IMPORTANCE AND DEPENDENCY OF THE LIVESTOCK INDUSTRY ON FEDERAL LANDS IN THE COLUMBIA RIVER BASIN

Report prepared by:
Leslie Frewing-Runyon
Bureau of Land Management
Oregon. State Office

For:
The Interior Columbia River Basin Ecosystem Management Project
Walla Walla, **Washington**

April 10, 1995

PURPOSE

This report examines the livestock'production subsector of the very large and diverse U.S. agricultural sector. This is motivated by desire to provide background about the economic uses of federal lands as part of the Interior Columbia Basin Ecosystem Management Project. Although federal lands contribute in many ways to the economy of the region, nation, and world these lands' influence the agricultural sector in two primary ways. First, the provision of grazed forage through permits allowing use by individuals and corporations. Second, the influence public lands and their management exert on the quantity and quality of water for agricultural uses, primarily irrigation. Water will not be addressed in this background paper.

The report begins with a general introduction and summary of existing rangeland condition and trend. The federal rangeland program and a discussion of capitalized permit value are discussed using selected references. Two primary references, Rangeland Reform '94 Draft and Final Environmental Impact Statements, have recently been renamed Rangeland Health for All Uses and has been summarized in this report. The full documention should be consulted for additional detail.

Projections of rangeland use by domestic livestock from current literature have been cited and compared. Distribution of grazing fee collections is discussed. The focus of the discussion is the percentage distribution specified under law. Historic distribution or fee levels are not discussed.

The first sections of the paper use existing literature citations to set the context for a discussion of the importance and

dependency of the livestock industry on rangelands managed by the Forest Service and Bureau of Land Management. Data tables appear at the end of the text.

INTRODUCTION

In the United States livestock industry is **longstanding. The livestock industry strongly influenced the settlement of the west in the latter 1800s. This is especially true in arid and semi-arid shrub-grassland areas. The industry continues to be economically and socially important; contributing to national self sufficiency and as a component of what many believe is a western way of life.**

The industry is characterized by natural cycles in environmental conditions of weather, drought, floods, insects, and disease. Modern agricultural equipment, chemicals, and farming practices have helped the agricultural sector respond to these environmental factors. In addition, increasing U.S. and world population have combined with increasingly efficient transportation and communication to create worldwide markets for many U.S. agricultural products.

Nationally feed grain products, wheat and wheat products, and oilseeds **and products are the leading agricultural commodity exports by weight. Exports of live and processed livestock products represented 17.1 percent of total agricultural commodity exports by value in the US. (U.S. Dept. of Commerce, 1994)**

Nationally, 650,000 ranches participate in the cattle raising agricultural subsector. The majority of these ranches are small with 85 percent having less that $25,000 in sales during 1987. (Fowler, 1993) These small ranching operations typically have

outside (non-ranch) incomes that contribute to ranch family income. Research has indicated that family members working off the ranch contribute between 11 and 53 percent of household income in the western states (Fowler, **1993)**

"The national trend toward fewer but larger farms begun in the 1950s and 1960s continued through the 1970s and 1980s, **although, at a pace mitigated by the establishment of small part-time farms in the West. The number of farms in the West increased in the 1970s and stabilized in the 1980s.** (**USDI,** 1994a)

To begin, federally managed rangelands are concentrated in eleven western states. Table 1, lists these States. The majority of federal rangelands are managed by the Forest Service and the Bureau of Land Management. Additional grazing is provided on federal lands managed by the US Department of Fish and Wildlife, Corp of Engineers, and in the Columbia River Basin, the Bonneville Power **Administration. The amount of grazing permitted by these agencies is small and administered under different legislation and regulations than those used by the Forest Service and Bureau of Land Management.**

Table 1: Eleven Western States Where Federal Grazing Programs are concentrated.

Arizona	**Montana**	**Utah**
California	**Nevada**	**Washington**
Colorado	**New Mexico**	**Wyoming**
Idaho	**O r e g o n**	

Forest Service and Bureau of Land Management statistical records examined during the Rangeland Reform process indicate that 26,900

permits to graze livestock exist in seventeen western states. In addition to the eleven western states in Table 1, Kansas, Nebraska, North Dakota, South Dakota, and Texas were included. Permits represent agreements by the federal government to allow private individuals (operators) to graze a specific number of cattle in a designated location for a specific period of time. Operators may hold more than one permit and may hold permits. issued by both the Bureau of Land Management and the Forest Service. In the eleven western states where federal grazing permits are concentrated, 21,132 beef cattle operators, or approximately 22 percent of all cattle producers hold federal permits. (USDI, 1994a) An estimated 5,502 sheep producers or 19 percent of all producers in the region hold federal permits. (USDI, 1994a)

RANGELAND CONDITION AND TREND

The condition of publicly managed rangelands is reported by both the Forest Service and Bureau of Land Management. The units and mechanisms used to report condition has changed in recent years. Additional changes are expected under Rangeland Reform '94. These proposed changes are driven by management objectives that encompass the components of rangeland ecosystems. These measures seek to describe the function and trend of rangeland environments and examine all aspects of rangeland ecosystems. The, following is a synopsis of national reports on rangeland condition published in recent years.

Bureau of Land Management

Potential Natural Community	3.3 **million acres**	**4.0 percent**
Late Seral	27.8 **million acres**	34.0 **percent**
Mid Seral	32.7 **million acres**	40.0 **percent**
Early Seral	12.3 **million acres**	**5.7 percent**
Unknown/Unclassified	5.7 **million acres**	**7.0 percent**

Source: USDI, 1994a

These classifications parallel the previous reporting terminology of excellent, good, fair, poor, unknown/unsuitable.

In addition,. trend for BLM rangeland was reported.

Upward Trend	**28.8 million** acres	16 .0 **percent**
Static	**91.8 million acres**	**59** .1 **percent**
Down	**16.6 million** acres	10.7 **percent**
Undetermined	**22.1 million** acres	14.2 **percent**

Source: USDI, 1994a

Under proposed standards in the Rangeland Reform '94, "properly functioning" uplands and riparian will be the terminology and tool used to describe and measure rangeland conditions in the future.

Bureau of Land Management does not currently use this terminology. The agency made the following estimates of rangeland function for inclusion in the Rangeland Reform '94 Draft Environmental Impact Statement.

Properly Functioning	90.5 million acres	56.9 percent
Functioning, but Susceptible to Degradation	48.0 million acres	30.2 percent
Non-Functioning	20.5 million acres	20.5 percent

Source: USDI, 1994a

Forest Service

As part of the Forest Service's 1989 Resource Planning Act Assessment, an extensive analysis of the rangeland management program was conducted. Rangeland conditions were reported at that time using the Potential Natural Community terminology.

Potential Natural Community	15.0 percent
Late Seral	31.0 percent
Mid Seral	38.0 percent
Early Seral	15.0 percent
Unknown/Unclassified/Annual Grasslands	0.8 percent

Source: USDA, 1989

Potential Natural Community was defined as the stable biotic community that would become established on and ecological site if all stages were completed without human interference under present environmental conditions. Early, mid, and late seral stages represent successional stages prior to "climax" potential natural community.

Rangeland trend was reported as:

Static.....43 **.O percent**
Moving away from Potential Natural Community.....14 **.O percent**
Moving Toward Potential Natural Community.....43 .0 **percent**
Source: USDA, 1989

In 1992, the **Forest Service revised its method of reporting rangeland trend. The revised reporting methodology measures how rangeland activities are meeting or progressing toward the objectives established in the forest plans and allotment management plans.**

Meeting or Moving Toward Forest Plan
Objectives.....47,501,971 acres.....64.0 **percent**
Not Meeting Objectives.....10,932,293 acres.....14.7 **percent**
Undetermined.....15,839,711 acres.....21.3 **percent**
Forest Service Acres with Range Vegetation
Management Objectives.....74,273,975 acres.....100.0 **percent**
Source: USDA, 1994

The Forest Service did not report acres in proper functioning condition in the Rangeland Reform '94 document.

Conclusion

The Forest Service and Bureau of Land Management have used different terminology and tools to measure rangeland condition and trend. Under the rules proposed by Rangeland Reform '94 the two agencies will begin using similar terminology and'tools to measure rangeland condition. In addition, emphasis will be placed on measuring both upland and riparian condition and trend.

FEDERAL GRAZING PROGRAM

The National Farm Costs and Returns Survey reported forage by source nationally and regionally. Nationally, beef cattle operations derive 83.3 percent of feed from harvested forage. Grazed forage accounts for 7.4 percent, with grain, protein supplements, and byproducts each contributing less than 5 percent. When examining the data at the regional level the same survey found that beef cattle operations in the West were the highest users of grazed forage. An estimated 27 percent of feed' requirements were met by grazing. Harvested forage was by far the greatest source of feed, 68 percent. Use of grain, protein supplements and byproducts were minimal. The West was defined as California, Colorado, Idaho, Montana, New Mexico, Oregon, Utah, and Washington. (USDA-ERS, 1993)

Table 2 displays estimated and projected forage by type for selected regions. The complete table appears in *An Analysis of the Rangeland Forage Situation in the United States.*

Table 2: Consumption of grazed forage types by beef cattle and sheep, AUMs, 1985 and 2040

	Deeded non-irrigated		Public Grazing		Deeded Irrigated Grazing		Crop Residue		Total
Region	Thous. AUMs	Percent	Thous. AUMs	Percent	Thous. AUMs	Percent	Thous. AUMs	Percent	Thous. AUMs
			Beef Cattle						
PN (1985)	9,929	74	611	5	2,162	16	671	5	13,373
NR (1985)	95,746	81	11,452	10	3.804	3	7,777	6	118,780
US (1985)	359,359	87	24,163	6	8.557	2	20,011	5	412.090
			Sheep						
PN	254	31	466	57	41	5	57	7	818
NR	2,369	31	4.356	57	382	5	535	7	7,642
US (1985)	10,742	56	5,304	28	725	4	2.302	.12	19.073
			Beef Cattle and Sheep						
PN (1985)	10,182	72	1,078	8	2,203	16	729	5	14,191
PN (2040)	31,200	72	3.200	7	6,700	15	2.200	5	43.300
NR (1985)	98.116	76	15,809	13	4,186	3	8,312	7	73,165
NR (2040)	157,800	78	25,500	13	6.700	3	13,500	6	203,500
u s (1985)	370,101	86	29,466	7	9,283	2	22,312	5	431,163'
u s (2040)	585,100	85	48,200	7	19.500	3	32.300	5	688.100

PN= Pacific Northwest (Oregon and Washington)
NR= Northern Rocky Mountians (Colorado, Idaho, Kansas, Montana, Nebraska, Nevada, North Dakota, South Dakota, Utah, and Wyoming

Source: USDA, FS, 1989. An Analysis of the Range Forage Situation in the United States: 1989-2040.

CAPITALIZED PERMIT VALUE

Government issued permits to graze livestock on public lands are an important factor of production for sheep and cattle ranchers in the west. Approximately 22 percent of western cattle producers and 19 percent of western sheep producers hold federal permits. (USDI, 1994a) The permits are linked to privately owned base property and enhance the productive capacity of the base property by providing additional forage during certain seasons. This allows rest or production of hay or other forage on the base property. A common practice is to produce alfalfa or other hay on irrigated pastures for winter use during the summer season when cattle are on public lands. Although each operation is different., it is assumed that the timing and amount of public land grazing is fully incorporated into the production functions of all operators.

Ranch value and borrowing ability is usually based on cash flow. With additional productive capacity, holders of federal permits often have increased ranch value and borrowing ability. These values often persist when the base property is sold or passed onto heirs. This is because, historically, permits are reissued to the new owner of the base property.

Although holding a federal permit can create additional cash flow and wealth for individual ranchers, permits have no legally recognized value as private property. The permits are not sold by the government and cannot be sold by the permit holder. In recent years alteration of the timing or amount of grazing permitted has become common especially at times of permit renewal or reissue. Under the standards proposed in Rangeland Reform '94 this will become more frequent as changes are made to meet

ecosystem and environmental objectives.

Changes in the timing and amount of livestock grazing effect individual operators differently. Some generalization can be made. A small number of operators would cease the production of livestock immediately or sell the base property. For most operators, a period of transition would follow any changes. During the transition, herd size or type of operation may be changed, in addition the intensity or type of agricultural use on the base property may also be changed. Operators can be expected to experience monetary and other costs associated with the transition. During the transition period additional operators would likely sell base property or cease unprofitable operations. After the period of transition it is expected that remaining livestock operations would operate efficiently and profitably given the timing and amount of livestock grazing permitted.

Changes in the fees charged permittees for use would change the profitability of operations and would have similar transitional impacts.

RANGELAND REFORM '94

The Rangeland Reform '94 Draft Environmental Impact Statement represents a significant cooperative effort between the Forest Service and the Bureau of Land Management. Philosophically the effort represents a desire by both agencies to manage rangelands and administer livestock grazing programs in a cooperative and parallel fashion. The Draft Environmental Impact Statement describes the existing federal rangeland management program, including descriptions of existing conditions and projections of future conditions. A Final Environmental Impact Statement was published January 1995. To implement proposed actions appearing

in the Final Environmental Impact Statement the agencies must publish Records of Decision and Final Rules. The Forest Service intends to release two Records of Decision. The first, addressing grazing fees and the second addressing rangeland management rules. The Bureau of Land Management published a Record of Decision and Planning and Rangeland Regulations February 22, 1995. Publication of Forest Service documents has been described as imminent.

The Proposed Action and Proposed Rules address grazing fee and management alternatives in 17 western states. Only National Forest, National Grassland, and Bureau of Land Management administered grazing lands are included. Grazing use on state lands and other federally managed lands was not examined.

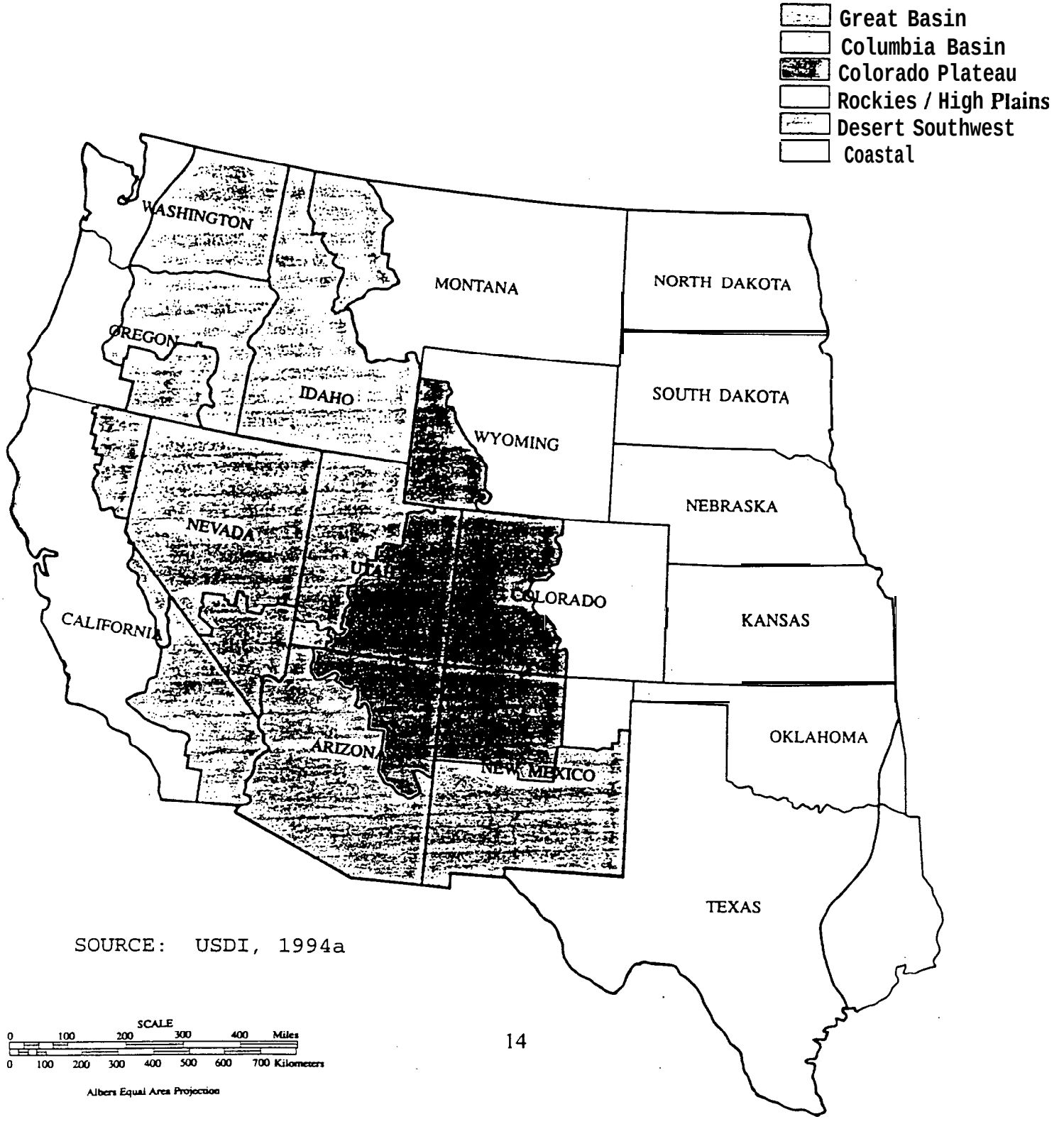
Table 3: States Included in Rangeland Reform '94

Arizona	**Nebraska .**	**South Dakota**
California	**Nevada**	**Texas**
Colorado	**New Mexico**	**Utah**
Idaho	**North Dakota**	**Washington**
Kansas	**Oklahoma**	**Wyoming**
Montana	**Oregon**	

"Both the Forest Service and Bureau of Land Management intend to recognize identical ecoregions to facilitate ecosystem management. A modification of R. G. Bailey's Ecoregions of the United States (Bailey, 1980), these ecoregions would serve as the basis for developing Bureau of Land Management regional standards and guidelines." USDI, 1994a.

The Rangeland Reform Draft Environmental Impact Statement identified six analysis areas. These areas generally follow major basins and are adjusted to incorporate some administrative boundaries and state boundaries.. These analysis areas are shown in Map 1. The Columbia River Basin Analysis Area is included within the Interior Columbia Basin Ecosystem Management Project (ICBEMP)assessment area. The boundary of the ICBEMP also includes lands from the Great Basin and Colorado Plateau Analysis Areas in Rangeland Reform '94.

MAP 1: ANALYSIS AREAS



SOURCE: USDI, 1994a

The intent of the changes proposed by Rangeland Reform'94 is to:

* **make the Forest Service and BLM's rangeland management programs more compatible with ecosystem management, and more consistent with each other,**

* **accelerate restoration and improvement of public rangelands to proper functioning condition,**

* **obtain for the public a fair payment for grazing livestock on public lands,**

* **streamline administrative functions, and**

* **consider the needs of local communities for open space and their dependence on livestock grazing.**

Source: USDI, **1994a**

To this end, the Rangeland Reform '94 Draft Environmental Impact Statement examined five alternatives and seven fee structures. These alternatives and fee structures were incorporated by reference into the Final Environmental Impact Statement.

TABLE 4: Range Reform '1994 Alternatives

Management Alternative 1: Current-Management (No Action)
Management Alternative 2: BLM-Forest Service Proposed Action
Management Alternative 3: Livestock Production
Management Alternative 4: Environmental Enhancement
Management Alternative 5: No Grazing

Fee Alternative 1: Current Public Rangeland Improvement Act Fee Formula (PRIA) (No Action)
Fee Alternative 2: Modified PRIA
Fee Alternative 3: BLM-Forest Service Proposed Action
Fee Alternative 4: Regional Fees
Fee Alternative 5: Federal Forage Fee
Fee Alternative 6: PRIA with Surcharges
Fee Alternative 7: Competitive Bidding

Issued concurrently with the Draft Environmental Impact Statement were Proposed Rules which would change administrative procedures to allow for implementation of the Proposed Action. A copy of the Proposed Rule as published in the Federal Register March 25, 1995 is attached as Appendix A. Final Rules were published in the Federal Register February 22, 1995. Under the Proposed Rules the Bureau of Land Management will be required to adopt national standards. The Forest Service already has national standards in place. State or regional standards may be developed and approved by the Secretary of Interior within 18 months of issuance of the Records of Decision. These State or Regional Standards would be developed with the involvement of Resource Advisory Councils chartered under the Proposed Action in the Rangeland Reform document. (USDI, 1994a) The structure of these councils would be flexible. (USDI, 1995) The Proposed Rule also includes

Fallback Standards that would automatically take effect in the event State or Regional Standards are not developed.

The Fallback Standards in the Proposed Rule were developed based on findings of the Committee on Rangeland Classification presented in *Rangeland Health: New Methods to classify, Inventory, and Monitor Rangelands* (National Research Council, 1994) and the Bureau of Land Management *Riparian Area Management: Process for Assessing Proper Functioning Condition.* (USDI, 1993b). The standards are linked to indicators of soil stability and watershed function, distribution of nutrients and energy, and the ability of plant communities to recover. (USDI, 1994a)

Management guidelines to meet and achieve these standards are included within the Proposed Rule. The following is a synopsis:

* restrict management practices to those activities that assist in or do not hinder meeting certain legal mandates and achieving or maintaining rangeland health,

* practices be implemented that assist in or do not hinder the recovery of threatened or endangered species,

* assist in attaining and protecting water quality consistent with the Clean Water Act,

* grazing schedules include periods of rest during times of critical plant growth or regrowth,

* development of springs or other water projects affecting water would be designed to protect the ecological values of the affected sites,

* require the establishment and application of utilization or residual vegetation limits that would benefit the diversity and vigor of woody and herbaceous species,

* specifies specific standards for development and amendment of Allotment Management Plans (AMPs) and other activity plans addressing livestock grazing. (USDI, 1994a)

IMPACTS OF RANGELAND MANAGEMENT ACTIVITIES

Livestock use on federal land as it is currently managed, and would be managed under the Proposed Action of the Range Reform '94 Draft Environmental Impact Statement, does not operate in a vacuum. The program is influenced by and influences many additional aspects of land management, environmental condition, economic condition, and social concern and satisfaction.

Many conditions or outcomes associated with the federal grazing management program have both positive and negative influences. Common management activities include management presence, road building and maintenance, seedings, water developments, fencing, and vegetation manipulation using a variety of methods. Each of these activities has associated conditions and outcomes. A generalized discussion of each activity follows. Site specific activities and estimated effects vary by individual management unit and are discussed in Forest Service and Bureau of Land Management plans. Site specific examples are not examined here.

The road systems now in place to facilitate administrative and permittee operations also are used by recreationists participating in a diversity of dispersed recreation activities. High road densities can also contribute to sedimentation, soil compaction, and provide pathways for dispersal of noxious weeds.

Water developments, typically springs or wells, offer additional water sources for wildlife and livestock. This 'changes the dispersal patterns of livestock and wildlife. These developments may also change water tables and flows, and the availability and quality of wetland and riparian areas.

Seedings and other human alterations of rangeland vegetation are

a common management activity. Seedings of non-native species palatable to livestock are common. Increasingly, however,/ manipulation of rangeland vegetation is designed to achieve multiple objectives. In these cases native species are often used and restoration is a primary driver. Seedings displace existing vegetation. This can decrease the diversity of native species or may improve conditions if the site is populated with noxious species or vegetation cover is poor subjecting the area to erosion. Seedings may also increase palatable forage for wildlife. Seedings also cause landscape fragmentation and alter landscape and species diversity. Finally, seedings are evidence of human alteration and may degrade scenic character.

Fences control livestock and access on public lands. Exclosures are often used to protect sensitive resources (cultural, riparian, Threatened and Endangered plant species, developed recreation sites, etc.) and habitats. These fences can also be sources of landscape fragmentation and may hinder the movement of some plant and animal species.

These examples demonstrate that actions taken to enhance or improve the management of livestock grazing have multiple effects on vegetation, riparian areas, aquatic conditions, and landscape appearance.

PROJECTIONS OF RANGELAND USE BY DOMESTIC LIVESTOCK

The Forest Service as part of the 1989 Resources Planning Act process, made projections of beef cattle inventories to the year 2040. Nationally herd sizes were expected to increase by 56 percent over 1985 inventories of 35.2 million, to approximately 55 million animals. Breeding ewe inventories were projected to more than double from 1985 inventories of 7.2 million, to

approximately 18 million. These projected increases were driven by increasing domestic population and to a limited extent increasing per capita consumption and international trade.

A shift of forage supplied was anticipated between Forest Service regions. An increase in California (Region 5) of 17 percent was expected to be offset by decreases in the Southwest (Region 3) and Southern (Region 8) Regions. Overall, a net increase of less than 1% was projected for forage availability within the Forest and National Grassland Systems was projected. Bureau of Land Management forage availability was projected to remain constant through the year 2040. Feed sources for the increases herds were anticipated to come from private lands. Grazed forage availability was anticipated to increase fifty-two percent, with much of this increase due to increased productivity. Increasing productivity on both public and private lands of 0.7% annually, or 47% between 1987 and 2040 was projected. These projections assumed forage offered by the BLM would remain constant during the projection period.

More recent projections appearing in the Rangeland Reform '94 Draft Environmental Impact Statement reached very different conclusions. An historic‘decreasing trend of 6 percent per decade on Bureau of Land Management and 8 percent per decade on Forest Service was identified. These decreases were attributed to agency decisions on carrying capacity and resource protection, and operator decisions based on personal or business considerations. This trend was projected to continue into the foreseeable future with or without programmatic changes in the federal grazing program. Under the No Action Alternative, representing continuation of current management practices, additional declines in federal forage consumption were projected. These additional decreases were anticipated relating to

implementation of environmental laws such as the Endangered Species Act. Declines of 18 percent for the Bureau of Land Management and 19 percent for the Forest Service were projected over the 20-year analysis period. Under the Proposed Action, decreases in AUMs authorized are projected to be even greater in the long term (20 years). Authorizations are anticipated to be 20 and 21 percent below current authorizations for the Bureau of Land Management and Forest Service respectively.

PAYMENTS TO STATES AND COUNTIES

The Bureau of Land Management and Forest Service collect grazing fees and distribute the proceeds under different legislative and procedural authorities.

Bureau *of Land Management*

The Bureau of Land Management collects grazing fees under two sections of the Taylor Grazing Act of 1934. Section 3 permits are issued within designated grazing districts. Collections from these permits are distributed as follows: 50 percent to the Range Improvement Fund for appropriation in the following year, 12.5 percent to the state where the fees are collected and 37.5 is returned to the U.S. Treasury. For the remaining Bureau of Land Management permits, issued under Section 15, half of the fee is allocated to the Range Improvement Fund with the remainder returning to the Federal Treasury. Monies in the Range Improvement Fund are used solely for labor, materials, and final survey and design of range improvement projects. Under changes proposed in Range Reform '94 distribution of Range Improvement funds would change. Half the funds would be allocated to the district of origin and the remainder to State Offices for rangeland ecosystem rehabilitation and protection. Fiscal year

1993 fee receipts totaled $17.4 million.

Forest Service

The collections from Forest Service permits are distributed as follows: 25 percent to the U.S. Treasury, 25 percent to the States for distribution to the counties of origin (must be used for roads and schools) and 50 percent to the Range Betterment Fund. Monies in the Range Betterment Fund are returned to the regions and forests of origin as appropriated dollars the following year to fund planning and building of rangeland improvements.

The Forest Service also manages National Grasslands. The Crooked River National Grassland and Curlew National Grasslands are located within the Columbia River Basin Assessment Area. Grazing permit collections from these units are distributed 12.5 percent to the states for distribution to the county of origin, 37.5 percent to the U.S. Treasury, 50.0 percent to the Range Betterment Fund. Forgiveness of half the grazing fee, the portion that goes to the Range Betterment Fund, may be waved if the permittee or grazing association will be making rangeland improvements. Forest Service grazing fee receipts totaled $10.7 million in calendar year 1991.

IMPORTANCE AND DEPENDENCY OF THE LIVESTOCK INDUSTRY

Great variation exists among individual sheep and cattle ranching operations. These differences occur across the Columbia River Basin and even on neighboring ranches. Factors causing these differences range from physical conditions such as weather, soil, and elevation, to things as unique as operator style.

Information on individual operations is proprietary and not available from public sources. Consequently, the following discussion is limited to averages that represent certain types of operations or operations within specific geographic areas. For this analysis geographic areas have been defined as counties. Using county boundaries conforms to the general availability of information from public sources. Bureau of Land Management and Forest Service information, has been manipulated to conform to these geographic areas.

To provide context for discussion of the federal rangeland program, information from the National Census of Agriculture was used. The Census of Agriculture is conducted every 5 years and the results are reported 2-3 years-after completion. The most recent survey was conducted for 1992.. To minimize the influence of agricultural cycles information from the past three surveys was averaged.. All dollar values have been expressed in 1992 dollars using the implicit price deflators for Gross Domestic Product (GDP). In a few counties information was not disclosed due to a single or small number of operators within the county. For purposes of averaging, a value of zero was assumed in these cases.

Two measures were used to provide a context in which to discuss the dependency and importance of the federal range program within the counties of the Columbia River Basin. The first examines labor income derived from agriculture as a percentage of total labor income. Total labor income was adjusted for residence to assign income based on place of residence instead of place of work. Table 5 compares total personal income to agricultural income in each of the 102 counties of the Interior Columbia Basin Ecosystem Management Project Assessment analytical area. Data for 1982, 1988, and 1992 has been adjusted to 1992 dollars using

the implicit price deflators for gross domestic product then averaged. Table 5 follows the text.

The second measure of the importance of agriculture in each county is the dollar value of agricultural products sold. This measure identifies counties that have large agricultural sectors. This measure is independent of the size of the county, products sold, and other economic activity in the county. For example, Yakima County, Washington reported the highest agricultural sales of all counties in the Columbia River Basin during the period examined, $656,256,000. This is not unexpected with the large orchard and large livestock sectors. However, reports by the Bureau of Economic Analysis (BEA) on income by sector shows that only 15 percent of income is derived directly from the agricultural sector, demonstating a diversified economy. Table 6 displays agricultural sales averaged over the three Census of Agriculture periods examined. The data has been adjusted to 1992 dollars using the implicit price deflator for gross domestic product. The counties are displayed in ranked order. Table 6 follows the text.

A subsidiary analysis compares cattle and calf sales to all' agricultural sales recorded for each county. This comparison is a straight forward and effective mechanism for evaluating the relative importance of cattle and calf sales to each county's agricultural sector. Table 7 repeats a portion of Table 6 adding information on cattle and calf sales and calculating the percentage. Data has been adjusted to 1992 dollars usint the implicit price deflators for gross domestic product. The counties are displayed in rank order. This table also appears following the text.

Sale of cattle and calves is a significant component of the

agricultural sectors throughout the basin. It is the most pervasive agricultural activity in the basin. In 75/102 counties in the basin sales of cattle and calves are more than 25 percent of all agricultural sales. Data on sheep sales was not available from the Census of Agriculture, thus were not included in this portion of the analysis.

DEPENDENCY AND IMPORTANCE OF FEDERAL FORAGE WITHIN EACH COUNTY

Within the states of the Columbia River basin permitted livestock users have varying levels of dependence on federal forage. These dependencies are determined by season of use, availability of federal forage relative to private forage, and the number of permits available. Sheep operations: are generally more dependent than cattle operations. Table 8 sumarizes the dependency of permitted herds for the states within the Columbia River Basin Assessment Area.

Table 8: Dependency of Permitted Herds by State

State	Number of Permittees	% Dependency (Cattle)	%Dependency (Sheep)
I d a h o	3,675	23	35
Montana	4,710	11	35
Nevada	930	36	43
Oregon	1,790	23	27
Utah	3,110	35	47
Washington	450	13	**
Wyoming	2,940	23	29

**** Sheep budgets were not prepared because few sheep graze on federal lands in this state.**

Source: Rangeland Reform '94, page 3-68

To perform a county level assessment of dependency on federal forage the portion of total forage required by livestock in the county supplied by permitted use on public lands was calculated. A very straight forward methodology was selected to perform this calculation.

The complexity of the analysis was limited by the availability of consistent, region-wide, county level data. In addition, several assumptions were made to ease calculations. The methodology assumes that inventories reported by the Census of Agriculture are held for the whole year within a single county. This is a simplification as federal pastures may be in a different county than the associated base property. In addition, many operators have multiple land holdings and winter livestock in different counties or states.

Typically, federal forage is offered during the spring and summer seasons and cattle are grazed or fed on privately owned lands during the fall and winter. It is frequently argued that private herd sizes are limited by federal forage availability. This argument is based on the assumption that 'operators are inflexible and have no access to alternative feed sources under any changes in the permitted federal grazing season. For the dependency analysis conducted for.this report an assumption has been made that seasonal availability of federal forage is not a limiting factor in determining herd size or inventory. This means that modification of base property utilizt'ion or purchase of additional feed sources can be used to restructure livestock operations to utilize all sources of feed available annually to maximum efficiency. This statement is mathmatically represented by the following formula.

AUM(h) + AUM(b) + AUM(p)/12 = **Inventory**

Where **h = crop residue, hay, and other feeds**
b = grazed forage on base property
p = grazed forage on public lands

Finally, the calculated dependencies represent the dependency and importance of federal forage to the livestock industry of the entire county. Dependency of individual operators holding federal permits will likely be higher because the livestock industry includes operators who do no hold federal permits.

Information on permitted grazing use by county was collected from the Forest Service and Bureau of Land Management. Animal Unit Months (AUMs) **by county were collected from both the Bureau of Land Management and the Forest Service for the 102 counties included within the Columbia River Basin Economic Analysis area. See Appendix B for a complete list of counties included.**

The Bureau of Land Management submitted information for the 1993 calender year: To accommodate calculation of AUMs **by county using the** BLM's **automated database, allotments spanning two or more counties were dropped. An estimated understatement of 4 percent was calculated.**

Region 4 of the Forest Service (southern Idaho, Nevada, Utah) submitted data for the 1994 fiscal year. Region 1 (northern Idaho and Montana) submitted data for 1993 calendar year. Region 6 (Oregon, Washington) submitted data for 1993 calendar year. Typically this data is collected by allotment and administrative unit and coded with county identifiers. The data was manipulated to sort by county identifier then grouped. Administrative and allotment units were disregarded in this process.

County livestock inventories reported in the US Census of Agriculture were used. To reduce the influence of agricultural cycles reported totals in the 1982, 1987, and 1992 Census' of Agriculture were averaged. Cattle and Calf and Sheep livestock classes were totaled.

Total forage requirements from all sources were calculated assuming cattle require 12 AUMs annually, and sheep require 2.4 AUMs annually. The portion of total forage requirement met through permitted grazing use on Forest Service and Bureau of Land Management lands was then calculated to represent the dependency on federal forage in each county. Table 9 displays average cattle, calf and sheep inventories, total feed requirements for these inventories, AUMs offered by the Forest Service and Bureau of Land Management, and calculated dependency for each agency and combined by county. Counties are displayed in rank order.

SUMMARY

As expected, 'the calculated dependency ratings are closely tied to the amount of federal land in each county. Of the thirty three counties within the assessment area identified as having greater than 10 percent dependency only five could be identified as large producers of cattle and calves. Large was defined as greater than $25 million in average sales during 1982, 1987, and 1992, expressed in 1992 dollars. These counties are Harney and Malheur counties in Oregon and Owyhee county Idaho, Elko county in Nevada, and Fremont county in Wyoming. Average sales of cattle and calves in these counties were as follows: Harney, $30,136,000; Malheur, $75,137,000; Owyhee, $58,116,000: Elko, $43,148,000; Fremont, $31,867,000. The majority of the

counties identified as highly dependent on federal forage have nominally small sales of cattle and calves. However, in many of these dependent counties the production of cattle and calves is the primary agricultural activity. In Adams, Boise, Custer, Lemhi, Owyhee, and Valley counties of Idaho, sales of cattle and calves represent more than 50% of all agricultural sales.' Harney, Grant, Lake, and Wallowa counties of Oregon and Ferry county in Washington have the same situation. In Montana, Lincoln and Silver Bow counties sales of cattle and calves represent more than 50% of all agricultural sales. The majority of agricultural sales in Fremont, Lincoln, Sublette, and Teton counties in Woming, and Elko county in Nevada, can be attributed to cattle and calves. Three of the dependent counties stand out because production of cattle and calves is a small portion of agricultural activity. These counties are: Skamania, WA , identified as the most dependent county (47%), with cattle and calves representing only 12.2 percent of agricultural sales. Total cattle and calf sales in Skamania county averaged $141,000, one of the lowest in the assessment area. Okanogan and Chelan counties in Washington are also identified as highly dependent on federal forage for the production of livestock. But livestock production is only a small portion of agricultural'activity in these areas, representing 12.2 percent and 0.6 percent respectively. Average cattle and calf sales were $16,914,000 and $869,000 respectively.

Within the assessment area Adams, Grant, Kititas, and Yakima, counties in Washington; Ada, Boise, Canyon, Cassia, Elmore, Gooding, Jerome, and Owyhee counties in Idaho; Malheur, Morrow, and Umatilla counties in Oregon are the largest producers of cattle and calves. Each of these counties has average sales larger the $50,000,000, as expressed in 1992 dollars. Generally these counties are not highly dependent on federal forage. Owyhee, Malheur, and Boise are the'exceptions with 22.9, 18.3,

and 17.1 percent respectively.

Livestock production is the most pervasive agricultural activity in the area. It appears from the data that in may cases, the provision of federal forage supports the production of livestock throughout the basin. Concentration of livestock production into areas of greatest productive capacity seems to have been arrested by the provision of federal forage. In terms of economic efficiency, this is not the best use of resources. However, in many instances, throughout the Columbia Basin livestock production is the major'agricultural activity. This activity is important for the maintenance of economic activity in less populated counties of the basin.

TABLE 5: AGRICULTURAL LABOR INCOME AS A PERCENT OF TOTAL LABOR INCOME, 1982, 1987, 1992 AVERAGE, 1992 DOLLARS, RANKED ORDER

County Name, State	Average Labor Income	Average Agricultural Labor Income	Percentage
Clark. ID	16,058	10,370	64.6%
Sherman, OR	28,294	14,184	50.1%
Columbia, WA	45,377	18,858	41.6%
Lincoln, WA	98,937	39,265	39.7%
Garfield, WA	25,124	9,776	38.9%
Camas, ID	9,222	3,246	35.2%
Lincoln, ID	32,152	11,254	35.0%
Gilliam. OR	17,234	5,700	33.1%
Gooding, ID	113,397	37,334	32.9%
Wheeler, OR	9,809	3,185	32.5%
Cassia, ID	217,644	68,882	31.6%
Power, ID	98,802	31,181	31.6%
Morrow, OR	84,979	25,526	30.0%
Jerome, ID	147,524	43,847	29.7%
Adams, WA	149,632	43,112	28.8%
Teton, ID	25,824	7,437	28.8%
Owyhee, ID	66,155	17,789	26.9%
Lewis, ID	36,644	8,972	24.5%
Fremont, ID	94,377	22,060	23.4%
Okanogan, WA	338,313	72,795	21.5%
Grant, WA	513,855	108,549	21.1%
Franklin, WA	418,461	80,645	19.3%

TABLE 5: AGRICULTURAL LABOR INCOME AS A PERCENT OF TOTAL LABOR INCOME, 1982, 1987, 1992 AVERAGE, 1992 DOLLARS, RANKED ORDER

County Name, State	Average Labor Income	Average Agricultural Labor Income	Percentage
Douglas, WA	292,818	55,988	19.1%
Payette, ID	139,312	25,495	18.3%
Washington, ID	60,212	10,540	17.5%
Bingham, ID	375,080	63,437	16.9%
Elmore, ID	230,911	37,192	16.1%
Franklin, ID	67,359	10,804	16.0%
Ferry, WA	48,785	7,714	15.8%
Whitman, WA	352,534	52,568	14.9%
Madison, ID	171,274	24,444	14.3%
Minidoka, ID	131,639	18,772	14.3%
Klickitat, WA	153,429	21,299	13.9%
Oneida, ID	25,972	3,525	13.6%
Gem, ID	81,969	11,119	13.6%
Yakima, WA	1,930,003	261,797	13.6%
Lake, OR	72,757	9,370	12.9%
Jefferson, ID	139,516	16,624	11.9%
Malheur, OR	206,363	23,399	11.3%
Chelan, WA	606,547	68,339	11.3%
Wallowa, OR	65,745	7,331	11.2%
Hood River, OR	174,761	17,895	10.2%
Butte, ID	47,195	4,683	9.9%
Twin Falls, ID	536,966	48,084	9.0%

TABLE 5: AGRICULTURAL LABOR INCOME AS A PERCENT OF TOTAL LABOR INCOME, 1982, 1987, 1992 AVERAGE, 1992 DOLLARS, RANKED ORDER

County Name, State	Average Labor Income	Average Agricultural Labor Income	Percentage
Wasco, OR	227,818	19,080	8.4%
Idaho, ID	110,851	9,033	8.1%
Walla Walla, WA	501,762	40,348	8.0%
Umatilla, OR	591,326	45,062	7.6%
Stevens, WA	272,884	20,307	7.4%
Adams, ID	29,513	2,166	7.3%
Canyon, ID	787,885	56,363	7.2%
Jefferson, OR	122,332	8,665	7.1%
Lemhi, ID	52,827	3,667	6.9%
Kittitas, WA	242,189	16,405	6.8%
Grant, OR	74,822	4,496	6.0%
Caribou, ID	85,760	4,908	5.7%
Humboldt, NV	160,712	8,291	5.2%
Union, OR	237,961	12,034	5.1%
Sublette, WY	59,373	2,984	5.0%
Bear Lake, ID	49,888	2,458	4.9%
Pend Oreille, WA	61,665	2,768	4.5%
Hamey, OR	68,378	2,923	4.3%
Lake, MT	142,705	5,938	4.2%
Box Elder, UT	419,271	16,917	4.0%
Custer, ID	44,888	1,805	4.0%
Bonneville, ID	911,493	35,961	3.9%

TABLE 5: AGRICULTURAL LABOR INCOME AS A PERCENT OF TOTAL LABOR INCOME, 1982, 1987, 1992 AVERAGE, 1992 DOLLARS, RANKED ORDER

County Name, State	Average Labor Income	Average Agricultural Labor Income	Percentage
Lincoln, WY	145,493	5,704	3.9%
Nez Perce, ID	394,931	14,272	3.6%
Benton, WA	1,746,460	56,885	3.3%
Klamath, OR	555,156	17,083	3.1%
Baker, OR	121,141	3,682	3.0%
Boundary, ID	61,232	1,848	3.0%
Latah, ID	286,806	8,168	2.8%
Valley, ID	67,002	1,868	2.8%
Crook, OR	125,690	3,481	2.8%
Asotin, WA	164,265	4,440	2.7%
Benewah, ID	86,861	2,339	2.7%
Sanders, MT	56,108	1,378	2.5%
Elko, NV	404,281	8,115	2.0%
Blaine, ID	178,527	3,543	2.0%
Skamania, WA	82,216	1,525	1.9%
Fremont, WY	338,318	5,658	1.7%
Boise, ID	33,671	511	1.5%
Granite, MT	19,242	292	1.5%
Deer Lodge, MT	73,422	793	1.1%
Ada, ID	2,920,749	23,602	0.8%
Spokane, WA	4,049,366	29,054	0.7%
Bannock, ID	716,722	4,808	0.7%

TABLE 5: AGRICULTURAL LABOR INCOME AS A PERCENT OF TOTAL LABOR INCOME, 1982, 1987, 1992 AVERAGE, 1992 DOLLARS, RANKED ORDER

County Name, State	Average Labor Income	Average Agricultural Labor Income	Percentage
Powell, MT	54,708	354	0.6%
Flathead, MT	595,217	3,848	0.6%
Teton, WY	208,579	1,270	0.6%
Bonner, ID	226,346	1,281	0.6%
Cleat-water, ID	88,386	469	0.5%
Mineral, MT	24,494	127	0.5%
Kootenai, ID	612,648	3,065	0.5%
Lewis and Clark, MT	556,728	2,434	0.4%
Lincoln, MT	150,481	608	0.4%
Deschutes, OR	775,353	2,957	0.4%
Ravalli, MT	168,979	464	0.3%
Missoula, MT	865,228	1,058	0.1%
Silver Bow, MT	358,265	(139)	-0.00%
Shoshone, ID	140,713	(99)	-0.1%

TABLE 6: VALUE OF AGRICULTURAL PRODUCTS SOLD (Sl,OOO), 1992 DOLLARS, RANKED AVERAGE

County Name, State	1982	1987	1992	Average
Yakima, WA	675,874	‘603,159	689,734	656,256
Grant, WA	450,862	425,023	481,928	452,604
Canyon, ID	336,782	30 1,624	262,178	300,195
Cassia, ID	211,727	211,694	284,333	235,918
Walla Walla, WA	332,519	159,893	197,442	229,951
Franklin, WA	218,394	213,570	239,528	223,831
Bingham, ID	25 1,287	179,199	215,446	215,311
Adams, WA	177,027	221,005	221,059	206,364
Umatilla, OR	223,823	204,195	186,690	204,903
Elmore, ID	175,859	160,907	265,116	200,627
Twin Falls, ID	214,841	195,765	170,499	193,702
Benton, WA	202,405	161,228	213,877	192,503
Malheur, OR	187,575	‘175,175	199,678	187,476
Whitman, WA	229,999	152,703	156,356	179,686
Jerome, ID	188,698	156,335	174,324	173,119
Gooding, ID	135,083	136,485	201,918	157,828
Morrow, OR	172,917	145,647	94,132	137,565
Chelan, WA	122,110	124,554	152,015	132,893
Okanogan, WA	116,380	128,641	138,419	127,813
Douglas, WA	144,386	100,253	109,236	117,958
Minidoka, ID	117,895	101,091	129,253	116,079
Ada, ID	109,323	136,669	97,173	114,388
Bonneville, ID	114,431	108,037	101,701	108,056

TABLE 6: VALUE OF AGRICULTURAL PRODUCTS SOLD ($1,000), 1992 DOLLARS, RANKED AVERAGE

County Name, State	1982	1987	1992	Average
Owyhee, ID	126,835	90,900	96,557	104,764
Lincoln, WA	129,667	78,060	81,664	96,464
Jefferson, ID	108,401	80,183	91,177	93,254
Power, ID	88,879	80,207	98,443	89,176
Klamath, OR	97,590	82,894	85,035	88,506
Spokane, WA	107,915	76,988	73,952	86,285
Kittitas, WA	114,039	72,980	70,276	85,765
Fremont, ID	92,726	74,604	86,126	84,485
Box Elder, UT	84,845	72,768	84,225	80,612
Madison, ID	75,506	62,113	73,198	70,272
Payette, ID	65,261	58,933	43,223	55,806
Franklin, ID	60,622	49,029	45,001	51,551
Fremont, WY	49,753	47,942	56,092	51,262
Hood River, OR	46,304	49,741	54,921	50,322
Union, OR	46,569	55,540	46,422	49,511
Lincoln, ID	72,582	35,459	39,158	49,067
Humboldt, NV	49,542	48,406	45,772	47,907
Wasco, OR	48,759	45,599	48,743	47,700
Elko, NV	43,692	47,285	50,852	47,276
Washington, ID	55,018	50,893	34,459	46,790
Jefferson, OR	59,021	38,364	42,456	46,614
Latah, ID	57,038	41,466	39,662	46,055
Baker, OR	48,923	49,357	39,033	45,771

TABLE 6: VALUE OF AGRICULTURAL PRODUCTS SOLD ($1,000), 1992 DOLLARS, RANKED AVERAGE

County Name, State	1982	1'987	1992	Average
Caribou, ID	51,912	39,073	36,781	42,589
Nez Perce, ID	54,647	36,718	33,917	41,761
Klickitat, WA	54,887	35,928	34,000	41,605
Idaho, ID	51,139	40,922	29,906	40,656
Lake, MT	43,395	40,186	36,674	40,085
Lake, OR	39,905	37,766	36,574	38,082
Harney, OR	36,826	34,660	35,402	35,629
Wallowa, OR	37,927	28,179	28,679	31,595
Clark, ID	25,379	31,637	36,718	3 1,245
Crook, OR	34,748	28,096	28,073	30,306
Gem, ID	32,524	26,382	29,510	29,472
Bannock, ID	36,178	24,066	25,913	28,719
Columbia, WA	38,655	22,744	19,664	27,021
Ravalli, MT	30,466	27,071	22,891	26,809
Stevens, WA	33,313	23,568	23,402	26,761
Blaine, ID	30,920	22,659	26,587	26,722
Flathead, MT	28,909	24,691	26,502	26,701
Lincoln, WY	28,497	25,759	25,178	26,478
Gilliam, OR	35,835	24,694	17,306	25,945
Sherman, OR	35,874	18,801	20,585	25,086
Teton, ID	33,507	21,167	20,193	24,956
Garfield, WA	32,537	23,363	18,524	24,808
Lewis, ID	29.034	24.754	19.525	24.438

TABLE 6: VALUE OF AGRICULTURAL PRODUCTS SOLD ($1,000), 1992 DOLLARS, RANKED AVERAGE

County Name, State	1982	1987	1992	Average
Sublette, WY	21,825	25,183	25,933	24,314
Butte, ID	27,475	17,966	19,380	21,607
Lewis and Clark, MT	23,078	21,529	19,100	21,236
Kootenai, ID	23,974	20,982	17,037	20,664
Grant, OR	21,856	20,604	18,150	20,203
Lemhi, ID	18,545	19,487	18,656	18,896
Deschutes, OR	20,931	17,991	16,360	18,427
Oneida, ID	25,412	14,777	13,188	17,792
Powell, MT	17,714	17,463	18,154	17,777
Bear Lake, ID	20,226	16,737	14,310	17,091
Custer, ID	16,664	13,500	14,085	14,750
Benewah, ID	15,421	11,115	12,579	13,038
Boundary, ID	15,040	10,597	11,900	12,512
Sanders, MT	11,541	11,552	12,074	11,722
Adams, ID	11,257	11,696	10,747	11,233
Asotin, WA	15,787	10,376	7,254	11,139
Granite, MT	11,689	10,405	10,085	10,726
Camas, ID	16,245	8,328	4,280	9,618
Teton, WY	-8,557	9,689	8,906	9,051
Valley, ID	9,252	9,684	6,511	8,483
Bonner, ID	10,866	6,652	6,025	7,848
Missoula, MT	8,069	7,420	7,743	7,744
Wheeler, OR	8,492	7,063	6,485	7,347

TABLE 6: VALUE OF AGRICULTURAL PRODUCTS SOLD (Sl,OOO), 1992 DOLLARS, RANKED AVERAGE

County Name, State	1982	1987	1992	Average
Clearwater, ID	6,709	4,883	4,604	5,399
Ferry, WA	4,799	5,849	4,500	5,049
Deer Lodge, MT	4,530	4,710	4,682	4,641
Pend Oreille, WA	3,920	2,849	2,781	3,184'
Boise, ID	3,186	2,536	3,558	3,093
Silver Bow, MT	3,641	2,667	2,476	2,928
Lincoln, MT	2,436	2,773	2,253	2,487
Skamania, WA	1,081	998	1,001	1,027
Mineral, MT	1,055	1,034	973	1,021
Shoshone, ID	363	337 I	359 I	353

TABLE 7: CATTLE AND CALF SALES AS A PERCENT OF TOTAL AGRICULTURAL SALES, 1992 DOLLARS, RANKED AVERAGE

County Name, State	Total Agricultural Sales, Average 1982, 87, 92 ($1,000)	Cattle and Calf Sales, ($1,000) 1982	1987	1992	Average	Percentage
Sublette, WY	24,314	20,018	23,262	24,235	22,505	92.56%
Granite, MT	10,726	10,748	9,585	9,156	9,830	91.64%
Elko, NV	47,276	39,700	43,349	46,396	43,148	91.27%
Adams, ID	11,233	10,014	10,336	9,565	9,972	88.77%
Grant, OR	20,203	19,428	18,516	15,330	17,758	87.90%
Valley, ID	8,483	7,843	8,817	5,378	7,346	86.60%
Silver Bow, MT	2,928	2,728	2,493	2,358	2,527	86.29%
Teton, WY	9,051	7,024	8,281	7,809	7,705	85.13%
Harney, OR	35,629	28,225	31,465	30,718	30,136	84.58%
Lemhi, ID	18,896	15,492	15,807	15,937	15,745	83.33%
Ferry, WA	5,049	3,524	5,307	3,650	4,160	82.39%
Powell, MT	17,777	14,431	13,960	15,418	14,603	82.15%
Wheeler, OR	7,347	6,303	5,422	5,868	5,864	79.82%
Custer, ID	14,750	12,532	10,868	11,705	11,702	79.34%

TABLE 7: CATTLE AND CALF SALES AS A PERCENT OF TOTAL AGRICULTURAL SALES, 1992 DOLLARS, RANKED AVERAGE

County Name, State	Total Agricultural Sales, Average 1982, 87, 92 ($1,000)	Cattle and Calf Sales, ($1,000) 1982	1987	1992	Average	Percentage
Baker, OR	45,771	36,700	40,250	29,578	35,509	77.58%
Deer Lodge, MT	4,641	3,868	3,296	3,088	3,418	73.65%
Lake, OR	38,082	26,496	28,606	24,816	26,639	69.95%
Sanders, MT	11,722	8,320	8,111	7,411	7,948	67.80%
Wallowa, OR	31,595	22,804	20,288	20,238	21,110	66.81%
Lincoln, MT	2,487	1,709	1,721	1,519	1,650	66.32%
Crook, OR	30,306	22,122	19,897	17,695	19,904	65.68%
Missoula, MT	7,744	4,292	4,959	5,371	4,874	62.94%
Lewis and Clark, MT	21,236	13,301	13,260	13,353	13,305	62.65%
Kittitas, WA	85,765	86,181	41,976	32,151	53,436	62.31%
Fremont, WY	51,262	29,242	30,139	36,220	31,867	62.17%
Boise, ID	3,093	1,764	1,533	1,908	1,735	56.09%
Owyhee, ID	104,764	75,019	49,669	49,659	58,116	55.47%
Washington, ID	46,790	32,073	30,945	14,001	25,673	54.87%

TABLE 7: CATTLE AND CALF SALES AS A PERCENT OF TOTAL AGRICULTURAL SALES, 1992 DOLLARS, RANKED AVERAGE

County Name, State	Total Agricultural Sales, Average 1982, 87, 92 ($1,000)	Cattle and Calf Sales, ($1,000) 1982	1987	1992	Average	Percentage
Ravalli, MT	26,809	15,566	14,687	12,827	14,360	53.56%
Ada, ID	114,388	42,889	84,060	52,203	59,717	52.21%
Lincoln, WY	26,478	12,725	13,299	14,940	13,655	51.57%
Bonner, ID	7,848	5,274	3,437	3,379	4,030	51.35%
Pend Oreille, WA	3,184	1,591	1,503	1,704	1,599	50.23%
Union, OR	49,511	16,343	31,010	25,607	24,320	49.12%
Bear Lake, ID	17,091	8,251	8,218	8,042	8,170	47.80%
Lake, MT	40,085	19,220	19,960	17,143	18,774	46.84%
Canyon, ID	300,195	153,187	134,793	87,774	125,251	41.72%
Blaine, ID	26,722	12,884	10,791	9,194	10,956	41.00%
Adams, WA	206,364	33,960	124,174	95,627	84,587	40.99%
Idaho, ID	40,656	21,296	15,324	13,200	16,607	40.85%
Malheur, OR	187,476	76,097	65,771	83,544	75,137	40.08%
Lincoln, ID	49,067	35,843	11,231	10,794	19,289	39.31%

TABLE 7: CATTLE AND CALF SALES AS A PERCENT OF TOTAL AGRICULTURAL SALES, 1992 DOLLARS, RANKED AVERAGE

County Name, State	Total Agricultural Sales, Average 1982, 87, 92 ($1,000)	Cattle and Calf Sales, ($1,000) 1982	1987	1992	Average	Percentage
Klamath, OR	88,506	34,501	35,860	32,720	34,360	38.82%
Elmore, ID	200,627	115,259	118,232	(D)	77,830	38.79%
Morrow, OR	137,565	83,041	64,694	11,543	53,093	38.59%
Cassia, ID	235,918	44,727	83,961	144,387	91,025	38.58%
Asotin, WA	11,139	4,381	4,666	3,502	4,183	37.55%
Stevens, WA	26,761	11,739	8,563	9,654	9,985	37.31%
Humboldt, NV	47,907	15,131	19,592	17,462	17,395	36.31%
Mineral, MT	1,021	387	329	365	361	35.32%
Gooding, ID	157,828	44,279	55,299	65,870	55,149	34.94%
Box Elder, UT	80,612	24,549	26,793	32,524	27,955	34.68%
Camas, ID	9,618	3,337	3,740	2,551	3,209	33.37%
Gem, ID	29,472	9,473	10,125	9,711	9,770	33.15%
Jefferson, ID	93,254	28,888	31,367	30,809	30,355	32.55%
Oneida, ID	17,792	6,725	4,949	5,588	5,754	32.34%

TABLE 7: CATTLE AND CALF SALES AS A PERCENT OF TOTAL AGRICULTURAL SALES, 1992 DOLLARS, RANKED AVERAGE

County Name, State	Total Agricultural Sales, Average 1982, 87, 92 ($1,000)	Cattle and Calf Sales, ($1,000) 1982	1987	1992	Average	Percentage
Payette, ID	55,806	27,481	16,042	8,805	17,443	31.26%
Deschutes, OR	18,427	5,598	6,079	5,494	5,724	31.06%
Flathead, MT	26,701	10,001	7,427	6,802	8,077	30.25%
Butte, ID	21,607	7,523	5,762	5,673	6,319	29.25%
Jerome, ID	173,119	74,493	47,346	28,604	50,148	28.97%
Shoshone, ID	353	105	197	(D)	101	28.62%
Gilliam, OR	25,945	7,608	8,088	5,757	7,151	27.56%
Grant, WA	452,604	116,795	144,458	108,603	123,285	27.24%
Clearwater, ID	5,399	1,679	1,256	1,332	1,422	26.35%
Klickitat, WA	41,605	13,142	10,157	8,215	10,505	25.25%
Clark, ID	31,245	6,767	10,556	6,285	7,869	25.19%
Umatilla, OR	204,903	50,689	55,741	46,889	51,106	24.94%
Yakima, WA	656,256	198,276	154,176	132,492	161,648	24.63%
Twin Falls, ID	193,702	47,575	48,696	46,209	47,493	24.52%

TABLE 7: CATTLE AND CALF SALES AS A PERCENT OF TOTAL AGRICULTURAL SALES, 1992 DOLLARS, RANKED AVERAGE

County Name, State	Total Agricultural Sales, Average 1982, 87, 92 ($1,000)	Cattle and Calf Sales, ($1,000) 1982	1987	1992	Average	Percentage
Fremont, ID	84,485	20,529	25,355	15,126	20,337	24.07%
Power, ID	89,176	13,758	19,102	28,554	20,471	22.96%
Caribou, ID	42,589	9,044	9,953	10,168	9,722	22.83%
Bonneville, ID	108,056	17,086	34,040	21,863	24,330	22.52%
Bannock, ID	28,719	7,008	6,145	5,997	6,383	22.23%
Bingham, ID	215,311	71,738	29,541	36,943	46,074	21.40%
Jefferson, OR	46,614	8,556	6,553	13,493	9,534	20.45%
Teton, ID	24,956	5,568	4,659	4,389	4,872	19.52%
Wasco, OR	47,700	6,388	7,208	8,795	7,464	15.65%
Franklin, ID	51,551	7,648	8,481	7,295	7,808	15.15%
Nez Perce, ID	41,761	6,484	5,480	6,681	6,215	14.88%
Boundary, ID	12,512	1,584	1,899	1,755	1,746	13.95%
Skamania, WA	1,027	280	144	(D)	141	13.78%
Okanogan, WA	127,813	18,505	16,513	15,723	16,914	13.23%

TABLE 7: CATTLE AND CALF SALES AS A PERCENT OF TOTAL AGRICULTURAL SALES, 1992 DOLLARS, RANKED AVERAGE

County Name, State	Total Agricultural Sales, Average 1982, 87, 92 ($1,000)	Cattle and Calf Sales, ($1,000) 1982	1987	1992	Average	Percentage
Kootenai, ID	20,664	2,982	2,141	2,420	2,515	12.17%
Garfield, WA	24,808	3,219	3,193	2,614	3,009	12.13%
Lincoln, WA	96,464	10,780	13,110	9,861	11,250	11.66%
Franklin, WA	223,831	31,276	16,277	26,913	24,822	11.09%
Minidoka, ID	116,079	13,151	11,747	12,636	12,511	10.78%
Spokane, WA	86,285	10,767	8,317	8,391	9,158	10.61%
Benton, WA	192,503	19,951	24,651	6,733	17,112	8.89%
Benewah, ID	13,038	1,207	1,215	916	1,112	8.53%
Madison, ID	70,272	6,411	6,237	5,323	5,990	8.52%
Lewis, ID	24,438	2,585	1,471	1,877	1,978	8.09%
Sherman, OR	25,086	1,601	1,835	1,818	1,751	6.98%
Columbia, WA	27,021	1,997	1,803	1,808	1,869	6.92%
Walla Walla, WA	229,951	0	47,474	(D)	15,825	6.88%
Latah, ID	46,055	3,459	2,946	3,076	3,161	6.86%

TABLE 7: CATTLE AND CALF SALES AS A PERCENT OF TOTAL AGRICULTURAL SALES, 1992 DOLLARS, RANKED AVERAGE

County Name, State	Total Agricultural Sales, Average 1982, 87, 92 ($1,000)	Cattle and Calf Sales, ($1,000) 1982	1987	1992	Average	Percentage
Douglas, WA	117,958	12,108	7,829	4,225	8,054	6.83%
Whitman, WA	179,686	10,153	13,799	10,558	11,503	6.40%
Hood River, OR	50,322	595	721	568	628	1.25%
Chelan, WA	132,893	1,221	745	642	869	0.65%

TABLE 9: CALCULATED DEPENDENCY ON FEDERAL FORAGE BY COUNTY, RANK ORDER							Page 1 of 7
County Name, State	Average Inventory, Cattle	Average Inventory, Sheep	BLM Active Preference	Dependency, BLM	USFS Actual Use	Dependency, USFS	Dependency, BLM+USFS
Skamania, WA	861	189	0	0.0000	5,157	0.4784	0.4784
Camas, ID	9,827	57	11,498	0.0974	34,945	0.2960	0.3934
Humboldt, NV	64,424	4241	247,183	0.3156	53,290	0.0680	0.3836
Elko, NV	172,624	32708	639,655	0.2975	183,340	0.0853	0.3828
Custer, ID	41,638	5454	63,757	0.1243	118,875	0.2318	0.3562
Clark, ID	21,668	12925	41,890	0.1439	55,888	0.1920	0.3360
Chelan, WA	2,790	408	749	0.0217	10,504	0.3049	0.3266
Sublette, WY	69,843	9090	112,214	0.1305	142,026	0.1652	0.2957
Teton, WY	12,417	112	341	0.0023	35,271	0.2363	0.2386
Adams, ID	24,679	1349	4,681	0.0156	66,694	0.2228	0.2384
Owyhee, ID	112,718	9264	315,206	0.2293	0	0.0000	0.2293
Butte, ID	23,420	10371	52,178	0.1706	10,447	0.0341	0.2047
Harney, OR	112,414	5206	223,011	0.1638	51,467	0.0378	0.2016
Malheur, OR	178,091	17977	392,506	0.1800	7,081	0.0032	0.1833
Wallowa, OR	61,111	7469	1,176	0.0016	129,915	0.1729	0.1745

TABLE 9: CALCULATED DEPENDENCYON FEDERAL FORAGE BY COUNTY, RANK ORDER							Page 2 of 7
County Name, State	Average Inventory, Cattle	Average Inventory, Sheep	BLM Active Preference	Dependency, BLM	USFS Actual Use	Dependency, USFS	Dependency, BLM+USFS
Deschutes, OR	21,177	5,778	29,316	0.1094	17,218	0.0642	0.1736
Lemhi, ID	56,355	6,064	68,453	0.0991	50,788	0.0735	0.1726
Boise, ID	6,252	19	5,630	0.0750	7,236	0.0964	0.1714
Jefferson, OR	22,793	8,667	938	0.0032	49,260	0.1674	0.1706
Lincoln, MT	5,503	298	0	0.0000	11,183	0.1675	0.1675
Valley, ID	12,102	165	294	0.0020	23,961	0.1645	0.1666
Fremont, WY	96,860	48,387	203,830	0.1594	412	0.0003	0.1598
Lincoln, WY	52,186	33,749	51,912	0.0734	60,761	0.0859	0.1593
Oneida, ID	26,997	3,266	30,354	0.0915	22,164	0.0668	0.1583
Lake, OR	102,848	3,291	123,186	0.0992	64,634	0.0520	0.1512
Caribou, ID	31,286	12,681	8,165	0.0201	52,713	0.1299	0.1500
Grant, OR	57,210	1,806	16,702	0.0242	85,942	0.1244	0.1486
Blaine, ID	29,985	29,735	38,335	0.0889	22,459	0.0521	0.1410
Ferry, WA	14,948	471	1,026	0.0057	24,165	0.1339	0.1396
Shoshone, ID	706	0	5	0.0006	1,033	0.1219	0.1225

TABLE 9: CALCULATED DEPENDENCYON FEDERAL FORAGE BY COUNTY, RANK ORDER							Page 3 of 7
County Name, State	Average Inventory, Cattle	Average Inventory, Sheep	BLM Active Preference	Dependency, BLM	USFS Actual Use	Dependency, USFS	Dependency, BLM+USFS
Fremont, ID	33,694	24,125	17,055	0.0369	34,720	0.0751	0.1120
Silver Bow, MT	9,149	375	2,348	0.0212	9,228	0.0834	0.1046
Okanogan, WA	54,211	4,324	6,465	0.0098	60,183	0.0911	0.1008
Crook, OR	54,102	4,531	27,135	0.0411	36,275	0.0550	0.0961
Cassia, ID	110,740	20,089	56,671	0.0412	72,479	0.0526	0.0938
Bear Lake, ID	32,744	10,489	6,241	0.0149	32,284	0.0772	0.0921
Elmore, ID	83,545	3,215	48,619	0.0481	42,718	0.0423	0.0904
Bonneville, ID	49,067	8,862	2,612	0.0043	49,152	0.0806	0.0848
Twin Falls, ID	112,865	16,094	83,090	0.0596	29,581	0.0212	0.0809
Latah, ID	12,932	2,025	32	0.0002	12,766	0.0798	0.0800
Baker, OR	103,426	5,863	47,805	0.0381	50,336	0.0401	0.0782
Washington, ID	48,126	7,797	29,507	0.0495	11,957	0.0201	0.0695
Bannock, ID	26,180	5,743	6,391	0.0195	14,095	0.0430	0.0625
Idaho, ID	51,486	9,553	4,481	0.0070	32,898	0.0513	0.0583
Wheeler, OR	22,313	2,666	2,927	0.0107	9,637	0.0352	0.0458

TABLE 9: CALCULATED DEPENDENCY ON FEDERAL FORAGE BY COUNTY, RANK ORDER							Page 4 of 7
County Name, State	Average Inventory, Cattle	Average Inventory, Sheep	BLM Active Preference	Dependency, BLM	USFS Actual Use	Dependency, USFS	Dependency, BLM+USFS
Union, OR	49,084	3,191	334	0.0006	26,942	0.0452	0.0457
Klamath, OR	98,847	19,870	15,997	0.0130	36,360	0.0295	0.0424
Granite, MT	31,457	772	2,672	0.0070	13,042	0.0344	0.0414
Pend Oreille, WA	7,595	240	0	0.0000	3,583	0.0391	0.0391
Teton, ID	16,798	541	1,017	0.0050	6,810	0.0336	0.0386
Box Elder, UT	87,011	52,026	44,663	0.0382	38	0.0000036	0.0382
Power, ID	28,803	1,709	10,102	0.0289	2,953	0.0084	0.0373
Lincoln, ID	36,407	2,098	16,200	0.0367	0	0.0000	0.0367
Clearwater, ID	5,629	326	72	0.0011	2,384	0.0349	0.0359
Franklin, ID	39,908	3,351	2,025	0.0042	15,133	0.0311	0.0352
Bingham, ID	94,564	25,103	7,177	0.0060	32,284	0.0270	0.0330
Morrow, OR	57,582	16,536	138	0.0002	23,606	0.0323	0.0325
Mineral, MT	1,336	182	0	0.0000	479	0.0291	0.0291
Gem, ID	37,454	2,975	4,574	0.0100	8,095	0.0177	0.0277
Garfield, WA	11,731	213	11	0.0001	3,847	0.0272	0.0273

TABLE 9: CALCULATED DEPENDENCYON FEDERAL FORAGE BY COUNTY, RANK ORDER							Page 5 of 7
County Name, State	Average Inventory, Cattle	Average Inventory, Sheep	BLM Active Preference	Dependency, BLM	USFS Actual Use	Dependency, USFS	Dependency, BLM+USFS
Deer Lodge, MT	9,106	322	464	0.0042	2,140	0.0194	0.0237
Columbia, WA	7,591	342	27	0.0003	2,016	0.0219	0.0222
Wasco, OR	29,709	913	3,500	0.0098	3,852	0.0107	0.0205
Douglas, WA	15,974	520	3,632	0.0188	0	0.0000	0.0188
Madison, ID	23,504	2,174	998	0.0035	4,306	0.0150	0.0185
Hood River, OR	2,356	401	0	0.0000	450	0.0154	0.0154
Umatilla, OR	86,186	26,419	900	0.0008	15,858	0.0144	0.0153
Missoula, MT	17,078	1,848	512	0.0024	2,477	0.0118	0.0143
Jerome, ID	79,141	11,542	13,709	0.0140	0	0.0000	0.0140
Asotin, WA	10,483	160	372	0.0029	1,392	0.0110	0.0140
Sherman, OR	8,512	23	1,285	0.0126	0	0.0000	0.0126
Stevens, WA	39,030	2,068	694	0.0015	5,157	0.0109	0.0124
Powell, MT	50,789	2,101	2,268	0.0037	5,083	0.0083	0.0120
Gilliam, OR	20,391	464	2,932	0.0119	0	0.0000	0.0119
Ravalli, MT	46,871	6,697	0	0.0000	6,488	0.0112	0.0112

TABLE 9: CALCULATED DEPENDENCY ON FEDERAL FORAGE BY COUNTY, RANK ORDER							Page 6 of 7
County Name, State	Average Inventory, Cattle	Average Inventory, Sheep	BLM Active Preference	Dependency, BLM	USFS Actual Use	Dependency, USFS	Dependency, BLM+USFS
Payette, ID	32,678	4,839	4,465	0.0111	0	0.0000	0.0111
Lewis and Clark, MT	43,831	9,007	5,332	0.0097	486	0.0009	0.0106
Bonner, ID	15,659	1,188	107	0.0006	1,776	0.0093	0.0099
Boundary, ID	7,499	1,018	0	0.0000	895	0.0097	0.0097
Flathead, MT	26,610	1,934	0	0.0000	3,135	0.0097	0.0097
Jefferson, ID	75,568	27,905	8,953	0.0092	92	0.0001	0.0093
Kittitas, WA	59,212	4,818	1,572	0.0022	3,857	0.0053	0.0075
Gooding, ID	94,839	29,084	8,505	0.0070	0	0.0000	0.0070
Minidoka, ID	35,927	30,582	3,262	0.0065	0	0.0000	0.0065
Kootenai, ID	9,639	852	86	0.0007	567	0.0048	0.0055
Benewah, ID	5,036	197	0	0.0000	322	0.0053	0.0053
Ada, ID	81,893	3,886	4,522	0.0046	417	0.0004	0.0050
Klickitat, WA	32,075	2,824	1,537	0.0039	45	0.0001	0.0040
Yakima, WA	180,425	16,781	2,918	0.0013	4,188	0.0019	0.0032
Lewis, ID	7,401	66	273	0.0031	0	0.0000	0.0031

TABLE 9: CALCULATED DEPENDENCY ON FEDERAL FORAGE BY COUNTY, RANK ORDER							Page 7 of 7
County Name, State	Average Inventory, Cattle	Average Inventory, Sheep	BLM Active Preference	Dependency, BLM	USFS Actual Use	Dependency, USFS	Dependency, BLM+USFS
Lincoln, WA	38,102	1,607	1,401	0.0030	0	0.0000	0.0030
Sanders, MT	42,108	1,269	0	0.0000	1,372	0.0027	0.0027
Grant, WA	112,798	5,807	3,237	0.0024	0	0.0000	0.0024
Franklin, WA	48,326	2,215	1,012	0.0017	0	0.0000	0.0017
Benton, WA	29,280	2,788	545	0.0015	0	0.0000	0.0015
Nez Perce, ID	17,983	294	148	0.0007	0	0.0000	0.0007
Lake, MT	62,091	6,094	0	0.0000	183	0.0002	0.0002
Canyon, ID	131,622	9,682	214	0.0001	0	0.0000	0.0001
Walla Walla, WA	46,994	1,440	75	0.0001	0	0.0000	0.0001
Adams, WA	75,118	1,231	0	0.0000	0	0.0000	0.0000
Spokane, WA	33,668	3,033	0	0.0000	0	0.0000	0.0000
Whitman, WA	30,942	1,851	0	0.0000	0	0.0000	0.0000

GLOSSARY

Dependency The portion of total forage requirement derived from a specific source that support the total inventory of livestock assigned to a specific geographic area by national statistical reports.

Potential Natural Communities- The stable biotic community that would become established on an ecological site if all successional stages were completed without human interference under present environmental conditions.

PRIA- **Public Rangeland Improvement Act of 1978.** Defines the current grazing fee formula which uses fair market value, beef prices, and production cost. The 1994 fee under this formula was $1.98/AUM. The 1995 fee under this formula was $1.61.

Properly Functioning Condition (Riparian-wetland)- riparian-wetland areas are functioning properly when adequate vegetation, landform, or large woody debris is present to dissipate stream energy associated with high waterflows, thereby reducing erosion and improving water quality; filter sediment, capture bedload, and aid floodplain development; improve floodwater retention and groundwater recharge; develop root masses that stabilize streambanks against cutting action; develop diverse ponding and channel characteristics to provide the habitat and water depth, duration, and temperature necessary for fish production, waterfowl breeding, and other uses; and support greater biodiversity. The functioning condition of riparian-wetland areas is influenced by geomorphic features, soil, water and vegetation.

Properly Functioning Condition (Uplands)- **Uplands function properly when the existing vegetation and ground cover maintain soil conditions capable of sustaining natural biotic communities. The functioning condition of uplands is influenced by geographic features, soil, water, and vegetation.**

Range Condition A term relating to the present status of a unit of rangeland in terms on specific values or potentials. Specific definitions vary by agency and are periodically revised.

BIBLIOGRAPHY

Fowler, J. M., Rush, D., and Hawkes, .J. *Characteristics of Western Livestock Industry.* **New Mexico Cooperative Extension Service, Las** Cruces, **NM.**

National Research Council. 1994. *Rangeland* **Health:** *New Methods to Classify, Inventory, and Monitor Rangelands.* **National Academy Press, Washington, D.C..**

Polzin, Paul. 1994. *Draft Analysis of Economic Sectors by County.* **Submitted to the Interior Columbia Basin Ecosystem Management Project. Amendment #2 to Cooperative Agreement. #PNW-0100.**

U.S. Department of Agriculture, Economic Research Service. 1993. *Cow/Calf Costs of Production, 1990-91.* **By Shapouri, H., Mathews, K., and Bailey, P.. ERS-NASS, Rockville, MD.**

U.S. Department of Agriculture, Economic Research Service. 1991. *Sheep Production in 11 Western* States. **By Shapouri, H.** ERS-**NASS, Rockville, MD.**

U.S. Department of Commerce, Bureau of the Census. 1994. *Census of Agriculture, 1992.* **Washington, D.C., Government Printing Office.**

U.S. Department of Commerce, Bureau of Economic Analysis. 1994. *Regional Economic Information System, Income by County, 1969-1992.* **Washington,** D.C., **Government Printing Office.**

U.S. Department of Agriculture, Forest Service. 1994a. *Range Writer, Update Report 4/11/94.* **Washington D.C., Office of the Director.**

U.S. Department of Agriculture, Forest Service. 1995a. *Aums by County, Region 4.* **Report prepared by Region 4 Range and Watershed Management Staff.**

U.S. Department of Agriculture, Forest Service. 1995b. *Aums by County, Region 6.* **Report prepared by Region 6 Panning and Environmental Affairs Staff.**

U.S. Department of Agriculture, Forest Service. 1994a. *Aums by County, Region 1.* **Report prepared by Region 1 Range, Air, Watershed, and Ecology Staff.**

U.S. Department of Agriculture, Forest Service. 1989. An *Analysis of the Range Forage Situation in the United States: 1989-2040, General Technical Report RM-180.* **Forest and Range Experiment Station, Fort Collins, CO.**

U.S. Department of Commerce, Bureau of Census. 1994. *Statistical Abstract of the United States, 1993.* **113th Edition. Washington, DC.**

U.S. Department of Interior, Bureau of Land Management. 1995. *Rangeland Reform '94, Final Environmental Impact Statement.* **Government Print Office, Washington D.C..**

U.S. Department of Interior, Bureau of Land Management. 1994a. *Rangeland Reform '94, Draft Environmental Impact Statement.* **Government Printing Office, Washington, D.C...**

U.S. Department of Interior, Bureau of Land Management. 1994b. *Active Preference by County.* **Report prepared by the BLM Division of Resource Services, Denver Service Center, Denver, CO.**

U.S. **Department of Interior, Bureau of Land Management. 1993a.** *Public Land Statistics 1992.* **Volume 177. Government Printing Office, Denver, CO.**

U.S. Department of Interior, Bureau of Land Management. 1993b. *Riparian Area Management: Process for Assessing Proper Functioning Condition.* **Technical Reference 1737-9. USDI, BLM Service Center, Denver, CO.**

U.S. Department of Treasury, Council of Economic Advisors. 1994. *Report to the President 1994.* **Washington** D.C., **Government Printing Office.**

APPENDIX A

Interior Columbia Basin Ecosystem Management Project Assessment Counties (102)

Ada, ID
Adams, ID
Bannock, ID
Bear Lake, ID
Benewah, ID
Bingham, ID
Blaine, ID
Boise, ID
Bonner, ID
Bonneville, ID
Boundary, ID
Butte, ID
Camas, ID
Canyon, ID
Caribou, ID
Cassia, ID
Clark, ID
Clearwater, ID
Custer, ID
Elmore, ID
Franklin, ID
Fremont, ID
Gem, ID
Gooding,' ID
Idaho, ID
Jefferson, ID
Jerome, ID
Kootenai, ID
Latah, ID
Lemhi, ID
Lewis, ID
Lincoln, ID
Madison, ID
Minidoka, ID
Nez Perce, ID
Oneida, ID
Owyhee, ID
Payette, ID
Power, ID
Shoshone, ID .
Teton, ID
Twin Falls, ID
Valley, ID
Washington, ID
Deer Lodge, MT
Flathead, MT
Granite, MT
Lake, MT
Lewis and Clark, MT
Lincoln, MT
Mineral, MT
Missoula, MT
Powell, MT
Ravelli, MT
Sanders, MT
Silver Bow, MT
Elko, NV
Humbolt, NV
Baker, OR .
Crook, OR
Deschutes, OR
Gilliam, OR
Grant, OR
Harney, OR
Hood River, OR
Jefferson, OR
Klamath, OR
Lake, OR
Malheur, OR
Morrow, OR
Sherman, OR
Umatilla, OR
Union, OR
Wallowa, OR
Wasco, OR
Wheeler, OR
Box Elder, UT
Adams, WA
Asotin, WA
Benton, WA
Chelan, WA
Columbia, WA
Douglas, WA
Ferry, WA
Franklin, WA
Garfield, WA
Grant, WA
Kittitas, WA
Klickitat, WA
Lincoln, WA
Okanogan, WA
Pend Oreille, WA
Skamania, WA
Spokane, WA
Stevens, WA
Walla Walla, WA
Whitman, WA
Yakima, WA
Fremont, WY
Lincoln, WY
Sublette, WY
Teton, WY