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Economic, Social, and Cultural Aspects of Livestock Ranching on the Española and Canjilon Ranger Districts of the Santa Fe and Carson National Forests: A Pilot Study

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Abstract

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The ranches of northern New Mexico, composed of land and livestock, are integral components of family and community life. This pilot study examines current economic, social, and cultural aspects of livestock operations owned by ranchers with Federal grazing permits (permittees) on the Canjilon and Española Ranger Districts of the Santa Fe and Carson National Forests. This research develops preliminary results and tests survey methods that will be used in a planned larger study. Information gathered from the study is intended to help agency managers administer forest lands with increased effectiveness by promoting greater cultural understanding. It will also be valuable as a public information tool because many residents of the State, especially those newly migrated to both urban and rural areas, are unfamiliar with the primarily Hispanic culture and traditions of northern New Mexico. The study focuses on both the economic and noneconomic contributions of livestock ownership to local families and communities. It explores the ways in which ranching maintains traditional values and connects families to ancestral lands and heritage. Acknowledging the importance of small livestock operations to area families and communities is crucial for understanding their way of life and resolving disputes over public land and resource use.

Keywords: Northern New Mexico, permittees, ranching, livestock, ancestral lands, values, tradition, heritage

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Cover photo: Corral on the road to Gallina, NM, 1993. Alice M. McSweeney.

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Economic, Social, and Cultural Aspects of Livestock Ranching on the Española and Canjilon Ranger Districts of the Santa Fe and Carson National Forests: a Pilot Study

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Contents

Summary and Management Implications

The ranching tradition in northern New Mexico is long standing, enduring across many generations. Livestock ownership and ranch life are powerful forces that bind families and communities, continuing a heritage that began with Spanish colonization. Owing to the history of land use and ownership in the region, many contemporary ranchers rely to a considerable degree on public land to graze their animals. Rules and regulations governing use of these lands have the potential to significantly affect the viability and survival of local livestock operations.

Controversy continues over the use of Federal lands and land management agencies in northern New Mexico, as well as in the Western United States as a whole, which often arises from agency officials' imperfect understanding of local sociocultural values and attitudes toward land use. Although Forest Service permittee relations have improved in recent years, problems still exist. This is exemplified in northern New Mexico where distinctive custom, culture, and tradition contribute to misunderstanding and conflict.

This pilot study is the first part of a longer term research program that will address the problem by gathering information on contemporary land management and use issues among ranchers with Federal grazing permits. This study, limited to two Ranger Districts of the Santa Fe and Carson National Forests, develops preliminary results and tests survey methods that will be used in the next phase of the research with all permittees on the two Forests. The work is intended to assist managers in addressing land management and use issues now and in the future. It will also be valuable as a public education tool because many residents of the State, especially those newly migrated to both urban and rural areas, are unfamiliar with the primarily Hispanic culture and traditions of northern New Mexico.

Acknowledging the importance of small livestock operations to area families and communities is crucial for understanding their way of life and resolving disputes over public land and resource use. The study focuses on gathering information on both the economic and noneconomic contributions of livestock ownership to local families and communities. It explores the extent to which the use of public land for grazing and other purposes provides opportunities for community interaction and maintenance of traditional culture.

Those permittees with whom we spoke consider the ranching way of life vital to maintaining their cultural heritage and traditional values, as well as to passing those values on to future generations. There is a strong sense of responsibility to land, livestock, family, and community, with land often viewed as part of the family, not as something to sell. Keeping land in the family and upholding traditional values are regarded more highly than material possessions or monetary gain.

Changing attitudes and values among the general public have the potential to negatively impact the rural ranching way of life in northern New Mexico, with its ties to traditional lands and heritage. The effects of population growth and urbanization on land values, property taxes, water availability, and attitudes concerning ranching and other traditional rural economic activities require in-depth study. These trends add to the difficulties the permittees discussed with us concerning "making ends meet" and keeping their lands in agricultural use. This becomes increasingly difficult as neighboring lands are sold and subdivided. The ranchers struggle with the problems, challenges, and benefits of working on both private and public land and fear losing their permits, ranches, and rural cultural traditions, which are so heavily dependent upon land and livestock ownership.

Introduction and Historical Background

The ranching tradition in northern New Mexico (fig. 1) is deeply rooted in history, with responsibility toward land and livestock enmeshed in family values. Livestock ownership and ranch life are powerful forces that bind communities and families. Continuing this way of life on ancestral lands serves to preserve the culture and heritage of the past for future generations. Due to the history of land ownership in the region, many ranching operations rely on public lands as a necessary source for livestock grazing. A substantial amount of these lands were formerly granted to or used by local communities and the ancestors of current permittees. Regulations and management decisions concerning these lands significantly affect the operation of ranching throughout the area.

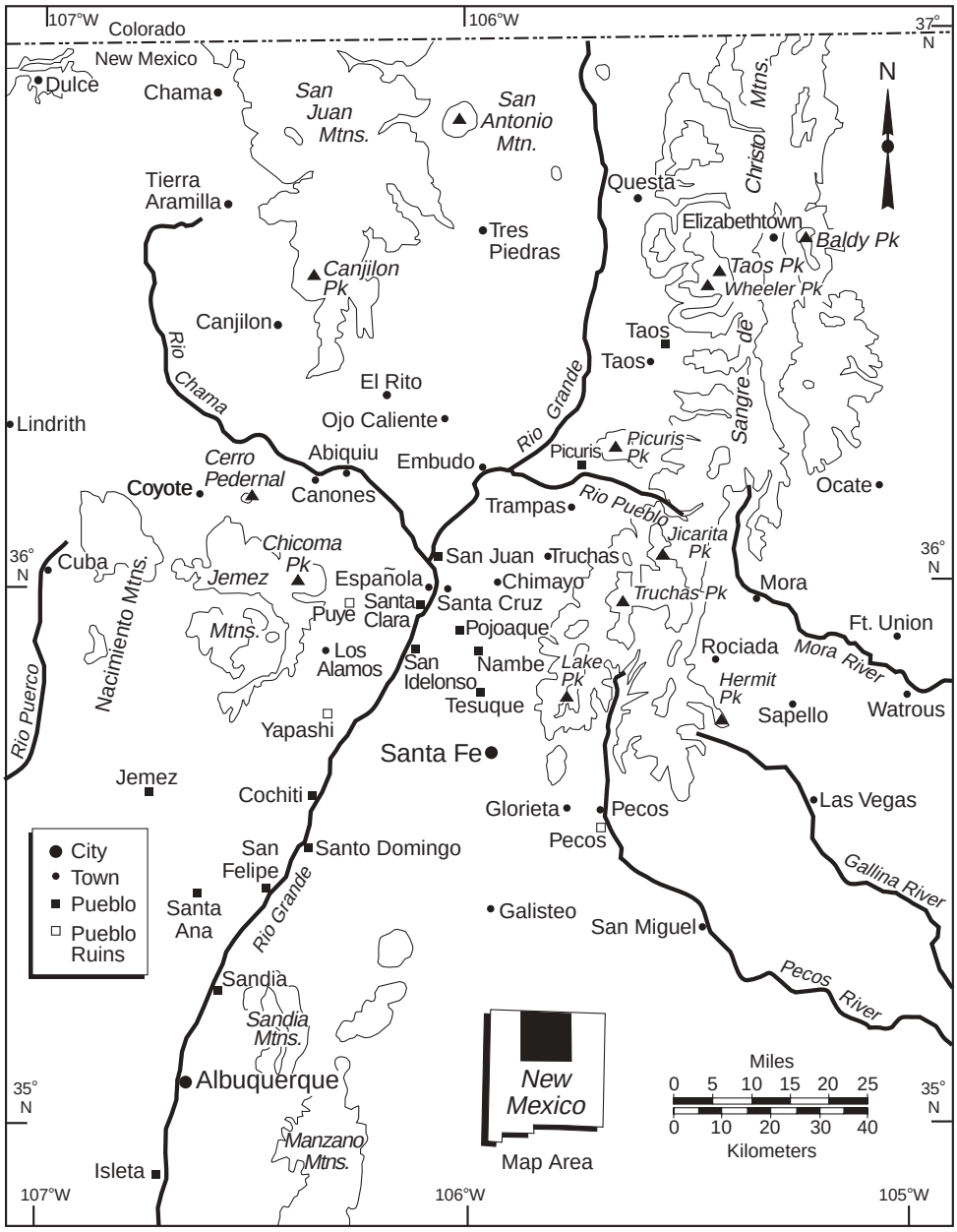

Figure 1—North-central New Mexico, adapted from de Buys (1985).

Today controversy continues over the role of Federal lands and land management agencies in the Western United States, where considerable amounts of land are under Federal control. The State of New Mexico is no exception. In the State's six north central counties (Mora, Rio Arriba, Sandoval, San Miguel, Santa Fe, and Taos), the general area of concern for this study, approximately 34 percent of the land is Federally controlled. Together, the USDI Bureau of Land Management (BLM) and the USDA Forest Service (USFS) manage 52 percent of the land in Rio Arriba County and 53 percent in Taos County (Eastman and others 2000).

Much of the debate over Federal land use occurs because land managing agencies have not adequately emphasized and monitored sociocultural attitudes toward land valuation and use. The Española/Canjilon study addresses this problem by exploring contemporary land management, valuation, and use issues within their cultural context among ranchers with Federal grazing permits (permittees) on National Forest lands in northern New Mexico.

Understanding the importance of livestock operations to area families and communities is crucial to comprehending and resolving disputes over public land and resource use. This study examines the economic, social, and cultural aspects and contributions of the generally small livestock operations on the Española and Canjilon Ranger Districts of the Santa Fe and Carson National Forests of northern New Mexico. For this discussion, cattle ranches with less than 100 head (or approximately 135 animal units yearlong—AUY) are classified as small. Those ranches with 40 head (approximately 54 AUY) or less are considered extra small. The number of animal units (AUs) is about 1.35 times the number of mature cows on a cow/calf ranch. An AUY is the amount of forage consumed by 1 AU in 1 year (Torell and others 1998).

The study focuses on gathering information on both the economic and noneconomic contributions of livestock ownership to local families and communities. In other purposes allows communities to maintain social cohesion and traditional culture. Local attitudes toward land management agencies and policies are examined. Some comparisons to previously collected information from the general area are also made.

Research on the two Districts serves as a pilot study to test the research design and data collection methods that will be used in a larger study planned to include livestock operations and grazing permittees on all Ranger Districts of the two Forests (Raish 1999). Results from the present study are used to evaluate and refine research questions for the larger study by developing new topics and questions, and by deleting inappropriate topics. Although this pilot study provides valuable information to assist managers in addressing land management and use issues, it represents only those who were interviewed for this initial portion of the project. These data cannot be generalized to nonparticipating permittees from the two Districts, to the two Forests, or to northern New Mexico as a whole. Methodological aspects of the study are discussed in detail in a separate section of this report.

To understand the problems and issues of livestock grazing on public lands in New Mexico, it is necessary to explore the historical background of land valuation, use, and ownership in the area. Because contemporary problems and controversies often have their roots in the past, this orientation clarifies the role of historical practices and events in shaping current practices, issues, and disputes. In the remainder of this section we discuss not only the history of the area, but in some cases how that history helped mold our methods for the current and future phases of our research.

Spanish and Mexican Periods

Many of the small livestock operations in northern New Mexico are owned by Hispano families, regional residents since well before United States conquest in 1848.

The Hispano ranching tradition began with Spanish colonization in 1598 but did not become fully developed until after the reconquest of 1692 through 1696 (Earls 1985; Simmons 1979; Wozniak 1995). When Juan de Oñate colonized what is now New Mexico in 1598, he brought European domesticated plants and animals, including cattle, sheep, goats, and horses (Baxter 1987; Hammond and Rey 1953). In addition to their domesticates, the Spanish introduced new technologies and subsistence strategies into the existing Native American agricultural system. The settlers changed indigenous farming practices, which had relied on extensive floodwater farming using water control and soil retention techniques, to more intensive irrigation agriculture from major watercourses (Earls 1985; Wozniak 1995).

During the 1600s, Pueblo Indian populations in the region declined mainly because of introduced diseases and famine, caused by a series of severe droughts and destruction of food stores by raids from nomadic Indian groups. As the Puebloan population declined, the tribute and labor requirements of the colonists became increasingly onerous. These conditions, along with forced relocations and missionization, led to the Pueblo Revolt of 1680. During this rebellion, the vast majority

of the Spanish were forced out of the Upper Rio Grande for 12 years. The settlers returned between 1692 and 1696 when Diego de Vargas initiated and completed the Spanish reconquest of New Mexico (Simmons 1979).

Hispano populations rose throughout the 1700s to approximately 25,000 by the later part of the century. Even so, the significant population declines of the Puebloan groups left a sufficient amount of land for both groups to farm and ranch along the main waterways and their tributaries (Simmons 1979). After the reconquest, the economic, political, and religious systems of New Mexico were different from the prerevolt systems. The new generation of Spanish colonists were accomplished agriculturalists and stock raisers who generally worked their own land and maintained relatively cordial relations with the Pueblo Indian groups as both used the land in similar ways (Simmons 1979). The descendants of these people are the Hispanic villagers and farmers of northern New Mexico.

During the Spanish Colonial (1598 to 1821) and Mexican (1821 to 1848) periods, land ownership and use were confirmed by land grants from the Spanish Crown or Mexican government. There were various types of land grants, but community grants, in which groups of settlers used portions of the grant in common, are of particular interest because they are a major land ownership issue in the area today (Eastman and others 1971; Harper and others 1943). Within community grants, settlers received individually owned building sites and agricultural plots of irrigated land, which were often quite small, averaging from 5 to 10 acres (Van Ness 1987). They tended to grow even smaller as they were divided for purposes of inheritance. The farmers also used the village grazing lands, timberlands, and community pastures as common lands (Eastman and others 1971). Because kinsmen often worked their fields cooperatively and herded their animals together, they were able to subsist on the small-sized, scattered agricultural plots.

Throughout the Colonial period, a subsistence, agropastoral economy based in small, scattered villages existed along the Rio Grande and its tributaries. Raids from nomadic Apache, Navajo, Ute, and Comanche limited range expansion and travel for commerce and trade (Clark 1987; Van Ness 1987). Thus, the villagers' main goal was production for local subsistence, not competition in a commercial market. The community of Cañones (Kutsche and Van Ness 1981; Van Ness 1987) provides a good description of ranching and farming in the Hispanic villages. Both animal and plant production formed parts of a mixed farming system, with sheep and goats most frequently used as food. Livestock were used for plowing, threshing, transporting produce, and manuring fields. The community stock were individually owned but cooperatively grazed. They were moved into the higher elevation pastures during the spring and summer and returned to the village after the harvest to graze and manure the stubble fields.

Livestock numbers were not great for the first 2 centuries after the conquest. In these early years sheep were more numerous than cattle, in part due to sale and loss of the latter to nomadic Indian groups (Gonzales 1969). In the early 1800s, the number of sheep increased as the Spanish population expanded eastward onto the plains, across the Sandia and Manzano Mountains, and westward from the Rio Grande Valley. This movement coincided with the growing trade in wool and sheep during the Mexican period (Eastman and others 2000).

Although concentrations of sheep and cattle near villages produced some scattered areas of overuse during Spanish Colonial times (Baxter 1987; Scurlock 1995), herds were generally small in proportion to the land base (Rothman 1989). Thus, relatively small populations of subsistence farmers and their animals successfully used the resources of the region during the long period of Spanish control (Raish 2000).

Areas of overutilization increased during the Mexican period as commercial sheep production increased (Scurlock 1995). However, the large majority of operations remained small and subsistence-oriented during this period. As an example, Rothman (1989) describes use of the Pajarito Plateau west of Santa Fe in the following way. Throughout the 1800s, local Hispanic and Pueblo residents of the nearby valleys used the plateau as common property, bringing their small herds to the plateau for summer grazing. They also harvested from the abundant timber resources for personal use and small-scale business ventures and planted some summer crops. The small size and noncommercial nature of these operations ensured that sufficient grass and forest resources remained for all who needed them.

American Period

Both patterns of land ownership and use changed substantially after United States conquest of the region during the Mexican-American War of 1846 through 1848. Under the Treaty of Guadalupe Hidalgo, the United States agreed to recognize the property rights of the resident Hispano population. To obtain valid land titles according to U.S. law, however, land grantees had to petition for title confirmation, at first through the Surveyor General to the Congress and after 1891

to the Court of Private Land Claims (Griswold del Castillo 1990). To accomplish this, claimants often had to hire an attorney, file their claim, and locate required supporting documents. As stated by Eastman (1991:103): "...landholders were turned into claimants who had to incur a substantial expense to have their property respected." Money was scarce in the subsistence economy of the region, so many landholders signed over portions of their land to pay legal fees. Thus, even successful claimants lost substantial amounts of land because legal fees often accounted for from one-third to one-half of the land involved (Eastman 1991). In addition, many land claims were rejected; approximately 24 percent of the acres claimed in New Mexico were confirmed compared to about 73 percent in California (Ebright 1987, discussed in Raish 2000).

The Surveyor General and the Court of Private Land Claims refused to confirm grants for various reasons. Boundaries were sometimes vague, original titles may have been lost, and communal ownership of pasture and woodlands ran counter to 19th century American concepts of private ownership (Eastman and others 1971). Often, the court confirmed house lands and irrigated farmland but did not confirm community pastures and woodlands, also part of the grant, which had always provided the Hispano villagers with their main grazing and fuel wood resources. Lands from unconfirmed claims became part of the public domain.

Ebright (1987), Griswold del Castillo (1990), and Eastman (1991) argue that, in many cases, the U.S. government did not honor the intent of the treaty and related documents that land grants in the ceded territories should be recognized. The government adopted an approach that some consider legalistic and restrictive toward land claims in the State (Griswold del Castillo 1990). Although fraudulent claims definitely should have been rejected, many potentially legitimate claims were also rejected, often on the basis of documentation that was incomplete or inconsistent. Claims from residents who had occupied their land for generations were denied because of lost or inconsistent documents (Eastman 1991). Villagers also lost considerable amounts of confirmed land because they could not pay property taxes under the American system of monetary tax payments, which differed in significant ways from prior systems of payment in agricultural products. Unscrupulous land speculation by both Anglos and Hispanos, which was often upheld by the courts, also resulted in land loss (de Buys 1985, discussed in Raish 2000).

Land grant loss remains an issue of bitter controversy to this day, with initiatives presented at regular intervals to Congress recommending further study of the problem. Most recently, the General Accounting Office (GAO) has undertaken a study of community land grants in New Mexico (GAO 2001) at the request of several members of the New Mexico Congressional delegation. It remains to be seen what, if any, action will result from this effort.

Today much of the former grant land in northern New Mexico is managed by Federal agencies, primarily the USDA Forest Service (USFS). Many of these lands came into Federal control after being degraded in one form or another by large commercial ranching or timbering operations that occurred after alienation from the original Hispano owners (Eastman and others 1971; Rothman 1989). Nonlocal corporate interests generally owned these enterprises (Wildeman and Brock 2000). When the commercial operations were no longer profitable, the land was often sold to the government. In this way, the Carson and Santa Fe National Forests include all or portions of various former land grants that were mainly used as community range and woodland by local villages (de Buys 1985; Eastman and others 1971; Gonzales 1969). Of these Forests, 22 consist of confirmed Spanish and Mexican land grants with additional land coming from claimed but unconfirmed grants (de Buys 1985; Hurst 1972). Currently, many local ranchers have grazing permits on the two Forests, but since they are often descendants of former grantees, many resent government restrictions and payment to use land they consider part of their ancestral heritage.

The Forest Service began to address problems of land condition in the early part of the 20th century. Beginning in the 1920s and accelerating from the 1940s through the 1960s, livestock ranching on the two Forests changed significantly as the economy changed and the Forest Service introduced range improvement programs, many of which were thought by local stock raisers to be harsh and poorly explained. There was a continuous decline in the number of grazing permits and the number of animals permitted. On the Carson and Santa Fe National Forests there were 2,200 individuals holding permits in 1940, which by 1970 had been reduced to fewer than 1,000 (de Buys 1985).

With declines in the numbers of animals permitted to graze on the two Forests, the small subsistence ranchers suffered increasing limitations on their herd sizes over the years. One community had herd reductions of 60 percent , while the ranchers of another lost permits for 1,000 cattle in a period of a few years (de Buys 1985). Free-use permits, issued for animals such as milk cows and draft horses, were phased out by 1980. Also during this period, there were massive declines in the numbers of sheep and goats under permit. By 1980,

there were no goats on either Forest and no sheep on the Santa Fe (de Buys 1985; Van Ness 1987).

These significant changes came about both as a result of Forest Service direction and changing economic conditions, as the region shifted from a subsistence-based to a cash-based economy. Land losses and herd size cutbacks undoubtedly pushed many people into the cash-based economy of wage work (West 1982). Over the years there was a notable trend toward permit consolidation, which led to fewer permittees with larger herds. Although there were definite issues of rangeland health, the livelihoods of many villagers were affected by reductions in permittee numbers, sheep permit reductions, loss of free-use permits, and restrictions on goats. This is reflected in statements from the residents of Cañones that Forest Service administration favored large-scale ranching and was often not compatible with the subsistence needs of local communities (Kutsche and Van Ness 1981).

Our discussions with local community leaders showed that an examination of the contemporary role of ranching in northern New Mexico requires an assessment of the economic impact of these prior reductions in AUMs. One suggestion was to compare current economic conditions and an economic situation that might exist had animal numbers not been reduced. This matter is important because, if land base and animal numbers had not been reduced, the economy of northern New Mexico might today be quite different. With retention of former animal numbers and a sufficient land base, ranches might currently operate at a higher level of production. There might be less necessity for secondary employment, allowing more time and effort to be devoted to the livestock operation. An increase in profits would provide the freedom and incentive to carry out innovations and improvements, leading to greater credibility and financial returns to support industries and the community as a whole. Data to model such a scenario do not currently exist. Future phases of the research will be directed toward obtaining this information, if feasible.

Discontent over Federal grazing policies, lost grant lands, and general economic decline in the region led to protest movements in the 1960s.The most well known of the protest groups, the *Alianza Federal de Mercedes* (later called the *Alianza Federal de los Pueblos Libres* or simply the Alianza), was led by Reies López Tijerina. A series of incidents involving the group included an attempt at a so-called "citizens arrest" at the courthouse in Tierra Amarilla that led to violence. There was also a takeover of the Echo Amphitheater campground, which brought national attention and news coverage. Two of the main goals of the group's actions were to bring the problem of land grant loss to national attention and to address grievances concerning management of grazing on the National Forests (deBuys 1985).

The violence of these protests caused the Forest Service to reexamine its policies in northern New Mexico, resulting in *The People of Northern New Mexico and the National Forests,* commonly known as the Hassell Report (Hassell 1968). The unpublished report recommended 99 measures, of which 26 related to grazing, to improve economic and environmental conditions in the area. Some measures were implemented, and some progress was made. In addition, the Forest Service developed a special policy for managing the National Forests of northern New Mexico.

The Southwestern Policy on Managing National Forest Lands in the Northern Part of New Mexico, or the Northern New Mexico Policy, was oriented to stressing the importance of valuing the Hispanic and Indian cultures of the Southwest (Hurst 1972). Policy implementation, which was periodically reviewed, was based on the recommendations of the Hassell Report (1968). After the last review in 1981, the agency decided that a separate policy statement was no longer needed and that further implementation would be through regional and Forest mission statements and plans (Hassell 1981). Difficulties with implementing recommendations of the policy are discussed by Raish (1997).

Problems remain in the area, and many of the situations discussed in the Hassell Report (1968) have not improved. Severe poverty, disappearance of traditional life ways, and environmental degradation are still major concerns. Unfortunately, the authors have found that many Forest Service employees some three decades later are unaware of the Hassell Report (1968) and the conditions that led to its development. Although there have been recent efforts to develop regional cultural awareness programs and hire managerial level employees from the region, a need remains for training in the cultural traditions and social values of northern New Mexico. Significant misunderstandings persist, and the potential for conflict remains.

Methods

Study Site Selection

The present study is designed to provide much-needed information concerning the culture and economic practices of the region for agency employees, policymakers, and the general public. Two Ranger Districts were chosen for the initial study, Española on the Santa Fe National Forest and Canjilon on the Carson National Forest. The Española Ranger District was selected first for this initial study because it is a good example of livestock operations in northern New Mexico and, in particular, on the Santa Fe and Carson National Forests. After discussions with range staff, the study was broadened to include the Canjilon Ranger District of the Carson National Forest to give representation to that Forest also (D. Case, personal communication, 1997). Although carefully selected, these two Districts cannot be assumed to represent the two Forests or the general area in any statistical sense.

At the time of research design development, there were nine active grazing allotments on the Española Ranger District, ranging from approximately 7,000 to 73,000 acres. On the Santa Fe Forest as a whole, allotments typically range from approximately 4,000 to 100,000 acres. Virtually all the Española allotments have more than one permittee, ranging from two through 16. Of the active allotments on the Santa Fe, 70 percent have more than one permittee, with a range of two through 20. Of the 17 listed grazing associations on the Santa Fe, six occur on the Española District.

Of the 55 people with Forest Service permits on the Española District, 30 (55 percent) have permitted head numbers from one to 25, 11 have 26 to 50 (20 percent), and 14 have 51 to 100 (25 percent). Española exemplifies the common allotment pattern of the northern New Mexican Forests, typified by small herd sizes, shared allotments, and organized grazing associations (Raish 1999). This pattern is consistent with the general area, having small and extra small cattle operations (as defined earlier) comprising 87 percent of the ranches in Rio Arriba County and 96 percent in Taos County (Eastman and others 2000). Multiple-permit allotments (referred to as community allotments), small herd sizes per permittee, and grazing associations of permittees show continuing communal range use in northern New Mexico.

The Canjilon Ranger District, with its 57 permittees, was recommended for study by range staff on the Carson. At the time of data collection in 1999, Canjilon had 10 active grazing allotments ranging from approximately 300 to 43,000 acres. Five of the allotments (50 percent) have more than one permittee (ranging from two through 25), with five having one permittee. The District's grazing associations occur on the allotments with the most permittees. The majority of herds range from four to 250 animals with six operations having 100 or more head of cattle (sheep operations are larger and are discussed in following sections of this report). The largest herds per permittee occur on the allotments with only one permittee. Of the 71 allotments on the Carson, 40 percent have more than one permittee, ranging from two through 25. There are 24 grazing associations on the Carson (Raish 1999). Canjilon provides contrast with Española, having more single-permittee allotments with larger herd sizes, while still having many of the relatively small-sized livestock operations typical of northern New Mexico (Raish 1999).

Information on range figures from the Santa Fe and Carson National Forests was obtained from range data tables provided by Jerry Elson, Range and Wildlife Staff (retired) on the Santa Fe National Forest; Sylvia Valdez, Resource Assistant on the Santa Fe National Forest; Don Case, Range, Wildlife, Fish, Soil, Air, and Water Staff (retired) on the Carson National Forest; and Lorraine Montoya, Resource Assistant on the Carson National Forest.

Data Collection

Development of the Questionnaire and Discussion Questions—Following the format of prior studies in the region (Eastman and others 1971, 1979; Gray 1974), data collection is organized around a written questionnaire, supplemented by a personal interview (appendix A). The questions are grouped to elicit the following categories of information:

a. Background information on the permittee and his/her family.

b. Background information on the livestock operation.

c. Contribution of the livestock operation to the household economy.

d. Contribution of the livestock operation to maintaining the cultural and traditional values of the family.

e. Contribution of the livestock operation to the family's participation in the social network of the community.

The questionnaire consists of 52 questions divided into seven sections. Two sections request demographic information and descriptive information on livestock operations. Questions on age, education, employment, primary language spoken in the household, and years of residence in the area provide demographic data. Information on livestock operations consists of questions concerning the number of years the permittee and his or her family have owned livestock and have had Forest Service or Bureau of Land Management grazing permits. The number and type of animals owned are also requested. A third section deals with costs and benefits of owning livestock with questions focused on the costs of the livestock operation and on the economic contribution of the livestock to family income. In addition, use of the animals and their by-products for household consumption and exchange with relatives and neighbors is included.

The remaining four sections emphasize social and cultural contributions of livestock ownership, including the reasons for owning livestock, community activities related to owning livestock, a rancher's preferred means of saving money, uses of the money earned from the livestock operation, and plans to use the livestock operation as a retirement activity. Questions also elicit information on the role of livestock ownership in selecting a place of residence, the social and business activities that result from livestock ownership, and whether a permittee grazes cattle with relatives or neighbors or both.

A section on family goals requests respondents to prioritize statements concerning increasing family income, increasing the quality of life, maintaining traditional lifestyles and values, and having greater respect within the community. Another question asks respondents to prioritize family goals for the livestock operation, such as making more money from the operation, increasing the family's quality of life, avoiding being forced out of ranching, and increasing the size of the operation. The section on land ownership and use attitudes contains questions concerning the merits of hiring local versus nonlocal workers, selling land to local versus nonlocal buyers, and managing Federal lands primarily for the benefit of local residents or for users and tourists from other parts of the country. Other questions deal with ranchers' willingness to sell inherited land and their views on what factors constitute land ownership.

Consultation with expert researchers in the field, as well as published information on prior research and information-gathering strategies, are used to assess content and face validity of the questionnaire questions (Babbie 1990, 1995; Eastman and Gray 1987; Eastman and others 1971, 1979; Fowler and others 1994; Liefer 1970). Drs. Clyde Eastman (retired) and John Fowler, Department of Agricultural Economics, New Mexico State University, reviewed a draft of the questionnaire and suggested revisions, which were made. With their permission, relevant questions from prior surveys undertaken in their research are incorporated into the present questionnaire. Dr. Don Case, Forest Range, Wildlife, Fish, Soil, Air, and Water Staff Officer (retired) on the Carson National Forest, who holds a Ph.D. degree in rural sociology, also reviewed the questionnaire. In addition, the following Forest Service range personnel examined and commented on the instrument: David Stewart, Range Administration, Southwest Regional Office; George Martinez, Rural Community Assistance Program Manager, Southwest Regional Office; Jerry Elson, Range and Wildlife Staff Officer (retired), Santa Fe National Forest; David Manzanares, Range and Watershed Staff, Española Ranger District, Santa Fe National Forest (currently with the Natural Resources Conservation Service); and Cipriano Maez, Range Technician, Canjilon Ranger District, Carson National Forest.

Reliability of the questionnaire is increased by the use of questions/measures that have proved reliable in prior studies. Reliability will also be assessed by using the present study on the two Ranger Districts as a basis of comparison to the responses from the planned larger study to be conducted on all Ranger Districts of the two Forests (discussed in Babbie 1990, 1995). The rationale for selecting all the permittees from the Española and Canjilon Districts as an alternate population with similar characteristics for the pilot study is discussed in the previous section. Because all permittees from the two Districts are offered the opportunity to participate in the pilot, and all permittees from the two Forests will be offered the opportunity to participate in the proposed larger study, there is no need to test a sampling design.

The pilot is being used to assess the clarity and internal consistency of the questions, as well as their relevance and complexity (Babbie 1990, 1995). Many of the questions have been used in prior studies and have proved useful and reliable (Babbie 1990, 1995; Eastman and others 1971, 1979; Fowler and others 1994; Liefer 1970). Reviewers have already commented on these issues in their examinations of draft instruments. Their suggestions have been implemented. These issues are discussed in greater detail in following sections of this report.

The six discussion, or personal interview, questions constitute an informal, more ethnographically oriented portion of the study (Spradley 1979). They are designed to allow respondents to discuss their own views, feelings, and problems. Respondents can provide other information if they wish, focus on only one or two questions, or skip a question or parts of a question. No responses to these questions are examined using statistical data manipulation techniques; they are not used in a formal attitude survey or assessment. These questions are intended to give a personalized picture of the ranchers and their varying views and concerns, serving as a background for the formal study.

Questionnaire and Discussion Question Administration—For approximately 1 year prior to beginning data collection, Raish spoke with Forest and District personnel, community members, and grazing permittees at association meetings discussing the proposed project and soliciting input from those who would be involved. At the time of data collection, there were 55 permittees with active grazing allotments on the Española District and 57 on the Canjilon District for a total of 112. All permittees were offered the opportunity to participate in the project.

Before beginning data collection, Raish and McSweeney mailed each permittee a cover letter (appendix B) in English and Spanish explaining the project along with a copy of the questionnaire, so that people would have an opportunity to review it. The review questionnaire is in English, but our letter states that the questionnaire is available in Spanish and the discussion or interview questions are also available in Spanish. We then called each permittee with a listed telephone number to determine if he/she wished to participate in the project. We scheduled times and places at the convenience of the permittee to personally administer the questionnaire and discuss the interview questions for those who wished to participate. We chose to personally administer the questionnaire to maximize response rate, clarify questions, and assess "problem" or inappropriate questions that should be removed for the planned larger study. Prior discussions with community members and Forest Service staff also indicated that response to a mailed questionnaire would probably be extremely low. Those permittees without listed telephone numbers were sent a stamped, addressed envelope and a form to return to us indicating interest. Of the six with no listed telephone number, one participated in the project.

McSweeney and Raish administered the questionnaire and conducted the interviews together in the vast majority of cases with Raish going through the questionnaire with the respondents. Owing to scheduling conflicts, Raish conducted a few of the sessions alone. We used this strategy to minimize possible problems caused by different interviewers interpreting or clarifying questions in different ways, which might lead to bias in responses. The entire questionnaire and interview process generally lasted from 1.5 to 2.5 hours. Our following discussion of ranch life is based on the information we received from those who participated in the study and does not represent any other permittees.

In all, 62 (55 percent) permittees from the two Districts participated in the project by completing questionnaires. All but three of these also participated in personal interviews. The group consisted of 29 (53 percent) from Española and 33 (58 percent) from Canjilon. Nonrespondents included persons who declined to participate, those with listed telephone numbers whom we were unable to reach after several attempts, and those without listed telephone numbers who did not respond to the written request to participate.

We are in the process of using the information from this initial study to revise and redesign both the questionnaire and the discussion questions to improve clarity, relevance, and simplicity and eliminate redundancy in the information collection instruments for the proposed larger study. For example, project participants answered the majority of the questions in a straightforward manner with little hesitation. Many of the questions elicited supplementary comment, providing additional information to the responses. As will be noted in subsequent discussions, a few questions did require some explanation and clarification on the part of the interviewers. One question in particular, involving amounts of money spent on range improvements (30), proved too complex and time consuming to be answered within the framework of the interview process. Thus, this question will not be discussed in the report. Alternative means of obtaining this type of information will be developed for the larger study.

Data Entry and Analysis

All interview notes from the discussion questions taken by both McSweeney and Raish were transcribed and entered into the computer anonymously (preserving the anonymity of the respondents) as were the questionnaire responses. The questionnaire coding system was developed with an eye toward preserving as much response variability as realistically possible and including clarifications and other information provided by the ranchers during questionnaire administration. Raish coded all responses to questionnaire items and entered them into the database. Although only one researcher coded all questionnaire responses and performed all data entry, variability and errors can occur as the data recording process proceeds. Thus, a 10 percent "grab" sample of six questionnaires was recoded to determine if code selections remained the same on the second coding. The sample consisted of three Española and three Canjilon questionnaires including those from early, middle, and late in the data coding process. The recoding identified nine of the 103 variables (derived from the 52 questions) as showing coding problems on one or more of the sampled questionnaires. Thus, these problem variables were reexamined on all questionnaires. In addition, all data entries were proofed for typographical errors and other data entry mistakes of this nature.

Responses derived from the discussion questions provide a background for issues and concerns, presenting the kind of personal, although anonymous, information that lends credence, reality, and a human face to the more "numbers-oriented" data gathered from the questionnaire. These discussion questions are identified as interview questions with their number as they appear throughout the report. The 52 questions on the questionnaire cover attitudes and values as well as direct descriptive and demographic information. These questions are also identified throughout the text by their corresponding number.

The demographic data, information on livestock operations, and descriptions of the economic, social, and cultural contributions of livestock operations derived from this study are summarized using basic descriptive statistics. These include percentages of occurrence for the discrete variables (rounded to the nearest whole number within the text), with frequencies and measures of central tendency and dispersion presented for the continuous variables. Data tables containing this information are located in appendix C. Preliminary comparisons between selected responses from the present study and those from earlier studies are made to assess possible changes in the role of livestock operations over time.

Prior Research

There is a considerable body of work that provides a valuable framework for assessing and understanding the economic, social, and cultural role of livestock operations in the communities of the north. Both McSweeney (1995) and Atencio (2001) have interviewed ranchers concerning their views and attitudes about the ranching way of life and its role in maintaining traditional culture and heritage. Anthropological community studies (such as Kutsche and Van Ness 1981), land grant studies (such as Briggs and Van Ness 1987), and specific studies of livestock operations (such as Eastman and Gray 1987; Fowler and others 1994) have been undertaken.

Since the 1970s, there has been increasing research on land grants and land grant problems in New Mexico. These works describe land grant history, examine the role of community grant lands in village subsistence practices, and explore the economic effects of land grant loss. A summary discussion of land grant studies ordered by legal, historical, anthropological, or political orientation is given in Briggs and Van Ness (1987). Such studies provide the necessary background for understanding public land use disputes, given that much of the Federal land is former grant land.

Various studies (discussed in Eastman and others 2000) describe contemporary community organization, traditional culture, farming, and stock raising in north-central New Mexico, including the ways in which communities have responded to changing governments and patterns of land ownership (Gonzales 1969; Knowlton 1961, 1967; Kutsche 1983; Sanchez 1940; Swadesh 1974; Van Ness 1976, 1987). Excellent community-specific studies include those of Leonard and Loomis (1941) on El Cerrito, and Kutsche and Van Ness (1981) on Cañones. Forrest (1989) examines the effects of Depression Era and New Deal programs on the Hispanic villages of the area. Part II of Weigle's 1975 reprint of the 1935 Tewa Basin Study consists of an extensive bibliography of studies on Hispanic New Mexico (Weigle 1975).

The Tewa Basin Study itself "...was among the first and most ambitious of government efforts to explore sociocultural and environmental variables," providing "an indispensable foundation for any discussion of social change and rural culture in northern New Mexico" (Weigle 1975:viii). The study provides information on 32 Hispanic communities of the area during the mid-1930s, including information on farming and raising livestock.

In addition to these studies, specific studies of ranching operations have been conducted, primarily by economists, rural sociologists, and anthropologists from New Mexico State University. Their work examines the economic benefits of small farms and ranches, the attitudes and values of ranchers and farmers, and the economics of community grazing on both private and public lands (Eastman and Gray 1987; Eastman and others 1971, 1979; Fowler and others 1994; Gray 1974). Statewide agricultural economic research by Fowler and associates (Fowler and others 1994; Fowler and Torell 1985) also contains sections that pertain to the northern region of the State.

As Eastman and others (2000) discuss, contemporary ranching operations in northern New Mexico are generally small. Even in prior years, when people were more dependent upon agriculture, the majority of operations were small. Several descriptions of communities in the 1930s drawn from the Tewa Basin Study serve as good examples of this long-standing pattern (Weigle 1975). The village of Cundiyo was described as having 21 families with 175 cattle, ranging from one to 19 per family. Seventeen families owned 31 horses. There were also 12 sheep and three goats in the village. Corn was the most important crop; other crops included beans, chili, squash, and fruit. Each owner worked his or her own land with neighbors cleaning irrigation ditches together and helping each other during planting, harvesting, and house building. No one hired outside help (Weigle 1975, discussed in Eastman and others 2000).

During the study, the village of El Rito comprised 210 families. The average farm had 8 acres with sizes ranging from 2 to 71 acres. Main crops were beans, wheat, and alfalfa. According to the study, the farmers and ranchers had more range for livestock than other communities in the area using both private grant land and permits on the Carson National Forest. Villagers owned 607 head of cattle and 500 horses. The largest

herd numbered 78 cattle and eight horses with the average family having one team of horses and three head of cattle. Three ranchers had a total of 3,260 sheep, and one family owned 300 goats. The sheep grazed part of the year on the Forest, while the goats ranged yearlong on the private grant land (Weigle 1975, discussed in Eastman and others 2000).

The community of Truchas was divided into three scattered groupings of dwellings consisting of approximately 200 families. The principal crop at the time of the study was wheat with other crops including peas, potatoes, and beans. The farmers also cultivated substantial amounts of alfalfa and owned 200 head of cattle, 200 horses, 50 sheep, and 1,100 goats. One man owned a herd of 200 goats. Cattle herds ranged from one to 20 with an average of three head. Only about 60 families owned cattle. Animals grazed on private grant land (Weigle 1975, discussed in Eastman and others 2000).

In 1967, Kutsche and Van Ness conducted ethnographic research in the village of Cañones, which at that time had 30 households. The primary crops were alfalfa and pasture, along with grain and garden vegetables. As the authors stated: "Since forage is so scarce, it is economic for landowners to devote most of their irrigated land to their livestock, which requires relatively little labor, and to spend their own time earning wages elsewhere" (Kutsche and Van Ness 1981:36, discussed in Eastman and others 2000). Cattle were grazed under permit on the National Forest during the 5.5 months grazing season and were on private pasture and feed during the remainder of the year. Eighteen families had no cattle, while one had two cows, six had between five and eight, four had between 10 and 20, and one had over 20. There were also 10 sheep and one goat in the village, and 10 families owned 27 horses. The 1967 study showed a trend away from dependence on farm produce toward full-time outside employment combined with stock raising and a kitchen garden. This trend has increased in recent years as demonstrated by 1980 figures that showed a higher proportion of adult males commuting to work than in previous years–four to Española and two to Los Alamos (Kutsche and Van Ness 1981).

Other research, also conducted primarily in the 1970s and 1960s on small-scale cattle operations, demonstrated that although domesticated animals were important components of household economy, most of the small operators no longer depended on their crops and animals for their full support. They generally had outside jobs or were retired. The function of the livestock herd was not purely economic. They were used as a partial subsistence and back-up resource and as a means of saving for hard times or special expenses. The animals also added to economic security by providing meat no matter what the market price or the condition of family finances (Eastman and Gray 1987).

In addition to the economic considerations, the animals served important social and cultural functions. The small-scale producers stressed the importance of the good quality of life that ranching provided them and their families. They spoke in terms of preserving a working relationship with the land that could be passed on with pride to their children. Owning animals was important to them as a way of reaffirming ties to their ancestral lands and heritage. In many cases, the extra buffer that the animals provided allowed the family to stay in the ancestral, rural community and continue at least a part of the traditional lifestyle (Eastman and Gray 1987). These trends continue in the region today and are essentially the pattern found by this study.

Ranchers and Ranching on the Española and Canjilon Ranger Districts

Longevity of Residence and the Ranching Tradition

Information derived from our interviews demonstrates the long tenure of local residents and their depth of knowledge concerning land ownership and use patterns in the region. Of those we spoke with, 97 percent were born in northern New Mexico (question 1; appendix C, table 1), 94 percent of the families had been residents of the area since their grandparents' time or earlier (question 2; appendix C, table 2), and 86 percent reported great-grandparents or even earlier relatives living in the communities of the north, with many having ancestors in the area in the 1700s and 1600s (appendix C, table 2). Commitment to remaining in their local communities is strong among these ranchers, with 85 percent stating that they would remain in the home community even if they no longer owned livestock (question 13; appendix C, table 13). However, several commented that they could not imagine a life without livestock nor living in the city without animals. Several said they had passed up jobs or promotions or had gone into certain lines of work to remain near their ranches and land. Several also commented that they or other family members had returned home from elsewhere as soon as they had the opportunity. The desire to raise their children near their land and heritage and away from the troubles of the city was often repeated. The appeal of the small home community and the rural life is strong.

The ranching tradition itself is also one of long duration, with 94 percent of the permittees reporting that livestock ownership and ranching go back in their families for at least several generations (to their grandparents' time), and 73 percent had ancestors in the ranching business, ranging from great-grandparents back to the time of Oñate (question 18, 19; appendix C, tables 18 and 19.). The longevity of the tradition is also demonstrated by the fact that slightly over 70 percent have had their Forest Service grazing permits over 50 years and/or received them from their fathers or grandfathers. Just 3 percent have had the permit less than 10 years (question 21; appendix C, table 21a).

As one would expect from their long tenure in the area, many of the families are associated with active or former land grants and are well versed in the history and loss of these lands; 58 percent either currently use land grant lands for various resources, have used them in the past, or know that their family used land grant lands at some point in the past. Approximately one-third (34 percent) have never had any association with land grants. The remainder do not use such lands now and are unsure if their families did in prior years (question 20; appendix C, table 20).

The contemporary ranching operations of the area that have access to private grant lands use a combination of privately owned or leased lands, grant lands, and public lands as their range. Those with no access to private grants rely on privately owned or leased lands and public lands. Eastman and Gray (1987) and Eastman (1991) note there are only 14 community grants remaining in private ownership with significant amounts of grazing land (owing to the previously discussed loss of land grants and portions of grants). Land losses seriously limit the grazing areas available to many ranchers. As an example, the community of Cañones, near the Santa Fe National Forest, lost community grant lands to speculators who finally sold the land to the Federal government in 1937. Thus, 89 percent of the Cañones valley is managed by the Forest Service, and the town is surrounded on three sides by National Forest (Van Ness 1987). Because of these land losses, local stock owners are forced to rely on grazing permits on the National Forest for their cattle.

Personal and Family Portraits

Almost half (48 percent) of the men and women who shared their stories, information, and concerns ranged in age from 50 to 65, with about one-quarter in the category from 36 to 49 (26 percent) and one quarter over 65 (24 percent) (question 4; appendix C, table 4).

About 52 percent of the families use both Spanish and English in the home, with 34 percent using Spanish as the primary language and 13 percent using English. About 2 percent use Tewa as their primary language (question 3; appendix C, table 3). Many reported that Spanish was the primary or only language used within the home when they were young, but now they use both languages in the home and did so when their children were growing up. Several lamented that the younger generation seem to prefer English. The prevalence of television and the primary use of English in schools were seen as influences.

The importance of a good education was stressed repeatedly by the permittees and was a top priority for them with respect to their children. In fact, when responding to a question concerning the importance of passing on land as a means of providing for their children's future, several voluntarily commented "as well as providing them with a good education." Some 45 percent reported spending money earned from the livestock operation on special expenses such as college tuition for the children (question 33; appendix C, table 32c), and 90 percent of the respondents themselves have a high school education or higher (53 percent high school, 15 percent some college, 11 percent college degree, 11 percent graduate school) (question 5; appendix C, table 5). Of the spouses, 96 percent also have a high school education or higher (50 percent high school, 29 percent some college, 13 percent college degree, 4 percent graduate school) (question 6; appendix C, table 6).

Table 1 shows a breakdown of the employment categories for the 50 ranchers whose responses to question 8 (If employed outside the home or ranch, what is your job title or description?) could be classified as to job type. Preretirement job types are included for those who are currently retired. Aside from those who reported their primary job as rancher/farmer (16 percent), the other most prevalent occupations were skilled trade/technician (26 percent), educator (14 percent), and business owner or manager (14 percent) (question 8; appendix C, table 8). Forty-five of the spouses have jobs classifiable as to type, with 87 percent of those engaged in paid work, while 13 percent list themselves as full-time homemakers. A wide range of jobs was given with the most popular being clerical (22 percent), business owner/manager or those who assist with the family business (16 percent), health care professional (11 percent), and daycare or home care provider (11 percent) (question 11; appendix C, table 11).

Table 1—Primary employment categories reported by permittees.

Employment category	Number	Percentage
Skilled tradesperson/technician	13	26
Rancher/farmer	8	16
Educator (school administrator, Superintendent, principal, teacher)	7	14
Business owner/manager	7	14
Other professional/scientist	5	10
Heavy equipment operator/ Truck driver	5	10
Law enforcement officer/ Firefighter/security officer	4	8
Laborer/maintenance worker	1	2
Total	50	100

The ranchers reported working 40 or more hours per week off the ranch in 40 percent of the cases. Another 45 percent are now retired from prior off-ranch work (question 9; appendix C, table 9). Almost 58 percent of the 52 spouses reporting employment hours work at least 20 hours per week outside the home or ranch, and 25 percent are retired from outside jobs; almost 6 percent work under 20 hours per week, have varying hours, or do paid work at home (question 12; appendix C, table 12). The slight difference in percentages between the homemaker categories given for job type (13 percent) and work hours (12 percent) results from differences in the number of spouses reporting information for the two questions.

These figures confirm what studies from the 1960s and 1970s also showed—that the majority of small ranching operations in the north are not full-time operations (Eastman and Gray 1987; Kutsche and Van Ness 1981). Our study shows that 85 percent of the ranchers have other employment or are retired from other employment. The majority of their spouses also work outside the home or are retired from outside jobs (83 percent). Information collected by Fowler and associates in the early 1990s (Fowler and others 1994) showed that Statewide 75 percent of extra small and small ranches had people employed off the ranch, bringing in 44 percent of family income. Thus the trend toward off-ranch employment is Statewide as well as being common in the north-central area.

About 10 percent of the respondents describe themselves as full-time ranchers and farmers or retired from this occupation (question 7; appendix C, table 7). This category is defined as fully supported by agricultural work as opposed to the previously mentioned 16 percent who report their primary, but not necessarily only job, as rancher/farmer. Many of them told us they only work outside the ranch as a way to supplement their incomes and remain in the ranching business. They look forward to a time when they can afford to retire and

devote all of their time to the ranch and livestock. Retaining their livestock operations for their families and future generations is tremendously important. About 94 percent put the majority of money earned from the ranch back into the operation to maintain and improve it, and 92 percent plan to run their cattle operation as a major activity after they retire from other jobs (question 33; appendix C, table 32e; question 36; appendix C, table 35).

Over 75 percent feel that they might not be able to afford, do not know whether they could afford, would have problems affording, or would not have the land to run a livestock operation if they waited until retirement to begin ranching (question 37; appendix C, table 36). Because they view ranching as a serious endeavor, many also questioned the idea of beginning a livestock operation without the benefit of background, knowledge, and experience. A rancher told us that the land and livestock play a major part in his family's life and he is using income from his other job to maintain the ranch and pay off his debts, looking forward to the day when he can retire and get on with ranching full time.

The people we spoke with view their ranching as a career and an integral part of their lives, and many consider it their primary occupation. Often, working another job is more of a necessity than a choice. There has been an unfortunate tendency among some agricultural economists to classify small ranching operations by value-laden terms such as "hobbyist" (for example, Gentner and Tanaka 2002). Implying that working these ranches is merely a hobby can be pejorative and offensive to many, for whom small-scale ranching is part of a long-standing tradition that maintains communities and cultural heritage. The classification "hobbyist" indicates ignorance of the broader social, cultural, and economic values of small-scale ranching (Barlett 1986; Eastman and others 2000).

In her work, Barlett (1986) reviews the prevalence and historic importance of part-time farming worldwide. She is one of the first researchers to suggest that choosing part-time farming is a rational economic decision that incorporates, but does not solely depend on, a complex package of benefits that may not be exclusively economic. The benefits from these operations in aggregate make a substantial contribution to national well-being (Eastman and others 2000). Our work with the permittees shows that using the terms "part-time," "hobbyist," or "lifestyle farmer" in reference to these ranchers is both inaccurate and misleading. It in no way encompasses the role and importance of ranching in their lives or their contributions to their communities.

Ranching Operations

In many cases the ranching operations of the late 1990s reflect a mixture of contemporary and traditional aspects and forms. Eastman and others (2000) note that the overwhelming preponderance of cattle over sheep reflects contemporary work patterns as well as Forest Service influence. A recent study of New Mexico acequias (irrigation ditches) by Eastman and others (1997) found that the most common crops on the small, irrigated farms were alfalfa and pasture and that cattle were the most common livestock. There are practical reasons why this is so, especially for people who have off-farm employment. An alfalfa pasture and cattle operation lend themselves well to evening and weekend care. Sheep operations, on the other hand, require more intensive labor and management and do not lend themselves so well to part-time work. There are currently no sheep operations on the Santa Fe and five on the Carson, two of which fell within our study area.

Ranch Size—The majority of ranches throughout New Mexico are extra-small and small cow-calf operations with from one to 99 head (table 2), as is the case in Arizona and is consistent with national figures (Ruyle and others 2000). This size ranch constituted 70 percent of New Mexico's 8,313 ranches in 1996. Other major types of ranches include yearling-stocker operations and sheep operations (the following discussion of ranch types and characteristics in the State is based on 1996 figures from Torell and others 1998, unless otherwise cited). Cow-calf operations consist of a base cow herd, their calves, generally some yearling heifers and steers, replacement heifers, and the bulls needed to support the herd (Ruyle and others 2000).

Table 2—Comparison of cattle ranch sizes between northern New Mexico and the State as a whole, 1996 (adapted from Fowler 2000; Torell and others 1998).

Ranch size category	North-central New Mexico		All New Mexico	
	Number	Percentage	Number	Percentage
Extra small and small (1-99 head)	1,488	82	5,802	70
Medium (100-499 head)	263	15	1,892	23
Large (500 or more head)	53	3	619	7
Total	1,804	100	8,313	100

Yearling operations, excluding cow-calf ranches that purchase some weaned calves when conditions are favorable, typically buy calves to put on leased pasture. These animals are fed until they are large enough to be sent to a feedlot (Fowler 2000). The majority of the State's yearling operations are located in the northeastern, plains portion of the State, which comprises the most productive rangeland, allowing for larger operations. This area produced 30 percent of the State's beef cows and contained 28 percent of the livestock operations in 1996.

Southeastern New Mexico, also a plains grassland area but with less precipitation than the northeast, accounted for 22 percent of the State's ranches, producing 23 percent of the beef cows and 38 percent of the sheep. The northwest is the other region of the State with large sheep operations, providing 36 percent of the State's sheep, 20 percent of the beef cows, and containing 22 percent of the ranches. The southwestern region of the State, including the Chihuahuan Desert of southwestern New Mexico, receives considerably less precipitation than other areas and is less productive. This area produced 12 percent of the beef cows and contained 6 percent of the ranches.

In the north-central mountain area of the State, small cow-calf operations made up 82 percent of the listed 1,804 ranches in 1996. This area also had the fewest large (500 or more head) ranches of the various ranching areas of the State,with large ranches making up 3 percent of the total; Statewide, they accounted for 7 percent of the total. In New Mexico 30 percent of ranches were considered to fall in the medium and large categories with at least 100 head. In northern New Mexico, however, only 18 percent of the ranches fell within these size categories. Thus, northern New Mexico had considerably fewer medium-to-large ranches and more extra small and small ranches than the State as a whole (Fowler 2000; Torell and others 1998).

This size pattern also occurs on the ranches we studied on the two Districts (generally extra small and small cow-calf operations with a few larger ranches). Herd sizes range anywhere from five to 550, with size determined by economics, available land, and grazing permits (question 23; appendix C, table 23a). With the few large and very small operations removed, herd sizes range from eight to 160 (based on 56 of the 62 cases). The average herd size is 54 animals. There is one large ranch with over 500 head and 10 medium-sized ranches having at least 100 head (table 3). These 11 constitute 18 percent of the total of 62, the same as the northern New Mexico percentages for 1996 discussed previously. As is the case for the area in general, 82 percent of the ranches in our survey are classed as extra-small or small with one to 99 head.

Table 3—Cattle ranch size on the Española and Canjilon Ranger Districts.

Size category	Number	Percentage
Extra small (40 head or fewer)	28	45
Small (41-99 head)	23	37
Medium to large (100-499 head)	10	16
Large (500 or more head)	1	2
Total	62	100

A few of the ranchers also have some sheep, ranging from three to 28, which they pasture on private land. There are also two large commercial sheep operations, which graze under permit on the Canjilon District. These two have between 650 and slightly more than 750 head (question 23; appendix C, table 23a). Many people commented on the loss and decline of sheep operations and how they missed their family's sheep. Once the prevalent livestock of northern New Mexico, sheep were outnumbered by cattle in the last half of the 20th century due in part to government influence, increased threat of predation, and lack of time for their more intensive management.

Livestock Management and Breed Selection—Preferences vary in livestock management techniques among the different ranching operations, often conditioned by terrain, tradition, or government regulations. A variety of grazing systems, the details of which are beyond the scope of this discussion, are in use. Some of these incorporate traditional herding methods. According to one rancher, "There have been changes in the way people manage livestock from past years and changes in society. People have gotten away from tradition…Years back, there was a more personal way of management using herders for the animals." He spoke of intermixing new animals with older animals that are accustomed to an area, thereby utilizing the animals' natural behavior patterns as a way to facilitate herding management.

Listening to explanations of the various breeds of livestock, and the particular characteristics of each, is reminiscent of a university lecture in animal science. The basis for breed choice demonstrates a well-thought-out combination of experience, reasoning, and study. The rancher wants cattle that are adaptable to the land, able to thrive efficiently, and genetically suited to

produce offspring that will sell. Breeds are chosen for qualities of disposition, low birth weight, weight gain, and maternal characteristics. Stockmen place great importance on the type of bull to ensure calving ease for the heifer or cow. A cow should possess good maternal characteristics in order to provide the health and safety of her calf. The right choice of breeds determines how well the calf will develop and gain weight prior to weaning. Many ranchers feel that locally raised cattle do better than cows from other places because the former are acclimated to their surroundings. As a permittee explained, these cows are "accustomed to the ranch, find their way home better, survive better, and wander less."

A variety of breeds have been introduced or developed since the Spanish first brought cattle into New Mexico; many are represented in the herds of today. Although there are purebred cattle on a number of ranches, the trend in northern New Mexico is to the crossbred herd. Economics, practical management, and confidence in hybrid vigor may affect preference for the latter. Permittees must consider specific environmental conditions related to potential health hazards to avoid producing cattle that will be susceptible to high altitude diseases or problems resulting from exposure to intense sunlight. In addition, a breed of cattle that requires more forage than the land can produce will be replaced by a more suitable breed.

Animal Losses—Discussions with the ranchers revealed great respect and affection for their animals. This is not surprising considering that the animals are interconnected with family tradition and long association with the land. A few of the ranchers expressed this as being "born with the livestock."

Yearly losses of livestock represent both emotional and economic hardships. "The loss of one cow is a big thing. One cow represents a big investment." Although losses can vary tremendously from year to year, permittees reported average losses of two cows (4 percent) per year from an average herd size of 54 (table 4; question 24; appendix C, table 24a). Reported cow losses for 1 year ranged from 0 to 10; calf losses ranged from 0 to 12. Causes of these losses include the death of mother or infant from complications at birth, predation by wild animals, disease,injuries, poisoning from toxic plants, lightning, or old age. Other reasons for loss include rustling, malicious killings, and predation by packs of domestic dogs. While wild animals such as coyote, cougar, and bear represent a hazard on more remote allotments on forest land, the domestic dog poses a greater threat on pastures located close to the home ranch or on allotments located adjacent to more populated, urban interface areas. Although the financial loss may be the same, it seems easier to accept an animal's death from natural causes or accident than to find one shot for target practice.

About 64 percent of the permittees reported problems with theft or vandalism on their allotments (question 24; appendix C, table 24g). Theft, a major cause of animal loss on forest allotments, is even worse in areas with greater access to roads. "So many people use the forest that things just seem to walk off," a rancher told us. Another related how he lost four calves out of 40 to poaching or rustling, all cases that he has proven. Rustling has been a problem on allotments in southern Colorado, too. A New Mexico rancher lost 20 pairs there in 1 year. Although there seems to be less rustling in recent years according to our informants, this form of theft continues.

Vandalism is also a serious problem on the allotments. Ranchers describe coyotes as a "normal" problem and are far more disturbed by the activities of the "two-legged coyotes." For example, on one allotment a calf was found with an arrow in its head. The calf had to be sold for butchering. Another, in similar condition, appeared to have been used for target practice. Several permittees reported stories of cows and calves that were shot during early hunting season, when cattle are still on the forest.

Predation by wild animals or domestic dogs can also be a source of animal loss, as it is throughout the State. Fowler and others (1994) report 71 percent of the

Table 4—Average number of cows lost during a typical year.

Number of owners[a]	Number of cows lost by owners	Number of cows lost by owner groups
19	0	0
5	1	5
17	2	34
4	3	12
6	4	24
5	5	25
2	6	12
1	8	8
1	10	10
Total 60	130	

Average number of cows lost per owner: 2.17 (130 divided by 60).
[a]Total number of owners discussing lost animals.

ranchers in the State indicated that predation was a problem for their livestock operations in 1991. In our survey, 51 percent of the respondents reported problems with predation (question 24; appendix C, table 24g). The smaller number found in our study may relate to the fact that many fewer sheep operations were included in our sample than were represented in the Statewide survey. Sheep and lambs are subject to a higher predation rate than cattle.

In many of our discussions regarding predation, permittees contrasted the behavior of coyotes versus domestic dogs. In the experience of one rancher, most losses of both cows and calves occur at calving time from attacks by dogs, coyotes being less of a problem. He told us that once a calf sucks from the cow, coyotes would not bother with them. Another commented that coyotes are not a problem unless there are infant calves; coyotes are less likely to bother the larger calves. There was also a contrast drawn between the more remote forest allotments and those closer to towns and growing suburban areas, with domestic dog activity more prevalent in the latter areas.

Poisonous plants were also mentioned as a cause of animal loss. Larkspur, a toxic plant that grows at high elevations on many allotments, is a serious problem. Avoiding it is a matter of timing. Larkspur is at its worst from late spring until around mid June. Therefore, it helps to delay taking the cattle to those areas where larkspur occurs until after the plants have bloomed. A few reported cows or calves found dead by a stream or water hole. It is possible the cause was from ingestion of plants containing cyanide. Toxins or noxious plants in purchased hay may also result in losses. In one unusual case many cow deaths were attributed to hay thought to be contaminated by elk urine. Whatever the reasons for loss, animal deaths have a serious impact upon the success and economic viability of the extra-small and small ranches of the area.

Costs and Returns: Time, Effort, and Income—Often, the hours many ranchers put in with their livestock in addition to their other employment add up to two full-time jobs. Ranch work requires considerable time and effort. Nearly 70 percent described working every day or a portion of every day on the ranching operation with the animals. In fact, when asked how many days per year they worked on the ranch (question 22; appendix C, table 22), many laughed at such a naïve question and quickly responded "every day, of course!" One told us he gets up every morning in winter at 3:00 to drive up to the ranch and feed the animals before going to work at his full-time job in Santa Fe.

Ranches are not only costly in terms of time and effort; they are costly in terms of financial resources as well. Of the 58 respondents willing to answer a question concerning how much it costs them to own livestock, only 9 percent reported spending less than $1,000 per year on their operation, while 19 percent reported spending between $1,000 and $5,000 annually, and 48 percent spent over $5,000 (table 5; question 31; appendix C, table 30). About 24 percent did not report a dollar figure but stated that their expenses were very high, hard to estimate, or that the operation took all the profit, sometimes costing more than it brought in. Specific expenses are discussed in greater detail in following sections.

Two questions (32, 34) were designed to elicit information on percentage of annual income derived from livestock operations and on family dependence on livestock for income (question 32 and 34; appendix C, tables 31 and 33). Direct questions concerning income are sensitive by their nature but can yield valuable information. However, problems with wording of the two questions, which were not discovered until well into the interview process, produced results that may be misleading. For example, question 32 asks directly for an estimate of the percentage of income derived from the ranching operation but does not specify gross or net income. In addition, many respondents either could not, or were unwilling to, specify a percentage. This group either gave a dollar figure that could not be converted to a percentage or commented on the general lack of profitability of the enterprise and described where the money from the enterprise was being spent.

Question 34 asks people to select from a series of responses describing their dependence on their ranches for family income and their level of involvement in the operation. The two-part nature of the responses to the question may have confused some respondents, leading to inaccurate information. Thus, results from these two questions are not discussed further in this report. The means and utility of determining direct

Table 5—Money spent annually on livestock operations.

Amount	Number	Percentage
Less than $1,000	5	9
Between $1,000 and $5,000	11	19
More than $5,000	28	48
Expenses are high and hard to estimate/takes all the profits/costs more than it brings in, and so on.	14	24
Total	58	100

income information are being reevaluated and redesigned for the proposed larger study.

Virtually all of those we spoke with consider the ranch an investment, a form of savings, and a tradition, with 79 percent wishing to save or invest money by buying land in the area, improving the ranch, or doing both (fig. 2; question 38; appendix C, table 37). Some 11 percent would select a savings account or other monetary investment, while 10 percent would save or invest in other ways and combinations. Eastman and others (2000:543) discuss use of extra-small and small ranches as both an investment and a form of savings in the following way:

> While the ranch may produce little or even a negative operating income, the assets have a high value which is expected to increase. Most northern ranchers own their homes, land, and cattle, and these constitute a significant investment and form of savings, which often has very high value. Managed properly, operating losses often provide income tax write-offs against other income. Thus, small operators stand to benefit from a reduced tax burden while their assets increase in value.
>
> The ranchers often view their animals as *banks-on-the-hoof*, which can be used…for emergencies, for periods of unemployment, or for special needs such as college tuition for the children. They also add to subsistence security by providing meat for the family no matter what the supermarket price is or the condition of family finances. In some years, a profit is made when animals are sold.

Despite the fact that livestock are not the primary means of support for the large majority of families, the animals do make a substantial contribution to household economy, with 58 percent of interviewees reporting that they use money from the ranch for basic living expenses, including 48 percent who use livestock money for household and family emergencies, and 45 percent who use it for special expenses, such as college tuition for the children and for household improvements (question 33; appendix C, tables 32a, 32b, and 32c). Selling livestock in an actual emergency, however, is not a popular strategy, with almost 64 percent stating that they have not sold livestock to meet an emergency in the past 5 years (question 35; appendix C, table 34). Several observed that selling in an emergency is not an economically sensible course of action and would be strongly avoided. Keeping the herd together and selling surplus animals at the appropriate times seem important. Almost 15 percent of the interviewees have sold animals to cover an emergency one or two times within the 5-year period, 13 percent sold three to five times, and about 3 percent sold more than 10 times during the period or sold some stock every year. Sales often result from serious family illness or accident.

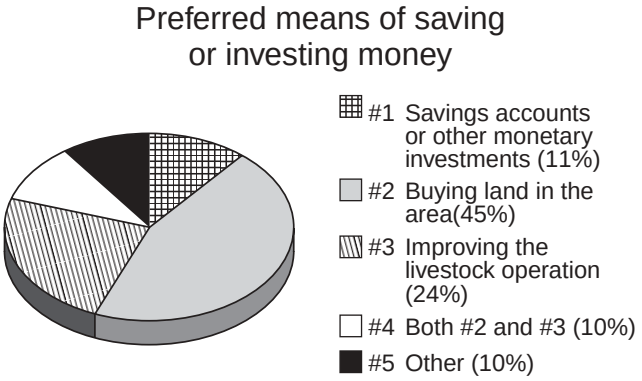

Figure 2—Preferred means of saving or investing money.

In addition to monetary gains, the animals provide a variety of other resources. Families butcher an average of 2.6 animals per year for household consumption by either the immediate or extended family or for use as gifts for friends and more distant relatives (table 6; question 25 and 28; appendix C, tables 25 and 28). In many cases, those we spoke with included all animals butchered (for whatever purpose) under the rubric of animals butchered for household consumption. Thus, it is often not possible to sort out how many animals were actually used in the home versus those provided to friends or more distant relatives.

Of the 55 respondents who discussed sharing live animals, approximately 38 percent share with family, other relatives, and friends. They less commonly share butchered animals (question 27; appendix C, table 27). About 35 percent stated that they give away between one and four live animals during a typical year, while 4 percent report giving more than four. Several remarked that live animals might be given but are then butchered for meat. Permittees said that live animals are most often given to friends, relatives, and children to start herds. Another common reason for giving live animals is as a donation for charity events. Others remarked that they used to give live animals but that the family is too big now or that friends and family have their own animals.

Table 6—Average number of animals butchered during a typical year.

Number of permittees[a]	Number of animals butchered	Total number of animals butchered by permittee groups
5	0	0
10	1	10
23	2	46
10	3	30
8	4	32
1	5	5
2	6	12
0	7	0
2	8	16
0	9	0
1	10	10
Total 62		161

Average number of animals butchered per permittee: 2.6 (161 divided by 62).
[a] Total number of permittees discussing butchered animals.

Use of animal by-products has apparently declined in recent years, as 79 percent reported no use of by-products such as milk, hides, or wool (question 26; appendix C, table 26). About 8 percent use milk and milk products such as cheese, with the remainder using combinations of milk, hides, and wool. Of the 26 people who made additional comments on the use of animal by-products, about half remarked that their families had a milk cow when they were growing up and made cheese and butter but that now there is no time for milking and maintaining a milk cow.

Use of animals and meat for bartering and trading for goods and services is apparently not a common practice among those with whom we spoke (question 29; appendix C, tables 29a and 29b). Of the 55 interviewees who discussed the topic, almost 73 percent reported that they do not trade or barter with their animals, and a little over 83 percent (out of 60 respondents) stated that they do not barter or trade meat. Several commented that they do not barter, preferring to sell animals and keep things on a cash basis. Of those who do use animals for bartering, most trade calves for goods, work, and services.

Use of extra-small and small ranches as a means of maintaining family traditions and cultural heritage is the focus of following sections.

Issues and Concerns

Because so many ranching operations in the region rely to some extent on public land (primarily National Forest land for those in this study), regulations and management decisions affecting these lands significantly impact the operation and future of ranching throughout the area. The degree to which a ranch relies on leased and permitted land under different ownerships strongly affects the complexity of ranch management. Regulations, fees, and enforcement can vary between agencies and within the same agency from location to location. The managing agency defines grazing seasons and stocking rates, which are often limited by competing uses and values such as recreation or riparian restoration. Restrictions imposed by the Endangered Species Act (ESA), the National Environmental Policy Act (NEPA), and the National Historic Preservation Act (NHPA) also come into play and often affect the timing and construction of range improvements such as water developments and fencing. Such restrictions can adversely affect ranch operations and economic viability (Ruyle and others 2000).

The costs of grazing on public land can also be subject to change and to considerable scrutiny. Some people believe that ranchers are paying less than fair market value for grazing fees, while others argue to the contrary, stating that the additional costs associated with the grazing fee more than make up for the difference. Some of these additional costs include boundary fence maintenance, water source development and upkeep, brush control, and road/trail repair. Expenses associated with grazing on public land resulting from theft, vandalism, and disruption of operations by public access increase operational costs for public land ranchers. As populations, urbanization, and recreational uses increase, these costs will rise (Ruyle and others 2000). Such problems and issues are as common in northern New Mexico as they are in other parts of the region.

When the permittees were asked to discuss their most serious issues and concerns related to their livestock operations, they highlighted a dozen or so categories, many of which were intertwined with working on public land (interview question 6). A few issues such as drought, brush encroachment, rustling, predation by coyotes, neighbors' dogs, and the need for communication with agency personnel were stated simply and with little comment. Others that were mentioned with more frequency and seemed to be of greater concern were explained in detail. These issues were included

in the broader topics of unstable cattle prices, high costs of the livestock business, water sources, vandalism, inadequate law enforcement, government regulations, competition from elk, allotment upkeep, and environmental conflict.

The expenses of running the business and keeping the operation afloat are concerns of many, extinction being their greatest fear. As respondents explained, costs of feed and hay are high in relation to the market value of cattle, and there is not enough private land to hold the animals until the prices go up. Cattle production is affected by drought. Other problems include fluctuating beef prices and having to transport livestock so far for sale. Some expressed the need to have a processing facility nearby that would enable them to market their product more effectively. Problems arise from economic conditions one has no control over, a rancher told us. "The price of cattle has been low for quite a while," he continued. "People in other countries can produce cheaper than we can here, but we do not know what the quality is. The trade policy [NAFTA] has caused problems for U.S. producers. The consumer will have to decide between quality and quantity."

To others, water is their biggest problem, the specifics varying according to type of allotment. One permittee expressed the need for irrigation on Forest land in dry years, others for reservoirs to keep the cattle from moving back down to the village. Another permittee was concerned with the limiting of livestock use of streams for drinking water. If the windmills were repaired, a rancher explained, they could spread out the cows for better distribution on allotments.

A particularly disturbing problem on the allotments involves vandalism and carelessness, subjects that encompass anything from cut fences to target practice on wells to the shooting of cattle. The carelessness of people leaving gates open is a problem on many allotments causing difficulties with trespass and exposing cattle to danger if they get out. Fence cutting by hunters and wood haulers is also a problem, even on private land. One rancher said the worst example of vandalism has been people killing their cows. Many observed that law enforcement is lacking. "People shoot signs off fences and break fences down. Four-wheelers cut gashes through the land and are destroying the land." Some respondents felt that the Forest Service does not have enough personnel to patrol the land and control abuse.

Other problems involve government restrictions, the possibility of losing permits, increases in permit fees, or reductions in time or livestock numbers on the allotment. Loss of permits would ruin many of the ranchers in the area because they depend upon public land for grazing. An increase in permit fees to equal those on private lands would be prohibitive. "People think if you have animals, you have money. They do not know how much money you have to spend," said one rancher. "You must pay a lot of money just to keep your traditions going." With livestock numbers so small, another explained, it is not a very profitable business. Owing to the dry conditions of recent years, use of allotments has been delayed, and the cattle must be fed more at home, increasing operating costs.

Another frequently mentioned difficulty involves the activity of elk on forest allotments and on private land. A herd of elk can do considerable damage to fences, contributing to work and expenses. More seriously, elk compete with cattle for forage. Respondents felt that "rest rotation" (a type of grazing system) does not work well on allotments where there is an abundance of elk. There is no control over the behavior of game animals; therefore the elk still eat the grasses when the pasture is meant to be "at rest." "The elk are putting us out of commission," a rancher said. Elk are also getting into winter feed supplies of pasture and hay on private land. "The Game and Fish Department [New Mexico Department of Game and Fish] should be held accountable," stated a permittee, "after all, the rancher is!"

The San Antonio Mountain Elk Project—a joint research effort among the New Mexico Department of Game and Fish (NMDGF), the Carson National Forest, the Bureau of Land Management Taos Field Office, and the Rocky Mountain Elk Foundation—should shed light on the activities of elk in the area. The study was conducted from 1998 through 2001 with analysis currently in progress. The project area includes portions of the San Juan Mountains, the San Luis Valley, and the Sangre de Cristo Mountains in southern Colorado and northern New Mexico. The study examines elk demographics, spatial and temporal distribution of elk, and resource conflicts involving elk (Smallidge, personal communication, 2002).

Negative publicity, environmentalists, and "livestock unfriendly" people constitute a formidable problem for a majority of the ranchers. Several think that fear of cattle is behind some of the public's criticism of livestock in the Forest. There is concern over negative publicity put out about ranching and farming, and about apparent antilivestock bias expressed by certain newspapers. There should be more educational information published through universities to help the public understand the role of the rancher in food production and the importance of the ranching tradition in the State, according to many with whom we spoke.

When we asked the ranchers about the most serious problems they face in their livestock operations today,

many listed the environmental movement as a major concern. Some simply mentioned "environmentalists" in roles of harassment, interference, or criticism. Others spoke of "environmentalist pressure" on government agencies. Some are concerned because they feel that the Forest Service bows to influence and pressures from environmental groups and the monetary resources they represent. Criticism from environmentalists and fear of the actions of some of the more radical groups are of serious concern to the ranchers we interviewed. They feel resentment toward these "outsiders" who are trying to dictate how they should care for the land, and frustration that their own knowledge seems to be ignored. The following paragraphs contain some of the ranchers' thoughts on this complex subject.

Ranchers refer to pressures from environmental groups who do not understand life in northern New Mexico. They feel that some environmentalists do not understand that people here still need wood for heating and cooking. "Environmentalists just have information from books. They have not lived on the land, and they do not do labor work. We have lived it, and they have not." Environmentalists have little understanding of ranching, an interviewee told us. He thinks communication needs to improve between the two groups. He believes it is important to get along with one's neighbors and to try to understand them. You have "got to know him," he said, referring to the neighbor. "It makes all the difference."

"Local people," another said, "have been using this land for grazing livestock for many generations without destroying it. Why, therefore, should new people be complaining?" "We're environmentalists ourselves. We're not extremists." Many of the ranchers expressed the fear that environmentalists are trying to drive them out. They have always thought of themselves as "on-the-ground, front-line people" taking care of the land. Now they feel alienated from the environmental community. "Some good comes from the environmental movement. It's the extreme politics that cause the problem. The environmental threat is always hanging over us."

"It's hard to be in this business in this day and age," another said. "You can't compete against big corporations and environmental issues." "We like the land," he said, in spite of accusations to the contrary. "Livestock and the environment can get along if both are managed correctly." There are those who "think ranchers rape the land," he stated, "but if you're smart you do not do that." He believes that most people who own land want to care for it. These landowners do not want to overuse their land or have trash lying around, in consideration for the welfare of animals as well as for the land and aesthetics. A rancher summed up by saying, "We must take some responsibility ourselves. We need to invest in public lands, look at the benefit to the resource…We need to take the initiative to continue to keep a good open line of communication with all the stakeholders. There are a lot of ranchers who take care of the land, care about the animals (wildlife). We must meet the challenge of the public!"

Working on Forest Service Managed Land

When asked about their views and attitudes toward working on Forest Service managed land (interview question 5), the permittees shared their problems, frustrations, and suggestions, as well as positive experiences. Working relationships of ranchers with agency personnel vary according to the location of their allotments, specific rangers, and personalities of the permittees. Having cattle on an allotment in the higher elevations may be an entirely different experience from an allotment adjacent to a busy highway or located close to a large town. Initially, there was a polite reserve to most of the answers, but as we talked the ranchers became more candid and less guarded. Their responses indicated good relationships with government personnel or described relationships that have improved in recent decades. Most of these were backed up with explanations of why a good working relationship exists and what circumstances have brought about favorable change. Some continued with difficulties they faced in spite of the good working relationship.

In recent years, attitudes and orientations appear to have changed among Forest Service personnel. Raish's discussions with Forest and District range staffs on both the Carson and the Santa Fe in 1996 indicate a strong awareness of the role and importance of small herds to local ranchers and communities. Forest Service personnel express a commitment to working with the permittees to improve range conditions within the framework of multiple-permittee allotments. In addition, many local people currently work both as rangers and in range positions on the two Forests, which seems to increase sensitivity to local problems and needs.

Forest Service range staffs at the regional level describe the difficulty of balancing community, cultural, and economic concerns with rangeland sustainability issues in today's climate of resource conflict and litigation. Much of Forest Service management, as they point out, is legislatively mandated and comes under the scrutiny of environmental, recreation, and commodity

interest groups. This complex management situation often leads to conflict between resource users and difficulties in implementing agency programs and improvements. Nonetheless, the importance of the ranching tradition to rural communities and the role of ranches and farms in maintaining open space and ecosystem integrity are strongly acknowledged (Brown and Stewart, personal communication, 2002).

The fact that a Forest Service employee was raised in the area is generally viewed as beneficial. The "local man" is viewed as having the advantage of being familiar with the land, may have been raised with livestock, and will be more likely to understand the people and culture of the District. He may be perceived as an ally and as a means of communication with the agency. Many ranchers commented positively about a local range technician, noting that he is knowledgeable and has their interests at heart. One permittee described relations between ranchers and rangers as "tremendously improved." " In prior years," he said, "the ranger was king. Now the rangers try to work with the people in the area instead of being dictatorial." Another who feels they currently have a good relationship with Forest personnel thinks the older generation found it harder to deal with the agency. Culture, language barriers, and personal memories of land loss contributed to the problem. In his opinion, the Forest Service is now beginning to listen more carefully to the ranchers and value their knowledge.

A few District Rangers were mentioned specifically as good people to work with; one in particular, with long tenure in the area, was held in great esteem. He was described as "a tremendous fellow," sincere, and willing to listen to local opinions. Many we spoke with felt he valued their presence as permittees on the forest and had a gentle way of dealing with people. Coming from a farm background, he was in tune with the area and the people and was highly respected and valued as an ally. "If you have good people who understand why you do things, it's so important," a rancher stated. "It's a way of keeping the peace."

In contrast, others that we interviewed, although usually courteous in their responses, felt that relations with the agency were not good or had deteriorated over time. There was some discomfort expressed over apparent unequal treatment from District to District. Most of the problems, however, were common throughout the area. The feeling was expressed that "the Forest Service doesn't understand the cattleman's culture and tradition," adding that "it's a hard thing to learn."

As in most rural communities, there is a tendency to place great value on long-term associations, on knowing a person and being able to trust that person. Emphasis is placed on the importance of personal familiarity with the land, animals, and people. Several people mentioned that the Forest Service changes rangers too often. From the rancher's point of view, the frequent changeover in agency personnel promotes a continuous lack of communication and a deterrent to understanding. Rangers often move (usually to improve their careers) or are transferred before they can develop the personal relationships necessary to work effectively in the local community.

Resentment arises when a ranger unfamiliar with the area is given control over a person's home territory and way of life. This resentment is heightened when the prevailing attitude implies that scholastic learning counts for more than a lifetime of experience. Regulations are seen as rigid, and pressure from environmental groups seems to have a strong influence on the agency. Improvements and livestock management systems are often mandated, and some permittees feel that they must pay even if these improvements and systems are against their better judgment.

Timing of entry into the allotments, and movement and distribution of cattle, are of special concern and were mentioned frequently. Many of the ranchers gave examples of why they believe the old ways were less harmful and more beneficial to both land and livestock. One permittee commented that he is not comfortable with government management decisions that can be both costly to him and disruptive to the welfare of his cattle. Several felt that agency restrictions are often counterproductive to the management of their herds. "Moving the cows too much causes the cows to lose cycle, but the Forest Service says, 'This is the day you must go in.' The result is a loss of money because the cows can't be bred when they should be, and calving gets strung out. The old men moved the cows less. The new methods put a lot of stress on the cattle; everything gained may be lost in a 30-mile walk."

There was an often-repeated invitation to agency personnel to ride with the ranchers to observe and discuss the range. "Forest Service personnel are good but should be given more freedom to work out in the field," stated one rancher. According to several permittees, there are times when agency personnel do not know things because they are not out in the field. Another rancher described his relationship with the Forest Service as a partnership in caring for the land. He believes ranchers and agency share a common goal and should work together to protect the land. "Permittees are the eyes and ears of the Forest Service," one said, observing that the rancher spends more time in the National Forest than does the ranger, but theorizing that part of the reason is an "understaffed" agency.

Livestock, Community, and Family

Community and Family Cohesion—Livestock ownership and ranching are powerful forces that bind communities and families. Of those we interviewed, 85 percent herd with their relatives or with help from their relatives (question 16; appendix C, table 16), 81 percent herd with neighbors or with other community members, often in their grazing associations (question 17; appendix C, table 17). Some 87 percent attend grazing association meetings during a typical year (question 14; appendix C, table 14), as well as participate in many other ranching and agricultural events with neighbors (question 15; appendix C, tables 15a–f). These include brandings (100 percent), round-ups or moving the cattle on the allotment (94 percent), rodeos (66 percent), fairs and 4-H events (61 percent), and matanzas (occasions when families and neighbors gather to share in the butchering and processing of the meat) (68 percent). Percentages include those who reported attendance at the event with no number of events per year given, those who attended at least one event up through those who attended more than 10 per year, and those reporting "too many to count." Matanzas are apparently less common now than in the past, time seeming to be a major factor in their decline. Of 45 people who commented on their activities, 18 stated that matanzas are less common now than when they were growing up and that they now butcher their own animals for their family.

Family Values and Livestock Operation Goals—When asked to prioritize family goals and values, 96 percent of the participants ranked a better quality of life and the continuance of traditional values as most important, with 55 percent choosing the former and 41 percent the latter. In contrast, the increase of family income was ranked as most important by only a fraction more than 3 percent of the participants, with less than 2 percent being concerned with increasing respect within their community (fig. 3; question 39; appendix C, tables 38a–d). This particular question was given considerable thought by most, partly as it dealt with their values and also because it required clarification of our wording.

The importance of their values was exemplified by such comments as, "numbering things is not realistic when those things are interdependent" and "acquisition of material things is not even a priority." It seemed to us that the idea of gaining more respect in the community struck the majority of participants as inappropriate to the question. For instance, one rancher stated, "Respect in the community is not a goal to seek, nor a value of importance." Another asked, "How do you create respect? It's the way you live that does that." One summed up his response by adding, "If you have the way of life, time with your family, and the respect of your neighbors, you'll have all you need."

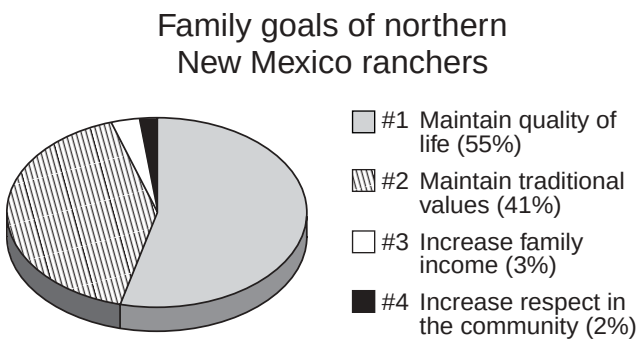

Figure 3—Family goals of northern New Mexico ranchers.

The next question (table 7; question 40; appendix C, tables 39a–d) asked for a ranking of goals for their livestock operations. Again, it was the family's quality of life and the continuation in the tradition of the livestock business that took priority, with 90 percent of the participants ranking those choices as most important. Maintaining the family's quality of life that results from owning livestock received the highest proportion (over 57 percent) and avoiding being forced out of livestock ownership, therefore securing family tradition, receiving the second highest (almost 33 percent). The remaining two choices—making more money above costs and improvement of the livestock

Table 7—Goals of permittee ranchers for their livestock operations.

Goals	Number	Percentage
Number 1 Maintain quality of life (resulting from livestock ownership)	35	57
Number 2 Avoid being forced out of livestock ownership	20	33
Number 3 Improve livestock operation (obtain more land, more animals, and better equipment)	3	5
Number 4 Increase overall income, profit, and purchasing power	3	5
Total	61	100

operation—although important considerations, were ranked as most important by about 5 percent each.

For example, one young couple we interviewed worked in Albuquerque for a while, but they didn't want to raise their children in the city. They preferred to buy cows and land than "cars and materialistic stuff," so they came back to live where their ancestors had homesteaded. They would not live anywhere else now and quoting her rancher father, she said, "We like that struggle." They say that money is not everything; they just need enough to live on. Another said, "It's in your blood for the rest of your life. If you're raised in this kind of atmosphere, you keep on doing it for as long as you can, not to make money!"

Eastman and others (2000) describe the value placed on the quality of life that ranching provides to livestock owners and their families. Eastman and Gray (1987) note that small-scale livestock producers have a hierarchy of goals that differ noticeably from those of large, commercial producers. Their studies found quality of life the highest-ranking goal, with income the last choice, which is consistent with the results of our study. Eastman and Gray (1987) describe the benefits of small-scale cattle ownership as providing a sense of security, gaining personal satisfaction from their work, and upholding family tradition. In general, these cattle owners show a tendency to avoid debt, a preference for proven methods of operation, a special attachment to their livestock, and a desire to retain their livestock in anticipation of retirement (Eastman and Gray 1987). Our study also confirms these values.

Role of Livestock in Teaching Children—History has been defined as "a narrative of events; a story; a chronicle," tradition as "the passing down of elements of a culture from generation to generation," and heritage as "something other than property passed down from preceding generations; legacy…" (Morris 1978: 625,1360, 617). History provides us with a description of the past as it leads up to the present, while the dynamic forces of tradition and heritage continue forward to influence the future. For most of the participants in this study, there is a firm set of traditional values they hope to impart to their children and a rich cultural heritage to be shared with future generations.

The participants were asked if they used land and livestock to teach their children about traditional values and heritage (interview question 2). The ranchers' responses stressed family bonding, responsibility to the land and livestock, and a balanced attitude toward money. The children, they told us, learn to care for and respect the animals as well as the land and its resources, factors that have shaped the lives of their parents and grandparents. Time spent in the daily business of the ranch provides the children with an opportunity to experience the way of life that is their heritage and serves to strengthen family ties. The ranchers feel family life is enriched by the teaching of parent to child in the course of working together with the livestock on ancestral lands. "With ranching, you do not teach by the book; you teach by doing," was a rancher's observation.

Teaching the children family values and responsibility was a common theme throughout most of the discussions. Ranch life provides time to be spent together as a family, they explained. It is viewed as a way for the children to learn to work, to keep busy and out of trouble. Sons and daughters alike take part in the daily work associated with the ranch. Due to the traditional nature of the livestock business, there can be an opportunity for these children to learn from or about their grandparents, a great source of heritage and traditional values. In addition, many ranches involve the extended family, with uncles and aunts a part of every day life. Often, grown children who have moved away will return to help with gathering or branding. In many cases, a husband and wife or other family member participated as a team during the interview process. Several stressed the benefits of having the mother present to care for the children at home.

The ranchers seemed eager to discuss teaching family values, responsibility, and the love of animals. Even those without children of their own had shared their knowledge and time with nieces or nephews. Some extended their teaching to local children by serving in the community as 4-H leaders. The children in these communities are encouraged to participate in 4-H. In addition, many of the ranchers have grandchildren with whom they can share their love of land and animals. Many feel that ranch life serves as an example for the children, teaching them the value of hard work. They also feel that the ranch provides continuity with the ways of their grandparents and with their Spanish heritage.

For some, it is a form of recreation to be out riding horses, camping in tents, the evenings spent with the father telling the children about family history. It gives them something better to do than town life could offer. One rancher said he has known all the area and mountains around the area from going out with his father and now teaches his own children the same way. Another rancher said he used the land and livestock to teach his children about traditional values by working together, caring for the livestock, and caring for the land. He uses this time to tell them stories of his own childhood with his father and grandfather and relates the stories told to him when he was a boy. He also

teaches his children about the geography of the allotment, water conservation, soil erosion, and timber management.

Another said his children were with him since they could walk, at his side much or the time. In this way the children become involved with the work and are taught how things should be done, learning at first by observation and by helping with simple chores. "Teaching the children through this work is good for several reasons," a rancher states: "so they will learn about the past, so they will stay out of trouble, so they can see what's going on, so maybe they will want to continue [with the ranching way of life]." "The payoff is keeping the children off the streets," one father commented. He said he feels "deeply grateful" for the ranch that has kept his family close and his children out of trouble.

The ranchers tell us that their children learn to accept responsibility by working with the animals on the ranch. "It's the only way to raise kids, with the livestock, taking care of something beside your self," one says. Another rancher wants his children to understand what it is to buy an animal and then lose it. Many of the children are involved in 4-H projects, selling a steer or lamb to buy school clothes. A prize steer may pay for a year of college. Gifts of livestock keep the children in the business and help to keep up interest and tradition.

On one ranch, the family does a lot together because of the ranch work, but the work also keeps them apart, the father missing a lot of school and church ceremonies. It is stressful to family life during some months, he says, but the children go with him whenever possible. They learn the business and are introduced to new things and, through the livestock business, have had exposure to the outside world. They learn how to handle adversity. The children ask a lot of questions. They get to work together and to learn responsibility.

We were told that the traditional values of heritage, hard work, and responsibility come more easily to these children than to children in town. They learn what life is about. "For the children, the ranch opens their minds that money isn't everything…Money could be gone in a day's time; land is better, especially if you have raised your kids to respect that land and become a part of it." Their oldest daughter is willing to sacrifice a big income in favor of a future running the ranch.

"Your children see what you're doing. They take part in all phases of the ranch. But, not until they are adults do they understand what you've done or tried to teach them. You plant those seeds in the children, and harvest the results as they grow. You only reap what you sow." The children of this rancher learned their biology during the butchering of livestock. They know where their food comes from. "They learn the value of life, how precious, how instantaneous, when they see the animal drop. But, they must learn to do this properly, and to value the animal's life. The animal gave his life to feed them. They get first-hand experience with the land, not just as a visitor."

Many of the ranchers encourage their children to pursue an education beyond high school. They are obviously proud of their college graduates as well as those in other careers. In one rancher's opinion, "It is important to give your children a good education as well as land." Another considered education and good family values as "the best way to provide for the future of your children." Some measure of apprehension existed about sending the next generation out to jobs or an education because the future of a ranch often depends upon the continued interest and participation of younger generations. The values and heritage instilled in childhood are necessary ingredients for survival of the family ranch.

Role of Land and Livestock in Maintaining Traditional Culture and Family Values—The traditions and culture of the ranching families of northern New Mexico are deeply rooted in history, with responsibility toward land and livestock enmeshed in family values. The well being of the community is also an integral part of life, necessary to survival. Preserving the culture and heritage of the past gives a sense of identity in the present and the hope of extending their traditions and way of life into the future.

Great importance is placed on ranching as a tradition that goes back for generations in a family. Most designated the 1800s or earlier as the origins of ranching in their families. They are proud of their roots and interested in family history. Respect for family is evident in the desire to retain their lands and way of life, entities entrusted to them by their parents. A few said they had given up other careers to return home and run the family ranch when a parent died or an aging father needed help.

We asked participants in this project to describe their feelings about the land and livestock and to explain the role these elements play in their family's life (interview question 1). One replied that he still lives in the house where his grandfather lived, on the land where his grandfather homesteaded. The grandparents were rich in culture but poor in possessions. He took a job closer to home when his father died because there was no one to look after the animals. Retired now, he works full time with the cattle and loves every minute of it. "When you have roots," he says, "they're hard to get away from."

Another states that, although the land is not a major part of his income right now, emotionally and culturally the land and livestock have made a positive effect on his family. "It teaches you to learn the value of money, to learn the land." Ranching is hereditary to this family; they were born and raised here. "Working and owning the same land all of your life is especially important if that land has been passed down from generation to generation. Livestock can be replaced [if necessary], the land can't. … There's nothing better to put your money into than land, to keep the land from being cut up and sold in pieces. There's not any more land being made!"

The roles of land and livestock in daily life are not to be taken lightly. They are closely connected to family and community. They are a reason for being, a way of life, the way these people were raised. Land, livestock, and people are interdependent. The Spanish word *querencia*, from the verb *aquerenciarse*, meaning to become fond of a place, may apply here. These ranchers express the feeling of being "at home in the place where they live and work and raise their families. This place provides them with the resources needed for survival, and, in turn, they feel a responsibility to care for that place…It goes beyond the boundaries of legal ownership, beyond the promise of monetary return" (McSweeney 1995:112).

"Being familiar with your land is very important. You know your neighbors and who you can, or cannot, depend upon," a rancher stated. "You get to like your animals. They play a part in your daily life. There's a calmness about being among your animals. You grow into it."

Cattle are a cultural reason to live in the area as much as a financial reason, the acquisition of money often less important than how and where the ranchers live. One describes their way of life as a tradition brought forth from the grandparents with roots that tie their people to the land. He realizes that if he did not have these ties to the land and livestock, he would be more mobile and could advance more in his other job. However, he admits he would rather be his own boss as a full-time rancher provided he owned enough land, permits, and livestock. He says he has kept the grazing permit because of tradition. Another remembers that from the time he was growing up, he thought he would want to return to the ranch and raise his children there. The pay scale is not as important to him as his health and enjoyment of life. "There's a lot of things more important than income."

A rancher told us that he thinks of land as part of the family, not as something to sell. Another feels he should not sell land that has been passed down from father to son. When people ask him why he doesn't just get rid of the cattle, he answers that he would feel bad giving up the livestock when his father gave them to him. It is a family tradition. A third said the land and livestock play a big role in keeping the family together. He loves the land and wants to protect it. If the land is not cared for, he told us, it will not provide for them. Being part of nature, the cycles of spring and fall, is his way of life. He said, "I will not sell an inch of land," and has taught his children to feel the same way. He does not want the monetary value of the land to go to their heads. Having worked so hard to acquire and keep his lands, he would hate for his children to sell them.

"It's not a hobby; it's a way of life!" states another rancher. He adds that he and his family hope to be in the cattle business for a long time. "Everything is related to the cow business. … Everything we do is so integrated [4-H, knowledge of the local people, and so forth]. It is very simple and very complicated at the same time." They say they will graze the land and hope to get financial gain, but not by abusing the land. They feel closely tied to this Forest and know it well, want their children to be able to use it, and want it to last for the next thousand years. They feel they are tied too closely to the land for people to take it away from them or tell them what to do. "It is difficult to talk about this," he says. In a way, the National Forest Service land is theirs, in a way not. It is a family thing.

A rancher recalls that his family (ancestors) had sheep and cattle back as long as they were in New Mexico. Another respondent tells us, "For many years the people here have used this land for subsistence. It has been part of the continuity and identity of the people here. Now there is the influence of new people. Mass migration from urban areas is causing the surrounding area to fill up." He feels that it is losing the flavor and tranquility so essential to them.

Land Use and Ownership

Those we interviewed consider their lands as critical to maintaining their heritage and way of life. This complex topic includes management, use, and ownership of land and other resources. In many cases, our discussions of these topics lent themselves to examining the issue of land grant loss and the Treaty of Guadalupe Hidalgo, which ended the Mexican-American War in 1848. Under the Treaty, the United States agreed to respect the property rights of the conquered peoples of the region (Griswold del Castillo 1990). As discussed previously, many residents lost long-used property during this period and bitterness over implementation of the Treaty continues to the present.

The Treaty of Guadalupe Hidalgo—When asked about their views on the implementation of the Treaty of Guadalupe Hidalgo, specifically regarding the loss of land grants or portions of land grants, ranchers gave varying responses (interview question 4). Views ranged from those of the land grant activists that "grant lands should be in the ownership of the original families" to those expressing the desire to see "the past left in the past." One receives the impression, however, that most are well aware that the treaty was supposed to protect the property rights of the conquered people of the region. They also believe that in many cases property rights were not honored, causing land to be lost by the original owners, and that these losses significantly affected the ability of their ancestors to support themselves as ranchers and farmers. Furthermore, they believe that this impact continues to the present day.

To some, the land grant issue was a remote idea, too distant in the framework of time or in relevance to present day life. To others, the treaty and resulting land loss are pertinent topics impressed upon them by fathers and grandfathers. One grandson said his feelings are hard to describe except as a "silent rage." A few declined to comment on the basis of the subject's controversial nature. Several ranchers simply stated that the provisions of the Treaty of Guadalupe-Hidalgo had "never been honored" from the beginning. One of the more emphatic responses stands out as exemplified by the following comments: "There is discrimination by the Federal government against the native communities … [They] throw bones to divide and conquer, to control the people. The U.S. government is going to run out of places to run and hide … How can the U.S. step in to help other countries and [at the same time] mistreat its own people?"

As one of the ranchers discussed with us, there were some mistakes made when New Mexico became a Territory and then a State. "The people here," he told us, "did not have an understanding of the system nor the economic means to avoid exploitation. They lacked information on U.S. law." To make matters worse, the information they did receive was passed on in a language that was foreign to many of them. There was a treaty between the U.S. and Mexico, but "the U.S. government failed to protect the rights" of its new subjects. The people we spoke with have strong feelings on the subject and generally indicated support for the various efforts that have been and are being introduced into Congress to reexamine the problems and issues surrounding implementation of the treaty.

Views and Attitudes Toward Owning Land—The ranchers were asked to give their opinions concerning who has the right to own land and make decisions concerning its use (interview question 3). Many had a difficult time responding to this request. It seemed obvious to them that he who has the means has the right to purchase and own land in this country. "The right to own land is protected by the US Constitution," said one. "This is the United States," another answered. "Everybody has the right to own land. We may not like it, but that's the way it is." A few of the responses were prefaced with the idea that land once purchased becomes the property of the buyer, to be dealt with as the owner so chooses as long as the law is not broken in the process.

Many of the ranchers expressed the responsibility of a landowner to care for the land in their possession. One rancher believes that people have a right to own land plus a duty to respect it. He also comments on the responsibility he feels toward "public lands," even though he realizes it is government-owned land on which he only has a lease. Another said, "People are responsible to keep the land as it is as opposed to using or destroying it for personal gain. For example, building houses in mountain areas limits the habitat for wildlife. Everybody wants views. When there is a conflict between humans and animals, the animals always lose."

For generations these lands have been used for agriculture. The tendency for ranch land to be sold and subdivided rather than to continue as agricultural land is a great concern for many. It takes just one ranch to sell for the process to begin, with one ranch sale affecting the next, with land being divided and taxes increasing, and with mounting demands on the limited water supply. The ranchers noted that some of the new people adapt to life in the rural communities, but many want to alter the place to suit their own notions of civilization. The contrast created with the addition of extreme affluence transforms what was once viewed as quaint to the perception of a less than desirable appearance of poverty. The potential for change brought about by this attraction of place is what one rancher meant to convey when he said, "A place this beautiful is a curse!"

According to the ranchers, other cultures enter the picture as new people move into the community. Some come to change things; some fit in. People who share their traditions or values are all right, they say, but there are others with the money to buy whatever they want, whose intentions are to subdivide the land for profit. "The problem is people coming in to change the traditions of the place. Some of these new people are friendly and blend in; others look down on you." Many of the newcomers do not understand the rural way of

life, complaining about the use of wood as fuel or about the presence of livestock. "People want to move in here and change everything. They come here because they like our way of living. Then they want to change things."

It is not easy for these people to continue in the old way of life with the outside world moving ever closer. A rancher sums up by saying, "Those willing to work and willing to learn are the ones who should own land. You should give members of the community first chance to buy lands. It's not just a case of land passed on. You must also teach the children the way of life and how to care for the land. Once you lose your identity, your culture, and language, you are nothing."

We attempted to capture these and related sentiments in a series of 12 statements, which participants were asked to rate according to their level of agreement: strongly agree, agree, neutral, disagree, or strongly disagree (question 41–52; appendix C, tables 40–51). These statements were derived from land attitude questions that proved useful in studies undertaken by Eastman and others (1971). Many respondents added qualifying remarks that provide valuable insight into their views and attitudes and are included in the following discussion. Participant comments also provided feedback on statements that were poorly worded, confusing, or perceived as irrelevant. These will be revised or deleted for the larger study.

The pride of owning and personally working land that has been in the family for generations, and the desire to retain that land, were almost universally agreed upon. This was demonstrated by responses of strongly agree or agree to questions 41 (over 98 percent), 43 (almost 89 percent), and 45 (over 98 percent) (appendix C, tables 40, 42, and 44). When presented with the statement that passing on land to one's children is the best means of providing for their future, nearly 84 percent were in agreement (strongly agree or agree), with minimal dissent (question 52; appendix C, table 51). However, much consideration was given to individual circumstances, attempting to balance what would be best for the land as well as what would be best for the children. One rancher said he could agree to a certain extent, explaining that passing on land would be best "only if the child were interested in the business and able to manage it."

Although the ranchers stressed the importance of land for their children's future, 57 percent also agreed with the alternate statement that having money in the bank or other types of investment was the best means of providing for their children's future (question48; appendix C, table 47). This contradiction reflects an awareness of the role and importance of money in contemporary society, as well as the fact that some respondents could not realistically choose between the two statements. This may be the reason that 21 percent gave a neutral response to the statement. Having both land and money are evidently seen as interdependent.

The many qualifying remarks elicited by this statement reflect a strong regard for family values as well as a practical outlook on life and may help to explain the discrepancy. In their comments regarding the importance of money, alternatives were presented such as education, good family values, land, and livestock. Despite practical concerns, such as inheritance taxes on real estate or the possibility that, without sufficient money, land might have to be sold to put the children through college, the theme of their comments remained consistent that "money isn't everything; values are important." One told us that it was more important to teach children how to earn money running the ranch rather than to give them money. A practical point of view was stressed that both land and money are necessary in combination and also the idea that if land were not passed along, the children would have to start over. "A person can borrow against the land, but once the land is gone, the price [of that land] will only go up. Money disappears rapidly; land is the most important because they're not making any more of it."

The importance of land also appeared in the way ranchers view its role in community life, as well as in family life. This is expressed by responses to the statements concerning land ownership and management. A recurrent theme of these discussions focuses on a landowner's responsibility to neighbors and community. Even though nearly 89 percent of those we interviewed agreed with the statement that a person should be able to manage his or her land however he or she chooses (question 51; appendix C, table 50), their comments on the statement demonstrate an attempt to balance community responsibility with freedom of ownership. Some of their considerations include being in agreement with the people around you, managing your land as you see fit as long as neighbors and land are not harmed, and maintaining rural traditions.

The idea of having to sell land was met with little enthusiasm, as summed up by the comment, "[You] shouldn't sell any land, its too hard to come by these days." Nonetheless, the pros and cons of selling land locally or to "outsiders" were discussed in two of the statements. When asked if an owner should make it a top priority to sell to someone within the local community (question 50; appendix C, table 49), 75 percent agreed. Several felt that land should be kept within the community so traditions would be maintained. Others were concerned that selling land outside the community

might result in suburban development, rising taxes, and loss of agricultural land.

Almost 67 percent were unwilling to make price the top consideration in selling land (question 46; appendix C, table 45). Comments on the statement indicated that considerable deliberation went into balancing the good of the family with the good of the community. Such thoughts encompassed the desire to sell to someone who would not develop the land, but also the need to think of the good of the family (in terms of getting a good price for the land). A couple of people expressed it as wanting the most for your money but realizing that sometimes the person with the most money is not best for the land. Most alluded to selling to family and neighbors before "outsiders." There was concern that sale to nonlocals could lead to "people coming in [to a community] and wanting to tell locals how to manage the land when locals have managed it well for years."

An attempt was made to explore further landowners' feelings of responsibility to community by seeing if they preferred to hire workers from the locality over workers from other areas (question 44 and 49; appendix C, tables 43 and 48). In support and loyalty to community, much was said in favor of using local workers. About 71 percent agreed that landowners should make it a top priority to hire local workers, while almost one-quarter chose to remain neutral on the subject. Discussion on this topic was instructive, surfacing issues other than a simple desire to offer employment to local community members. The majority of those who commented mentioned that although they would like to hire local people, competent, willing, and affordable workers could be hard to find here as elsewhere throughout the United States. "[One] must be realistic when it comes to business," avoiding decisions that are detrimental to the business and the livestock.

Perhaps reflecting the apparent difficulty of finding workers within the community, of the 59 respondents who answered the question, 56 percent agreed to a related statement that landowners should hire the most qualified workers without regard to where they come from (question 49; appendix C, table 48). About 15 percent were neutral on the subject, and almost 29 percent disagreed. This statement also elicited discussion on the importance of hiring qualified, dependable people and further remarks on the difficulty of finding local workers. On the other hand, several observed that landowners should hire local kids to give them the opportunity to learn ranching or that local people would be the most qualified. Countering the notion of hiring workers at all, reference was made to the old-fashioned custom of neighbors pitching in to help each other.

Another dimension of land use that was explored involves the integral role of public land in ranching operations. Some 97 percent agreed with the statement that public land should be managed with greatest consideration for long-time, traditional users (question 47; appendix C, table 46). The remainder were neutral; none disagreed. They expressed their desire to care for the land and the importance of that grazing land to their livelihood in their comments on the statement.

The contrasting view that public land should be managed with equal consideration for the use and enjoyment of all U.S. citizens (question 42; appendix C, table 41) was met with 50 percent agreement and 36 percent disagreement by the 58 people who responded. This was apparently a difficult question to answer because it embodies the mandate of the Multiple Use Act, with which most respondents are familiar. Thus, it would be like disagreeing with the law, which may have prompted the 50 percent agreement response. However, there were stipulations (along with the agreements) that users should respect and preserve the land, not vandalize, destroy, or damage it. In earlier work, McSweeney (1995) also found that the northern ranchers show an attachment to the Federal lands that extend beyond the boundaries of their ranches. They spoke of these lands as being part of their history, expressing a responsibility toward the forestland almost as though it belonged to them.

Summary and Conclusions

The continuing controversy over the role of Federal lands and land management agencies in northern New Mexico, as well as in the Western United States as a whole, often relates to imperfect understanding of sociocultural values and attitudes toward land use on the part of public agency officials. Although Forest Service-permittee relations have improved in recent years, problems still exist. This often appears to be the case in northern New Mexico where distinctive custom, culture, and tradition, in addition to a history of U.S. conquest, contribute to misunderstanding and conflict. Acknowledging the importance of small livestock operations to area families and communities is crucial for understanding their way of life and resolving disputes over public land and resource use.

The pilot study begins to address this issue by gathering information on contemporary land management, valuation, and use issues among ranchers with Federal grazing permits on National Forest lands in northern New Mexico. The study focuses on gathering information on both the economic and noneconomic contributions of livestock ownership to local families and communities. It explores the extent to which the use of public land for grazing and other purposes provides opportunities for community interaction and maintenance of traditional culture. The work is intended to assist managers in addressing land management and use issues now and in the future. It will also be valuable as a public education tool because many residents of the State, especially those newly migrated to both urban and rural areas, are unfamiliar with the primarily Hispanic culture and traditions of northern New Mexico.

The ranching tradition in northern New Mexico is one of depth and generations. The vast majority of grazing permittees on the two Districts we studied were born in the area into families who have been ranching in the region long before the advent of public lands. Those we spoke with consider the ranching way of life vital to maintaining their cultural heritage and traditional values, as well as to passing those values on to future generations. Ranches and land ownership are integral components of family and community life that feature prominently in the present and future plans of their owners. Many of the ranchers have structured their careers or taken special jobs so that they could remain in the area to be near their land and cattle, some even passing up promotions to remain near the ranch or of returning home when their families needed help running the livestock operation. The large majority plan to run their ranches as their main activity after retiring from other jobs and would like to be fully supported by the cattle venture.

Keeping land in the family and upholding traditional values are regarded more highly than material possessions or monetary gain. The tremendous social, cultural, and economic importance of these operations argues for future research designed to move the study of these types of agricultural enterprises out of the realm of purely economic study into disciplines that can assess the full range of their contributions.

Changing attitudes and values among the general public have the potential to negatively impact the traditional rural ranching way of life in northern New Mexico. For example, the effects of population growth and urbanization on land values, property taxes, water availability, and attitudes concerning ranching and other traditional rural economic activities require in-depth study. These trends add to the difficulties the permittees discussed with us concerning "making ends meet" and keeping their lands in agricultural use. This becomes increasingly difficult as neighboring lands are sold and subdivided.

The ranchers struggle with the problems, challenges, and benefits of working on both private and public land, and they fear losing their permits, ranches, and rural cultural traditions. The work and attitudes of these people demonstrate their concern for the welfare of both private and public land and their deep commitment to family, community, and heritage. The continuity of their long enduring traditions is inextricably linked to the history, heritage, culture, and future of the State.

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Appendix A

OMB APPROVAL NUMBER 0596-0144

QUESTIONNAIRE: LIVESTOCK OWNERSHIP AMONG USDA FOREST SERVICE GRAZING PERMITTEES IN NORTHERN NEW MEXICO

Please help us gather information about the importance of livestock ownership by answering the following questions. All questions apply to the permittee. For purposes of this questionnaire, livestock refer to cattle and sheep.

Family Information

Please provide the following information about yourself and your family.

1. How many years have you lived in north central New Mexico?

_____

2. How many years or generations has your family lived in north central New Mexico?

_____

3. Circle the primary language spoken in the household. (Please circle one response.)

Spanish English Both Other

4. Please circle your age range.

20-35 36-49 50-65 over 65

5. Please circle your highest level of completed education.

Grade School High School Some College College Degree Graduate School

6. Please circle your spouse's highest level of completed education.

Grade School High School Some College College Degree Graduate School

1

7. Circle the letter that best describes your job. (Please circle one letter.)

A. Self-employed as a full-time rancher or farmer

B. Self-employed other than as a rancher or farmer

C. Employed full-time outside the home or ranch

D. Employed part-time outside the home or ranch

E. Retired

F. Other (Please describe.)

8. If employed outside the home or ranch, what is your job title or description? If you have more than one, please list them in order of importance.

_____

_____

9. How many total hours per week do you work outside the home or ranch?

_____

10. Circle the letter that best describes your spouse's job. (Please circle one letter.)

A. Self-employed as a full-time rancher or farmer

B. Self-employed other than as a rancher or farmer

C. Employed full-time outside the home or ranch

D. Employed part-time outside the home or ranch

E. Retired

F. Other (Please describe.)

11. If employed outside the home or ranch, what is your spouse's job title or description? If your spouse has more than one job, list them in order of importance.

_____

_____

12. How many total hours per week does your spouse work outside the home or ranch?

_____

Community Activities Related to Owning Livestock

13. If you did not own livestock, would you live in the same community? If no, why not?

_____

_____

_____

14. Approximately how many grazing association meetings do you attend during a typical year?

_____

15. Please give the number of the following events that you and your family participate in during a typical year?

_____ Brandings

_____ Round-ups

_____ Matanzas

_____ Rodeos

_____ County Fairs

_____ Others (Please list.)

16. Do you run your livestock together with relatives who do not live in your household?

_____

3

17. Do you run your livestock together with neighbors who are not relatives?

_____

Description of your Livestock Operation

Please answer the following questions about your livestock and land, and the way you manage your herd.

18. How many years have you had livestock?

_____

19. How many years or generations has your family had livestock?

_____

20. How many years or generations have you and your family grazed on lands that were associated with community grant lands?

_____

21. How many years have you and your family held a grazing permit on Forest Service-managed land? On BLM-managed land?

FS _____ BLM _____

22. How many days do you or other members of your family work on your livestock operation during a typical year?

_____

23. Please provide the following information about your herd. How many head of each type do you own during a typical year?

Cows	_____	Ewes	_____
Bulls	_____	Rams	_____
Yearlings	_____	Lambs	_____
Calves	_____	Working Horses	_____

24. How many head are lost during a typical year, and how do you think they were lost?

Kind of Animal	Number Lost	Reason for Loss

Costs and Benefits of Owning Livestock

25. How many animals do you butcher for your household use during a typical year?

_____

26. What animal byproducts (hides, wool, and milk) are used by your household during a typical year? Estimate how much or how many of each.

_____

27. How many live animals do you give to relatives and friends during a typical year?

_____

28. How much meat (and byproducts such as hides, wool, and milk) do you give to relatives and friends during a typical year?

(Meat)_____

(Byproducts)_____

29. During a typical year, how many animals and how much meat do you trade for other goods and services?

(Animals)_____

(Meat)_____

30. Please estimate how much money you spend and how much labor you put into making improvements on your federal (Forest Service and BLM) allotment(s) and your base property.

	Your Cost in Dollars	Days of Labor*
New Fence		
Fence Reconstruction		
Corrals and Pens		
Spring Development		
Stock Tank Development		
Water well development		
Brush or Weed Control		
Road Building and Reconstruction		
Other (List)+		

*(Permittee and Unpaid Workers); +Example: Hired Workers

31. Please estimate how much it costs you to own livestock during a typical year. Consider costs to operate and maintain vehicles, equipment, stock tanks and pumps, horses, veterinary expenses, feed costs, association fees, permit fees, etc.

_____

32. Please estimate the percentage of your income that comes from the livestock operation in a typical year

_____

Role of Livestock

33. In the past five years, in which of the following areas have you spent money gained from the livestock operation? (Please circle all appropriate letters.)

A. Basic living expenses

B. Household and family emergencies

C. Special expenses such as trips or children's college tuition

D. Household improvements

E. Buying more livestock or upgrading the livestock operation

F. Investments

G. Other (Please list.)

34. Circle the letter of the statement that best describes the way you and your family depend on your livestock for family income. (Please circle one letter.)

A. We depend on our livestock for our full income. We are full-time ranchers.

B. We depend on our livestock for part of our income. We are part-time ranchers, but would like to be fully dependent on our livestock for family income.

C. We depend on our livestock for part of our income, and would not want to depend on our livestock for our full family income.

D. We are retired, but still depend on our livestock for part of our income.

E. Other (Please describe.)

35. In the past five years, how many times have you sold livestock to meet emergency household or family needs?

_____

36. Do you plan to manage your livestock as a major activity after you retire?

_____

37. If you had no livestock before retiring, could you afford to buy them after retiring?

_____

38. If you could pick one of the following means of saving or investing money, which would you choose? (Please circle one letter.)

A. Putting money in a savings account or other form of money investment program

B. Buying land in the area

C. Buying more livestock or improving the stock operation in other ways, such as investing in range improvements.

D. Other (Please describe.)

Family Goals

39. Please order the following statements about your general family goals by putting 1 in front of the most important, 2 in front of the second most important, etc., with 4 being least important.

_____ To have more net income and be able to buy more material goods

_____ To have a better quality of life and spend time with my family

_____ To continue living the way my parents and grandparents did (maintain traditional values)

_____ To have more respect in the community

40. Please order the following statements about your goals for your livestock operation by putting 1 in front of the most important, 2 in front of the second most important, etc., with 4 being least important.

_____ To make more money above costs each year from the livestock operation in order to increase the family's overall income and material goods

_____ To maintain the family's quality of life that results from owning livestock (spend time outdoors together, keep the children out of trouble, etc.)

_____ To avoid being forced out of livestock ownership (the family has had livestock for generations)

_____ To improve the livestock operation by obtaining more land, better equipment, and more animals

Views about Owning and Using Land

Please indicate your level of agreement or disagreement with the following statements by circling the letter of the appropriate response.

41. One of the greatest sources of pride for a landowner is owning and working the same land all his/her life.

A. Strongly Agree B. Agree C. Neutral D. Disagree E. Strongly Disagree

42. Public lands, such as national forest or BLM-managed lands, should be managed with equal consideration for the use and enjoyment of all U.S. citizens.

A. Strongly Agree B. Agree C. Neutral D. Disagree E. Strongly Disagree

43. Land that has been in the family for generations should not be sold.

A. Strongly Agree B. Agree C. Neutral D. Disagree E. Strongly Disagree

44. Landowners should make it a top priority to hire local workers.

A. Strongly Agree B. Agree C. Neutral D. Disagree E. Strongly Disagree

45. True land ownership includes personally working the land (or having members of the family work it), raising one's own crops and livestock.

A. Strongly Agree B. Agree C. Neutral D. Disagree E. Strongly Disagree

46. When selling land, the owner owes it to his/her family to sell to the person who offers the best price even if that person is not from the local community.

A. Strongly Agree B. Agree C. Neutral D. Disagree E. Strongly Disagree

47. Public lands, such as national forest or BLM-managed lands, should be managed with greatest consideration for long-time, traditional users.

A. Strongly Agree B. Agree C. Neutral D. Disagree E. Strongly Disagree

48. Having money in the bank or other investments is the best means of providing for your children's future.

A. Strongly Agree B. Agree C. Neutral D. Disagree E. Strongly Disagree

49. Landowners should hire the most qualified workers without regard to where they come from.

A. Strongly Agree B. Agree C. Neutral D. Disagree E. Strongly Disagree

50. When selling land, the owner should make it a top priority to sell to someone within the local community.

A. Strongly Agree B. Agree C. Neutral D. Disagree E. Strongly Disagree

51. The legal owner of a piece of land should be able to manage it however he/she chooses.

A. Strongly Agree B. Agree C. Neutral D. Disagree E. Strongly Disagree

52. Passing on land to your children is the best means of providing for their future.

A. Strongly Agree B. Agree C. Neutral D. Disagree E. Strongly Disagree

The questions for the interviews are the following:

1. Please describe your feelings about the land and livestock operation you own and what role they play in your family's life.

2. Do you use your land and livestock to teach your children about traditional values and their heritage? If so, how do you accomplish this?

3. Please give your opinion concerning who has the right to own land and make decisions concerning its use.

4. What are your views on the implementation of the Treaty of Guadalupe Hidalgo signed in 1848 by the United States and Mexico?

5. Describe your experiences and feelings concerning working with the government (Forest Service or Bureau of Land Management) on your allotment(s).

6. Please discuss the most serious problems you face in your livestock operation today. How would you solve these problems?

Appendix B

United States Department of Agriculture | Forest Service | Rocky Mountain Research Station | 2205 Columbia SE Albuquerque, NM 87106

December

Mr. ----------

Dear

My name is Carol Raish, and I'm a research social scientist with the Rocky Mountain Research Station, U.S. Forest Service. My co-worker, Alice McSweeney, is a range scientist and manager of Los Pinos Ranch. Our backgrounds include long-term research interests in the importance of livestock and ranching. My prior work focused on studying the contributions of domesticated animals to farmers and ranchers worldwide, while Alices's included a series of interviews with ranchers from northern New Mexico concerning their views on land and nature.

With the sponsorship of Forest Service Research, we are inviting all grazing permittees on the Española and Canjilon Ranger Districts to participate in a study to demonstrate the importance of livestock ownership and grazing on federally managed land to the families and communities of north central New Mexico. Eventually, the project will be expanded to include all permittees on the Santa Fe and Carson National Forests. We need your help to describe the important cultural, social, and economic contributions of livestock to the people of the area. Participation is completely voluntary and anonymous.

Rocky Mountain Research Station will publish the final report from the project. You may have heard it discussed at one of your association meetings. Information from the study will be used to educate both the Forest Service and the public concerning the role and importance of the ranching tradition in north central New Mexico, resulting in greater respect and understanding of local history, culture, and values. Participants will receive the draft report for comment and a copy of the final publication.

We are providing you with a questionnaire designed to gather the information for this study. Please look it over to see if you would like to participate. If so, we would like to meet with you to fill out the questionnaire during a personal interview. After completing the questionnaire, you will have an opportunity to discuss any issues or problems related to your livestock operation that you might want to bring up.

Within the next couple of weeks, one of us will call you to see if you would like to be part of the project. If so, we will set up a time and place at your convenience (for example, your home, office, a local restaurant, the ranger station, etc.) to meet with you, which should take about 1 to 1 1/2 hours. We are including a copy of this letter in Spanish and will provide a questionnaire and interview in Spanish, if you prefer. We hope you will decide to help us gather this important information. Thank you for your time.

Sincerely,

CAROL RAISH, Ph.D.
Research Social Scientist

ALICE M. McSWEENEY, M.S.
Los Pinos Ranch

Enclosures

United States Department of Agriculture | Forest Service | Rocky Mountain Research Station Albuquerque Lab | 2205 Columbia Dr., SE Albuquerque, NM 87106 Phone 505-766-2384

Date: February 23, 1999

Estimado (a) Señor(a):

Me llamo Carol Raish y soy una socióloga con la Estación de Investigaciones Rocky Mountain del Servicio Forestal de los Estados Unidos. Mi colega, Alice McSweeney, es una científica que estudia los compos y bosques. Además ella está a cargo de dirigir el Rancho Los Pinos. Nuestra experiencia incluye investigaciones a largo plazo sobre la importancia de la ganadería y los ranchos. Mi trabajo se ha centrado en estudiar las contribuciones de los ganados para los granjeros y rancheros en todo el mundo, mientras que Alice ha llevado acabo entrevistas con los rancheros del norte de Nuevo México tocante sus opiniones repecto a la tierra y la naturaleza.

Con el patrocinio de la Estación de Investigaciones del Servicio Forestal invitamos a todos los dueños de permisos para pastear ganado en el distrito forestal de Española y Canjilón a participar en un estudio que demuestre la importancia que la ganadería y el pasteo en terrenos administrados por el gobierno federal representan para las familias y comunidades del norte de Nuevo México. Con el tiempo, este estudio se abrirá a los dueños de permisos en las florestas nacionales de Santa Fe y Carson. Necesitamos su ayuda para describir las importantes contribuciones culturales, sociales y económicas del ganado para la gente de la región. Su participación en este estudio es voluntaria y anónima.

La Estación de Investigaciones Rocky Mountain del Servicio Forestal va a publicar el reporte final de este proyecto. Tal vez, usted ya habrá oído hablar de ello en alguna reunión de su asociación. La información que resulte de este estudio se usará para educar tanto al Servicio Forestal como al público sobre las contribuciones e importancia de la tradición ganadera en la parte norte-central de Nuevo México. Queremos que esto tenga el efecto de crear una mayor respeto y entendimiento de los valores, la cultura y la historia local. Las personas que participan en el estudio recibirán un reporte preliminar para que den su comentario y parecer. Más tarde recibirán una copia en forma final.

Aquí incluimos nuestra encuesta (cuestionario) creada para juntar información para este estudio. Háganos el favor de revisarlo para determinar si le gustaría participar. Si decide participar, nos gustaría reunirnos con usted para llenar el formulario y a la vez hacerle una entrevista en persona. Después de haber completado la encuesta, usted tendrá la oportunidad de comentar sobre cualquier asunto o problema concerniente a su negocio de ganadería que usted tenga a bien discutir.

En las siguientes semanas, una de nosotras, lo llamará por teléfono para determinar si gusta ser parte de este proyecto. Si decide participar fijaremos un día y hora que sea conveniente para juntarnos con usted (la entrevista bien podría darse en su casa, oficina, un restaurante o en la estación forestal). La entrevista tardará de una hora a una hora y media. Aquí incluimos una copia de nuestra carta en español y también le aportaremos la encuesta y entrevista en español si así lo prefiere. Esperamos que usted nos ayudará a juntar esta información valiosa. Gracias por su tiempo.

Appendix C

Table 1—Permittee length of residence (PLENRES – Ques. 1).

PERMITTEE LENGTH OF RESIDENCE*	NUMBER OF PERMITTEES	PERCENT	VALID PERCENT
01	0	0	0
02	0	0	0
03	0	0	0
04	2	3.2	3.2
05	60	96.8	96.8
TOTAL	62	100.0	100.0

*Key
(01) 0-5 years
(02) 6-10 years
(03) 11-20 years
(04) Over 20 years but less than entire life
(05) Entire Life

Table 2—Family length of residence (FLENRES – Ques. 2).

FAMILY LENGTH OF RESIDENCE*	NUMBER OF PERMITTEES	PERCENT	VALID PERCENT
01	1	1.6	1.6
02	3	4.8	4.8
03	5	8.1	8.1
04	20	32.3	32.3
05	9	14.5	14.5
06	9	14.5	14.5
07	5	8.1	8.1
08	4	6.5	6.5
09	5	8.1	8.1
10	1	1.6	1.6
TOTAL	62	100.0	100.0

(03)-(10) Grandparents and earlier = 93.6%; (04)-(10) Great-grandparents and earlier = 85.6%
*Key
(01) One (generation), I came here as an adult.
(02) Two, my parents came here.
(03) Three, my grandparents came here.
(04) Four, my great-grandparents came here.
(05) Five, my great-great grandparents came here.
(06) Six, or seven, or more, my great-great-great grandparents came here.
(07) No generational count, family came in 1800s.
(08) No generational count, family came in 1700s.
(09) No generational count, family came in with Oñate, with Reconquest, or in 1600s.
(10) No generational count, family is American Indian.

Table 3—Primary language spoken in household (LANG – Ques. 3).

PRIMARY LANGUAGE SPOKEN IN HOUSEHOLD*	NUMBER OF HOUSEHOLDS	PERCENT	VALID PERCENT
01	21	33.9	33.9
02	8	12.9	12.9
03	32	51.6	51.6
04	1	1.6	1.6
TOTAL	62	100.0	100.0

*Key
(01) Spanish
(02) English
(03) Both
(04) Other

Table 4—Age range of permittee (AGE – Ques. 4).

AGE RANGE OF PERMITTEE*	NUMBER OF PERMITTEES	PERCENT	VALID PERCENT
01	1	1.6	1.6
02	16	25.8	25.8
03	30	48.4	48.4
04	15	24.2	24.2
TOTAL	62	100.0	100.0

*Key
(01) 20-35
(02) 36-49
(03) 50-65
(04) Over 65

Table 5—Permittee's highest level of education (PERMED – Ques. 5).

PERMITTEE'S HIGHEST LEVEL OF EDUCATION*	NUMBER OF PERMITTEES	PERCENT	VALID PERCENT
01	6	9.7	9.7
02	33	53.2	53.2
03	9	14.5	14.5
04	7	11.3	11.3
05	7	11.3	11.3
TOTAL	62	100.0	100.0

*Key
(01) Grade School
(02) High School
(03) Some College
(04) College Degree
(05) Graduate School

Table 6—Permittee's spouse's highest level of education (SPOUSED – Ques. 6).

SPOUSE'S HIGHEST LEVEL OF EDUCATION*	NUMBER OF SPOUSES	PERCENT	ADJUSTED PERCENT+
01	3	4.8	5.4
02	28	45.2	50.0
03	16	25.8	28.6
04	7	11.3	12.5
05	2	3.2	3.6
15	6	9.7	
TOTAL	62	100.0	100.1

*Key
(01) Grade School
(02) High School
(03) Some College
(04) College Degree
(05) Graduate School
(15) No Spouse, Spouse Deceased, Permittee Divorced
+Based on the 56 spouses reporting education information (62 minus 6 = 56), which deletes category 15

Table 7—Permittee's job description (PERMJOB – Ques. 7).

PERMITTEE'S JOB DESCRIPTION*	NUMBER OF PERMITTEES	PERCENT	VALID PERCENT
01	5	8.1	8.1
02	4	6.5	6.5
03	17	27.4	27.4
04	4	6.5	6.5
05	26	41.9	41.9
06	0	0	0
07	3	4.8	4.8
08	2	3.2	3.2
09	1	1.6	1.6
TOTAL	62	100.0	100.0

(01) and (09) Full-time rancher/farmer or retired from full-time ranching/farming = 9.7%
*Key
(01) A. Self-employed as a full-time rancher or farmer
(02) B. Self-employed other than as a rancher or farmer
(03) C. Employed full-time outside the home or ranch
(04) D. Employed part-time outside the home or ranch
(05) E. Retired (Retired from outside job, now employed full-time or part-time as a rancher).
(06) F. Other (Please describe.)
(07) Retired from outside job, but still works part-time outside home or ranch and part-time as rancher.
(08) Self-employed as a full-time rancher with self-employed part-time work outside of ranch.
(09) Retired from full-time ranching.

Table 8—Permittee's job category (PJOBCAT – Ques. 8).

PERMITTEE'S JOB CATEGORY*	NUMBER OF PERMITTEES	PERCENT	VALID PERCENT
01	5	8.1	10.0
02	7	11.3	14.0
03	0	0	0
04	7	11.3	14.0
05	13	21.0	26.0
06	5	8.1	10.0
07	0	0	0
08	8	12.9	16.0
09	4	6.5	8.0
10	1	1.6	2.0
TOTAL	50	80.6	100.0
MISSING	12	19.4	
TOTAL	62	100.0	

*Key
(01) Professional/Scientific/Managerial
(02) Education System/Teacher/Principal, etc./School Superintendent/School Administrator
(03) Health Care Professional
(04) Business Owner/Manager
(05) Skilled Trade/Technical/Clerical
(06) Heavy Equipment Operator/ Truck Driver/Van Driver
(07) Artist/Artisan
(08) Agricultural
(09) Law Enforcement/Fire Depart./Security Officer, etc./Security Access Specialist
(10) Laborer/Maintenance

Table 9—Total hours per week worked outside the home or ranch-permittee (PWORKHRS – Ques. 9).

TOTAL HRS. WORKED PER WEEK OUTSIDE HOME OR RANCH*	NUMBER OF PERMITTEES	PERCENT	VALID PERCENT
01	0	0	0
02	2	3.2	3.3
03	14	22.6	23.3
04	10	16.1	16.7
05	5	8.1	8.3
06	1	1.6	1.7
07	1	1.6	1.7
99	27	43.5	45.0
TOTAL	60	96.8	100.0
MISSING	2	3.2	
TOTAL	62	100.0	

(03)-(04) Work 40 or more hours per week off the ranch = 40%; (99) Retired = 45%
*Key
(01) Less than 20 hours
(02) 20 hours or more but less than 40 hours
(03) Full time, 40 hours per week
(04) More than 40 hours per week
(05) Do not work outside the home or ranch
(06) Seasonal work
(07) Hours vary
(99) Retired from outside work

Table 10—Permittee's spouse's job (SPOUSJOB – Ques. 10).

PERMITTEE'S SPOUSE'S JOB*	NUMBER OF SPOUSES	PERCENT	ADJUSTED PERCENT+
01	0	0	0
02	5	8.1	9.4
03	20	32.2	37.7
04	8	12.9	15.1
05	12	19.4	22.6
06	0	0	0
07	7	11.3	13.2
08	1	1.6	1.9
15	9	14.5	
TOTAL	62	100.0	99.9

*Key
(01) A. Self-employed as a full-time rancher or farmer
(02) B. Self-employed other than as a rancher or farmer
(03) C. Employed full-time outside the home or ranch
(04) D. Employed part-time outside the home or ranch
(05) E. Retired (Retired from outside job, now employed full-time or part-time as a rancher).
(06) F. Other (Please describe).
(07) G. Does not work outside the home or ranch.
(08) H. Self-employed as rancher and assists with family business.
(15) No Spouse, Spouse Deceased, Permittee Divorced
+Based on the 53 spouses reporting job information (62 minus 9 = 53), which deletes category 15

Table 11—Permittee's spouse's job category (SJOBCAT – Ques. 11).

PERMITTEE'S SPOUSE'S JOB CATEGORY*	NUMBER OF SPOUSES	PERCENT	ADJUSTED PERCENT+
01	4	6.5	8.9
02	4	6.5	8.9
03	5	8.1	11.1
04	7	11.3	15.6
05	10	16.1	22.2
06	0	0	0
07	1	1.6	2.2
08	5	8.1	11.1
09	6	9.7	13.3
10	1	1.6	2.2
11	2	3.2	4.4
15	9	14.5	
TOTAL	54	87.1	99.9
MISSING	8	12.9	
TOTAL	62	100.0	

*Key
(01) Professional/Scientific/Managerial
(02) Education System/Teacher/Principal, etc./School Superintendent/School Administrator
(03) Health Care Professional
(04) Business Owner/Manager/Assists with Family Business
(05) Skilled Trade/Technical/Clerical
(06) Heavy Equipment Operator/ Truck Driver/Van Driver
(07) Artist/Artisan
(08) Daycare Provider/Home Care Provider
(09) Homemaker
(10) Law Enforcement/Fire Dept./Security Officer/Security Specialist
(11) Housekeeping/Maintenance
(15) No Spouse, Spouse Deceased, Permittee Divorced
+Based on the 45 spouses reporting jobs classifiable as to type (62 minus 17 = 45), which deletes categories15 and "missing"

Table 12—Total hours per week worked outside the home or ranch-spouse (SWORKHRS – Ques. 12).

TOTAL HRS. WORKED PER WEEK OUTSIDE HOME OR RANCH-SPOUSE*	NUMBER OF SPOUSES	PERCENT	ADJUSTED PERCENT+
01	1	1.6	1.9
02	7	11.3	13.5
03	21	33.9	40.4
04	2	3.2	3.8
05	6	9.7	11.5
06	0	0	0
07	1	1.6	1.9
08	1	1.6	1.9
15	9	14.5	
99	13	21.0	25.0
TOTAL	61	98.4	99.9
MISSING	1	1.6	
TOTAL	62	100.0	

Combined categories: 57.7% work 20 hours or more outside the home or ranch, 25% are retired, 5.7% work under 20 hours/ have varying hours/do paid work at home, 11.5% do not work outside the home
*Key
(01) Less than 20 hours
(02) 20 hours or more but less than 40 hours
(03) Full time, 40 hours per week
(04) More than 40 hours per week
(05) Do not work outside the home or ranch
(06) Seasonal work
(07) Hours vary
(08) Does paid work at home and part-time outside home – 40 hours total
(15) No Spouse, Spouse Deceased, Permittee Divorced
(99) Retired from outside work
+Based on the 52 spouses reporting employment hours (62 minus 10 = 52), which deletes categories 15 and "missing"

Table 13—Permittee views on remaining in the same community without owning livestock (COMRES– Ques. 13).

COMMUNITY RESIDENCE (WITHOUT LIVESTOCK)*	NUMBER OF PERMITTEES	PERCENT	VALID PERCENT
01	13	21.0	21.3
02	24	38.7	39.3
03	3	4.8	4.9
04	1	1.6	1.6
05	5	8.1	8.2
06	2	3.2	3.3
07	4	6.5	6.6
08	1	1.6	1.6
09	2	3.2	3.3
10	4	6.5	6.6
11	2	3.2	3.3
TOTAL	61	98.4	100.0
MISSING	1	1.6	
TOTAL	62	100.0	

(01)-(05) and (10)-(11) Would live in the same community even if did not have livestock = 85.2%
*Key
(01) Yes, or Yes, I like it here.
(02) Yes, this is my home. My family and I have always lived here/or wanted to return home.
(03) Yes, I have always lived here. Can raise kids here without having them get into trouble.
(04) Yes, land keeps you in the community, wouldn't want to leave for a job somewhere else.
(05) Yes, I live where I live to be near the land—have passed up jobs to stay and took a job (in the area) to stay near the ranch.
(06) Don't know, would stay if I could find a job. Would have to find a job somewhere.
(07) No, there is no income without the livestock. I would have to go someplace else to make a good living/get a job.
(08) No, it is too crowded here – would move where it is not so crowded.
(09) Probably not, would live in the city – but couldn't imagine living in city and not having animals. Want to live in the country.
(10) Yes, can't imagine not having livestock and working the land. They are so important. What would I do if I didn't have livestock?
(11) Yes, I want to live in the country, away from the traffic and violence of the city.

Table 14—Number of grazing association meetings attended in a typical year (ASSOCMTS– Ques. 14).

NUMBER OF GRAZING ASSOCIATION MEETINGS*	NUMBER OF PERMITTEES	PERCENT	VALID PERCENT
01	6	9.7	9.8
02	1	1.6	1.6
03	12	19.4	19.7
04	23	37.1	37.7
05	12	19.4	19.7
06	4	6.5	6.6
07	2	3.2	3.3
08	1	1.6	1.6
TOTAL	61	98.4	100.0
MISSING	1	1.6	
TOTAL	62	100.0	

(03)-(07) Attend grazing association meetings = 87%
*Key
(01) Not in an association
(02) None
(03) 1-2
(04) 3-5
(05) 6-10
(06) More than 10
(07) Many meetings—no number given
(08) Not active now, used to be more involved

Table 15a—Number of brandings participated in per year (BRANDS – Ques. 15).

BRANDINGS PARTICIPATED IN PER YEAR*	NUMBER OF PERMITTEES	PERCENT	VALID PERCENT
01	0	0	0
02	5	8.1	8.1
03	29	46.8	46.8
04	20	32.3	32.3
05	7	11.3	11.3
06	1	1.6	1.6
07	0	0	0
TOTAL	62	100.0	100.0

*Key
(01) None
(02) Yes, attend the event—no number given
(03) 1-2
(04) 3-5
(05) 6-10
(06) More than 10
(07) Too many to mention

Table 15b—Number of round-ups participated in per year (ROUNDS – Ques. 15).

ROUND-UPS PARTICIPATED IN PER YEAR*	NUMBER OF PERMITTEES	PERCENT	VALID PERCENT
01	4	6.5	6.5
02	6	9.7	9.7
03	10	16.1	16.1
04	20	32.3	32.3
05	19	30.6	30.6
06	3	4.8	4.8
07	0	0	0
TOTAL	62	100.0	100.0

(02)-(07) Attend/participate in round-ups = 93.5%
*Key
(01) None
(02) Yes, attend the event—no number given
(03) 1-2
(04) 3-5
(05) 6-10
(06) More than 10
(07) Too many to mention

Table15c—Number of matanzas participated in per year (MATANZAS – Ques. 15).

MATANZAS PARTICIPATED IN PER YEAR*	NUMBER OF PERMITTEES	PERCENT	VALID PERCENT
01	20	32.3	32.3
02	5	8.1	8.1
03	25	40.3	40.3
04	7	11.3	11.3
05	3	4.8	4.8
06	1	1.6	1.6
07	1	1.6	1.6
TOTAL	62	100.0	100.0

(02)-(07) Attend/participate in matanzas = 67.7%
*Key
(01) None
(02) Yes, attend the event—no number given
(03) 1-2
(04) 3-5
(05) 6-10
(06) More than 10
(07) Too many to mention

Table 15d—Number of rodeos participated in per year (RODEOS – Ques. 15).

RODEOS PARTICIPATED IN PER YEAR*	NUMBER OF PERMITTEES	PERCENT	VALID PERCENT
01	21	33.9	33.9
02	14	22.6	22.6
03	16	25.8	25.8
04	8	12.9	12.9
05	2	3.2	3.2
06	1	1.6	1.6
07	0	0	0
TOTAL	62	100.0	100.0

(02)-(07) Attend/participate in rodeos = 66.1%
*Key
(01) None
(02) Yes, attend the event—no number given
(03) 1-2
(04) 3-5
(05) 6-10
(06) More than 10
(07) Too many to mention

Table 15e—Number of county fairs participated in per year (COFAIRS – Ques. 15).

COUNTY FAIRS PARTICIPATED IN PER YEAR*	NUMBER OF PERMITTEES	PERCENT	VALID PERCENT
01	24	38.7	38.7
02	15	24.2	24.2
03	19	30.6	30.6
04	3	4.8	4.8
05	1	1.6	1.6
06	0	0	0
07	0	0	0
TOTAL	62	100.0	100.0

(02)-(07) Attend/participate in county fairs = 61.3%
*Key
(01) None
(02) Yes, attend the event—no number given
(03) 1-2
(04) 3-5
(05) 6-10
(06) More than 10
(07) Too many to mention

Table 15f—Number of other events participated in per year (OTHREVS – Ques. 15).

OTHER EVENTS PARTICIPATED IN PER YEAR*	NUMBER OF PERMITTEES	PERCENT	VALID PERCENT
01	59	95.2	95.2
02	0	0	0
03	1	1.6	1.6
04	1	1.6	1.6
05	0	0	0
06	1	1.6	1.6
07	0	0	0
TOTAL	62	100.0	100.0

*Key
(01) None
(02) Yes, attend the event—no number given
(03) 1-2
(04) 3-5
(05) 6-10
(06) More than 10
(07) Too many to mention

Table 16—Permittees and relatives who herd livestock together (RUNRELS – Ques. 16).

PERMITTEES HERD LIVESTOCK WITH RELATIVES' LIVESTOCK*	NUMBER OF PERMITTEES	PERCENT	VALID PERCENT
01	45	72.6	73.8
02	9	14.5	14.8
03	7	11.3	11.5
TOTAL	61	98.4	100.0
MISSING	1	1.6	
TOTAL	62	100.0	

(01) and (03) Herd livestock together with relatives or with the help of relatives = 85.3%
*Key
(01) Yes
(02) No
(03) No, but relatives often help out

Table 17—Permittees and neighbors who herd livestock together (RUNEIGHS – Ques. 17).

PERMITTEES HERD LIVESTOCK WITH NEIGHBORS' LIVESTOCK*	NUMBER OF PERMITTEES	PERCENT	VALID PERCENT
01	50	80.6	80.6
02	12	19.4	19.4
TOTAL	62	100.0	100.0

*Key
(01) Yes
(02) No

Table 18—Number of years permittee has had livestock (YRSTOCKP – Ques.18).

NUMBER OF YEARS PERMITTEE HAS HAD LIVESTOCK*	NUMBER OF PERMITTEES	PERCENT	VALID PERCENT
01	20	32.3	32.3
02	9	14.5	14.5
03	18	29.0	29.0
04	15	24.2	24.2
TOTAL	62	100.0	100.0

*Key
01) Virtually entire life, since childhood.
(02) Since teen years
(03) Since adulthood
(04) Since adulthood—took them over from family, father and/or grandfather, or still in business with them.

Table 19—Years or generations that permittee's family has had livestock (YRSTOCKF – Ques. 19).

YEARS OR GENERATIONS PERMITTEE'S FAMILY HAS HAD LIVESTOCK*	NUMBER OF PERMITTEES	PERCENT	VALID PERCENT
01	0	0	0
02	4	6.5	6.5
03	13	21.0	21.0
04	18	29.0	29.0
05	6	9.7	9.7
06	4	6.5	6.5
07	8	12.9	12.9
08	3	4.8	4.8
09	3	4.8	4.8
10	2	3.2	3.2
11	1	1.6	1.6
TOTAL	62	100.0	00.0

(03)-(11) Grandparents and earlier = 93.5%; (04)-(11) Great-grandparents and earlier = 72.5%
*Key
(01) One (generation), I am the first to have livestock.
(02) Two, my parents had livestock.
(03) Three, my grandparents had livestock.
(04) Four, my great-grandparents had livestock.
(05) Five, my great-great grandparents had livestock.
(06) Six or seven, my great-great-great grandparents had livestock.
(07) No generational count, family has had livestock since the 1800s.
(08) No generational count, family has had livestock since the 1700s.
(09) No generational count, family has had livestock since Oñate's time, the Reconquest, or the 1600s.
(10) No generational count, family has had livestock since "the beginning," family has "always" had livestock.
(11) Other.

Table 20—Years or generations that permittee and family have grazed livestock on community grant lands (LAGRANTS– Ques. 20).

YEARS OR GENERATIONS ON COMMUNITY GRANT LANDS*	NUMBER OF PERMITTEES	PERCENT	VALID PERCENT
01	21	33.9	34.4
02	4	6.5	6.6
03	2	3.2	3.3
04	2	3.2	3.3
05	1	1.6	1.6
06	3	4.8	4.9
07	4	6.5	6.6
08	3	4.8	4.9
09	3	4.8	4.9
10	1	1.6	1.6
11	7	11.3	11.5
12	3	4.8	4.9
13	0	0	0
14	2	3.2	3.3
15	1	1.6	1.6
16	1	1.6	1.6
17	1	1.6	1.6
18	1	1.6	1.6
19	1	1.6	1.6
TOTAL	61	98.4	100.0
MISSING	1	1.6	
TOTAL	62	100.0	

(01) Family does/did not use land grant lands = 34.4%; (02)-(13) and (15)-(16) Family uses land grant lands now or has used them in the past = 57.5%

*Key

(01) Family does not/did not graze livestock on grant lands.
(02) Family used to graze livestock on grant lands, but not any more. Grant was lost, became public land, or they sold out, etc.
(03) Family is in a grant but is inactive or uses the grant lands for purposes other than grazing such as fuel wood gathering or gathering of vigas.
(04) Family grazes livestock on grant lands or lands that were grant lands but no length of time given.
(05) One (generation), permittee is the first in the family to lease grant lands.
(06) Two, parents grazed livestock grant lands, permittee does also.

Table 20. (Cont.)

(07) Three, grandparents grazed livestock on grant lands, permittee does also.
(08) Four, great-grandparents grazed livestock on grant lands, permittee does also.
(09) Five generations, great-great-grandparents grazed livestock on grant lands, permittee does also.
(10) Six generations, great-great-great-grandparents grazed livestock on grant lands, permittee does also.
(11) No generational count, family has grazed livestock on grant lands since the 1800s.
(12) No generational count, family has grazed livestock on grant lands since the 1700s.
(13) No generational count, family has grazed livestock on grant lands since Oñate's time or the 1600s.
(14) Unsure, have heard that family grazed livestock on grant lands in the past.
(15) Graze livestock in conjunction with the Pueblo.
(16) Family has grazed livestock on grant lands forever, back to the ancestors.
(17) Don't know.
(18) Not that I know of.
(19) Probably did, everyone did.

Table 21a—Number of years permittee and family have held a grazing permit on Forest Service land (FSPERM – Ques. 21).

NUMBER OF YEARS PERMITTEE HAS HAD A FOREST SERVICE GRAZING PERMIT*	NUMBER OF PERMITTEES	PERCENT	VALID PERCENT
01	0	0	0
02	0	0	0
03	22	35.5	35.5
04	4	6.5	6.5
05	6	9.7	9.7
06	2	3.2	3.2
07	4	6.5	6.5
08	3	4.8	4.8
09	3	4.8	4.8
10	4	6.5	6.5
11	3	4.8	4.8
12	4	6.5	6.5
13	5	8.1	8.1
14	2	3.2	3.2
TOTAL	62	100.0	100.0

(03)-(05) and (11)-(13) Have had the Forest Service permit over 50 years and/or received the permit from their father or grandfather = 71.1%; (06) Have had the Forest Service permit less than 10 years

*Key
(01) None (NOTE: All respondents to this survey should have a Forest Service permit.)
(02) Sublease on Forest Service land.
(03) Since permits began in the area.
(04) Father had the permit and passed it down.
(05) Grandfather had the permit and passed it down.
(06) Less than 10 years
(07) 10-20 years
(08) 21-30 years
(09) 31-40 years
(10) 41-50 years
(11) 51-60 years
(12) 61-70 years
(13) 71-80 years or more
(14) Father or grandfather had a permit and lost it. Current permittee got another one.

Table 21b—Number of years permittee and family have held a grazing permit on Bureau of Land Mangement land (BLMPERM– Ques. 21).

NUMBER OF YEARS PERMITTEE HAS HAD A BLM GRAZING PERMIT*	NUMBER OF PERMITTEES	PERCENT	VALID PERCENT
01	47	75.8	75.8
02	1	1.6	1.6
03	2	3.2	3.2
04	2	3.2	3.2
05	0	0	0
06	1	1.6	1.6
07	3	4.8	4.8
08	1	1.6	1.6
09	0	0	0
10	2	3.2	3.2
11	1	1.6	1.6
12	1	1.6	1.6
13	1	1.6	1.6
TOTAL	62	100.0	100.0

*Key
(01) None
(02) Sublease on BLM land.
(03) Since permits began in the area.
(04) Father had the permit and passed it down.
(05) Grandfather had the permit and passed it down.
(06) Less than 10 years
(07) 10-20 years
(08) 21-30 years
(09) 31-40 years
(10) 41-50 years
(11) 51-60 years
(12) 61-70 years
(13) 71-80 years

Table 22—Number of days permittee (or family) works on livestock operation in a typical year (WRKDAYS – Ques. 22).

NUMBER OF DAYS WORKED ON LIVESTOCK OPERATION*	NUMBER OF PERMITTEES	PERCENT	VALID PERCENT
01	43	69.4	69.4
02	1	1.6	1.6
03	4	6.5	6.5
04	1	1.6	1.6
05	1	1.6	1.6
06	4	6.5	6.5
07	2	3.2	3.2
08	2	3.2	3.2
09	1	1.6	1.6
10	1	1.6	1.6
11	1	1.6	1.6
12	1	1.6	1.6
TOTAL	62	100.0	100.0

*Key
(01) Every day, all the time, 365 days a year.
(02) Every day in winter, every week-end in summer
(03) Every day in winter, two or three times a week in summer
(04) Every day in winter, twice a month (two weekends) in summer
(05) Less than one third of the year
(06) Around one third of the year
(07) Around one half of the year
(08) Around three quarters of the year
(09) Two or three times a week all summer
(10) Less than one-quarter of the year
(11) Goes to ranch most weekends
(12) Around two-thirds of the year

Table 23a—Number of cows owned (COWFREQS – Ques. 23).

NUMBER OF COWS	NUMBER OF PERMITTEES	PERCENT	VALID PERCENT
05	2	3.2	3.2
06	1	1.6	1.6
08	1	1.6	1.6
09	1	1.6	1.6
10	2	3.2	3.2
11	2	3.2	3.2
12	1	1.6	1.6
13	2	3.2	3.2
14	1	1.6	1.6
15	2	3.2	3.2
20	1	1.6	1.6
25	2	3.2	3.2
28	1	1.6	1.6
30	4	6.5	6.5
35	1	1.6	1.6
38	1	1.6	1.6
40	3	4.8	4.8
42	1	1.6	1.6
43	1	1.6	1.6
50	2	3.2	3.2
51	2	3.2	3.2
52	1	1.6	1.6
54	1	1.6	1.6
60	2	3.2	3.2
65	1	1.6	1.6
66	1	1.6	1.6
68	1	1.6	1.6
70	2	3.2	3.2
72	1	1.6	1.6
75	2	3.2	3.2
76	1	1.6	1.6
80	1	1.6	1.6
81	1	1.6	1.6
84	1	1.6	1.6
90	1	1.6	1.6
100	1	1.6	1.6
110	1	1.6	1.6
115	1	1.6	1.6
130	2	3.2	3.2
135	2	3.2	3.2
160	1	1.6	1.6
250	2	3.2	3.2
550	1	1.6	1.6
TOTAL	62	100.0	100.0

Table 23b—Number of bulls owned (BULLFREQS– Ques. 23).

NUMBER OF BULLS	NUMBER OF PERMITTEES	PERCENT	VALID PERCENT
00	3	4.8	5.2
01	13	21.0	22.4
02	10	16.1	17.2
03	8	12.9	13.8
04	10	16.1	17.2
05	4	6.5	6.9
06	2	3.2	3.4
07	3	4.8	5.2
08	1	1.6	1.7
10	1	1.6	1.7
14	1	1.6	1.7
15	1	1.6	1.7
30	1	1.6	1.7
TOTAL	58	93.5	100.0
MISSING 97	4	6.5	
TOTAL	62	100.0	

Table 23c—Number of yearlings owned (YEARFREQS– Ques. 23).

NUMBER OF YEARLINGS	NUMBER OF PERMITTEES	PERCENT	VALID PERCENT
00	20	32.3	32.3
01	1	1.6	1.6
02	3	4.8	4.8
03	5	8.1	8.1
05	3	4.8	4.8
06	4	6.5	6.5
07	1	1.6	1.6
08	4	6.5	6.5
10	5	8.1	8.1
11	1	1.6	1.6
12	2	3.2	3.2
15	2	3.2	3.2
18	2	3.2	3.2
20	5	8.1	8.1
35	3	4.8	4.8
100	1	1.6	1.6
TOTAL	62	100.0	100.0

Table 23d—Number of calves owned (CALFFREQS – Ques. 23).

NUMBER OF CALVES	NUMBER OF PERMITTEES	PERCENT	VALID PERCENT
00	1	1.6	1.6
02	2	3.2	3.3
03	1	1.6	1.6
04	1	1.6	1.6
05	1	1.6	1.6
06	1	1.6	1.6
07	1	1.6	1.6
08	3	4.8	4.9
10	3	4.8	4.9
12	2	3.2	3.3
13	1	1.6	1.6
17	1	1.6	1.6
19	2	3.2	3.3
20	2	3.2	3.3
24	1	1.6	1.6
25	1	1.6	1.6
27	1	1.6	1.6
30	1	1.6	1.6
32	2	3.2	3.3
33	1	1.6	1.6
35	2	3.2	3.3
36	1	1.6	1.6
40	1	1.6	1.6
42	1	1.6	1.6
45	5	8.1	8.2
50	2	3.2	3.3
51	1	1.6	1.6
55	2	3.2	3.3
60	2	3.2	3.3
63	1	1.6	1.6
64	1	1.6	1.6
68	1	1.6	1.6
70	1	1.6	1.6
80	2	3.2	3.3
95	1	1.6	1.6
100	1	1.6	1.6
101	1	1.6	1.6
105	1	1.6	1.6
124	1	1.6	1.6
125	1	1.6	1.6
130	1	1.6	1.6
150	1	1.6	1.6
495	1	1.6	1.6
TOTAL	61	98.4	100.0
MISSING 97		1	1.6
TOTAL	62	100.0	

Table 23e—Number of ewes owned (EWEFREQS – Ques. 23).

NUMBER OF EWES	NUMBER OF PERMITTEES	PERCENT	VALID PERCENT
00	52	83.9	83.9
03	1	1.6	1.6
04	1	1.6	1.6
05	1	1.6	1.6
06	1	1.6	1.6
10	1	1.6	1.6
20	2	3.2	3.2
28	1	1.6	1.6
650	1	1.6	1.6
759	1	1.6	1.6
TOTAL	62	100.0	100.0

Table 23f—Number of rams owned (RAMFREQS– Ques. 23).

NUMBER OF RAMS	NUMBER OF PERMITTEES	PERCENT	VALID PERCENT
00	55	88.7	88.7
01	4	6.5	6.5
02	1	1.6	1.6
13	1	1.6	1.6
40	1	1.6	1.6
TOTAL	62	100.0	100.0

Table 23g—Number of lambs owned (LAMBFREQS– Ques. 23).

NUMBER OF LAMBS	NUMBER OF PERMITTEES	PERCENT	VALID PERCENT
00	54	87.1	88.5
01	1	1.6	1.6
03	1	1.6	1.6
06	1	1.6	1.6
08	1	1.6	1.6
20	1	1.6	1.6
25	1	1.6	1.6
700	1	1.6	1.6
TOTAL	61	98.4	100.0
MISSING 97	1	1.6	
TOTAL	62	100.0	

Table 23h—Number of horses owned (HORSEFREQS– Ques. 23).

NUMBER OF HORSES	NUMBER OF PERMITTEES	PERCENT	VALID PERCENT
00	2	3.2	3.2
01	3	4.8	4.8
02	14	22.6	22.6
03	12	19.4	19.4
04	9	14.5	14.5
05	10	16.1	16.1
06	5	8.1	8.1
07	4	6.5	6.5
08	1	1.6	1.6
10	1	1.6	1.6
15	1	1.6	1.6
TOTAL	62	100.0	100.0

Table 24a—Number of cows lost during a typical year (COWLOST – Ques. 24).

NUMBER OF COWS LOST	NUMBER OF PERMITTEES	PERCENT	VALID PERCENT
00	19	30.6	31.7
01	5	8.1	8.3
02	17	27.4	28.3
03	4	6.5	6.7
04	6	9.7	10.0
05	5	8.1	8.3
06	2	3.2	3.3
08	1	1.6	1.7
10	1	1.6	1.7
TOTAL	60	96.8	100.0
MISSING 97	1	1.6	
MISSING 98	1	1.6	
TOTAL MISSING	2	3.2	
TOTAL	62	100.0	

Table 24b—Number of bulls lost during a typical year (BULLOST – Ques. 24).

NUMBER OF BULLS LOST	NUMBER OF PERMITTEES	PERCENT	VALID PERCENT
00	56	90.3	93.3
01	4	6.5	6.7
TOTAL	60	96.8	100.0
MISSING 97	1	1.6	
MISSING 98	1	1.6	
TOTAL MISSING	2	3.2	
TOTAL	62	100.0	

Table 24c—Number of calves lost during a typical year (CALFLOST – Ques. 24).

NUMBER OF CALVES LOST	NUMBER OF PERMITTEES	PERCENT	VALID PERCENT
00	14	22.6	23.3
01	4	6.5	6.7
02	11	17.7	18.3
03	11	17.7	18.3
04	6	9.7	10.0
05	5	8.1	8.3
06	2	3.2	3.3
07	2	3.2	3.3
08	1	1.6	1.7
10	3	4.8	5.0
12	1	1.6	1.7
TOTAL	60	96.8	100.0
MISSING 97	1	1.6	
MISSING 98	1	1.6	
TOTAL MISSING	2	3.2	
TOTAL	62	100.0	

Table 24d—Number of ewes lost during a typical year (EWELOST – Ques. 24).

NUMBER OF EWES LOST	NUMBER OF PERMITTEES	PERCENT	VALID PERCENT
00	56	90.3	93.3
01	1	1.6	1.7
02	1	1.6	1.7
30	1	1.6	1.7
38	1	1.6	1.7
TOTAL	60	96.8	100.0
MISSING 97	1	1.6	
MISSING 98	1	1.6	
TOTAL MISSING	2	3.2	
TOTAL	62	100.0	

Table 24e—Number of lambs lost during a typical year (LAMBLOST– Ques. 24).

NUMBER OF LAMBS LOST	NUMBER OF PERMITTEES	PERCENT	VALID PERCENT
00	56	90.3	93.3
03	1	1.6	1.7
06	1	1.6	1.7
25	1	1.6	1.7
50	1	1.6	1.7
TOTAL	60	96.8	100.0
MISSING 97	1	1.6	
MISSING 98	1	1.6	
TOTAL MISSING	2	3.2	
TOTAL	62	100.0	

Table 24f—Number of cows or calves lost during a typical year (COCALOST– Ques. 24).

NUMBER OF COWS OR CALVES LOST	NUMBER OF PERMITTEES	PERCENT	VALID PERCENT
00	53	85.5	88.3
01	1	1.6	1.7
02	1	1.6	1.7
03	3	4.8	5.0
13	1	1.6	1.7
141	1	1.6	1.7
TOTAL	60	96.8	100.0
MISSING 97	1	1.6	
MISSING 98	1	1.6	
TOTAL MISSING	2	3.2	
TOTAL	62	100.0	

Table 24g—Reason for loss of livestock (REASLOSS – Ques. 24).

REASON FOR LOSS OF LIVESTOCK*	NUMBER OF PERMITTEES	PERCENT	VALID PERCENT
01	5	8.1	8.2
02	4	6.5	6.6
03	2	3.2	3.3
04	0	0	0
05	2	3.2	3.3
06	1	1.6	1.6
07	9	14.5	14.8
08	1	1.6	1.6
09	5	8.1	8.2
10	5	8.1	8.2
11	7	11.3	11.5
12	2	3.2	3.3
13	1	1.6	1.6
14	4	6.5	6.6
15	1	1.6	1.6
16	1	1.6	1.6
17	1	1.6	1.6
18	1	1.6	1.6
19	2	3.2	3.3
20	1	1.6	1.6
21	3	4.8	4.9
22	1	1.6	1.6
23	1	1.6	1.6
24	1	1.6	1.6
TOTAL	61	98.4	100.0
MISSING	1	1.6	
TOTAL	62	100.0	

(1), (05)-(07), (9), (11)-(13), (19), (21)-(23) Animals lost to theft or vandalism or killed by hunters = 63.9%; (02), (09)-(11), (13), (16)-(19), (21), (22) Animals lost to predation = 50.8%

*Key
(01) Theft, Vandalism
(02) Predation (Dogs, Coyotes, Mountain Lions, etc.)
(03) Natural Causes (Diseases or Accidents)
(04) Wandered Off
(05) Hunted (Killed by Hunters)
(06) Natural Causes, Hunted
(07) Natural Causes, Theft, Vandalism
(08) Poisonous Plants
(09) Theft, Predation
(10) Natural Causes, Predation
(11) Natural Causes, Theft, Predation
(12) Natural Causes, Theft, Poisonous Plants
(13) Theft, Predation, Poisonous Plants, Hunted
(14) Unknown
(15) Doesn't know why animals being lost – not going to make assumptions
(16) Poisonous Plants, Predation, Natural Causes
(17) Natural Causes, Predation, Unknown Causes
(18) Predation, Poisonous Plants
(19) Theft, Predation, Unknown Causes
(20) None lost
(21) Natural Causes, Theft, Predation, Poisonous Plants
(22) Unknown Causes, Predation, Theft, Poisonous Plants
(23) Unknown Causes, Theft
(24) Natural Causes, unknown causes
NOTE: Accidents such as lightning strike or stuck in a bog are included with natural causes.

Table 25—Number of animals butchered for use in a typical year (HSUSEFREQS – Ques. 25).

NUMBER OF ANIMALS BUTCHERED	NUMBER OF PERMITTEES	PERCENT	VALID PERCENT
00	5	8.1	8.1
01	10	16.1	16.1
02	23	37.1	37.1
03	10	16.1	16.1
04	8	12.9	12.9
05	1	1.6	1.6
06	2	3.2	3.2
07	0	0	0
08	2	3.2	3.2
09	0	0	0
10	1	1.6	1.6
TOTAL	62	100.0	100.0

Table 26—Animal byproducts used by permittee household during a typical year (BPRODS– Ques. 26).

ANIMAL BYPRODUCTS USED BY HOUSEHOLD DURING A TYPICAL YEAR*	NUMBER OF HOUSE-HOLDS	PERCENT	VALID PERCENT
01	49	79.0	79.0
02	2	3.2	3.2
03	2	3.2	3.2
04	5	8.1	8.1
05	2	3.2	3.2
06	1	1.6	1.6
07	1	1.6	1.6
TOTAL	62	100.0	100.0

*Key
(01) None
(02) Hides
(03) Wool
(04) Milk
(05) Hides and Milk
(06) Wool and Milk
(07) Wool and Hides

Table 27—Number of live animals given away in a typical year (LIVANFREQS – Ques. 27).

NUMBER OF LIVE ANIMALS GIVEN AWAY	NUMBER OF PERMITTEES	PERCENT	VALID PERCENT
00	34	54.8	61.8
01	7	11.3	12.7
02	4	6.5	7.3
03	6	9.7	10.9
04	2	3.2	3.6
05	0	0	0
06	0	0	0
07	1	1.6	1.8
08	0	0	0
09	0	0	0
10	1	1.6	1.8
TOTAL	55	88.7	100
MISSING 97	7	11.3	
TOTAL	62	100.0	

(01)-(10) Those who report sharing live animals with family or friends = 38.1%; (01)-(04) Those who share between 1 and 4 live animals = 34.5%; Those who share more than 4 live animals = 3.6%

Table 28—Amount of meat and byproducts given to family and friends in a typical year (MPROD– Ques. 28).

AMOUNT OF MEAT AND BYPRODUCTS GIVEN TO FAMILY AND FRIENDS IN A TYPICAL YEAR*	NUMBER OF PERMITTEES	PERCENT	VALID PERCENT
01	13	21.0	21.3
02	0	0	0
03	4	6.5	6.6
04	0	0	0
05	1	1.6	1.6
06	6	9.7	9.8
07	2	3.2	3.3
08	0	0	0
09	0	0	0
10	0	0	0
11	0	0	0
12	0	0	0
13	1	1.6	1.6
14	1	1.6	1.6
15	3	4.8	4.9
16	5	8.1	8.2
17	2	3.2	3.3
18	0	0	0
19	18	29.0	29.5
20	1	1.6	1.6
21	1	1.6	1.6
22	1	1.6	1.6
23	1	1.6	1.6
24	1	1.6	1.6
TOTAL	61	98.4	100.0
MISSING	1	1.6	
TOTAL	62	100.0	

*Key
(01) None
(02) A cow
(03) A side of beef
(04) A quarter of a beef
(05) A half calf butchered as meat
(06) 20-50 lbs of meat
(07) 51 to 100 lbs of meat
(08) 101-200 lbs of meat
(09) 201-300 lbs of meat
(10) 301-400 lbs of meat
(11) 401-500 lbs of meat
(12) More than 500 lbs of meat
(13) Several yearlings
(14) A few steaks
(15) Yes, give meat—no amount given
(16) Meat listed as discussed under live animals which are then butchered
(17) It depends/varies
(18) 6 calves butchered as meat
(19) Meat given to relatives counted under animals butchered for household use (Ques. 25).
(20) Butcher yearling and lambs
(21) Not meat, some byproducts
(22) Gives family members good deal on animals, then butchers
(23) Meat from 7 animals.
(24) Gives away meat, lamb, and pelts. Donates meat and animals.

Table 29a—Number of animals traded for goods and services in a typical year (BARTFREQS – Ques. 29).

NUMBER OF ANIMALS TRADED	NUMBER OF PERMITTEES	PERCENT	VALID PERCENT
00	40	64.5	72.7
01	7	11.3	12.7
02	2	3.2	3.6
03	3	4.8	5.5
04	0	0	0
05	2	3.2	3.6
06	0	0	0
07	0	0	0
08	1	1.6	1.8
TOTAL	55	88.7	100.0
MISSING 97	7	11.3	
TOTAL	62	100.0	

Table 29b—Amount of animals and meat traded for other goods and services in a typical year (BARTMEAT – Ques. 29).

AMOUNT OF ANIMALS OR MEAT BARTERED*	NUMBER OF PERMITTEES	PERCENT	VALID PERCENT
01	50	80.6	83.3
02	0	0	0
03	0	0	0
04	1	1.6	1.7
05	0	0	0
06	0	0	0
07	0	0	0
08	1	1.6	1.7
09	0	0	0
10	0	0	0
11	0	0	0
12	0	0	0
13	0	0	0
14	0	0	0
15	0	0	0
16	0	0	0
17	0	0	0
18	0	0	0
19	1	1.6	1.7
20	5	8.1	8.3
21	1	1.6	1.7
22	1	1.6	1.7
TOTAL	60	96.8	100.0
MISSING	2	3.2	
TOTAL	62	100.0	

*Key
(01) None
(02) A cow
(03) A calf
(04) A side of beef
(05) A quarter of a beef
(06) A half calf butchered as meat
(07) A sheep
(08) A lamb
(09) Around 50 lbs of meat
(10) 60 to 100 lbs of meat
(11) 101-200 lbs of meat
(12) 201-300 lbs of meat
(13) 301-400 lbs of meat
(14) 401-500 lbs of meat
(15) More than 500 lbs of meat
(16) Several yearlings
(17) A few steaks
(18) Yes, trade meat—no amount given
(19) It varies/depends
(20) Usually trades live animals
(21) Barter meat from animals listed under direct count of animals bartered
(22) Gives a calf or meat

Table 30—Costs of owning livestock (LVCOST– Ques. 31).

COSTS OF OWNING LIVESTOCK*	NUMBER OF PERMITTEES	PERCENT	VALID PERCENT
01	5	8.1	8.6
02	11	17.7	19.0
03	7	11.3	12.1
04	8	12.9	13.8
05	4	6.5	6.9
06	3	4.8	5.2
07	1	1.6	1.7
08	2	3.2	3.4
09	3	4.8	5.2
10	2	3.2	3.4
11	5	8.1	8.6
12	4	6.5	6.9
13	1	1.6	1.7
14	2	3.2	3.4
TOTAL	58	93.5	100.0
MISSING 97	1	1.6	
MISSING 98	2	3.2	
MISSING 99	1	1.6	
TOTAL MISSING	4	6.5	
TOTAL	62	100.0	

*Key
(1) Less than $1000
(2) $1000-$5000
(3) $5001-$10,000
(4) $10,001-$15,000
(5) $15,001-$20,000
(6) $20,001-$25,000
(7) $25,001-$30,000
(8) $30,001-$50,000
(9) More than $50,000
(10) Very expensive, takes all the profits, (paying off loans now)
(11) Very expensive, hard to estimate, doesn't know
(12) Sometimes costs more than the operation brings in
(13) Breaks even but gets good meat
(14) Listed various expenses, but no total figure
(97) Missing
(98) No response, declined to respond
(99) Unknown, don't know, no opinion

Table 31—Percentage of permittee's income that comes from livestock operation (INCPER– Ques. 32).

PERCENTAGE OF INCOME FROM LIVESTOCK OPERATION*	NUMBER OF PERMITTEES	PERCENT	VALID PERCENT
01	4	6.5	6.6
02	1	1.6	1.6
03	5	8.1	8.2
04	6	9.7	9.8
05	5	8.1	8.2
06	3	4.8	4.9
07	5	8.1	8.2
08	0	0	0
09	2	3.2	3.3
10	1	1.6	1.6
11	2	3.2	3.3
12	2	3.2	3.3
13	8	12.9	13.1
14	4	6.5	6.6
15	2	3.2	3.3
16	8	12.9	13.1
17	3	4.8	4.9
TOTAL	61	98.4	100.0
MISSING 98	1	1.6	
TOTAL	62	100.0	

*Key
(01) None
(02) Less than 5%
(03) 5%-10%
(04) 11%-20%
(05) 21%-30%
(06) 31%-40%
(07) 41%-50%
(08) 51%-60%
(09) 61%-70%
(10) 71%-80%
(11) 81%-90%
(12) 91%-100%
(13) Don't make much money; most/all goes back into the livestock operation.
(14) Don't make money on the livestock operation but save money on meat.
(15) Don't really make money on the livestock operation; it is an investment and a tradition; like money in the bank.
(16) Gave a $ figure that cannot be connected to a %.
(17) Don't make much money off it; paying off loans and putting money back into the operation.
(98). No response, declined to respond.
NOTE: Tabular material not used in analysis because of inconsistent responses stemming from wording problems in the question.

Table32a—Money from livestock operations spent on basic living expenses (LIVEXPS– Ques. 33).

MONEY FROM LIVESTOCK OPERATIONS SPENT ON LIVING EXPENSES*	NUMBER OF PERMITTEES	PERCENT	VALID PERCENT
01	36	58.1	58.1
02	26	41.9	41.9
TOTAL	62	100.0	100.0

*Key
(01) Yes
(02) No

Table 32b—Money from livestock operations spent on emergencies (EMERGENS– Ques. 33).

MONEY FROM LIVESTOCK OPERATIONS SPENT ON EMERGENCIES*	NUMBER OF PERMITTEES	PERCENT	VALID PERCENT
01	30	48.4	48.4
02	32	51.6	51.6
TOTAL	62	100.0	100.0

*Key
(01) Yes
(02) No

Table 32c—Money from livestock operations spent on special expenses (SPEXPS– Ques. 33).

MONEY FROM LIVESTOCK OPERATIONS SPENT ON SPECIAL EXPENSES*	NUMBER OF PERMITTEES	PERCENT	VALID PERCENT
01	28	45.2	45.2
02	34	54.8	54.8
TOTAL	62	100.0	100.0

*Key
(01) Yes
(02) No

Table 32d—Money from livestock operations spent on household improvements (HSEIMPS– Ques. 33).

MONEY FROM LIVESTOCK OPERATIONS SPENT ON HOUSEHOLD IMPROVEMENTS*	NUMBER OF PERMITTEES	PERCENT	VALID PERCENT
01	28	45.2	45.2
02	34	54.8	54.8
TOTAL	62	100.0	100.0

*Key
(01) Yes
(02) No

Table 32e—Money from livestock operations spent on improving the livestock operation (MORLVST– Ques. 33).

MONEY FROM LIVESTOCK OPERATIONS SPENT ON IMPROVING LIVESTOCK OPERATION*	NUMBER OF PERMITTEES	PERCENT	VALID PERCENT
01	58	93.5	93.5
02	4	6.5	6.5
TOTAL	62	100.0	100.0

*Key
(01) Yes
(02) No

Table 32f—Money from livestock operations spent on financial investments (INVESTS– Ques. 33).

MONEY FROM LIVESTOCK OPERATIONS SPENT ON FINANCIAL INVESTMENTS*	NUMBER OF PERMITTEES	PERCENT	VALID PERCENT
01	8	12.9	12.9
02	54	87.1	87.1
TOTAL	62	100.0	100.0

*Key
(01) Yes
(02) No

Table 32g—Money from livestock operations spent on other expenses (OTHREXPS– Ques. 33).

MONEY FROM LIVESTOCK OPERATIONS SPENT ON OTHER EXPENSES*	NUMBER OF PERMITTEES	PERCENT	VALID PERCENT
01	3	4.8	4.8
02	59	95.2	95.2
TOTAL	62	100.0	100.0

*Key
(01) Yes
(02) No

Table 33—Permittee dependence on livestock for family income (LVDEPEND– Ques. 34).

MANNER IN WHICH PERMITTEE DEPENDS ON LIVESTOCK TO CONTRIBUTE TO FAMILY INCOME*	NUMBER OF PERMITTEES	PERCENT	VALID PERCENT
01	6	9.7	9.8
02	17	27.4	27.9
03	2	3.2	3.3
04	21	33.9	34.4
05	4	6.5	6.6
06	1	1.6	1.6
07	1	1.6	1.6
08	1	1.6	1.6
09	1	1.6	1.6
10	4	6.5	6.6
11	2	3.2	3.3
12	1	1.6	1.6
TOTAL	61	98.4	100.0
MISSING 98	1	1.6	
TOTAL	62	100.0	

*Key
(01) A. We depend on our livestock (and farming) for our full income. We are full-time ranchers and farmers.
(02) B. We depend on our livestock for part of our income. We are part-time ranchers, but would like to be fully dependent on our livestock for family income.
(03) C. We depend on our livestock for part of our income, and would not want to depend on our livestock for our full family income.
(04) D. We are retired, but still depend on our livestock for part of our income.
NOTE: The category “E. Other (Please describe.)” had the following responses:
(05) We do not depend on our livestock for family income; we use them for physical and mental well-being and to maintain traditions and family values, etc.
(06) We are retired but still put most of the livestock money back into the operation.
(07) The children use the livestock money for their expenses and for tuition, etc.
(08) We put the livestock money back into the operation because we have other income.
(09) We are full-time ranchers but do not depend on our livestock for our full income.
(10) We do not get income from the livestock.
(11) We do not get income from the livestock, keep them for butchering.
(12) We are retired from other professions but depend on livestock for majority of income.
(98) No response, declined to respond.
NOTE: Tabular material not used in analysis because of inconsistent responses stemming from wording problems in the question.

Table 34—Number of times livestock has been sold in the past 5 years to meet emergency needs (SELLVSTK– Ques. 35).

NUMBER OF LIVESTOCK SOLD*	NUMBER OF PERMITTEES	PERCENT	VALID PERCENT
01	9	14.5	14.8
02	8	12.9	13.1
03	0	0	0
04	1	1.6	1.6
05	1	1.6	1.6
06	1	1.6	1.6
07	1	1.6	1.6
08	2	3.2	3.3
09	35	56.5	57.4
10	1	1.6	1.6
11	2	3.2	3.3
TOTAL	61	98.4	
MISSING 98	1	1.6	
TOTAL	62	100.0	

(05), (06), (08), and (09) Do not sell animals in emergencies = 63.9%
*Key
(01) 1 or 2 times
(02) 3-5 times
(03) 6-10 times
(04) More than 10 times
(05) Try hard not to sell animals in emergencies, use money from other sources.
(06) Not economically sensible to sell animals in emergencies, would be a poor choice to do this.
(07) Other family members sometimes sell animals in emergencies.
(08) Don't think so, have not had to do this.
(09) No, have not sold livestock.
(10) Have sold livestock all of the 5 years, no number given.
(11) Have sold livestock twice a year, though not an emergency.
(98) No response, declined to respond.

Table 35—Does permittee plan to manage livestock after retirement (RETIRE – Ques. 36).

PERMITTEE'S PLANS FOR MANAGING LIVESTOCK AFTER RETIREMENT*	NUMBER OF PERMITTEES	PERCENT	VALID PERCENT
01	49	79.0	79.0
02	3	4.8	4.8
03	8	12.9	12.9
04	1	1.6	1.6
05	1	1.6	1.6
TOTAL	62	100.0	100.0

(01) and (03) Plan to continue managing their livestock after retirement; do not plan to retire from livestock management = 91.9%
*Key
(01) Yes
(02) No
(03) Manage them now and plan to continue to do so, do not plan to retire (from ranching).
(04) Up to other family members who are partners in the operation.
(05) Not sure.

Table 36—Can permittee afford to purchase livestock after retirement (RETMON– Ques. 37).

COULD PERMITTEE PURCHASE LIVESTOCK AFTER RETIREMENT*	NUMBER OF PERMITTEES	PERCENT	VALID PERCENT
01	6	9.7	9.8
02	28	45.2	45.9
03	2	3.2	3.3
04	5	8.1	8.2
05	5	8.1	8.2
06	9	14.5	14.8
07	2	3.2	3.3
08	1	1.6	1.6
09	1	1.6	1.6
10	2	3.2	3.3
TOTAL	61	98.4	100.0
MISSING 99	1	1.6	
TOTAL	62	100.0	100.0

(02), (04), (06), (07), and (10) Would not be able to afford, don't know if they could afford, would have problems affording, or would not have the land to run a livestock operation = 75.5%

*Key
(01) Yes
(02) No
(03) Possibly, if the price were right.
(04) Possibly not, would be very hard.
(05) Yes, but wouldn't buy livestock because wouldn't have the background, knowledge, desire, or land to run a livestock operation.
(06) No, wouldn't have the land.
(07) Don't know
(08) Yes, but not as many
(09) Have to make the effort to afford it.
(10) Probably not, probably wouldn't want to.
(99) Unknown, don't know, no opinion.

Table 37—Permittee's chosen means of saving or investing money (SAVINGS– Ques. 38).

CHOSEN MEANS OF SAVING MONEY*	NUMBER OF PERMITTEES	PERCENT	VALID PERCENT
01	7	11.3	11.3
02	28	45.2	45.2
03	15	24.2	24.2
04	1	1.6	1.6
05	1	1.6	1.6
06	6	9.7	9.7
07	2	3.2	3.2
08	1	1.6	1.6
09	1	1.6	1.6
TOTAL	62	100.0	100.0

(02), (03), and (06) Buy land, improve the ranch, or do both = 79.1%; (04), (05), (07)-(09) Other investments = 9.6%

*Key
(01) A. Putting money in a savings account or other form of money investment program
(02) B. Buying land in the area
(03) C. Buying more livestock or improving the stock operation in other ways, such as investing in range improvements
NOTE: The category "D. Other (Please describe.)" had the following responses:
(04) Investing money in a personal business
(05) Means of saving depends on the amount available
(06) B and C
(07) A, B, and C
(08) A and C
(09) Discussion of problems with all the means of saving.

Table 38a—Order of general family goals: Priority order for having more income and being able to buy more material goods (INCOME – Ques. 39).

ORDER OF FAMILY GOALS - INCOME*	NUMBER OF PERMITTEES	PERCENT	VALID PERCENT
01	2	3.2	3.3
02	11	17.7	18.3
03	24	38.7	40.0
04	23	37.1	38.3
TOTAL	60	96.8	100.0
MISSING 98	2	3.2	
TOTAL	62	100.0	

*Key
(01) First
(02) Second
(03) Third
(04) Fourth
(98) No response, declined to respond

Table 38b—Order of general family goals: Priority order for having a better quality of life (QUALITY– Ques. 39).

ORDER OF FAMILY GOALS –QUALITY OF LIFE*	NUMBER OF PERMITTEES	PERCENT	VALID PERCENT
01	33	53.2	55.0
02	22	35.5	36.7
03	5	8.1	8.3
04	0	0	0
TOTAL	60	96.8	100.0
MISSING 98	2	3.2	
TOTAL	62	100.0	

*Key
(01) First
(02) Second
(03) Third
(04) Fourth
(98) No response, declined to respond

Table 38c—Order of general family goals: Priority order for maintaining traditional values (TRADVAL– Ques. 39).

ORDER OF FAMILY GOALS –TRADITIONAL VALUES*	NUMBER OF PERMITTEES	PERCENT	VALID PERCENT
01	25	40.3	41.0
02	24	38.7	39.3
03	10	16.1	16.4
04	2	3.2	3.3
TOTAL	61	98.4	100.0
MISSING 98	1	1.6	
TOTAL	62	100.0	

*Key
(01) First
(02) Second
(03) Third
(04) Fourth
(98) No response, declined to respond

Table 38d—Order of general family goals: Priority order for having more respect in the community (RESPECT– Ques. 39).

ORDER OF FAMILY GOALS – RESPECT*	NUMBER OF PERMITTEES	PERCENT	VALID PERCENT
01	1	1.6	1.6
02	3	4.8	5.0
03	21	33.9	35.0
04	35	56.5	58.3
TOTAL	60	96.8	100.0
MISSING 98	2	3.2	
TOTAL	62	100.0	

*Key
(01) First
(02) Second
(03) Third
(04) Fourth
(98) No response, declined to respond

Table 39a—Order of goals for livestock operation: Priority order for increasing overall income and material goods (PROFIT– Ques. 40).

ORDER OF GOALS FOR LIVESTOCK OPERATION– PROFIT*	**NUMBER OF PERMITTEES**	**PERCENT**	**VALID PERCENT**
01	3	4.8	4.9
02	8	12.9	13.1
03	14	22.6	23.0
04	36	58.1	59.0
TOTAL	61	98.4	100.0
MISSING 98	1	1.6	
TOTAL	62	100.0	

*Key
(01) First
(02) Second
(03) Third
(04) Fourth
(98) No response, declined to respond

Table 39b—Order of goals for livestock operation: Priority order for maintaining family's quality of life resulting from owning livestock (FAMLIFE– Ques. 40).

ORDER OF GOALS FOR LIVESTOCK OPERATION– FAMILY QUALITY OF LIFE*	**NUMBER OF PERMITTEES**	**PERCENT**	**VALID PERCENT**
01	35	56.5	57.4
02	17	27.4	27.9
03	6	9.7	9.8
04	3	4.8	4.9
TOTAL	61	98.4	100.0
MISSING 98	1	1.6	
TOTAL	62	100.0	

*Key
(01) First
(02) Second
(03) Third
(04) Fourth
(98) No response, declined to respond

Table 39c—Order of goals for livestock operation: Priority order for avoiding being forced out of livestock ownership (FORCEOUT – Ques. 40).

ORDER OF GOALS FOR LIVESTOCK OPERATION– AVOID BEING FORCED OUT*	NUMBER OF PERMITTEES	PERCENT	VALID PERCENT
01	20	32.3	32.8
02	21	33.9	34.4
03	14	22.6	23.0
04	6	9.7	9.8
TOTAL	61	98.4	100.0
MISSING 98	1	1.6	
TOTAL	62	100.0	

*Key
(01) First
(02) Second
(03) Third
(04) Fourth
(98) No response, declined to respond

Table 39d—Order of goals for livestock operation: Priority order for improving the livestock operation by obtaining more land, better equipment, and more animals (IMPROVOP– Ques. 40).

ORDER OF GOALS FOR LIVESTOCK OPERATION– IMPROVEMENT OF OPERATION*	NUMBER OF PERMITTEES	PERCENT	VALID PERCENT
01	3	4.8	4.9
02	15	24.2	24.6
03	27	43.5	44.3
04	16	25.8	26.2
TOTAL	61	98.4	100.0
MISSING 98	1	1.6	
TOTAL	62	100.0	

*Key
(01) First
(02) Second
(03) Third
(04) Fourth
(98) No response, declined to respond

Table 40—Permittee's level of agreement with statement "One of the greatest sources of pride for a landowner is owning and working the same land all his/her life" (PRIDE – Ques. 41).

PRIDE IN WORKING THE LAND*	NUMBER OF PERMITTEES	PERCENT	VALID PERCENT
01	47	75.8	77.0
02	13	21.0	21.3
03	1	1.6	1.6
04	0	0	0
05	0	0	0
TOTAL	61	98.4	100.0
MISSING 97	1	1.6	
TOTAL	62	100.0	

(01) and (02) = 98.3%
*Key
(01) A. Strongly Agree
(02) B. Agree
(03) C. Neutral
(04) D. Disagree
(05) E. Strongly Disagree

Table 41—Permittee's level of agreement with statement "Public lands, such as national forest or BLM-managed lands, should be managed with equal consideration for the use and enjoyment of all U.S. citizens" (PLAND – Ques. 42).

MANAGEMENT OF PUBLIC LANDS*	NUMBER OF PERMITTEES	PERCENT	VALID PERCENT
01	11	17.7	19.0
02	18	29.0	31.0
03	8	12.9	13.8
04	15	24.2	25.9
05	6	9.7	10.3
TOTAL	58	93.5	100.0
MISSING 97	1	1.6	
MISSING 98	3	4.8	
MISSING TOTAL	4	6.5	
TOTAL	62	100.0	

(01) and (02) = 50%; (04) and (05) = 36.2%
*Key
(01) A. Strongly Agree
(02) B. Agree
(03) C. Neutral
(04) D. Disagree
(05) E. Strongly Disagree
(98) No response, declined to respond

Table 42—Permittee's level of agreement with statement "Land that has been in the family for generations should not be sold" (NOSEL – Ques. 43).

SALE OF FAMILY LANDS*	NUMBER OF PERMITTEES	PERCENT	VALID PERCENT
01	45	72.6	73.8
02	9	14.5	14.8
03	5	8.1	8.2
04	2	3.2	3.3
05	0	0	0
TOTAL	61	98.4	100.0
MISSING 98	1	1.6	
TOTAL	62	100.0	

(01) and (02) = 88.6%
*Key
(01) A. Strongly Agree
(02) B. Agree
(03) C. Neutral
(04) D. Disagree
(05) E. Strongly Disagree
(98) No response, declined to respond

Table 43—Permittee's level of agreement with statement "Landowners should make it a top priority to hire local workers" (LOCAL – Ques. 44).

PRIORITY TO HIRE LOCAL WORKERS*	NUMBER OF PERMITTEES	PERCENT	VALID PERCENT
01	23	37.1	37.1
02	21	33.9	33.9
03	15	24.2	24.2
04	2	3.2	3.2
05	1	1.6	1.6
TOTAL	62	100.0	100.0

(01) and (02) = 71%
*Key
(01) A. Strongly Agree
(02) B. Agree
(03) C. Neutral
(04) D. Disagree
(05) E. Strongly Disagree

Table 44—Permittee's level of agreement with statement "True landownership includes personally working the land (or having members of the family work it), raising one's own crops and livestock" (OWNER– Ques. 45).

PERSONALLY WORKING THE LAND*	NUMBER OF PERMITTEES	PERCENT	VALID PERCENT
01	35	56.5	56.5
02	26	41.9	41.9
03	0	0	0
04	1	1.6	1.6
05	0	0	0
TOTAL	62	100.0	100.0

(01) and (02) = 98.4%
*Key
(01) A. Strongly Agree
(02) B. Agree
(03) C. Neutral
(04) D. Disagree
(05) E. Strongly Disagree

Table 45—Permittee's level of agreement with statement "When selling land, the owner owes it to his/her family to sell to the person who offers the best price even if that person is not from the local community" (PRICE– Ques. 46).

SELLING TO SOMEONE FROM OUTSIDE THE COMMUNITY*	NUMBER OF PERMITTEES	PERCENT	VALID PERCENT
01	1	1.6	1.7
02	6	9.7	10.0
03	13	21.0	21.7
04	23	37.1	38.3
05	17	27.4	28.3
TOTAL	60	96.8	100.0
MISSING 98	2	3.2	
TOTAL	62	100.0	

(04) and (05) = 66.6%
*Key
(01) A. Strongly Agree
(02) B. Agree
(03) C. Neutral
(04) D. Disagree
(05) E. Strongly Disagree
(98) No response, declined to respond

Table 46—Permittee's level of agreement with statement "Public lands, such as national forest or BLM-managed lands, should be managed with greatest consideration for long-time, traditional users" (USERS – Ques. 47).

MANAGEMENT OF PUBLIC LANDS FOR TRADITIONAL USERS*	NUMBER OF PERMITTEES	PERCENT	VALID PERCENT
01	40	64.5	64.5
02	20	32.3	32.3
03	2	3.2	3.2
04	0	0	0
05	0	0	0
TOTAL	62	100.0	100.0

(01) and (02) = 96.8%
*Key
(01) A. Strongly Agree
(02) B. Agree
(03) C. Neutral
(04) D. Disagree
(05) E. Strongly Disagree

Table 47—Permittee's level of agreement with statement "Having money in the bank or other investments is the best means of providing for your children's future" (FUTUR – Ques. 48).

PROVIDING FOR CHILDREN'S FUTURE*	NUMBER OF PERMITTEES	VALID PERCENT	PERCENT
01	13	21.0	21.3
02	22	35.5	36.1
03	13	21.0	21.3
04	12	19.4	19.7
05	1	1.6	1.6
TOTAL	61	98.4	100.0
MISSING 98	1	1.6	
TOTAL	62	100.0	

(01) and (02) = 57.4%
*Key
(01) A. Strongly Agree
(02) B. Agree
(03) C. Neutral
(04) D. Disagree
(05) E. Strongly Disagree
(98) No response, declined to respond

Table 48—Permittee's level of agreement with statement "Landowners should hire the most qualified workers without regard to where they come from" (LABOR– Ques. 49).

HIRING OF MOST QUALIFIED WORKERS*	NUMBER OF PERMITTEES	PERCENT	VALID PERCENT
01	6	9.7	10.2
02	27	43.5	45.8
03	9	14.5	15.3
04	17	27.4	28.8
05	0	0	0
TOTAL	59	95.2	100.0
MISSING 97	1	1.6	
MISSING 98	2	3.2	
MISSING TOTAL	3	4.8	
TOTAL	62	100.0	

*Key (01) and (02) = 56%
(01) A. Strongly Agree
(02) B. Agree
(03) C. Neutral
(04) D. Disagree
(05) E. Strongly Disagree
(98) No response, declined to respond

Table 49—Permittee's level of agreement with statement "When selling land, the owner should make it a top priority to sell to someone within the local community" (SALE– Ques. 50).

SALE OF LAND TO LOCAL COMMUNITY*	NUMBER OF PERMITTEES	PERCENT	VALID PERCENT
01	21	33.9	35.0
02	24	38.7	40.0
03	10	16.1	16.7
04	4	6.5	6.7
05	1	1.6	1.7
TOTAL	60	96.8	100.0
MISSING 98	2	3.2	
TOTAL	62	100.0	

(01) and (02) = 75%
*Key
(01) A. Strongly Agree
(02) B. Agree
(03) C. Neutral
(04) D. Disagree
(05) E. Strongly Disagree
(98) No response, declined to respond

Table 50—Permittee's level of agreement with statement "The legal owner of a piece of land should be able to manage it however he/she chooses" (LNMAN– Ques. 51).

LANDOWNER MANAGEMENT RIGHTS*	NUMBER OF PERMITTEES	PERCENT	VALID PERCENT
01	34	54.8	54.8
02	21	33.9	33.9
03	2	3.2	3.2
04	5	8.1	8.1
05	0	0	0
TOTAL	62	100.0	100.0

(01) and (02) = 88.7%
*Key
(01) A. Strongly Agree
(02) B. Agree
(03) C. Neutral
(04) D. Disagree
(05) E. Strongly Disagree

Table 51—Permittee's level of agreement with statement "Passing on land to your children is the best means of providing for their future" (INHER– Ques. 52).

LAND IS BEST WAY TO PROVIDE FOR CHILDREN'S FUTURE*	NUMBER OF PERMITTEES	PERCENT	VALID PERCENT
01	33	53.2	54.1
02	18	29.0	29.5
03	8	12.9	13.1
04	2	3.2	3.2
05	0	0	0
TOTAL	61	98.4	100.0
MISSING 98	1	1.6	
TOTAL	62	100.0	

(01) and (02) = 83.6%
*Key
(01) A. Strongly Agree
(02) B. Agree
(03) C. Neutral
(04) D. Disagree
(05) E. Strongly Disagree
(98) No response, declined to respond

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