcroft. Includes owner salary for medium and large ranches only.

Table 2. Northwest Region
Current Conditions/No Action Alternative

	Extra-Small Cow/Calf Ranch	Small Cow/Calf Ranch	Medium Cow/Calf Ranch	Extra Large Cow/Calf Ranch
Typical Ranch AUMs*	249	1,309	3,616	7,880
Percent BLM	68.20%	46.79%	26.22%	22.79%
Gross Revenues*	$5,490	$28,870	$78,650	$176,280
Gross Returns/AUM	$22.05	$22.05	$21.75	$22.37
Variable Production Costs*	$3,470	$21,180	$45,060	$104,790
Variable Production Costs/AUM	$13.92	$16.18	$12.46	$13.30
Gross Margin/AUM	$8.13	$5.87	$9.29	$9.07
Fixed Overhead Costs*	$2,400	$12,630	$39,800	$61,120
Financial Threshold for Production	2nd 90+ AUMs 1st 10 - 79	2nd 800+ AUMs 1st 345 - 697	100 AUMs	1,000 AUMs
Financial Threshold for Risk	295 AUMs	Not possible	4,284 AUMs	6,739 AUMs
Amount of additional income to pay Fixed Over-head Costs*	$380	$4,940	$6,210	$0

* Based on ten-year-average budgets developed by John Fowler, Ph.D., and Nick Ashcroft. Includes owner salary for medium and extra-large ranches only.

Table 3. Southeast Region
Current Conditions/No Action Alternative

	Extra-Small Cow/Calf Ranch	Small Cow/Calf Ranch	Medium Cow/Calf Ranch	Large Cow/Calf Ranch	Extra Large Cow/Calf Ranch
Typical Ranch AUMs*	636	1,221	3,124	5,671	8,895
Percent BLM	44.97%	58.07%	45.01%	45.02%	44.98%
Gross Revenues*	$14,980	$29,200	$74,690	$137,010	$217,930
Gross Returns/AUM	$23.56	$23.91	$23.91	$24.16	$24.50
Variable Production Costs*	$6,545	$12,940	$32,920	$60,360	$99,550
Variable Production Costs/AUM	$10.31	$10.60	$10.54	$10.64	$11.19
Gross Margin/AUM	$13.25	$13.31	$13.37	$1352	$13.31
Fixed Overhead Costs*	$11,350	$21,780	$33,300	$43,680	$57,830
Financial Threshold for Production	40 AUMS	40 AUMs	130 AUMs	50 AUMs	100 AUMs
Financial Threshold for Risk	856 AUMs	1,637 AUMs	2,491 AUMs	3,231 AUMs	2nd 5,600 AUMs 1st. 4,345 – 4,894 AUMs
Amount of additional income to pay Fixed Overhead Costs*	$2,910	$5,530	$0	$0	$0

* Based on ten-year-average budgets developed by John Fowler, Ph.D., and Nick Ashcroft. Includes owner salary for medium, large, and extra-large ranches only.

Table 4. Southwest Region
Current Conditions/No Action Alternative

	Extra-Small Cow/Calf Ranch	Small Cow/Calf Ranch	Medium Cow/Calf Ranch	Large Cow/Calf Ranch	Extra Large Cow/Calf Ranch
Typical Ranch AUMs*	259	1,204	2,777	5,103	15,166
Percent BLM	63.32%	62.04%	64.03%	62.34%	62.34%
Gross Revenues*	$5,245[2]	$24,375	$57,625	$108,290	$321,830
Gross Returns/AUM	$20.25[2]	$20.25	$20.75	$21.22	$21.22
Variable Production Costs*	$3,200	$15,510	$32,230	$70,200	$201,455
Variable Production Costs/AUM	$12.34	$12.89	$11.61	$13.76	$13.28
Gross Margin/AUM	$7.91	$7.36	$9.14	$7.46	$7.94
Fixed Overhead Costs*	$2,570	$11,940	$32,740	$42,670	$126,820
Financial Threshold for Production	12+ AUMs	3rd 650+ 2nd 260-460 1st 35-146	2nd 450+ 1st 25-246	3rd 2,520+ 2nd 1100-1920 1st 15-597	2nd 7130+ 1st 1000 – 5712
Financial Threshold for Risk	325+ AUMs	1625+ AUMS	3580+ AUMs	5500+ AUMs	15,630+ AUMs
Amount of additional income to pay Fixed Over-head Costs*	$520	$3,080	$7,350	$4,600	$6,500

* Based on ten-year-average budgets developed by John Fowler, Ph.D., and Nick Ashcroft. Includes owner salary for medium, large, and extra-large ranches only.

[2]Based on Feed Program payment of $.47/AUM.

Table 5a Central Mountain Region
RAC Alternative

	Extra-Small Cow/Calf Ranch	Small Cow/Calf Ranch	Medium Cow/Calf Ranch	Large Cow/Calf Ranch
Typical Ranch AUMs*	636	1596	3408	5826
Percent BLM	26.73%	11.78%	20.98%	20.01%
Gross Revenues*	$10,000	$29,570	$73,650	$129,570
Gross Returns/AUM	$15.73	$18.53	$21.61	$22.24
Variable Production Costs*	$11,780	$26,190	$45,930	$75,790
Variable Production Costs/AUM	$18.52	$16.41	$13.48	$13.01
Gross Margin/AUM	($2.79)	$2.12	$8.13	$9.23
Fixed Overhead Costs*	$11,350	$16,670	$38,030	$62,010
Financial Threshold for Production	Not possible w/ BLM permit, 250 AUMs w/o BLM permit	510 AUMs	375 AUMs	750 AUMs
Financial Threshold for Risk	Not possible	Not possible	4675 AUMs	6700 AUMs
Amount of additional income to pay Fixed Over-head Costs*	$11,350 with BLM permit, $7,900 w/o BLM permit	$13,300 with BLM permit, $2,200 w/o BLM permit	$10,300 with BLM permit, $4,000 w/o BLM permit	$8,200 with BLM permit, $7,300 w/o BLM permit
Amount of additional income to pay Fixed Costs if rancher pays cost of improvements	N/A	$14,000 with BLM permit, N/A w/o BLM permit	$11,850 with BLM permit, N/A w/o BLM permit	$9,650 with BLM permit, N/A w/o BLM permit

* Based on ten-year-average budgets, with cost and revenue adjustments as a result of management changes, developed by John Fowler, Ph.D., and Nick Ashcroft. Includes owner salary for medium and large ranches only.

Table 5b. Central Mountain Region
RAC alternative with 20% BLM permit reduction

	Extra-Small Cow/Calf Ranch	Small Cow/Calf Ranch	Medium Cow/Calf Ranch	Large Cow/Calf Ranch
Typical Ranch AUMs*	602	1558	3265	5593
Gross Revenues*	$9,470	$28,870	$70,560	$124,390
Gross Returns/AUM	$15.73	$18.53	$21.61	$22.24
Variable Production Costs*	$11,420	$25,880	$44,570	$73,700
Variable Production Costs/AUM	$18.97	$16.61	$13.65	$13.18
Gross Margin/AUM	($3.24)	$1.92	$7.96	$9.06
Fixed Overhead Costs*	$11,350	$16,670	$38,030	$62,010
Amount of additional income to pay Fixed Overhead Costs*	N/A w/ BLM permit, $7,900 w/o BLM permit	$13,700 with BLM permit, $2,200 w/o BLM permit	$12,050 with BLM permit, $4,000 w/o BLM permit	$11,300 with BLM permit, $7,300 w/o BLM permit
Amount of additional income to pay Fixed Costs if rancher pays cost of improvements	N/A	$14,400 with BLM permit, N/A w/o permit	$13,600 with BLM permit, N/A w/o permit	$12,750 with BLM permit, N/A w/o permit

* Based on ten-year-average budgets, with cost and revenue adjustments as a result of management changes, developed by John Fowler, Ph.D., and Nick Ashcroft. Includes owner salary for medium and large ranches only.

Table 6a Northwest Region
RAC Alternative

	Extra-Small Cow/Calf Ranch	Small Cow/Calf Ranch	Medium Cow/Calf Ranch	Extra Large Cow/Calf Ranch
Typical Ranch AUMs*	249	1309	3616	7880
Percent BLM	68.20%	46.79%	26.22%	22.79%
Gross Revenues*	$4,150	$21,795	$65,410	$104,790
Gross Returns/AUM	$16.68	$16.65	$18.09	$18.64
Variable Production Costs*	$3,700	$22,430	$48,250	$111,410
Variable Production Costs/AUM	$14.88	$17.13	$13.34	$14.14
Gross Margin/AUM	$1.80	($.48)	$4.75	$4.50
Fixed Overhead Costs*	$2,400	$12,630	$39,800	$61,120
Financial Threshold for Production	150 AUMs w/BLM 10 AUMs w/o BLM	Not possible w/BLM 345 AUMs w/o BLM	100	1,000
Financial Threshold for Risk	Not possible	Not possible	Not possible	13,583 AUMs
Amount of additional income to pay Fixed Overhead Costs*	$1,950 w/BLM permit $1,685 w/o	$12,630 w/BLM permit $8,270 w/o	$22,640 w/BLM permit $14,840 w/o	$25,645 w/BLM permit $20,515 w/o
Amount of additional income to pay Fixed Costs if rancher pays cost of improvements	$2,280 w/BLM permit, N/A w/o	N/A	$23,790 w/BLM permit, N/A w/o	$29,035 w/BLM permit, N/A w/o

** Based on ten-year-average budgets, with cost and revenue adjustments as a result of management changes, developed by John Fowler, Ph.D., and Nick Ashcroft. Includes owner salary for medium and extra-large ranches only.

Table 6b. Northwest Region
RAC alternative with 20% BLM permit reduction

	Extra-Small Cow/Calf Ranch	Small Cow/Calf Ranch	Medium Cow/Calf Ranch	Extra Large Cow/Calf Ranch
Typical Ranch AUMs*	215	1187	3426	7521
Gross Revenues*	$3,590	$19,760	$61,980	$140,190
Gross Returns/AUM	$16.68	$16.65	$18.09	$18.64
Variable Production Costs*	$3,430	$21,260	$47,010	$109,590
Variable Production Costs/AUM	$15.93	$17.91	$13.72	$14.57
Gross Margin/AUM	$.75	($1.26)	$4.37	$4.07
Fixed Overhead Costs*	$2,400	$12,630	$39,800	$61,120
Amount of additional income to pay Fixed Overhead Costs*	$2,240 w/BLM permit $1,685 w/o	N/A w/BLM $8,270 w/o BLM	$24,830 w/BLM permit $14,840 w/o	$30,525 w/BLM permit $20,515 w/o
Amount of additional income to pay Fixed Costs if rancher pays cost of improvements	$2,570 w/BLM permit N/A w/o	N/A	$25,980 w/BLM permit N/A w/o	$33,910 w/BLM permit N/A w/o

* Based on ten-year-average budgets, with cost and revenue adjustments as a result of management changes, developed by John Fowler, Ph.D., and Nick Ashcroft. Includes owner salary for medium and extra-large ranches only.

Table 7a Southeast Region
RAC Alternative

	Extra-Small Cow/Calf Ranch	Small Cow/Calf Ranch	Medium Cow/Calf Ranch	Large Cow/Calf Ranch	Extra Large Cow/Calf Ranch
Typical Ranch AUMs*	636	1221	3124	5671	8895
Percent BLM	44.97%	58.07%	45.01%	45.02%	20.57%
Gross Revenues*	$9,950	$20,400	$57,325	$110,070	$182,970
Gross Returns/AUM	$15.64	$16.71	$18.35	$19.41	$20.57
Variable Production Costs*	$7,270	$13,980	$35,580	$65,700	$107,660
Variable Production Costs/AUM	$11.43	$11.45	$11.39	$11.58	$12.10
Gross Margin/AUM	$4.21	$5.26	$6.96	$7.83	$8.47
Fixed Overhead Costs*	$11,350	$21,780	$33,300	$43,680	$57,830
Financial Threshold for Production	410 AUMs w/BLM 40 w/o	710 w/BLM 40 w/o	130	50	100
Financial Threshold for Risk	Not possible	Not possible	4784	5582	6830
Amount of additional income to pay Fixed Over-head Costs*	$8,670 w/BLM $6,620 w/o	$15,360 w/BLM $14,740 w/o	$11,550 w/BLM $10,070 w/o	$0 w/BLM $1,040 w/o	$0 w/BLM $0 w/o
Amount of additional income to pay Fixed Costs if rancher pays cost of improvements	$9,300 w/BLM N/A w/o	$16,360 w/BLM N/A w/o	$13,460 w/BLM N/A w/o	$3,350 w/BLM N/A w/o	$0

* Based on ten-year-average budgets, with cost and revenue adjustments as a result of management changes, developed by John Fowler, Ph.D., and Nick Ashcroft. Includes owner salary for medium, large, and extra-large ranches only.

Table 7b. Southeast Region
RAC alternative with 20% BLM permit reduction

	Extra-Small Cow/Calf Ranch	Small Cow/Calf Ranch	Medium Cow/Calf Ranch	Large Cow/Calf Ranch	Extra Large Cow/Calf Ranch
Typical Ranch AUMs*	579	1079	2843	5160	8095
Gross Revenues*	$9,060	$18,030	$52,170	$100,160	$166,510
Gross Returns/AUM	$15.64	$16.71	$18.35	$19.41	$20.57
Variable Production Costs*	$7,010	$12,960	$33,550	$61,360	$101,680
Variable Production Costs/AUM	$12.10	$12.01	$11.80	$11.89	$12.56
Gross Margin/AUM	$3.54	$4.70	$6.55	$7.52	$8.01
Fixed Overhead Costs*	$11,350	$21,780	$33,300	$43,680	$57,830
Amount of additional income to pay Fixed Overhead Costs*	$9,300 w/BLM $6,620 w/o	$16,710 w/BLM $14,740 w/o	$14,680 w/BLM $10,070 w/o	$4,880 w/BLM $1,040 w/o	$0 w/BLM $0 w/o
Amount of additional income to pay Fixed Costs if rancher pays cost of improvements	$9,930 w/BLM N/A w/o	$17,710 w/BLM N/A w/o	$16,590 w/BLM N/A w/o	$8,230 w/BLM N/A w/o	$0

* Based on ten-year-average budgets, with cost and revenue adjustments as a result of management changes, developed by John Fowler, Ph.D., and Nick Ashcroft. Includes owner salary for medium, large, and extra-large ranches only.

Table 8a Southwest Region
RAC Alternative

	Extra-Small Cow/Calf Ranch	Small Cow/Calf Ranch	Medium Cow/Calf Ranch	Large Cow/Calf Ranch	Extra Large Cow/Calf Ranch
Typical Ranch AUMs*	259	1204	2777	5103	15166
Percent BLM	63.32%	62.05%	64.03%	62.34%	62.34%
Gross Revenues*	$4,380[3]	$20,350	$47,960	$99,050	$303,170
Gross Returns/AUM	$16.90[3]	$16.90	$17.27	$19.41	$19.99
Variable Production Costs*	$3,460	$16,790	$34,200	$72,970	$209,670
Variable Production Costs/AUM	$13.35	$13.94	$12.31	$14.30	$13.83
Gross Margin/AUM	$3.55[2]	$2.96	$4.96	$5.11	$6.16
Fixed Overhead Costs*	$2,570	$11,940	$32,740	$42,670	$126,820
Financial Threshold for Production	185 AUMs w/BLM 12 w/o	810 w/BLM 2nd 260-460 1st 35-146	1375 w/BLM 2nd 450-999 1st 25-246	3480 w/BLM 2nd 1100-1922 1st 15-597	8040 w/BLM 1000-5712 w/o
Financial Threshold for Risk	724+ AUMs	Not possible	Not possible	6,400+ AUMs	17,500+ AUMs
Amount of additional income to pay Fixed Overhead Costs*	$1,650 w/BLM $755 w/o	$8,390 w/BLM $9,450 w/o	$18,980 w/BLM $24,350 w/o	$16,590 w/BLM $28,740 w/o	$33,320 w/BLM $78,200 w/o
Amount of additional income to pay Fixed Costs if rancher pays cost of improvements	$2,040 w/BLM N/A w/o	$8,980 w/BLM N/A w/o	$20,285 w/BLM N/A w/o	$18,890 w/BLM N/A w/o	$38,320 w/BLM N/A w/o

* Based on ten-year-average budgets, with cost and revenue adjustments as a result of management changes, developed by John Fowler, Ph.D., and Nick Ashcroft. Includes owner salary for medium, large, and extra-large ranches only.

[3]Based on feed program payment of $.47/AUM

Table 8b. Southwest Region
RAC alternative with 20% BLM permit reduction

	Extra-Small Cow/Calf Ranch	Small Cow/Calf Ranch	Medium Cow/Calf Ranch	Large Cow/Calf Ranch	Extra Large Cow/Calf Ranch
Typical Ranch AUMs*	226	1055	2421	4467	13,275
Gross Revenues*	$3,820	$17,830	$41,810	$86,700	$265,370
Gross Returns/AUM	$16.90	$16.90	$17.27	$19.41	$19.99
Variable Production Costs*	$3,185	$15,545	$31,665	$68,710	$197,000
Variable Production Costs/AUM	$14.09	$14.73	$13.08	$15.38	$14.84
Gross Margin/AUM	$2.81	$2.17	$4.19	$4.03	$5.15
Fixed Overhead Costs*	$2,570	$11,940	$32,740	$42,670	$126,820
Amount of additional income to pay Fixed Overhead Costs*	$1,935 w/BLM, $755 w/o	$9,660 w/BLM, $9,450 w/o	$22,555 w/BLM $24,350 w/o	$24,680 w/BLM $28,740 w/o	$58,470 w/BLM $78,200 w/o
Amount of additional income to pay Fixed Costs if rancher pays cost of improvements	$2,325 w/BLM N/A w/o	$10,250 w/BLM N/A w/o	$23,860 w/BLM N/A w/o	$26,980 w/BLM N/A w/o	$63,470 w/BLM N/A w/o

* Based on ten-year-average budgets, with cost and revenue adjustments as a result of management changes, developed by John Fowler, Ph.D., and Nick Ashcroft. Includes owner salary for medium, large, and extra-large ranches only.

Table 9a. Central Mountain Region
Fallback Alternative

	Extra-Small Cow/Calf Ranch	Small Cow/Calf Ranch	Medium Cow/Calf Ranch	Large Cow/Calf Ranch
Typical Ranch AUMs*	636	1596	3408	5826
Percent BLM	26.73%	11.78%	20.98%	20.01%
Gross Revenues*	$11,200	$29,570	$70,410	$125,900
Gross Returns/AUM	$17.61	$18.53	$20.66	$21.61
Variable Production Costs*	$11,610	$26,570	$46,920	$78,410
Variable Production Costs/AUM	$18.25	$16.65	$13.77	$13.46
Gross Margin/AUM	($.64)	$1.88	$6.89	$8.15
Fixed Overhead Costs*	$11,350	$16,670	$38,030	$62,010
Financial Threshold for Production	Not possible w/ BLM permit, 250 AUMs w/o permit	510 AUMs	375 AUMs	750 AUMs
Financial Threshold for Risk	Not possible	Not possible	Not possible	7,600 AUMs
Amount of additional income to pay Fixed Overhead Costs*	N/A with BLM permit, $7,900 w/o permit	$13,650 with BLM permit, $2,200 w/o permit	$14,550 with BLM permit, $4,000 w/o permit	$14,500 with BLM permit, $7,300 w/o permit
Amount of additional income to pay Fixed Costs if rancher pays cost of improvements	N/A	$14,400 with BLM permit, N/A w/o permit	$16,100 with BLM permit, N/A w/o permit	$15,950 with BLM permit, N/A w/o permit

* Based on ten-year-average budgets, with cost and revenue adjustments as a result of management changes, developed by John Fowler, Ph.D., and Nick Ashcroft. Includes owner salary for medium and large ranches only.

Table 9b. Central Mountain Region
Fallback Alternative with 20% BLM permit reduction

	Extra-Small Cow/Calf Ranch	Small Cow/Calf Ranch	Medium Cow/Calf Ranch	Large Cow/Calf Ranch
Typical Ranch AUMs*	602	1558	3265	5593
Gross Revenues*	$10,600	$28,870	$67,455	$120,865
Gross Returns/AUM	$17.61	$18.53	$20.66	$21.61
Variable Production Costs*	$11,240	$26,260	$45,515	$76,250
Variable Production Costs/AUM	$18.67	$16.85	$13.94	$13.63
Gross Margin/AUM	($1.06)	$1.68	$6.72	$7.98
Fixed Overhead Costs*	$11,350	$16,670	$38,030	$62,010
Amount of additional income to pay Fixed Overhead Costs*	N/A	$14,050 with BLM permit, $2,200 w/o permit	$16,100 with BLM permit, $4,000 w/o permit	$17,400 with BLM permit, $7,300 w/o permit
Amount of additional income to pay Fixed Costs if rancher pays cost of improvements	N/A	$14,800 with BLM permit, N/A w/o permit	$17,650 with BLM permit, N/A w/o permit	$18,850 with BLM permit, N/A w/o permit

* Based on ten-year-average budgets, with cost and revenue adjustments as a result of management changes, developed by John Fowler, Ph.D., and Nick Ashcroft. Includes owner salary for medium and large ranches only.

Table 10a Northwest Region
Fallback Alternative

	Extra-Small Cow/Calf Ranch	Small Cow/Calf Ranch	Medium Cow/Calf Ranch	Extra Large Cow/Calf Ranch
Typical Ranch AUMs*	249	1,309	3,616	7,880
Percent BLM	68.20%	46.79%	26.22%	22.79%
Gross Revenues*	$3,590	$18,800	$59,340	$133,410
Gross Returns/AUM	$14.40	$14.36	$16.41	$16.93
Variable Production Costs*	$3,820	$22,740	$48,250	$112,510
Variable Production Costs/AUM	$15.34	$17.37	$13.34	$14.28
Gross Margin/AUM	($.94)	($3.01)	$3.07	$2.65
Fixed Overhead Costs*	$2,400	$12,630	$39,800	$61,120
Financial Threshold for Production	Not possible w/BLM 10+ AUMs w/o	Not Possible w/BLM 345+ AUMs w/o	100+ AUMs	1,000+ AUMs
Financial Threshold for Risk	Not possible	Not possible	Not possible	Not possible
Amount of additional income to pay Fixed Overhead Costs*	N/A w/BLM $1,685 w/o	N/A w/BLM $8,270 w/o	$28,710 w/BLM $14,840 w/o	$40,225 w/BLM $5,075 w/o
Amount of additional income to pay Fixed Costs if rancher pays cost of improvements	N/A	N/A	$29,870 w/BLM N/A w/o	$43,615 w/BLM N/A w/o

* Based on ten-year-average budgets, with cost and revenue adjustments as a result of management changes, developed by John Fowler, Ph.D., and Nick Ashcroft. Includes owner salary for medium and extra-large ranches only.

Table 10b. Northwest Region
Fallback alternative with 20% BLM permit reduction

	Extra-Small Cow/Calf Ranch	Small Cow/Calf Ranch	Medium Cow/Calf Ranch	Extra Large Cow/Calf Ranch
Typical Ranch AUMs*	215	1,187	3,426	7,521
Gross Revenues*	$3,100	$17,045	$56,220	$127,330
Gross Returns/AUM	$14.40	$14.36	$16.41	$16.93
Variable Production Costs*	$3,530	$21,540	$47,010	$110,450
Variable Production Costs/AUM	$16.43	$18.15	$13.72	$14.69
Gross Margin/AUM	($2.03)	($3.79)	$2.69	$2.24
Fixed Overhead Costs*	$2,400	$12,630	$39,800	$61,120
Amount of additional income to pay Fixed Overhead Costs*	N/A	N/A	$30,580 w/BLM $14,840 w/o	$44,240 w/BLM $5,075 w/o
Amount of additional income to pay Fixed Costs if rancher pays cost of improvements	N/A	N/A	$31,740 w/BLM N/A w/o	$47,630 w/BLM N/A w/o

** Based on ten-year-average budgets, with cost and revenue adjustments as a result of management changes, developed by John Fowler, Ph.D., and Nick Ashcroft. Includes owner salary for medium and extra-large ranches only.

Table 11a Southeast Region
Fallback Alternative

	Extra-Small Cow/Calf Ranch	Small Cow/Calf Ranch	Medium Cow/Calf Ranch	Large Cow/Calf Ranch	Extra Large Cow/Calf Ranch
Typical Ranch AUMs*	636	1,221	3,124	5,671	8,895
Percent BLM	44.97%	58.07%	45.01%	45.02%	44.98%
Gross Revenues*	$7,880	$18,520	$47,390	$95,500	$151,930
Gross Returns/AUM	$12.39	$15.17	$15.17	$16.84	$17.08
Variable Produc-tion Costs*	$7,320	$14,520	$37,830	$68,190	$114,330
Variable Produc-tion Costs/AUM	$11.50	$11.89	$12.11	$12.02	$12.85
Gross Margin/AUM	$.89	$3.28	$3.06	$4.82	$4.23
Fixed Overhead Costs*	$11,350	$21,780	$33,300	$43,680	$57,830
Financial Threshold for Production	570 w/BLM 40 AUMs w/o	770 AUMs w/BLM, 40 w/o	1,880 w/BLM 130 w/o	50+ AUMs	5,100 AUMs w/BLM 100 w/o
Financial Threshold for Risk	Not possible	Not possible	Not possible	Not possible	13,683 AUMs
Amount of additional income to pay Fixed Overhead Costs*	$10,780 w/BLM $6,620 w/o	$17,800 w/BLM $14,740 w/o	$23,740 w/BLM $10,070 w/o	$16,380 w/BLM $1,040 w/o	$20,235 w/BLM $0 w/o
Amount of additional income to pay Fixed Costs if rancher pays cost of improvements	$11,410 w/BLM N/A w/o	$18,840 w/BLM N/A w/o	$26,390 w/BLM N/A w/o	$21,030 w/BLM N/A w/o	$25,575 w/BLM N/A w/o

* Based on ten-year-average budgets, with cost and revenue adjustments as a result of management changes, developed by John Fowler, Ph.D., and Nick Ashcroft. Includes owner salary for medium, large, and extra-large ranches only.

Table 11b. Southeast Region
Fallback alternative with 20% BLM permit reduction

	Extra-Small Cow/Calf Ranch	Small Cow/Calf Ranch	Medium Cow/Calf Ranch	Large Cow/Calf Ranch	Extra Large Cow/Calf Ranch
Typical Ranch AUMs*	579	1,079	2,843	5,160	8,095
Gross Revenues*	$7,170	$16,370	$43,130	$86,890	$138,260
Gross Returns/AUM	$12.39	$15.17	$15.17	$16.84	$17.08
Variable Production Costs*	$7,050	$13,430	$43,130	$63,750	$108,060
Variable Production Costs/AUM	$12.18	$12.44	$12.55	$12.35	$13.35
Gross Margin/AUM	$.21	$2.73	$2.62	$4.49	$3.73
Fixed Overhead Costs*	$11,350	$21,780	$33,300	$43,680	$57,830
Amount of additional income to pay Fixed Overhead Costs*	$11,220 w/BLM $6,620 w/o	$18,840 w/BLM $14,740 w/o	$25,840 w/BLM $10,070 w/o	$20,540 w/BLM $1,040 w/o	$27,630 w/BLM $0 w/o
Amount of additional income to pay Fixed Costs if rancher pays cost of improvements	$11,850 w/BLM N/A w/o	$19,880 w/BLM N/A w/o	$28,490 w/BLM N/A w/o	$25,190 w/BLM N/A w/o	$32,970 w/BLM N/A w/o

* Based on ten-year-average budgets, with cost and revenue adjustments as a result of management changes, developed by John Fowler, Ph.D., and Nick Ashcroft. Includes owner salary for medium, large, and extra-large ranches only. $35,670

Table 12a Southwest Region
Fallback Alternative

	Extra-Small Cow/Calf Ranch	Small Cow/Calf Ranch	Medium Cow/Calf Ranch	Large Cow/Calf Ranch	Extra Large Cow/Calf Ranch
Typical Ranch AUMs*	259	1,204	2,777	5,103	15,166
Percent BLM	63.32%	62.04%	63.03%	62.34%	62.34%
Gross Revenues*	$3,610[4]	$16,050	$37,660	$82,160	$244,170
Gross Returns/AUM	$13.94[4]	$13.33	$13.56	$16.10	$16.10
Variable Production Costs*	$3,390	$17,415	$35,390	$75,980	$219,830
Variable Production Costs/AUM	$13.08	$14.46	$12.74	$14.89	$14.50
Gross Margin/AUM	$.86[4]	($1.13)	$.82	$1.21	$1.60
Fixed Overhead Costs*	$2,570	$11,940	$32,740	$42,670	$126,820
Financial Threshold for Production	190 AUMs w/BLM 12 w/o	Not possible w/BLM 2nd 260 w/o 1st 35-146 w/o	2,460 w/BLM 2nd 456 w/o 1st 25-246 w/o	4,390 w/BLM 2nd 1100+ w/o 1st 15-597 w/o	12,300 w/BLM 1000+ w/o
Financial Threshold for Risk	Not possible	Not possible	Not possible	Not possible	Not possible
Amount of additional income to pay Fixed Overhead Costs*	$2,350 w/BLM $755 w/o	N/A w/BLM $9,450 w/o	$23,480 w/BLM $24,350 w/o	$36,500 w/BLM $28,740 w/o	$102,480 w/BLM $78,200 w/o
Amount of additional income to pay Fixed Costs if rancher pays cost of improvements	$2,740 w/BLM N/A w/o	N/A	$24,780 w/BLM N/A w/o	$39,050 w/BLM N/A w/o	$107,780 w/BLM N/A w/o

* Based on ten-year-average budgets, with cost and revenue adjustments as a result of management changes, developed by John Fowler, Ph.D., and Nick Ashcroft. Includes owner salary for medium, large, and extra-large ranches only.

[4]Based on feed program payment of $.47/AUM

Table 12b. Southwest Region
Fallback alternative with 20% BLM permit reduction

	Extra-Small Cow/Calf Ranch	Small Cow/Calf Ranch	Medium Cow/Calf Ranch	Large Cow/Calf Ranch	Extra Large Cow/Calf Ranch
Typical Ranch AUMs*	226	1,055	2,421	4,467	13,275
Gross Revenues*	$3,150	$14,065	$32,830	$71,920	$213,730
Gross Returns/AUM	$13.94	$13.33	$13.56	$16.10	$16.10
Variable Production Costs*	$3,125	$16,095	$32,705	$71,350	$206,060
Variable Production Costs/AUM	$13.82	$15.25	$13.51	$15.97	$15.52
Gross Margin/AUM	$.12	($1.92)	$.05	$.13	$.58
Fixed Overhead Costs*	$2,570	$11,940	$32,740	$42,670	$126,820
Amount of additional income to pay Fixed Overhead Costs*	$2,545 w/BLM $755 w/o	N/A	$25,620 w/BLM $24,350 w/o	$42,100 w/BLM $28,740 w/o	$119,150 w/BLM $78,200 w/o
Amount of additional income to pay Fixed Costs if rancher pays cost of improvements	$2,935 w/BLM N/A w/o	N/A	$26,920 w/BLM N/A w/o	$44,650 w/BLM N/A w/o	$124,450 w/BLM N/A w/o

* Based on ten-year-average budgets, with cost and revenue adjustments as a result of management changes, developed by John Fowler, Ph.D., and Nick Ashcroft. Includes owner salary for medium, large, and extra-large ranches only.

Table 13a. Central Mountain Region
County Alternative

	Extra-Small Cow/Calf Ranch	Small Cow/Calf Ranch	Medium Cow/Calf Ranch	Large Cow/Calf Ranch
Typical Ranch AUMs*	636	1596	3408	5826
Percent BLM	26.73%	11.78%	20.98%	20.01%
Gross Revenues*	$12,370	$35,890	$75,790	$133,010
Gross Returns/AUM	$19.45	$22.49	$22.24	$22.83
Variable Production Costs*	$10,790	$25,380	$43,380	$70,000
Variable Production Costs/AUM	$16.96	$15.90	$12.73	$12.02
Gross Margin/AUM	$2.49	$6.59	$9.51	$10.82
Fixed Overhead Costs*	$11,350	$16,670	$38,030	$62,010
Financial Threshold for Production	250 AUMs	510 AUMs	375 AUMs	750 AUMs
Financial Threshold for Risk	Not Possible	Not Possible	4,000 AUMs	7,600 AUMs
Amount of additional income to pay Fixed Overhead Costs*	$9,800 with BLM permit, $7,900 w/o permit	$6,150 with BLM permit, $2,200 w/o permit	$5,600 with BLM permit, $4,000 w/o permit	$0 with BLM permit, $7,300 w/o permit
Amount of additional income to pay Fixed Costs if rancher pays cost of improvements	$10,400 with BLM permit, N/A w/o permit	$6,900 with BLM permit, N/A w/o permit	$6,750 with BLM permit, N/A w/o permit	$0 with BLM permit, N/A w/o permit

* Based on ten-year-average budgets, with cost and revenue adjustments as a result of management changes, developed by John Fowler, Ph.D., and Nick Ashcroft. Includes owner salary for medium and large ranches only.

13b Central Mountain Region
County Alternative with a 20% BLM permit reduction

	Extra-Small Cow/Calf Ranch	Small Cow/Calf Ranch	Medium Cow/Calf Ranch	Large Cow/Calf Ranch
Typical Ranch AUMs*	602	1558	3265	5593
Gross Revenues*	$11,710	$35,040	$72,610	$127,690
Gross Returns/AUM	$19.45	$22.49	$22.24	$22.83
Variable Production Costs*	$10,450	$25,090	$42,100	$68,000
Gross Margin/AUM	$2.09	$6.41	$9.35	$10.67
Fixed Overhead Costs*	$11,350	$16,670	$38,030	$62,010
Amount of additional income to pay Fixed Overhead Costs*	$10,100 with BLM permit, $7,900 w/o permit	$6,700 with BLM permit, $2,200 w/o permit	$7,500 with BLM permit, $4,000 w/o permit	$2,300 with BLM permit, $7,300 w/o permit
Amount of additional income to pay Fixed Costs if rancher pays cost of improvements	$10,750 with BLM permit, N/A w/o permit	$7,450 with BLM permit, N/A w/o permit	$8,650 with BLM permit, N/A w/o permit	$3,150 with BLM permit, N/A w/o permit

* Based on ten-year-average budgets, with cost and revenue adjustments as a result of management changes, developed by John Fowler, Ph.D., and Nick Ashcroft. Includes owner salary for medium and large ranches only.

Table 14a Northwest Region
County Alternative

	Extra-Small Cow/Calf Ranch	Small Cow/Calf Ranch	Medium Cow/Calf Ranch	Extra Large Cow/Calf Ranch
Typical Ranch AUMs*	249	1,309	3,616	7,880
Percent BLM	68.20%	46.79%	26.22%	22.79%
Gross Revenues*	$4,570	$24,010	$71,810	$161,150
Gross Returns/AUM	$18.37	$18.34	$19.86	$20.45
Variable Production Costs*	$3,610	$22,100	$47,060	$109,185
Variable Production Costs/AUM	$14.51	$16.88	$13.01	$13.86
Gross Margin/AUM	$3.86	$1.46	$6.85	$6.59
Fixed Overhead Costs*	$2,400	$12,630	$39,800	$61,120
Financial Threshold for Production	135 w/BLM 10 AUMs w/o	1,060 w/BLM 345 w/o	100+	1,000+
Financial Threshold for Risk	622+ AUMs	Not possible	Not possible	2,275 +
Amount of additional income to pay Fixed Overhead Costs*	$1,440 w/BLM $1,685 w/o	$10,720 w/BLM $8,270 w/o	$15,040 w/BLM $14,840 w/o	$9,160 w/BLM $5,075 w/o
Amount of additional income to pay Fixed Costs if rancher pays cost of improvements	$1,770 w/BLM N/A w/o	$11,545 w/BLM N/A w/o	$16,200 w/BLM N/A w/o	$12,550 w/BLM N/A w/o

* Based on ten-year-average budgets, with cost and revenue adjustments as a result of management changes, developed by John Fowler, Ph.D., and Nick Ashcroft. Includes owner salary for medium and extra-large ranches only.

Table 14b. Northwest Region
County alternative with 20% BLM permit reduction

	Extra-Small Cow/Calf Ranch	Small Cow/Calf Ranch	Medium Cow/Calf Ranch	Extra Large Cow/Calf Ranch
Typical Ranch AUMs*	215	1,187	3,426	7,521
Gross Revenues*	$3,950	$21,770	$68,040	$153,800
Gross Returns/AUM	$18.37	$18.34	$19.86	$20.45
Variable Production Costs*	$3,340	$20,960	$45,875	$107,270
Variable Production Costs/AUM	$15.52	$17.66	$13.39	$14.26
Gross Margin/AUM	$2.85	$.68	$6.47	$6.19
Fixed Overhead Costs*	$2,400	$12,630	$39,800	$61,120
Amount of additional income to pay Fixed Over-head Costs*	$1,790 w/BLM $1,685 w/o	$11,820 w/BLM $8,270 w/o	$17,630 w/BLM $14,840	$14,590 w/BLM $5,075 w/o
Amount of additional income to pay Fixed Costs if rancher pays cost of improvements	$2,120 w/BLM N/A w/o	$12,645 w/BLM N/A w/o	$18,790 w/BLM N/A w/o	$17,980 w/BLM N/A w/o

* Based on ten-year-average budgets, with cost and revenue adjustments as a result of management changes, developed by John Fowler, Ph.D., and Nick Ashcroft. Includes owner salary for medium and extra-large ranches only.

Table 15a Southeast Region
County Alternative

	Extra-Small Cow/Calf Ranch	Small Cow/Calf Ranch	Medium Cow/Calf Ranch	Large Cow/Calf Ranch	Extra Large Cow/Calf Ranch
Typical Ranch AUMs*	636	1,221	3,124	5,671	8,895
Percent BLM	44.97%	58.07%	45.01%	45.02%	44.98%
Gross Revenues*	$11,100	$24,540	$68,600	$125,780	$200,050
Gross Returns/AUM	$17.45	$20.10	$21.96	$22.17	$22.49
Variable Production Costs*	$7,160	$13,710	$34,890	$63,430	$102,320
Variable Production Costs/AUM	$11.26	$11.23	$11.17	$11.18	$11.50
Gross Margin/AUM	$6.19	$8.87	$10.79	$10.99	$10.99
Fixed Overhead Costs*	$11,350	$21,780	$33,300	$43,680	$57,830
Financial Threshold for Production	350 w/BLM 40 AUMs w/o	512 w/BLM 40 w/o	130+	50+	100+
Financial Threshold for Risk	Not Possible	Not possible	3,086+	3,976+	5,264+
Amount of additional income to pay Fixed Overhead Costs*	$7,410 w/BLM $6,620 w/o	$10,955 w/BLM $14,740 w/o	$0 w/BLM $10,070 w/o	$0 w/BLM $1,040 w/o	$0 w/BLM $0 w/o
Amount of additional income to pay Fixed Costs if rancher pays cost of improvements	$8,040 w/BLM N/A w/o	$11,955 w/BLM N/A w/o	$1,490 w/BLM N/A w/o	$0 w/BLM N/A w/o	$0 w/BLM N/A w/o

* Based on ten-year-average budgets, with cost and revenue adjustments as a result of management changes, developed by John Fowler, Ph.D., and Nick Ashcroft. Includes owner salary for medium, large, and extra-large ranches only.

Table 15b. Southeast Region
County alternative with 20% BLM permit reduction

	Extra-Small Cow/Calf Ranch	Small Cow/Calf Ranch	Medium Cow/Calf Ranch	Large Cow/Calf Ranch	Extra Large Cow/Calf Ranch
Typical Ranch AUMs*	579	1,079	2,843	5,160	8,095
Gross Revenues*	$10,100	$21,690	$62,430	$114,400	$182,060
Gross Returns/AUM	$17.45	$20.10	$21.96	$22.17	$22.49
Variable Production Costs*	$6,910	$12,715	$32,920	$59,290	$96,630
Variable Production Costs/AUM	$11.94	$11.78	$11.58	$11.49	$11.94
Gross Margin/AUM	$5.51	$8.32	$10.38	$10.68	$10.55
Fixed Overhead Costs*	$11,350	$21,780	$33,300	$43,680	$57,830
Amount of additional income to pay Fixed Overhead Costs*	$8,160 w/BLM $6,620 w/o	$12,810 w/BLM $14,740 w/o	$3,790 w/BLM $10,070 w/o	$0 w/BLM $1,040 w/o	$0 w/BLM $0 w/o
Amount of additional income to pay Fixed Costs if rancher pays cost of improvements	$8,790 w/BLM N/A w/o	$13,810 w/BLM N/A w/o	$5,700 w/BLM N/A w/o	$0 w/BLM N/A w/o	$0 w/BLM N/A w/o

* Based on ten-year-average budgets, with cost and revenue adjustments as a result of management changes, developed by John Fowler, Ph.D., and Nick Ashcroft. Includes owner salary for medium, large, and extra-large ranches only.

Table 16a Southwest Region
County Alternative

	Extra-Small Cow/Calf Ranch	Small Cow/Calf Ranch	Medium Cow/Calf Ranch	Large Cow/Calf Ranch	Extra Large Cow/Calf Ranch
Typical Ranch AUMs*	259	1,204	2,777	5,103	15,166
Percent BLM	63.32%	62.04%	64.03%	62.34%	62.34%
Gross Revenues*	$4,600[5]	$20,350	$47,960	$99,050	$303,170
Gross Returns/AUM	$17.77[5]	$17.90	$17.27	$19.41	$19.99
Variable Production Costs*	$3,320	$16,150	$33,580	$71,950	$206,635
Variable Production Costs/AUM	$12.82	$13.41	$12.09	$14.10	$13.62
Gross Margin/AUM	$4.95[5]	$3.49	$5.18	$5.31	$6.37
Fixed Overhead Costs*	$2,570	$11,940	$32,740	$42,670	$126,820
Financial Threshold for Production	155 AUMs w/ BLM 12 w/o	720 w/BLM 2nd 260-460 w/o 1st 35-146 w/o	1,280 w/BLM 2nd 450-999 w/o 1st 25-246 w/o	3,150 w/BLM 2nd 1,100-1,922 w/o 1st 15-597 w/o	7,870 w/BLM 1,000-5,712 w/o
Financial Threshold for Risk	395+	Not Possible	Not Possible	6,190+	17,300+
Amount of additional income to pay Fixed Overhead Costs*	$1,290 w/BLM $755 w/o	$7,750 w/BLM $9,450 w/o	$18,370 w/BLM $24,350 w/o	$15,570 w/BLM $28,740 w/o	$30,290 w/BLM $78,200 w/o
Amount of additional income to pay Fixed Costs if rancher pays cost of improvements	$1,680 w/BLM N/A w/o	$8,340 w/BLM N/A w/o	$19,670 w/BLM N/A w/o	$17,870 w/BLM N/A w/o	$35,290 w/BLM N/A w/o

* Based on ten-year-average budgets, with cost and revenue adjustments as a result of management changes, developed by John Fowler, Ph.D., and Nick Ashcroft. Includes owner salary for medium, large, and extra-large ranches only.

[5] Based on Feed Program payment of $.47/AUM.

Table 16b. Southwest Region
County alternative with 20% BLM permit reduction

	Extra-Small Cow/Calf Ranch	Small Cow/Calf Ranch	Medium Cow/Calf Ranch	Large Cow/Calf Ranch	Extra Large Cow/Calf Ranch
Typical Ranch AUMs*	226	1,055	2,421	4,467	13,275
Gross Revenues*	$4,020	$17,830	$41,810	$86,700	$265,370
Gross Returns/AUM	$17.77	$16.90	$17.27	$19.41	$19.99
Variable Production Costs*	$3,065	$14,985	$31,130	$67,820	$194,350
Variable Production Costs/AUM	$13.56	$14.20	$12.86	$15.18	$14.64
Gross Margin/AUM	$4.21	$2.70	$4.41	$4.23	$5.35
Fixed Overhead Costs*	$2,570	$11,940	$32,740	$42,670	$126,820
Amount of additional income to pay Fixed Over-head Costs*	$1,620 w/BLM $755 w/o	$9,100 w/BLM $9,450 w/o	$22,060 w/BLM $24,350 w/o	$23,780 w/BLM $28,740 w/o	$55,800 w/BLM $78,200 w/o
Amount of additional income to pay Fixed Costs if rancher pays cost of improvements	$2,010 w/BLM N/A w/o	$9,690 w/BLM N/A w/o	$23,360 w/BLM N/A w/o	$26,080 w/BLM N/A w/o	$60,800 w/BLM N/A w/o

* Based on ten-year-average budgets, with cost and revenue adjustments as a result of management changes, developed by John Fowler, Ph.D., and Nick Ashcroft. Includes owner salary for medium, large, and extra-large ranches only.

APPENDIX E
CUSTOM AND CULTURE

Early in the EIS writing process BLM committed to the counties and tribes of New Mexico that if they would submit a three page or less summary of their Custom and Culture, the BLM would utilize them in the EIS analysis and print them in an appendix of the EIS. Appendix E is composed of what was submitted word-for-word. The originals are available for review at the BLM New Mexico State Office.

Write-ups were received from the following:

Counties	Tribes
Catron	Navajo Nation
Chaves	Pueblo of Acoma
Curry	
Eddy	
Grant	
Hidalgo	
Lea	
Lincoln	
Luna	
Otero	
Rio Arriba	
Santa Fe	
Sierra	

By publishing these write-ups BLM is not endorsing the reports as valid, historically or legally accurate, or complete.

The Custom and Culture write-ups start in the following page of Appendix E.

CATRON COUNTY
CUSTOM AND CULTURE

The Definition of Custom & Culture in Catron County

Custom & Culture

The purpose of the custom and culture section of the comprehensive plan is to begin to define custom and culture as required by the National Environmental Policy Act (NEPA).

Among other things, NEPA requires:

It is the continuing responsibility of the Federal Government to use all practical means, consistent with other essential considerations of national policy, to improve and coordinate Federal plans. functions, programs, and resources to the end that the Nation may-

(2) assure for all Americans safe, healthful, productive and aesthetically and culturally pleasing surroundings,...

(4) preserve important historic, cultural and natural aspects of our national heritage and maintain, wherever possible, an environment which supports diversity and variety of individual choice.[1]

Culture, as used in NEPA, is defined as:

The body of "customary beliefs, social forms, and material traits[2] constituting a distinct complex of tradition of a racial, religious or social group"[3] --that complex whole that includes knowledge, belief, morals, law, customs, opinions, religion, superstition and an.

As stated in the above definition, culture includes custom.

"Custom" is defined by Black's Law Dictionary as:

A usage or practice of the people, which by common adoption and acquiescence, and by long and unvarying habit, has become compulsory, and has acquired the force of a law with respect to the place or subject matter to which it relates... An habitual or customary practice, more or less widespread, which prevails within a geographic or sociological area.[4]

Custom, as used in the context of the comprehensive plan, refers to land usages and practices that have "acquired the force of a tacit and common Consent." Such land uses and practices, livestock grazing, logging. and hunting, to mention just a few, are well established, readily identifiable, and are the foundation of Catron County's economy.

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[1] 42 U.S.C. §4331(b)(2),(4).

[2] *Webster's Ninth New Collegiate Dictionary*, 1991, p.314.

[3] *Webster's Ninth New Collegiate Dictionary*, 1991, p. 314

[4] *Black's Law Dictionary*, p. 348 (5th ed. 1979).

Common use and everyday experience teaches us that the words "custom" and "culture" are frequently interchanged. We often rely on just one of the two terms to convey the meanings of both. Yet, in very important ways, the individual meanings of “custom" and "culture" are quite different and are not so easily switched or substituted. Culture deals more with human activities and practices and the acceptance and adoption of those activities and practices as community norms. In many ways, culture is invisible, at least in the sense of not being immediately evident on the surrounding landscape. It pertains to what people believe and value and how they pursue and realize those beliefs and values. Custom, on the other hand, is the way that people implement their culture. It deals with the way that people traditionally use the land and its natural resources, make a living and act toward each other. Custom is the visible and tangible manifestation of the shared beliefs that binds a group of people into a community.

In Catron County, culture, in a very down to earth sense, comprises the shared values and beliefs that give guidance and meaning to the lives of local residents. These shared values and beliefs, including such traits as independence, egalite, self-sufficiency and devotion to family, work and the land, have their origins in religion, folk traditions and in the shaping influence of environment on the individual and community. Moreover, culture in Catron County includes the array of social standards and social institutions, from family ties, to kindly neighbors, to high school sports, to the county rodeo, that hold together and give common purpose and meaning to community life.

Of all the qualities of culture coloring the American experience, equality may be the most crucial.

> The principle of equality, which makes men independent of each other, gives them a habitat and taste for following in their private actions, no other guide than their own will. That complete independence, which they constantly enjoy in regard to their equals and in the intercourse of private life, tends to make them look upon all authority with a jealous eye and speedily suggests to them the notion and the love of political freedom. Men living at such times have a natural bias towards free institutions. Take any one of them at a venture and search if you can his most deep seated instincts, and you will find that, of all governments, he will soonest conceive and most highly value that government whose head he has himself elected and whose administration he may control.[5]

Culture is a people's identity and the foundation upon which political society and an economy are built. Without culture, without commitment to democracy, devotion to equality, and celebration of political freedom, the people of Catron County would be something less than what de Tocqueville defined to be American. The citizens of Catron County are inseparable from their culture. They are, first and foremost, Americans with a deep-seated commitment to democracy, equality and political freedom. They are also unique products of the complex Web of land uses and practices, values and beliefs that nurture their communities, sustain their economies, empower their local government, and give form and -shape to their spiritual and physical environments. Stripped of their land use practices and usages, denied their values and beliefs, they would lose coherence as a people. If stripped and denied of their private property rights, their equitable estates on federal lands, their right to practice self-rule, to pursue equality and to live and practice the challenge of political freedom, they would lose the very essence of what it means to be American: To be sovereign in one sown land; to be filly equal in matters of power; and to be the final beneficiaries of political freedom.

The Native American roots of culture and custom are the oldest in New Mexico. In 1598, Juan de Onate laid the foundation for permanent Spanish settlement in New Mexico. Spanish institutions exerted a profound influence on New Mexicans who would live under Spanish and Mexican law for two hundred fifty years before becoming part of the United States, an additional and profound influence creating the customs and culture of Spanish and Mexican people living in New Mexico was the Roman Catholic Church. The Church provided these people with their religious values, family structures and sense of community.

Kearny's Code-Protection of Existing Customs & Culture

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[5]de Tocqueville, Alexis, *Democracy in America*, Vol. II, New York: Random House, p. 304.

In 1846, General Kearny took possession of New Mexico, imposed martial law and established a code of conduct which would become known as Kearny's Code. Within the context of this Code, he recognized the existing culture and custom of the area and pledged to the inhabitants, as citizens of a Territory of the United States, that the Army would protect and defend these customs and cultures. Kearny's Code remains part of the statutory law of the State of New Mexico today.

In addition to the culture described above, perhaps the most important custom which would be protected under the Kearny Code was the right of private property ownership. Prior to the imposition of Martial Law, title to private property could only be acquired through permission of the Spanish King, the Mexican government or their representatives. To acquire title under Spanish or Mexican law, the citizen or settler first had to request permission of the King or government. Once that permission was acquired, the settler was allowed to enter the property, then occupy and improve that property. These requirements of occupancy and improvement came to be known as public good and public weal. As described by J. Brocchus in his dissenting opinion in Pino v. Hatch. (Sup. Ct. Jan. 1855), "[t]hose uses were the cultivation of the soil, the pasting of flocks, the promotion and encouragement of industrial pursuits, and in general such purposes as looked to the settlement of the uninhabited portions of the province. the enhancement of the value of the soil, the development of the resources of the country, and the promotion of the public good.

Public weal was defined in much the same manner as public good. In that same opinion, J. Brocchus describes "public weal" as public good with an additional requirement of "the enhancement of the value of the adjacent lands belonging to the public domain."

After four years of land occupancy and creating public good and public weal, the settler could then apply for land title. Once the King's or government's representative was ensured that the requirements of occupancy, public good and public will were satisfied, the King or government granted title to the requesting party.

Another way that title could be acquired was a grant by the Spanish or Mexican government for services rendered such as for assuming responsibility for defense against nomadic Indians or for "peopling" or developing the tracts in question. Although the acquisition of lands by grant from the King or government came to an end with the signing of the Treaty of Guadalupe Hidalgo in 1848, the custom of occupancy and creating public good/public weal did not. These concepts carried through to the American concept of preemption. Under preemption, the settler was also required to hold the land by occupancy, then create "public good" and "public weal" before he could acquire title.

Although Congress questioned the Kearny Code as evidenced by a Resolution sent to President Polk, the President rebuffed Congress and "..justified the general's actions as extending to these people those rights which were so cherished in the United States..."

Treaty of Guadalupe Hidalgo----Protection of Existing Property Rights, Culture, and Customs

With the signing of the Treaty of Guadalupe Hidalgo, which ended the Mexican-American War, in 1848, the New Mexico Territory was Formally ceded to the American Government. The terms of the Treaty explicitly specified that any property right, culture and custom which had been recognized by the Spanish or Mexican governments before the lands were ceded to the United States would continue intact and be honored and protected by the United States.

After the arrival of Kearny, the ceding of New Mexico to the United States and the establishment of Kearny's Code, the third dominant culture was introduced to New Mexico when an immigration, consisting largely of Scottish American merchants, miners, ranchers, skilled workers and freighters came to the Territory, married local Spanish/Mexican women and became integrated into the now Hispanic-American community. This Hispanic-American influence is still the most distinguishing contributor to the culture and custom in New Mexico.

Today, the Scot-Irish contribution to the culture of Catron County is largely that of the border estate between Scotland and England.

> The border derived its cultural character from one decisive historical fact, For seven centuries, the Kings of Scotland and England could not agree who owned it... From the year 1040 to 1745, every English monarch but three suffered a Scottish invasion, or became an invader in his turn... This incessant violence shaped the culture of the border region...
>
> To the first settlers, the American back country was a dangerous environment, just as their British borderlands had been. The borders were more at home than others in this anarchic environment, which was well suited to their family system, their warrior ethics, their farming and herding economy, their attitudes toward land and wealth and their ideas of work and power. So well adapted was the border culture to this environment that other ethnic groups tended to copy it.[6]

The Custom of Livestock Grazing in Catron County

The Development of Equitable Estates for Grazing on Federal Lands (Adapted from the Catron County Comprehensive Land Use and Policy Plan, Part II, Chapter 2, pp.2-5 to 2-14)

Scot-Irish, Mexican, & Spanish Influence on Catron County's Land Use Practices

There is no question that the culture of the Scot-Irish Mexican and Spanish people living in Catron County have shaped the land use practices, customs and economy of the area. With regard to livestock grazing, these customs were also influenced by the local environment. As the local residents will attest the environment in Catron County for grazing livestock is harsh. The weather is hot, the rainfall is sparse and it is difficult to work the soil to grow crops on anything but lands subject to irrigation. Because of these "abnormal conditions" when compared to lands east of the 30th meridian, it takes a great deal of land to sustain even a modest size herd of livestock. These environmental factors shaped the custom of livestock -grazing in Catron County.

As stated above, land acquisition under the governments of Mexico and Spain came from grants by the King of Spain or the Government of Mexico. However, because of environmental factors described above, that grant of land was normally not enough to sustain a herd of livestock. Therefore, in addition to the use of his property, the Spanish or Mexican citizen also used the other unclaimed lands belonging to the government, in connection with his private property, to sustain his herd, his way of life and to perpetuate community stability.

In New Mexico, the development of livestock grazing under the American system paralleled, intertwined and emulated the Spanish and Mexican custom of using the unclaimed public domain. Under the American system, although a settler could make a good living on 160 or 640 acres of homestead lands east of the 30th meridian, the same could not be said in Catron County. As the Spanish and Mexican citizens had discovered, the environment in New Mexico required more land for grazing than could be granted to the settler. As such, a parallel custom, learned from the Spanish and Mexican settlers, became the American custom. Allowing livestock to graze on the unclaimed public domain became the norm.

Encouragement of Livestock Grazing to Assist in Populating the West

Not only was the grazing of livestock on the unclaimed federal lands the custom in Catron County, the practice was encouraged by the United States Presidents and by the Army who wished to quickly settle and occupy these lands for the United States. There were three major reasons that American settlers and pioneers were

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[6]Fischer, David Hackett, *Albion's Seed, Four British Folkways in America*. Oxford, 1989.

desperately needed to quickly settle the New Mexico territories:

1. Concern that a Foreign power would take control of these lands by occupancy.

2. The problem of securing the land from hostile Indian tribes.

3. The protection of the public traveling across the continent.

Concern That a Foreign Power Would Take Control or These Lands by Occupancy.

Many American Presidents were afraid that, unless the New Mexico territories were populated and settled by citizens loyal to the United States, a foreign power would take control of these lands by occupancy. Even though, the Treaty of Guadalupe Hidalgo had ended the war with Mexico, the American Presidents wanted to be sure that these newly acquired lands would be populated with citizens loyal to the United States. As President Polk explained in 1847:

> Mexico is too feeble a power to govern these Provinces, lying as they do at a distance of more than 1000 miles from her capital, and if attempted to be retained by her they would constitute but for a short time even nominally a part of her dominions...
>
> The sagacity of powerful European nations has long since directed their attention to the commercial importance of that Province, and there can be little doubt that the moment the United States shall relinquish their present occupation of it and their claim to it as indemnity an effort would be made by some foreign power to possess it, either by conquest or purchase. If no foreign government should acquire it in either of these modes, an independent revolutionary government would probably be established by the inhabitants and such foreigners as may remain in or remove to the country as soon as it shall be known that the United States have abandoned it. Such a government would be too feeble long to maintain its separate existence, and would finally become annexed to or be a dependent colony of some more powerful state. ..no foreign power shall without our consent be permitted to plant or establish any new colony or dominion on any part of the North American continent...
>
> The Provenances of New Mexico and the Californias are contiguous to the territories of the United States, and if brought under the government of our laws their resource---mineral, agricultural, manufacturing, and commercial---would soon be developed.[7]

Securing the Land From Hostile Indian Tribes

In addition to the concern over the use of Foreign powers on American soil, the Congress and the Presidents also Faced the problem of securing the land from hostile Indian tribes. When President Zachary Taylor received the helm of the nation, he focused on occupying and controlling the southwest region because of her great agricultural and mineral wealth. However, as he soon discovered, the Southwest was not easily controlled because of its numerous Indian tribes.

President Millard Fillmore also faced problems with the warring Indian tribes in the Southwest. In his third address to the Nation, he stated:

> Every effort should-be made to protect our frontier and that of the adjoining Mexican States from the incursions of the Indian tribes, of about 11,000 men of which the Army is composed, nearly 8,000 are employed in the defense of the newly acquired territory (including Texas) and of the emigrants proceeding thereto. I am gratified to say that these efforts have been usually successful. With the exception of some partial outbreaks in California and Oregon and occasional depredation on a portion of the Rio Grande,

[7] Polk, James K, *IV Messages and Papers of the President*, 1847. New York, 1897, pp. 539-540.

owing, it is believed, to the disturbed state of that border region, the inroads of the Indians have been effectually restrained.[8]

Fillmore also continually reminded Congress that the Treaty of Guadalupe Hidalgo also required the United States to protect the Mexican Frontier. Although Fillmore was able to convince Congress to appropriate larger regimes of the cavalry to the Southwest, he also recognized that the best protection against hostile Indians was to increase permanent settlements.[9]

Protection of the Public Traveling Across the Continent

The government wanted to colonize the West as quickly as possible far the protection of the public traveling across the continent. As stated by President Polk:

> For the protection of emigrants while on their way to Oregon against the attacks of the Indian tribes occupying the country through which they pass, I recommend that suitable number of stockades and blockhouse forts be erected along the usual route between our frontier settlements on the Missouri and the Rocky Mountains, and that an adequate force of mounted riflemen be raised to guard and protect them on their journey...[10]

Protection of the Customs, Cultures & Property Right of Those Already Living in the New Mexico Territories

After recognizing the difficulties of life in the southwest and the importance of keeping those lands for the United States, the Congress and presidents would face the problem of determining (1) how the land would be secured for those already living in the Southwest and (2) how the land would be transferred to those moving to the Southwest. With regard to those already occupying the land, the answer to the question would be contained in "local law" and an international treaty.

As stated above, Kearny's Code and the Treaty of Guadalupe Hidalgo guaranteed the protection of the customs, cultures and property rights of those already living in the New Mexico territories. Because many of these settlers had already acquired property titles and additional property use rights from the Spanish or Mexican governments or by occupancy and the promotion of the public good and the public weal, those rights would be protected and honored by the United States government under the treaty and Kearny's Code. Such protection also extended to those land use rights which were not codified by legal title because of the promise to protect local custom. The Treaty of Guadalupe Hidalgo and Kearny's Code even extended the protection of property and land use rights as those uses passed from buyer to seller and from generation to generation.

With regard to the people who were induced by the American government to go to the Southwest to make their fortune, Congress and the Presidents promised "liberal grants" of the land. As promised by President Polk:

> I recommend that the surveyor-general's offices be authorized to be established in New Mexico and California, and provision made for surveying and bringing the public lands into market at the earliest practicable period. In disposing of these lands, recommend that the right of preemption be secured and liberal grants be made to the early emigrants who have settled or may settle upon them [Emphasis added].[11]

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[8]Fillmore, Millard, *V Messages and Papers of the Presidents*, 1852. New York, 1879, p. 174.

[9]Fillmore, Millard, *V Messages and Papers of the Presidents*, 1850. New York, 1879, p. 87.

[10]Polk, 1845, supra, pp. 396-397.

[11]ibid.

In a separate address, President Polk stated:

> That it will ultimately be wise and proper to protect and make liberal grants of land to the patriotic pioneers who amidst privations and dangers lead the way through savage tribes inhabiting the vast wilderness intervening between our frontier settlements and Oregon. and who cultivate and are ever ready to defend the soil, I and fully satisfied. To doubt whether they will obtain such grants as soon as the convention between the United States and Great Britain shall have ceased to exist would be to doubt the justice of Congress.[12]

Along that same line, President Zachary Taylor told Congress in 1849:

> > [I recommend] [t]hat commissions be organized by Congress to examine and decide upon the validity of the present subsisting land titles in California and New Mexico, and that provision be made for the establishment of offices of surveyor-general in New Mexico, California, and Oregon and for the surveying and bringing into market public lands in those territories. Those lands, remote in position and difficult to access, ought to be disposed of on terms liberal to all but especially to the early immigrants.[13]

President Fillmore also urged that Congress move swiftly to establish a commission to examine the validity of all the lands claims in New Mexico and California, since he viewed the uncertainty of those claims as retarding the settlement of the country. In his annual address in 1831, he again stressed the need to encourage settlement of the Territories:

> The agricultural lands [of the newly acquired Territories should, however, be surveyed and brought into the market with as little delay as possible, that the titles may become settled and the inhabitants stimulated to make permanent improvements and enter ordinary pursuits of life.[14]

Franklin Pierce followed President Fillmore to the White House. He also believed that agriculture development in the west and southwest was of the utmost importance. He urged that the lands be swiftly and inexpensively sold to those settlers who would develop the lands for agriculture purposes.[15]

President Ulysses Grant continued to encourage the movement west with promises of the acquisition of property:

> The opinion that the public lands should be regarded chiefly as a source of revenue is no longer maintained. The rapid settlement and successful cultivation of them are now justly considered of more importance to our well-being than is the fund which the sale of them would produce. The remarkable growth and prosperity of our new States and Territories attest to the wisdom of the legislation which invites the settler to secure a permanent home on terms within reach of all. The Pioneer who incurs the dangers and privations of a frontier life, and thus aids in laying the foundation of new commonwealths, renders a signal service to his county and is entitled to its special favor and protection. These laws secure that object and largely promote the general welfare. They should therefore be cherished as a permanent feature of our land system.[16]

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[12] ibid

[13] Taylor, Zackary, *V Messages and Papers of the Presidents*: 1849. New York, 1897, p. 20.

[14] Fillmore, Millard, *VI Messages and Papers of the Presidents*: 1851. New York, 1897, p. 127.

[15] Pierce, Franklin, *VI Messages and Papers of the Presidents*, 1853. New York, 1897, p. 2749.

[16] Grant, Ulysses, *IX Messages and Papers of the Presidents*, 1853. New York, 1897, pp. 110-111.

While honest settlers and pioneers hastened west turning barren wasteland into productive farms and ranches, other not so honest and productive citizens also ventured west to attempt to make a fast fortune. Such stories of the graft and corruption of land speculators who would move into an area to deplete the timber and other resources then move on without purchasing or replenishing the land so that it would be suitable for use by permanent settlers caused Congress, in 1891, to alter it policies in an attempt to ensure that the honest settler would continue to build the American west. First, Congress permanently repealed the preemption acts and second, Congress added an amendment to the appropriations bill allowing the president to set aside “national Forest lands" or forest reserves.

Protection of the Rights of Livestock Operators Using the Forest Reserves

Even after the creation of the forest reserve system, **the importance of the use of the unclaimed federal lands for livestock grazing was recognized and protected**. As stated in the official annual report of the Secretary of the Interior in 1891, "One striking difficulty in establishing the reservations [forest reserves] themselves may be found in the fact that much of that land that should be reserved is as yet unsurveyed; other parts are subject to prior rights, or are expected to be included in railroad grants."[17]

Although the creation of the forest reserves or national forests had a very rocky start, livestock grazing was always part of the use of those lands. In fact, the Department of the Interior immediately began to adopt policies to protect the rights of livestock operators using the forest reserves. Those policies:

1. Encouraged the rancher to develop improvements to enhance the productivity of the Forest reserves.

2. Allowed title to remain with the Forest Service so that those lands suitable for private settlement would only be taken if such settlement did not interfere with the livestock owners grazing rights.

3. Allowed the states to collect taxes from the use of the federal lands to be used for the development of water resources.

4. Encouraged cooperative projects between the Department of the Interior and the individual livestock producer to better the land for livestock grazing.[18]

The Secretary of the Interior also established rules and regulations to implement the will of Congress in creating the forest reserves and to protect the prior rights of those within the borders of the reserves. The first regulations allowing the continued use of the forest reserves acknowledged the Spanish custom of allowing local ranchers to have first priority for use of the public lands. As described by the Secretary of the Interior in 1902.

Applicants for the grazing privilege are given preference in the following order:

(a) Persons residing within the reserve.

(b) Persons owning ranches within the reserve, but not residing thereon.

(c) Persons living in the vicinity of the reserve owning what may be called neighboring stock.

(d) Persons living at a distance from the reserve who have some equitable claim to use the reserve.

Class (b) under paragraph 16 should not be construed so as to allow large stock owners to obtain the preference therein given, by simply buying or obtaining small ranches inadequate for their

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[17] *Department of Agriculture Annual Report to Congress 1891*, Washington: Government Printing Office, p. 226.

[18] *Report of the Secretary of Agriculture, 1891.* Washington, Government Printing Office, 1892.

business. This will not be tolerated.[19]

Although these regulations initiated a good start in the recognition of the prior rights on the Federal lands, further progress in the recognition of these rights was made during the 1905 Denver meeting between the Forest Service and stockmen. During this meeting, the following report was made:

> The main points of agreement, worked out by the department and stock organizations, emphasized that those already grazing in the forest ranges would be protected in their priority of use [Law of Occupancy and Prior Appropriations Doctrine: that reductions in the number of grazed stock would be imposed only after fair notice; that small owners would have preference over large; that only in rare circumstances would the department seek total exclusion of stock from the forest; and that the policy of use would be maintained wherever it was consistent with intelligent forest management. Finally, some attempt would be made to give stockmen a voice in making the rules and regulations for the management of stock on local ranges through the establishment of forest advisory boards.[20]

In 1906, the above agreement was codified into regulation by the Forest Service "The Use Book." Those regulations permanently allocated grazing on the federal lands in the following manner:

Applicants for grazing permits will be given preference in the following order:

(a) Small nearby owners.
Persons living in or close to the reserve whose stock have regularly grazed upon the reserve range and who are dependent upon its use,

(b) All other regular occupants of the reserve range.
After class- (a) applicants have been provided for, the larger nearby owners will be considered but limited to a number which will not exclude regular occupants whose stock belong or are wintered at a greater distance from the reserve.

(c) Owners of transient stock.
The owners- of stock which belong at a considerable distance from the reserve and have not regularly Occupied the reserve range.

Priority in the occupancy and use of the range and the ownership of improved farming land in or near the reserves will be considered, and the preference will be given to those who have continuously used the range for the longest period.

It was by this system and the recognition of the long-standing use of the federal lands that created the permit and preference right system used by the Forest Service and Bureau of Land Management today.

Equitable Estates for Livestock Grazing on "Federal Lands

After considering the Spanish and Mexican customs and culture as protected by Kearny's Law and the Treaty of Guadalupe Hidalgo, the promises made to the settlers and pioneers by the American presidents and Congress and the efforts made to protect and continue livestock grazing even after the creation of the Forest reserves, the question to be answered by this comprehensive plan is whether those events have legal significance today. The answer to that question is YES.

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[19] *Forest Reserve Manual*. Washington: Government Printing Office, 1902.

[20] Hage, Wayne, *Storm Over Rangelands*, Bellevue: Free Enterprise Press, 1989, p. 161; Albert Potter, "Cooperation in Range Management," *American National Cattleman's Association Proceedings*, 16 (1913):55.

It follows, if a person follows the law, he has the benefit of the law. The settlers in the New Mexico territories in obeying the local laws and customs, relying on the promises of the U.S. presidents and obeying the rules and regulations required after the creation of the Forest reserves have earned an equitable estate for livestock grazing on public and Federal lands.

An equitable estate is a "right or interest in land, which not having the properties of a legal estate, but merely being a right of which courts of equity will make notice, requires the aid of such court to make it available. These estates consist of uses, trusts and powers."[21] In cases of "conflict" between an equitable right and a legal title, the courts will either suspend the enforcement of the legal title, "or decree that it [the legal title] shall be considered as held in trust for the benefit of the one having the equitable title. If equities are made out, the court will always require them to be satisfied before the legal title will be enforced."[22] [Emphasis added]. Actions to protect incorporeal rights are also within the jurisdiction of the equity court.[23] Equitable estate, according to Noah Webster's 1828 American Dictionary of the English Language, is "...The estate or interest of one who has a beneficial right in property, the legal ownership of which is vested in another..."

There are numerous reasons that the equitable estate in the federal lands created by Catron County's custom and culture, recognized by the presidents and Congress and originally protected and recognizably the U.S. Forest Service and Bureau of Land Management should remain in full force and effect today.

1. Livestock grazing on the unclaimed or federal lands is protected under Kearny's Code and the Treaty of Guadalupe Hidalgo. As described above, it was by Spanish and Mexican custom that a person grazing the unclaimed lands earned an equitable estate in that land. The extent or size of the equitable estate was determined by the amount of water owned by the settler. "A territorial statute of 15 February 1887 limited the cattle on a given range to the number which could be watered."[24]

2. The original Forest Service regulations sanctioning livestock grazing on the federal lands recognized and protected the grazer's right to use the federal lands. As stated above, only those livestock operators who could prove a prior use of the unclaimed lands, who had adequate water rights or "commensurate property" and who lived in or near the federal lands could acquire a grazing permit. The-fact that those grazing permits were originally taxed as private property further illustrates the Forest Service original intent of protecting livestock grazing on the forest reserves.

3. Even today, the Forest Service and the U.S. Army recognize the monetary value of a grazing permit. This is evidenced with the purchase of the Glenn Allotment by the New Mexico Department of Game & Fish and the condemnation proceedings by the U.S. Army when it acquired the grazing rights and the non-federal lands within the McGregor Range in southern New Mexico. The value placed on the Glenn Allotment was determined by the Forest Service. This documentation can be referenced in the Glenn Allotment file, Gila National Forest. The McGregor Range history is documented in a 1977 report from the Secretary of the Interior and the Secretary of Agriculture.[25]

4. The Internal Revenue Service (IRS) also recognizes a grazing permit on federal lands as a property right. In

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[21] *Bouvier's Law Dictionary*, p. 530, (1st. Ed. 1868).

[22] 27 *Am. Jur. Equity* § 64 (1966).

[23] ibid.

[24] Clark, Ira G., *Water in New Mexico*, Albuquerque: University of New Mexico Press, 1987, p. 147. (*NM Territorial Laws of 1889*, Ch. 61, pp. 126-27).

[25] "McGregor Range History", *Study of Fees from Grazing Livestock on Federal Lands*, A Report from the secretary of the Interior and The Secretary of Agriculture, Appendix C, Part 3(a), October 21, 1977.

Shufflebarger v. Internal Revenue Service. 24 T.C. 980 (1955), the Court held:

> That the grazing of livestock on national forests is to be regarded as a substantial, well-established, and indefinitely continuing pant of the national forests program, is not, according to our reading of the grazing regulations and the Forest Service Manual, open to question,... It seems to us abundantly clear that the statute and regulations contemplate that once the right to a fair and just allotment of grazing land has been acquired under the established procedures, that right, subject to some adjustment if it should become necessary for the protection of the range or for a more equitable distribution among preference holders, is to be regarded as an indefinitely continuing right, [emphasis added]

As determined by the IRS, that "indefinitely continuing right" is taxed upon the death of the owner for the fair market value of the permit. That value is based on the "animal unit" numbers or carrying capacity of the permit which is usually one third (l/3) of the value of the deeded lands.[26]

Equitable estates on federal lands are taxed by some of the western states. In California, grazing permits were recognized as equitable property rights in 1850, and are now taxed accordingly.

Summary-Federal Land Grazing Permits are an Equitable Estate.

Therefore, based on the customs and cultures of the people, the promises of the presidents. the historical agreements made with the United States Forest Service, and the value of grazing permits as recognized by the Forest Service itself, the Internal Revenue Service and by some states, Catron County hereby recognizes that those federal land grazing permits acquired under proper authority to be an "equitable estate." "As such, these property rights shall have the Full protection of the Fifth and Fourteenth Amendments to the U.S. Constitution.

[26]IRS letter of July 31, 1990 to Dick Manning, rancher, IRS letter of August 25, 1988 to R.B. Tippeconnic, U.S. Forest Service; IRS letter of September 30, 1983 to Robert Hadley.

CHAVES COUNTY
CUSTOM AND CULTURE

A BRIEF HISTORY OF THE CUSTOM AND CULTURE OF CHAVES COUNTY, NEW MEXICO

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With the vast majority of the land in Chaves County not subject to irrigation for growing cultivated crops, it was perhaps inevitable that grazing would be the dominant agricultural activity in the area. The grazing of beef cattle provided the original economic base for the county and continues to constitute a major portion of the present-day economy.

The grazing business in the Pecos Valley started in the mid-1860's, when James Patterson and a few others worked cattle in the area. Also, Hispanic sheepherders lived along the Rio Berrendo. The documented history, however, starts with the blazing of the Goodnight-Loving Trail in 1866 by Charles Goodnight and Oliver Loving. At the invitation of beef contractors, they brought Texas longhorns to sell to the Federal Government for Navajo and Mescalero Apache Indians at the Bosque Redondo Reservation and for soldiers at Fort Sumner who guarded the reservation.

With later cattle drives, the Goodnight-Loving Trail was extended northward until it reached Denver and even Cheyenne. Goodnight found markets for his cattle not only at Indian reservations and Army posts, but also at mining camps and wherever cattlemen wanted to stock the ranges and start raising cattle. Loving died rather early in the operation.

In 1867, John S. Chisum, already a big operator in Texas, brought in his first herd. He and Goodnight entered into a partnership, which lasted from 1868 until 1871. Chisum's crews would round up the cattle in Texas and drive them to Bosque Grande on the Pecos, about 35 miles north of present Roswell, where Goodnight's crews would take over and deliver the herds to market. The men would then split the profits.

When John Chisum brought herds through present Chaves County, he picked out all of the best heifers and kept them to stock the range for about 150 miles from Fort Sumner south to the Texas line. He became a permanent resident of New Mexico in 1872, with his headquarters at Bosque Grande. In 1875, he moved to the head of the South Spring River a few miles southeast of Roswell, where he established the South Spring River Ranch. By that time, he was beginning to upgrade the quality of his cattle by importing registered Durham bulls. Estimates of his herds in the mid-1870's are as high as 80,000 head, which made Chisum the largest cattle producer in the United States at the time.

Chisum trail herds left the Pecos Valley year around, mostly for Indian reservations in Arizona Territory. After the railroad reached Las Vegas, N.M., in 1879, cattle could be trailed there for shipping. It was not until 1894 that the railroad was built to Roswell, and then it came from the south the wrong direction for efficient marketing of cattle. That problem was finally resolved when the railroad was extended to Amarillo in 1899 and connected with major lines.

In the early 1880's, J.P. white established the LFD Ranch at Bosque Grande and served as manager and partner with his uncle, Texas cattle baron George W. Littlefield. Soon many other cattle ranches were started in the area. Major cattle operations included the Cass Land and Cattle Co., which established a ranch in 1884 that came to be known after 1889 as the Bar V; it was located in the Cedar Canyon area, some 60 miles northeast of Roswell. On the Penasco, about 75 miles southwest of Roswell, the Champion Cattle Co., initiated the CA Bar Ranch in 1885. The

Diamond A Ranch on the Rio Hondo west of Roswell was an early ranch. Capt. J. C. Lea started the LEA Ranch northwest of Roswell in the 1880's; he brought the first sheep to the area in 1877.

Much of the early sheep raising in Chaves County was carried on by itinerant sheepmen who caused conflict with cattle ranchers in the 1880's by grazing their sheep on the public domain and watering them at private sources. As a result of overgrazing, a law was passed that required the flocks to move at least six miles per day. This helped some, but there were uncooperative sheepmen that would graze out three miles on one side of a stream, cross over and graze out three miles on the other side -- thus obeying the letter of the law. As a stabilized business, sheep raising in the Chaves County area traces from 1880 when J.M. Miller bought his first flock and established a ranch. Sheep ranchers began to improve the quality of their stock by bringing in fine breeding stock from the eastern U.S.

Ranches raising cattle, sheep, or both soon proliferated until they were too numerous to mention. One operation that should be acknowledged, however, was Slaughter's Hereford Home on the eastern outskirts of Roswell. Col. C.C. Slaughter, one of the largest of the Texas cattlemen, established a breeding operation around the turn of the century. Some of the most famous Hereford bulls in the world were located there, and they attracted cattle producers and livestock writers from far and near.

In the early years of the cattle grazing industry in Chaves County, the accepted practice was "open-range ranching" without fences. Each ranch owned or leased its own land, but cattle were allowed to range far over the public lands in the Pecos Valley. Cooperative roundups, typical of the West, were conducted a couple of times each year so the individual ranches could process or sell their stock. The first drift fences in the area were built in the early 1890's; but when government inspectors discovered that the fences were on federal land, they ordered their removal. Some fences could still be found, however, under the pretext of fencing public roads.

The livestock industry in Chaves County grew along with the population and economy. Like other grazing areas, it was affected by the blizzard of 1887, the Panic of 1893, the two world wars, the Great Depression, and other developments outside the area. In addition to cattle and sheep, mohair-producing Angora goats were brought in by some ranchers. An important national event that had a lot of local consequences was the passage of the Taylor Grazing Act of 1934. This law required ranchers to identify their boundaries and to erect drift fences, so there was much fence-building over the next twenty years. With fences, ranchers soon realized they would have to drill wells to provide water for their animals; the Taylor Act therefore resulted in a boom in water-well drilling. The fenced ranches not only made it possible to improve the quality and health of the livestock, but there was a similar improvement in the wildlife and in the range itself.

In the long run, grazing in the county prospered. For example, during the World War II era, the wool warehouses in Roswell shipped three to five million pounds of wool per year; State totals showed that the value of sheep and mohair exceeded the value of cattle. Chaves County became the leading county in New Mexico in sheep and wool production and one of the top counties for mohair and beef cattle production. Some of the world's best award-winning wool and mohair are produced in Chaves County. The advent of plastic pipe in the 1960's made it possible for ranchers to provide water sources for their livestock about every mile, making it unnecessary for the cattle and sheep to walk long distances to find water. Beef cattle grazing was complemented in the early 1900's by a few stock farms, in the 1960's and 1970's by several feedlots, and in the 1980's and 1990's by numerous dairies.

The production of sheep, wool, mohair, and grass-fed beef continue as mainstays of the economy of Chaves County, demonstrating that grazing - the original basis for the development of the area -- is still a major factor today in the economy and culture of the county. The array of businesses in Roswell and the area that cater to ranchers is some indication of the importance of ranching: livestock-trucking firms, veterinarians, ranch supply stores, wool/mohair warehouses, sales rings, etc. Sheep and cattle producers' organizations are also quite active in the Pecos Valley.

Continued demand for the products of the range ensures that grazing will continue to be the principal, most efficient use of the semi-arid lands of Chaves County. Ranch hands in the 1990's may ride the range in pickup trucks or all-terrain vehicles (ATV) addition to or instead of horses; ranchers may market their livestock via video-tapes over satellite television channels and other innovative techniques; but the basic functions of livestock production today

remain substantially the same as they have been for many decades.

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CURRY COUNTY
CUSTOM AND CULTURE

Curry County

Curry County was carved from Roosevelt and Quay Counties in 1909. The forty by forty five mile stretch of land is a vast expanse of land that has become an agricultural oasis due to its underground water supply.

Cowmen became the first permanent settlers in present Curry County during the 1880's. The first influx of homesteaders started between 1901 and 1903 with the construction of the Belen cut-off by the Santa Fe Railroad in Curry County. The 250 mile-long rail line connect the Pecos Valley with the Northeast and enabled heavy freight trains to avoid the steep mountain grades of northern New Mexico. The railroad located its division point at Riley Switch, nine miles west of Texico. The Santa Fe Railroad had considered several other sites for the division point: Texico, the first town in present Curry County, Melrose, founded in 1906; Blacktower, also founded in 1916. Construction began on a roundhouse in Melrose but was terminated when a new Chief Engineer for the railroad decided that the new townsite of Clovis had better water and more reasonably priced land.

During the last territorial legislature assembly in 1909, House Bill No. 5 was presented. It proposed the creation of Curry County. Charles Scheurich, a resident of Clovis and a supporter of creating a separate county, went to Santa Fe to garner support for the creation of a new county. Through negotiations with senators from Roosevelt and Quay counties the boundaries of the new county were developed. The senator from Roosevelt County did not want to give up all the Santa Fe Railroad taxes on land through his county so he asked for about an eighteen mile stretch on the west. Hence, Roosevelt County now has a narrow panhandle in its Northwestern corner in which the Santa Fe Railroad passes. On the north, the senator had several communities which had always given him political support and he didn't want to give up those communities to a new county. That is the reason that the northern boundary is shaped like a stairstep. The creation of a new county received support from the Governor when Scheurich assured the Governor that the county would be named for him, Curry.

Curry County grew steadily from 1909 to 1949 as people continued to move to the area due to the railroad as well as the farming opportunities in the area. The second period of growth for the county began in early 1950s with the introduction of deep well irrigation and the reactivation of a World War II airfield located west of Clovis. Cannon Air Force Base was reactivated in 1951 due to the Korean conflict and became part of the Air Force's Tactical Air Command. Cannon has become an important part of the economic growth of Curry County. It contributes more than $50,000,000 annually to the local economy and one third the population of Curry County is comprised of military personnel and dependents.

The cattle industry, the county's first industry, continues to be an important source of revenue and 395,000 acres of rangeland and wheat pasture are still used for cattle. Agriculture contributes over $30,000,000 to the county's economy and has undergone massive changes since the 1950's. The railroad also continues to be a viable part of the economy with approximately 775 employees and contributes approximately $12,000,000 annually to the economy. The economy of Curry County continues to be stable and diversified.

The History of Curry County continues to play an important role in the economy. Those industries that were the cause of the creation of the county have endured.

The future economic development of the community will continue to depend upon agriculture, ranching and the development of new industry. Key to bringing in new industry will be the Clovis Community college. Learning institutions bring a vast array of opportunities to any community. The future of Curry County rests on the future generation that find challenge and opportunity in Curry County.

EDDY COUNTY

CUSTOM & CULTURE

Eddy County is located near the southeast corner of the state boarding Texas on the south. The Pecos River crosses the county from North to South and enters Texas at the lowest elevation in New Mexico, south of Carlsbad. The River has been dammed at several points in the county forming various reservoirs and lakes. Irrigation land (75,000 acres) in the Pecos Valley produces hay, cotton, chili and pecans but most of the county is semiarid brush and grassland suitable for cattle and sheep ranching. Mining of potash, oil and gas provides a significant source of income in the county.

Carlsbad is the most populous community and the county seat. The second largest city is Artesia. The Village of Loving is located in south Eddy County, to the southeast of Carlsbad and is a farming, ranching, and residential community. The Village of Hope is located in north Eddy County to the west of Artesia and is an agricultural community.

Four historic trails follow the Pecos River through Eddy County. The earliest of those is one blazed by the Spaniards in 1536. Apache Indians lived in the region at that time, and they found abundant game in the mountains and on the plains and many kinds of fish in the rivers. The Guadalupe mountains were where many of the Apache Indians were located at that time.

The Guadalupe Mountains are the southernmost extension of the Rocky Mountain range. Today, with a few exceptions, the entire area is part of the Guadalupe District of the Lincoln National Forest. There are many families engaged in the ranching industry in the southern Guadalupe Mountains.

In 1866 cattlemen found a virgin grassland lying westward between the Pecos and the highlands. The largest numbers of settlers arrived in the 1880's and 1890's. The county was organized in 1889 from a part of Lincoln County. Carlsbad was made the county seat in 1890.

In 1887 two brothers, by the name of Eddy, who had a ranch in the area of today's Carlsbad had found both funding and a place take a small ditch from the deeply cut Pecos. They and their ever increasing circle of partners soon extended both their plans and their dreams until they were attempting to bring ditch water to two hundred thousand acres along a hundred mile stretch of the river lying south from Roswell. It was the largest irrigation project that had ever been attempted in the United State. It relied on several dams and canal systems that were designed and created by the West’s corps of railroad engineers since irrigation engineering did not exist yet.

In the late 1890's, after years of ups and downs with irrigated farming, ranching, again became for twenty years, the major economic support for the Pecos Valley, and the local economy swung with the frequent ups and downs of cattle and sheep prices. By this time, however, the successful drilling of stock wells had added the plains to the east as an additional large ranching area.

By 1903 guano was being taken from one tunnel of Bat Cave, today’s Carlsbad Caverns. The claim would later be made that one hundred thousand tons were removed there. Most of the material was shipped to Arizona and California for use in the citrus groves. One of the guano miners was the Jim White who is credited with exploration of the scenic areas of the Bat Cave. In 1923, when the federal government declared the cave a national monument, it was a major coup for Carlsbad and Eddy County that the official name was shifted from Bat Cave to Carlsbad Cave and latter to Carlsbad Caverns. Tourism began to emerge as an additional mainstay in the local economy.

There is an eighty year history in the county of development of mineral resources. Oil was first discovered in today's Eddy County in 1913. Across the decades, the oil and natural gas extraction industries shifted through cycles of greatest and lesser expansion, having grown to be a more and more important part of the economy.
In 1925 a group that was exploring for oil discovered, instead the county's major potash deposits thirty miles east of Carlsbad. Potash has been a major source of funds for this county ever since. The more recent sulfur development south of Eddy County in Texas has also brought economic benefit to this area.

Carlsbad got its first major taste at the federal feed trough during World War II when an army airbase and bombardiers school were located on the southern outskirts of town. In the 1950's the federal government returned to the area to sink Project Gnome into the vast salt beds that underlie this part of the Permian Basin. The first major project in America's pursuit of peacetime uses for atomic energy, the 1961 detonation produced a ruptured chamber that left all of the planned experiments undone.

By the 1970's the federal government was again searching for a deep salt bed. Carlsbad launched a major effort to attract the Waste Isolation Pilot Project (WIPP) program a national radioactive waste depository, at about the same time county, state and federal officials were in Washington attempting to get federal construction of Brantley Dam on the Pecos River between Carlsbad and Artesia. Both efforts were successful. Carlsbad also boasts being the home of a state zoological and botanical garden, the Living Desert State Park. The recent discovery of the huge Lechuguilla Cave system immediately adjacent to Carlsbad Caverns is said to be even more spectacular than Carlsbad Caverns. So far, Lechuguilla Cave does not appear capable of development for public access.

Like Carlsbad, Artesia's history is rich in discovery. With the completion of the Pecos Valley Railroad in 1894, Artesia's first given name was Miller's Siding. The community had yet another name change when promoter Baldwin Stegman settled in Miller's Siding and married the famous cattleman John Chisum's niece Sallie Roberts. Together they established a post office, naming the town Stegman.

In 1903, the town adopted a new name, Artesia for it's Artesian wells. That same year, the Artesia Townsite company joined with the Artesia Improvement Company to drill the first Artesian well in the community. By November, a well 830 feet deep with a six inch casing was completed three miles outside of town making it the world's largest Artesian well at that time. The age of the big water well had come and each week saw a new well surpassing the last. From 1905 to 1907, the ample water for irrigation brought over 1,200 people to area farms.

1923-a record year for Artesia when two men from Robinson, Illinois hearing of the oil traces in the Artesian wells, brought a steam powered cable tool rig to drill for oil. After several dry holes, the oilmen were ready to pack up their drilling rig when Martin Yates II acquired state leases east of the Pecos River. Yates talked the two into drilling one more well which was more promising. The next well was gas, while not marketable then, supplied energy for equipment on future wells. By April of 1924, the company brought in well Illinois No. 3 which was the first producing well in New Mexico and the third in the oil-rich Permian Basin.

The next four decades were a period of steady growth for Artesia. Its agriculture production flourished with the ample water supply and great soil conditions. Oil and gas production and processing helped to meet the needs of an energy-hungry world.

Artesia lies within the heart of the Pecos basin with 45,000 of the counties 75,000 total acres of irrigated lands. Navajo Refining is one of the largest independent refinery's in the United States. Because of the discovery of gas in 1923, Artesia is also the headquarters for Yates Petroleum Corporation, also one of the largest independent oil and gas companies in New Mexico and the United States. The Federal Law Enforcement Training Center is a large training center for all branches of law enforcement from all over the United States.

Artesia Alfalfa Growers Association is the largest agriculture cooperative in New Mexico. Dairies and chile processing plants are also important economic components of Artesia and Eddy County.

Eddy County was built by people with dreams, courage and vision. The same still holds true today. Eddy County is

rich in history, natural resources and it's people. Agriculture, ranching and farming, founded Eddy County. Today those industries are still the anchor of the County along with the many other invaluable natural resources, and ever expanding industries.

GRANT COUNTY
CUSTOM AND CULTURE

GRANT COUNTY

CULTURAL AND HISTORICAL PREFACE

Grant County was created by the New Mexico Territorial legislature, January 30, 1868. The territory was taken from the western portion of Dona Ana County and was formerly part of the Republic of Mexico. The culture of Grant County has been influenced by both Mexico and the United States as reflected by the two languages that are widely spoken throughout the County-Spanish and English - and by cultures of the Native American peoples who populated the area prior to European settlement.

The area of New Mexico that became Grant County was home to ancient people for-thousands of years before historical records were kept. The Mogollon Culture which occupied the Mimbres Valley perhaps as early as 300 B.C. was the forerunner of the Mimbres Culture which flourished in the area for hundreds of years around 1000 A.D.

By the time Spanish explorers from Mexico reached the area in the 17th century, it was the homeland of nomadic Apache tribes. The fiercely independent Apache resisted settlement and fought to defend their homeland, first from the Spanish, and then the Mexicans, and later the Americans. Because of their familiarity with their natural environment and adaptability to use European weapons, the Apache slowed or stopped Mexican and American expansion until the late 1800's in the area that would later become Grant County. Although a settlement was established at Santa Rita in 1800, and Fort Bayard, Fort West, and Fort Mobane were built to protect the miners and pioneers from attack, the Apache remained a threat, even after permanent settlements were established at Pinas Altos, on the Mimbres at San Lorenzo, and in 1870 at La Cienega de San Vicente, which later became Silver City.

In 1879, Victorio, Chief of the Chihinne Apache, accompanied by his sister, Lozen, who the Apache believed to have the power to determine the precise location of the enemy, began a series of violent and successful raids that reportedly led to the death of 300 Mexican and American settlers within a 150 mile radius of Silver City.

In 1883, Judge McComas, a Grant County Commissioner, and his wife fell victim to the Apaches, while their young son Charlie was abducted. The massacre of the Marques family - father, mother, and three children - and further raids throughout the County, prompted the Grant County Commission to offer a $250 reward for each Apache scalp in 1886. A $500 bounty was offered for the scalp of Geronimo.

While the Apaches and the newcomers were often merciless toward each other, they sometimes spared the lives of children who were taken captive. Thirteen-year old Jimmy (Santiago) McKin was abducted from his home on the Mimbres by Geronimo and held seven months before being released to his father. Child abduction was not limited to the Apache. Mangas, the only son of the great Apache chief, Mangas Coloradas, was abducted by Anglos during the fight in which John Bullard was killed. After four years of living with various Anglo families in Grant County, the young chief was returned to the Apache where he became, like Geronimo, one of the strongest Apache leaders, completely dedicated to his people.

Indians were far from the only danger the early settlers faced. Life was hazardous; mining accidents and murder were common. Pine Cienega and the area around Mule Creek were home to a notorious band--of cattle rustlers, -- The Upper Mimbres was the headquarters for a band of Mexican cattle rustlers who reportedly robbed the Georgetown stage of a thousand dollars in cash. - The leader of the band, Pilar Perez, abducted a sixteen-year old girl, Petra Parra, after shooting a deputy sheriff. Petra testified against - Perez when he was captured,- - and then eloped with one Francisco Lara from Pinos Altos soon after marrying another man.

Tales of romance and adventure abound in Grant County. Henry McCarty lived for a time in Silver City where he was put in jail for robbing a Chinese laundry - the first in a career of crimes. Escaping through a chimney of the jail, McCarty left Grant County and went on to become a legend as Billy the Kid.

The Chinese, who served as cooks and launderers for the miners, formed a substantial community around Texas and Yankie streets in Silver City and farmed vegetables on a flat south of town known as Chinese gardens; while in Pinos Altos they occupied dugouts in the gulches around town. By 1879, the newspapers reported various opium dens operating all over Silver City and Pinos Altos.

The mining towns of Grant County were quite lively, filled-with saloons, gambling, and bordellos. At one time, there were nine saloons in Central and numerous "houses of ill repute" which served the soldiers of Fort Bayard. Kate W. Stewart emerged as an early leader among the women of "easy Virtue" in Silver City. The Silver City Enterprise reported that "there is no other town in the west where this class of humanity are shown as much liberty as in Silver City." Stewart's Texas St. house passed into the hands of Bessie Harper, who was destined to become a Silver City institution as was her successor, Mildred Cusey, who operated out of a building known as "Millie's" located at the site of the current Silver City Post office.

Much of the frontier spirit of Grant County still remains. The people of Grant County have always been determined to survive and maintain their way of life in spite of many obstacles, including the depletion of mineral ore and the eventual closure of most of the mines in Grant County. The independent nature of the County was evident in the "Grant County Rebellion". In 1876, the entire county threatened to secede from New Mexico and join Arizona, going as far as to frame their own "Declaration of Independence". While the "Rebellion" was unsuccessful, it brought new respect to Grant County from the northern "Santa Fe Ring", and a bill was passed that not only incorporated Silver City, giving the town such special privileges as assessing and collecting taxes, but it also granted the town the power to establish schools, which led to the formation of the first independent public school district in the territory.

More recently, the spirit of independence was exhibited by more than 100 miners and their wives who went on strike against the Empire Zinc Mine in Hanover on October 17, 1950, for equality in wages and benefits, and equality on the job. After the union was prevented from picketing by a Taft-Hartley injunction, the women and children took over the picket lines and refused to back down even after they had been incarcerate. The Empire Zinc Strike has become an inspiration for people everywhere who struggle for justice and equality.

From the earliest times in Grant County, strong, capable leaders have emerged to uphold the values and viewpoints of their people. - Mangas Coloradas and Cochise are two Apache chiefs who refused to be removed to a reservation, preferring to die in freedom than to live in captivity. N.Y. Ancheta was a successful merchant in Pinos Altos before he moved to the Mimbres where he established merchandising, milling, and ranching enterprises that were essential to the growth of San Lorenzo and San Juan. Elizabeth Warren owned and operated many successful businesses in Silver City. She hired M.R. Koehler, another woman, as the foreman for her contracting business. Dressed in their culottes and men's work shoes, Mrs. Warren and Miss Koehler were often seen on the streets showing their work crew of men how to pour cement. Rebecca Brewer, an African-American woman employed by Mrs. Warren as a concrete worker, owned virtually the entire east side of Silver City at one time. One of the more prominent citizens of Grant County, Mrs. Brewer was an acknowledged "curandera", or healer, and also a jailer. She was reported to be 104 years old at the time of her death in 1970.

Agriculture

Agriculture has been crucial to the residents of Grant County from the time when the Indians of the Mogollon Culture cultivated crops in the fertile flood plain of the Mimbres Valley, and hunted in the surrounding hills. The Mimbres Valley has continued to be the center of agricultural production in Grant County.

During the latter part of the 19th century, the Mimbres was heavily farmed in food crops such as corn, potatoes, and vegetables, with hay and alfalfa grown for livestock. Although fruit crops, such as apples, peaches and grapes were first planted in the 1870s, large commercial orchards of several thousand trees each were begun in the 1880s and 1890s. During the l920s large scale apple production was initiated in the valley by Grover McSherry of Faywood. The agricultural census figures estimate that there were 4,575 acres of improved farm land, comprising 68 farms in Grant County in 1880, reaching a peak in 1920 of 545 farms on 31,230 acres of farmland.

Apparently, the first purebred cattle were brought to Silver City from Missouri in the early 1870s by Harvey H. Whitehill. Starting with 15 Durham cows and 1 bull, Whitehill built up his - herd to 1,060 head within 10 years. Richard Hudson ran about 600 head of cattle near his Hot Springs resort in the late l870s. Hudson later became a leading member of several Territorial cattlemen's associations. On January 15, 1881, the Southwest Stockmen's Association was formed in Silver City to protect the stock of the membership, to curtail rustling, and to lobby for legislation beneficial to the industry.

Cattle companies formed and bought up large tracts of land to run their cattle on the open range. There were the Oak Grove Live Stock, Cuchillo Cattle, Old and New Mexican Ranch and Cattle and San Simon companies, all incorporated in the mid-l880s. Around 1883 Arron and Marion Lasater drove 2,000 head of cattle from Texas to the Big Gallinas near Sherman where they established the NAN Ranch. By l890, when they incorporated as the Victorio Land and Cattle Company, the group held most of the watering places between Silver City and the Mexican border.

The 1870s and 1880s was the era of the cattle baron, of which there is no better example than Tom Lyons. The L/C Ranch rose through the efforts of Lyons and Angus Campbell. The pair began to acquire land in the early 1880s for stockraising, starting with the Nogales Ranch on Duck Creek. By 1885 they had purchased 19 ranches on the Gila, and within five years owned "all the range from the mouth of Duck Creek to above Mule Springs, on both sides of the Gila, and every waterhole and meadow within a day’s ride."

Undoubtedly, the L/C Ranch was one of the truly great ranches of the West. At its height in the 1890s, Lyons controlled a million acre range carrying 60,000 head. Lyons dreamed of an operation that would make Grant County the biggest cattle market west of Kansas City. Lyons and Campbell improved methods of ranching and cattle breeding throughout Grant County. While Campbell developed extensive feed and water systems, complete with dams, reservoirs, and water tanks to irrigate acreage for food for both cattle and employees, Lyons set up wide-ranging distribution systems with commission houses, finishing pastures, and slaughter-houses in Denver and Los Angeles.

The L/C continued to be expanded until it resembled a self-sustaining feudal principality. The ranch employed 100 wagons, 750 riding horses, 400 work horses, 75 cowboys in season and 3-6 chuck wagons. The farming operations employed 100 Mexican families, most of whom came from Chihuahua. Being people of culture, Lyons and his wife had a well-stocked library, and held music and lavish entertainment at their ranch headquarters, which became a mecca for the famous and wealthy.

The 1880s witnessed a gradual transformation of the ranching industry from open range, with large unfenced expanses of land held through the Strategic ownership of water sources in the area, to the era of fixed ranches with fenced pastures owned or leased by companies. By the turn of the century, the industry was forced to reorganize on a smaller, more efficient scale. Grant County continued to lead the region in cattle production with some 198,519 head reported by the 1910 census.

As the population of Grant County grew, the amount of acreage used for agriculture decreased. In Grant County

today, there are 842,969 acres of deeded land in grazing, 2,721 acres of cultivated land, 200 acres of orchards, and 362 acres of vineyards. There is an estimated 55,000 head of cattle. The major crops continue to be alfalfa and apples.

HIDALGO COUNTY
CUSTOM AND CULTURE

Summary of the CUSTOM & CULTURE of the People of Hidalgo County

By: Parsifal Smith, Department of Cultural Studies, University of Arizona, Tucson, Arizona

Hidalgo County in southwestern New Mexico seems typical for this part of the Southwest: small communities tucked into the vast desert and oak-crowned hills, farms and ranches marking the little spots of human habitation outside the small towns. But the quiet of Hidalgo County, like other counties in America's rural west, belies the struggles taking place over the lands these peoples reside within. It is primarily a question of power and a response of resistance; a struggle between rural and urban values and, for many of the people in Hidalgo County, a question of freedom. All of this centers upon the land-- land that means a great many things to a great many people -- forming self and community identities in the same way the wind and rain and sun formed the lands that inspire the world to reach for their own piece of New Mexico's landscape. Through all of this --because all of this -- a picture of the cultures and lifeways within Hidalgo County articulate themselves in the resistance emerging from the complex gathering of desires. It is these lifeways and the cultures they have built that I strive to articulate through the voices of the residents in Hidalgo County, hoping that from a recognition of the customs and traditions inherent and inspired by the lifeways in Hidalgo County, any decisions made about the fate and direction of the land and people in Hidalgo County will keep foremost the desires of the peoples who live here now, for it is their lives that will surely be affected most.

People and the Concept of Place:

Whenever you sit down and talk with the people living in Hidalgo County you're likely to bear the word place come up in the conversation. On one hand, place can mean something very simple, a common reference to a certain space, nothing more or less. On the other hand, place is recognized by social scientists to express a person's relationship to home, community, and the land that surrounds them -- especially in rural areas like Hidalgo. Place, like landscape, is the:

> whole complex of cultural response such as memory, experience, values, evaluation, and judgment [which] arc present in the processes of cognition with the result being a construction of environment which is perhaps analogous to a map of a landscape: a representation but not the terrain itself.[27]

In other words, place holds a very personal, emotional and even spiritual meaning for people when they use the word in the context of the conversations recorded here in a cultural study of Hidalgo County. Place is inseparable from the person's own sense of self as well. The history of place being the history of a person: the site marking, creating, and encouraging his or her identity that, in turn, is transferred to and transforms into the identity and values of their community. Place, then, when used by the peoples I speak with in this study, should be recognized as an expression in many ways of the very heart, or essence of their lives. That is, not only will the word be pointing to specific geographic sites and features, but also to convey for these people a deep sense of commitment: of history, of complex cultural and family ties to the land they work with, the structures they call home. The communities they live within, and the ecology that has written the nature of their being inexorably into the land. It is for that reason that Daniel Kemmis, author and mayor of Missoula, Montana, suggests that for areas like Hidalgo County, there is:

> perhaps no better way to get a sense of what this place is than to ask why it (and not someplace else) became

[27] I.G. Simmons. Interpreting Nature: Cultural Constructions of the environment (London & New York: Routledge, 1993), 76.

> the last of that old frontier. There were good reasons that this dry, windy, cold, hot, remote region was so late in being settled. Those features still keep the region largely unpopulated. This in turn, preserves the sense that the land is dominant here - that this is a place of more land than people. It seems to come natural, then, that people tend to define themselves in terms of the land that surrounds them.[28]

There is a strong sense of the land in Hidalgo County, visibly worn into the features and words of the people here, whose small towns huddle in the midst of an ever present horizon and endless sky. It is this, sometimes overwhelming stretch of land that at once isolates and connects the people and towns to one another, forming throughout as a community of rural interest and rural values. In many ways, perhaps at the most fundamental level, values and the way people respond to differing values from their own, is a the crux of many of the problems counties like Hidalgo are confronting throughout the rural West. It is likely that very little will be achieved by such a study if an interested parties do not deal first with the issues of differing value-systems as well as understanding that the different values are not a result of generation alone, but of a new mind-set brought to rural areas from urban influences. As J. Kennedy explains, underlying:

> all this socio-political change is the shift in public land values of an American industrial nation that emerged from WWII to become an urban, post-industrial society in the 1970's. Much of the American public hold environmentally-oriented public land values today, versus the commodity and community economic development orientation of the earlier conservation era (1900- 1969).[29]

This is not suggest that the difference between rural and urban values is a generational one. People in general in Hidalgo, regardless of age, share the same outlook on the land and their relationship to it. Hidalgo, like most of rural America, aligns closely with the "earlier conservation era:" finding value in things like home, family, community -- those ideals that our urban residents are struggling mightily to regain. And it is these ideals that separate urban from rural identity for most of the people in Hidalgo. Residents of Hidalgo often remarked on this, with statements like:

> the values are different here -- that's why we moved here from California: the values are different from those in big towns. We're more family oriented.

The difference in values-systems between rural and urban peoples is recognized just as readily by those people Wallace Stegner calls “stickers”[30] people who have lived most or all of their lives in Hidalgo, sharing a sense of place and a connection with their community, enduring thick and thin to build a home for themselves and a place for others to come after them and continue the values that have made their communities strong. All of which begins with a history, a connection to a site through self and personal relations -- things that begin to imbue geography with history; turning land into landscape, site into place, peoples into communities. The kinds of people who have built what J. Kennedy calls.

> a region where family farms and a small-town, rural way of life have long been central to the resident's sense of identity and their vision of a good life.[31]

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[28]This is taken for Daniel Kemmis’ work Community and the Politics of Place, published by the University Of Oklahoma Press, 1990 (p 41). And although Kemmis is referring to the area in Montana, the sense of people and land and the last frontier are just as fitting to Hidalgo County.

[29]J.J. Kennedy, “Changing Social Values and Images of Public Rangeland Management” in Rangelands 17(4) August 1995.

[30]Wallace Stegner, The American West as Living Space (Ann Arbor: University of Michigan Press, 1987).

[31]Kemmis, 39.

It is this “vision of a good life" in which residents of Hidalgo share a well-formed sense of community -- a sense of their neighbors lives being closely connected to their own, and inspiring comments like:

> we have our own little Utopia down here... it's a small, tight-knit community where everyone belongs.

This is a strong statement, but not an isolated one. People in Hidalgo extend themselves to create a place where “everyone belongs" because it is central to the way in which people in Hidalgo County form their own sense of self and how, most often, they develop the values they carry with them throughout their life. The words above were echoed throughout my interviews with residents of the county as families and friends maintain close contact through the place “where everyone belongs” -- a place that nurtures, protects, and maintains the values and traditions that the lifeways have developed among the people here.

Americans, wherever they live, tend to regard rural people as honest, hard-working, self-reliant, and law-abiding individuals for whom the land is the generator of generations, valued for its beauty as well as for what it produces. Values most of us are familiar with and to which our nation's leaders so repetitively evoke to their own characters, can be found in abundance in the vast majority of the people one meets in Hidalgo County. It is not imposed nor affected, it merely rests on people's shoulders here like the guardian of our nation's fundamental values where, as William Cronon writes, it:

> continues to this day as a key element in the mythology and idealogy of American nationalism...where many Americans continue to locate a central core of their identity. The meaning of heroism, the relation of the individual to family and community the nature of patriotism, the value of freedom, the challenge of making a home.[32]

All of these are central components to people's lives in Hidalgo County, getting passed along by the people living in the region to those new to the area through social gatherings, work-sharing, or experiences with children, grandchildren, and neighbors. It is a function that Barre Toelken calls the ideational core of the community, interactions that:

> help to reinforce and maintain the central ideas of the group (their value centers), help to induct newcomers (children and greenhorns), into the group, and help to define outsiders and strangers.[33]

Work-sharing, what we know as “being neighborly”, is another important way people's identities are not only strengthened within themselves but tied intimately and become interdependent with others in the community. As one resident explains:

> I help my neighbors and they help me ..... hell, we get along with everybody in the county...we work together all the time. He [neighbor] is gonna help me tomorrow and I’m gonna help him Saturday.

The difference between rural and urban values is a major concern as urban influx and encroachment into rural areas continues to increase in the Southwest. Much of the problem, as I've already said, is simply a matter of coping with differing values: values that are so deeply embedded, virtually inseparable from the person, that they demand the recognition of almost separate realities. The majority of urban people are likely to see a vastly different horizon when they look upon the spaces of the Southwest and Hidalgo County than the one seen by rural residents. A difference which prompts J. Kennedy to explain, rural people tend:

> to have different interactions with rangelands than urban societies, often resulting in different perceptions, values and uses. Many modern conflicts over rangeland or wildlife issues are conflicts of agricultural

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[32]William Cronon, Under an Open Sky, 24 (see note 2).

[33]Taken from Barre Toelken, The Dynamics of Folklore (Boston: Houghton Mifflin, 1979). 106

(utilitarian) and urban (biocentric) values about human relationships with and the use of nature.[34]

The different views over rural landscapes results in a somewhat diabolical tendency in politics and academics to label rural people as "traditional" and urban people as "modern" -- giving rise to the misconception that rural people are less informed and less willing to change in the face of newly "emerging world" (read urban) views. It is a tendency that makes a lot of people in Hidalgo uneasy, even angry in some, like the resident who told me:

> I hate this traditional/modern dichotomy: these people are traditional and these people are modern. In order to understand intellectually the differences, they use this traditional/modern dichotomy: these people are traditional and these people are modern. What bothers me, is that they were talking about traditional people in the 20th century, assuming that these people stayed in the stone-age. They look at us as being clannish, and backward, which for them [urbanites] is being apolitical.

This dichotomy is a problem recognized well beyond the hills of Hidalgo as social scientists from a wide range of fields and interests begin to uncover some of what lies in the shadows of this division. Stuart Hall is among the foremost of these, and writes:

> the changing balance and relations of social forces throughout ... history reveal themselves, time and again, in struggles over the forms of the culture, traditions and ways of life of the popular classes... that is why popular culture is linked, for so long to questions of tradition, of traditional forms of life -- and why its 'traditionalism' has been so often misinterpreted as a product of a merely conservative impulse, backward looking and anachronistic. Struggle and resistance -- but also, of course, appropriation and ex-propriation. Time and again, what we are really looking at is the active destruction of particular ways of life, and their transportation into something new. "Cultural change" is a polite euphemisin for the process by which some cultural forms and practices are driven out of the centre of popular life, actively marginalised. Rather than simply "falling into disuse" through the Long March to modernization, things are actively pushed aside, so that something else can take their place.[35]

In other words, being traditional is not a way of hiding from change, but questioning the change that occurs and making the conscious choice whether to abandon the old to embrace the new. For the people of Hidalgo, their lifeways are centered around family and place, "traditional" things that mean more to them than entering the tourist consumptive market that much of the Southwest has declined toward.

People throughout Hidalgo County expressed a relationship of trust in their neighbors, a willingness to pass along the values of their community to others, and a general friendliness and satisfaction with the region they inhabit. Most of the people have a definite sense of who they are through their interactions with the communities and the majority of the people I spoke with, young and old, told me this was their home and where they wanted to stay.

Ranching:

> Man is part of nature, and yet he is not: and in that tension he finds his existence.[36]

Throughout my research in Hidalgo County I was struck by the commitment to place that I saw and heard in the

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[34] J.J. Kennedy, "Changing Social Values and Images of Public Rangeland Management" in Rangelands (17(4), August 1995.

[35] Stuart Hall. "Notes on Deconstructing The Popular" in People's History and Socialist Theory, Ed. By Raphael Samuel (London: Routledge & Kegan Panl, 1981). 227-8.

[36] Thomas Sieger Derr, Ecology and Human Need (Philadelphia: Westminster Press, 1975). 19.

residents of the small towns there. Yet this love of place is expressed nowhere as poignantly or powerfully as by those people whose love for land, home, and community is unparalleled and yet who face the highest risk of losing it all in the turmoil of the changing terrain of national values and political economics: the ranchers. Women and men who have lived their lives in the homes their forefathers built, who have crossed distance and duress that few would endure all for the sake of a lifeway that, for them, holds the essence of the values America was founded upon. For them, place runs deep -- it is attached to every moment of their lives and is as important to their identity as their own flesh and blood. For the rancher, place signifies the sacred, the
resting ground of those who embodied the ideal of the American frontier: women and men who ventured into a "wilderness"[37] to secure a home, to create a lifeway around values they were willing to defend with their lives, and to build a place for those who came after they had gone. For these people, ranching becomes a religion and their birthright is to live and die in the same space as mother and father, or in the same place they will pass to their children and grandchildren. For these people the ranch is not only identity, it is destiny. For them, there is no other place, there is only where they are. It is best expressed by a woman who has spent her seventy years on the ranch her mother and father built and when I asked her why she stays, she told me in tears:

> This is my home. This is my life. My way of life. And my children ask me, "Well where do you want to live, mom, when you can't live there [the ranch]? And I tell them, "I don't want to be here, if I can't live here."

For many of the people who live in Hidalgo County, it isn't a question of choice, of picking the place they want to live. For them, there is no life outside of home. As it is so emotionally and eloquently stated above, there is no second option when it comes to place for these people. That is why the demand upon politicians and policy makers is so high here -- the stakes are high-peoples lives are in the balance. If decisions are made which force some of these people to move from their lands, then it will not only be, as many people in Hidalgo see it, as a violation of human rights, it will be, in many cases, a violation against life itself. Another resident strove to make her point as adamantly as she could when she told me:

> You can't take these people and move them. They think it is paradise here, and everyone here will tell you that. These people just cannot move. They cannot move. They're not mobile people. They're not city people, you can't just tell them, "I have a nice beautiful apartment for you." They don't care about a beautiful apartment. You should see some of my neighbors and the kinds of dwellings they live in. They don't care about these things. They don't live in fancy houses, but they think theirs is the prettiest place in the whole world.

The people who live in Hidalgo are not only engaged in a way of life they find attractive -- ranching and ruralness is their culture, it is every fiber of who they are, how they journey through their lives, and how they expect to die. And while voices will be raised for the economic "realities," there are other, far more humanistic realities as well. Even though it:

> is possible to buy the land from some of these people with money, because times are really tough right now,

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[37] The word ***wilderness*** is always at best a problematic one. As the descendants of European conquers swiftly became colonists they moved into a region already occupied by the first peoples to explore, conquer, and colonize the continent. William Cronon explains that "settlement" really meant "land taking, and land taking meant violence. Violence was central to the frontier experience ... Always it drew dark lines on a landscape whose newly created borders were defended with bullets, blades, and blood ... The more settlers invested their labor and their dreams in the land, the more they belonged to the land and the more the land belonged to them. Indeed, the longer they (and their children and their grandchildren) perceived themselves in such terms, the less one could call them invaders. Before very many years had passed, they too were defending the homes of their ancestors (Under and open sky), 15." I'm saying all this from the perspective of the people here in Hidalgo County, for them it is the home of their ancestors and no one else's.

> these people will break emotional if you do. Their ain't no willing sellers up here. But what is a willing seller? Nobody thought to ask where did it leave them and where did they go after that.

Indeed, ranchers in this part of the West who have, for years now, felt threatened by the implementation of "land reform" and otherwise feel the effects of a changing economy and, for them an often alien and uncertain set of values being brought from primarily urban areas, are moving ahead with very visible forms of resistance and change. It is in these forms of resistance and central to the impetus for the change that one recognizes “how important cleavages and opposition can be in sustaining a regional identity.”[38] What ranchers are resisting and the sacrifices ranchers are willing to make to ensure the continuation of this resistance, underscores the deep fracture at a fundamental level ranchers now feel between themselves and organizations whose ideologies are being brought into this part of the Southwest. Ideologies which arise most often from urban mindsets and have been forced upon rural people, ranchers especially, by politicians anxious to garner the massive numbers of voles and dollars in those urban regions. Ranchers encounter threats to their culture and this, in turn, deepens the fractures within their way of identifying with themselves as Americans but also as keepers of something sacred; holders of the great American myth of the cowboy and what that myth represents to our nation. For ranchers in Hidalgo ideology is a lot less ideal than many of us recognize it to be. As a resident said, “I understand that:

> ideology motivates people. But in the rural area, when these people are talking about America, about their constitution and how much they love the United States, they're really talking about their ranch...it's physical for them, it's not completely ideology in the way I understand it to be. It's like, America is my ranch." And they'll say it's violating their American Dream, but I think it really ties so strongly with their connection to where they live.

In other words, the American Dream is not a dream at all among ranchers and residents of Hidalgo -- it is embodied in the place they have made for themselves, as much a part of the landscape as their own flesh and blood. This is why the land upon which the residents lives and lifeway depends is so utterly important to them, and why they care for it as deeply as anyone possibly can. Heather Thomas, in her research on range management, concludes that management of rangelands:

> has been a mix of science, tradition and politics, with the rancher caught in the middle trying to grow livestock and grass. The rancher is the only true range manager, for he is the only one actually on the land. The health and future of the land affect his own future. But the government agencies and pseudo-environmentalists haven't understood this very basic fact, and have often stood in the way of good management, rather than trying to work with the ranchers.[39]

Ranchers in Hidalgo are intimately and inextricably connected to their lands, where their work life, and living come together. For them, I was told:

> the land is important to us - the land is damn important, because we know we cannot make it without the land. If you want it put into Marxist terminology, that's my means of production. I cannot destroy it, I need it. But by the same token it is not a hammer, it's something you learn to love, too.

The feelings here run deep when it comes to the land, where the land is cared for by people who were not trained in management from books, but from sweat and blood and a love almost ineffable, more like what one resident called:

> an instinct; they grew up with it -- sometimes they cannot even explain why they do things, or why they do it

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[38] For more detailed thoughts see Clyde Milner II “The View from Wisdom” in William Cronon’s Under an Open Sky: Rethinking America’s Western Past (New York: W.W. Norton & Co. 1992), 220.

[39] Heather Smith Thomas, “History of Public Lands Grazing” in Rangelands (16(6), December 1994)

> this way. You cannot ask a straight question sometimes, and get a straight answer. Not because their stupid -- I came to find out that their smarter than me -- it's because they've never had to put it into words that will make sense to a person like me. They talk in very short sentences and the images are very, very visual. They don't know it, they just do it -- and they do a hell of a job.

A job that often times is unappreciated by others visiting Hidalgo -- pointing to the future dangers for the residents and ranchers or this county -- who enjoy seeing:

> the differences. And I can see it day in and day out. I have all intimate feeling with the land and I don't like somebody telling me that I don't have the right to be there because I'm destroying his wilderness. Now I'm getting real emotional, but, damn it, it hurts. You're here trying to do your best with the place you love, the place you've given your whole life to caring for and somebody else comes and tells you your just an intruder. On his place!

New Mexico is a land of space; of landscapes often appearing more art than the art representing them. And like the rest of New Mexico, Hidalgo County rolls out the distant mountains like a vision on canvas. It gives one the feeling that it is a place more land than people. It is a feeling that most people have when coming into the Southwest. But it is a perception possible only when you're passing through - for the people who live in Hidalgo County it is the presence of people and the communities they live in that defines their identities in the midst of the space. This is important and often overlooked because for most people, especially those who live in urban areas and yet make the decisions that affect the lives of rural people, space "does something to the vision. It makes the country itself... into something formidable, alluring, and threatening... [40]" and it has made Hidalgo County, and no where else in the world, home for the people living here.

[40]Stegner, Wallace, Where the Bluebird Sings to the Lemonade Spring, (New York: Random House, 1992).

LEA COUNTY
CUSTOM AND CULTURE

STATEMENT OF CUSTOM AND CULTURE -- LEA COUNTY, NEW MEXICO

The lure of open land led to the settlement of Lea County early in the 20th century.

That same openness: unfettered rangeland under limitless sky, still defines Lea County and its people today.

The county's 2.8 million acres anchor the southeastern corner of New Mexico. They are largely flat, semi-arid, and without significant timber or above-ground flowing water. Their wealth lies in the grass and cultivated crops on their surface and the vast reservoirs of minerals beneath.

As a political entity, Lea County was established in 1917 from the eastern parts of Chaves and Eddy counties. But its principal communities were founded some ten years earlier by settlers who had ventured onto the dry Llano Estacado when arable land to the north and east was pretty well exhausted.

Lovington, the county seat, was incorporated in 1908. The other four incorporated municipalities -- Hobbs, Eunice, Jal and Tatum -- were formally established much later, although they had their beginnings as farming and ranching communities at about the name time as Lovington.

Dry land farming and ranching were the means of subsistence in the area until irrigated agriculture was introduced in the 1930s. The number of irrigated acres, however, was still just 3,200 in 1940. The impetus to real development came with World War II, when an influx of population to the Hobbs Army Air Corps base and its suppliers increased demand, and as war-time technology made it easier to pump and distribute water.

Raising and breeding livestock has been as much a part of the county's history and economy as farming. If dry-land farming was a challenge, so was dry-land ranching.

As in much of New Mexico, livestock grazing in early Lea days required more acreage than most settlers could acquire by homesteading. It takes a lot of the kind of surface growth indigenous to the Llano Estacado to raise livestock without supplemental feeding. So, the practice of grazing livestock on the unclaimed public domain became as commonplace in Lea County as it was throughout the former Spanish and Mexican land grant areas of the Southwest.

The petroleum industry changed the face of the county in the late 1920s, beginning with the first discovery of oil near Hobbs in 1928s.

For at least the last 70 years, then, land use in Lea County has centered around agriculture, the range livestock industry, and petroleum exploration and production. The lifestyle and value systems of Lea County communities reflect the importance of these industries.

The challenge of conducting agribusiness in a semi-arid environment, and of extracting oil and gas from isolated, deep fields has bred into Lea Countians for several generations a strong belief in the right of self- determination, the sanctity of private property rights, and the value of open market competition.

Those principles have guided not only business practices but also government operations and accountability in Lea County throughout its existence.

Demographic data supplied by the Economic Development Corporation of Lea County indicates that only about three

percent of the county's workforce of 21,346 people is employed directly in agriculture. However, the influence of agricultural, ranching and open land traditions is much more pervasive.

In the mid-1990s, the county's human population has grown to about 57,000 individuals. Its livestock population, on the other hand, includes approximately 74,000 cattle, dairy cows, sheep and lambs. Some 39,350 acres of land are dedicated to crop production, with annual harvests of cotton, grain sorghum, grain wheat, alfalfa and other hay, peanuts and chili. Race horses are bred and raised in the county, as are ostriches and emus.

Virtually every community in Lea County -- incorporated or not -- has its own roping arena. The Lea County Fair and Rodeo is second only to the New Mexico State Fair in attendance and participation by exhibitors and contestants.

Bird, small game, antelope and deer hunting are extremely popular recreational pursuits. Sand dunes dotting the southern half of the county are frequented by dirt bikes and all-terrain vehicles, as well as by hikers and target shooters. And it's not unusual to see, from any road or by-way in the county, a lone horseman silhouetted against the sky.

In short, Lea Countians are closely tied to the land by their occupational and recreational pursuits, and by their staunch belief in free enterprise and the equitable use of federal lands for the good of the many. They are fiercely protective of their individual and their private property rights. They pride themselves in self-suffiency, dedication to family and hard work.

To erode these values and customary pursuits -- as well as the character-building influence they exert -- by further restricting or unnecessarily regulating the use of public and private land would cut way at the very fabric of the county.

LINCOLN COUNTY
CUSTOM AND CULTURE

LINCOLN COUNTY - CUSTOM AND CULTURE
as influenced by Livestock Grazing on Public Lands.

I. Past Use

La Placita (Lincoln) was first settled in 1849 along the Bonito River. Small farms were established and a trading center developed. The establishment of Fort Stanton in the 1850's provided protection from the Indians and a market for goods produced on the small farms. Other settlements and farms were established along the Rio Ruidoso, Rio Rondo, and smaller creeks. In the 1870's, gold discovery led to settlements such as white Oaks, Nogal, Bonito City, and Jicarilla being established.

The development of the farms and gold field required the use of water and the doctrine of "first in time; first in right" developed. Water rights were established and the right to use the land was tied to the use of water. These rights were bought and sold as chattel. "Squatters" and "jumpers" (those who used the land without having a secure water right) were common and often dealt with in a violent fashion.

In the late 1870's and 1880's, the large corporate cattle ranches along the Pecos River began looking for additional grass. They began securing water rights along the Rio Rondo and other creeks and allowing their cattle to graze the public domain for as far as they could graze away from water. Large ranches were also developed in other parts of the county by subsidiaries of English companies.

In the 1880's and 1890's, homesteaders began filing on 160 acre tracts of land. The first areas homesteaded generally had a natural source of water located on them. Other homesteads that did not have a natural spring or lakebed were somewhat arable, and summer runoff was diverted into dirt tanks and further ditched to the fields. These tracts of land went from public domain to private ownership and the use of the land was tied to a natural source of water on the land or dependent upon the rainfall. Crops such as corn, milo, and oats were grown for the settlers own use as well as sold or bartered to local merchants. They also raised livestock and these often grazed on public lands. Some of these early settlers brought in additional income by trapping and hunting as well as cutting firewood and posts on the public domain. Small communities were built and many one roomed schools established. In this time period, some of the large ranches would also have their cowboys file on a tract of land under the various Homestead Acts, then buy the land from the cowboy thereby transferring more land into private ownership.

With the development of water well drilling and windmill technology, smaller family-owned ranches were also established. They acquired land from homesteaders who either went broke or sold out to move to greener pastures. Livestock ranches were also formed when the large corporate ranches sold out to partners or drought and economic panic and depressions caused them to sell.

Livestock grazing on the public domain continued to occur by everyone, and there was no chance for any of the ranchers to conserve or manage the grass because "if you didn't use it, somebody else would". Some of the ranchers began fencing their deeded land and as much public domain as their cattle could graze from water.

When the Taylor Grazing Act was passed by Congress in 1934, the indiscriminate grazing use of the public land was halted. The public land with a three or four mile service area of "base water" was allotted to the ranchers and the land fenced accordingly into units. Some of these ranching units have remained in the same family ownership; some have been broken into smaller units through inheritance or an economic need to sell off a portion of the ranch; while other ranches have grown larger by acquisition of small ranches or homesteads.

II. Present Use

The use of Public land for grazing of livestock is very important to the welfare of the citizens of Lincoln County and also to the health of the range itself. Lincoln County has a total land surface of 3,109,760 acres of which 1,704,937 acres are deeded land, 301,481 are state trust lands, 524,717 acres are managed by the Bureau of Land Management and 398,743 acres are managed by the Forest Service. With 31% of the land in Lincoln County managed by the Federal government and 18% of that total managed by the BLM, one can see what a significant role these lands play in the make-up of Lincoln County. The BLM has 120,184 AUM's in Lincoln County or 21% of total grazing. This area supports $6.8 million in output, $1.7 million in income and 63 jobs annually. The State land and private land supports 24.3 million output, 6.2 million in income and 222 jobs per year. Since the public lands effects are assumed to be proportioned to the public forage, these effects are likely to be conservative estimates. There are approximately 124 commercial ranches in Lincoln County, of which approximately 69 (or 55 percent) depend on federal grazing leases (BLM and USFS) for at least one quarter of their vegetation requirements. Most of the other ranches have at least some small parcels of BLM land on their ranch. Many of these parcels of land are small or scattered throughout the main ranch.

With the elimination of livestock grazing on public lands, the operators would be forced to liquidate and disperse their livestock, or obtain other lands for grazing to remain in business.

Besides the obvious economic impacts, environmental considerations are worth mentioning. The technological advances and innovations available to modem ranchers and government agencies enables them to improve natural resources with proper management. Some of the effects of managed livestock grazing are loosening of the soil surface during dry periods; incorporation of mulch into the soil profile to speed humus development, nutrient recycling and increased availability in the ecosystem, tramping of seeds into the soil, reduction of excess accumulation of standing, dead vegetation material which chemically and physically inhibits new growth; and reduction of fire, insect, and rodent problems association with vegetation accumulation (Holochek, 1981). Proper grazing stimulates plant grown in many cases (Stoddart, et al.,1975).

Many of the rural communities in Lincoln County depend on agriculture as the primary source of income and jobs for their residents. The survival of most of our rural communities and the institutions which make up those communities, such as churches, schools, fire departments, community centers and business, would be seriously jeopardized by the reduction or elimination of grazing on BLM lands.

The use of the BLM lands to graze part of the 34,000 cattle and the 53,000 sheep is very important to both the rancher and the citizens of Lincoln County not only for the revenue brought in but also keeps the rural aesthetics of Lincoln County alive and well.

III. Future Use-BLM Standards & Guidelines EIS - Statement of Custom & Culture of Lincoln County.

Lincoln County's population growth and the world's population growth will put more demands upon the BLM administered lands within Lincoln County. These demands include increased recreation use, increase in oil and gas production, increased demand for agricultural products and an increase in demand for water. This population growth in Lincoln County will also place a larger burden upon the County's government for services.

The uses of the BLM administered lands must be maintained at or above the current levels to protect Lincoln County's economic base. Policies must be put in place to protect the local people's independence, political integrity, economic discretion and responsiveness to retain a way of life commensurate with local custom and culture. Increased restrictions and encumbrances upon current uses of the lands and property rights will hurt the economic base resulting in loss of community stability and slow or no economic growth.

Community stability and a growing economy will let the future generations of Lincoln County citizens inherit and continue the custom and culture that Lincoln County citizens currently enjoy. The custom and culture of ranching will pass along many of the beliefs and values that are cherished by our rural society including but not limited to:

satisfaction of producing food and fiber to meet the world's needs - admiration, appreciation and respect for nature - good work ethics - leadership abilities - self-reliance and independence - appreciation, trust and fellowship between neighbors - conservation of natural resources - responsibility and reliability - patience and tolerance - respect, honor and duty - compassion toward all animals - accountability for one's own actions - the desire to learn - and the ability to practice successful resource stewardship. By protecting the custom and culture of ranching in Lincoln County, the small family owned ranches will be able to continue a way of life that is highly rewarding in the quality of life and the dignity that go along with a job well done.

IV. TRENDS

Since the 1970's a number of smaller ranches around Capitan, Carrizozo and Ruidoso have sold primarily for subdivision purposes. Some USFS allotments around Ruidoso are unalloted because the commensurate property was sold for development.

The trend in the county is for parcels of private land around the urban centers to be sold for housing purposes.

Some of the smaller ranches are being bought by more financially secure ranchers so as to maintain an economical unit.

Some of the larger ranches are being purchased by people from other states who have substantial outside income. Other ranches, particularly small units, are purchased by people who are retired or have off ranch income and can subsidize the ranch operation. In general, the trend is that livestock ranches are being bought by people with outside income, who are not relying on the ranch income to make a living for them, yet are attracted to ranching because of the myth and custom/culture attached to livestock ranching.

LUNA COUNTY
CUSTOM AND CULTURE

LUNA COUNTY

Luna County, with an area of 2,957 square miles, is located in the Southwest part of the State of New Mexico. With Mexico along its southern border, it is bounded by Dona Ana County on the east, Sierra and Grant Counties on the north and Grant and Hidalgo Counties on the west.

Deming, the County seat, is located approximately mid-way across the county east-west axis and alongside Interstate 10. Deming is approximately 100 miles north-west of El Paso, Texas and 80 miles east of the Arizona State Line.

Columbus, the only other incorporated municipality in the county, lies three miles north of Palomas, Mexico and about 30 miles south of Deming on State Highway 11.

Luna County was created in 1901, having been carved out of eastern Grant County and western Dona Ana; it was named for Solomon Luna, a prominent area sheep rancher and politician. The formation of the new county was the result of a long standing rivalry between Deming and Silver City; a situation that began in the 1880's with Deming residents demanding a county of their own. A series of bills were introduced in the state legislature between 1888 and 1901 requesting the establishment of a new county. The effort succeeded in 1901.

The earliest traceable inhabitants, the Mimbres Indians, established themselves in the area around 950-1000 A.D. Irrigation agriculture was probably employed. Their culture continued to develop until the drought period of the 1300s. Their settlements in the area were abandoned by the end of the extended drought. Today these early inhabitants are best known for their distinctive pottery with its characteristic designs of black and white.

Spanish exploration of the area probably started about 1780 when Governor de Anza led an expedition south from Santa Fe to explore for possible new trade routes to the settlements in Sonora. Two other groups left Mexico about the same time, hoping to meet de Anza's men in the Mimbres Mountain region, (about 40 miles north of Deming's present site). The three groups explored the area, including the Mimbres river and Cooke's Peak. The hope for meeting never occurred and a direct trade route remained undiscovered.

The second contact with the Spanish came in the year 1785 with another expedition into the area. The purpose of this expedition was not to explore, but to hunt Apaches who had become active in the region by that time. The venture was unsuccessful and the Apaches remained in the area, harassing the Spanish interlopers and their Anglo successors until the end of the nineteenth century.

The greatest hindrance to the early growth and development of the region, next to the Apaches, was the lack of water. Early water laws developed through custom into what became known as the Prior Appropriation Doctrine. This doctrine meant that the first person to use the water for beneficial use created a property right to the water. Mining and livestock grazing were the primary "beneficial use" applications within what was to become Luna County.

This doctrine existed in Mexico prior to U.S. acquisition of New Mexico; it was continued by New Mexico territorial and state governments and was culminated by Congressional passage of the Act of July 26, 1866, which stated in part: "That whenever, by priority of possession, rights to the use of water for mining, agricultural...purposes, have vested and accrued, and the same are recognized and acknowledged by the local customs, laws and the decisions of the courts, the possessors and owners of such vested rights shall be maintained and protected in the same". Water rights have long been a property right in Luna County.

Early settlers in the region quickly laid claim to the seeps, springs and wells under the prior appropriation doctrine.

Those who owned the water sources often controlled large areas of grazing land. It was an accepted fact within the West, that “He who owned the water, owned the land."

Following the Mexican War, the boundary between the United States and Mexico was established thus leaving the area containing Luna County on the American side. Much of the land in the county was obtained through the Gadsen Purchase, with the U.S. seeking the land for a southern route for a transcontinental railroad.

A southern land route was in great demand following the gold rush boom in California and a new trail was developed by the Butterfield Overland Mail Company. The company was in operation until the new Southern Pacific Railroad lines forced it to close its doors.

Fort Cummings, in 1863, was established in the county to contain the Apaches - who posed an ever increasing threat to the settlers. The fort, manned by Black troops, was built with twelve foot thick walls which protected the garrison containing barracks, hospital, offices, commissary and quartermaster departments. The fort was of considerable importance as it guarded the southernmost portion of the Butterfield Trail, which was considered one of the most dangerous stretches of the southern route. The fort was abandoned in 1886, after years of unsuccessful attempts to contain the Apaches.

A number of small settlements were established, in site of the Apache threat to the settlers, after promising mining finds were made. These towns, Gage, Hermanas, Victorio and others, still persist on some maps today, but little sign of their existence remains. Other towns, Vencill, Wemple, Mongola, Marios, Luxor, and Ocho grew-up at road and rail interchanges but never seemed to develop.

Only two of the settlements, Deming and Columbus, took hold and grew. Columbus, a small border town, was largely burned in 1916 by followers of Pancho Villa. The town declined in population following the raid as frightened villagers moved elsewhere.

Deming became the county's population center following its inception in 1881. The town was named for the wife of one of the owners of the two railroads which met at the Deming terminal. Known as the “City of the Windmills” because of the windmill beside every house, Deming grew in importance. It became a central shipping point for minerals and livestock and a stopping point for travelers on the railroad.

Deming attracted many rough men of the West because of its importance. It is said that General Crook rounded up outlaws in Arizona and gave them one-way tickets to Deming. Social life in Deming was giddy, with numerous bars and saloons, and the Harvey House as its center. "The Bucket of Blood", “The Aquarium”, and "Climax" saloons were as colorful and exciting as their names. Finally, the citizens of the town formed their own Militia and held drills in the streets. This, combined with the final capture of the Apaches, made life in Deming more secure and orderly for its inhabitants. Social graces flourished with the Deming Opera House reputed to be the finest between Kansas City and Los Angeles. Luna County and its inhabitants, in 1901, had finally arrived.

Mining has played an important role in the culture and custom of the county. There has been rather extensive mining activity in the Florida Mountains and Cooke's Peak, with the most active period from 1880 to 1920. Metals mined in the area include lead, zinc, copper, silver, gold and manganese. A mill for processing ore was built in 1921, but did not prove profitable and was discontinued in 1931. Manganese deposits were worked during World War II and in the 1950's but these too played-out and have been discontinued.

The area of present Luna County has been principally cattle country since the early 1860's. Mining; the Butterfield stage route; the soldiers stationed at Fort Cummings; the approaching railroads, with their trackside towns, caused the early settlers to realize the profit of the surrounding land lay in the grazing of livestock. Even before the county was formed in 1901, Deming and Columbus were the chief cattle shipping points in Southern New Mexico. The rancher who owned the water controlled vast areas of the land in this arid region of unassigned lands on the public domain.

The Taylor Grazing Act was passed in 1934, recognizing and protecting the rights of the county's stockmen to continued use of federal lands. The law created grazing districts and recognized the grazing preference rights of ranchers whose livestock were grazing the public domain, and who possessed water rights and deeded property contiguous to the public land they were using. The rights were acknowledged, on allotments of public land, by permits designating the number of animal units allowed (or permitted) by the Bureau of Land Management (BLM). Preference rights could be bought, sold or transferred by the ranch owner alone. The law provided that preference rights could only be obtained from a willing seller. Once the transaction was completed the new owner could apply for and obtain a permit from the (BLM). Thus today, federal lands in Luna County contain property rights which are owned by ranchers and other property rights owned by the public. This situation has been and continues to be a source of confusion and animosity.

Despite the confusion over property rights on the federal land, cattle have played a major economic role in the county over the years. The total number of cattle in the area in 1910 was about 31,000 and today the county boasts more than 40,000 notwithstanding recent droughts and poor market conditions. The cattle industry, along with other sectors of agriculture, continues as the economic bedrock of the county.

In 1909, irrigated farming came to the county, and the agricultural economy was firmly established. The soil and water combined to provide an excellent variety of crops; chief of which today are chile, cotton, hay, wheat and onions.

Today Luna County is in the midst of a period of transition; holding to the traditions and customs of the past, while positioning for the future. Agribusiness, tourism, and trade with Mexico are vital to our future growth, but our strength remains in crop production and the livestock industry. The citizens of the county realize the hard lessons learned from the past; the future of the county remains with the two elements that have brought us to this point -- our land and our water. We must protect these resources above all others.

CUSTOM AND CULTURE

Luna County inhabitants, through a long history of Indian, Spanish, Mexican and American settlers, have bonded in an appreciation and love of the two elements which have provided for their livelihood over the years. Those two elements are land and water. Those two have become, not just soil and moisture in the traditional sense but, “our” land and water. The area encompassing the land and water is home and in many cases the home of our ancestors. There is a deep sense of belonging associated with that area. Here in this place of earth and rain their “roots" were nurtured and watered. It has not always been that way.

The early Mimbres Indians, who were the first known to irrigate their crops in this region, lost the area as their homeland. The drought came and stayed too long. The people disappeared and with them their custom and culture was lost. Other people soon followed with similar results.

The Spanish explorers rode in to find fortune, established towns and soon left as they came. Mexico replaced Spain in North America, as two cultures blended together and Mexican people moved in and replaced the Spanish. The Mexican settlers further developed existing trade routes, expanded their frontier and pushed north. Like those who preceded them they could not hold these lands either.

Americans, believing their destiny to be manifest, overwhelmed the government of Mexico and through treaty and purchase this area became a part of the territory of New Mexico. The new settlers fought the Apaches to hold this land - their new home. They were a tough and resilient people who came to stay. They conquered the adversity which had made the place so hard to tame. Those early pioneers used the land and the water and they made this place their home.

Those pioneers, before irrigation techniques became sufficiently advanced, capitalized on the natural resource produced by the soil and rain -- the grass; the forage. They became livestock producers. Their beef fed the soldiers who fought the Apache; the men who built the railroads; the miners who extracted the ore; and they shipped their

cattle east to feed an ever increasing market. The soldiers left as the Apache were quieted; the builders moved on as the railroads were finished; miners searched elsewhere as the mineral sources ran out; but the cattlemen stayed and continued to feed the people back east. Ranchers, like the farmers who followed, owed their very existence to the land and water. They remained while the others moved on, and they provided the stability required for a culture to grow and flourish.

Those early settlers' firm tenacity played a major role in the manner in which many of Luna County's present residents react or respond in their behavior patterns. The ranchers whose families came and stayed, now boast of being third and fourth generation stockmen. They have shared In the passing along of values and beliefs which have created a way of life which is unique to this community. The families who passed the same ranch to their sons that grandpa carved out of this arid wilderness, likewise passed along a knowledge and love for the land that can only be obtained from working and living on that land. Not just that land, but their land.

It was their land in the classic John Locke theory which consisted of the idea that property was created by mixing an individual's labor with the state of nature (the unassigned lands of the territory). The water was their's by virtue of the doctrine of prior appropriation, which stated that the first person to use the water and put it to beneficial use, created a property right. The early settlers passed these concepts on to their heirs and the local community. Thus there was a powerful motivation to care for the land and water.

Early pioneers found that grasses must be preserved and conservation was vital if their business was to withstand drought and low market prices. They came to understand they could not abuse land and water resources and continue to have a viable ranch which could be passed to their heirs. This concept became a way of life; a part of the rural culture of Luna County.

This way of life, has spawned a powerful emotion that runs deep in the people who live on the land. They believe that they understand how to care for it better than anyone else. A concept similar to that has captured the urban members of the county as well.

The idea, that local people know what is best for their county, is comparable to the assertions that ranchers know what is best for their land. People in the towns of Deming and Columbus have long concluded that they know how to solve their local problems better than anyone in the governing bodies of Santa Fe or Washington, D.C. They do realize however, there are times when we all need help.

Today, as in times past, when hard times fall on a family it is customary to help them through those times of need. This is what Luna County is all about and the type of thing we desire to protect and continue as our tradition. We believe in helping one another.

Help is necessary when it comes time to work cattle. Moving cattle from pasture to pasture in order to steward the range; branding; yeaning; shipping; and a multitude of other chores is too much for one family to handle at times. That's when neighbors share the job and help each other. Helping one another is a habit we want to preserve.

Even with help from friends, farming and ranching is a difficult way to raise a family. Today's ranch and farm will usually only support one family. Often the principal providers must work a second job as well. Never before has that old saying been more true, that says, "Behind every successful rancher is a wife -- who works in town." Because of the economic difficulty of family agri-businesses, children learn at an early age the meaning of responsibility; the importance of hard work. The result is the development of young people with a sense of self worth that serves them throughout a lifetime. Rural kids grasp the meaning of "family." They always remember it was at home that they learned these important lessons.

Home is the farm or ranch they grew up on. This is the stability in there lives that they can always count on -it's their special place. A place they can return to and find the recuperative power to revitalize that inner being. That is what it means to grow up on a ranch in Luna County. That is what generations of living off the land give to people.

The people who lived on these lands and drank from these waters before more recent times left a wonderful heritage also. Their contributions have left powerful influences on the people of Luna County. The Mimbres Indians handed down an almost reverent respect for beauty. Today we admire the exquisite art work of their pottery and we study their culture. We recognize a spirit of adventure which has been passed down from the early conquistadors who searched for their fortune in gold in this land. We greatly admire the humble religious faith and powerful family ties inherited from Mexico. We honor the proud Apache people, with their fierce desire for freedom; their invincible ability to withstand the cruel elements of the environment in which they lived. These are all a part of the mosaic that has been woven together to form the structure that supports the way of life residents of Luna County wish to maintain and strengthen. The past has forged us and made us the people we are today. We have been blessed by the blending of many peoples, mores and traditions, but beneath it all is the land and the water. The love for this land defines us best as who we are.

OTERO COUNTY
CUSTOM AND CULTURE

THE CUSTOM AND CULTURES OF THE PEOPLE OF OTERO COUNTY

The very first people to inhabit our county were transient. They came down from the north, in the winter they hunted game in the desert and migrated to the cool Sacramento Mountains in the summer. We find artifacts they left behind in the Fresnal Shelter, under the Otero Mesa Rim and their petroglyphs at Three Rivers and on the Cornudas Mountains in Souther Otero County.

Probably the proudest people ever to rule this part of the world were the Apaches. Their territory included west Texas, New Mexico, Southern Colorado, Arizona, Sonora and Chihuahua.

Our local tribe was the Mescalero Apaches. One of their staple foods was the mescal cactus, so they were called "mescal eaters" or Mescaleros. The mescal plant grows in the desert mountains of southern New Mexico. It is about two feet tall. The Mescaleros would cut off the spiny leaves to reveal the heart of the plant which is about half the size and shape of a basketball. They were baked with wood fires and stones for several days before eating and the leaves were used for fiber.

The early day Mescaleros never practiced agriculture but were very nomadic. The traveled down to the Texas plains, through western New Mexico and Arizona, down south into the Sierra Madre, and continued south and west into the tropics--hunting and gathering as they went. Then they would return to their homeland up through Chihuahua and cross the Rio Grande coming back north to the Tularosa Basin and Sacramento Mountains. Resisting first the Spanish and later the Anglos, they put up a gallant fight to save their land, but the end came when Geronimo surrendered in Skeleton Canyon. They were made prisoners of war and incarcerated in Florida. They were later sent to Fort Sill, Oklahoma. After Geronimo died in 1909, the Apaches were released and many of them came back to Mescalero. Today, we have a mixture of many Apache Tribes living here. We still hear many of the royalty ancestral names, such as Cochise, Shanta Daklugie, Geronimo and Chino. Today many of the Apaches are farmers, ranchers and foresters. They also manage a thriving timber and tourist industry.

1800's

The next people to come to our area were the farmers, ranchers and miners. Most of these people came from Texas soon after the military came to protect the settlers. Forts were built all over the west, and our closest military protection came from Fort Bliss, a small fort north of Tularosa, Fort Stanton and the Buffalo Soldier camp near Wind Mountain in the southern part of Otero County. Farming soon failed except where it could be irrigated. In the mid 1930's the last of the dry land farmers gave up. The miners had their hey day in the Jarilla Mountains near Oro Grande and on the west side of the Sacramentos. The Oro Grande area dominated the local mining industry, and the real rush came when 61/2 ounce gold nugget was found in the Little Joe Mine. Three mining camps were built up in the mountains northwest of Oro Grande, -- Brice, Lucky Flat and Ohacey (the only one with a post office). 7 miles of railroad were built up through the mountains and a smelter was built at Oro Grande, which at the time had 3,000 residents. A 53-mile pipeline to bring water from Sacramento River was constructed. This pipeline still furnishes Oro Grande with water. Oro Grande had a newspaper, 9 saloons with brothels and all the gaiety of any other mining boom town and gambling center. Three train loads of Ore came out of the mountains each day for many years. The miners were on the top rung of the social and economic ladder for many years, but as the ore played out the rancher became the dominant leaders. After the Civil War many ranchers moved to our area. They could get free land, free grass and water. Ranching was our number one industry for many years, and is still an important part of our economy. Many small ranchers moved their herds from Texas, early day ranching included cattle, sheep, goats and horses to be sold to the calvary. Several cattlemen built vast empires such as Oliver Lee and Albert Fall each controlling in excess of a million acres. There were also John Good of La Luz and Pat Goglan who was called the King of Tularosa and was a partner of Billy the Kid in a beef contract for Fort Stanton.

The U.S. Forest Service and the Bureau of land Management were given management authority over all federal land and the herds were cut drastically.

1900's

In June 1898 the railroad reached Alamogordo, then on to Cloudcroft, opening up the new industry of lumbering. The stagecoach took passengers from the Cloudcroft depot to Stegman which is now Artesia. The railroad also opened up our county to tourism. Cloudcroft and Alamogordo built some fine hotels and Cloudcroft had Casino-type gambling for many years. Every few miles along the railroad, small towns and villages were present some of them being Valmont, Escondida, Turquoise, Hueco, Newman, Kearney siding and Three Rivers.

In the mid 1940's a paved road was built to Cloudcroft and the railroad was taken out. Lumbering is still an important industry for our county, even though it has slowed down the past few years because of environmental concerns. The community of Mayhill, on the Penasco River, is an irrigated farming and ranching community. Weed is on Agua Chiquita Canyon and is mostly ranching and lumbering. It is a very old settlement. Pinon is a ranch community of sheep, goats, and cattle. The communities of High Rolls and Mountain Part are fruit growers and are becoming a bedroom community for Alamogordo. La Luz is a very old community and has some irrigation. Tularosa was started by families from the Rio Grande in 1865 and is our oldest town. It has irrigation and most of its labor force works for military related industry. They have a rich culture and history. Boles Acres, the Oro Vistas and Dog Canyon settlements all south of Alamogordo, are people who enjoy rural living. They are mostly employed at Holloman.

In 1942 the Alamogordo Army Corps training base was built near Alamogordo. Little did we know how it would change our lives forever. Much of our ranch land was permanently withdrawn for bombing range. At the present time White Sands Range covers 2 million acres and employs 8,160 people. It is the largest overland missile range in the country.

In the mid 50's the ranching industry again was affected when the military purchased several ranches in southern Otero County to create McGregor Range. The purchase included the price for the private land, improvements and the lease hold interest for the grazing lease. Some of the leases were under the jurisdiction of the BLM and some were controlled by the National Forest Service. After the purchases were completed, the ranch houses and outbuildings were taken down. Since that time this area has been used for military target practice, Roving Sands aneuvers and speculative cattle grazing to the highest bidder. Our ranching industry is a small part of our economy at the present time. However, they are a very important part and are a very proud and colorful people.

The county tax records show that we have 19,562 cattle, 964 horses and mules, 9,892 sheep and 837 goats. This is a value of approximately 12 million dollars of earning assets for our county. The latest income figures available for agriculture are from 1994. Fourteen million, nine hundred forty one thousand, 14,941,000, was the figure for all agricultural income for Otero County for that year. We assume the largest portion was ranching, then fruit, nuts and hay, etc.

The National Defense now dominates our county. In 1990 Holloman became the world’s only F-117A Stealth Base, the plane that played such a major role in the Persian Gulf War. The F-4E Phantom II, the T38A Talon, the HH-60 Pave Hawk helicopter and the 10 mile long high speed test track are also managed by Holloman. The German Air Force contingent at Holloman consists of 350 military plus their families. By 1999 the Germans hope to have 2,100 people here, with a $21 million payroll and a $100 million military infrastructure budget. Holloman and White Sands have an annual budget of $479 million. Holloman is now in the process of trying to acquire their own bombing range on the north edge of McGregor because White Sands has gotten so busy. This is land already being used by the military. If this happens it will cause more growth for the base and Otero County.

To sum up the customs and cultures report, I would report that probably the only cultures we have lost are dry land farming, mining and the nomadic hunting and gathering. The county culture presently practiced by most people, involves or is directly related to the defense industry. Next in order would probably be entrepreneurial including

tourism, education, ranching, the timber industry, farming and others too numerous to mention. Time constraints prevented us from acquiring dollar amounts for our other cultures.

Clif McDonald
Chairman Customs and Culture Committee
Public Land Use Advisory Council of Otero County

RIO ARRÍBA COUNTY
CUSTOM AND CULTURE

Customs and Traditions of the People of Río Arriba County
Prepared by Estevan Arellano of Oñate Cultural Center Alcalde, New Mexico on February 8, 1997.

INTRODUCTION:

When talking about the American West, all the major institutions that have made the West what it is today were introduced by Spain. Whether it is the large water projects which have brought irrigation to the West, or the livestock industry, Spain's influence is everywhere. And probably there is no better place to see this influence than in Río Arriba County where the first European settlement was established on July 11, 1598. From here the diversity of crops, *acequias*, cattle, sheep, goats, pigs, and the famous Spanish horse, they all spread to the far reaches of the West where they are now perceived to be American institutions, yet their roots are in Río Arriba County and the first Spanish *pobladores*. Based on the research we have done concerning agriculture in the Río Arriba, this area used to produce all types of fruits and vegetables. As early as 1630, Fray Alonso de Benavidez wrote, "*All this land is very fertile, it gives forth with great abundance everything which is sown in it: corn, wheat, beans, lentils, garbanzos, fabas, peas, pumpkins, watermelons, cantaloupes, cucumbers; every kind of vegetable: cabbage, lettuce, carrots, thistles, garlic, onions, cactus fruit, pitahayas, apricots, peaches, nuts, acorns, blackberries and many others...*" What we see today is that the diversity New Mexico used to enjoy is rapidly disappearing, including the grazing of cattle and the famous churro sheep.

Don Pedro Baptista Pino, in his 1810 presentation to the Cortes in Spain, had this to say about diversity, "*In New Mexico all the same crops are harvested that one finds in Spain, and are of much better quality than those grown in the rest of New Spain*." At that time all the lands today held by the Bureau of Land Management and the U.S. Forest service were part of the *dehessas*, or common lands, of the land grants which were used for grazing and for people to exploit the natural resources for materials to build their homes. Today that is no longer true, as more and more restrictions are imposed on a daily basis and locals feel more alienated from their "traditional ancestoral lands," while at the same time outsiders seem to be the only ones privileged to use the commons.

Cultures cannot survive for long without a sustainable agricultural base and sustainable land and water use ethic: care of the earth, care of people, contribution of surplus time, money and energy communally. Old timers call this philosophy.- "*el juicio de la tierra*," the wisdom of the land. In his book, *Plants, Man and Life*, Edgar Anderson describes the garden/orchard plantings grouped around the houses in Central America, much like it used to be in the Río Arriba bioregion of New Mexico.

HISTORICAL PERSPECTIVE:

When we start laying out the ground work for developing an "Environmental History of La Raza," from our perspective, especially as it relates to land and water use in New Mexico, specifically the Río Arriba Bioregion, we have to go back to the writings of the ancient Greeks (*los griegos*), on one hand, the Moors in Al-Andalu and also at what was going on here in 1598.

As *raza* - whether we call ourselves *hispanos, Chicanos. nuevomexicanos, manitos, paisanos*, etc. - there are two very important documents that we have to familiarize ourselves with, one lays the foundation (*Recopilacion de leyes de los reynos de las indias*, published in 1681 in four volumes, divided into nine books, 218 titles and 6,447 laws) and the other (***El tratado de Guadalupe-Hidalgo*** and the subsequent ***Protocol de Queretero***) which guarantees our right to exist as defined by the "Laws of the Indies."

Though the term bioregionalism is a recent term coined by geographers when the *Leyes de las indias* (which have their antecedents in the *Ordenanzas* of King Phillip II of 1573 and the *Siete Partidas* of 1257) were being complied, *nuestros antepasados* in a way were laying the foundation for what today Kirkpatrick Sale, defines as bioregionalism:

"*...the crucial and perhaps only all-encompassing task is to understand place the immediate specific place where we live. The kinds of soils and rocks under our feet: the source of the waters we drink: the meaning of the different kinds of winds; the common insects, birds, mammals, plants and trees: the particular cycles of the seasons: the times*

to plant and harvest and forage - these are the things that are necessary to know..."

Though once we - *la raza còosmica* - might have been an alien presence in this land, because of our Spanish fathers, we have now become as natural a figure in this landscape as the pinon tree because whether we (or the Native Americans) acknowledge it or not, most of us have Native American blood running through our veins. It is that communion with the landscape which ties us to that enduring code of brotherhood, of being *carnales*, just as the poet makes the landscape itself the carrier of memory.

As with so many revolutions, that of Chimayò of 1837 and later the Taos Rebellion of 1847 - with battles in *La Cañada de Santa Cruz, Embudo, Mora and Taos Pueblo* - and today what is happening, it began with memory; today we are on the verge of losing our memory. And if we lose our language, we will lose most of our environmental history and that we cannot afford to lose. Never! For our memory has now assumed the form of the landscape itself. That is the essence of *Querencia*. If we lose one we lose both memory and landscape. "*El que pierde su tierra pierde su memoria*."

Now let's take a look at what I consider three of the most important "laws" in terms of defining bioregionalism, or *Querencia*. Sale reminds us that, "*bioregionalism calls for human society to be more closely related to nature, and to be more conscious of its locale, or region or life-place... It is a proposal to ground human cultures within natural systems, to get to know ones' place intimately in order to fit human communities to the Earth, not distort the Earth to our demands*," which has been the mission of Los Alamos.

Now, let's examine the following in terms of what constitutes our *Querencia* - Río Arriba:

(Book Four, Title Five, First Law: *That the lands and provinces, that have been selected for settlement, have the following wing qualities, it is declared.*

"It is ordered, that having resolved to settle a province, or region which is under our jurisdiction, or later discovered, the settlers be considerate and be advised that the land be healthy, recognizing if men live to an old age, and are of good complexion, disposition and color: if the animals and livestock are healthy, of good size and the fruits and sustenance good and abundant, and the lands good for planting and foraging: if poisonous, and noxious things grew: the sky of good and joyful constellation, clear and benign, the air pure and sweet, without impediments or alterations: the climate without excess heat or cold: (and having to choose between one or another quality, choose the cold) if there is good grazing for livestock: forests and trees for firewood materials for houses and other buildings: a plentiful supply of good waters for drinking and irrigation...")

It appears that Sale was following "las leyes" to arrive at his definition of what is bioregionalism, that for us is *Querencia*.

The same philosophy was expressed by **Marcas Cato** (234 - 149 B.C.), when he advised people in search of a good piece of land, saying that "*It should have a good climate, not subject to storms; the soil should be good, and naturally strong. If possible, it should lie at the foot of the mountain and face south; the situation should be healthful...it should be well watered...*"

Now, let's look further as to how our memory, nuestra querencia, had its foundation layed out.

(Book Four, Title Seven, First Law: *That the new settlements be established with the qualities of this law.*

"*...Try to have water close by, and that it can be conducted to the town and other property, diverting it, if possible, to better utilize it, and the materials necessary for buildings, lands for agriculture and pasture saving on labor and costs that come with long distance. Don't select sites to settle which are very high, due to the winds, and the difficulty of servicing and transportation, or in very low places, since they are prone to illness; settle in mid-elevations, where the north and south winds prevail. And if there are mountains or slopes, that they be facing east or west: and if not possible to avoid high places, settle in areas where there isn't any fog, observing what is best for health and accidents: and if building in the shore of a certain river; and if such is the case, when the sun comes out, it first hits the town, then in the water:*"

Here is where our "*Memory of Landscape*," our *Querencia* - this sense of *place*, this land we call Nuevoméxico begins. Fray Angelico Chávez in his classic book, "*My Penitente Land*," attempts to define this *Querencia* and tie it to the biblical lands or' north Africa, where our ancestors, the Moors, came from.

(Book Four, Title Seven, Law Seven: *That the land and surroundings be abundant and healthy.*

"*It is ordered, that the land and surroundings, which are to be settled, be the most fertile, with abundant, pasture, firewood, lumber; materials, sweet waters, natural people, transportation, ingress and egress, and there be no lake close by, nor marsh lands where venemous animals live, nor there be any corruption of winds, or waters*.")

The three above laws lay the cornerstones, the foundation of what has become our *Querencia*, that which gives us a sense of place, that which anchors us to the land, that which makes us a unique people. "*Before it can ever be a repose for the senses, landscape itself is the work of the mind. It's scenery is built up as much from strata of memory as from layers of rock*," writes historian David Schuma in ***Landscape and Memory.***

Our environmental history is based on a solid foundation, our ancestors were environmentalists - not extremists who understood what was meant both by private property and common lands. Wendell Berry reminds us that, "Historically, the commons belonged to the local community, not to the public." But before we can use the land in common, we need to go back to the past, and mine that "*oro del barrio*," that knowledge which is rapidly disappearing and understand what are our privileges and responsibilities. As nuevomexicanos, today we have had almost nothing to say about our region's character and identity, yet we are the ones who have defined that character and identity.

As Sale writes, in terms of this *Querencia*, or bioregion, we have to know, "*The limits of its resources; the carrying capacity of its lands and waters; the places where it must not be stressed; the places where its bounties can best be developed; the treasures it holds and the treasures it withholds - these are the things that must be understood*." He goes on to say, a bioregion "*is governed by nature, not legislature*, " or by the DOE, or any other governmental entity.

When we talk about the commons, the *dehessas y montes*, we are concerned about lands where we all have a common interest, an interest that precedes our interest in private property or the *suertes*. For we not only share in the common wealth but we also share in the common health, the two, in fact, are inseparable. Berry writes, "*If we have the `right to life, `as we have always supposed, then that right must stand upon the further right to air; water, food, clothing, and shelter*." Exactly what the *Laws of the Indies* defined as the perfect places for the new settlements.

If we want the land to be taken care of properly, duty and sentiment are not enough, we must have people living on and from the land who are able and willing to care for it. We need to implement a different kind of education, a different philosophy and a different economy. Again I must reiterate, we cannot get good care of the land by demanding it from public officials. We have to understand that we cannot save the land and water apart from the people or the people apart from the land and water. To save either, we must save both; and for that we need a strong rural economy. In a way Los Alamos destroyed that rural economy, it destroyed the diversity that existed in northern New Mexico and in its place created an economy based on fantasy. Instead of preserving the possibility of intimacy in the use of the land, as dictated by the *Laws of the Indies*, Los Alamos created a consumptive society interested in sterile or inconsequential intimacy. The intimacy for the land became supplanted with an intimacy for money. Our economic system of *cambalache* was taken over by a money economy and greed.

Laura Jackson, in her paper, "***Agricultural Industrialization and the Loss of Biodiversity***, " warns us that as farming families dwindle, we lose not only essential and perhaps irreplaceable knowledge, but "*When the minds responsible for these farms have left the countryside, replaced by minimum-wage labor in factory-style facilities, so will the potential to conserve and improve the agricultural landscape*." Though Los Alamos pays good wages very few locals can get past a certain wage level. What we have in the Río Arriba Bioregion is a colonial economy and colonial economies place no value on caring for the land, and do not teach, encourage, reward and much less protect it. So now we have environmentalists who have no concept of our history who want to come and teach how to care for the land.

Before when land was banded down from father to son, so was that knowledge of the land, of how to water from the *acequias*. That is not the case today; now the land passes so rapidly from one owner to the other that there is no time to learn how to use it. Everytime a piece of property is put on the market the prices go up and so do the taxes; then the local county commissioners get blamed when it is greed that drives the prices up. In Embudo from 1970 to now the price for land has gone up from $1,000 an acre to upwards of $40,000. As a result it is predictably abused, old cars abandoned in the orchards, mobile homes in arroyos, luxury homes on mountain tops and *cienagas.*

CONCLUSION:

Berry reminds us, that "*if conservationists are serious about conservation, they will have to realize that the best conserver of the land in use will always be the small owner or operator...who knows how to use the land in the best way, and who can afford to do so."*

We have to prevent abuse of the land and water and the best blue-print is to follow the *"Laws of the Indies*," as our forefathers did. We have to preserve what we have, but at the same time, realize an economic benefit that only comes from knowing the land, being intimate with the land. "*We have to move towards vigorous local economies capable of sustaining a stable and capable rural population rewarding them appropriately both for their products and their stewardship*," Berry reminds us.

Sale tells us, "*...that bioregions are not only of different sizes but often can be seen to be like Chinese boxes, one within another, forming a complex arrangement from the largest to the smallest, depending upon which natural characteristics are dominant.*"

It is this intimacy with the land that we must protect, this knowledge that has to be preserved. Some of us have been doing it for a lifetime. In closing I want to remind you:

"**We do not inherit the land from our parents, we have it borrowed from our children**," therefore we have a moral obligation to turn the land over to our children in a better condition than we got it, not worse. As I've pointed out, we have a solid environmental history to backup our philosophy of *Querencia*, or bioregionalism, as the best model for moving forward as we approach the 21st century it is a knowledge that draws a classic Greek agricultural practices, Roman law, Moorish customs, along with the knowledge inherited from the Mayas, Aztecas and Pueblos. Here the knowledge from Africa, Europe and the Americas converged in 1598. We are therefore, *la raza cósmica, la nueva raza*; we are a walking diversity of bloods, cultures and languages, anchored in *nuevomexico, nuestra Querencia*.

SANTA FE COUNTY
CUSTOM AND CULTURE

Santa Fe County

Custom and Culture

"By and large this is the New Mexico associated with the upper Rio Grande Valley and the mountains containing it. It was here that the first colonists settled in the late sixteenth century, and it was here that the province (state) acquired its identity. What attracted settlement was the mild climate, the apparent abundance of water, the fertile soil, and the forests covering the mountains. In many ways the landscape seemed to resemble that of Spain. Almost from the time of the first explorations New Mexico was seen as a kind of promised land: not a paradise of ease and abundance, to be sure, but a land of grass and forest and flowing water where the effort of working men and women would duly rewarded. For it so happens, even today, that no matter whether you come to New Mexico from the immediate east, the High Plains, the arid south, or the canyon landscape in the west, the region always seems, by comparison with the country you have been traveling through, a land flowing with milk and honey. What shatters the illusion is the long dry summer that afflicts the greater part of the state...

Spanish settlement was long confined to the Rio Grande region which to this day remains the heartland of Spanish-American culture. The small lateral valleys of the river, as well as the valley of the river itself provided colonist with an environment suited to their kind of agriculture and their kind of living-in small villages where old-established customs and relationships could be continued. Settlement in colonial New Mexico was in effect a transplantation, a new version of the order that had prevailed in colonial Mexico and Spain. It was not work of footloose individuals in search of adventures or wealth, but of small homogeneous groups of simple people who brought with them their religion, their family ties, their ways of building and working and farming.

Each village devised its own communal irrigation system; and each village created its own miniature landscape of gardens and orchards and fields and pastures, a landscape distinct from the surrounding wilderness.

The history of these villages is largely unrecorded; all we know about then is roughly the decade of their settlement, the date of the first church, and the place of origin of their settlers. One after the other, over the decades, the settlements died, but not without resistance. A flood buried gardens and fields under gravel or sand; a local resource- wood or game or a special crop-lost its market; a railroad ceased operation; the school was closed. Rather than abandon their home the villagers became ranchers and raised cattle or sheep. But in the end it died, and others died; first the remote villages on the margins of the plains, where there were no other jobs, and then the villages where the rangeland had deteriorated and the cedars and junipers were coming back into the abandoned fields. All that is now left of that traditional farming landscape are the villages in the mountain heartland and in the Rio Grande Valley."[41]

Agriculture has shaped both the community and culture of Santa Fe County. Due to its past role, agriculture remains an integral and complex part of Santa Fe County. It is simultaneously an economic development issue, an open space concern, an important water element, and a key ingredient in valuation of rural character and lifestyle consideration throughout the County. In all of these respects, the agrarian history of the County provides the foundation for considering how the important and positive aspects of this rural culture can be extended into the future.

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41 Reprinted from: A book by John Brinckerhoff Jackson, A Sense of Place, a Sense of Time, published by the Yale University Press, Copyright 1964 by Yale University. A letter of permission, to reprint limited selected lines as requested, from the Yale University Press is on file at the New Mexico State Office of the Bureau of Land Management.

Today government and service sectors have replaced the agriculture sector. Santa Fe County's major employers include the state of New Mexico with approximately 9,000 employees in Santa Fe County: Santa Fe Public Schools, with 1,650 employees; St. Vincent's Hospital, with a staff of over 1,300; and the City of Santa Fe with 1,000 employees. Over the past 22 years the relative share of total employment for the various sectors has remained stable, except for government and services. The share of government sector jobs has declined from 39 percent of total employment to 22 percent. During the same time, employment in the services sector increased from 22 percent to 34 percent. On average service sector jobs pay below average wages. Santa Fe County has set a policy to diversify its economic base.

Santa Fe County government recognizes that the need of each of its communities may be different. It is important for us to seek economic development which is supportive of these needs, enriches our community life and promotes our values of self-reliance, individualism and entrepreneurship. Santa Fe County seeks economic activity which is environmentally and socially integrated with our way of life.

In December 1995, the University of New Mexico conducted a regional strategic planning process to focus on the ways to offset the impact of downsizing of the Los Alamos National Laboratory on the regional economy. Five industry clusters were identified to target:

Agriculture and the food industry
Furniture making and related home furnishings
Environmental technology
Biomedical industry including alternative healing traditions
Multimedia

All five targeted clusters have been adopted by Santa Fe County as important to diversify our economic base and to build upon our traditions.

The Custom of Livestock Grazing in Sierra County

The Development of Equitable Estates for Grazing on Federal Lands
(Adapted from the Draft Sierra County Comprehensive Land Use and Policy Plan, Part II, Chapter 2, pp. 2-5 to 2.14)

1.0 Scot-Irish, Mexican, & Spanish Influence on Sierra County's Land Use Practices

There is no question that the culture of the Scot-Irish, Mexican and Spanish people living in Sierra County have shaped the land use practices, customs and economy of the area. With regard to livestock grazing, these customs were also influenced by the local environment. As the local residents will attest, the environment in Sierra County for raising livestock is harsh. The weather is hot, the rainfall is sparse and it is difficult to work the soil to grow crops on anything but lands subject to irrigation. Because of these "abnormal conditions" when compared to lands east of the 30th meridian, it takes a great deal of land to sustain even a modest size herd of livestock. These environmental factors shaped the custom of livestock grazing in Sierra County.

As stated above, land acquisition under the governments of Mexico and Spain came from grants by the King of Spain or the Government of Mexico. However, because of environmental factors described above, that grant of land was normally not enough to sustain a herd of livestock. Therefore, in addition to the use of his property, the Spanish or Mexican citizen also used the other unclaimed lands belonging to the government, in connection with his private property, to sustain his herd, his way of life and to perpetuate community stability.

In New Mexico, the development of livestock grazing under the American system paralleled, intertwined and emulated the Spanish and Mexican custom of using the unclaimed public domain. Under the American system, although a settler could make a good living on 160 or 640 acres of homestead lands east of the 30th meridian, the same could not be said in Sierra County. As the Spanish and Mexican citizens had discovered, the environment in New Mexico required more land for grazing than could be granted to the settler. As such, a parallel custom, learned from the Spanish and Mexican settlers, became the American custom. Allowing livestock to graze on the unclaimed public domain became the norm.

2.0 Encouragement of Livestock Grazing to Assist in Populating the West

Not only was the grazing of livestock on the unclaimed federal lands the custom in Sierra County, the practice was encouraged by the United States Presidents and by the Army who wished to quickly settle and occupy these lands for the United States. There were three major reasons that American settlers and pioneers were desperately needed to quickly settle the New Mexico territories:

1. Concern that a foreign power would take control of these lands by occupancy.

2. The problem of securing the land from hostile Indian tribes.

3. The protection of the public traveling across the continent.

2.1 Concern That a Foreign Power Would Take Control of These Lands by Occupancy

Many American Presidents were afraid that, unless the New Mexico territories were populated and settled by citizens loyal to the United States, a foreign power would take control of these lands by occupancy. Even though

the Treaty of Guadalupe Hidalgo had ended the war with Mexico, the American Presidents wanted to be sure that these newly acquired lands would be populated with citizens loyal to the United States. As President Polk explained in 1847:

> Mexico is too feeble a power to govern these Provinces, lying as they do at a distance of more than 1000 miles from her capital, and if attempted to be retained by her they would constitute but for a short time even nominally a part of her dominions...
>
> The sagacity of powerful European nations has long since directed their attention to the commercial importance of that Province, and there can be little doubt that the moment the United States shall relinquish their present occupation of it and their claim to it as indemnity an effort would be made by some foreign power to possess it, either by conquest or purchase. If no foreign government should acquire it in either of these modes, an independent revolutionary government would probably be established by the inhabitants and such foreigners as may remain in or remove to the country as soon as it shall be known that the United States have abandoned it. Such a government would be too feeble long to maintain its separate existence, and would finally became annexed to or be a dependent colony of some more powerful state. No foreign power shall without our consent be permitted to plant or establish any new colony or dominion on any part of the North American continent...
>
> The Provenances of New Mexico and the Californias are contiguous to the territories of the United States, and if brought under the government of our laws their resources-mineral, agricultural, manufacturing, and commercial-would soon be developed.[42]

2.2 Securing the Land From Hostile Indian Tribes

In addition to the concern over the use of foreign powers on American soil, the Congress and the Presidents also faced the problem of securing the land from hostile Indian tribes. When President Zachary Taylor received the helm of the nation, he focused on occupying and controlling the southwest region because of her great agricultural and mineral wealth. However, as he soon discovered, the Southwest was not easily controlled because of its numerous Indian tribes.

President Millard Fillmore also faced problems with the warring Indian tribes in the Southwest. In his third address to the Nation, he stated:

> Every effort should be made to protect our frontier and that of the adjoining Mexican States from the incursions of the Indian tribes. Of about 11.000 men of which the Army is composed, nearly 8,000 are employed in the defense of the newly acquired territory (including Texas) and of the emigrants proceeding thereto. I am gratified to say that these efforts have been usually successful. With the exception of some partial outbreaks in California and Oregon and occasional depredation on a portion of the Rio Grande, owing, it is believed, to the disturbed state of that border region, the inroads of the Indians have been effectually restrained.[43]

Fillmore also continually reminded Congress that the Treaty of Guadalupe Hidalgo also required the United States to protect the Mexican frontier. Although Fillmore was able to convince Congress to appropriate larger regimes of the cavalry to the Southwest, he also recognized that the best protection against hostile Indians was to increase permanent settlements.[44]

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[42]Polk, James K., *IV Messages and Papers of the President*, 1847. New York, 1897, pp 539-540.

[43]Fillmore, Millard, *V Messages and Papers of the Presidents*, 1852. New York, 1879, p. 174.

[44]Fillmore, Millard, *V Messages and Papers of the Presidents*, 1850. New York, 1879, p. 87.

2.3 Protection of the Public Traveling Across the Continent

The government wanted to colonize the West as quickly as possible for the protection of the public traveling across the continent. As stated by President Polk:

> For the protection of emigrants whilst on their way to Oregon against the attacks of the Indian tribes occupying the country through which they pass, I recommend that suitable number of stockades and blockhouse forts be erected along the usual route between our frontier settlements on the Missouri and the Rocky Mountains, and that an adequate force of mounted riflemen be raised to guard and protect them on their journey...[45]

3.0 Protection of the Customs, Cultures & Property Rights of Those Already Living in the New Mexico Territories

After recognizing the difficulties of life in the southwest and the importance of keeping those lands for the United States, Congress and presidents would face the problem of determining (1) how the land would be secured for those already living in the Southwest and (2) how the land would be transferred to those moving to the Southwest. With regard to those already occupying the land, the answer to the question would be contained in "local law" and an international treaty.

As stated above, Kearny's Code and the Treaty of Guadalupe Hidalgo guaranteed the protection of the customs, cultures and property rights of those already living in the New Mexico territories. Because many of these settlers had already acquired property titles and additional property use rights from the Spanish or Mexican governments or by occupancy and the promotion of the public good and the public weal, those rights would be protected and honored by the United States government under the treaty and Kearny's Code. Such protection also extended to those land use rights which were not codified by legal title because of the promise to protect local custom. The Treaty of Guadalupe Hidalgo and Kearny's Code even extended the protection of property and land use rights as those uses passed from buyer to seller and from generation to generation.

With regard to the people who were induced by the American government to go to the Southwest to make their fortune, Congress and the Presidents promised "liberal grants" of the land. As promised by President Polk:

> I recommend that the surveyor-general's offices be authorized to be established in New Mexico and California, and provision made for surveying and bringing the public lands into market at the earliest practicable period. In disposing of these lands, I recommend that the right of preemption be secured and liberal grants be made to the early ernigrants who have settled or may settle upon them. [Emphasis added].[46]

In a separate address, President Polk Stated:

> That it will ultimately be wise and proper to protect and make liberal grants of land to the patriotic pioneers who amidst privations and dangers lead the way through savage tribes inhabiting the vast wilderness intervening between our frontier settlements and Oregon. and who cultivate and are ever ready to defend the soil, I and fully satisfied. To doubt whether they will obtain such grants as soon as the convention between the United States and Great Britain shall have ceased to exist would be to doubt the justice of Congress.[47]

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[45] Polk, 1845, supra, pp. 396-397.

[46] ibid.

[47] ibid

Along that same line, President Zachary Taylor told Congress in 1849:

> [I recommend] [t]hat commissions be organized by Congress to examine and decide upon the validity of the present subsisting land titles in California and New Mexico, and that provision be made for the establishment of offices of surveyor-general in New Mexico, California, and Oregon and for the surveying and bringing into market public lands in those territories. Those lands, remote in position and difficult to access, ought to be disposed of on terms liberal to all but especially to the early immigrants.[48]

President Fillmore also urged that Congress move swiftly to establish a commission to examine the validity of all the lands claims in New Mexico and California, since he viewed the uncertainty of those claims as retarding the settlement of the country. In his annual address in 1851, he again stressed the need to encourage settlement of the Territories:

> The agricultural lands [of the newly acquired Territories] should, however, be surveyed and brought into the market with as little delay as possible, that the titles may become settled and the inhabitants stimulated to make permanent improvements and enter ordinary pursuits of life.[49]

Franklin Pierce followed President Fillmore to the White House. He also believed that agriculture development in the west and southwest was of the utmost importance. He urged that the lands be swiftly and inexpensively sold to those settlers who would develop the lands for agriculture purposes.[50]

President Ulysses Grant continued to encourage the movement west with promises of the acquisition of property:

> The opinion that the public lands should be regarded chiefly as a source of revenue is no longer maintained. The rapid settlement and successful cultivation of them are now justly considered of more importance to our well-being than is the fund which the sale of them would produce. The remarkable growth and prosperity of our new States and Territories attest to the wisdom of the legislation which invites the settler to secure a permanent home on terms within reach of all. The Pioneer who incurs the dangers and privations of a frontier life, and thus aids in laying the foundation of new commonwealths, renders a signal service to his country and is entitled to its special favor and protection. These laws secure that object and largely promote the general welfare. They should therefore be cherished as a permanent feature of our land system.[51]

While honest settlers and pioneers hastened west turning barren wasteland into productive farms and ranches, other not so honest and productive citizens also ventured west to attempt to make a fast fortune. Such stories of the graft and corruption of land speculators who would move into an area to deplete the timber and other resources then move on without purchasing or replenishing the land so that it would be suitable for use by permanent settlers caused Congress, in 1891, to alter it policies in an attempt to ensure that the honest settler would continue to build the American west. First, Congress permanently repealed the preemption acts and second, Congress added an amendment to the appropriations bill allowing the president to set aside “national forest lands" or forest reserves.

4.0 Protection of the Rights of Livestock Operators Using the Forest Reserves

Even after the creation of the forest reserve system, the importance of the use of the unclaimed federal lands

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[48]Taylor, Zachary, *V Messages and Papers of the Presidents*, 1849. New York, 1897, p. 20.

[49]Fillmore, Millard, *VI Messages and Papers of the Presidents*, 1851. New York, 1897, p. 127.

[50]Pierce, Franklin, *VI Messages and papers of the Presidents*, 1853. New York, 1897, p. 2749.

[51]Grant, Ulysses, *IX Messages and papers of the presidents*, 1853. New York, 1897, pp. 110-111.

for livestock grazing was recognized and protected. As stated in the official annual report of the Secretary of the Interior in 1891, "One striking difficulty in establishing the reservations [forest reserves] themselves may be found in the fact that much of that land that should be reserved is as yet unsurveyed; other parts are subject to prior rights, or are expected to be included in railroad grants."[52]

Although the creation of the forest reserves or national forests had a very rocky start, livestock grazing was always part of the use of those lands. In fact, the Department of the Interior immediately began to adopt policies to protect the rights of livestock operators using the forest reserves. Those policies:

1. Encouraged the rancher to develop improvements to enhance the productivity of the forest reserves.

2. Allowed title to remain with the Forest Service so that those lands suitable for private settlement would only be taken if such settlement did not interfere with the livestock owners' grazing rights.

3. Allowed the states to collect taxes from the use of the federal lands to be used for the development of water resources.

4. Encouraged cooperative projects between the Department of the Interior and the individual livestock producer to better the land for livestock grazing.[53]

The Secretary of the Interior also established rules and regulations to implement the will of Congress in creating the forest reserves and to protect the prior rights of those within the borders of the reserves. *The first regulations allowing the continued use of the forest reserves acknowledged the Spanish custom of allowing local ranchers to have first priority for use of the public lands*. As described by the Secretary of the Interior in 1902.

> Applicants for the grazing privilege are given preference in the following order:
>
> (a) Persons residing within the reserve.
>
> (b) Persons owning ranches within the reserve, but not residing thereon.
>
> (c) Persons living in the vicinity of the reserve owning what may be called neighboring stock.
>
> (d) Persons living at a distance from the reserve who have some equitable claim to use the reserve.
>
> Class (b) under paragraph 16 should not be construed so as to allow large stock owners to obtain the preference therein given, by simply buying or obtaining small ranches inadequate for their business. This will not be tolerated.[54] [Emphasis Added].

Although these regulations initiated a good start in the recognition of the prior rights on the federal lands, further progress in the recognition of these rights was made during the 1905 Denver meeting between the Forest Service and stockmen. During this meeting, the following report was made:

> The main points of agreement, worked out by the department and stock organizations, emphasized that those already grazing in the forest ranges would be protected in their priority of use [Law of Occupancy and Prior Appropriations Doctrine]: that reductions in the number of grazed stock would be imposed only after

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[52] *Department of Agriculture Annual Report to Congress 1891*, Washington: Government printing Office, p. 226.

[53] *Report of the Secretary of Agriculture, 1891*.Washington: Government printing Office, 1892..

[54] *Forest Reserve Manual*. Washington: Government Printing Office, 1902.

fair notice; that small owners would have preference over large; that only in rare circumstances would the department seek total exclusion of stock from the forest; and that the policy of use would be maintained wherever it was consistent with intelligent forest management. Finally, some attempt would be made to give stockmen a voice in making the rules and regulations for the management of stock on local ranges through the establishment of forest advisory boards.[55]

In 1906, the above agreement was codified into regulation by the Forest Service "The Use Book." Those regulations permanently allocated grazing on the federal lands in the following manner:

Applicants for grazing permits will be given preference in the following Order:

(a) Small nearby owners.
Persons living in or close to the reserve those stock have regularly grazed upon the reserve range and who are dependent upon its use.

(b) All other regular occupants of the reserve range.
After class (a) applicants have been provided for, the larger nearby owners will be considered, but limited to a number which will not exclude regular occupants whose stock belong or are wintered at a greater distance from the reserve.

(c) Owners of transient stock.
The owners of stock which belong at a considerable distance from the reserve and have not regularly occupied the reserve range.

Priority in the occupancy and use of the range and the ownership of improved farming land in or near the reserves will be considered, and the preference will be given to those who have continuously used the range for the longest period.

It was by this system and the recognition of the long-standing use of the federal lands that created the permit and preference right system used by the Forest Service and Bureau of Land Management today.

5.0 Equitable Estates for Livestock Grazing on Federal Lands

After considering the Spanish and Mexican customs and culture as protected by Kearny's Law and the Treaty of Guadalupe Hidalgo, the promises made to the settlers and pioneers by the American presidents and Congress and the efforts made to protect and continue livestock grazing even after the creation of the forest reserves, the question to be answered by this comprehensive plan is whether those events have legal significance today. The answer to that question is YES.

It follows, if a person follows the law, he has the benefit <u>of</u> the law. The settlers in the New Mexico territories in obeying the local laws and customs, relying on the promises of the U.S. presidents and obeying the rules and regulations required after the creation of the forest reserves have earned an **equitable estate** for livestock grazing on public and federal lands.

An **equitable estate** is a "right or interest in land, which not having the properties of a legal estate, but merely being a right of which courts of equity will make notice, requires the aid of such court to make it available. These estates consist of uses, trusts and powers."[56] In cases of "conflict" between an equitable right and a legal title,

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[55]Hage, Wayne, *Storm over Rangelands*, Bellevue: Free Interprise Press, 1989, p. 161; Albert F. Potter, "Cooperation in Range Management," *American National Cattlemen's Association Proceedings, 16 (1913):55.*

[56]*Bouvier's Law Dictionary*, p. .530, (1st. Ed. 1868).

the courts will either suspend the enforcement of the legal title, "or decree that it [the legal title] shall be considered as held in trust for the benefit of the one having the equitable title. If equities are made out, the court will always require them to be satisfied before the legal title will be enforced."[57] [Emphasis added]. Actions to protect incorporeal rights are also within the jurisdiction of the equity court.[58] Equitable estate, according to Noah Webster's 1828 *American Dictionary of the English Language*, is "...The estate or interest of one who has a beneficial right in property, the legal ownership of which is vested in another..."

There are numerous reasons that the equitable estate in the federal lands created by Sierra County's custom and culture, recognized by the presidents and Congress and originally protected and recognized by the U.S. Forest Service and Bureau of Land Management should remain in full force and effect today.

1. **Livestock grazing on the unclaimed or federal lands is protected under Kearny's Code and the Treaty of Guadalupe Hidalgo**. As described above, it was by Spanish and Mexican custom that a person grazing the unclaimed lands earned an equitable estate in that land. The extent or size of the equitable estate was determined by the amount of water owned by the settler. "A territorial Statute of 15 February 1887 limited the cattle on a given range to the number which could be watered."[59]

2. **The original Forest Service regulations sanctioning livestock grazing on the federal lands recognized and protected the grazer's right to use the federal lands**. As stated above, only those livestock operators who could prove a prior use of the unclaimed lands, who bad adequate water rights or "commensurate property" and who lived in or near the federal lands could acquire a grazing permit. The fact that those grazing permits were originally taxed as private property further illustrates the Forest Service original intent of protecting livestock grazing on the forest reserves.

3. **Even today, the Forest Service and the U.S. Army recognize the monetary value of a grazing permit**. This is evidenced with the purchase of the Glenn Allotment by the New Mexico Department of Game & Fish and the condemnation proceedings by the U.S. Army when it acquired the grazing rights and the non-federal lands within the McGregor Range in southern New Mexico. The value placed on the Glenn Allotment was determined by the Forest Service. This documentation can be referenced in the Glenn Allotment file, Gila National Forest. The McGregor Range history is documented in a 1977 report from the Secretary of the Interior and the Secretary of Agriculture.[60]

4. **The Internal Revenue Service (IRS) also recognizes a grazing permit on federal lands as a property right**. In Shufflebarger v. Internal Revenue Service, 24 T.C. 980 (1955), the Court held:

> That the grazing of livestock on national forests is to be regarded as a substantial, well-established, and indefinitely continuing part of the national forests program, is not, according to our reading of the grazing regulations and the Forest Service Manual, open to question... It seems to us abundantly clear that the statute and regulations contemplate that once the right to a fair and just allotment of grazing land has been acquired under the established procedures that right, subject to some adjustment if it should become necessary for the protection of the range or for a more equitable distribution among preference holders, is to be regarded as an indefinitely continuing right. [emphasis added]
>
> As determined by the IRS, that "indefinitely continuing right" is taxed upon the death of the owner for the

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[57] 27 *AM. Jur. Equity, §* 64 (1966).

[58] ibid

[59] Clark, Ira G., *Water in New Mexico*, Albuquerque: University of New Mexico Press, 1987, p. 147 (*New Mexico territorial laws of 1889*, Ch. 61, pp. 126-127).

[60] "McGregor Range History", *Study of Fees of Grazing Livestock on Federal Lands*, a Report from the Secretary of the Interior and the Secretary of Agriculture, Appendix C, Part 3(a), October 21, 1977.

fair market value of the permit. That value is based on the "animal unit" numbers or carrying capacity of the permit which is usually one third (1/3) of the value of the deeded lands.[61]

5. **Equitable estates on federal lands are taxed by some of the western states**. In California, grazing permits were recognized as equitable property rights in 1850, and are now taxed accordingly.

6.0 Summary-Federal Land Grazing Permits are an Equitable Estate

Therefore, based on the customs and cultures of the people, the promises of the presidents, the historical agreements made with the United States Forest Service, and the value of grazing permits as recognized by the Forest Service itself, the Internal Revenue Service and by some states, **Sierra County hereby recognizes that those federal land grazing permits acquired under proper authority to be an "equitable estate."** As such, these property rights shall have the full protection of the Fifth and Fourteenth Amendments to the U.S. Constitution.

[61] IRS letter of July 31, 1990 to Dick Manning, rancher; IRS letter of August 25, 1988 to R. B. Tippeconnic, U.S. Forest Service; IRS letter of September 30, 1983 to Robert Hadley.

Navajo Custom and Culture

It's hard to say for sure just when the Navajo first arrived in the Four-Corners area of New Mexico. There was nobody here to observe their arrival. However, it's easy to say that they became the preeminent denizens of the area. The invading Spanish or Anglo found them living in widely scattered family units, occupying loosely-defined territories. Without any distinct tribal leadership, individual bands were unaware of events affecting other tribal members. Their common bond, however, was their sacred beliefs and a love of the land.

The land provided the Navajo people with essentials that could be hunted, gathered and grown. Livestock were added to the resource pool in dramatic fashion. Around 1540, Coronado, in a search for gold, brought his conquistadors to Navajo land. He also brought horses, sheep and goats. Since the Spanish were uninvited and trespassing on Navajo land, the Navajo took horses and livestock as rightfully theirs. Horses, sheep and goats became as tightly woven into Navajo society as the splendid rugs that were to come.

For the next several centuries, an occasional raid or trade between the neighboring Apache, Ute, Pueblo or Spanish immigrant was the usual form of contact with the outside world. Although occurring earlier, serious Anglo exploration and settlement of Navajo land did not begin until the end of the Spanish American war in 1848. The Anglo invasion was accented and aggravated by the passage of the Homestead Act in 1862. The Navajo didn't always get along with the interlopers. The Navajo often found occasion to put down the herding staff and pick up the bow, arrow and rifle. Navajo history progressed with many a skirmish between the Navajo and their unwelcome company. The period 1846 to 1863 saw numerous attempts by the U.S. military to restrict Navajo activities. This segment of their history culminated, in 1863, with a final invasion by the U.S. Military led by Kit Carson, the vanquishing of the Navajo, in 1864, the Long Walk to Fort Sumner.

The Long Walk traversed three hundred rugged miles and took three wintry months for the survivors to accomplish. Nearly 9,000 Navajo were held captive in the barren Bosque Redondo Reservation. There was no food and only Pecos River water to drink. Wood for heat was as scarce as sickness and Starvation were abundant. 3000 died! Finally, in 1867, General Sherman was sent to Fort Sumner. He didn't fail to recognize the government's failure, and his solution, formalized in an 1868 Treaty, was to send the remaining Navajo back to where they came from. They could go home. And, in June, 1868, they did. Leaving Fort Sumner, they marched for two months before reaching Fort Wingate, where they were given food and livestock, allowed to mosey back to their ancestral homelands, and granted the right to resume their lives.

Of course, there were some conditions to this largesse. They would have to send their children to government schools and they could not resist the building of a transcontinental railroad through their land. This later event was to have unimagined, but spectacular, consequences.

The construction of the Santa Fe Railroad through New Mexico and Arizona was completed in 1883. The completion of the railway was also the inauguration of what is today a major Navajo industry... tourism. The pastoral Navajo people, who, as herdsmen, only dabbled in silversmithing and rug-weaving for personal use, experienced a new, vast, and still expanding market for their handicrafts.

Of equal, or perhaps even greater magnitude, are the changes that have come about as a result of the development of the mineral industry. The advent of the mineral recovery industry in Navajo Country produced startling results. Exploration for and recovery of mineral assets, and the subsequent royalties and tax revenues produced, led directly to an apparent improvement in the Navajo standard of living. Dollars were used to produce more and better roads, more and better schools, more and better entitlements, and to manage it all, more, if not necessarily better,

government.

The development of the tourist and mineral recovery industries altered the focus of economic activity from the agricultural to the mineral resource and service sectors. As an increasing population of Navajo discovered that they were living on a fixed and ever more crowded land base, alternative, non-ranching employment became more of a necessity. Services, trade, government and mineral recovery provide the bulk of today's paid employment opportunities.

Even so, the majority of Navajo people remain reliant on raising livestock for their livelihood. And, as always, it is done in the traditional manner. Little or no English is spoken. Hogans, corrals, and sweathouses are scattered piecemeal throughout the region, and form the residential base for claims to livestock use. Many, if not most, residences lack running water and/or electricity.

By large measure, today's Navajo people continue to share the same complicated belief system that has been handed down for generations. Lands have long been held for family use, and even though current economic reality has required some members to move away, the extended family concept is maintained and the family members who leave for work frequently return to enjoy the family surroundings. Economic goods are shared and the family works cooperatively to sustain all the members. Many follow tribal customs and practices, and maintain the personal, spiritual, and physical values and beliefs of their ancestors.

Navajo children are "born to the clan of their mother", but they are "born for" the clan of their father. Beliefs, values and correct behavior are learned in the home, as are herding, riding and animal husbandry skills. Young girls have the additional burdens of learning to cook and weave as well as tend to their even younger siblings. Grandparents and grandchildren still share common tenants which hold custom, practice and religion as inexorably tied to relationships with the land. The earth is considered sacred and many ceremonies are conducted to maintain the balance between Mother Earth and her human inhabitants. Actions and events can occur that disrupt one's harmony. A system of ceremonial rituals, chants and symbolic sand painting performed by a trained medicine man has been developed to restore harmony to an individual's life.

If the disruption of harmony is of a more political or simply quarrelsome nature, individuals and families also turn to other groups or individuals to mitigate or mediate a solution. Land Board members, as well as respected Bureau of Indian Affairs (BIA), Tribal, or Chapter personnel are often called upon to informally referee a disagreement between kin, clan or neighbor.

Navajo livestock operators are assigned permits to graze their livestock. These permits indicate a specific area that the permittee is authorized to use Land Boards, made up of elected Navajo live stockmen, have been given the responsibility of determining range unit boundaries and land users. The land board members, who themselves are part of the Navajo culture, have been greatly influenced by tradition. A grazing system has resulted that is made up of a large number of small range units, with 160 acres not being uncommon, each used by several permit holders grazing their own herds of sheep, goats, cows or horses on a year-long basis.

Considering the fact that the Four-Corners area of New Mexico is such a complicated checkerboard pattern of land status, a cooperative agreement for the grazing administration of this area was entered into by the BLM, BIA and the Navajo Nation in 1966. Under the agreement and its subsequent amendments, the grazing administration on 33 Indian communities was transferred from the BLM to the BIA. Two Navajo communities remain under BLM grazing administration. The 33 communities administered by the BIA include 1,118,742 acres, of which 268,951 are public domain, 34,601 are state lands, and 22,666 acres are owned by the Navajo Nation. The balance is either land held in Trust, or otherwise set aside for Navajo use. The BIA issues grazing permits to 2,425 operators on 935 separate range units. An additional 20 Homesteads and 3000 Individual Indian allotments also freckle the landscape. The Homesteads are 640 acres and the allotments average 160 acres in size. Grazing is managed by the individual

Indian owners with little BIA or Tribal supervision.[62] The Navajo Nation has sole jurisdiction over ranch operations on 1,015,439 Tribally owned acres, 134,233 public domain acres, and 128,350 acres of land owned by New Mexico.[63]

In the arid, beautiful environment of the Four-Corners area of New Mexico, range plants and animals, and the ever-present Navajo herdsmen, continue to be a major part of the panorama. And although they now share space with pump-jacks on the horizon and concessionaires along the road, they remain the primary icons of land use among the red mesas on the high desert. Man or woman, whether astride the saddle or on foot, whether attired in a new Carhartt coat or shrouded in an old blanket, the Navajo, his dog, and his herd remain as one with the land.

The above is my abbreviated effort to describe the Custom and Culture of the Navajo in New Mexico. It is a short synopsis of their history. Although facts and figures on all facets of Navajo life are available, including statistics on birth, employment, income, demographics and death, I have forgone a discussion of them. By design, my treatment was not a scholarly one. It does not analyze events. It does not attempt to delve into the depths of detail available on the subject. Suffice it to say that for every sentence you've read, a chapter could be written. You won't find citations, (with two obvious exceptions), because there aren't any. Statements were made simply from knowledge gained in my numerous years as an employee with the BIA in Crownpoint, NM.

Allan Vesely
l/29/97

[62] Bureau of Indian Affairs, Navajo Area, Eastern Navajo Agency Statistics

[63] Title, Records and Appraisal Section, Navajo Land Department, Division of Natural Resources, October 24, 1996, memo to Eastern Navajo Land Board members

PUEBLO OF ACOMA
CUSTOM AND CULTURE

Pueblo of Acoma Custom and Culture:

HISTORY:

The Pueblo of Acoma people; and other Pueblos, have lived in this region of the Southern Colorado Plateau from time immemorial. Archeologists now find our ancestry goes back longer than 10,000 years. For Acomas, even as we have resided on top of Acoma Mesa for only 1,000 years we lived in the Acoma Valley, along Cebollita Canyon, and in the Rio San Jose River Valley for much longer than that. Our migration history tells that we came from the north and we identify Chaco Canyon and Mesa Verge as our ancestral places. We are known as Acomas living at Acoma because we were looking for a permanent homeland that was “haakuu” (a place prepared) for our people. When the Spanish came they called our villages “pueblos", and we are now called Acoma Pueblo.

Today, much of our ancient land is private, state, and federal land. We lost 1,500,000 acres to the federal government even as we proved aboriginal title in Pueblo of Acoma vs. United States of America. The Spanish recognized some of our land and today 95,000 acres is known as the Pueblo of Acoma Grant. Much of our remaining landholding we have had to recover from the United States. We have had to purchase thousands of acres ourselves. Our present land base consists of 386,000 acres.

We are part of this land. It is our permanent homeland. Our elders tell us we are already underneath the land and we are part of it. The Thousands of ruins in this region attest to the ancient occupation of our people. We have always been agriculture people, residing together in matrilineal clanship system. We were and remain a peaceful, spiritual people who lived conservatively and gratefully with the land and natural resources. We gave thanks to the Great Creator for the water, animals, clay and stone, and all natural resources as we made use of them for daily sustenance. This remains our way of life.

PRESENT

Our way of life is centered around our ancient village, commonly known as "Sky City." We claim to be the oldest, continuously occupied village in North America. The three foreign governments of Spain, Mexico, and the United States, gave canes of recognition to the Acoma People. These canes which are carried by tribal leaders recognize the sovereign attributes of the tribe. Our modern political government remains traditionally selected by traditional, religious leaders.

We are a closely knit tribal community. We have Spanish and English names yet we also have our own Acoma names. We are collective owners of tribal land. Individual lands for farming and residential purposes are allocated by traditional methods. Our people use their land assignments for homes, farming, and ranching. The Acoma people are thriving economically. The tribe was the first Indian gaming tribe in New Mexico and we now operate Sky City Casino. We are also cattlemen, individually, and as we operate the tribal Bar-l5 Ranch and Red Lake Ranch. We rely heavily on tourism and this has proven to be a mainstay of the tribal economy, both for tribal revenues and for community benefit as our people market their arts and crafts.

Language and traditional ways remain strong in the Acoma culture. Our way of life revolves around traditional, religious practices. We continue to hold religious, ceremonial events in private. We pray for all people that we may all be well and live good and peacefully and that we may have rain for our crops and the wildlife. We continue to pray at religious shrines located on private, state, and federal land, such as on Mt. Taylor and El Malpais National Monument. Yet we are a very, open community. We respect and we have good relationships with the neighboring Navajo, Hispanic, and Anglo communities.

FUTURE BASED ON CUSTOM AND CULTURE

We intend to remain Acoma, living on our permanent Acoma homeland. Our population is increasing on the Acoma Indian Reservation. Even as we diversify our tribal economy into other tourism oriented businesses we encourage tribal people to make use of the land for farming. This is difficult when there is little water. We need help from state and federal resources to respect, develop, and protect our water resources. We expect that local governments, the state, and the federal government understand and respect the sovereignty of the Acoma tribe. We are a sovereign indigenous nation. We have all the rights to govern our ourselves and to establish all laws and policies for ourselves and to freely self-determine our way of life as a nation.

There are state and federally lands being leased by the Acoma tribe. These are aboriginally claimed lands that were taken from us under state and federal laws. Now, in essence we pay to lease our aboriginal land. It is the tribal goal to see the return of these lands to we the rightful owners. We intend to work with state and federal government to make this a justful reality.

Appendix F

The National Environmental Policy Act of 1969, as amended

TITLE 1

DECLARATION OF NATIONAL ENVIRONMENTAL POLICY

Section 101. (a) The Congress, recognizing the profound impact of man's activity on the interrelations of all components of the natural environment, particularly the profound influences of population growth, high-density urbanization, industrial expansion, resource exploitation, and new and expanding technological advances and recognizing further the critical importance of restoring and maintaining environmental quality to the overall welfare and development of man, declares that it is the continuing policy of the Federal Government, in cooperation with State and local governments, and other concerned public and private organizations, to use all practicable means and measures, including financial and technical assistance in a manner calculated to foster and promote the general welfare, to create and maintain conditions under which man and nature can exist in productive harmony, and fulfill the social, economic, and other requirements of present and future generations of Americans.

(b) In order to carry out the policy set forth in this Act, it is the continuing responsibility of the Federal Government to use all practicable means, consistent with other essential considerations of national policy to improve and coordinate Federal plans, functions, programs, and resources to the end that the Nation may -

(1) fulfill the responsibilities of each generation as trustee of the environment for succeeding generations;

(2) assure for all Americans safe, healthful, productive, and esthetically and culturally pleasing surroundings;

(3) attain the widest range of beneficial uses of the environment without degradation, risk to health or safety, or other undesirable and unintended consequences;

(4) preserve important historic, cultural, and natural aspects of our national heritage, and maintain, wherever possible, an environment which supports diversity, and variety of individual choice;

(5) achieve a balance between population and resource use which will permit high standards of living and a wide sharing of life's amenities; and

(6) enhance the quality of renewable resources and approach the maximum attainable recycling of depletable resources.

(c) The Congress recognizes that each person should enjoy a healthful environment and that each person has a responsibility to contribute to the preservation and enhancement of the environment.

Section 102. The Congress authorizes and directs that, to the fullest extent possible: (1) the policies, regulations, and public laws of the United States shall be interpreted and administered in accordance with the policies set forth in the Act, and (2) all agencies of the Federal Government shall -

(A) Utilize a systematic, interdisciplinary approach which will insure the integrated use of the natural and social sciences and the environmental design arts in planning and in decisionmaking which may have an impact on man's environment;

(B) Identify and develop methods and procedures, in consultation with the Council on Environmental Quality established by title II of this Act, which will insure that presently unquantified environmental amenities and values may be given appropriate consideration in decisionmaking along with economic and technical considerations;

(C) Include in every recommendation or report on proposals for legislation and other major Federal actions significantly affecting the quality of the human environment, a detailed statement by the responsible official on -

(i) The environmental impact of the proposed action,
(ii) Any adverse environmental effects which cannot be avoided should the proposal be implemented,
(iii) Alternatives to the proposed action,
(iv) The relationship between local short-term uses of man's environment and the maintenance and enhancement of long-term productivity, and
(v) Any irreversible and irretrievable commitments of resources which would be involved in the proposed action should it be implemented. . . .

(D) Any detailed statement required under subparagraph (C) after January 1, 1970, for any major Federal action funded under a program of grants to States shall not be deemed to be legally insufficient solely by reason of having been prepared by a State agency or official, if:

(i) the State agency or official has statewide jurisdiction and has the responsibility for such action,
(ii) the responsible Federal official furnishes guidance and participates in such preparation,
(iii) the responsible Federal official independently evaluates such statement prior to its approval and adoption, and
(iv) after January 1, 1976, the responsible Federal official provides early notification to, and solicits the views of, any other State or any Federal land management entity of any action or any alternative thereto which may have significant impacts upon such State or affected Federal land management entity and, if there is any disagreement on such impacts, prepares a written assessment of such impacts and views for incorporation into such detailed statement.

The procedures in this subparagraph shall not relieve the Federal official of his responsibilities for the scope, objectivity, and content of the entire statement or of any other responsibility under this Act; and further, this subparagraph does not affect the legal sufficiency of statements prepared by State agencies with less than statewide jurisdiction.

(E) Study, develop, and describe appropriate alternatives to recommended courses of action in any proposal which involves unresolved conflicts concerning alternative uses of available resources;

(F) Recognize the worldwide and long-range character of environmental problems and, where consistent with the foreign policy of the United States, lend appropriate support to initiatives, resolutions, and programs designated to maximize international cooperation in anticipating and preventing a decline in the quality of mankind's world environment;

(G) Make available to States, counties, municipalities, institutions, and individuals, advice and information useful in restoring, maintaining, and enhancing the quality of the environment;

(H) Initiate and utilize ecological information in the planning and development of resource-oriented projects; and . . .

Section 105. The policies and goals set forth in this Act are supplementary to those set forth in existing authorizations of Federal agencies.

Council on Environmental Quality (CEQ) Regulations For Implementing The Procedural Provisions Of The National Environmental Policy Act 40 CFR §1500.2

Federal agencies shall to the fullest extent possible:

(a) interpret and administer the policies, regulations. and public laws of the United States in accordance with the policies set forth in the Act and in these regulations.

(b) Implement Procedures to make the NEPA process more useful to decisionmakers and the public; to reduce paperwork and the accumulation of extraneous background data; and to emphasize real environmental issues and alternatives. Environmental impact statements shall be concise,
clear, and to the point, and shall be supported by evidence that agencies have made the necessary environmental analyses.

(c) Integrate the requirements of NEPA with other planning and environmental review procedures required by law or by agency practice so that all such procedures run concurrently rather than consecutively.

(d) Encourage and facilitate public involvement in decisions which affect the quality of the human environment.

(e) Use the NEPA process to identify and assess the reasonable alternatives to proposed actions that will avoid or minimize adverse effects of these actions upon the quality of the human
environment.

(f) Use all practicable means, consistent with the requirements of the Act and other essential considerations of national policy, to restore and enhance the quality of the human environment and avoid or minimize any possible adverse effects of their actions upon the quality of the human
environment.

Appendix G

The Federal, State and local Agency letters received on the Draft RMPA/EIS are included in this Appendix. They are listed below in the order they were received.

Legislature of the State of New Mexico

Eddy County Board of Commissioners

State of New Mexico Environment Department

USDA Natural Resources Conservation Service

County of Lincoln

Hidalgo County

Sierra County Treasurer

U.S Department of the Interior National Park Service

County of Otero

U. S. Environmental Protection Agency

State of New Mexico Department of Game and Fish

Catron County

New Mexico Association of Conservation Districts

State of New Mexico Commissioner of Public Lands

U.S. Department of the Interior Fish and Wildlife Service

The Legislature of the State of New Mexico

FORTY-FOURTH LEGISLATURE
FIRST SESSION, 1999

SENATE MEMORIAL 13

INTRODUCED BY
SENATORS PHIL GRIEGO, PETE CAMPOS AND PATRICK H. LYONS

A MEMORIAL

SUPPORTING AND ENDORSING THE HUMAN DIMENSION STANDARD OF THE BUREAU OF LAND MANAGEMENT OF THE UNITED STATES DEPARTMENT OF THE INTERIOR FOR PUBLIC LAND MANAGEMENT DECISION-MAKING.

WHEREAS, the Bureau of Land Management of the United States Department of the Interior recently drafted a statewide Resource Management Plan Amendment that proposes a human dimension standard for livestock grazing management decisions; and

WHEREAS, the Human Dimension Standard considers economic, cultural, historical and social welfare aspects of permittees, lessees and their communities; and

WHEREAS, this standard will allow the Bureau of Land Management to consider the human dimension as important as endangered species and water quality; and

WHEREAS, Agriculture and the Ranching Industry are vital to the culture, history, social structure and economy of the State and its rural communities;

NOW, THEREFORE, BE IT RESOLVED BY THE SENATE OF THE STATE OF NEW MEXICO that it support and endorse the Bureau of Land Management's Human Dimension Standard for public land management decision-making; and

BE IT FURTHER RESOLVED that copies of this Memorial be transmitted to the New Mexico Congressional Delegation, to the Secretary of the Interior and to the Director of the Bureau of Land Management and the New Mexico Commissioner of Public Lands.

Signed and Sealed at The Capitol, in the City of Santa Fe.

Walter D. Bradley

Walter D. Bradley, President
New Mexico State Senate

Margaret Larragoite

Margaret Larragoite, Chief Clerk
New Mexico State Senate

Eddy County
Board of Commissioners

Ray Camp, Chairman
Julius Doubrava
Glenn Collier
Laurie Kincaid
Lucky Briggs

Eddy County

Eddy County Manager
Steve Massey

101 W. Greene St., Suite 225
Carlsbad, New Mexico 88220
Phone (505) 887-9511
Fax (505) 887-1039

April 22, 1999

John W. Whitney, BLM Project Leader
Bureau of Land Management
P. O. Box 27115
Santa Fe, NM 87502-0115

RE: New Mexico Standards for Public Land Health and Guidelines for Livestock Grazing Management

Dear Mr. Whitney:

The Eddy County Commission appreciates the opportunity to comment on the draft of the New Mexico Standards for Public Land Health and Guidelines for Livestock Grazing Management. The County Alternative is the position we believe will have the least amount of impact on the custom, culture, social, economic, and tax payers' well being of our County. This Alternative has the same goals as the other alternatives but proceeds slower to the goal, which lessen the fracture of tax base and hardship on permittees. We believe this will give better decision making at the local level.

We are in disagreement upon several parts of the draft and feel these parts need further explanation or analyzed more in detail. These sections are as follows.

Chapter 4 - page 25 & 26 - Mineral Resources

The Bureau of Land Management (BLM) stated that standards would apply to oil and gas yet also stated it would not amend mineral resource and minerals that could be leased because of existing statues and regulations. However, 43 CFR 3100 regulations on oil and gas gives the BLM authority to amend land use plans. Such plans as the Environmental Assessments and the Environmental Impact Statements could change State and Local BLM RMP's. It is our understanding the BLM is now receiving comments on the above regulations from oil and gas on proposed changes of regulations for federal land.

Implementation of these regulations in the proposed changes by the Federal Government may affect the standards and grazing guidelines in the State RMP. In addition, the State of New Mexico and Local County Governments may also be affected. The County requests that you respond to these questions and comments to this regulation and proposed changes.

Chapter 1 - page 4

The County has commented before that peer science review should be included in the RMP. This should be inserted in the third paragraph on the right hand page. This would support the endangered species document in the RMP. For example, If federal agencies make a decision on a threatened or endangered species, under the full force and effect, this could and has caused a permittee to remove livestock from all or part of his or her allotment. This decision should include peer science review. The peer science review would include the Bio Dimension and the Human Dimension.

Economic Analysis

The economic analysis appears to be incomplete. Does the BLM propose to have 428 allotments meeting the criteria in 21 years? What has the BLM budgeted for improvements? If the BLM does not have the money budgeted, will the cost be passed on to the permittee? Moreover, if the permittee cannot meet the cost, would livestock have to be removed from the allotment?

Why were the allotments meeting the Standard not included? If allotments are meeting the Standard why are livestock numbers going down instead of up? Has preference not been given for full carrying capacity of allotments. Was the Central Mountain Region the only region analyzed for the State of New Mexico? We feel the other regions in New Mexico need to be included for a sound analysis of the regions and the State.

The Human Dimension is weak and needs to be analyzed deeper on the following criteria: Equity Analysis, Taking, Civil Right Burden, Environmental Justice, Social Well-being, and Cultural Stability.

The BLM has written finding no significant impact (FONSI). This may not have a national base impact but we feel it will have impact at the County basis.

Conclusion

The Eddy County Board of Commission believes this draft has not fully analyzed the content and impact that could affect individuals and County Government under a partial list of federal laws. These laws include NEPA CEQ, EO 12898 Environmental Justice, EO 1230, PRIA and Taylor Grazing Act, and FLMPA.

We would like to ask for an extension of the document until an amendment to the Environmental Impact Statement is published that would include all data for all regions.

Whereas the Central Mountain Region data is important, we feel the incorporation of the data from other regions, with higher percentage of federal land, is crucial. Furthermore, we ask to have adequate time to comment on the additional information. As a final request, we would like the BLM to comment on these questions to aid in our clarity of the RMP.

On behalf of the Commissioners, I thank you for your consideration of our requests.

Sincerely,

Ray L. Camp

Ray Camp, Chairman
Eddy County Board of Commissioners

State of New Mexico
ENVIRONMENT DEPARTMENT
Harold Runnels Building
1190 St. Francis Drive, P.O. Box 26110
Santa Fe, New Mexico 87502-6110
Telephone (505) 827-2855
Fax: (505) 827-2836

GARY E. JOHNSON
Governor

PETER MAGGIORE
Secretary

April 30, 1999

John W. Whitney
BLM Project Leader
Bureau of Land Management, (NM-931)
P.O. Box 27115
Santa Fe, N.M. 87502-0115

Dear Mr. Whitney:

RE: NEW MEXICO STANDARDS FOR PUBLIC LAND HEALTH AND GUIDELINES FOR LIVESTOCK GRAZING MANAGEMENT: DRAFT STATEWIDE RESOURCE MANAGEMENT PLAN AMENDMENT AND ENVIRONMENTAL IMPACT STATEMENT; US DEPARTMENT OF THE INTERIOR, BUREAU OF LAND MANAGEMENT, NEW MEXICO STATE LAND OFFICE; FEBRUARY 1999

This transmits New Mexico Environment Department (NMED) staff comments concerning the above-referenced document.

As mentioned in the referenced document, the standards found in the New Mexico Water Quality Control Commission's, State of New Mexico Standards for Interstate and Intrastate Streams apply to all streams and rivers in New Mexico.

River and stream reaches that are not fully supporting designated uses in New Mexico are listed in the State of New Mexico Water Quality Control Commission's, Water Quality and Water Pollution Control in New Mexico 305(b) list and the 1998-2000 State of New Mexico 303(d) List for Assessed Stream and River Reaches.

As a result of a lawsuit filed by two environmental groups against the U.S. Environmental Protection agency, the Department's Surface Water Quality Bureau (SWQB) has developed a schedule of monitoring all streams and rivers in New Mexico and developing Total Maximum Daily Loads (TMDLs) as appropriate. As part of this process, the State performs water quality monitoring, outlines current water quality conditions, determines load reductions needed, outlines sources of pollutants, and submits implementation plans to bring affected streams into compliance. The SWQB is monitoring New Mexico's streams on a five-year rotating schedule; the Bureau encourages and welcomes any applicable input from BLM to this process.

Because water quality is directly related to the conditions of watersheds and riparian areas, the NMED supports best management practices that will improve and protect these resources.

We appreciate the opportunity to review this document. Please let us know if you have any questions.

Sincerely,

Gedi Cibas, Ph.D.
Environmental Impact Review Coordinator

NMED File No. 1247ER

USDA
United States Department of Agriculture
Natural Resources Conservation Service
6200 Jefferson NE, Room 305
Albuquerque, New Mexico
87109-3734
Phone: (505) 761-4400
Fax: (505) 761-4462

April 26, 1999

John W. Whitney, BLM Project Leader
Bureau of Land Management (NM-931)
P.O. Box 27115
Santa Fe, New Mexico 87502-0115

Dear Mr. Whitney:

I wish to thank the Bureau of Land Management (BLM) for the opportunity to provide comments on the "Draft Statewide Resource Management Plan Amendment/Environmental Impact Statement (EIS) for New Mexico Standards for Public Land Health and Guidelines for Livestock Grazing Management".

The following are New Mexico Natural Resources Conservation Service (NRCS) comments as requested.

1. Page 1 – 1 , The definition of an Ecological Site is as follows. An ecological site, as defined for Rangeland, is a distinctive kind of land with specific physical characteristics that differ from other kinds of land in its ability to produce a distinctive kind and amount of vegetation. (NRCS – National Range & Pasture Handbook, 1997)

2. Page 2-1 – last paragraph – When NRCS is the lead agency in the CRMP process NRCS will assure that the NEPA process is followed on the planning area. NRCS does not routinely do environmental assessments (EA) on federal lands. EA development on public lands is the responsibility of the land-administering agency. NRCS would not have authority implement NEPA on BLM lands. NRCS would however assure that the land administering agency approved of the CRMP and it would be the responsibility of the land-administering agency to assure NEPA compliance on lands under their jurisdiction. .

3. Page 2 – 2 – RAC Alternative – Standard for Public Land Health – Upland Sites Standard: There is a typing error on Column 1 last paragraph first sentence. Should read "Upland ecological sites are in a productive and sustainable condition…".

4. Page 2 – 3, Riparian Sites Standard – Indicator for this standard – Streambank Stability – Add "Minimal" shearing & sloughing. Shearing & sloughing indicates a degraded condition, and unstable streambank.

5. Page 2 – 3, Coordinated Resource Management & Planning (CRMP) should be included as an indicator for the Human Dimension Standard.

G-5

6. Page 2 – 4, Section 1. (d) Season, duration, frequency and intensity of use should be flexible and consider climate, topography, kind, class and health/condition of livestock. Add the following. **"and should also consider the needs of the plant community".** Season, duration, frequency and intensity of use should always consider the needs of the plants as well as the needs of animals.

7. Page 3-1, Biome types: Not all pinon-juniper (PJ) types are considered woodlands. Many PJ sites are grassland sites that have been invaded with PJ.

8. Page 3 –17, Soil Erosion second paragraph "Natural litter…): Please note that Alfisols, Aridisols, Entisols almost always have less than 1% organic matter in the top 10 inches of the soil surface.

9. Page 4 – 19, Soils: All soils in New Mexico would respond differently to drought or moisture, not just upland soils.

If you have any questions concerning these comments or require further clarification please contact State Rangeland Management Specialist George Chavez at (505)761-4421 or Email: fchavez@nm.nrcs.usda.gov.

Sincerely,

ROSENDO TREVINO III
State Conservationist

cc:
Kenneth B. Leiting, ASTC/ Technology, NRCS, Albuquerque, NM
George Chavez, State Rangeland Management Specialist, NRCS, Albuquerque, NM

County of Lincoln

Post Office Box 711 • Carrizozo, New Mexico 88301-0711 • (505) 648-2385

May 4, 1999

Mr. John W. Whitney, BLM Project Leader
Bureau of Land Management
P.O. Box 27115
Santa Fe, New Mexico 87502-0115

RE: New Mexico Standards for Public Land Health and Guidelines for Livestock Grazing Management

Dear Mr. Whitney:

On behalf of the Board of Commissioners of Lincoln County, I wish to express my thanks for your consideration in the design and input on the New Mexico Standards for Public Land Health and Guidelines for Livestock Grazing Management.

We favor the County Alternative evidenced by having the least impact on custom, culture, social, economic and resident taxpayers' well-being in Lincoln County. We feel the process is rushed in nature and will require major changes if not all these alternatives are utilized. Some of our concerns are as follows:

The following definition of "Riparian" as stated on page 65 in Glossary states: "an area of land directly influenced by permanent water. It has visible vegetation and physical characteristics reliant upon continuous presence of water. Lakeshores and streambanks are typical riparian areas. Sites such as ephemeral streams or washes that exhibit the presence of vegetation which is dependent on free water in the soil would be considered riparian areas."

We would recommend omission of the last sentence in order to eliminate contractions to the rest of the definition.

The BLM has recently acquired large tracts along the Rio Bonito Riparian corridor, and we wish to clarify definitions and their impacts before final implementation occurs.

We would further recommend that the Standards and Guidelines recognize historical custom and culture including all historical agrarian pursuits and would further ask for a policy of No Net loss of Private Properties, including water rights with the borders of Lincoln County, New Mexico.

In conclusion, along with our county's custom and culture, we would like also to impress upon the agency and joint leads the diversity of agriculture within our county and a need for maintenance of these diverse levels instead of general standardization statewide.

Sincerely,

Thomas F. Stewart
Lincoln County Manager

G-6

State of New Mexico
HIDALGO COUNTY
300 S. SHAKESPEARE
Lordsburg, New Mexico 88045

John W. Whitney, BLM Project Leader
Bureau of Land Management (NM-931)
PO Box 27115
Santa Fe, NM 87502-0115

May 13, 1999

Subject: Comments on the Draft EIS Standards for Public Land Health and Guidelines for and Livestock Grazing Management.

Dear Sirs:

We recommend the BLM select the County Alternative. Our reasoning is as follows:

The BLM estimates the County Alternative will effect fewer allotments than either the RAC or the Fallback Alternative. This is significant because:

A. BLM funding may not be available to assist in improving range conditions on affected allotments. The rancher may have to pay for the needed improvements while at the same time being forced to reduce allotment numbers. To improve range conditions in our county large scale brush control will be required. If an analysis had been completed requiring ranchers to pay for the brush control while cutting cattle numbers, the estimated of ranchers converting to real estate would probably be much higher than this EIS estimates (22%).

B. The analysis states "...for the long term, communities and ranching operations may be more stable and in better conditions financially, socially and culturally under the RAC Alternative when compared to the Fallback or County Alternatives." (page 4-31). While this statement is correct based on the analysis, if the ranch is unable to survive the short term, the long term is irrelevant.

C. The analysis is flawed. The reason the long term analysis for the RAC Alternative is better than the County Alternative is because more allotments are effected in the RAC Alternative. The analysis then brings the affected allotments up to preference numbers by targeting resources of these allotmens, while the unaffected allotments retain their current numbers. It should be the goal of all of us to bring every allotment up to preference. For instance, after ten years most of the resources directed at the affected allotments would be complete. The next ten years the unaffected allotments should receive the resources. An analysis of this scenario would likely show the County Alternative would be the best Alternative both in the short term and the long term.

We extend our appreciation to the BLM for accepting Hidalgo County as a cooperating agency in this project. We also thank The Lt. Governor for providing the vital leadership to the cooperating counties. We understand the additional agencies extended the time frame of this project; however, we believe it has resulted in a better analysis and document.

Sincerely,

Lloyd V. Payne

Lloyd Payne
County Commisioner Chairman

cc: Office of the Lieutenant Governor/Cecilia Abeyta
NMSU/Department of Ag Economics/Dr. John Fowler

SANDI CHATFIELD

SIERRA COUNTY TREASURER

Sierra County Courthouse
311 Date Street
Truth or Consequences, New Mexico 87901
Phone (505) 894-3524 / 743-3306
FAX (505) 894-9548

Sharon Coffee
Chief Deputy

Margaret Chavez
Senior Deputy Clerk

May 14, 1999

John W. Whitney, BLM Project Leader
Bureau of Land Management
P.O. Box 27115
Santa Fe, N.M. 87502-0115

RE: Draft EIS for New Mexico Standards & Guidelines for Public Land Health

Dear Mr. Whitney:

I have a number of concerns over the draft EIS for the New Mexico Standards & Guidelines for Public Land Health.

**The economic analysis is flawed in that it does not consider or direct resources to the unaffected allotments, resulting in the RAC Alternative appearing to be the best Alternative in the long term.*

**The economic analysis should have considered resources directed to the unaffected allotments after ten years, by which time the affected allotments will have completed their improvements. If this economic analysis had been used in the EIS, the results would probably have shown the County Alternative to be the best in the short term, as well as the long term.*

**Fewer allotments will be adversely affected if the County Alternative is selected versus either the RAC or the Fall back Alternatives.*

**It will cost a substantial amount of money to bring affected allotments up to standards. The assumption, in the EIS, that the BLM will pay for 100% of the improvements is flawed, because the total improvements, while at the same time reducing allotment numbers, this will cause the estimated number of ranchers converting to real estate much higher than the 22% estimated in the EIS.*

The EIS is void of mitigation measures that would reduce the economic, financial, social cultural effects on ranch families and rural communities.

The EIS fails to include state and county human dimension impacts.

The EIS includes inaccurate economic impacts that used Adjudicated Preference 20 years for long range projections without adequately displaying negative impacts in the short run (over the next 7 years).

Thank you for the opportunity to comment and hope that you take these points into consideration.

Sincerely,

Sandi Chatfield
Sierra County Treasurer

Cc: Governor Johnson

United States Department of the Interior

National Park Service
Intermountain Support Office - Denver
12795 West Alameda Parkway
Post Office Box 25287
Denver, Colorado 80225-0287

IN REPLY REFER TO:

RECEIVED
BLM-MAILROOM
99 MAY 17 AM 10:32
STATE OFFICE
SANTA FE, NEW MEXICO

May 12, 1999

John W. Whitney
BLM Project Leader
Bureau of Land Management (NM-931)
P.O. Box 27115
Santa Fe, NM 87502-0115

Re: New Mexico Standards for Public Land Health and Guidelines for Livestock Grazing Management/Draft Statewide Resource Management Plan Amendment and Environmental Impact Statement

Dear Mr. Whitney:

We reviewed the *New Mexico Standards for Public Land Health and Guidelines for Livestock Grazing Management/Draft Statewide Resource Management Plan Amendment and Environmental Impact Statement* and have no comments. This represents the consolidated comments of the National Park Service. If you should have any questions, please contact me at (303) 969-2377.

G-9

Sincerely,

Greg Cody

Greg Cody
NEPA/Section 106 Specialist
Intermountain Region-Denver Support Office
National Park Service

COMMISSION/ADMINISTRATION
(505) 437-7427

DATA PROCESSING
(505) 434-4246

INDIGENT
(505) 434-4902

ROAD/GEOGRAPHIC
INFORMATION SYSTEM
(505) 437-7636

FAX (505) 437-6542

State of New Mexico

County of Otero

1000 NEW YORK AVE., RM. 101
ALAMOGORDO, NM 88310-6935

May 12, 1999

RECEIVED
BLM-MAILROOM
99 MAY 17 AM 10:48
STATE OFFICE
SANTA FE, NEW MEXICO

John W. (J.W.) Whitney, Project Leader
BLM (NM-931)
P.O. Box 27115
Santa Fe, NM 87502-0115

Dear Mr. Whitney:

Otero County respectfully submits the following comments on the BLM Draft Statewide resource Management Plan Amendment/Environmental Impact Statement - New Mexico Standards for Public Land Health and Guidelines for Livestock Grazing Management.

1. Needs assessment is not clear. Purposes are not well defined.

2. The no action alternative/fallbacks should not be the baseline. The state wide E.I.S. is being done because the fallback received vigorous criticism. This makes the baseline a document that is considered unacceptable to both the state and counties.

3. Bad multiple data base information on permitees from the BLM caused early confusion and excess reworking of information for the state team.

4. BLM has different interpretation of the law then the state and counties concerning NEPA, executive orders, Rules and Regulations. These differences were never mitigated or resolved.

5. No lists of statutory compliance were listed in the document, which would define what requirements are mandated under the law by the agency.

6. Not enough scoping "Per NEPA" and Environmental justice to involve Indian Tribes and other ethnic and social economic groups.

7. No consistency analysis was included (per FLPMA 43 CFR-1610.3).

8. BLM needs to consider its own budget. The agency has not funded enough money to achieve their 10 year goals. This is effecting their conditions on the ground. At that point,

the permittee suffers the effects. This was not looked at in the EIS.

9. Statements that the cattle are causing the problem in riparian areas are not backed up by science and this should be deleted or science provided.

10. The memorandum of understanding between the BLM and New Mexico Environment Department, to over see water issues in the state, is legally questionable.

11. The Human Dimension analysis was left out in the form as written by the State team. The BLM said as written, the Human Dimension was unacceptable. Early in the process in November of 1997, it was agreed, that the state would write this section. The BLM's retort in the final months of the process was, they would rewrite the Human Dimension with the State Team, but it would be subject to changes by their editors and lawyers. Because of the conflict, some counties submitted a separate document (per NEPA) in the form of an EIR. These were not considered nor were they printed.

    Listed are some but not necessarily all requirements in the Human Environment.

    A. E.O. 12630
    B. E.O. 12898
    C. E.O. 12291
    D. E.O. 13045
    E. 18 U.S.C. 241 and 45 (A) - (1)
       1994 C.R.A. Title VII
    F. Regulatory Flexibility Analysis
    G. Duplication of Effort (NEPA)

    By not doing a complete analysis, irreparable and irreversible damage can be caused to the counties customs and culture and also, make the EIS incomplete.

12. An Environmental Justice Analysis (E.O. 12630) was not developed when the law is clear on Environmental Justice. The BLM's comment is that they are not targeting any particular group, so no complete analysis is necessary. This does not provide for the best possible science (NEPA) nor satisfies the intent of the law.

13. A mitigation plan was never developed. BLM said that plan could be developed on the ground later. This does not meet the standard of NEPA or E.J. (E.O. 12630).

14. The economic analysis is incomplete. This analysis should show all permits moving toward preference, not just the permits below standard. Also, all regions of the State should be included. This analysis must be completed or the EIS is incomplete.

Otero County strongly believes the D.E.I.S. is incomplete and that the science and demographic information, are on the first issue, easily achievable and on the later, readily available. The science would provide the best science available (NEPA). The state's demographic information, both on minorities and poverty levels, would show the agency needs to complete the equity analysis.
Incomplete information and facility information, will lead to an incorrect decision.

Respectfully,

Richard L. Zierlein
Otero County Commissioner

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 6
1445 ROSS AVENUE, SUITE 1200
DALLAS, TX 75202-2733

May 12, 1999

Mr. John W. Whitney
BLM Project Leader
Bureau of Land Management
P.O. Box 27115
Santa Fe, New Mexico 87502-0115

Dear Mr. Whitney:

In accordance with our responsibilities under Section 309 of the Clean Air Act, the National Environmental Policy Act (NEPA), and the Council on Environmental Quality (CEQ) Regulations for Implementing NEPA, the U.S. Environmental Protection Agency (EPA) Region 6 office in Dallas, Texas, has completed its review of the US Department of the Interior, Bureau of Land Management (BLM), New Mexico Standards for Public Land Health and Guidelines for Livestock Grazing Management, Draft Environmental Impact Statement (DEIS).

The DEIS documents the effects of adopting statewide standards for public health and guidelines for grazing management on BLM administered lands in New Mexico. Any standards or guidelines would be incorporated into eight existing resource management plans in New Mexico. The proposed standards and guidelines were developed in partnership with the statewide Resource Advisory Council (RAC) and with other public input. Another alternative is to adopt standards and guidelines developed by the New Mexico/Arizona Coalition of Counties, or otherwise referred to as the County Alternative. Both alternatives are being proposed in accordance with revised regulations for live stock grazing on BLM lands (43 CFR 4100).

The DEIS fully describes the proposed action, explores and objectively evaluates reasonable alternatives, provides evidence and analyses of impacts on the affected environment, demonstrates coordination with other agencies with special expertise or jurisdiction by law with respect to environmental impacts, provides for mitigation and monitoring, and documents efforts to involve the public.

EPA classifies your DEIS and preferred action as "LO," i.e., EPA has "Lack of Objections" to either alternative ie; the RAC or the County Alternative. Both appear to have beneficial merits that should contribute positively toward public health protection and grazing management. Our classification will be published in the Federal Register according to our responsibility under Section 309 of the Clean Air Act, to inform the public of our views on proposed Federal actions.

EPA appreciates the opportunity to review the DEIS. We request that you send our office one (1) copy of the Final EIS at the same time that it is sent to the Office of Federal Activities (2251A), EPA, 1200 Pennsylvania Avenue, N.W., Washington, D.C. 20044.

Sincerely yours,

Michael P. Jansky, P.E
Regional 309 Coordinator

GOVERNOR
Gary E. Johnson

DIRECTOR AND SECRETARY
TO THE COMMISSION
Gerald A. Maracchini

STATE OF NEW MEXICO
DEPARTMENT OF GAME & FISH

Villagra Building
P.O. Box 25112
Santa Fe, NM 87504

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May 17, 1999

Mr. John W. Whitney, BLM Project Manager
Bureau of Land Management (NM-931)
P.O. Box 27115
Santa Fe, NM 87502-0115

Re: Draft Statewide Resource Management Plan Amendment/Environmental Impact Statement, New Mexico Standards for Public Land Health and Guidelines for Livestock Grazing Management. NMGF Doc. #6674.

Dear Mr. Whitney:

The Department of Game and Fish (Department) has reviewed the Draft Statewide Resource Management Plan Amendment/Environmental Impact Statement, New Mexico Standards for Public Land Health and Guidelines for Livestock Grazing Management (DEIS). The DEIS analyzes the impacts of adopting statewide standards for public land health and guidelines for grazing management on lands administered by the U.S. Bureau of Land Management (BLM) in New Mexico.

The Department recognizes the importance of rangeland and riparian health in maintaining productive wildlife populations and sustainable human economies. Therefore, the Department supports the BLM's effort to improve rangeland and riparian conditions, thereby guaranteeing the long-term viability of both wildlife and human communities.

BACKGROUND

The DEIS analyzes the following four alternatives:

- The no action alternative uses land management and grazing practices that were in effect before the current grazing regulations were approved in February 1995. This alternative cannot be implemented, but provides for baseline comparison with the other alternatives.
- Standards and guidelines developed by the New Mexico Resource Advisory Council (RAC), which is the BLM's preferred alternative;
- Standards and guidelines developed by the New Mexico members of the Arizona/New Mexico Coalition of Counties; and

- Fallback standards and guidelines defined in the February 1995 grazing regulations (BLM began implementation of the fallback standards and guidelines on 1 March 1998, where the standards had not been met and livestock grazing was a contributing factor).

As stated in the abstract, adoption of alternatives 2, 3, or 4 would require changing the existing land use plans to make them consistent with the adopted standards and guidelines. The standards and guidelines selected will be incorporated into eight BLM resource management plans (RMP's) that affect approximately 13.5 million acres. Of 2,193 grazing allotments, 287 to 480 allotments would not meet the standards, depending on which alternative is selected.

GENERAL COMMENTS

1. Based on our interpretation of the National Environmental Policy Act (NEPA) regulations, the most problematic procedural concern with the DEIS is that it does not adequately present the anticipated impacts and the alternatives in comparative form, which would allow the reader to distinguish between alternatives. Chapter 4 discusses the anticipated effects of implementation of each of the four alternatives on natural resource criteria. The Upland Vegetation, Water and Special Status Species sections for each alternative consist of repetitious verbatim text. These repetitious statements do not clearly differentiate the potential impacts of each alternative on these resources to provide a clear basis of choice. Similarly, the Big Game, Upland Game/Nongame and Waterfowl/Fisheries subsections for each Major Land Resource Area (MLRA) often contain verbatim language that also does not distinguish qualitative differences between alternative implementation on these resources. Clearly defined comparative analysis of each alternative would allow for well defined analysis of alternative implementation on wildlife resources in the various MLRA's and special status species. We recommend that these sections of the document be rewritten to more clearly define the differences between anticipated potential effects of each alternative. Providing comparative information in a table format for all resource criteria evaluated would be especially helpful in distinguishing differences between the alternatives.

2. Page 3-13 states: "Based on existing inventory data, lotic [running water] riparian areas on public land in New Mexico total 427 miles, containing 13,285 acres of riparian habitat located in 244 stream segments." Page 3-17 states: "Comparatively, the number of miles of perennial streams on public lands is small, only 433 (USDI, BLM 1997 Public Land Statistics). There are no estimates of the miles of ephemeral channels on public lands." Based on these statements, the riparian segments are apparently only perennial stream segments. The DEIS should provide a discussion of stream types that were analyzed and omitted from analysis (i.e., intermittent), discuss the rationale for this decision, and provide a comparison of the biological and functional nature of the different stream types, to give the reader some idea of the nature and extent of riparian resources that may have been excluded from analysis.

3. Concerning the condition of the riparian streams in the DEIS, page 3-13 states: "Statewide, 38 stream segments are in proper functioning condition, 116 segments are functional at risk, 38 segments are not functional, and 52 have not been inventoried. Of the total areas, 160 segments are grazed and 84 segments are excluded from grazing. Of the grazed areas, 14 are in proper functioning condition, 85 are functional at risk, 31 are not functional, and 30 have not been inventoried." Page 3-18 discusses non-point source (NPS) surface water pollution (NMWQCC 1998), stating that grazing on rangelands accounts for 29.5% of the total NPS contribution to surface water quality impairment in the state. The DEIS further states that "...grazing is a probable major source of pollutants which may contribute to water quality impairments on approximately 2,474 stream miles, and a minor source of pollutants which may contribute to water quality impairment on approximately 676 stream miles. Undoubtedly, many of the 448 miles of perennial streams on public lands have been impacted by grazing in the past. Of the 163 water-quality limited stream reaches identified by NMED (1998), approx. 46 have public lands within their watershed. Forty-two of these (91%) have grazing identified as one of the probable sources of pollutants."

4. The Department is concerned about riparian, aquatic and wetland habitats because they are essential for the survival of a majority of the species of wildlife found in the state. The quality (NMWQCC 1992) and quantity (Dahl 1990; Hink and Ohmart 1984) of these habitats have been significantly diminished or degraded. Of the 867 species of vertebrates known to occur in New Mexico, 479 (55%) rely wholly or in part on aquatic, wetland or riparian habitat for their survival. Fifty-one of the 96 species that are listed by the state as threatened or endangered are associated with these habitats (NMGF 1997).

5. All three action alternatives are designed to improve uplands and riparian areas that have been adversely affected by a combination of factors such as climate, fire suppression and grazing that have altered natural disturbance regimes, riparian function, and vegetative and wildlife composition, structure and diversity. Page ix states: "Of the 2,193 grazing allotments, it is projected that between 287 to 480 allotments (a relatively small percentage) would not meet the standards, depending on the alternative....In the short term, some allotments would increase livestock numbers while others may be adjusted downward....In the long term, livestock use is expected to increase as the rangelands improve in health and the forage production increases." The discussion describing impacts on wildlife from implementing the RAC alternative states on page 4-20: "Livestock would be used as a management tool to help restore and maintain sustainable habitats, increase biological diversity and vegetative productivity, and promote proper functioning uplands and riparian areas."

6. The DEIS does not explain how intensified grazing regimes will be used to achieve and maintain standards. The DEIS contains repetitious statements in the Grazing Administration sections for each alternative that do not clearly define differences between anticipated future management practices for increased livestock numbers and previous practices, and between alternative implementation. Since grazing has been a

contributing factor to not meeting the existing standards on some allotments, a discussion should be provided describing how future management practices that increase livestock numbers will: 1) differ from previous management practices that were insufficient to maintain upland and riparian health; 2) achieve the adopted standards and the goals of increasing biological diversity, vegetative productivity and proper functioning conditions of upland and riparian areas; 3) avoid contributing to or returning to the conditions that require the implementation of new standards and guidelines; 4) maintain the new standards for rangeland and riparian health once they have been achieved; and 5) differ between alternatives.

7. Page 4-46 of the DEIS states: "Under this alternative [Fallback] 480 permittees could be affected [the most of any alternative]. Permittees most affected by the guidelines would be those with small one-pasture allotments where there is continuous, season-long grazing. Continuous, season-long grazing is allowed to occur only when it has been demonstrated to be consistent with achieving a healthy, properly functioning ecosystem." This statement is inherently contradictory. According to the DEIS, implementation of the Fallback alternative would be the most restrictive and affect the most permittees, the majority of which practice season-long grazing. However, the DEIS maintains that season-long grazing is only allowed to occur if demonstrated to be consistent with achieving a healthy, properly functioning ecosystem. The standards and guidelines themselves are intended to improve rangeland and riparian conditions to achieve a properly functioning condition. Thus, it is unclear how the majority of allotments potentially affected by Fallback guideline implementation could have been achieving a healthy, properly functioning ecosystem.

8. The Cumulative Effects discussion addresses primarily the potential short-term effects of implementing the Proposed Action or other alternatives on the livestock industry, but does not factor in the cumulative benefits of improved surface water quality and groundwater recharge, soil retention and stability, decreased soil erosion and surface water runoff, more productive wildlife habitats, and increased hunter and non-consumptive wildlife user satisfaction.

9. The DEIS does not recognize the importance of vegetative communities as forage for wildlife. No discussion of formulas for determining AUM allocations for wildlife was included in the DEIS. Please provide a discussion in the wildlife sections of each alternative explaining how AUM's for wildlife will be determined, and how these formulas would differ for each alternative.

10. In the 1990 Memorandum of Understanding between the Department and the BLM, the BLM has agreed to "Appropriately recognize and give full consideration to wildlife as a desirable and co-equal resource on public lands under the multiple resource management concept." The Department is concerned that none of the standards and guidelines in the proposed alternatives sufficiently recognize the importance of standing residual vegetation and litter as cover for wildlife. Grassland bird species require residual vegetation for nesting cover, and many of these species are declining. Breeding Bird Survey data indicate that grassland bird populations are

experiencing the greatest population declines of any other avian group in North America (Robbins et al. 1993, Knopf 1994), probably attributable to habitat modifications from grazing and other human activities (Martin and Finch 1995). The lesser prairie chicken (*Tympanuchus pallidicinctus*) usually nests within sand sage-grassland or shinnery oak, and appears to require residual clumps of tall grasses for successful nesting (Davis 1979, Riley et al. 1992). The lesser prairie chicken has recently been determined by the U.S. Fish and Wildlife Service to be Warranted But Precluded for federal listing under the Endangered Species Act. Mule deer (*Odocoileus hemionus*), a priority management species for the Department, needs adequate residual vegetative cover for fawn survival. High predation rates and low fawn survival may be attributable in some areas to loss of cover from grazing (Green Hammond 1996). When selecting a final alternative to implement, the BLM should consider its commitment to recognize wildlife as a coequal resource, and the importance of residual vegetative biomass as wildlife cover and forage.

RECOMMENDATIONS

The Department recommends implementation of the Fallback standards and guidelines for the following reasons:

1. As stated on page 4-46, this alternative would focus management activities on more acres for wildlife habitat protection than the other alternatives.
2. The greatest number of riparian segments would be improved and restored to Proper Functioning Condition (PFC). Of 154 riparian segments classified as nonfunctional or functional-at-risk with a downward trend, or where the trend is not apparent, 107 riparian segments would be improved, 39 to PFC. The RAC alternative would improve 68 riparian segments, restoring 32 to PFC. The County alternative does not state the total number of riparian segments improved, but would also restore 32 segments to PFC.
3. Riparian segments would be improved and restored in the least amount of time.
4. The Fallback alternative allows for a slight increase in actual AUM's over the long-term, but considers and protects critical wildlife resources. The RAC alternative also protects critical wildlife resources, the County alternative does not.
5. The Fallback alternative incorporates landscape-level, as well as site-specific (allotment level) habitat needs when developing Allotment Management Plans (AMP's). The RAC alternative also considers landscape-level habitat needs; the County alternative does not.
6. Soil conditions will undergo the greatest improvement under the Fallback alternative. The RAC alternative provides for better soil conditions than the No Action or County alternatives, from the implementation of grazing guidelines on more acres. The County alternative will provide for slightly more improvement to soils than the No Action alternative.
7. Although not clearly defined in the analysis for water and upland vegetation, the Fallback alternative will most successfully improve surface water quality by reducing non-point source pollution, increasing water retention and associated aquifer recharge, and reducing surface erosion and stream sedimentation, which will improve habitat quality and quantity for aquatic life.

8. Although not stated or adequately analyzed in the Big Game section of each alternative, based on enhanced conditions of other resources such as riparian and upland habitats, the Fallback alternative will provide the best long-term opportunities for increasing deer herds, a primary management goal of the Department.

Finally, the Department recognizes that grazing can have numerous and complex effects on soil, water, vegetation and wildlife resources. The DEIS refers to conducting future extensive and widespread brush control and herbicide projects in shinnery oak, mesquite, juniper and big sage communities. Between 1989 and 1992, BLM conducted an average of over 20,000 acres of brush control a year. These activities can have profound effects on wildlife populations with specialized habitat requirements. To assist the BLM in addressing these concerns, we have included several lists of Threatened, Endangered and Sensitive species potentially adversely impacted by grazing and range improvement practices such as brush control on juniper, big sage, mesquite and shinnery oak. The Department would like to continue to work closely with the BLM on AMP's that could impact wildlife resources.

We appreciate the opportunity to comment on this DEIS. Should you have any questions, please contact Mark Watson, Habitat Specialist, of my staff at 827-1210.

Sincerely,

Jerry A. Maracchini, Director

JAM/MLW

Encl.

Xc (w/o encl.)
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Lieutenant Governor Walter Bradley
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Mark Watson (Conservation Services Habitat Specialist)

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Taxa which are Endangered, Threatened, Proposed, Candidate, Sensitive and/or Species of Concern in Great Basin sagebrush

Common Name	SCIENTIFIC NAME	FWS.. ESA	FWS. SOC	FS. R3	BLM.. NM	STATE NM	STATE AZ
N. Sagebrush Lizard	Sceloporus graciosus graciosus	-	S	-	-	-	-
Swainson's Hawk	Buteo swainsoni	-	-	S	-	-	S
Ferruginous Hawk	Buteo regalis	-	S	S	S	-	S
Burrowing Owl	Athene cunicularia hypugaea	-	S	-	S	-	-
Loggerhead Shrike	Lanius ludovicianus	-	S	-	S	-	-
Black-billed Magpie	Pica pica hudsonia	-	-	-	-	-	S
White-tailed Jack Rabbit	Lepus townsendii campanius	-	-	-	-	S	-
Gunnison's Prairie Dog	Cynomys gunnisoni	-	-	-	-	S	-
NM Banner-tailed Kangaroo Rat	Dipodomys spectabilis baileyi	-	-	-	-	-	S
Red Fox	Vulpes vulpes	-	-	-	-	S	-

Taxa which are Endangered, Threatened, Proposed, Candidate, Sensitive and/or Species of Concern in Shinnery Oak

Common Name	SCIENTIFIC NAME	FWS.. ESA	FWS. SOC	FS. R3	BLM.. NM	STATE NM	STATE AZ
Texas Horned Lizard	Phrynosoma cornutum	-	S	S	S	-	-
Sand Dune Lizard	Sceloporus arenicolus	-	S	-	S	T	-
Desert Kingsnake	Lampropeltis getula splendida	-	-	S	-	-	-
Texas Longnose Snake	Rhinocheilus lecontei	-	-	S	-	-	-
Desert Massasauga	Sistrurus catenatus edwardsii	-	-	S	-	-	S
Swainson's Hawk	Buteo swainsoni	-	-	S	-	-	S
Ferruginous Hawk	Buteo regalis	-	S	S	S	-	S
Lesser Prairie-chicken	Tympanuchus pallidicinctus	-	-	-	S	S	-
Sandhill White-tailed Deer	Odocoileus virginianus texana	-	-	-	-	S	-

Taxa which are Endangered, Threatened, Proposed, Candidate, Sensitive and/or Species of Concern in Chihuahua Desert; mesquite/tarbush/ocotillo

Common Name	SCIENTIFIC NAME	FWS.. ESA	FWS. SOC	FS. R3	BLM.. NM	STATE NM	STATE AZ
Great Plains Narrowmouth Toad	Gastrophryne olivacea	-	-	S	-	E	S
Texas Horned Lizard	Phrynosoma cornutum	-	S	S	S	-	-
Giant Spotted Whiptail	Cnemidophorus burti	-	S	S	S	T	-
Gray-checkered Whiptail	Cnemidophorus dixoni	-	S	-	S	E	-
Reticulate Gila Monster	Heloderma suspectum suspectum	-	-	S	-	E	-
Gray-banded Kingsnake	Lampropeltis alterna	-	-	-	-	S	-
Desert Kingsnake	Lampropeltis getula splendida	-	-	S	-	-	-
Texas Longnose Snake	Rhinocheilus lecontei	-	-	S	-	-	-
Desert Massasauga	Sistrurus catenatus edwardsii	-	-	S	-	-	S
Swainson's Hawk	Buteo swainsoni	-	-	S	-	-	S
Zone-tailed Hawk	Buteo albonotatus	-	-	S	-	-	-
Ferruginous Hawk	Buteo regalis	-	S	S	S	-	S
Burrowing Owl	Athene cunicularia hypugaea	-	S	-	S	-	-
Loggerhead Shrike	Lanius ludovicianus	-	S	-	S	-	-
Yellow-eyed Junco	Junco phaeonotus palliatus	-	-	S	-	T	-
Varied Bunting	Passerina versicolor	-	-	S	-	T	-
Nelson's Pocket Mouse	Chaetodipus nelsoni canescens	-	-	-	-	S	-

Taxa which are Endangered, Threatened, Proposed, Candidate, Sensitive and/or Species of Concern in Juniper

Common Name	SCIENTIFIC NAME	FWS.. ESA	FWS. SOC	FS. R3	BLM.. NM	STATE NM	STATE AZ
Arizona Toad	Bufo microscaphus microscaphus	-	S	S	S	S	-
N. Sagebrush Lizard	Sceloporus graciosus graciosus	-	S	-	-	-	-
Giant Spotted Whiptail	Cnemidophorus burti	-	S	S	S	T	-
Gray-checkered Whiptail	Cnemidophorus dixoni	-	S	-	S	E	-
Mountain Skink	Eumeces tetragrammus callicephalus	-	-	S	-	T	-
Desert Kingsnake	Lampropeltis getula splendida	-	-	S	-	-	-
Texas Longnose Snake	Rhinocheilus lecontei	-	-	S	-	-	-
Green Rat Snake	Senticolis triaspis intermedia	-	-	S	-	T	-
Yaqui Blackhead Snake	Tantilla yaquia	-	-	-	-	S	-
Mottled Rock Rattlesnake	Crotalus lepidus lepidus	-	-	S	-	T	-
Desert Massasauga	Sistrurus catenatus edwardsii	-	-	S	-	-	S
Swainson's Hawk	Buteo swainsoni	-	-	S	-	-	S
Zone-tailed Hawk	Buteo albonotatus	-	-	S	-	-	-
Ferruginous Hawk	Buteo regalis	-	S	S	S	-	S
American Peregrine Falcon	Falco peregrinus anatum	E	-	S	-	T	S
Arctic Peregrine Falcon	Falco peregrinus tundrius	A	-	S	-	T	S
Burrowing Owl	Athene cunicularia hypugaea	-	S	-	S	-	-
Mexican Spotted Owl	Strix occidentalis lucida	T	-	S	-	S	S
Loggerhead Shrike	Lanius ludovicianus	-	S	-	S	-	-
Gray Vireo	Vireo vicinior	-	-	S	-	T	-
Mexican Chickadee	Poecile sclateri eidos	-	-	S	-	-	-
Yellow-eyed Junco	Junco phaeonotus palliatus	-	-	S	-	T	-
McCown's Longspur	Calcarius mccownii	-	-	S	-	-	-
Long-legged Myotis Bat	Myotis volans interior	-	S	-	S	S	-
Penasco Least Chipmunk	Tamias minimus atristriatus	-	-	S	-	E	-
Organ Mtns. Colorado Chipmunk	Tamias quadrivittatus australis	-	S	-	S	T	-
Oscura Mtns. Colorado Chipmunk	Tamias quadrivittatus oscuraensis	-	S	-	S	T	-
Gray-footed Chipmunk	Tamias canipes canipes	-	S	-	S	-	-
Gunnison's Prairie Dog	Cynomys gunnisoni	-	-	-	-	S	-
Guadalupe Pocket Gopher	Thomomys bottae guadalupensis	-	S	S	S	S	-
Southern Pocket Gopher	Thomomys umbrinus emotus	-	-	-	-	T	-
Navajo Mogollon Vole	Microtus mogollonensis navaho	-	S	-	-	-	S
Red Fox	Vulpes vulpes	-	-	-	-	S	-

Taxa which are Endangered, Threatened, Proposed, Candidate, Sensitive and/or Species of Concern: Potential trampling/cover impacts.

Common Name	SCIENTIFIC NAME	FWS.. ESA	FWS. SOC	FS. R3	BLM.. NM	STATE NM	STATE AZ
Texas Horned Lizard	Phrynosoma cornutum	-	S	S	S	-	-
Sand Dune Lizard	Sceloporus arenicolus	-	S	-	S	T	-
Mountain Skink	Eumeces tetragrammus callicephalus	-	-	S	-	T	-
American Bittern	Botaurus lentiginosus	-	-	S	-	-	S
Green Heron	Butorides virescens	-	-	S	-	-	-
Lesser Prairie-chicken	Tympanuchus pallidicinctus	-	-	-	S	S	-
Gould's Wild Turkey	Meleagris gallopavo mexicana	-	-	S	-	T	-
Sora	Porzana carolina	-	-	S	-	-	-
Piping Plover	Charadrius melodus circumcinctus	T	-	-	-	E	-
Mountain Plover	Charadrius montanus	P	-	S	-	S	-
Black-necked Stilt	Himantopus mexicanus	-	-	S	-	-	-
Upland Sandpiper	Bartramia longicauda	-	-	S	-	-	-
Interior Least Tern	Sterna antillarum athalassos	E	-	S	-	E	-
Buff-collared Nightjar	Caprimulgus ridgwayi ridgwayi	-	-	S	-	E	-
Broad-billed Hummingbird	Cynanthus latirostris magicus	-	-	S	-	T	-
Veery	Catharus fuscescens salicicola	-	-	-	-	-	S
Sprague's Pipit	Anthus spragueii	-	-	S	-	-	S
Baird's Sparrow	Ammodramus bairdii	-	S	S	S	T	S
AZ Grasshopper Sparrow	Ammodramus savannarum ammolegus	-	-	-	-	T	S
Yellow-eyed Junco	Junco phaeonotus palliatus	-	-	S	-	T	-
McCown's Longspur	Calcarius mccownii	-	-	S	-	-	-
Bobolink	Dolichonyx oryzivorus	-	-	-	-	-	S
White-sided Jack Rabbit	Lepus callotis gaillardi	-	S	S	S	T	-
Yellow-nosed Cotton Rat	Sigmodon ochrognathus	-	S	-	S	-	-
Heather Vole	Phenacomys intermedius intermedius	-	-	-	-	S	-
Arizona Montane Vole	Microtus montanus arizonensis	-	-	S	-	E	-
Prairie Vole	Microtus ochrogaster haydenii	-	-	-	-	S	-
New Mexican Jumping Mouse	Zapus hudsonius luteus	-	S	S	S	T	S
Sandhill White-tailed Deer	Odocoileus virginianus texana	-	-	-	-	S	-
Chihuahuan Pronghorn	Antilocapra americana mexicana	-	-	S	-	-	S

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May 14, 1999

John W. Whitney,
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P.O. Box 27115
Santa Fe, NM 87502-0115

Dear Mr. Whitney,

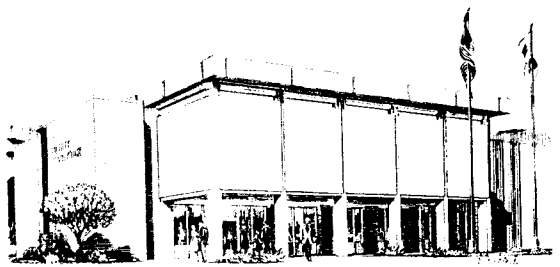
As you are aware, the State/BLM ID Team is in the midst of the NEPA comment period for considering the various alternatives for Healthy Public Lands Standards and Guidelines. Once the public comment period is over the joint State/BLM ID Team in consultation with the State of New Mexico and Cooperating Counties, will examine the comments to complete the Environmental Impact Statement (EIS). At this point in time it is important to identify concerns over the Draft EIS (DEIS) because it fails to adequately address the potential significant impacts on the people of New Mexico and because the joint planning process and agreements have been breached by the BLM.

In reviewing the DEIS document, the County has identified several problems in content as well as problems with our agreed upon scope of environmental impact analyses, especially pertaining to the human dimension aspect. The County comments follow the Council on Environmental Quality guidelines(CEQ 1503.3(a)) that state:

Comments...should be as specific as possible and may address the adequacy of the statement [DEIS] or the merits of the alternatives discussed or both.

The County's concerns center around the failure of the BLM adequately to address problems identified by the State ID Team. CEQ states that:

If the lead agency leaves out a significant issues...the EIS may be found later to be inadequate.(CEQ Forty Most Asked Questions (henceforth referred to as FMAQ) #14b).



Background
The State ID Team agreed with the BLM to document the existing environment for the economic, social, cultural, and equity areas for baseline information in Chapter 3. Also to analyze economic, social, cultural, and equity impacts for each alternative in Chapter 4. Furthermore, the State ID team was asked to coordinate the development, analyze and document the Human Dimension component per agreement in Alamagordo (agreed upon official meeting minutes, 11/97). It is apparent that the current DEIS does not reflect these agreements, nor does it comply with NEPA/CEQ regulations in content or process for a joint EIS analyses, documentation or joint public involvement process (CEQ 1506.2, the State/BLM MOU or Cooperating County mini NEPA ordinances). BLM is negligent in these areas and in their competence and scientific accuracy. Moreover, the BLM has constantly flip flopped on their data bases, positions, interpretations of NEPA requirements, and in demonstrating a disregard for the laws and regulations of the State and Counties of New Mexico.

Listed below are the major problems with the current DEIS content and planning processes pursuant to federal, state and/or county laws. The three major areas of concern with the current DEIS are:

A. Inadequacy and inaccuracy of the DEIS;
B. Errors in DEIS content, and,
C. BLM/State/County process & the rejection of the State impact analysis and documentation.

A. Inadequacy and Inaccuracy of the DEIS

1. Throughout the DEIS document the BLM makes erroneous claims that the RAC alternative is the better alternative for the public land rancher "in the long run". This is false due to their erroneous assumption that the historical BLM adjudicated preference grazing AUMs (Animal Unit Months) would be used as long range target numbers (goals). The recent 10 Circuit Court of Appeals overturned the adjudicated preference policy. Hence, BLM has rejected the policy of adjudicated preference numbers, invalidating the impact analyses. Also, the analysis does not include the impacts of those permits that do meet the standards and will move towards adjudicated preference within the analyzed time frame. In short, this problem invalidates BLM's conclusion that the RAC is the best alternative for the rancher and for New Mexico. The DEIS is an inadequate impact analysis, failing to accurately display the full significant effects of the Fallback, RAC and County alternatives.

2. The BLM information problems include database inaccuracies, methodologies, delays and a general lack of clarity, understanding and readability of the DEIS. In

addition, meetings between the State ID Team and BLM illustrate chronic problems with BLM delays as well as inconsistencies and inaccuracies with the BLM's information, analysis and persistent misinterpretations. This is reinforced by the Customs and Cultures of the County in an appendix instead of the main body of the DEIS.

3. The DEIS is difficult to follow in part due to their convoluted formatting and manipulation of both State analyses as well as Cooperating County inputs. CEQ requires that an EIS document be clear and understandable to the general public. The Department of Interior *NEPA Handbook (*Chapter 44.19) states:

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If the EIS is combined with another decisionmaking document [e.g., Cooperating County EIRs] *[the EIS] will be clearly and separately identified and not interwoven into other portions of or spread throughout the [EIS] document.*

As it now stands the DEIS does not meet this requirement. It is impossible to understand what the real impacts are, much less sort out these distinctions cited above.

B. Errors in the BLM DEIS Content:

1. The BLM failed to identify and fulfill their statutory and regulatory requirements by not including adequate and detailed socioeconomic, cultural or distributional effects analyses. More particularly, the BLM did not analyze the effects on equity (e.g., distributional effects) or federal rights regulations, including requirements to conduct Takings Implication Assessment (Presidential Executive Order 12630) or impacts on civil rights (18 U.S.C. 241 & 245(a)(1), 1964 Civil Rights Act Title VII). The BLM persisted in ignoring their responsibilities under Presidential Order 12898, Environmental Justice and Environmental Justice NEPA Guide (designed specifically for addressing the effects on protected classes of citizens). In addition, the BLM disregarded requirements to assess regulatory impacts (Presidential Order 12291); the Regulatory Flexibility Analysis (5 U.S.C. 603 & 604); and, the requirements under the Presidential Executive Order 13045 Protection of Children from Environmental Health Risks and Safety Risks.

Furthermore, the BLM was presented with documentation from their own manuals and guidelines for conducting socioeconomic analyses, for considering Human Dimension, and distributional effects, civil rights and Environmental Justice, mitigation guidelines *BLM Guide to Social Assessment, Reference Guide to Socioeconomic Mitigation and Human Dimension Internal Policy.* Yet BLM disregarded these cites by leaving out important components in the Effects/Impact Analyses.

2. The BLM also failed to analyze indirect and cumulative social, cultural and economic effects of each alternative as well as failed to address irreversible and irretrievable impacts (CEQ 1508.7, 1508.8(b) and 1508.27). The *BLM NEPA Handbook* (Chapter V #2) CEQ states:

The EIS must identify all the indirect effects that are known and make good faith effort to explain the effects that are not known but are "reasonably foreseeable." (FMAQ#18).

The DEIS is void of analysis of the indirect and cumulative effects analysis for each of the alternatives. This is exemplified in their removal of key phrases in chapter three analyses of the urban impacts on healthy rangelands. This information was included in the County's EIR. BLM went out of its way to play down the *relative* effects of urbanization by stating that these lands occupy less than 3% of the total BLM lands. While this low percentage should be questioned, the point is not the percentage of land

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impacted, rather the degree and cumulative impacts. Academic research and BLM field reports show that urban impacts have the potential for irreversible and irretrievable impacts on healthy public rangelands. The BLM surgically removed any reference to this potential for indirect, cumulative and irreversible and irretrievable effects discussed in the County's EIR. By removing this analysis and language it eliminates the point that this is disproportionate harm to the ranchers. Without being able to show that other public land users are contributing to adverse effects to healthy public lands, it conceals the fact that the public land rancher is being singled out to bare the brunt of the costs.

3. The BLM failed to consider the Human Dimension effects on all the regions of the State of New Mexico (southwest, southeast, or the northwest). By opting to only consider one region (Central Mts.), the DEIS does not adequately show the significant demographic and geographic regional differences (a key component to managing for these different ecosystems). Moreover, by disregarding these significant differences, the report displays a lack of sensitivity not only the different ecosystems, but to the ethnic and cultural differences. Most notably, the document does not address the Native Americans, especially the Navajos in the northwest who have a significant number of BLM grazing permits. In order to analyze and document statewide effects, it is necessary to address each region within the State to obtain a statewide aggregate. The other three regions should be incorporated before the final EIS is completed for statewide analysis.

4. In addition, the DEIS did not adequately analyze the effects of the No Action alternative in their report. The DEIS only *lists* the present condition. It is essential to analyze the No Action alternative to provide a baseline *for comparative evaluation* - to show the effects of *relative* changes for each alternative *from* the baseline (even if the baseline will not be implemented).

5. The above analyses are designed to determine if there are significant adverse effects from each alternative in order to consider mitigation measures *to show ways to reduce or eliminate* harm to the Human Environment (CEQ 1508.14, 1502.14(f), 1502.16(h) and 1505.2c). BLM did not develop mitigation measures for addressing and alleviating significant negative effects, even after the State ID Team requested measures be identified to provide guidelines for implementation of Standards and Guidelines and

after the State/Counties requested to participate in mitigation planning. Hence, the BLM removed the *only* opportunity to reduce or eliminate significant adverse effects and provide for a balance between socioeconomic and biophysical impacts (NEPA 102).

6. BLM did not conduct the Consistency Analysis requirements in DEIS per Federal Land Planning and Management Act (43 CFR 1610.3). This law requires the BLM to analyze and identify consistencies and inconsistencies with State environmental and natural resources Laws and County environmental and natural resources Ordinances. The Counties refused to do this requirement, and therefore the BLM simply left this

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requirement out. The implications to such inaction is that the State/BLM ID Team never was afforded the opportunity to develop a combined document that would show how the healthy rangeland alternatives relate to federal, state, and local laws. This should have been done early in the process to avoid many of the problems that subsequently arose. This consistency review also is an important foundation for moving from the healthy rangelands Standards and Guidelines to actual Area Resource Plan implementation. Without it, the future Area Resource Plans will be missing critical intergovernmental coordination to manage for public lands.

CEQ FMAQ#22 states:
...certain inconsistencies may exist between the proposed federal action and any approved state or local plan or law. The joint document should discuss the extent to which the federal agency would reconcile its proposed action with such plan or law (CEQ 1506.2)

Instead of compliance, the BLM unilaterally decided to reject State and County analyses without attempting to reconcile the inconsistencies.

7. The DEIS refused to include County Environmental Ordinances for assessing social, cultural and economic impacts, as well as County requirements to assess federal proposed actions on civil rights and property rights. The BLM disregarded the County Ordinances that *require* consideration of the impacts on property rights and civil rights.

CEQ 1506.2 states:
Agencies shall cooperate with State and local agencies to the fullest extent possible to reduce duplication between NEPA and State and local requirements...Where State laws or local ordinances have environmental impact requirements...federal agencies shall cooperate in fulfilling these requirements as well as those of federal laws so that one document will comply with all applicable laws.

Cooperating County environmental ordinances provide the vehicle in which county environmental impact reports are to be included in federal EISs. Yet, the BLM's response is 28 pages of rationalizations as to why they, as a federal agency, are exempt from their

own federal statutory compliance requirements. The BLM never did give a logical or legal argument why BLM denied the counties from exercising *their* right in joint EISs per CEQ1506.2. Federal, State and County laws and regulations were discussed in detail in the County EIR. The BLM suggested to the State Team to place this discussion in the Appendix; the BLM subsequently and unilaterally removed it from the DEIS.

Related to the above, it is inadequate (and odd) that the DEIS is void of any mention of the joint planning process, adding to the confusion of the reader. It should explain the

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exact nature of this joint effort as well as reasons why it is necessary for State and County participation.

C. BLM/State/County Process & The Rejection Of The County Impact Analysis And Documentation.

1. BLM refused to include the State Team's social, cultural and equity (distributional effects) analyses, otherwise referred to as the Human Dimension Analysis per State/County/BLM agreement. While the BLM seemingly recognized the differences in analyses and documentation, the BLM disregarded CEQ requirements for both resolving differences and for dealing with differences by removing the State Team's Human Dimension impact analyses and documentation. Again, CEQ states:

If the lead agency leaves out a significant issue or ignores the advise and expertise of the cooperating agency, the EIS may be found later to be inadequate. Similarly, where the cooperating agencies have their own decisions to make and they intend to adopt the environmental impact statement and base their decisions on it, one document should include all of the information necessary for the decisions by the cooperating agencies. Otherwise they may be forced to duplicate the EIS process by issuing a new, more complete EIS or Supplemental EIS, even though the original EIS could have sufficed if it had been properly done at the outset. Thus both lead and cooperating agencies have a stake in producing a document of good quality. ... (CEQ FMAQ #14b).

Cooperating Counties plan to base their (County) decision on the one document, that is, the BLM DEIS. Given the problems with the DEIS, Cooperating Counties have been forced to duplicate the DEIS and redo the entire process, analysis and documentation.

CEQ recognizes differences and provides instructions for dealing with this. More importantly it is clear that CEQ still requires that "complete" state and county analyses be included in the document:

Because of the differences in perspectives as well as conflicts among federal, state and local goals...the Council has advised participating agencies to adopt a flexible, cooperative approach. The joint EIS should reflect all of their interests and missions, clearly identified as such. The final document would then indicate how state and local

interests have been accommodated or would identify conflicts in goals... The EIS must contain a complete discussion of the scope and purpose of the proposal, alternatives, and impacts so that the discussion is adequate to meet the needs of local, state and federal decisionmakers. (FMAQ#22)

It was clear in the agreement with the BLM that the State Team in consultation with Cooperating Counties, would analyze and document the economic, social, cultural and equity analyses for both chapters three and four of the DEIS. It is also clear that BLM

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action denied the State and the Counties the right to full disclosure of the impacts defined by the State and Counties in one document. The BLM chose to disregard their own legal requirements, and in this process disregard State and County laws to protect the health, safety and welfare of their citizens.

2. In addition, the BLM did not include the State or Cooperating Counties in the on-going public involvement process as a joint process per MOU agreement, CEQ 1506.2 and County Environmental Ordinances (as well as requests by the State and Cooperating Counties). In addition, the BLM has failed to adequately incorporate the affected tribes and pueblos of New Mexico in the analyses and documentation processes. Presently, the tribes and pueblos have no idea or way of knowing the potential adverse effects on their jurisdictions much less on their communities or individual permittees.

3. Finally, the BLM did not afford the opportunity to the State Team in writing and distribution of the DEIS per State/County/BLM MOUs. Instead, the BLM reversed this agreement and unilaterally wrote the DEIS over protest from the State Team and Cooperating Counties.

Conclusion and Recommendation:

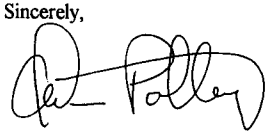
These problems are identified early during the comment period for consideration by the State Team and the Cooperating Counties of New Mexico. The DEIS should either be redone or a Supplemental EIS be conducted. this is necessary because the DEIS is inaccurate in comparing the alternatives as well as drastically under-estimating the significant adverse effect on the Human Environment.

The County hopes this critique can be helpful in resolving the problems that now exist. It would be a real disservice to New Mexico, Counties and the general public to continue as is (not to mention the increased exposure to litigation and financial risks). Furthermore, it would be a tragic waste of human and financial resources. The State and County Teams have spent half a million dollars on this Joint EIS process, excluding the BLM waste.

In the end, to pursue with the current DEIS and Preferred Alternative, will only contribute to politically motivated interest groups using public land ranchers as scapegoats.

Moreover, it will have adverse effects on rural dependent communities, our natural resources and on a major sector of New Mexico's economy -drastically impacting agriculture -without a complete and accurate analysis and full disclosure document.

Sincerely,



Adam Polley
Catron County Manager

New Mexico Association of Conservation Districts

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Home Ph/Fax (505) 981-2422

163 Trail Canyon Road
Carlsbad, New Mexico 88220

May 10, 1999

Bureau of Land Management (NM-931)
Mr. J.W. Whitney, BLM Project Leader
P.O. Box 27115
Santa Fe, NM 87502

Dear Mr. Whitney:

On behalf of the New Mexico Association of Conservation Districts, I would like to submit these comments concerning the draft Environmental Impact Statement (DEIS). I am concerned that this document does not comply with the NEPA process. The DEIS fails to analyze the indirect and cumulative social, cultural, and economic effects and the irreversible impacts of each alternative.

The Federal Land Policy and Management Act requires BLM to identify and analyze consistencies and inconsistencies with State and local plans. Each of the Soil and Water Conservation Districts in New Mexico has annual and long-range plans. These plans have not been considered. Individual Soil and Water Conservation Districts have Memorandums of Understanding (MOU's) signed with BLM; these are not being utilized.

Soil and Water Conservation Districts are responsible for the conservation and development of the natural resources within their district boundaries. They are also responsible for protecting the human health and safety of the state of New Mexico. We encourage the Bureau of Land Management to coordinate and consult with the local Soil and Water Conservation District and to update the existing MOU's.

We would like to support the county alternative, so that the "human dimension" may be considered.

Sincerely,

Debbie Hughes, Executive Director

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May 24, 1999

Mr. John Whitney, BLM Project Leader
Bureau of Land Management (NM 931)
P.O. Box 27115
Santa Fe, New Mexico 87502-0115

Dear Mr. Whitney:

Thank you for providing the State Land Office with the opportunity to review the Draft Statewide Resource Management Plan Amendment/EIS for New Mexico Standards for Public Land Health and Guidelines for Livestock Grazing Management. Based on our review we offer the following comments.

1. (page 1X) Of the alternatives presented we recommend the RAC alternative. This alternative provides a framework for focusing on rangeland health with a strong component for input from rangeland experts and the public. While such a degree of public involvement could influence or divert attention from needed management actions, this alternative also focuses on the human dimension of rangeland management.

2. (page 1-4) The BLM proposal to create an interagency team of rangeland specialists responsible for developing site indicators is of interest to the State Land Office, since we hold lands in BLM grazing allotments. Consequently, we would like to contribute a member to that interagency team and ask that we be notified of its formation.

3. (pages 2-2/2-4) Again, the RAC alternative is recommended because it contains more specific guidelines and has a strong emphasis on riparian/watershed management.

In summary, while all four alternatives have the potential to achieve the same goals, the human dimension as evaluated in both the RAC and County alternatives directly affects the BLM's ability to target specific problems with on-the-ground management activities. Thus, input and participation from experts and the public alike are important components to implementing management objectives associated with the RAC alternative. However, if undertaken, this alternative appears to have the greatest potential to improve rangeland health in New Mexico.

Again, thank you for providing the opportunity to comment. If you have any questions or would like any further information, please feel free to contact Robyn Tierney at 505/827-5751.

Sincerely,

ROBERT S. JENKS
ASSISTANT COMMISSIONER
SURFACE RESOURCES

RSJ/RT/dm

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United States Department of the Interior

FISH AND WILDLIFE SERVICE
New Mexico Ecological Services Field Office
2105 Osuna NE
Albuquerque, New Mexico 87113
Phone: (505) 346-2525 Fax: (505) 346-2542

June 10, 1999

Cons. #2-22-99-I-282

Memorandum

To: State Director, New Mexico State Office, Bureau of Land Management, Santa Fe, New Mexico

From: Field Supervisor, New Mexico Ecological Services Field Office, U.S. Fish and Wildlife Service, Albuquerque, New Mexico

Subject: Draft Statewide Resource Management Plan Amendment/Environmental Impact Statement, New Mexico Standards for Public Land Health and Guidelines for Livestock Grazing Management

The U.S. Fish and Wildlife Service (Service) has reviewed the *Draft Statewide Resource Management Plan Amendment/Environmental Impact Statement, New Mexico Standards for Public Land Health and Guidelines for Livestock Grazing Management* (DEIS) dated February 1999. The DEIS analyzes the impacts of adopting statewide standards for public land health and guidelines for grazing management on lands administered by the Bureau of Land Management (BLM) in New Mexico. Any standards and guidelines adopted would be incorporated into eight existing resource management plans (RMPs) covering the public lands in New Mexico. The proposed standards and guidelines were developed in partnership with a statewide Resource Advisory Council (RAC), and other public input.

The DEIS considers four alternatives. The first alternative (present management/no-action) is the continuation of the current management direction. The second alternative (proposed action/BLM preferred alternative) is to adopt the standards and guidelines developed by the RAC. The third alternative (County alternative) is to adopt standards and guidelines developed by the New Mexico/Arizona Coalition of Counties. The fourth alternative (Fallback alternative) is to implement the fallback standards and guidelines defined in the BLM's grazing regulations. If any of the action alternatives are adopted, changes would have to be made to the existing land use plans.

The Service commends the BLM for its efforts to consider actions to improve upland and riparian conditions. However, the DEIS does not adequately analyze or compare the alternatives. Section 1502.14(a-f) of the National Environmental Policy Act states that and Environmental Impact Statement should present the environmental impacts of

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the proposal and alternatives in comparative form thus sharply defining the issues and providing a clear basis for choice among options. There are not qualitative or quantitative differences that can be distinguished across the range of alternatives for this proposed project. The Service recommends that Chapter 4 of the DEIS be edited and revised to clarify and describe the differences between alternatives and their impacts.

The DEIS does not explain how the BLM will use grazing management to achieve the standards that are proposed in the various alternatives. There are no apparent differences in management across the action alternatives.

The cumulative effects discussion does not adequately address the impacts of implementing the action alternatives on vegetative and soil conditions, water quality, and impacts to wildlife and specialized wildlife habitats. The focus of the analyses emphasizes the grazing industry and the associated economic impacts of adopting standards and guidelines. No single factor has been a greater cause of decline in wildlife populations than loss of habitat. To maintain viable populations of wildlife species, sufficient resources and adequate environmental conditions must provide for reproduction, foraging, resting, cover and dispersal of animals. These attributes of wildlife habitat are not adequately addressed in the document. It is impossible to make meaningful management decisions and adequately evaluate the overall cumulative affects of adopting the standards and guidelines without a picture of the habitat and wildlife that will be impacted.

The Service recommends the implementation of the Fallback Alternative. According to the DEIS, the standards and guidelines under the Fallback Alternative would focus management activities on the maximum amount of wildlife species and their habitats than the other alternatives. The most significant improvements to vegetative and soil conditions, water quality and key wildlife habitats occur under this alternative. Also, the largest amount of riparian habitat would be improved in the least amount of time under this alternative.

The Service appreciates the opportunity to review this DEIS. However, we did not receive the document from the Bureau of Land Management until April 26, 1999. Therefore, although we were unable to meet the deadline for comments of May 17, 1999, we request you consider our comments during the preparation of the final environmental impact statement.

Thank you for your concern for endangered species and New Mexico's wildlife habitats. If we can be of further assistance, please contact Delfinia Jaramillo of my staff at the letterhead address or at 505/346-2525.

Jennifer Fowler-Propst

cc:
Director, New Mexico Department of Game and Fish, Santa Fe, New Mexico
Field Supervisor, U.S. Fish and Wildlife Service, Arizona Ecological Services Field Office, Phoenix, Arizona