# Who Are Public Land Ranchers and Why Are They Out There?

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Cattle ranching is one of the traditional uses of public lands recognized under various federal laws and has occurred on those lands well before the existence of those laws. The federal government is the largest landowner in the 11 western states with about 42% of the total land base, which varies from 22% in Washington to 86% in Nevada. The Bureau of Land Management (BLM) and the U.S. Forest Service (USFS) manage most of the federal lands where grazing occurs. Local communities have been established and evolved throughout the rural parts of the western United States with varying degrees of dependency on a ranching industry that has incorporated public land forage as an important part of seasonal forage supply. The questions we address here are who the public land ranchers are, what might be their motivations for owning the ranch, and how that information can be used in policy formulation and analysis.

Approximately 85% of federal land is grazed by domestic livestock (CAST 1996). The two management agencies administer about 29,925 grazing permits across the West with 21,018 unique permittees (Gentner and Tanaka 2002). These permits included approximately 21.6 million federal animal unit months (AUMs) of grazing in the early 1990s (CAST 1996). Public land grazing use during 2002-03 was lower at about 13.5 million AUMs (Vincent 2005).

Grazing permit holders account for over half of the commercial beef cattle in the 11 western states (CAST 1996). Levels of yearlong dependency on public forage vary across the West; some ranches utilize federal lands for a minimal amount of seasonal grazing capacity while others depend on federal lands for most, if not all, of yearlong grazing capacity. In 1983 the USDA/USDI (1986) estimated that 88% of the cattle produced in Idaho, 64% in Wyoming and 63% in Arizona grazed at least part of the year on public rangelands. Nearly half of the sheep producers with more than 2,500 head used public rangeland.

Opinions vary greatly about the current status of the ecological condition and health of public rangelands. Controversy about the desired management of public rangeland has intensified with a shift from focusing on the condition of rangeland for grazing use – the capacity of the land to produce forage for livestock – to an increased emphasis on non-livestock benefits and services provided by healthy rangelands, including open space, wildlife habitat, water, and biological diversity. In recent years there has been increasing pressure by various interest groups to either significantly reduce or eliminate public land grazing. There has also been pressure for the land management agencies to implement livestock management plans to accommodate and enhance other uses of public lands. These changes will affect public land ranchers as well as local communities, regional economies, and to some extent the national economy.

Individuals affected by policy changes must be identified and land-use policies defined in a way that is relevant to the situation. The western ranching industry is no exception. Fowler and Gray (1988) defined the “double infinity” of ranching. The first infinity arises from the wide array of physical variation

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existing across western grazing lands. The second infinity stems from the different rancher characteristics, such as managerial ability, skill and knowledge. The typical production function approach has been difficult to apply to the ranching industry due to these heterogeneities and a lack of a strong profit motive.

Differences in social and economic characteristics and differences in ranch ownership motives were summarized in a survey of public land ranchers conducted in 1999 (Gentner and Tanaka 2002). We also know that public land ranchers do not consider profit to be the most important goal in terms of why they ranch (Smith and Martin 1972, Gentner and Tanaka 2002, Rowe et al. 2001, Torell et al. 2004). Subgroups of public land ranchers seek to fulfill a continuum of management goals ranging from economic satisficing and the desired rural lifestyle to strict profit maximization and wealth building.

In the Gentner and Tanaka (2002) survey of public land ranchers, ranchers were asked to rank the importance of many goals and objectives that ranged from profit-motivated to lifestyle objectives. Goals were defined to be: 1) Owning land and a ranch is consistent with my family's tradition, culture and values; 2) A ranch is a good place to raise a family; 3) Living on a ranch allows me to live closer to my friends and family; 4) I want to obtain a good return on my investment; 5) With my skills it would be difficult to obtain a job outside of the ranch; 6) I own a ranch primarily for environmental purposes; and 7) I continue ranching so I will have a business to pass on to my children. Survey responses were separated into eight groups using cluster analysis (Figure 1). Two broad categories were also evident based on whether the rancher appeared to be part-time or full-time. Selected characteristics of the eight different clusters are given in Table 1.

**Figure 1.** Types of public land ranchers (Gentner and Tanaka 2002).

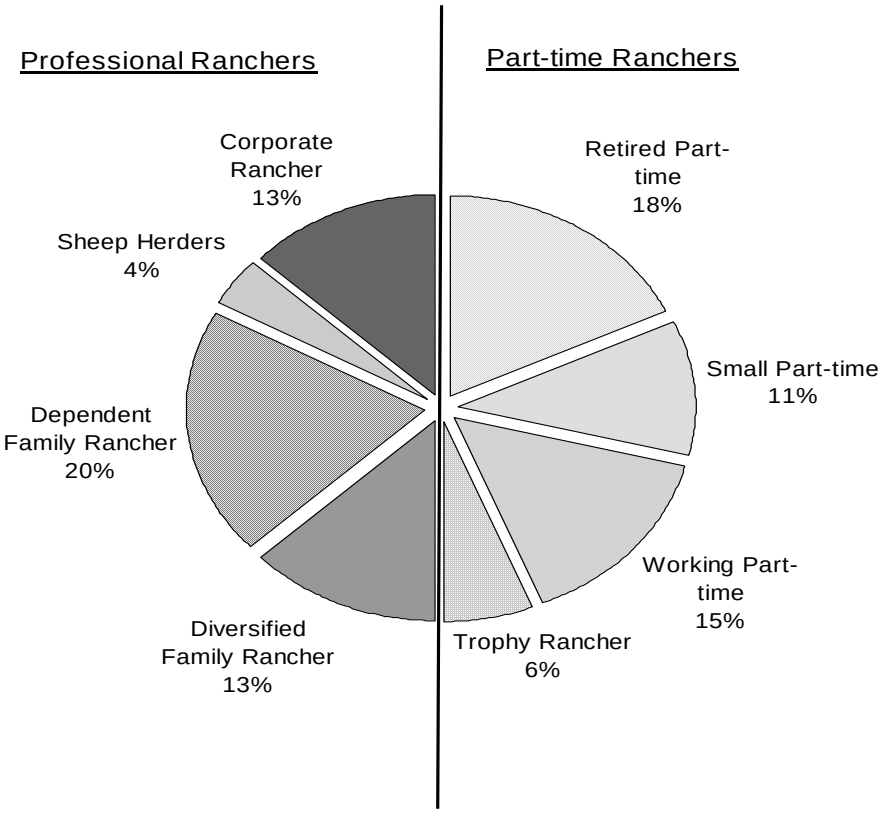

**Table 1.** Selected characteristics of public land ranchers (Gentner and Tanaka 2002).

| | Part-Time | | | | Full-Time | | | |
|---|---|---|---|---|---|---|---|---|
| | Small Part-Time | Retired Part-Time | Working Part-Time | Trophy Rancher | Diversified Family Rancher | Dependent Family Rancher | Corporate Rancher | Sheep Rancher |
| Reasons to Own a Ranch (1 = least important, 5 = most important) | | | | | | | | |
| Tradition, Values, Culture | 3.7 | 4.6 | 4.5 | 3.4 | 4.1 | 4.9 | 4.5 | 4.4 |
| Good Place to Raise a Family | 3.7 | 4.6 | 4.6 | 3.3 | 4.2 | 4.9 | 4.5 | 4.5 |
| Pass to Future Generations | 1.5 | 4.3 | 4.0 | 2.4 | 2.3 | 4.8 | 4.1 | 3.8 |
| Live Closer to Family and Friends | 2.8 | 3.9 | 3.5 | 2.1 | 2.9 | 4.4 | 3.5 | 3.2 |
| Profit | 2.6 | 3.7 | 3.6 | 2.6 | 3.7 | 4.2 | 3.6 | 3.5 |
| No Other Skills | 1.5 | 2.3 | 1.8 | 1.3 | 2.0 | 3.3 | 2.3 | 2.3 |
| Environmental Purposes | 2.4 | 2.2 | 2.3 | 2.1 | 1.9 | 2.3 | 2.0 | 2.0 |
| Income (% by Source) | | | | | | | | |
| Livestock | 13.0 | 21.5 | 18.2 | 21.1 | 74.9 | 84.7 | 71.9 | 80.8 |
| Other Ranch | 4.5 | 21.4 | 2.3 | 7.7 | 7.7 | 6.0 | 9.2 | 2.1 |
| Off-Ranch | 57.2 | 5.1 | 77.4 | 15.7 | 7.6 | 4.8 | 9.2 | 6.2 |
| Retirement | 12.9 | 36.5 | 0.5 | 9.1 | 1.4 | 2.5 | 2.6 | 0.7 |
| Investments | 11.7 | 8.8 | 1.2 | 40.7 | 3.2 | 1.4 | 3.3 | 7.1 |
| Other | 1.8 | 5.9 | 0.4 | 5.1 | 2.2 | 0.5 | 3.7 | 3.0 |
| Net Income ($) | 65,857 | 44,602 | 53,491 | 94,245 | 42,970 | 46,926 | 50,116 | 53,000 |
| Business Organization | | | | | | | | |
| Sole Proprietor | 70.1 | 66.7 | 69.1 | 22.2 | 80.3 | 65.3 | 9.4 | 378.0 |
| Partnership | 23.1 | 33.2 | 27.1 | 15.8 | 13.4 | 39.8 | 20.3 | 31.1 |
| Corporation | 6.9 | 12.2 | 3.7 | 62.0 | 6.3 | 14.3 | 70.3 | 30.1 |
| Deeded Acres | 1,398 | 2,620 | 1,563 | 11,134 | 4,765 | 4,058 | 12,554 | 14,849 |
| # of Animals | | | | | | | | |
| Cows | 79.5 | 122.0 | 143.0 | 466.7 | 276.2 | 295.7 | 615.2 | 385.8 |
| Ewes | 27.5 | 4.4 | 10.1 | 0.8 | 7.8 | 10.6 | 3.1 | 796.0 |
| Age (years) | 57.5 | 64.0 | 51.3 | 59.0 | 53.9 | 61.1 | 55.6 | 57.8 |
| History (years) | 22.4 | 29.2 | 36.9 | 13.3 | 35.3 | 29.5 | 33.0 | 32.0 |
| Labor (person-months/year) | | | | | | | | |
| Family | 10.5 | 17.2 | 14.9 | 13.5 | 20.7 | 24.6 | 26.7 | 27.5 |
| Hired | 4.5 | 4.8 | 2.3 | 28.2 | 4.3 | 3.6 | 32.0 | 45.3 |

The stated goals and objectives of public land ranchers varied from a high ranking for lifestyle amenities for identified part-time ranchers, to a stronger emphasis on profit for professional ranchers more dependent on ranch income. This was similar to the findings of Young and Shumway (1991) who also found that small, part-time ranchers were driven more than the large, full-time ranchers by objectives other than profit. Gentner and Tanaka (2002) found that all types of public land ranchers ranked lifestyle attributes above profit maximization. All groups listed the complementary relationship between land ownership and family tradition, culture and values as a primary reason for owning the ranch. Yet, all ranchers were economic satisficers with varying degrees of importance placed on profit and earning potential from the ranch. The survey indicated a nearly equal split with about half of the ranchers depending on the ranch for less than 22% of annual disposable income and half depending on the ranch for over 80% of annual income.

Other studies have shown similar results to the Gentner and Tanaka (2002) survey and demonstrated that the lack of a strong profit motive is common for private land ranchers and farmers. Recent ranch value studies in New Mexico, Idaho, Eastern Oregon and northern Nevada have found that only 5 to 30% of the total value of a ranch can be attributed to the production of cattle (Torell et al. 2004). Gosnell and Travis (2005) concluded that recent ranch buyers are more likely to be lifestyle seekers than professional ranchers. This profile of ranch buyers is also reflected in numerous other studies that asked farmers and ranchers about their motives and concluded, as did Gentner and Tanaka (2002), that the desired lifestyle is the over-riding reason for farm and ranch ownership (Harper and Eastman 1980, Liffman et al. 2000, Rowe et al. 2001, Blank 2002, Sulak et al. 2004). However, the question of purchasing ranches for their long-term capital appreciation value should not be overlooked and may explain some of the behavior of ranch purchasers as a wealth building strategy (Blank 2005).

Another indication that profit is not the driving motivation for ranch ownership is the observation made by Smith and Martin (1972) over 30 years ago: rates of return from livestock operations are low by any standard investment criteria, and well below comparable average non-agricultural rates. This has not changed. Average annual livestock production returns are reported to range from negative amounts for small part-time ranches to about 3% for large commercial ranches. This range of returns is consistently reported by university and government studies throughout the United States. Similar rates of return have been reported for farms as well. Using Bureau of Economic Analysis (BEA) data, Erickson et al. (2004) found that from 1960 through 2001 rates of return on non-farm assets dominated those of agricultural assets, producing both a higher rate of return and lower risk. But, average rates of return as typically reported do not include estimates of land appreciation, which has traditionally added a significant economic return. Blank (2005) estimated that over the 1960-2002 period agricultural returns from capital gains exceeded returns from crop and livestock production; this included the 1980-86 period of the "farm crisis" when land values declined significantly. Sunderman et al. (2000) found that over the 1989-1997 period all types of Wyoming ranches realized 80% of investment returns (11.4% annual return) from land appreciation. For non-scenic ranches, 68% of investment returns (14.8% annual return) came from land appreciation. Torell et al. (2004) estimated a lower but even more pronounced difference in appreciation rates between high-valued deeded land ranches and relatively low-valued public land ranches. Using a hedonic ranch value model for estimation (http://ranval.nmsu.edu), the market value of a 95% public land ranch in the southwest deserts of New Mexico was estimated to have appreciated in value from $119/AUM in 1996 to $130/AUM in 2002. This represents a 1.34% annual appreciation of market value. The permit ranch would have sold for about $83/AUM ten years earlier in 1986 (Bartlett et al. 2002).[2] In the last 20 years, after adjusting for inflation, public land grazing permits have appreciated very little in market value and have actually decreased on a real-price basis. By comparison, a scenic all-deeded land ranch in the mountains was estimated to have doubled in value over the 1996-2002 period (12% annual increase in nominal value).

Martin and Jeffries (1966) concluded that the major reason for inflated ranch prices must be consumptive-related outputs, and we agree for public land leases, given their minimal appreciation of value and the minimal contribution of ranch income to ranchland value. Public land leases allow the purchase of a bigger ranch, and because the price is less, some individuals who can only afford a relatively low-priced ranch can enter the ranching business and live the desired lifestyle. It may be that for some tax incentives and land appreciation are major factors in the ranch purchase decision, but this has not been shown for ranches primarily composed of public lands. The major objective of western public land ranchers has not changed from what Smith and Martin (1972, p. 218) found over 30 years ago: "to maintain the ranch as a business, home, and way of life". Public land ranchers prefer to make more money to less and most are not rich. They need to at least break even on the ranching operation and, for many, off-ranch employment is a requirement.

[2] Average permit values in northern states where seasonal grazing is common have generally been about half as much as the yearlong permits of New Mexico and Arizona (Bartlett et al. 2002).

## Policy and Management Analysis

The final question we examine is whether the lack of a profit motive has any bearing on how economic policy analysis is conducted (or should be conducted) as it relates to public grazing issues. Others have raised this question before. Smith and Martin (1972) argued that economic models that attempt to explain rancher behavior based only on the profit motive are inadequate and will lead to ill-conceived land-use policies and policy assessments.

Traditionally, production function, profit-maximizing models are developed and used to represent typical ranches in an area. This typical ranch is then used in analyzing the potential impacts of altered policies and management prescriptions. Paying little attention to the warning of Smith and Martin (1972), we have used these models in a variety of settings. While we believe these profit-maximizing models provide an indication of impact direction, we are not sure that they are useful for predicting rancher behavior.

As an example, for a recent symposium at the Society for Range Management's annual meeting, we were given the assignment of evaluating the economic impacts of various cattle-management practices to improve grazing distribution. These included livestock herding, off-stream water development, fencing, strategic supplementation, and others. We developed a multi-period linear programming model to represent a typical ranch in northeastern Oregon and evaluated the economic impacts of each practice. While the results of our model indicated the changes in management and production practices that should be made to maximize profit with expanded management and production options, it did not tell us whether a rancher would really do that. If the model did show that herding cattle away from riparian areas was profitable, we also have to realize that the rancher may choose not to implement that kind of practice if it does not fit lifestyle considerations.

As another example, many range improvements are implemented even though economic studies indicate that added forage and livestock production will not pay for the project. Preferring more money to less, ranchers typically seek cost share funds to finance many of these "unprofitable" improvement practices. Yet, many range improvements are implemented knowing full well that the economics of the practice is dismal.

Public land ranchers represent a continuum of economic behavior ranging from consumption of ranching as a good to ranching for profit. Ranching for profit does not appear to be a straightforward concept because even the dependent family and corporate ranchers value the consumption of ranching as a good. This fits with previous results that even large ranch businesses may act as economic satisficers – producing an income that is satisfactory and enough to pay the bills, while consuming ranching as a good (Smith and Martin 1972). It may also be, as Biswas et al. (1984) concluded, that ranchers have multiple objectives but ultimately behave in a manner that is consistent with profit maximization. But, as we have noted, there is substantial evidence that this is not the case: ranch returns are low by any standard investment criteria, inflated prices are paid for ranches, and "unprofitable" improvements and investments continue to be made based on criteria unrelated to profit. The continuum of observed behaviors and motivations helps to describe the heterogeneity of ranchers across the West through differences in socioeconomic and demographic attributes.

Policies crafted that are based on economic analyses using the profit-maximizing assumption will not always provide desired outcomes since all public land ranchers cannot be broadly categorized under the classical profit-maximizing assumption. While a utility-maximizing model would be more appropriate, those models cannot be quantified and defined. A household production-function approach would be most appropriate for ranchers on the consumptive side of the continuum, while a more typical production-function approach would be more appropriate for ranchers on the profit-oriented end of the continuum. By defining the subgroups of the population and modeling behavior based on placement in the continuum, more informed choices could be made based on the specific

attributes of that sub-group. As noted by Sayre (2004), qualitative and descriptive research tools may be more appropriate for many policy assessments.

The reason we have continued to use the profit-maximizing criteria to describe and predict the behavior of public land ranchers is that it provides an objective, measurable estimate and criterion for evaluating management and economic changes when policies and conditions change. Profit remains important as long as decisions lead to at least breakeven situations; it does not explain all of the behavior of public land ranchers. Without the profit motive we are left with relying on ranchers to describe how they might adjust to altered land use policies and whether they are motivated and willing to adopt some new technology. Most agricultural economists are not comfortable with this subjective assessment. Perhaps, though we should heed the warning of Smith and Martin (1972) and be less comfortable reporting and believing policy assessments that rely on the profit-maximizing criteria. New approaches to both ranch decision and policy analysis models are needed to incorporate the non-profit goals of the public land rancher.

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