

An Economic Overview of the Salmon River Basin

by
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and
Edgar L. Michalson

**Water Resources Research Institute
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*Note: This Information Bulletin No. 7 serves as a replacement for the Agricultural Subproject of the Methodology Study Reports.

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INTRODUCTION

This study is part of a continuing effort to develop water and related land use policies for Idaho. An economic overview study attempts to provide specific economic data in a convenient form which may be used for evaluation of management alternatives. It does not attempt to advise on policy matters.

The sections of this study are generally oriented around resource categories. Sections are included on employment, agriculture, timber, minerals and recreation. The methodology involves an inventory and description of activities of economic consequence. Levels of employment and income generated by the activity are examined. An economic base analysis is made and a multiplier estimated. Estimates of indirect subsidies to resource users who do not pay full market value for the resource are made.

A regional study of the Salmon River Basin is difficult to make because the hydrologic region defined as the area drained by the Salmon River and all tributaries is not an economic region. Figure 1 shows the relationship of the hydrologic area to Idaho and its counties and to economic study areas as defined by the Idaho Water Resource Board. The Salmon drainage areas includes land from eight Idaho counties and includes none of them entirely. Most of the land area of Lemhi and Custer Counties is within the basin. Major portions of the resource areas of Idaho and Valley Counties are within the basin while the population centers are located short distances from the basin boundaries. Only small sparsely populated areas of Nez Perce, Lewis and Blaine Counties are within the basin. The map shows that Nez Perce, Lewis and Idaho Counties are part of the Clearwater economic study area, and Adams and Valley

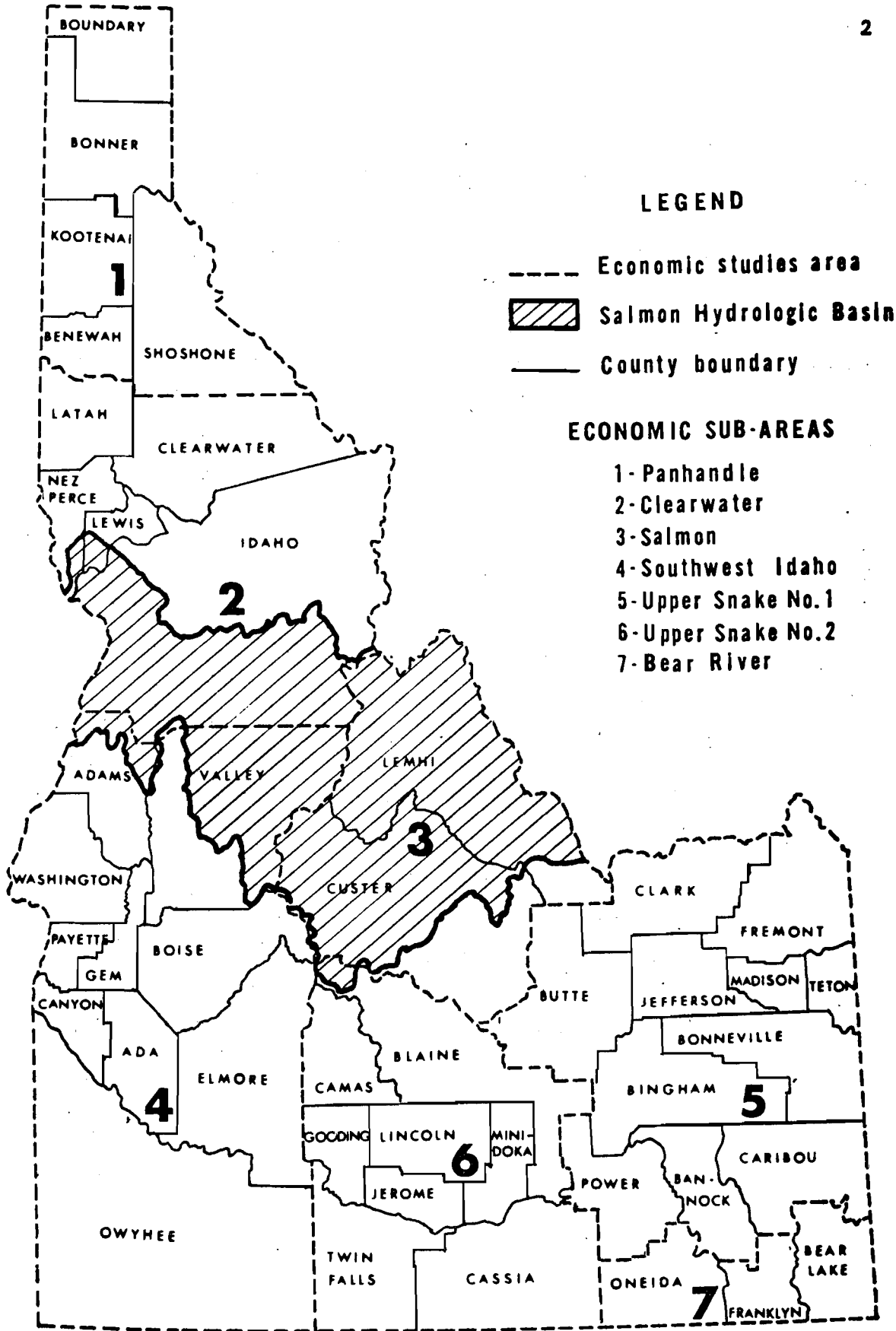


Figure 1. The Salmon River Basin in Relation to Economic Areas in Idaho.

Counties are part of the southwest Idaho economic area; Lemhi and Custer Counties are sufficiently autonomous to constitute a separate economic area.

The principle directions of trade within the basin are apparent in the newspaper distributions shown in Table 1. Lewiston is the main trade center for Idaho, Lewis and Nez Perce Counties. Boise advertising is carried to Adams and Valley Counties and as far north as Riggins in Idaho County. The bi-weekly Salmon Recorder Herald is the main newspaper in Lemhi and Custer Counties but extended trade from this area is generally directed toward south-eastern Idaho.

Table 1

DAILY NEWSPAPER CIRCULATION IN SALMON RIVER COUNTIES - 1971

COUNTIES	LEWISTON TRIBUNE	IDAHO STATESMAN	IDAHO FALLS POST REGISTER	SALT LAKE CITY TRIBUNE
NEZ PERCE	8,954			
LEWIS	1,158			
IDAHO	2,026	132		
ADAMS		477		
VALLEY		863		
LEMHI		*	429	71
CUSTER		*	336	84

*Less than 25 copies

The Salmon River drainage does qualify as a resource region. Although the economic activities of the area are not tied together commercially, they are related in type of resource use and in many cases by competition for a common bundle of resources. This relationship of resource use from the basin provides the basis for the defining area boundaries to be used for information format for this study. Because virtually all social and economic statistics are compiled with the county as the basic unit, a study area following county boundaries is almost mandatory. Of the eight counties with land within the basin all except Blaine have important employment activities utilizing resources from the basin. Nez Perce County is included also because Lewiston serves as an important gateway to the Salmon River country to out-of-staters. It is important to the study to measure the extent of recreational-related retail sales generated by significant outdoor recreation areas in its proximity. Blaine County is not included because high levels of recreational use outside of the basin would be difficult to separate from that occurring within the Salmon River drainage.

A seven county study area is used to represent the basin when data is reported only by counties. The counties included are Adams, Custer, Idaho, Lemhi, Lewis, Nez Perce and Valley. When the term area, study area or Salmon River Counties is used, it refers to these seven counties. When the term basin or drainage is used, it signals that the figure or reference specific the land area designated as the Salmon Hydrologic Basin as described by the Idaho Water Resource Board. It should be noted that this configuration includes some minor watersheds in the Seven Devils area of Hells Canyon that drain into the Snake River. It should be further specified that a phrase such as Salmon River national forests would refer to all national forests

administering land within the hydrologic basin, or Salmon River forest districts refer to just those national forest districts that have land within the basin. Figures for larger areas as those just mentioned are frequently used where exact figures corresponding to the hydrologic basin are not available, and they usually give good indication of the trends and magnitude of activities within the basin.

As indicated in Figure 1, the entire Salmon River Basin is located within the State of Idaho. With a drainage of over 14,000 square miles, it is one of the largest drainage basins that lies entirely within one state. The river is approximately 425 miles long, originating in Idaho's beautiful Sawtooth Valley and emptying into the Snake River about 49 miles south of Lewiston, Idaho. The elevation at its origin is about 8,000 feet and it descends to an elevation of just over 900 feet at its Confluence with the Snake. It is a productive watershed with an average discharge measured at Whitebird, Idaho, of 11,000 cfs and has a range from 1,000 cfs to 100,000 cfs. Average annual runoff is 8,000,000 acre feet.

The elevation extremes are reflected in the temperature and precipitation patterns within the basin. Table 2 presents a survey of the meteorological characteristics of a number of sites within the basin. The basin is influenced by north Pacific weather patterns; consequently, moisture comes mostly in the form of snow during the winter months. In the lower reaches of the canyon snow rarely stays on the ground more than a couple of days. Because of elevation and rainfall patterns, vegetation types vary from bunchgrass to subalpine types. Unique watershed problems are present in the form of the Idaho batholith with coarse, unstable granatic soils. Figure 2 shows the primary and secondary road system within the basin and indicates the north-

Table 2

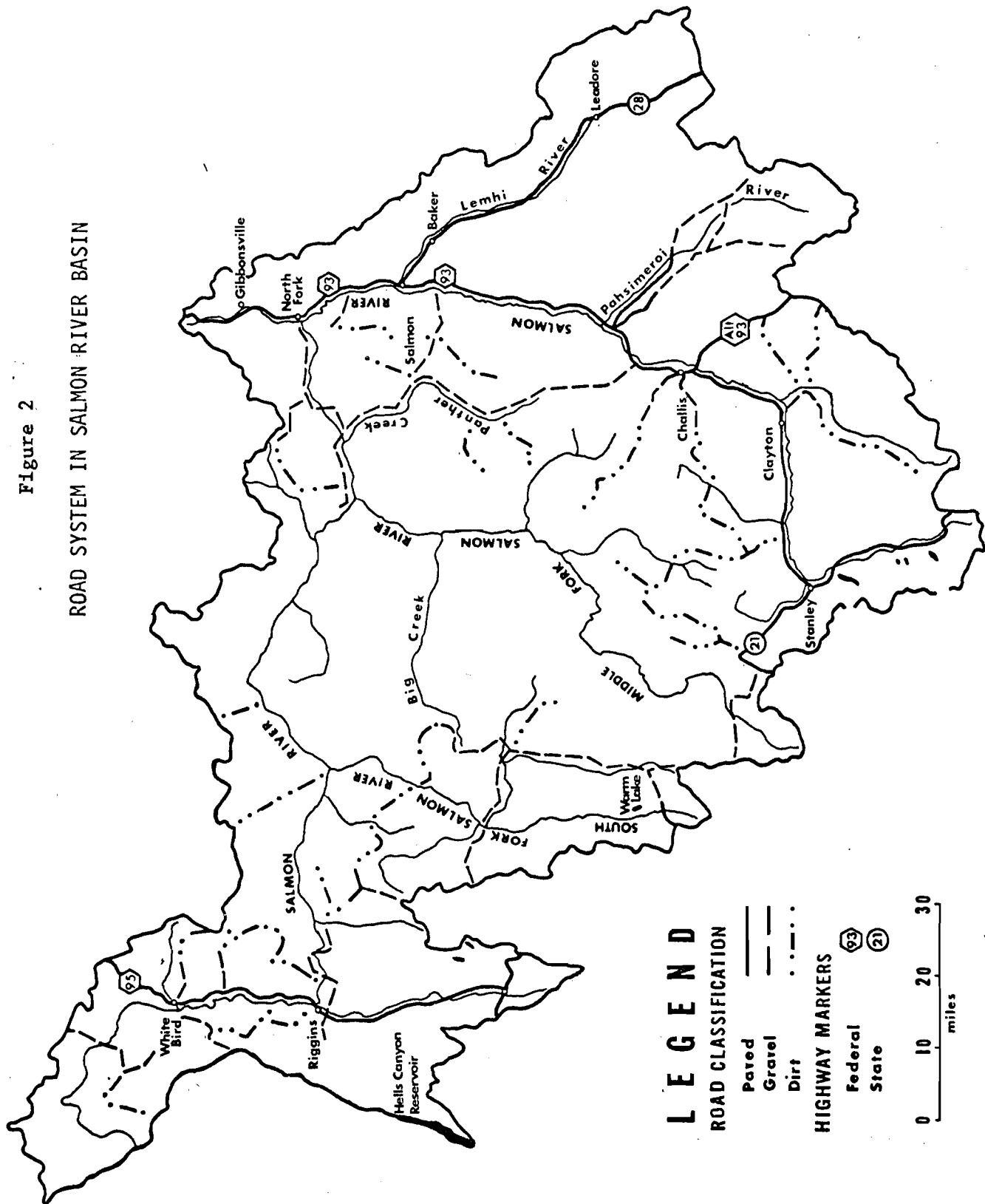
CLIMATIC DATA FROM SELECTED STATIONS
 WITHIN THE SALMON RIVER BASIN

AVERAGES FOR 1931-1961

STATIONS	ELEVATION	ANNUAL PRECIPITATION	SEASONAL SNOWFALL INCH	AVERAGE TEMPERATURE			NO DAYS BETWEEN 32 DEGREES	P<.90 AGAINST GETTING BELOW 28°	
				JANUARY	JULY	ANNUAL MEAN		AFTER	UNTIL
LEWISTON	1,413	13.24	19.3	30.7	73.8	51.6	180	5-3	11-8
GRANGEVILLE	3,355	22.65	55.1	27.7	67.0	46.5	131	5-15	10-29
MCCALL	5,025	26.75	121.2	18.5	62.8	39.9	68	6-17	10-3
CHALLIS	5,171	6.93	20.3	18.4	68.1	44.1	110	6-2	10-7
SALMON	3,949	8.93	24.1	17.9	67.8	44.0	96	6-8	10-17
RIGGINS	1,800						178	5-1	11-24

*Source: David F. Stetingson and Dale O. Everson, Spring and Fall Freezing Temperatures in Idaho. Idaho Agricultural Experiment Station Bulletin 494, University of Idaho, Moscow, Idaho. 1968.
 Idaho Almanac, Territorial Centennial Edition 1863-1963. Idaho Department of Commerce and Development. Boise, Idaho. 1963. p.35.

Figure 2
ROAD SYSTEM IN SALMON RIVER BASIN



south orientation of development. No roads link the eastern and western parts of the basin. The Idaho Primitive Area sits squarely in the middle of the basin. The lack of transportation ties across the basin suggests that an economic development scheme for the entire basin would be largely misdirected. The economic connections of the three areas are much stronger with out-of-basin areas than across the basin. Most of the non-roaded area is in federal ownership. Table 3 presents a summary of federal land ownership in the seven counties.

Table 3

FEDERAL LAND OWNERSHIP IN SALMON RIVER COUNTIES

COUNTIES	SQUARE MILES	PERCENT FEDERAL OWNERSHIP	SQUARE MILES FEDERAL
Nez Perce	847	10.4	84.7
Lewis	478	12.3	58.4
Idaho	8515	83.2	7084.5
Adams	1377	65.4	900.6
Valley	3678	86.5	3181.5
Custer	4933	94.4	4656.8
Lemhi	4585	90.7	4158.6
7 Counties	24,863	80.9	20,125.00

*Source: A.N. Nybrotten. Idaho Statistical Abstract. 1971. p.39. Estimates of % of Land Federally Administered - National Education Assoc.
Federal Lands: Administred by Forest Service, B.L.M., B.I.A., National Park Service.

DEMOGRAPHY

The demographic characteristics of a region are important to determine the number of people that could be affected by specific management plans; but also they describe the past showing the effects of policies and plans upon the area.

The number of residents for the base year 1970 in the Salmon River Basin as a hydrologic unit cannot be accurately determined from census reports because of the divergence of the boundaries between the basin and census subdivisions. Table 4 presents census data for the seven county area and estimates of the basin population. The estimate of basin population was made by subtracting from the population of the seven counties all minor civil divisions outside of the basin boundaries. Where basin boundaries crossed the boundaries of the minor civil divisions, the populations were apportioned on the basis of land area.

The disparity between the population of the seven counties and that of the hydrologic basin emphasizes the rural nature of the basin. The population density of the seven county area is only 0.4 persons per square mile compared with a density for the state of 8.6. The population density of the basin proper would be less than .1 persons per square mile. Salmon is the largest city within the basin with 2,910 inhabitants. Riggins and Challis are the next largest population centers and both only marginally exceed 500 persons. The area appears to be so sparsely populated that a significant increase in population will not occur without some large exogenous stimulus. The population levels are so low that self-generated development is quite unlikely. In the past decade the total population of the area increased only on the strength of a 16.5% increase in the Nez Perce County urban areas which are outside of the basin boundaries.

Table 4

RESIDENCE CHARACTERISTICS OF POPULATION OF THE SALMON RIVER BASIN COUNTIES - 1970

STATE	TOTAL POPULATION	ESTIMATED POPULATION WITHIN BASIN	PERSON PER SQ. MILE	URBAN		RURAL		1960 POPULATION	PERCENT Δ 1960-1970	
				1000 - 2500	2500 - 10000	10000 - 25000	25000 - 100000		TOTAL	URBAN
State	713,003		8.6	385,434	43,312	283,821	667,191	6.8	21.6	-6.6
Counties										
Adams	2,877	1,074	2.1	--	--	2,877	2,978	-3.4	--	-3.4
Custer	2,967	1,745	0.6	--	--	2,967	2,996	-1.0	--	-1.0
Idaho	12,891	3,266	1.5	3,636	--	9,255	13,542	-4.8	-0.2	-6.5
Lemhi	5,566	5,566	1.2	2,910	--	2,656	5,816	-4.3	-1.2	-7.5
Lewis	3,867	311	8.1	--	1,307	2,560	4,423	-17.1	--	-17.1
Nez Perce	30,376	384	36.0	26,068	--	4,308	27,066	12.2	16.5	-8.3
Valley	3,609	31	0.1	--	1,758	1,851	3,663	-1.5	--	-1.5
7 COUNTIES	62,153	12,377	.4	32,614	3,065	26,474	60,394	2.9		

*Source: U.S. Department of Commerce, Bureau of Census.

** Δ : Change

The general social and economic characteristics presented in Table 5 of the basin create a dismal economic picture. They describe an area where unemployment is high and largely seasonal. The median income is generally lower than the state average (which is low enough by itself); a high percentage of the families live at poverty levels and houses most often lack adequate plumbing. The 1970 Census shows that the education levels have increased since 1960 but so has unemployment.

Some moderating factors should be noted, however. The time of year the census is taken gives a biased picture of an area such as the Salmon River Basin because it is taken during April before the summer seasonal activity has begun. Also, houses built primarily for use as summer homes without all plumbing might be biasing the housing figure. Furthermore, some persons earning high incomes in the area might not have returned to the area from their winter residences making the unemployment figures look high and the income figures low. Many of the higher income people who work in this area live outside of the basin.

A summer visit to many of the basin towns may leave the visitor with the impression that the area's economy is booming. The census figures show that a three month boom in recreation travel does not provide the community needs in employment and income for 12 months of the year.

Population Projections

Making population projections for a sparsely populated area of diverse employment opportunities and large employment potential is a difficult and risky undertaking. Table 6 shows the population by counties for the area from 1940 to 1970. The total seven counties has increased in population nearly 20% during that period. But if the count for Nez Perce County is subtracted, the population in the rest of the counties declines nearly 9%

Table 5

SUMMARY OF SOCIO- AND ECONOMIC CHARACTERISTICS - 1960 & 1970

COUNTY	PERCENT UNEMPLOYED		% WORKED 50-52 WEEKS		% GOVERNMENT WORKERS		FAMILIES- MED- IAN INCOME (DOLLARS)		FAMILIES % UNDER POVERTY LEVEL	
	1960	1970	1960	1970	1960	1970	1960	1970	1960	1970
The State	5.7	5.2	52.9	54.0	NA	17.2	5259	8381	20.8	10.9
Counties										
Adams	14.4	18.0	41.9	45.9	NA	27.0	4976	8178	23.4	10.7
Custer	2.1	9.3	54.8	49.5	NA	25.8	4615	7063	32.4	16.3
Idaho	10.7	10.2	49.6	55.4	NA	20.6	4933	7952	22.6	13.4
Lemhi	5.7	5.3	47.6	56.4	NA	19.7	3909	6902	35.6	17.4
Lewis	6.8	10.6	45.6	47.8	NA	16.6	5997	9520	14.1	8.8
Nez Perce	6.8	5.0	52.6	56.0	NA	15.7	5673	8757	18.0	10.2
Valley	10.1	16.1	49.0	50.7	NA	24.4	5422	8633	15.1	7.9

	Persons 25 & Over Median School Year Completed		Families - % With Own Children Under 6 Years		Housing -- % Lacking Some Or All Plumbing Faci- ties	
	1960	1970	1960	1970	1960	1970
The State	11.8	12.3	34.7	27.1	NA	NA
Counties						
Adams	10.5	12.0	25.9	20.8	69.1	10.0
Custer	11.4	12.1	30.5	22.5	10.1	11.7
Idaho	10.5	12.1	34.3	29.5	9.7	9.5
Lemhi	11.0	12.1	32.3	25.5	6.6	14.6
Lewis	12.1	12.2	33.7	21.4	6.4	4.4
Nez Perce	11.7	12.3	32.0	26.8	4.3	5.2
Valley	12.0	12.2	32.9	21.3	13.2	4.0

* Source: Bureau of the Census, U.S. Department of Commerce

during that time. This at least indicates an absence of any upward trend in the basin population. It should be indicated, however, that during 1940 employment in the basin was inflated by war-related mining.

Population in a small area, especially a rural area that has little else to attract resident population, depends very closely on basic employment. The population of the basin is very closely connected to the economic activity in the agriculture, mining and wood products industries. Employment in agriculture has continued to decline. There has been a great deal of prospecting activity in the basin and rumors are rampant. Mining could easily change the employment and population figures very rapidly. But the occurrence or non-occurrence of any such result is still speculation.

Changes of employment in lumber or agricultural sectors could very easily result from pending federal land management decisions. The present prognosis suggests that resource related employment will be reduced. This will tend to reduce population. About the only things tending to increase population in the basin proper is increased recreational use and some degree of increase in retirement residences in the Salmon area. Recreational residence use generally will exert little upward push on permanent population.

The most reasonable projection one could make concerning the basin population is that if no major changes in basic employment occur, the population should stabilize or show small increases. Contractions from employment decreases in mining and agriculture of the fifties and sixties are largely completed. Increases in services as a result of real wage increases. Larger recreational spending (especially powerful if winter attractions are developed), and increasing governmental activity in the area can be expected to increase basin population slowly. Major mining activities or other large employment would cause more rapid increases.

Table 6

POPULATION OF SALMON RIVER COUNTIES - 1940-1970

COUNTIES	<u>YEARS</u>			
	1940	1950	1960	1970
LEWIS	4,666	4,208	4,423	3,867
NEZ PERCE	18,873	22,658	27,066	30,376
IDAHO	12,691	11,423	13,542	12,891
ADAMS	3,407	3,347	2,978	2,877
VALLEY	4,035	4,270	3,663	3,609
LEMHI	6,521	6,278	5,816	5,566
TOTAL	53,742	55,502	60,484	62,153
Less Nez Perce	34,863	32,844	33,418	31,777

*Source: Idaho 1971. Statistical Abstract. Bureau of Business & Economic Research. University of Idaho, Moscow, Idaho (1971).

EMPLOYMENT

A detailed analysis of employment is a tool that gives great insight into the economic activities in the basin. The analysis here points out which sectors of the economy are making the greatest contributions to income of residents of the area, and reflects how the resources of the basin are being utilized to affect the economies of other areas. A projection of the effect of changes in resource related employment on total employment within the basin is made.

Table 7 presents a description of the industrial mix in the seven county study area by breaking the employment down into sectors. Total employment is divided into three general categories of agricultural employment, non-agricultural self-employed and domestics, and non-agricultural wage and salary workers. Non-agricultural wage and salary workers is then divided into manufacturing and non-manufacturing, with the numbers of workers given for the various sectors under each of these categories. This description is presented for three sub-areas of the basin: Sub-area 1 - Nez Perce, Lewis and Idaho Counties; Sub-area 2 - Adams and Valley Counties; and Sub-area 3 - Custer and Lemhi Counties. In addition to the seven county study area, the state employment figures are also included in the comparison to provide perspective. The data source for this analysis is the Idaho Department of Employment. Other sources of information that are frequently used in this type of analysis were rejected because they were either too narrow in the time period or employment categories covered.

Table 7

EMPLOYMENT BY SECTORS FOR SALMON RIVER COUNTIES - 1970

	Subarea 1		Subarea 2		Subarea 3		7 Counties		Idaho	
	1970	% of Total Employment	1970	% of Total Employment	1970	% of Total Employment	1970	% of Total Employment	1970	% of Total Employment
Civilian Labour Force	20,659		3,455		3,594		27,708			
Unemployment Annual Rate	1,268	6.14	361	10.4	178		1,807			
TOTAL EMPLOYMENT	19,391		3,094		3,416		25,901			
Agricultural Employment	2,135	1.10	449	1.45	1,160	33.9	3,758	14.5		16.7
Non-Ag Self-Employed & Domestic	2,839	14.60	428	13.80	388	11.3	3,655	14.1		12.3
Non-Ag Wage & Salary Workers	14,413	74.40	2,217	71.30	1,854	58.8	18,484	71.4		71.0
TOTAL MANUFACTURING	4,476	23.1	613	19.8	231	6.8	5,320	20.6		
Food Processing	273	1.4	---	---	36	1.1	309	1.2		
Lumber	2,435	12.6	604	19.2	182	5.3	3,221	12.4		4.6
Other	634	3.3	9	0.3	8	0.2	651	2.5		4.3
TOTAL NON-MANUFACTURING	9,942	51.3	1,604	51.8	1,623	47.5	13,169	50.8		
Mining	13	0.1	12	0.4	83	2.4	108	0.4		1.3
Construction	387	2.0	109	3.5	34	1.0	530	2.0		3.7
Transp., Comm. & Utilities	953	5.0	104	3.4	79	2.3	1,132	4.4		5.0
Trade, Wholesale & Retail	3,624	18.7	265	8.6	394	11.5	4,283	16.1		16.9
Finance, Ins. & Real Estate	464	2.4	45	1.5	44	1.3	553	2.1		2.7
Services & Misc.	1,803	9.3	283	9.1	284	8.3	2,371	9.2		10.9
Government	2,693	13.9	786	25.4	704	20.6	4,183	16.1		16.4

*Source: Idaho Department of Employment: Basic Economic Data for Idaho.

Table 7 reveals the percentage of total employed workers in agricultural employment was less in Sub-areas 1 and 2 than for the state, while in Sub-area 3 consisting of Lemhi and Custer Counties, agricultural employment is 1/3 of all employment and substantially above the state average. The relative magnitudes of employment in different sectors through time is reflected for the state, the seven counties and for each of the Sub-areas in Figures 3 through 7. Because of the small number employed in some sectors of some sub-areas, employment categories have been grouped to make the description more graphic. Grouping is primarily around resource use types. Mining, construction, transportation and utilities are lumped together. Trade and services is a catch-all category including wholesale and retail trade, services and miscellaneous. And, government includes federal administrative units, state and local governments, and state and local educational units.

The vertical axis of these graphs are in cyclical log scale to allow greater separation of smaller employment sectors. The breaks in the line indicate that the time scale is not continuous.

Area Analysis of Employment

Sub-area One: Nez Perce, Lewis and Idaho Counties

The dissimilarities between the sub-areas of the area of interest is clearly revealed by a comparison of the employment in various categories in each sub-area as shown in Figures 3, 4 and 5. Exact figures for each county are given in the appendix. Nez Perce County contains approximately 3/4 of the population of the entire seven counties, and Lewiston is the only town in the study area with more than 3,000 people. The different industrial mix in Sub-area 1 is somewhat to be expected. Trade and services is the largest employment sector in Sub-area 1 and is distinctly larger, percentage wise,

than the trade and services sector in any other sub-area. Nez Perce County's growth in retail trade from 1958 to 1967 was 49% which was 9% higher than the retail sales in the state at the same time. It was by far the most rapidly expanding sector in the sub-area. All other wage and salary sectors declined during this period as did employment in lumber and agriculture.

This distinctive change in the non-basic to basic ratio, affected by the growth of the trade and services industries may be attributed to three distinct but simultaneous phenomena. The first factor is that the population of Nez Perce County is reaching a "critical mass" at which service employment is virtually self-generating. Lewiston has reached a size that will support an increasing number of specialty retail outlets that would not find sufficient demand for economical operation in a slightly smaller city. The second factor is the effect of increased real incomes. As real incomes go up, the same number of workers in basic employment have more income with which to support trade and services. The third factor is that Lewiston appears to be realizing increased benefits from recreation and travel expenditures.

Sub-area Two: Adams and Valley Counties

Figure 4 suggests that the economy of Adams and Valley Counties has been fairly stable through the last decade after a decline in the late fifties. Downward pressures through this period have been exerted by declines in the lumber industry and in agriculture. These declines have been offset by a 50% increase in government employment and modest gains in trades and services employment. Government has become the largest single factor in maintaining stable total employment. Government employment has nearly doubled in this sub-area in the 13 years shown. It now constitutes approximately 25% of the labor force in Adams and Valley Counties. Retail trade in the area dropped

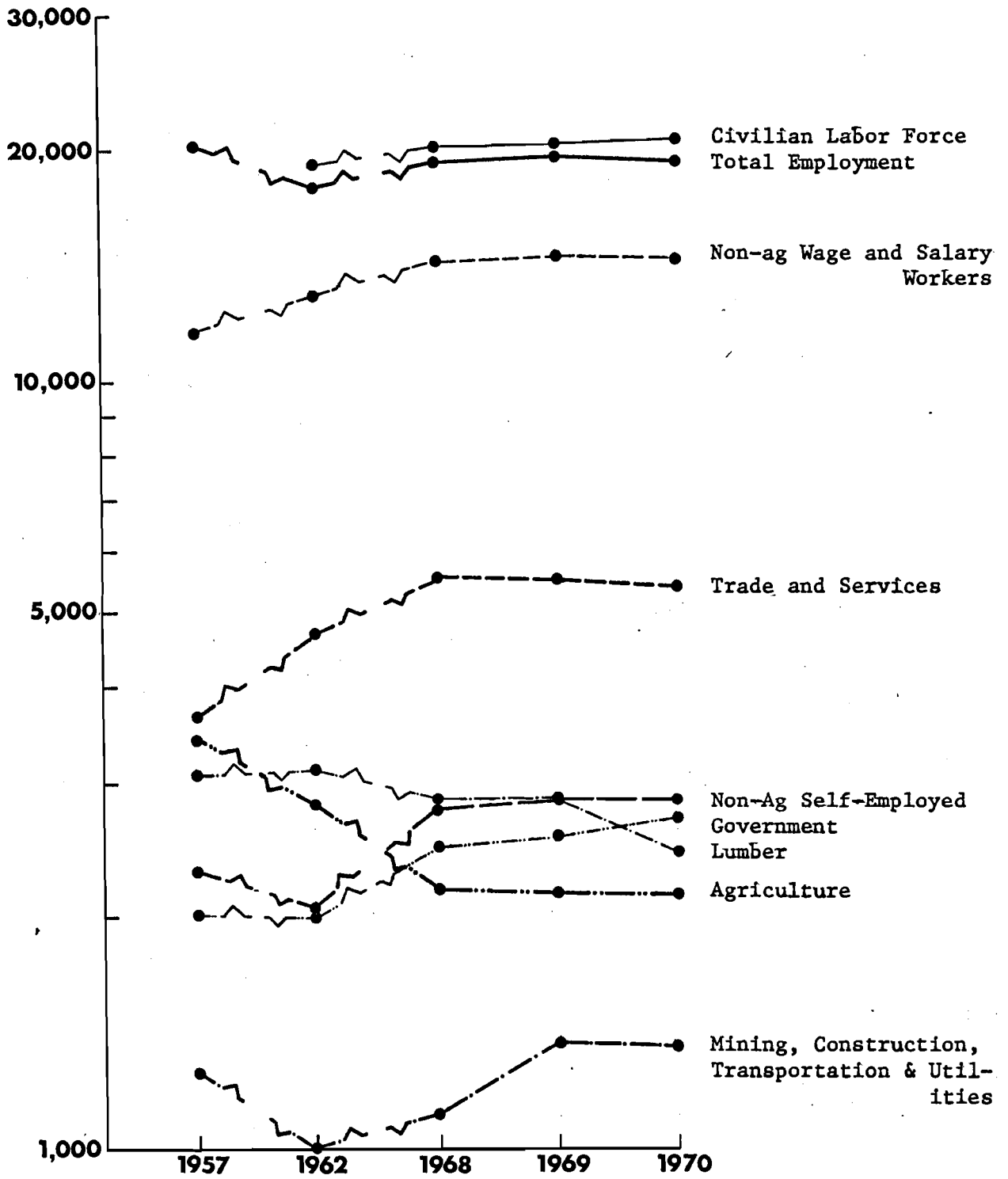


Figure 3. Employment in Selected Industries, 1957-1970.
Sub-area 1 - Idaho, Lewis and Nez Perce Counties

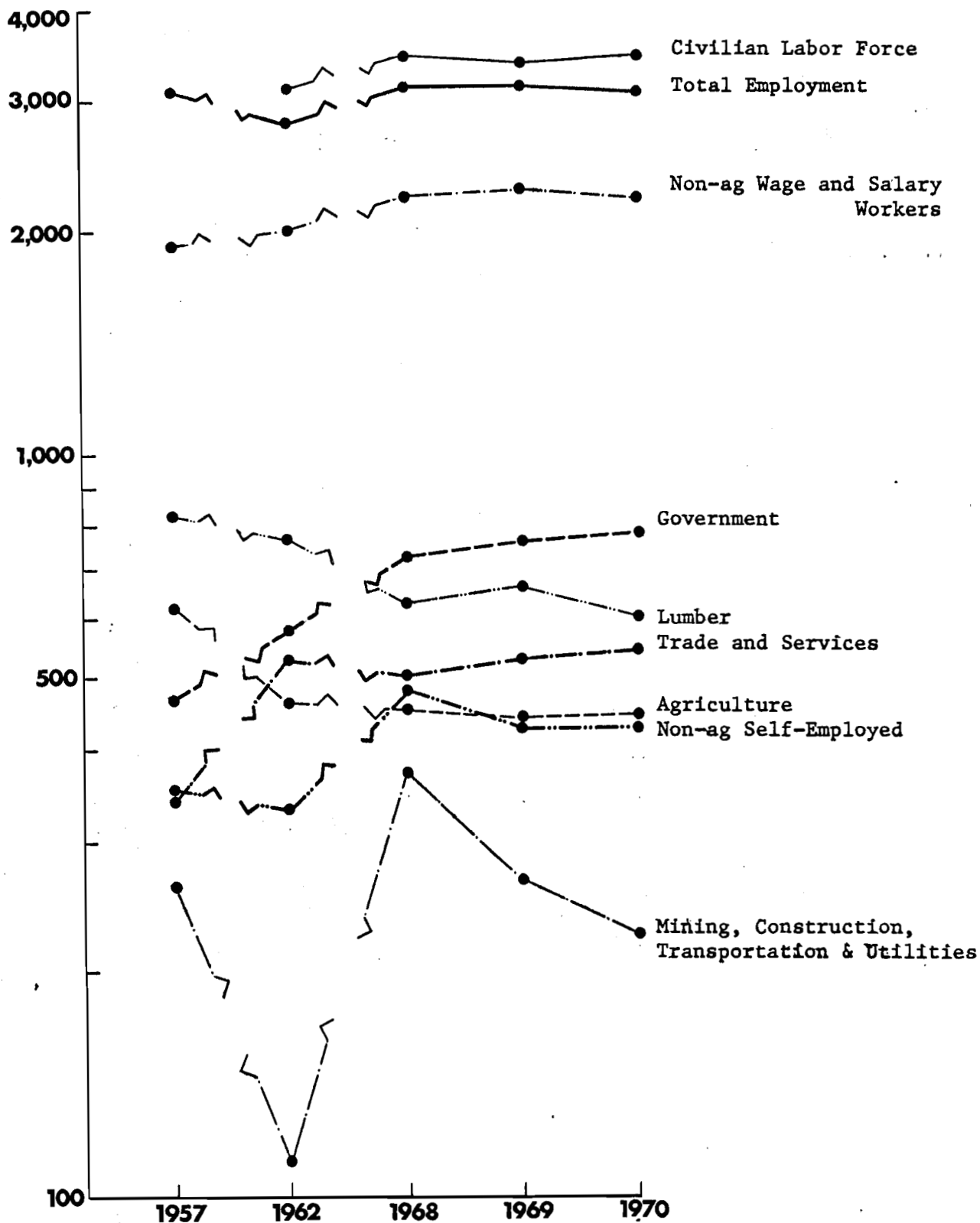


Figure 4. Employment Trends in Selected Industries, 1957-1970.
Sub-area 2: Adams and Valley Counties

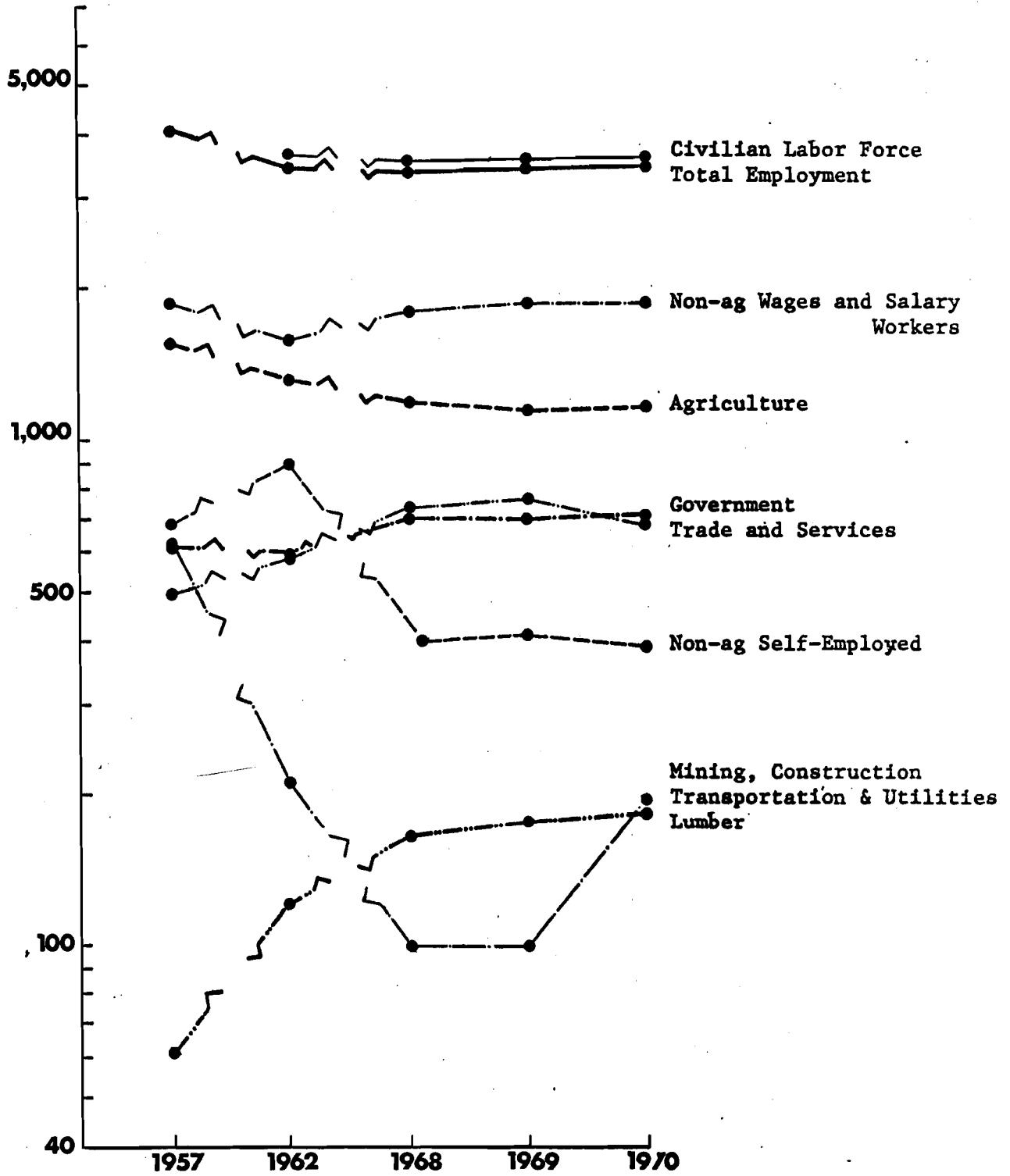


Figure 5. Employment Trends in Selected Industries, 1957-1970
Sub-area 3: Custer and Lemhi Counties

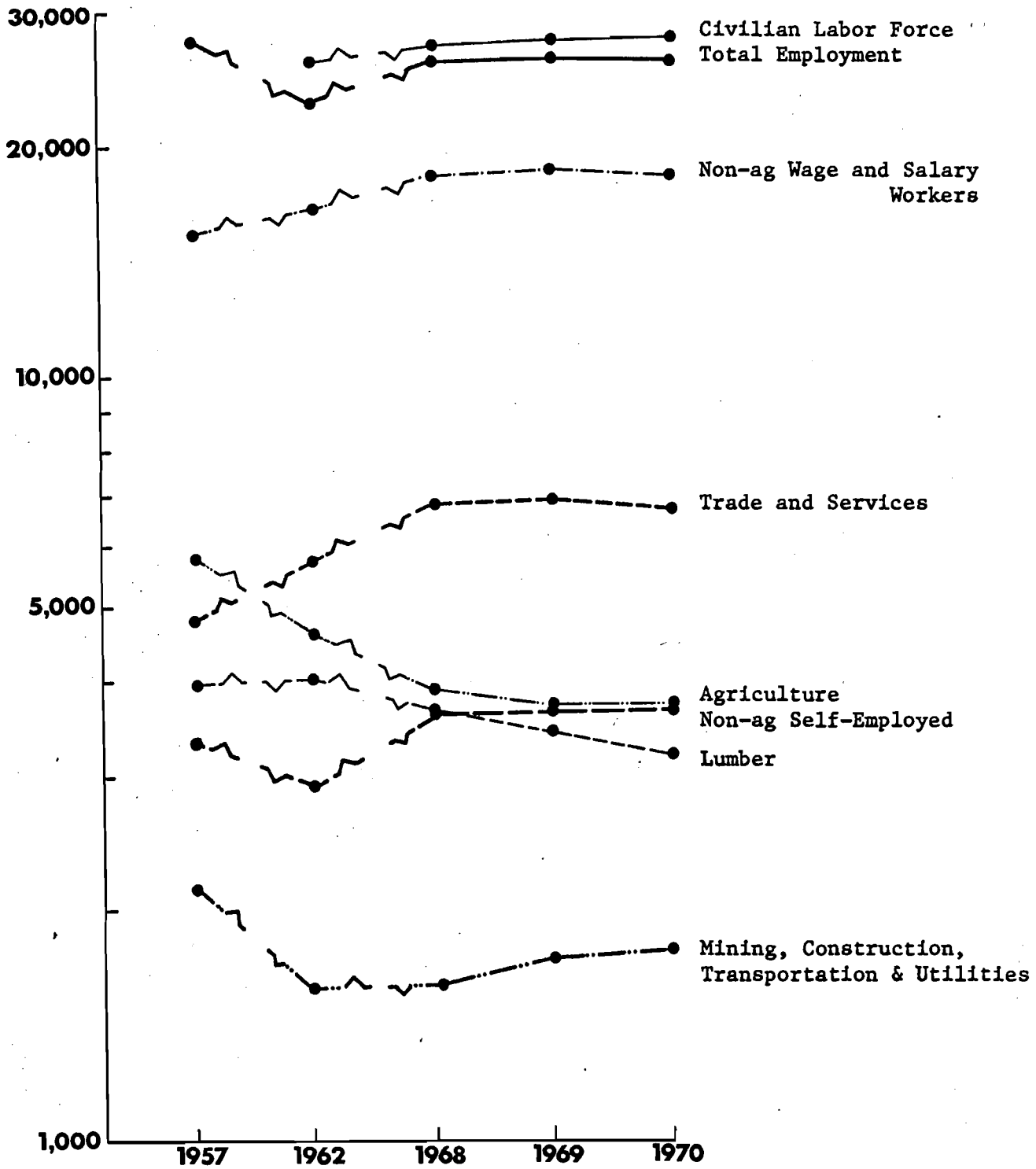


Figure 6. Employment Trends in Selected Industries, 1957-1970
Salmon River Counties

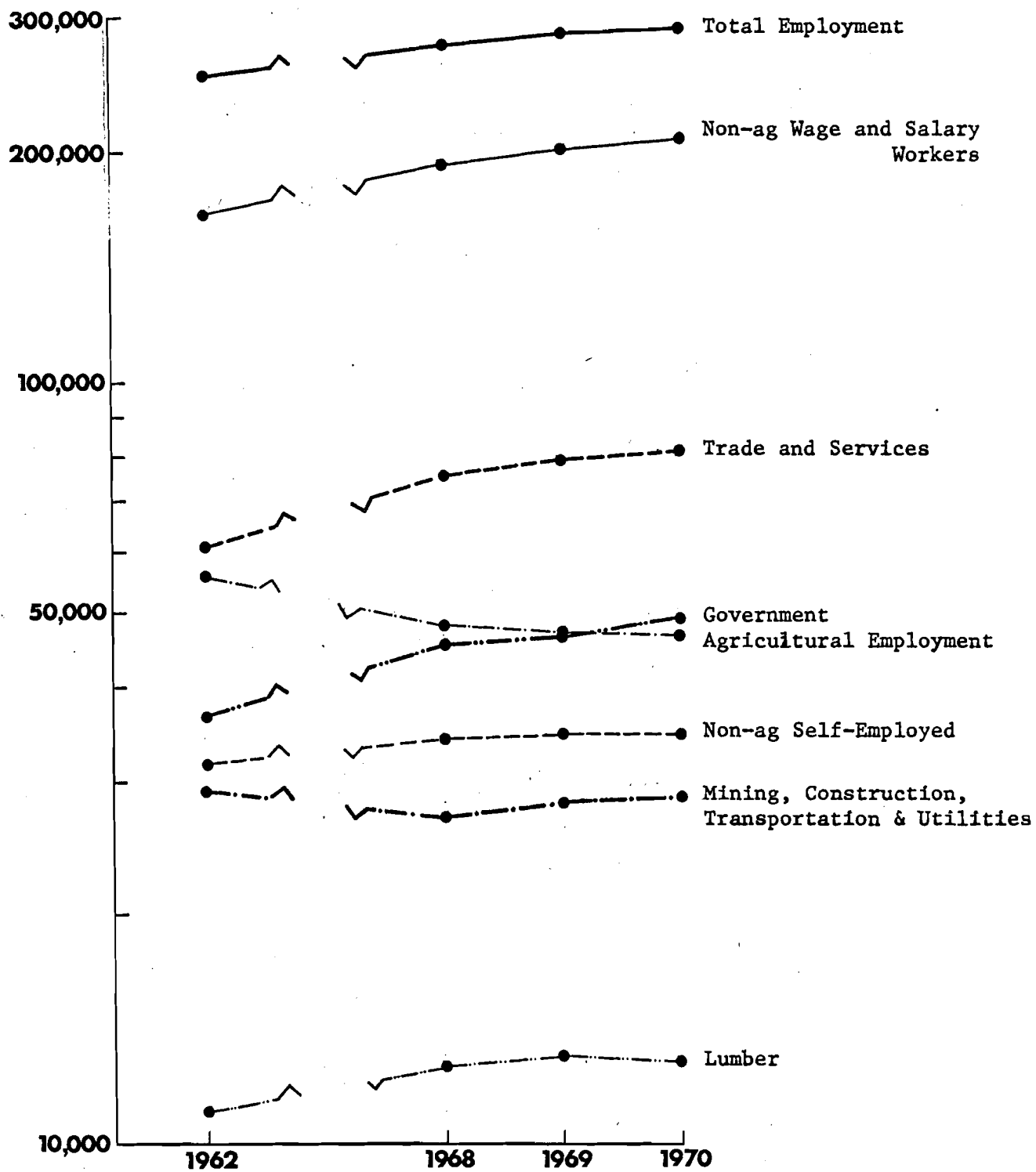


Figure 7. Employment Trends in Selected Industries, 1962-1970. State of Idaho

severely through the measured period ending in 1967. In spite of a known increase in volume of recreation in the area, all the retail trade indicators, which would be expected to catch the benefit of recreational expenditures, were lower in 1967 than in 1958. This is at least partially attributable to a decline in the resident population during such a period. A summary of retail trade figures for each of the seven counties is presented in the Appendix.

Sub-Area Three: Lemhi and Custer Counties

Total employment in Sub-area 3 was 17% lower than in 1957 as shown in Figure 5. The major drop occurred between 1957 and 1962 and was caused by employment reductions in mining and agriculture. Increases in employment in lumber, trade and services and government have offset continuing declines in agriculture and self-employed categories to stabilize total employment at about 3,400 workers. The increase in trade and services employment has largely consisted of more services and miscellaneous workers rather than employees in retail or wholesale trade.

It appears that slack in the local economy created by the large employment decline of the late fifties has not largely been taken up. Construction which was virtually at a standstill in the mid-sixties began to pick up in the last of the decade - nearly four times as many construction workers in 1970 than in 1968. This trend appears to be continuing in the seventies with increased residential and business construction.

Effects of Employment Trends

This analysis presents evidence of the often expounded hypothesis that it takes a great deal of outdoor recreation use and travel-through type tourists to significantly alter the employment and income position of the small re-

source oriented community. If the trade and services sector captures the main effect of tourism on employment, the present tourism has not greatly increased secondary employment in sub-area 3 which contains the most notable recreational areas in the basin and significant amounts of use. Retail trade is largely static during a period of greatly increasing recreation. The trades and services sector is only 19% of the total employment in sub-area 3 while in sub-area 1 it is 27%. It appears that the impact of tourism may be more significant on the larger population centers of the state through which the travelers pass and where more expenditures are made for food and lodging. Thus recreational values of the basin are of more economic importance to the larger population centers of the state than they are to the in-basin residents. The economic burden on the person who loses employment in small rural areas such as exist in the basin is usually doubly harsh. There are not usually alternative jobs in the area so he must move. When the economy slackens in such an area, there is no demand for homes and the displaced worker may take a serious loss on his home if he has to sell. The possibility of the occurrence of this sequence of this sequence tends to retard investment in housing and resultant economic development in many of the towns in the basin.

The demand for recreational residences throughout the basin has ameliorated this fear to some extent. Now the worker or home builder knows that a market will exist for his residence if he is forced to move because of second home demands - that is if the dwelling is in a low to medium price range. But the recreational pressure might in some ways retard economic development in the area. The pressure drives up the cost of real estate and makes it more difficult for the area to attract year round residence of basic employment because of the higher cost of living. Unless such an area can capture year

round employment, it becomes subject to a summer boom-winter bust cycle that retards economic growth of a more permanent nature.

Dynamics of Employment

The analysis presented to this point has been descriptive. Understanding the interactions of economic activities that shape the economic environment is of greater value. The industrial mix analysis presented above sets the stage for investigation into employment interactions through the economic base model. This model is based upon the premise of regional economics that the basis of existence and growth of a region is the goods and services produced locally but sold beyond the boundaries of the area. The hypothesis is that regions grow and support their populations on the income derived from the export of goods and services or other activities bringing in income to the region. The economic base model attempts to differentiate between activities in an area are basic or export producing and activities which are secondary existing only to provide services to the industries and persons engaged in basic employment. The object of the analysis is to obtain a ratio between basic and secondary industries. This ratio gives the amount that total income of the basin would theoretically be increased by increasing income to basic industries by \$1.00. This ratio is called the economic base multiplier.

Since the multiplier effect occurs through income, income data would be preferred over employment figures. However, income data for each industry is not available so employment figures are used here. This substitution is based on the assumption that employment is proportional to income.

Identifying the percentages of output of each economic sector that is exported or paid for with money originating out of the basin is the most

difficult part of obtaining the multiplier. Table 8 shows the percentages of employment of each sector that is estimated to be basic or export producing for the seven county study area. The estimates of the percentage of each industry production that goes for export here are based on observation of local conditions and by comparison with ratios developed in an input-output study of Grant County, Oregon (Haroldsen and Youmans, 1972). This is a county with an economic structure similar to that existing in the Salmon River Basin areas. As indicated by the percentages shown, virtually all of the agricultural production and manufacturing (lumber) is exported. The percentages in other categories represent estimates of the amount of purchases in the goods and services of these groups by out-of-basin residents such as tourists and commercial travelers. The government sector covers a wide range of income imports into the basin. School, road, federal government employment and transfer payments such as social security are all methods of income import into the basin. The amount by which total government expenditures in the area exceeds the payment of basin residents to governments is an import of funds. The 25% figure used in Table 8 estimates this net import from the government sector.

The employment figures used are from the Idaho Department of Employment. Examination of state employment data indicates that variation between total employment in the slow months of late winter and the high employment levels in July and August may be as much as 30% to 50%. The state figures used represent annual average monthly employment which is still 20% to 30% below high month figures. The category, "Non-agricultural Self-employed and Domestic", was allocated among the various sectors on the basis of proportions in employment categories in the 1970 Census likely to represent self-employed and domestic workers.

Table 8

AREA BASIC EMPLOYMENT AND BASIC EMPLOYMENT MULTIPLIER¹ - 1970

SECTOR	EMPLOYMENT	% BASIC	BASIC EMPLOYMENT
Agriculture	3,758	98	3,683
Manufacturing	5,320	95	5,083
Mining	108	100	108
Construction	859	50	430
Transportation Communication & Utilities	1,388	20	278
Wholesale and Retail Trade	5,818	25	1,454
Finance, Real Estate & Insurance	809	10	81
Service & Miscellaneous	2,993	25	748
Government	4,183	25	1,050
TOTAL EMPLOYMENT	27,708		
BASIC EMPLOYMENT			12,915
BASIC RATIO			2.15/1
ESTIMATE BASIC EMPLOYMENT MULTIPLIER			2.15

¹Employment for 1970 from Idaho Department of Employment, preliminary reports.

Computations presented in Table 8 show a basic employment multiplier of 2.15. This indicates that on the average on the seven county study area for every job created (or lost) in a basic industry, 1.15 additional jobs will be created (or lost) in the services sectors. The total increase (or decrease) in employment is thus 2.15 workers.

Care needs to be taken in the interpretation of this statistic. It would be incorrect, for example, to say that for every dollar brought into the area \$2.15 of local income is generated. Estimates of the effect on employment can be made however by determining the amount of basic income required to create one additional full-time job.

Several interacting factors may be explicative of a higher multiplier than is typically obtained in studies of areas of this type. First, the Lewiston area in Nez Perce County influences the multiplier upward. With its greater amount of wholesale, retail and service facilities, part of the increased employment resulting from additional exports anywhere in the northern three counties would be in the Lewiston area. Removal of Nez Perce and Lewis Counties would lower the multiplier a little. Second, the great seasonal variation in employment is significant. Many of the workers in basic industries during peak employment periods are not year-around basin residents. However, most of the service activity requires a more fixed investment and basin residence for a longer term, causing under-employment in service industries during the winter. This would make the average number of secondary employees higher inflating the ratio.

Observation indicates that a growing number of people live in the basin because of aesthetic reasons and are willing to accept a lower standard of living to do so. The number of retired persons living in the basin also appears to be growing and is likely to continue to increase particularly in Lemhi County.

Input-output analysis is the most sophisticated method of analyzing the interactions of employment and income changes in an area. It is also the most expensive and difficult. Precise analysis requires comprehensive investigation of all the expenditure and sales patterns of all businesses within the area of investigation. Two input-output studies for Idaho have been made, both using the surrogate methods to obtain the necessary exchange coefficients. Peterson (1968) of the University of Idaho based his study on provisional estimates of gross flows between sectors. Rafsnider and Kunin (1971) prepared a model of Idaho's economy based on a breakdown of a national input-output model of the United States. The multipliers derived in each study from sectors relevant to the Salmon River Basin are presented in Table 9. It must be remembered that these figures measure the accumulative effect of changes in final demand on any of these sectors within the entire state. It is likely that they overstate the multiplier for a small relatively undeveloped area as the Salmon River Basin. For exact measurements of the multiplier effects on the basin alone, separate studies of that area would have to be produced. Because the basin population is so small and most management decisions will affect the state economy in far greater absolute magnitudes, the effect on the state should be given prime consideration.

Table 9

STATE INCOME MULTIPLIERS OBTAINED IN ¹TWO
PROVISIONAL INPUT-OUTPUT STUDIES

SECTOR/STUDY	KUNIN	PETERSON
Agriculture	1.877	1.434
Livestock Products	2.872	*2
Food Feed Grains	1.353	*2
Mining	1.380	1.302
Lumber, Wood Products	1.616	1.397
Trade	1.106	1.278
Hotels	1.166	*2
Federal Government Expenditures	1.141	*2

¹Rafsnider and Kunin (1971) and Peterson (1968).

*Average of several related classifications weighed by Total Output.

**No comparable sector.

AGRICULTURE

Mining activities first brought large numbers of settlers to the Salmon River Basin. As the mining booms came to an end, livestock men came in their place to harvest the perpetual flow of forage produced in the mountains and meadows of the basin. Agriculture has replaced mining as the leading employer and leading producer in the basin. The employment data in Table 7 suggests that nearly 1/4 of total employment of the basin itself is in agriculture. The effect of agricultural employment and income on the rest of the economy of the area will be discussed later.

Table 10 presents a general summary of agriculture in the seven county study area. In 1969 over 42 million dollars worth of farm products were harvested from the 1.9 million acres of privately owned farm land. The crop production of the seven counties was slightly less than the total for livestock production. Less than 10% of the total farm land in these counties is irrigated. But the non-irrigated dryland areas of Lewis, Nez Perce and Idaho Counties account for almost 90% of the crop production in the counties. The 1969 Census of Agriculture cites the reported value of land and buildings in the seven counties to be over \$338 million. With an investment in machinery and equipment of \$37 million, this gives a total capital investment of \$375 million on agriculture in the seven counties.

The graphs of Figure 8 describe the agriculture of the counties. Figure 8a shows that the percentage of land area in farms in the counties varies from 95% for Nez Perce County to only 4% in Valley County. Agricultural production does occur on a large portion of those lands not classified as farms through its use as grazing lands. These lands are predominately held in federal ownership.

Table 10

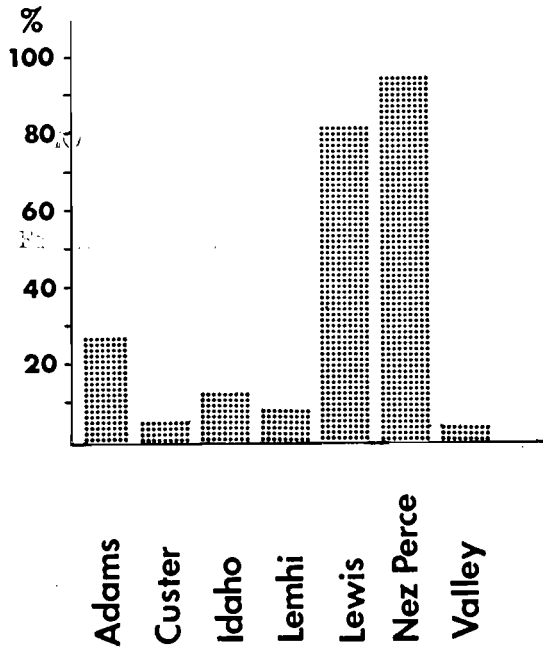
GENERAL AGRICULTURAL DATA - 1969

COUNTIES	ADAMS	CUSTER	IDAHO	LEMHI	LEWIS	NEZ PERCE	VALLEY	TOTAL 7 COUNTIES	ESTIMATED BASIN TOTALS	IDAHO STATE
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Number of farms	182	205	735	289	275	492	114	2,292		25,475
Acres of farms	238,292	149,947	779,444	225,940	245,923	516,931	91,978	1,948,455		14,415,521
Total cropland	164	181	670	271	260	442	94	2,082	675 ¹	23,734
Farms	38,805	58,342	245,455	98,672	159,431	213,725	29,665	844,095	208,500	6,172,473
Acres	127	174	52	254	3	62	84	756		17,840
Irrigated land	21,112	58,436	3,109	82,659	161	1,431	23,976	190,884	143,000	2,760,852
Farms	116	142	497	218	122	257	48	1,400		14,162
Acres	21,583	30,664	46,899	44,718	7,257	21,499	8,525	181,145		1,547,313
Milk Cows	49	56	192	111	28	69	23	528		6,591
Number	254	212	1,023	934	112	721	56	3,312		125,322
Farms	18	52	59	55	4	19	5	212		1,823
Number	1,071	13,506	18,893	14,416	133	6,237	137	54,393		841,376
Market value of all agricultural products sold:	2,927,605	4,153,705	12,566,593	5,604,315	7,380,033	11,324,545	2,266,698	46,223,494	13,560,000 ²	649,570,844
Dollars										
Crops including nursery products and hay:	70	95	506	102	247	356	67	1,443		18,319
Farms	139,373	1,075,433	5,815,248	624,995	6,477,005	8,253,645	354,873	22,740,572	2,160,000 ²	295,922,016
Dollars										
Forest Products:	4	--	52	2	14	35	13	120		544
Dollars	5,688	--	182,681	485	34,237	76,287	28,017	327,395	50,000 ²	1,577,020
Livestock, poultry and their products:	158	183	640	270	152	357	71	1,831		19,486
Dollars	2,782,544	3,078,272	6,568,644	4,978,835	868,791	2,994,613	1,883,808	23,155,527	11,370,000 ²	352,071,808

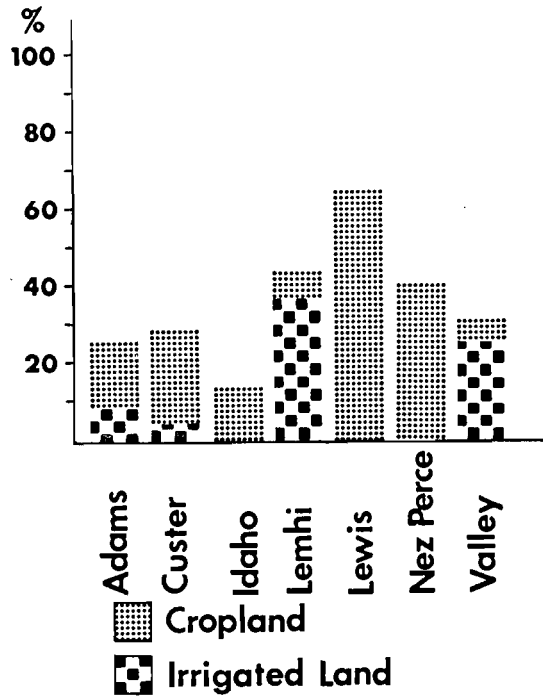
*Source: U.S. Bureau of Census, Census of Agriculture, 1969

¹ Soil Conservation Service Watershed Land Survey.² Estimated through the use of the factors presented in Table 12.

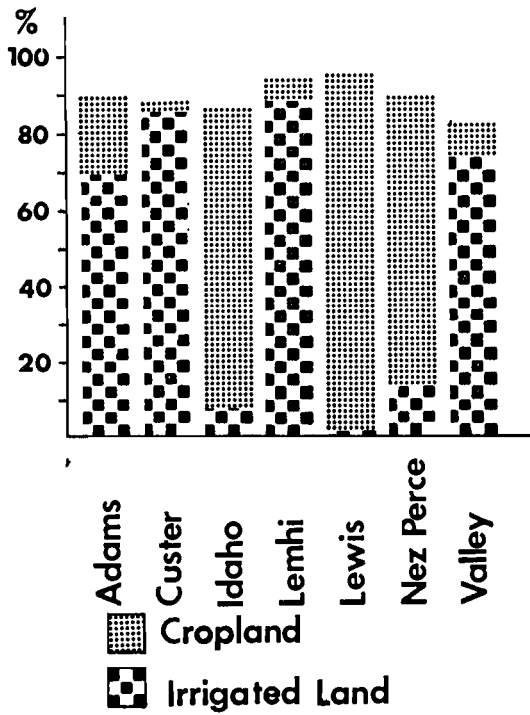
a. Percentage of County in Farms



b. Percentage of Farmland that is Cropland and Irrigated Land



c. Percentage of Farms having Cropland and Irrigated Lands



d. Percentage of Farms having Livestock by Type

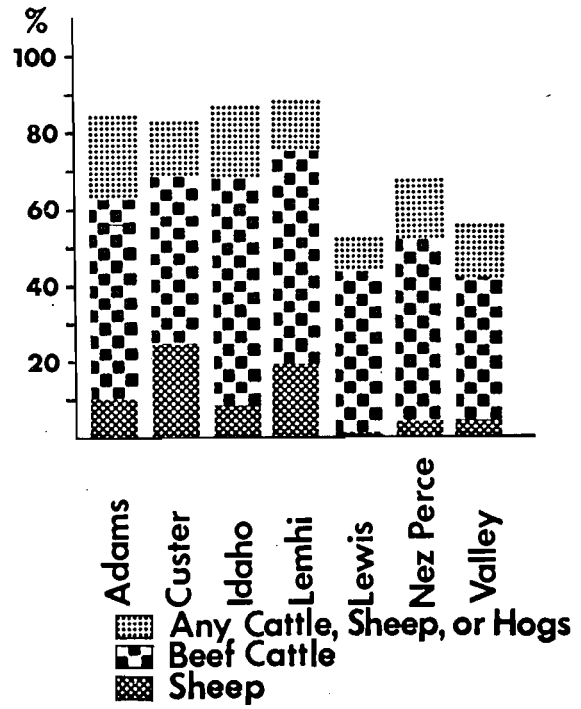


Figure 8: LAND USE AND FARM CHARACTERISTICS OF SEVEN COUNTIES

Figure 8c suggests that around 10% of the farms in the area do not have any croplands at all. Figure 8c also shows that most of the farms of Adams, Custer, Lemhi and Valley Counties have some irrigated land; although as shown in Figure 8b, only in Lemhi and Valley Counties is most of the cropland irrigated. The cropping patterns of the counties are described in Table 11. Small grains and hay are the only crops grown consistently throughout the area.

The vegetable production indicated in Lewis and Nez Perce Counties consist largely of green pea production with some other vegetables grown for local use. Some potato production occurs in Custer and Valley Counties.

By far the most important agricultural activity in the basin proper is livestock production. Figure 8d shows the percentage of farms reporting livestock on their farms. Beef cattle production is the most important agricultural activity in the basin. If Lewis and Nez Perce Counties are removed, nearly 85% of all farm operations involve livestock. A fair portion of those reporting no animals engage in renting out pasture to others. In the seven counties, of the 1,385 reporting cattle, there were 198 farms with more than 200 head of cattle and 45 operations running over 500 head. Reports indicate that the average number of cattle on farms of the latter group is over 900 head. The census figures reveal that the farms with the largest sales volume are the grain farms of the Camas Prairie and Nez Perce Counties. In Lewis County, for example, 61% of the farms had sales over \$20,000. For the total seven counties 40% had gross sales over \$20,000, while 24% had sales between \$10,000 and \$19,000 and 35% had sales less than \$10,000 per year.

Table 11

CROPS - 1969

	ADAM	CUSTER	IDAHO	LEMHI	LEWIS	NEZ PERCE	VALLEY	TOTAL 7 COUNTIES	IDAHO STATE
Field Corn for all Purposes:									
Farms	7	--	2	--	1	4	1	15	3,422
Acres	152	--	86	--	1	245	9	493	87,758
Wheat for Grain:									
Farms	32	44	430	29	234	314	13	1,096	11,830
Acres	866	1,435	49,702	540	47,240	57,635	754	158,172	960,758
Bushels	20,500	56,194	2,763,099	17,140	2,559,746	3,292,005	38,559	8,747,243	38,091,608
Other Small Grains for Grain:									
Farms	54	72	372	82	177	216	32	1,005	13,112
Acres	1,255	4,986	38,667	2,357	28,110	23,541	3,061	101,977	846,536
Hay:									
Farms	121	158	520	243	149	253	64	1,508	17,228
Acres	13,364	22,602	41,702	56,222	8,181	13,350	7,165	162,586	1,179,630
Tons	26,722	53,418	65,681	98,567	14,915	26,826	9,026	295,155	3,336,854
Vegetables, Sweet Corn or Melon for sale (Peas):									
Farms	--	2	8	2	4	31	1	47	920
Acres	--	1	85	3	845	10,708	1	11,642	44,461
OTHER CROPS: (Seed, Lentils, Orchards, Potatoes)									
Farms	14	31	268	19	182	233	19	766	9,835
Acres	342	2,417	24,004	781	34,900	36,946	1,417	100,807	848,624

*Source : U.S. Bureau of Census, Census of Agriculture, 1969
Statistic for the State and Counties, Idaho. U.S.
Government Printing Office, Washington, D.C., 1967.

The great agricultural productivity of the non-basin areas of Nez Perce, Lewis and Idaho Counties tends to obscure the crop production that occurs within the basin. An estimate of basin production values is presented in Column 9 of Table 10. Estimated total agricultural production in the basin in 1969 was 13.5 million dollars while in the seven county study area it was 46.2 million dollars. The estimates of in-basin agricultural products sold are based on the factors presented in Table 12.

Table 12 presents estimates of the percentage of each type of agricultural production that occurs within the basin for each county. A significant portion of the Camas Prairie of Lewis and Idaho Counties is drained to the south into the Salmon River. Accordingly, 15% of the crop production of Idaho County is estimated to occur within the Salmon River Basin. The 38,000 acres of Lewis County and the 94,400 acres of Nez Perce County that lie within the basin contain only a small amount of crop land and are virtually all grazing areas with some timber lands. It is estimated on the basis of land areas that 10% of the livestock production in those two counties occurs within the basin.

The Salmon River drains between 1/3 and 1/2 of Idaho County. The lands bordering the main stem of the Salmon account for a large portion of the livestock production in the basin. There is also considerable numbers of livestock wintering areas on the Prairie outside of the basin which utilize summer ranges inside the drainage. The agricultural lands of Adams County within the basin are largely irrigated high meadows used for grazing and grass hay production, so the estimated production is largely composed of livestock and timber. That portion of Valley County that lies within the basin is virtually all national forest; and although this is grazed extensively, the privately owned areas of the county have very large amounts of livestock production.

Table 12

FACTORS FOR DETERMINING PROPORTION OF
PRIVATE AG PRODUCTION OF 7 COUNTIES
ATTRIBUTABLE TO SALMON RIVER BASIN

Counties	Crops	Livestock	Forest
Nez Perce	--	10%	5%
Lewis	--	10%	--
Idaho	15%	40%	25%
Adams	10%	30%	30%
Valley	--	15%	--
Lemhi	100%	95%	100%
Custer	60%	80%	50%

* Source: SCS Estimates of Land Use by Watershed; and personal estimates based on land use maps and Idaho Tax Commission county figures.

Therefore, it is estimated that only 15% of livestock production of the county occurs within the basin. Finally, virtually all of Lemhi County is within the basin as is approximately 2/3 of Custer County. The factors shown in Table 12 reflect these divisions.

The percentages given in Table 12 are intended only as general estimates of total production of livestock, crops and private timber. They should not be applied to specific crops or livestock classes. The percentages given for livestock reflects the production that occurs on federal lands. Thus, \$13,560,000 represents a total of all agricultural production within the basin minus the timber production that occurs on federal and state lands in the basin. Timber sales are discussed in the Forestry section.

The agricultural industry in the Salmon River Basin is experiencing the same trends as agriculture is throughout the country. Employment is down - total production is up. Farms are fewer but larger and more specialized. Table 13 summarizes some of these factors. Table 14 illustrates the trends in livestock inventories by county. The increase in value of livestock products sold shown in Table 13 appears to be largely due to increases in prices and changes in management practices. The number of cattle and calves on area farms has declined nearly 30,000 animals between 1954 and 1969, while the reported value of livestock and livestock products sold has doubled. The inventories shown in Table 14 indicate a shift toward beef production and away from sheep as well as a marked decline in the number of milk cows. Although more farms in the area have milk cows than sheep, the number of milk cows per farm is small; and on the whole, sheep are more economically significant to the area.

Table 13

NUMBER OF FARMS BY SALES CLASS
IN FOUR CENSUS YEARS

	1954	1959	1964	1969
Reported Number of Farms by Sales Class				
Sales of \$40,000 & Over		171	214	277
20,000 - 39,999		347	375	445
10,000 - 19,999		579	477	439
5,000 - 9,999		535	454	358
2,500 - 4,999		319	336	287
 All Farms	 3,689	 2,986	 2,772	 2,292
 Reported value of Products Sold:				
All Crops	23,475,141	21,126,094	22,338,924	23,067,967
All Livestock & Livestock Pro- ducts	11,424,513	16,727,855	15,440,985	23,155,527

*Source: U.S. Bureau of Census, Census of Agriculture.

Table 14

LIVESTOCK INVENTORIES IN FOUR CENSUS YEARS

	1954	1959	1964	1969
<u>Cattle & Calves</u>				
Adams	24,201	25,806	27,336	22,343
Custer	34,748	32,510	36,976	30,664
Idaho	48,533	48,373	45,568	46,899
Lemhi	58,310	50,464	51,275	44,718
Lewis	7,678	7,247	8,150	7,257
Nez Perce	23,135	20,007	22,731	21,499
Valley	16,605	9,176	8,442	8,525
Seven Counties	213,210	193,583	200,478	181,905
<u>Sheep</u>				
Adams	2,865	5,069	6,998	1,286
Custer	31,624	31,612	10,632	13,506
Idaho	17,452	12,710	17,226	18,893
Lemhi	25,834	30,084	15,424	14,416
Lewis	53	54	107	133
Nez Perce	1,787	1,422	5,258	6,237
Valley	865	245	147	137
Seven Counties	80,480	81,196	55,792	54,608
<u>Milk Cows</u>				
Adams	1,124	758	518	285
Custer	1,055	827	433	212
Idaho	3,161	2,322	1,468	1,023
Lemhi	2,184	1,427	1,047	934
Lewis	504	283	212	112
Nez Perce	1,806	1,305	867	721
Valley	618	392	127	56
Seven Counties	10,432	7,314	4,672	3,343
<u>Horses</u>				
Adams	822	876	NA	536
Custer	1,738	1,392	NA	1,037
Idaho	2,377	2,197	NA	1,583
Lemhi	2,568	1,977	NA	1,518
Lewis	454	518	NA	297
Nez Perce	1,111	1,082	NA	1,118
Valley	433	292	NA	217
Seven Counties	9,503	8,334	NA	6,306

* Sources: U.S. Bureau of Census, Census of Agriculture

In the thirteen years from 1957 to 1970, agricultural employment in the area decreased from 5,783 persons to 3,758 persons - a loss of 35% of the 1957 employment. Agricultural employment dropped from 21% of total employment of just over 14%. This decline is offset to some degree by the greater number of employees in trades and services that a more highly mechanized agriculture requires. However, if total agricultural production were to decline due to changing economic conditions or reduced resource availabilities, the effect on the basin economy could be expected to be quite significant.

Irrigation

Although the water production of Salmon River Basin is approximately 22% of the state's water yield, only 5% of the state's irrigated acres are found within the basin. This is due largely to the fact that the irrigable land of the basin is largely located on the high and dry upper end of the drainage where water is not so abundant and projects not easily constructed.

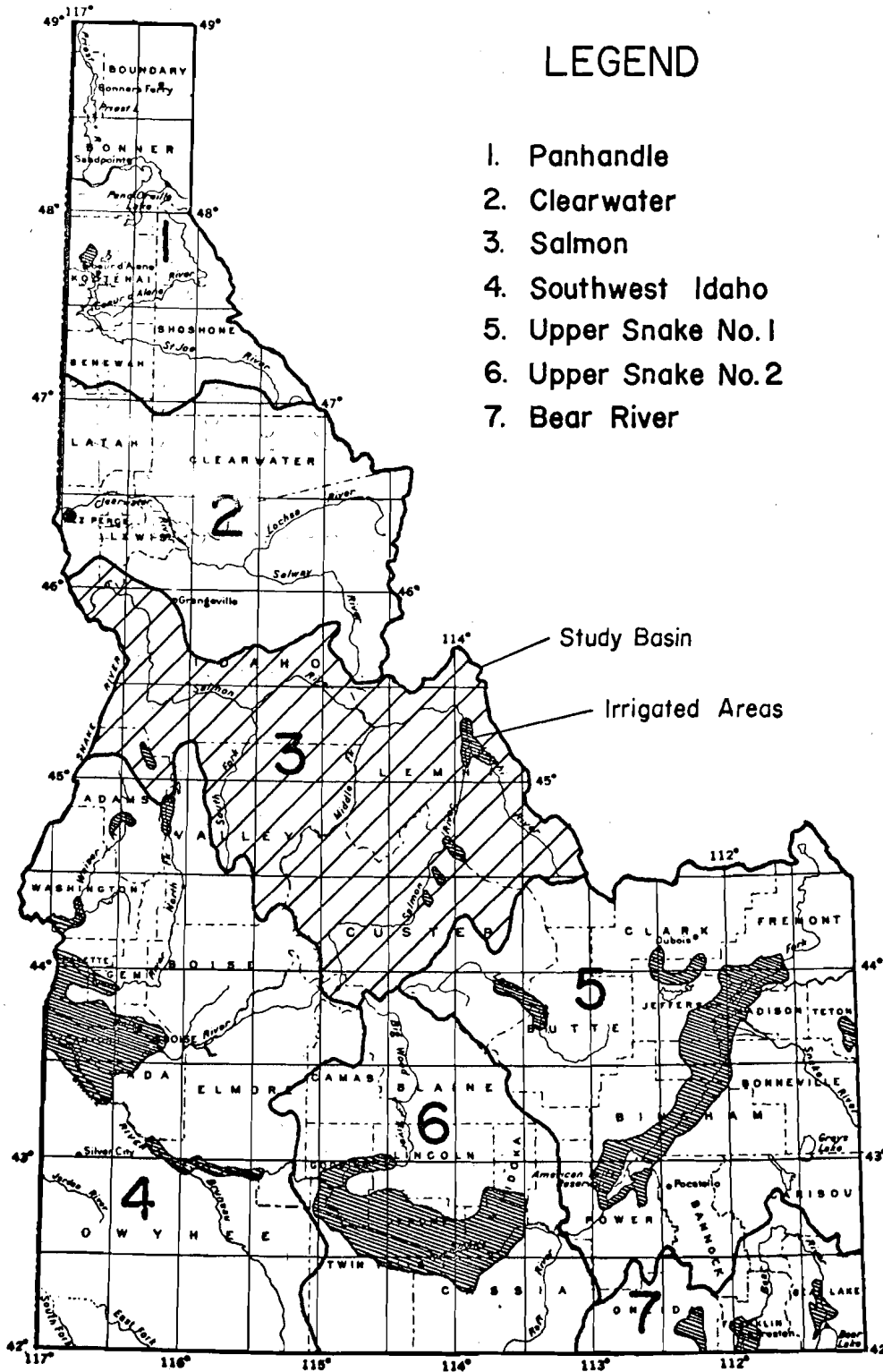
There is some difference of opinion among state and federal agencies concerning the irrigated and potentially irrigable acreage in the basin. The Soil Conservation Services's survey report prepared for the Columbia North Pacific Comprehensive Framework Study in 1970 records 143,000 irrigated acres within the Salmon River Basin. The estimated irrigated acreage (141,200) and its location as prepared by the Idaho Water Resource Board in 1970 is presented in Table 15. Figure 9 shows the location of major irrigated areas and Figure 10 shows the location of irrigated and potentially irrigable acres in Lemhi and Custer Counties which are the most likely areas for irrigation development. Estimates of potentially irrigable lands are also shown in Table 15.

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

IDAHO

TOPOGRAPHIC DIVISION
PACIFIC AREA
MENLO PARK, CALIFORNIA

Fig. 9 Sketch Map of Irrigated Areas of Idaho and Basin Subdivisions.



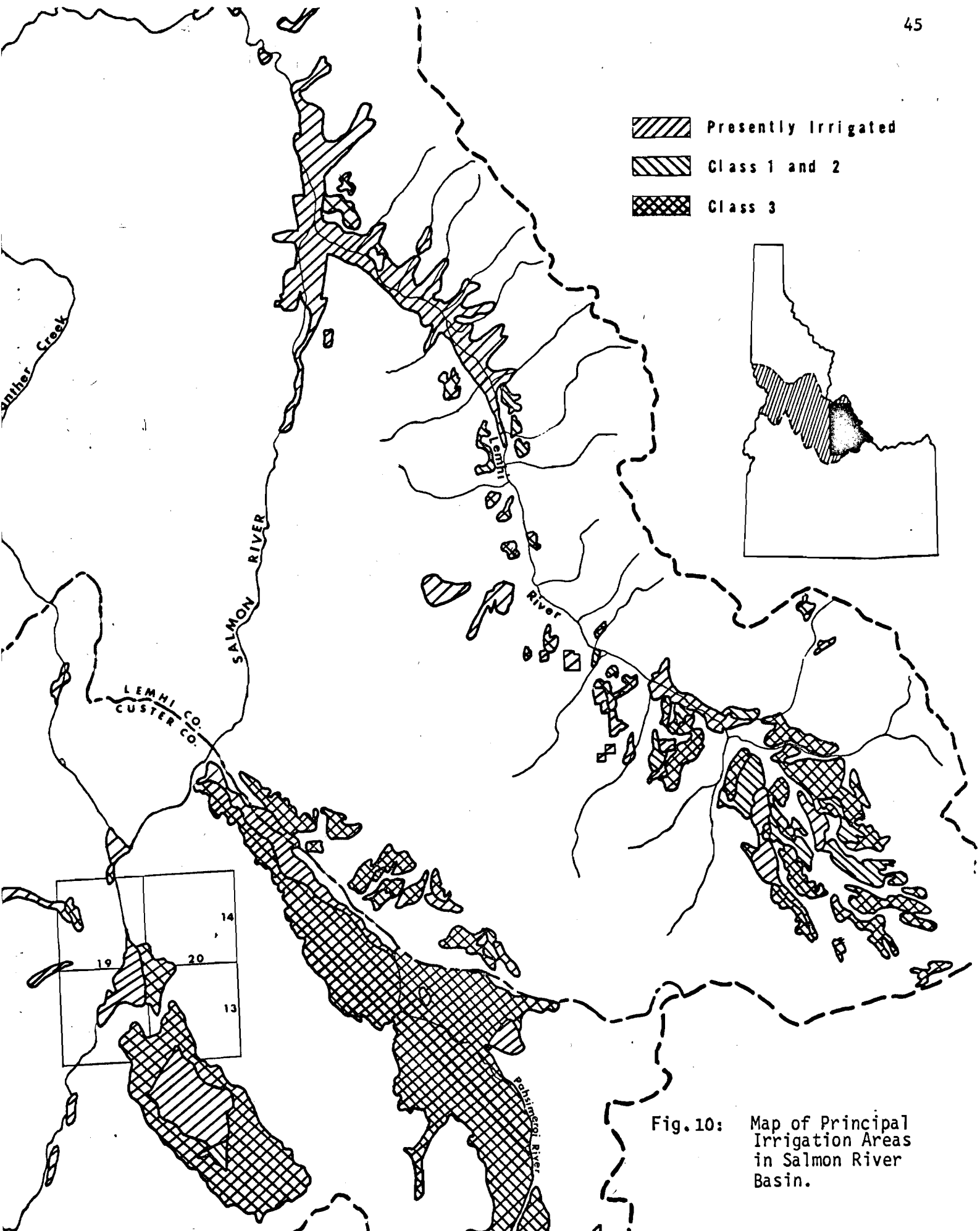


Fig. 10: Map of Principal Irrigation Areas in Salmon River Basin.

Table 15

PRESENT AND POTENTIAL IRRIGATION IN THE SALMON RIVER BASIN

COUNTY	ACRES IRRIGATED	POTENTIALLY IRRIGABLE		
		Class 1	Class 2	Class 3
Adams	11,400	0	2,000	0
Blaine	700	0	2,700	1,600
Custer	48,100	1,300	3,900	154,100
Idaho	1,500	0	18,079	19,995
Lemhi	79,500	0	23,200	53,800
Lewis		0	0	9,100
Valley		0	6,800	1,900
TOTAL	141,200	1,300	56,679	240,495

*Source: Idaho Water Resource Board, "Potentially Irrigable Lands in Idaho - 1970."

The greatest need for irrigation development in the basin is probably for supplemental water for land that is already under irrigation systems. The U.S. Bureau of Reclamation report, "Columbia River and Tributaries, Northwestern United States," states that 12,300 acres needs additional water. Several small projects for irrigation in the upper basin have been proposed; but only one, the Challis project, has reached the feasibility level of planning. Institutional barriers and a desire to protect the basin rivers in their free flowing state at present appears preclusive of any but very small developments on a few remote mountain streams.

Plans have been suggested for diversions of Salmon River waters out of the basin to provide irrigation for other areas which would be of significant economic impact on the basin. These are discussed thoroughly in Warnick's Report of Irrigation Subproject (1971). Effects of the various proposals on Salmon River free flowing nature, minimum flows and fisheries characteristics range from minimal to extreme. None of the proposed irrigation diversion plans are presently being seriously considered.

Range

Public lands play an important role in livestock production in the Salmon River Basin. Without the public grazing resource provided by the Bureau of Land Management and the Forest Service, livestock operations of the present magnitude and profitability would not be possible in the Salmon River Basin.

This heavy dependence on the federal ranges is a consequence of the typical forage program used by the majority of livestock operations based in the area.

Most ranchers utilize public grazing land as an integral part of the overall pattern. Although these use patterns differ, many involve placing

the livestock on BLM Lands in the spring, moving them onto the mountain pastures of the Forest Service during the summer months, returning to BLM lands for the fall grazing and then using the privately owned valleys for the winter. Because of the use of public pasture lands during the summer, the private lands can then be used for production of hay for wintering the herds. This cycle allows the private lands to support much higher numbers of livestock than would otherwise be possible. Loss of the public lands would either so adversely affect the livestock carrying capacity or increase costs so much that the typical operations would be uneconomical.

Although the value of the feed produced on federal grazing lands does not fully account for the economic significance of the public grazing resource, a non-dynamic measure of the value of this resource can be obtained by placing a value on the total animal unit months of forage harvested from federal lands. Although it has a more specific technical definition, the definition in use of an animal unit month (AUM) is that amount of forage that will support one cow and her sucking calf for one month without causing a reduction in the productivity of the range. Table 16 summarizes the livestock use of the federal grazing resource in 1971.

In an open market, the true value in production of one AUM would equal the lease price for that AUM. Thus by comparing the lease price of an AUM on private pastures comparable to the federal grazing land, an estimate of the value of the federal AUM can be obtained. Federal grazing lands are very seldom strictly comparable, however, because of such factors as higher travel costs, higher death losses and other users' costs which have been shown to be somewhat higher on federal lands.

Establishing a market related value for federal lands is very difficult. One reason is the difficulty in obtaining an accurate measure of an AUM; all

Table 16

PRIVATE USE OF PUBLIC RANGELANDS IN THE
SALMON RIVER BASIN - 1971

	CATTLE & NO. HEAD	HORSES APPROX. NO. AUM'S	SHEEP NO.	APPROX. AUM'S	TOTAL AUM'S	NO. PERMITTEES
<u>National Forests</u>						
Bitterroot		0	0	0	0	0
Boise	2,024	6,320	4,897	7,769	15,826	14
Challis	17,697 ¹	45,311	9,609 ¹	8,748	55,554	126
Nez Perce	1,967	8,560	6,704	5,983	16,543	22
Payette	2,668	6,743	27,180	22,597	29,340	22
Salmon	9,640	18,959	4,093	4,007	22,966	56
Sawtooth	<u>603</u>	<u>1,385</u>	<u>18,118</u>	<u>4,611</u>	<u>5,996</u>	<u>12</u>
Total	34,598	87,278	59,000	53,715	146,225	254
<u>BLM District</u>						
Boise	1,020 ²	1,825	1,265 ²	2,779	4,604	13
Coeur d'Alene	5,928 ²	3,860	2,393 ²	785	4,645	43
Salmon	33,977 ²	83,890	12,619 ²	12,890	96,208	275
Shoshone	<u>0</u>	<u>0</u>	<u>4,151²</u>	<u>4,045</u>	<u>4,045</u>	<u>*</u>
Total	40,905	89,575	20,328	20,519	109,502	331
BASIN TOTAL	DNA ³	176,855	DNA	73,934	255,725	585

¹ Estimated on basis of ratio of animals to AUMS in rest of basin.

² Estimated on ratio of number of animals to AUMS for whole district.

³ Since many animals utilizing NF lands also are in BLM Permits, it would be misleading to add the two.

*Sources: Personal communications from National Forests; Herbst, Range Subproject, and BLM Facts 1969-70, U.S. Dept. of Interior. Bureau of Land Management.

AUMS from the public lands are not equally valuable. Roberts and Topham (1965) found in a study of 635 Utah private and public grazing operations that the average value per AUM of public rangeland varied from as little as \$1.02 for winter desert pasture to a high of \$1.80 for cattle and \$2.10 for sheep on summer mountain pastures. D.B. Nielson reported in an unpublished study conducted in Region Six for the Forest Service that the average price grazing fee was \$1.86 per AUM and that some ran as high as \$4.50 to \$5.00. This difference in value per AUM also exists in public grazing lands of like character because of the difficulty of providing similar administration of grazing resources. Some general average value must therefore be accepted.

In 1966 the Department of Interior and Department of Agriculture made an intensive study of grazing fees, in which it was established that the true market value of the average Forest Service and Bureau of Land Management grazing permit for one AUM was \$1.23. This fee was a weighed average value for all the federal grazing lands in the west including a great amount of desert lands. These agencies decided in 1969 to move in gradual steps from their currently charged base fees of \$.51 and \$.33 to \$1.23. They also planned for changes in market values of grazing by incorporating an inflator based on the market value of private grazing. This exscalator has raised the market value of grazing fees to \$1.36 in three years.

It would be generally agreed that the quality of the federal grazing resources within the Salmon River Basin is generally much higher than the national average. It is likely that the quality in some areas such as the Bear Valley District of Valley County closely approximates the value of the most valuable private summer grazing obtainable in the west.

Because the productive value of most of the federal grazing in the basin exceeds the national average, the federal price undervalues the resource value and creates a subsidy to resource users who pay less than full market value. Estimates of values more in line with the true market value are used in Table 17 to estimate a total annual full market value of \$557,190. If permittees paid the full federal estimated value of \$1.36 per AUM, they would be receiving a subsidy of \$209,404. The grazing fees has not yet reached \$1.36, however, so currently the subsidy is somewhat greater.

The full value of these grazing resources to the livestock industry or to the local community is greatly understated by the market value of the range. As computed above they represent only the value added to the livestock industry by the forage production alone. Since this resource is used as a base on which a whole industry is built, removal of this base would mean a loss to the area of the marginal value products of the labor, supplies, capital, transportation and all other factors that contribute toward the total livestock production in the area.

The effect of increasing the price of federal grazing to full market value is a loss of wealth in grazing permit values and a reduction of income to the rancher. As long as fees remain below the marginal value product of the forage, no reduction of numbers of animals would be expected to result from increased costs. The increase in costs would result in reduction of income to the farmer and to the community through the multiplier effect.

Nielson and Workman (1971) estimate on the basis of several studies of local communities in the mountain west that livestock production in these areas has an income multiplier of 2.5. Thus, a \$1.00 reduction in livestock exports in an area such as Lemhi County would probably result in a total income loss to the community of \$2.50.

Table 17

ESTIMATES OF VALUE OF AUM'S PRODUCED IN 1971
IN THE SALMON RIVER BASIN AND OF SUBSIDY
TO LIVESTOCK OWNERS

Estimated Full Market Value

146,225 Forest Service AUM's @\$2.50	\$365,562	
109,502 BLM AUM's @\$1.75	<u>191,628</u>	
TOTAL		\$557,190

Total AUM's at Average Value for Federal Lands

255,725 AUM's @\$1.36		<u>347,786</u>
-----------------------	--	----------------

<u>Annual Subsidy to Grazing Permit Holders</u>		\$209,404
---	--	-----------

A management alternative that is of much greater impact to the rancher and the community is the reduction of grazing allotments. Because grazing on federal lands is such an integral part of the forage program of the ranchers of this area, reduction of quotas typically causes a direct reduction in the number of livestock carried by the ranchers. Because of size efficiencies, costs do not decrease as much as income when carrying capacities of the ranches are reduced. Thus, a much more direct and sizable loss of income to the stockman and to the community will result unless the rancher has alternative pastures available. The same effect would be felt if fees go above the current marginal value product of the resource.

It should be remembered that the basic resource which is creating this value is a physical resource of soil, temperature and location rather than a specific amount of forage. It has been estimated that the grazing potential of the western federal lands could be increased 75% through intensive management. The real limitations on the value of the grazing resource is the level of management. Grazing histories provided by the Boise, Payette and Salmon National Forests indicate stocking level efforts have been made in this direction. In these areas over the last 10 years for the basin, the total number of cattle and horses has only been reduced 4% and the numbers of sheep have been reduced 10%.

Neilson and Workman estimate that the grazing potential of the western federal lands could be increased 75% through intensive management. Thus, it appears that there is yet considerable room to avoid conflict between livestock usages and its competitors if resource managers are supplied the funding for administration to this end. Many examples of the required operation between ranchers, Forest Service and State Fish and Game Departments give reason

for optimism that through proper management the grazing industry need not be sacrificed for the benefit of alternative uses. Studies are presently being made which indicate that through proper management livestock uses in certain areas can enhance the area for other uses such as wildlife or recreation. The eventual outcome depends largely on the level of management inputs and the degree of cooperation between agents for seemingly competitive uses.

FORESTRY

Approximately 90% of the Salmon River Basin is contained within the six national forests that administer land within the drainage. Considerable amounts of forested areas also occur on BLM lands and state owned areas. Just as the meteorological characteristics vary greatly within the basin, so does the timber productivity. Generally, the areas of heavier rainfall are more productive, but soil types, topography and elevation cause further variation. Figure 11 shows the general location of forested land in the basin. The principle areas of timber harvest are depicted as the roaded corridors inside the dashed line. Isolated locations are harvested outside the area marked, but the magnitude of such harvest is small compared to the basin total. An inventory of all sawtimber, 9 inch dbh (diameter breast high) or larger, located within the Salmon River Basin on unreserved commercial forest lands is presented in Table 18. Timber on primitive or wilderness areas, wild rivers, park or other areas withdrawn from multiple use management is not contained in this table. These reserved areas contain approximately 9 million board feet. If this is added to the unreserved volume, it is estimated that the total timber volume within the basin is 31,679 million board feet which is approximately 28% of the total sawtimber volume in the state.

Most of the reserved land timber in the basin is within the Idaho Primitive Area with a small amount within the Sawtooth Primitive Area. Much of this timber would not be harvested even if multiple use management concepts were applied to these areas. Building roads to much of the timber would be prohibitively expensive and haul distances would render harvest uneconomical in many cases even if roads existed. As indicated in Figure

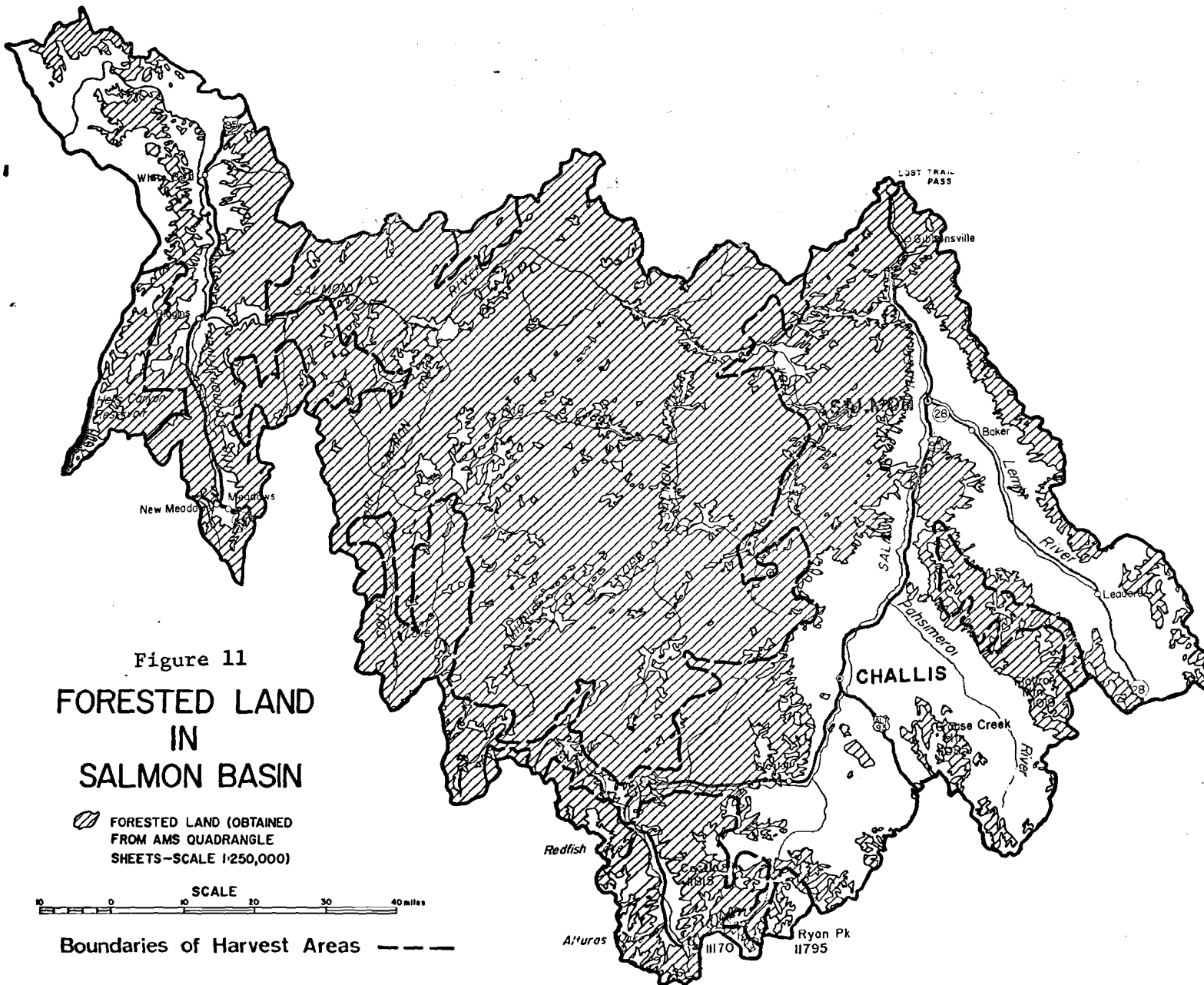



Figure 11
**FORESTED LAND
IN
SALMON BASIN**

 FORESTED LAND (OBTAINED
FROM AMS QUADRANGLE
SHEETS—SCALE 1:250,000)

SCALE
0 10 20 30 40 miles

Boundaries of Harvest Areas - - - -

TABLE 18
 Forest Inventory, MMBF¹, of Salmon River Drainage by Owner and by Species
 (Excluding Primitive Areas)

National ¹ Forest	Douglas-fir, Larch	Ponderosa Pine	Lodgepole Pine	Spruce	True Firs	Other & Mixed	Total
Boise	1,257.5	318.7	137.2	497.9	537.0	61.7	2,810.0
Challis	3,395.4	295.0	--	1,353.2	518.3	43.6	5,605.5
Nezperce	620.2	109.9	103.3	70.7	97.6	56.2	1,057.9
Payette	1,955.1	1,248.3	397.1	1,501.8	1,616.2	12.4	6,730.9
Salmon	2,922.4	397.4	521.3	293.8	576.7	123.8	4,835.4
Sawtooth	449.7	--	162.6	178.4	80.2	48.5	919.4
Bureau of Land Mgt. ²	168.4	6.6	24.7	7.4	3.3	--	210.4
State of ³ Idaho	271.2 ⁵	151.8	6.4	--	--	--	429.4
Private ⁴	--	--	--	--	--	--	--
TOTAL	11,039.9	2,527.7	1,352.6	3,903.2	3,429.3	346.2	22,598.9

1 - MMBF - million board feet
 2 - \pm 10% within/ 1 standard deviation
 3 - \pm 5% within/ 1 standard deviation
 4 - no figures, but an insignificant portion of total
 5 - mixed species, mostly DF

*Source: Herbst, John H. A Methodology Study to Develop Evaluation Criteria For Wild and Scenic Rivers: Forest Subproject.

11 sizable unharvested areas exist outside of the primitive areas. Timber densities are typically low in these areas which increases the cost of logging.

The historic trends in timber sales within Salmon River Basin forest districts is presented in Table 19. Blanks in the table indicate absence of data. The dash indicates no sales. The total timber sales for the basin districts was 158.5 MMFB in 1971, the only year for which complete data was reported. This represents about 20% of sales in the state for that year. The 10 year history in volume cut in the five national forests of USFS Region 4 administering lands in the basin is shown in Figure 12. The trend has been too erratic for significant time series projections. Statements of forest personnel indicate, however, that reductions in timber cut as large as 30% will occur in 1972-73 and that production may remain at this lower level for the foreseeable future. This reduction is a result of increased uses of forest land incompatible with timber harvest.

A reduction in timber cuts would be expected to have severe consequences on the economies of many small towns in the basin. Over 3,200 workers are employed in lumber manufacturing in the seven county study area. This figure does not contain the number working as loggers or truckers. Herbst (1972) estimates that the average logging production per man year in Idaho is approximately one MMBF. A timber harvest of 158 MMBF would require 158 loggers. This makes nearly 3,400 workers in wood products industry in the basin which is over 1/10 of the total labor force. If timber sales are reduced by 30%, employment in wood products industry would be expected to decline by 30% also - a decrease of 1,000 jobs. If one job in the timber industry supports an additional one half job in trades and services as the input-output multiplier

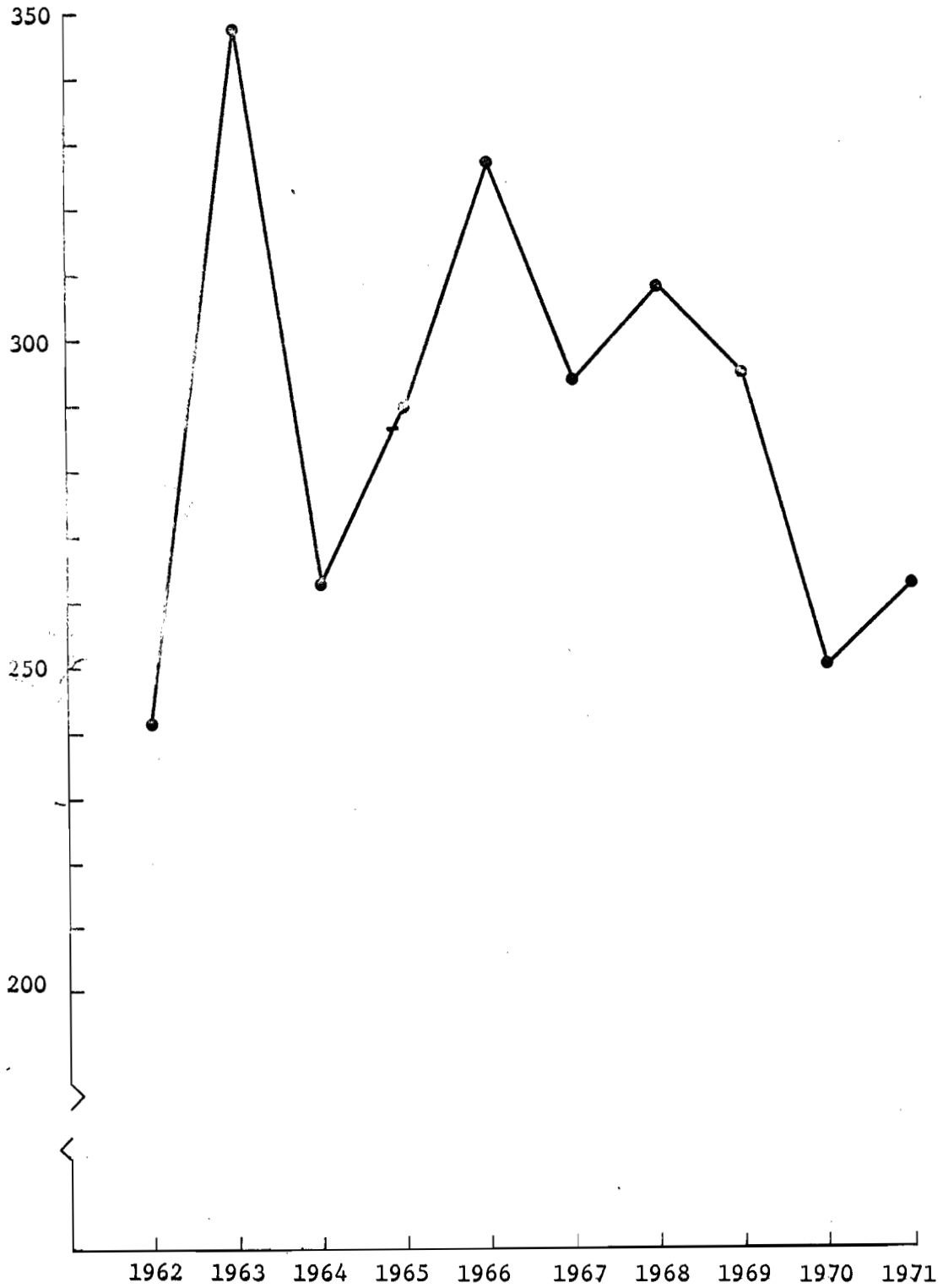


Figure 12. Annual Timber Harvest in the Boise, Challis, Payette, Salmon and Sawtooth National Forests.

suggests, 1,500 people could lose their jobs in the seven counties as a result of timber harvest reductions.

Much of the impact of reduction of timber cut in the Salmon River Basin would be felt outside of the basin. Figure 13 shows that mills utilizing timber from the Salmon River Basin are found far beyond the basin boundaries. The effect on the employment at each mill depends to a large degree on the alternative timber availabilities within feasible haul distances. If reductions occur over the whole state, the outlook in the lumber industry throughout the state would be quite dismal.

The average stumpage value of the timber sold in Idaho forests of Region 4 in 1971 was \$7.85 per thousand board feet. The 10 year average value per MBF of all timber produced in Idaho was \$7.03. At this price the total value of 1971 production within Salmon River Basin district would be \$1,114,255. If 1971 production is assumed to be fairly close to normal then the value of national forest timber productive capacity, capitalized into perpetuity at 6% interest, is over \$18,500,000.

Timber then ranks first in value of production of all activities on the federal lands in the Salmon River Basin. Timber use management has received much criticism recently from environmental protection groups because of alleged degradation to soils, water quality and esthetics. It should be noted that timber production can be complementary to many other uses. Removing timber may increase vegetative growth advantageous to big game. Timber harvest develops roads that are utilized by many recreation visitors. Timber harvest may also reduce fire hazards. Most importantly timber is the base for important economic activity that is extremely important to many of the basin towns. On the national scale it is estimated that the average total value added to

Table 19
 TIMBER SALES IN SALMON RIVER NATIONAL FOREST DISTRICTS
 (RMEF)

FOREST AND DISTRICTS	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971
<u>Bitterroot</u>										
<u>Boise:</u>										
Bear Valley									0.1	3.0
Cascade	8.0	9.0	12.0	10.0	9.0	5.0				
Landmark	3.0	5.0	2.0	3.0	4.0	2.0	3.0		2.0	2.0
TOTAL	11.0	14.0	14.0	13.0	13.0	7.0	3.0		2.0	5.0
<u>Challis:</u>										
All Districts				3.1	3.6	6.2	7.6	0.0		10.2
<u>Nez Perce:</u>										
Area #1										10.0
Area #2										61.5
Area #3										0.3
Area #4										0.5
TOTAL										72.3
<u>Payette:</u>										
New Meadows	23.5	30.6	30.8	30.4	12.3	30.6	26.4	42.6	40.4	39.3
Krassel	1.6	1.4	6.4	8.1	14.7	7.6	0.0	0.0	0.0	0.0
Warren	0.1	1.9	5.0	2.4	0.0	3.5	0.4	0.2	8.4	0.1
Big Creek	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TOTAL	25.2	33.9	42.2	40.9	27.0	41.7	26.8	42.8	48.8	39.4

Table 19. (Cont.)

FOREST AND DISTRICTS	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971
<u>Salmon:</u>										
Cobalt	2.7	0.1	1.9	2.0	1.8	2.7	4.8	9.2	10.2	3.5
North Fork	1.6	4.3	9.2	3.0	0.2	0.7	10.6	5.2	3.1	11.6
Indianola	7.5	7.5	8.7	7.6	17.0	18.5	7.8	3.3	2.8	0.6
Leadore	0.7	2.3	2.8	1.3	3.4	3.6	4.3	2.0	0.0	0.7
Salmon	4.0	8.3	8.6	10.0	8.2	7.6	8.5	7.3	10.0	15.2
TOTAL	16.5	22.5	31.2	23.9	30.6	33.1	36.0	27.0	26.1	31.6
GRAND TOTAL	52.7	70.4	87.4	77.8	73.7	85.4	72.0	69.8	84.6	158.5

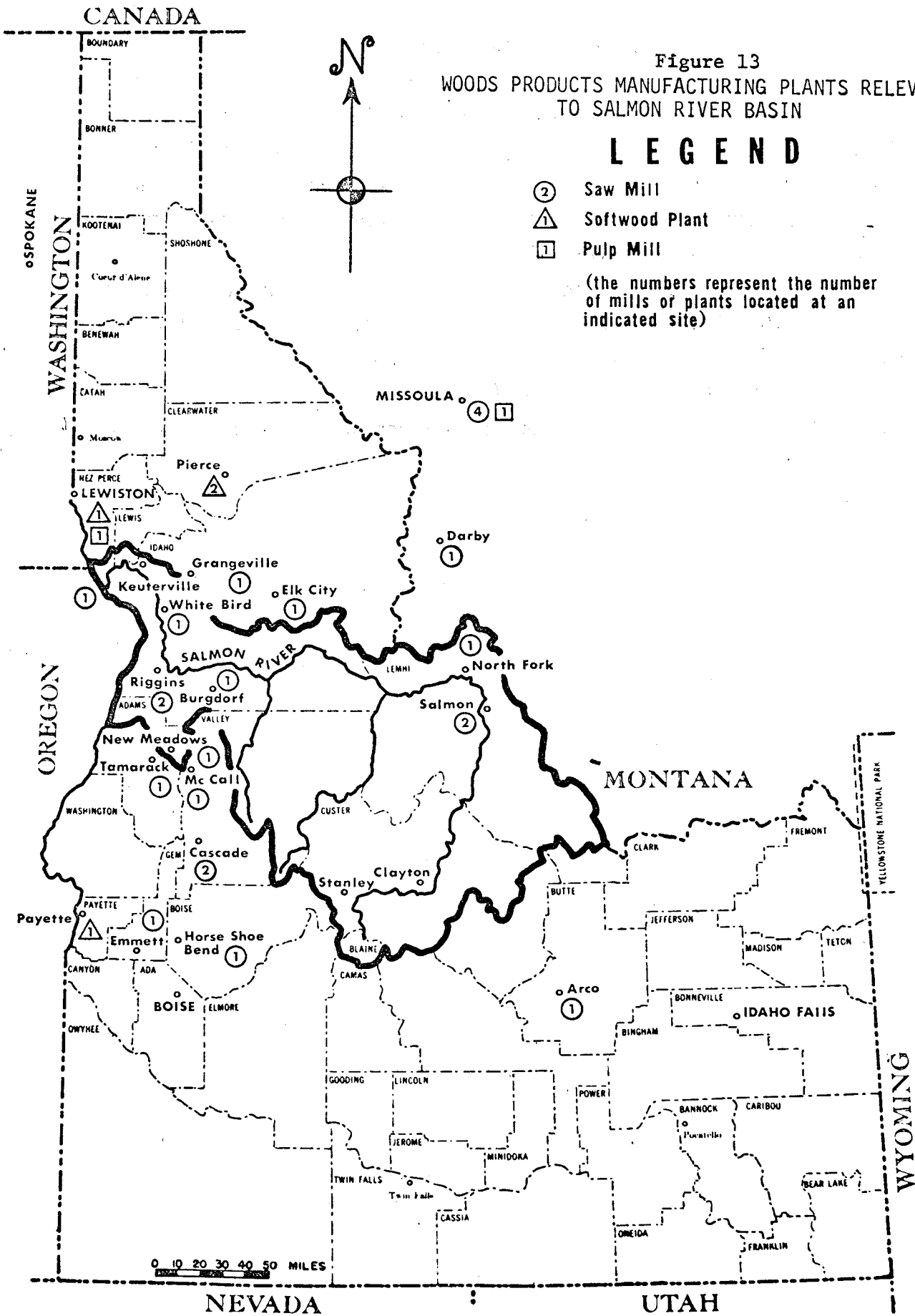
Figure 13

WOODS PRODUCTS MANUFACTURING PLANTS RELEVANT TO SALMON RIVER BASIN

LEGEND

- ② Saw Mill
- △ Softwood Plant
- Pulp Mill

(the numbers represent the number of mills or plants located at an indicated site)



* Source: Herbst, John R. A Methodology Study to Evaluate Wild and Scenic Rivers: Forest Subproject.

wood products is approximately 25 times the stumpage value. At this ratio the timber production of the Salmon River Basin is supporting a \$28 million national industry.

MINING AND MINERALS

In the early history of Salmon Basin, mining was the most important economic activity. Since the turn of the century, however, there has been a steady decline in mining in the area until 1970 where there were 108 people reported to be engaged in this activity.

About one-half of the Salmon hydrologic basin is underlain by the Idaho batholith, a great mass of intrusive granitic-type rocks of late Mesozoic and early Tertiary age. This batholith with its marginal zone of altered rocks includes Idaho and Valley Counties and the western part of Lemhi and Custer Counties. On the east in Lemhi and Custer Counties the batholith is flanked by the Challis Volcanics of the Tertiary age and sedimentary rocks of Triassic or Permian age. Also on the west Nez Perce and Lewis Counties are underlain by Columbia River basalt flows of middle Tertiary age.

The Idaho batholith and its marginal zone together with the Challis volcanics and metasediments in Lemhi and Custer Counties contain a wide variety of metallic mineral deposits, some of which have a record of substantial past production and many of which have potential for future development and production. In contrast, the parts of the basin underlain by basalt contain few metalliferous deposits; production has been limited mostly to stone, gravel and a few other non-metallic minerals.

The Salmon River Basin contains many of the best known mining districts in Idaho. The principle metallic and non-metallic minerals found within the basin include:

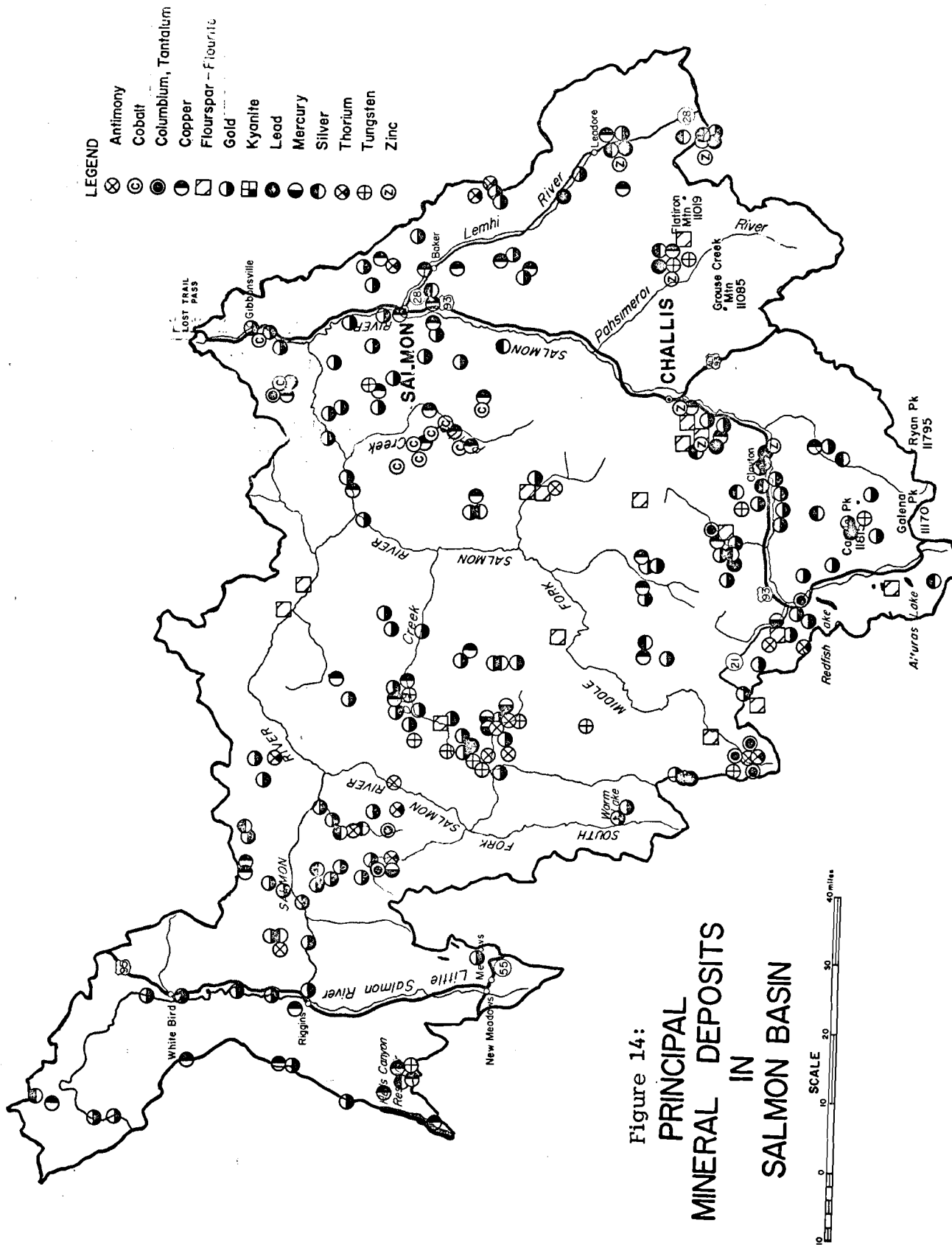
Antimony and tungsten	Peat
Barite, fluorspar and clay	Silica
Carbonate rock	Silver, lead and zinc
Cobalt, copper and molybdenum	Titanium, zirconium and hafnium
Garnet (placer) and mercury	Niobium (Columbium) and tantalum
Gemstones	Thorium and rare-earths
Iron ore	Uranium

The location of past production and principal known deposits is indicated in Figure 14.

Although the records show that 2,921,700 ounces of gold have been produced within the basin, currently gold is produced chiefly as a by-product from ores containing copper, cobalt, silver, lead and zinc. The free-market price of gold of over \$60 per ounce would be sufficiently high to induce reopening of many gold producing sites in the basin if it were to become the prevailing price in the United States.

Silver, lead and zinc commonly occur together, although any one of these metals may be predominant in any particular location. At least 15 known occurrences of these metals of economic significance are found within the basin. Recent price increases have increased prospecting and development work for silver. Reportedly in 1970 about \$20,000 of high grade silver ore was shipped from the Silver Moon mine at Gilmore in Lemhi County. The Clayton Silver Mines have produced large quantities of ore in the late 1960's.

Cobalt, copper and molybdenum are three minerals that have added a great deal of excitement to the minerals scene in the basin recently. The Blackbird district west of Salmon in Lemhi County contains one of the world's largest resources of cobalt. Currently the area is producing copper, but cobalt separation is uneconomical at the present prices. Considerable exploratory work and development has occurred in this area lately. Copper seems to be the main attraction. The location of molybdenum deposits in the



*Adapted from: Peebles, John J. A Methodology Study to Develop Evaluation Criteria for Wild and Scenic Rivers, Navigation Subproject.

basin have been known since 1919. The basin's deposits of this mineral gained fame with the proposal to develop a very large open pit molybdenum mine in the White Clouds Peaks. The likelihood of the existence of other deposits similar to the White Clouds deposit is high.

The Yellow Pine District, Valley County, was the major producer of antimony from stibnite ores from 1932 to 1952. Low market prices and declining grade were responsible for closing the largest antimony producer in the district in 1952. Large reserves of antimony ores remain in the district and production will likely increase when economic conditions are more favorable or other world sources become unavailable.

Nearly ten percent of all tungsten produced in the United States since 1900 has come from the Ima Mine in the Blue Wing District, Lemhi County, and the Yellow Pine Mine both of which are closed at the present time. There is a good potential for future production in the Yellow Pine and Big Creek districts, Valley County; Ten Mile and Warren districts, Idaho County; and Mineral Hill, Blue Wing, Bayhorse and East Fork districts in Lemhi County. The resources are regarded as very large.

The mercury deposits in the Yellow Pine District, Valley County, have accounted for about 50 percent of all the mercury produced in Idaho. The Hermes Mine produced 10,700 flasks of mercury between 1942 and 1948. Considerable resources of mercury-bearing rock remain in the Yellow Pine District; however, it seems unlikely at the present time that future production will equal that of the past.

Thorium, with associated rare earth minerals, occurs in the placer deposits of Bear Valley and in monazite deposits of Ruby Meadows and some production has come from these sources. However, veins containing thorium and rare earth minerals in the Lemhi Pass area of Lemhi County are probably one of the greatest known resources of thorium in the United States.

Table 20

MINERAL ACTIVITIES ON LANDS ADMINISTERED BY
US FOREST SERVICE IN THE SALMON RIVER BASIN - 1971

COUNTIES	ACTIVE MINING OPERATIONS	MINERALS & AUXILLARY CLAIMS
Bitterroot	1	<100
Boise	0	*
Challis	*	*
Payette		
New Meadows	*	848
Krassel	*	41
Warren	*	2,102
Big Creek	*	3,588
Nez Perce	1	NA
Salmon		
All Districts	4	3,300
Reported Total	6	9,979

* Not available or not reported

The extraction method is the most important determinate of the competitiveness of mineral development with other resource uses. Underground mining techniques that are typically used with high grade ores tend to be less destructive of other resource values and are more adaptable to control measures. Placer mining and open pit mining are techniques that are inherently more dangerous to the environment.

Idaho has passed a State Dredging and Placer Mining Protection Act which requires control of water pollution and restoration of the surface in placer mining. The Parker Brothers operation in Bear Valley during the late fifties has been sited as an example showing that dredging can be done in many locations without serious long term effects on the environment. Currently, however, there are fears of water quality degradation from the workings. The mining of low grade ores by open pit methods such as initially proposed for White Cloud molybdenum deposits are potentially the most destructive of mining techniques as they leave huge pits and gigantic tailing ponds. Mineral recovery practicable only through open pit mining requires special consideration and probably would be best handled by new laws especially written for such circumstances.

Areas of substantial mineral potential need special consideration by the resource use planner. He might well plan that such an area might be designated and developed for a more extensive, mechanized type of recreation which might be more compatible with mineral development. The entire spectrum of demands for the resource need to be considered as well as its mineralization.

In conclusion, the Salmon River Basin is a mineralized area which has a varying grade of ore depending upon the mineral considered. Under present pricing for minerals, the most favorable mineral use ranges from high grade

precious metals to low grade open pit mining of molybdenum. Unless the price structure changes - moves upward - much of the mineral potential of the basin will never be realized. Since the pricing of minerals is largely a function of demand and supply, the obvious conclusion is that as the availability of some of the basin's mineral resources declines either nationally or internationally the price of these minerals will increase to a level where mining will be more seriously considered. The timing of supply and demand shifts remains largely unpredictable. Until prices begin to move upward, the mineral activity in the Salmon River Basin will most likely be prospecting - not mining.

RECREATION

The recreational resources of the Salmon River Basin play an important role in the economic activity of the area. Therefore, analysis and inventory of those resources and measures of recreational impact should be included in an economic overview. The economic effect of recreational use in the basin is aggregated in the employment section of this report as part of the trade and services sector. It is there seen that the impact of recreation within the basin on employment and incomes was more significant in the population centers proximate to the basin than in the basin proper. For several reasons the importance of the recreational resources of the basin are more highly prized by people in large population centers - particularly those outside of Idaho.

Typically, great mountain ranges, wild rivers, abundant freshwater fishing areas, wild game lands and archeological and historical sites have been administered as free goods which do not have a market value affixed. This resource is now recognized to have limits in carrying capacity at a given level of management and that use must be regulated in some manner, perhaps even by a price mechanism. Studies are now being made attaching economic measures to specific parts of the total resource. This section will attempt only to inventory the recreational developments and the extent of use of those resources and report the results of such surrogate market value studies.

With the exception of recreational housing, practically all recreational development and most of the recreational activity is on federal lands. Most of the prime campsites are administered by the Forest Service. The Bureau of Land Management has constructed a few campsites within the area, and the Idaho Department of Highways operates road side rest and picnic areas in several locations along the Salmon River.

Inventory of Recreational Developments

Although there is great clamour for preserving much of the national forest lands in a pristine or primitive condition, some development is required before virtually any use is made of the area. The backpacker, for example, seldom travels far from the blazed trail. The extent of recreational use depends a great deal on the extent of recreational development. Table 21 presents a summary of the recreational development in the Forest Service districts completely or predominantly within the Salmon River Basin. This division is used as the reporting basis throughout this section. Although this includes area outside of the hydrologic boundaries and overstates total recreational development and use within the basin proper, a small amount is deemed desirable to facilitate comparisons of use levels at a future time.

The camping sites and roads and trails are the most important recreational developments within the area. Table 21 indicates a total of 178 different developed camping sites with 1,139 family camping units within the basin. The capacity per unit is normally said to be 5 people at one time (PAOT) per unit, so 1,139 units would accommodate 5,695 persons at one time if filled to theoretical capacity. The percentage of visitors using developed sites is not known. The trails and roads into the remote areas are important recreational developments, and the magnitude of development in the basin highlights the grandiose nature of the recreational resources within the basin. The road developments if laid end to end would cross the nation, and traveling the length of the trails would be nearly sufficient to cross the Atlantic and return again to the United States.

Level of use is a measure of the utilization of the recreational resources managed by the Forest Service. Table 22 reports the visitor days

Table 21

RECREATIONAL DEVELOPMENTS IN SALMON RIVER BASIN
BY FOREST SERVICE DISTRICTS - 1971

NATIONAL FOREST & DISTRICT	DEVELOPED RECREATIONAL SITES	FAMILY UNITS ¹	MILES OF TRAILS	MILES OF ROADS	NO. OF GUIDES & OUTFITTERS	CABIN PERMITS
Bitterroot ¹ McGruder ¹	3	5	140	11	4	
Boise						
Bear Valley	9	43	106	124	27	3
Cascade	9	101	35	118	2	69
Landmark	8	41	295	153	5	2
Challis						
Stanley, Clayton May & Challis Districts	52	274	1,469	647	17	NA
Nezperce						
Salmon River	10 ¹)		453	209	2	4
Slate Creek	3 ¹)	= 101 ¹	260	248	1	0
Red River	11 ¹)		540	271	12	7
Payette						
New Meadows	10	77	440	449	1	1
Krassell	1	57	328	90	3	0
Warren	2	6	341	177	5	6
Big Creek	2	3	818	59	15	0
Salmon						
All Districts	28	190	1,503	1,055	51	35
Sawtooth						
Sawtooth Valley	28	238	NA	NA	8	61
BASIN TOTAL	178	1,139	6,728	3,611	153	188

¹In basin portion of district only.

Table 22

ESTIMATED RECREATIONAL USE IN THE SALMON RIVER NATIONAL FORESTS BY TYPE OF ACTIVITY (1000 VISITOR DAYS)

FORESTS & DISTRICTS	GENERAL LEISURE & SIGHTSEEING	LAND TRAVEL	WATER TRANSPORT & PLAY	GROUP ACTIVITIES SPORTS	FISHING	PERSONAL ACCOMODA- TIONS	WINTER SPORTS	UNDEVELOPED AREA ACTIVITIES	VIS. INFO.	ACTIVITY TOTAL	DISTRICT TOTALS
Bitterroot		4.4			2.7	5.3		.6	.1	13.1	13.1
Boise											
Bear Valley		1.5			2.9	20.5		6.0		30.9	35.0
Cascade		3.1	12.3	4.7	15.4	47.7	1.2	13.6		98.0	176.0
Landmark		7.9	5.0	4.1	14.4	21.7		15.1		68.2	64.8
TOTAL		12.5	17.3	8.8	32.7	89.9	1.2	34.7	.1	197.1	275.8
Challis											
Challis ¹						3.7				3.7	
Clayton ¹						26.7			9.9	36.6	
May ¹						10.6				10.6	
Stanley ²	1.1	62.3	27.3	.9	40.9	38.9	2.6	13.9	1.9	186.7	191.9
TOTAL	1.1	62.3	27.3	.9	40.9	79.9	2.6	13.9	11.7	240.6	341.8
Nezperce											
Red River	2.1	56.1	31.8			107.7		20.9	.2	218.8	272.8
Salmon River	4.6	32.2	11.4		12.1	22.8	.3	11.3	.2	94.9	94.9
Slate Creek	1.8	22.2	9.1		18.0	27.3		.2	.6	79.2	81.0
TOTAL	8.5	110.5	52.3		30.1	157.8	.3	32.4	1.0	392.9	448.7
Payette											
New Meadows	.1		.4			17.4	9.9			27.8	123.6
Krasse ¹						2.0				2.0	31.6
Warren ¹						1.3				1.3	23.8
Big Creek (Primitive Area)	5.4	2.9	2.4		5.8	12.2		3.4	.1	32.2	41.7
Seven Devils (Payette Portion)	2.7	11.7	1.8		3.3	1.7		2.4	1.1	24.7	
TOTAL	8.2	14.6	4.6		9.1	34.6	9.9	5.8	1.2	88.0	219.7
Salmon											
Cobalt ²	28.2	114.6	25.3		41.5	40.3	.6	37.8	2.2	290.5	300.5
North Fork	1.3	40.5	.4	1.4	16.8	22.0	.2	10.5	17.7	110.8	108.8
Indianola	1.9	48.1	20.3		49.4	69.9		49.6	7.5	247.0	244.7
Leodore	3.6	7.2	.5		6.6	10.1	.6	6.9		35.5	35.5
Salmon	.2	13.0	6.4		11.6	15.0	1.5	14.7	.2	62.3	62.6
TOTAL	35.2	223.4	52.9	1.4	125.9	157.3	2.9	119.5	27.6	746.1	746.1

Table 22 (Cont.)

FORESTS & DISTRICT	GENERAL LEISURE & SIGHTSEEING	LAND TRAVEL	WATER TRANSPORT PLAY	GROUP ACTIVITIES SPORTS	FISHING	PERSONAL ACCOMODA- TIONS	WINTER SPORTS	UNDEVELOPED AREA ACTIVITIES	VIS. INFO.	ACTIVITY TOTAL	DISTRICT TOTALS
Sawtooth Sawtooth Valley ²	35.6	79.6	32.4	.7	75.8	270.5	3.4	33.2	6.6	537.8	567.2
Salmon River Basin	88.6	507.3	186.8	11.8	317.2	795.3	20.3	240.1	48.2	2,215.6	2,612.9

¹Developed SITE use only

²Estimated. See text for explanation.

*Source: RIM Reports from individual forests.

by type of activity for each Salmon River forest district in 1971. This table is based on recreation information (RIM) reports of each forest involved. These reports indicate a total of 2,612,900 visitor days spent in the Salmon districts, but activity class was only reported for 2,215,600 visitor days. Approximately 1/3 of the total visitor days was spent in camping activities and between 10% and 15% was spent in vehicular or foot travel within the area.

The type of activity classification in Table 22 differs slightly from the general assembly code classifications presented in the Forest Service Handbook, Amendment 18, issued May, 1970. The following classification scheme is used. General leisure and sightseeing includes viewing outstanding scenery, enjoying unique or unusual environment and spectator activities. Land travel includes all motorized and non-motorized forms of transportation overland. Water travel and play includes canoeing, floating, rafting, water-skiing and swimming as well as use of power craft. Personal accommodations included all types of camping, picnicking, resort and commercial public service, and recreation residence use. This category, personal accommodations, represented by far the greatest amount of activity. The predominate activity in undeveloped country was hunting which typically accounted for 80% to 90% of the visitor days in that category. Nature study and acquiring general knowledge and understanding comprised the rest. Group activities, winter sports and visitor information represented the least significant activities on a basin-wide scope.

The accuracy of the information presented in Table 22 is decreased by two factors. The estimates of visitor days in each activity are made through a statistical sampling technique that has not yielded highly consistent results. Therefore, no time series projections of visitor days in

the basin has been made. The data available would produce time trends that would be inconsistent with observed recreational use.

The accuracy of the figures is also reduced by the extent of coverage. Most of the RIM data only covers use in developed sites, wilderness, primitive areas and other areas of special interest. It does not attempt to account for all activities on undeveloped lands within the forest. Thus, if the sampling technique is accurate, the visitor day total reported in Table 22 is an understatement of total recreational use in the basin. In addition, the figures reported in Table 22 understate total estimated use by type of activity for several of the forests because complete data was not obtained by the researcher. The column in Table 22 labeled District Total shows a reported figure for the districts for which activity breakdowns were not given. The column, Activity Total, is the summation of all activity class for each district. The difference between the Salmon River Basin totals for Activity Totals and District Totals represents data not reported to the compiler.

It will be noticed upon examining Table 22 that in the Challis National Forest only the Stanley Ranger District is fully reported. To obtain a more complete estimate of total visitor days spent on national forests in the Salmon River Basin, the total visitor days for the other districts is estimated. It was assumed that the ratio of all activities to visitor days in personal accommodations in the non-reported districts was $3/4$ that reported in the Stanley District. This fraction is used because the Stanley District includes Stanley Lake and part of the Sawtooth Primitive Area which would tend to have greater levels of activity other than camping. By this method a total of 341.8 visitor days is estimated to occur in the Challis National Forest. Including this estimate, an estimate of total visitor days for the Salmon River Basin of 2,612,900 visitor days is obtained.

Clearly, the heaviest use occurs in the headwater areas of the main Salmon in the Sawtooth Valley and Stanley Basin area. Downstream, the heavy use areas are located further away from the river in the area of the Idaho Primitive Area and the Middle Fork with heavy use picking up again along the main stem below the North Fork. The heavy fishing use on the main stem between Clayton and North Fork is not recorded in these statistics because the river does not transverse Forest Service lands in that area.

The heaviest use areas of the Boise National Forest within the basin are the sites on the South Fork of the Salmon River around Warm Lake and Johnson Creek in the Cascade Ranger District. Substantial numbers also visit the headwaters of the Middle Fork in the Bear Valley District. Much of the use in the Landmark District is the undeveloped areas category because this district is largely primitive area. The greatest amount of use in the Payette National Forest occurs in the New Meadows District which includes a number of high lakes on both sides of the Little Salmon and also is the gateway to the Seven Devils Scenic Area. Although it is drained by tributaries to the Snake, this area is within the Salmon River Hydrologic Area as specified by the Idaho Water Resource Board. The Seven Devils area within the Payette Forest and the portion of the area in the Nezperce National Forest are included in the figures for the Salmon River Basin. It should be noted that much of the heavy use in the Red River District of the Nezperce National Forest probably occurs outside of the basin.

Floating and boating is becoming increasingly important in the basin both for the number of participants and as a generator of income. The most famous area for river floating is the Middle Fork of the Salmon which runs through the heart of the Idaho Primitive area. The number of floaters on the

Middle Fork has increased steadily during the period for which data is available. As shown in Table 23 the number of floaters has increased from 625 in 1962 to 3,178 in 1971 - an increase of slightly more than 500%.

Similar increases in floating and jet boating have occurred in other parts of the basin. Some floating and canoeing is experienced in the Stanley Basin area. Jet boating has been growing on the main Salmon from North Fork downstream to the confluence with the Snake. Much of this activity is transportation for the fall hunting season and spring salmon and steelhead runs. No data has been compiled to designate the exact magnitudes of these activities.

Jet boating and river floating tend to be high income sources to the basin because they involve the services of professional guides. From data gathered in a 1969 field survey on the Middle Fork, it was estimated that the floaters that year spent \$422 each and that total expenditures for floating was \$788,296. Of this amount 69% or \$547,324 was spent in Idaho. River activities involving the participants own equipment and not utilizing the professional services of local experts produce less income for the basin.

Table 23

NUMBER OF MIDDLE FORK FLOATERS

YEAR	NUMBER	YEAR	NUMBER
1962	625	1967	1,299
1963	580	1968	1,529
1964	753	1969	1,868
1965	1,260	1970	3,028
1966	1,260	1971	3,178

The magnitude of recreational use within the basin can be more easily understood when the visitor days information is converted into a more naturally visualized category such as the number of visitors. This would be possible if an estimate of the average number of visitor days in each recreational visit to the basin was available. Forest Service data does not include this information however. Estimation of this number would have to represent those that come to the basin on day visits, weekend trips and visits of several days duration. One recreational survey conducted by the Water Resources Research Institute in the Redfish Lake and Stanley Basin area found that the average length of stay among campers there was 8.4 days. This is an overstatement because the sample was not corrected for the length of stay bias so that more people staying longer were sampled. Also only people camping in campgrounds were sampled. When all things are considered, two or four visitor days are probably very close to the true average length of stay.

Using this figure, 2,612,900 visitor days in the basin would represent visits to the basin by 653,000 persons (if each only visited once). This is almost one visit for every person in the state of Idaho.

The economic impact of recreation tends to be spread widely over a large number of activities and purchases. For example, a family leaves Salt Lake City for a week in the Sawtooth Valley with their pick-up camper. Food is purchased at a local supermarket, gas at the local station and camping, fishing and recreational gear from a variety of local stores. As the trip progresses, gas, meals and snacks are purchased along the way. After arriving in the Sawtooths the family may replenish their food supply, purchase recreational gear and fishing licenses and other minor items. The point is that,

although the total expenditures may be over \$1,000 for this family's trip, a relatively small amount of this money would be spent in the recreation area or in Idaho - usually less than 50%. Because of this, the recreational impact on the Salmon River Basin measured in employment and retail sales is a very small part of the total impact on the national economy.

In the agricultural section a subsidy to the livestock industry was computed. In fairness, the subsidy to recreation users should also be considered. Gordon (1971) estimated that optimum daily charges for fishing in the Salmon River Basin varied from \$4.00 per day for stream fishing for trout to \$15.00 per day for steelhead fishing. Other studies of economic value of a visitor day in the area is in progress. For lack of a more exact figure, \$6.00 is used here to approximate the market value of a visitor day in forest lands in the basin. This is the midpoint of the range of values suggested by the Water Resources Council (1971) for evaluating water projects. If each of the visitors had paid a \$2.00 entrance fee for use of forest facilities, then the subsidy to each user would be \$4.00 per day. The net annual subsidy for 2.6 million visitor days would then amount to \$10,400,000. The desirability of this subsidy depends on welfare judgements and income distribution goals.

Fishing

The estimates given in Table 22 on visitor days in fishing represent only the extent of the activity in the national forest in the basin. A more complete description of the importance of the Salmon River Basin as a sports fishery can be obtained from Idaho Fish and Game Department reports and other papers on the subject. Gordon (1970), on the basis of an extensive postal questionnaire mailed to over 9,000 resident and non-resident fishing

license purchasers, estimated total days fishing and total current expenditures for the state of Idaho in 1968. The estimates for the Salmon River Basin are presented in Table 24. Of an estimated 509,000 fishing days spent in the Salmon River Basin in 1968, 47% was spent in stream fishing for trout, 17% of the effort went for steelhead and almost 10% went for salmon.

The Idaho Fish and Game Department has made estimates for several years of the total harvest of salmon and steelhead on the basis of a survey of permit holders. Historically, the Salmon River has produced approximately 50% of the steelhead and 98% of chinook salmon harvested in the state. Table 25 presents the estimated catch of these fish in the Salmon and in the state for the period 1967 through 1970.

The value of the Salmon River as a spawning bed of salmon and steelhead smolt for Columbia River fisheries together with the value of the river as a sports fishery estimates the full value of the river to fishing.

The Idaho spawning grounds according to Mallet and Bjornn (1970) account for approximately 55% of steelhead, 34% of spring chinook and 41% of summer chinook runs of the Columbia. These authors estimated that the net annual economic value of the Salmon River as a sports fishery and as a spawning ground for Columbia sport and commercial salmon and steelhead is approximately \$3,000,000. Because commercial hatcheries have shown their ability to substantially replace major river sections as spawning grounds, the upper limit of the value for the river as a spawning ground is the cost at which a hatchery could consistently produce a number of smolt sufficient to replace the run produced by natural production on the river.

As indicated in Table 24 the expenditure on salmon and steelhead fishing is only a small part of the annual total expenditures in the Salmon River Basin. Gordon (1970) estimates on the basis of extensive sampling of fishing

Table 24

TOTAL DAYS FISHED AND GROSS EXPENDITURES
SALMON RIVER BASIN - 1968

TYPE OF FISHING	LAKES					TOTAL	% OF STATE TOTAL
	SALMON	STEELHEAD	HIGH LAKES	ACCESSIBLE BY ROAD	STREAMS		
Total Days Fished	49,000	88,000	73,000	60,000	239,000	509,000	17.3
Total Current Ex- penditures -- (000's)	\$365,000	\$1,322,000	\$388,000	\$117,000	\$1,063,000	\$3,255,000	29.4

*Source: Gordon, L. An Economic Analysis of Idaho Sport Fisheries. Idaho Fish and Game Department. 1970.

Table 25

ESTIMATED CHINOOK SALMON AND STEELHEAD HARVEST IN SALMON
RIVER BASIN AND STATE OF IDAHO

Year	<u>Salmon River Basin</u>		<u>State</u>	
	Chinook Salmon	Steelhead	Salmon	Steelhead
1967	1,300	11,900	7,500	24,500
1968	10,800	11,300	11,500	24,500
1969	12,300	9,400	13,000	17,000
1970	5,500	10,100	5,700	20,100
Average: 1954-69			16,300	21,125

*Source: Keating, James F. Annual Survey of Salmon and Steelhead Sport Fishing Harvest in Idaho. Idaho Fish and Game Department, 1971.

license holders that the capitalized value of all forms of sport fisheries within the Salmon River Basin to be \$33,010,000. This estimate was based on a Clawson type simulated demand model which has come under extensive criticism.

Arguments are made both that this evaluation technique overstates and understates the true value of the recreation resource. It remains the most widely used evaluation method for non-market outdoor recreation. Whatever the arguments concerning the efficiency of the model, it should be pointed out that this estimate of present value takes no cognizance of the increased intensity of use that is expected to be the result of increased population pressure and projected increase in demand for outdoor recreation.

Big Game Hunting

Although big game hunting is a relatively small percentage of total recreational use of the Salmon River Basin according to Forest Service estimates, the Salmon River Basin is generally considered the major big game hunting area in a state renowned for its hunting. In 1970 the basin produced 18% of the deer kill and 24% of the elk kill of the entire state. The calculated harvest from 1963 through 1970 is presented in Table 26. In addition bear, antelope, moose, bighorn sheep and mountain goat were harvested. The basin is the only area in the state for hunting bighorn sheep and the major area for mountain goat. The hunting resource found in the basin has to be considered one of its unique and most valuable attributes.

Gordon (1971) presents an analysis of deer and elk hunting in the Salmon River Basin in 1968 based on interviews of 125 representative hunters as they left the hunting area. The results give interesting information of hunting in the basin, the hunters and their expenditure patterns. He estimated that

Table 26

INDICATED DEER AND ELK HARVESTS - 1963-1970
FROM SALMON RIVER BASIN

Year	Deer	Elk
1963	13,041	3,158
1964	10,846	3,012
1965	10,380	2,896
1966	13,221	3,298
1967	16,122	2,837
1968	17,223	3,763
1969	18,316	3,461
1970	15,280	3,540
Basin Average	14,304	3,242
State Average 1961-70	69,399	14,813

*Source: Idaho Department of Fish and Game, Annual Reports, 1963-70.

in 1968 36,500 resident and 5,900 non-resident hunters took 18,016 deer. In the same year 14,600 resident and 2,700 non-resident hunters took 3,461 elk. He estimated that the average resident hunter spent \$64.62 for the hunting expedition in Idaho of which the transportation expense, food and beverages and hunting supplies constituted 91%. The non-resident hunters spent an average of \$271.72 in Idaho. Transportation was the highest single item with license expenses and guides and outfitters the next two major items.

Nearly half of the total sample indicated that they had spent less than 25% (\$850,000) of total trip expenses in the Salmon River Basin. The total hunting associated expenditures are listed in Table 27.

Table 27

ESTIMATED EXPENDITURES OF RESIDENT AND
NON-RESIDENT SALMON RIVER BASIN HUNTERS
BY LOCATION

EXPENDITURES	TOTAL (\$)	IN IDAHO (\$)	IN BASIN (\$)
Resident	3,378,779	3,340,014	1,087,844
Non-Resident	2,776,097	2,191,965	1,195,431
TOTAL	6,154,876	5,531,979	2,283,275

*Source: Gordon, Douglas. (1971)

The sociological information gathered in the survey gives an interesting hunter profile. The typical hunter is male (98.4%) between the age of 20 and 60 (92.8%), a blue collar worker (52.4%) with an income between \$7 - 15,000 (\$7 - 10,000, 33.9%; \$10 - 15,000, 33.1%), not a college graduate (88.7%) and lives in the suburbs (40%). Attitudes concerning hunting in the basin were also sampled. Sixty-two percent ranked hunting as either the very best or very

good, 77% desired the basin to be left in essentially the same state of development as then existed, and 68% thought the number of people encountered in the basin "just right". The opinions were about equally divided on the question of restricting vehicles to the road (40% yes versus 37% no).

Highway Travel Data as an Indicator of Recreation Use

Highway travel data can give significant information concerning recreational use in an area of high useage such as the Salmon River Basin. The measures utilized by the Forest Service in estimating visitor days is clearly superior for detail, but highway travel statistics have the advantage of breadth of coverage. The data presented here is two types. The most comprehensive in coverage are the estimates of annual average daily traffic which are based on spot counts only. The more exact and more detailed information gathering technique is the continuous count station which provides a record of the number of vehicles passing a point each day of the year. The locations of continuous count stations and locations of annual average daily traffic (ADT) spot counts are shown in Figure 15. Table 28 presents the annual average daily traffic volumes for five locations in the basin.

Highway travel data can be of two major uses to the resource planner. Continuous count statistics could provide a basis of estimation of visitor days within a major area, and historic trends of highway travel present a good estimation of trends in recreational use. Twenty years of traffic growth factors prepared by the Idaho Department of Highways for basin highways are presented in Table 29. These estimates of increased travel are based on time series projections of ADT, modified in a few locations by estimated effects of improved highways and other factors. These factors are used in Highway Department planning and may be in a small degree self-fulfilling

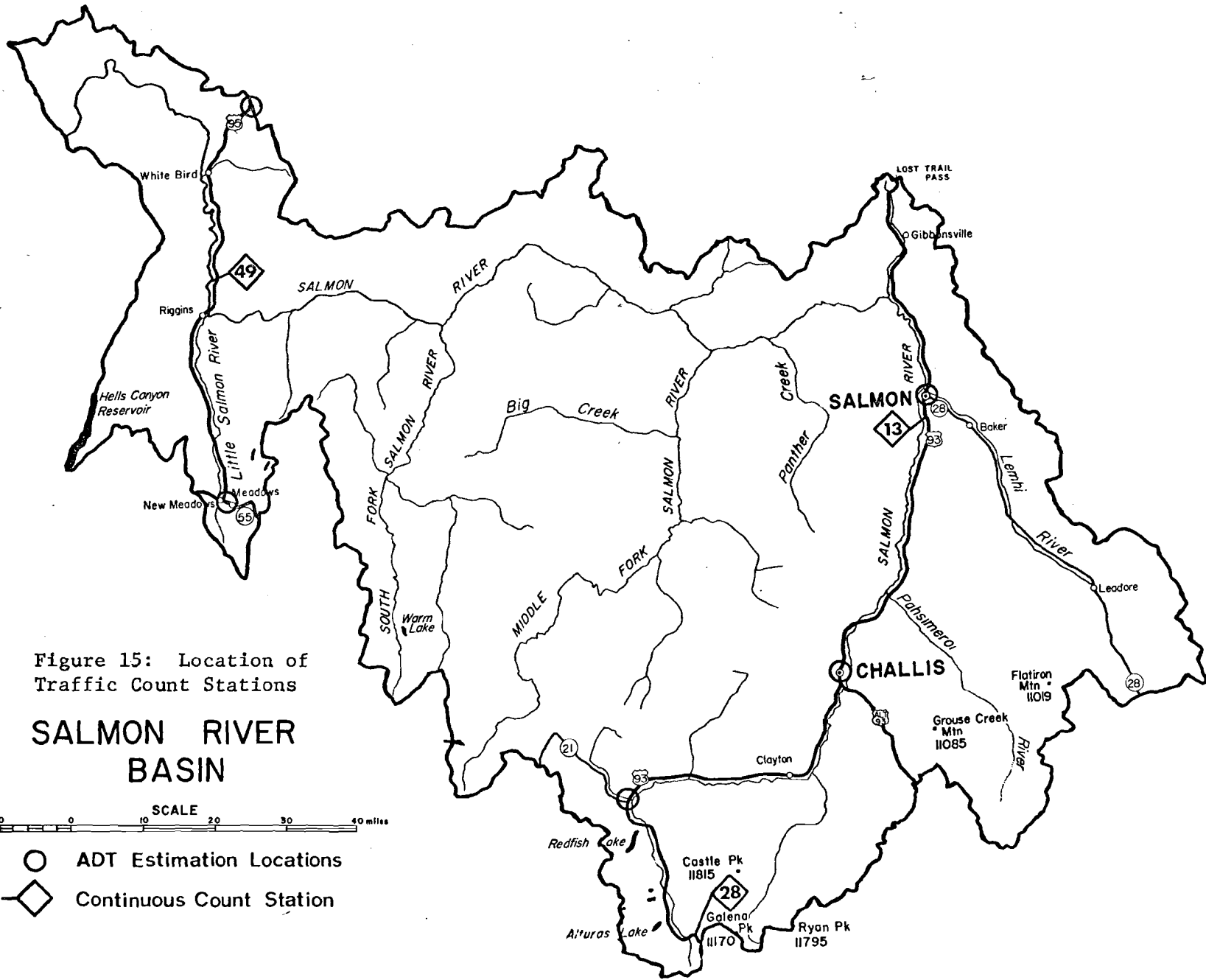


Figure 15: Location of Traffic Count Stations

SALMON RIVER BASIN



- ADT Estimation Locations
- ◇ Continuous Count Station

Table 28

AVERAGE DAILY TRAFFIC FOR SELECTED SITES
SERVING THE SALMON RIVER BASIN - 1971

US 93

Junction of US 93 & State 21 at Stanley:

To Challis	765
To Galena	816
To Lowman	462

Junction of US 93 & US 93A near Challis:

To Mackay	396
To Clayton	504
To Challis	756

Junction US 93 & State 28 at Salmon:

To Carmen	2,358
To Baker	1,464
To Challis	1,908

US 95

Junction US 95 & State 13 at Grangeville:

To Whitebird	1,575
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Junction US 95 & State 55 at New Meadows:

To Riggins	1,038
To McCall	1,479

*Source: Unpublished data from Idaho Department of Highways.

Table 29

1970 - 1990 20 YEAR TRAFFIC VOLUME GROWTH FACTORS
IN SALMON RIVER BASIN

HIGHWAY SEGMENT	ESTIMATED GROWTH FACTOR ¹
US 93 Montana border to Challis	1.6
US 93 Challis to Stanley	1.8
93 Stanley to Ketchum	2.5
93 Ketchum to Hailey	1.7
US 93A Challis to Chilly	1.4
93A Chilly to Arco	1.2
State 28 Salmon to Baker	1.5
28 Baker to Leadore	1.3
State 21 Boise to Idaho City	2.5
21 Idaho City to Stanley	3.5
State 55 Horseshoe Bend to New Meadows	1.7
US 95 Weiser to New Meadows	1.4
95 New Meadows to Riggins	1.6
95 Riggins to Grangeville	1.9

* Source: Idaho Department of Highways, 1970-1990 Traffic Volume Growth Factors. Unpublished Material obtained by personal consultation, Jan. 18, 1972.

prophesies when road conditions are changed to facilitate this growth. However, increases in travel in this area depend most directly on population, economic conditions and demand for outdoor recreation.

Examination of weekly traffic patterns gives a strong indication of the high volume of recreational traffic at the continuous count locations. Table 30 shows that average traffic for week days during the summer months is less than weekend traffic at both station 13 and 28 and it is about equal at station 49. The ratio of ADT for the month with the highest traffic volume compared with the lowest month gives a further indication of the amount of traffic that is recreationally based. Table 31 shows how these ratios have changed through time at four locations.

Traffic researchers have devised a technique for estimating the weekend traffic volumes. A factor is obtained which when multiplied times the average weekday summer traffic gives an estimate of recreational daily traffic on weekends. The Idaho Department of Highways has derived the following factors for the continuous count station locations in the Salmon River Basin: No. 13-0.75; No. 28-1.64; No. 49-1.43. A knowledge of the percentages of traffic that is recreational combined with estimates of visitors per vehicle and length of stay in the area would provide a means of making a rough estimate of total visitor days in the basin. This would capture a more complete picture than presently utilized methods.

Winter Sports

Snowmobiling and skiing are becoming increasingly important winter sports in the basin. Snowmobiling is particularly common in the Stanley and McCall areas; there are annual snowmobile races at both of these locations each winter along with several so called "fun days". This sport

Table 30

DAY OF THE WEEK TRAFFIC VOLUME COMPARISONS AT
SALMON RIVER BASIN COUNT STATIONS - 1970.

STATION	A/M	A/T	A/W	A/Th	A/F	A/S	A/Sun	Monthly Total	Monthly Average
Station 13									
Salmon									
June	1,647	1,637	1,713	1,619	1,700	1,708	1,706	50,271	1,675
July	2,012	1,939	1,977	1,863	1,980	1,965	1,920	60,429	1,949
August	1,854	1,868	1,931	1,823	1,914	1,807	1,775	57,383	1,851
ANNUAL ADT									1,908
Station 28									
Ketchum									
June	768	702	739	670	788	1,051	1,359	25,752	858
July	1,513	1,393	1,421	1,382	1,710	2,158	2,614	54,070	1,744
August	1,150	1,139	1,402	1,392	1,547	1,931	2,169	47,082	1,519
ANNUAL ADT									575
Station 49									
Riggins									
June	1,287	916	853	866	902	1,149	1,072	30,071	1,002
July	1,316	1,130	1,047	1,006	997	1,246	1,210	35,184	1,135
August	1,357	1,181	1,061	1,160	1,256	1,412	1,321	38,588	1,245
ANNUAL ADT									763

*Source: Idaho Department of Highways: Unpublished Data from Monthly Traffic Volume Summary; and Traffic Comparison on Idaho Highways - 1957, 1969, 1970. Idaho Department of Highways.

Table 31

RATIOS OF ADT¹ FOR HIGHEST MONTH TO ADT FOR LOWEST MONTH
AT FOUR SALMON RIVER BASIN LOCATIONS

LOCATIONS	1963	1964	1965	1966	1967	1968	1969	1970	1971
Salmon	3.602	2.71	2.328	2.295	2.128	2.585	2.610	2.464	2.699
Galena		17.066	12.517	14.426	18.000	18.358	17.609	16.771	12.554
Donnelly							4.135	4.105	4.616
Riggins							2.983	2.498	2.649

¹Average daily traffic

*Source: Traffic Comparison on Idaho Highways, 1957, 1969, 1970. Idaho Dept. of Highways.

attracts from 500 to 1,000 snowmobiles to the basin. There are no accurate estimates available on the exact number. Snowmobiling tends to be a family sport and generates important off-season recreation activity in these areas.

Skiing is a more traditional winter sport in the basin and several locations within the basin have been developed for skiing. The Brundage Mountain Ski Area near McCall is the most important area in the basin and one of the best known area in Idaho and in the Pacific Northwest. Nearby is the Payette Lakes Ski Area, but this area has not operated in recent years. In addition, there are two ski area which are very close to the boundaries of the basin. These are the Snow Haven Ski Area near Grangeville and the Lost Trail Ski Area on Lost Trail Pass.

The economic impact of the winter sports is quite important to the basin--more in the terms of potential than present income generated. Development of major winter recreation in the area would substantially increase the economic benefit from recreation to the basin by increasing returns to a set amount of fixed costs and by extending the season for recreational based employment. Winter recreation is needed to compliment the present investment for summer recreation. From a casual survey it appears that there is substantial potential for further development. Snowmobile areas can be developed with little cost. Several sites exist for high quality ski areas that could be feasible if the demand for skiing continues to increase. The development of the skiing potential of the basin would undoubtedly require an improved winter transportation network involving both ground and air transport. Cross-country skiing and snowshoeing are other activities that are growing in participation and which can be developed with minimum investment. Areas should be provided for these activities in any area development plan.

Recreational Residence

The unique combination of recreational resources available in the Salmon River Basin has attracted a great deal of activity in the subdivision and marketing of recreational properties for second homesites. Large subdivision advertising signs are frequently seen from the highways of Lemhi and Custer Counties. Table 32 lists the platted subdivisions in those counties. There are thirty-one separate subdivisions in these two counties which contain some 3,804 lots. Figure 16 shows the location of these developments listed in Table 32.

The principle subdivision activity within the basin is contained within Lemhi and Custer Counties. Some small subdivisions exist along the Little Salmon River in Adams and Idaho Counties. Also considerable subdivision has occurred in the Sawtooth Valley in the vicinity of Alturas Lake which is in Blaine County. Information was gathered only for Custer and Lemhi Counties. State law requires that any time a single parcel is divided into five or more parcels, a subdivision plat map drawn up by an engineer must be filed in the county courthouse. The information in Table 32 was obtained from the plat maps of Custer and Lemhi Counties in June, 1972. Only subdivisions outside of incorporated areas are included.

Recreational residence developments in the basin can be grouped into three categories. The first is cabins located on sites leased annually from federal agencies. The Salmon River forests report a total of 188 cabin permits issued in 1971. These are typically in medium density, highly desirable sites. Present Forest Service policy discourages further cabin development. The economic significance of this group is fairly small because of the small numbers involved.

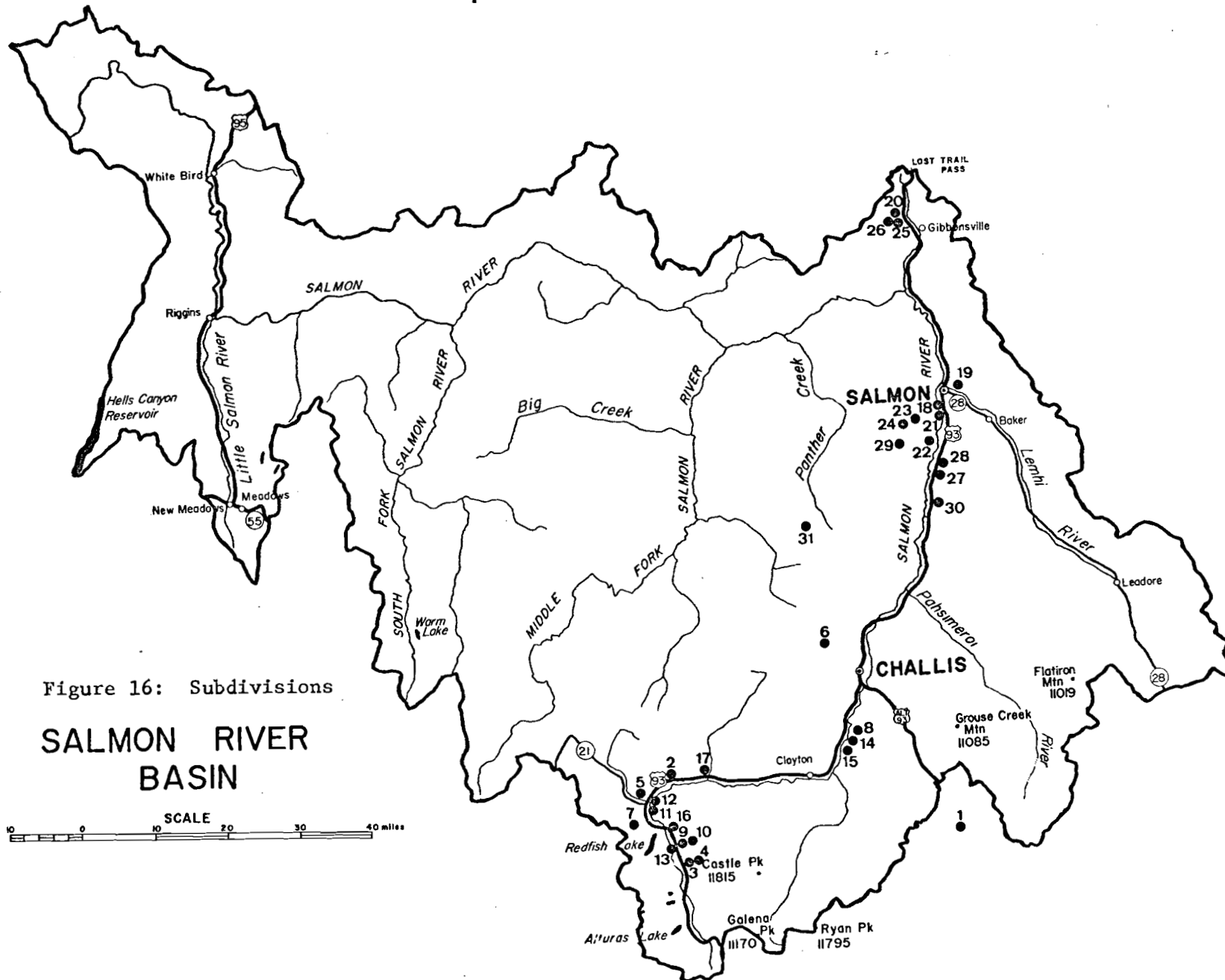


Figure 16: Subdivisions
**SALMON RIVER
 BASIN**



*Note: Name and description of developments are listed by number in Table 32.

Table 32
RECREATIONAL SUBDIVISIONS PLATTED IN
LEMHI AND CUSTER COUNTIES, JUNE, 1972

MAP NO.	LOCATION	DEVELOPMENT NAME	NUMBER OF LOTS
Custer County			
1	Antelope Valley Unit A	Sec. 23 T9N R21E	192
2	Casino Creek Cabin Sites	Sec. 20 T11N R14E	13
3	Wohelo Valley Subdivision	Sec. 4 T8N R14E	15
4	Fisher Creek Subdivision	Sec. 4 T8N R14E	30
5	Gateway Subdivision #1	Sec. 35 T11N R13E	16
6	Lakeview Areas	Sec. 27 T14N R17E	11
7	Riverside	Sec. 10 T10N R13E	23
8	Salmon River Subdivision	Sec. 18 T15N R20E	24
9	Sawtooth Valley Areas	Sec. 32 T9N R14E	71
10	Sawtooth Valley Subdivision	Sec. 29 T9N R14E	44
11	Stanley Basin Cabin Sites	Sec. 25 T10N R13E	65
12	The Stanley Basin Subdivi.	Sec. 8 T10N R13E	78
13	Swiss Air Villa	Sec. 30 T9N R14E	41
14	Swiss Air Villa II	Sec. 29 T9N R14E	416
15	Tunnel Rock Areas	Sec. 19 T12N R19E	24
16	White Clouds Subdivision #1	Sec. 4&9 T9N R14E	40
17	Yankee Fork Subdivision	T12N R15E	10
Lemhi County			
18	Mountain View Areas	Sec. 19 T21N R22E	37
19	Amarlu Subdivision	T23N R17E	42

Table 32 (Cont.)

MAP NO.	LOCATION	DEVELOPMENT NAME		NUMBER OF LOTS
20	Neyman Subdivision	Sec. 35	T26N R21E	24
21	Green Areas	Sec. 29	T21N R22E	11
22	Pleasant Meadows	Sec. 18	T22N R22E	29
23	Williams Lake	Sec. 33&34	T20N R21E	442
24	Lake Creek	Sec. 1&2	T19N R21E	166
25	Cummins Lake Subdivision	Sec. 19	T25N R21E	35
26	Sheep Creek		T25N R21E	7
27	Salmon River Estates	Sec. 10&15	T18N R21E	1527
28	Salmon County Estates	Sec. 36	T20N R21E	143
29	Salmon River Highlands	Sec. 36	T20N R21E	35
30	Salmon River County Estates	Sec. 16	T17N R E	146
31	Rams Horn Estates		T18N R17N	<u>127</u>
			TOTAL	<u><u>3804</u></u>

The second category consists of the small and medium sized developments intended mainly for sale in Idaho. Federal statute requires certain standards of water supply and bonding to ensure completion of advertised amenities for subdivisions to be sold interstate. Generally, a development greater than 200 units is needed before interstate sale becomes profitable. Twenty-six subdivisions in the basin have less than this amount. Normally this group has higher site occupancy rate because the owners tend to live within distances that allow them to visit the site more than just during vacations. Improvements on the sites are more likely. Thus, a significant impact on retail trade, construction employment and personal services can be expected in the area from these developments.

The third group consists of large subdivisions intended for sale interstate. Five developments in the basin fit this category and together have offered 2,669 lots. The largest is the Salmon River Estates developed by Penn Phillips Corporation. Lot sizes in this development vary from 1/4 acre to over 5 acres and vary in price from \$1,590 to \$11,900. Sales are practically all made in California to residents of that state. The lots were reported to be 2/3's sold by mid-June, 1972.

Several characteristics are common to this type of development. They are typically in less desirable locations where land values are low enough to enable an attractive sales price and still cover the high advertising required to sell the lots. In order to sell in California, the developers must be bonded to guarantee completion of the advertised amenities. Typically, these developments are of little direct economic impact on the community. Virtually all profits remains out of the state and occupancy rates are very low. At present in the Penn Phillips development less than five lots have been improved, although nearly 1,000 of the lots have been sold. The biggest bene-

fit of the development to the counties is the gain that accrues to the county tax base. The lots pay full taxes as soon as sold, while the county is required to provide very little in the way of services to the non-resident owners.

The subdivision activity is going on so rapidly that Table 32 will soon be incomplete. Two developments were found that were in the late planning stages but that had not been recorded as yet; and another major development company was negotiating for land when the information was gathered. More subdivisions of size sufficient for interstate sale are expected. Virtually the only limitation to this large scale development apparent along the upper Salmon River is the availability of sufficiently large groupings of private land conducive to large scale development.

SUMMARY AND CONCLUSIONS

The Salmon River Basin is not an economic region but is composed of several economic regions located in a hydrologic basin. Thus, generalization about economic activities are not likely to be equally applicable to all parts of the basin. For this reason the seven counties included in this study are divided into three sub-areas: Sub-area One - Nez Perce, Lewis and Idaho Counties; Sub-area Two - Adams and Valley Counties; and Sub-area Three - Lemhi and Custer Counties.

Demography

The population projection trends for the Salmon River Counties appear to be declining in every county except Nez Perce. The rates of decline vary from 1.5% in Valley County to 17.1% in Lewis County between 1960 and 1970. Nez Perce County registered a 12.2% increase during the same period, and the increase was large enough to carry the seven basin counties to a 2.9% increase. If Nez Perce County is eliminated from the basin population statistics, the six county rate of population decline between 1960 and 1970 was 1.9%. Unless major outside developments occur, this trend is expected to continue.

Unemployment is higher in the basin than in the state and the difference has increased during the period of 1960 and 1970. In 1960 the average unemployment in the basin counties was approximately 50% greater than that of the state and in 1970 approximately twice that of the state. Employment tends to be highly seasonal. Approximately 21% of the employment in the basin was provided by the government in 1970.

Median family income in the basin lagged behind that of the state by \$184 in 1960 and \$238 in 1970. Poverty levels were higher within the basin

both in 1960 and 1970 than for the state. In 1970 the percent under the poverty level was 12.2% versus 10.9% in the state. Generally, the Salmon River Basin is an area of declining population and below average economic conditions.

Employment

The employment categories and their percentage shares found in the seven counties involved were 14.5% agricultural, 14.1% non-ag self-employed and domestic and 71.4% non-ag wage and salary workers. A further breakdown indicated that 36.7% of the employment was in manufacturing and that 50.8% was in non-manufacturing activity.

An estimate was made of the basin employment multiplier. This study also summarizes the results of two input-output studies that have been done for the whole state. These studies found that the income multiplier for various sectors range from 1.1 to 2.9.

They indicate that a much larger economic impact is obtained from increased investment and spending in basic industries such as agriculture, lumber milling and mining than would be obtained from recreation, retail trade and other service activities. Alternatively stated, it would take a much larger level of spending in recreation or retail trade than in agriculture or wood products to create the same level of economic activity and well being. In general, those sections which purchase the greatest amount of goods and services necessary for final output within the basin have a much greater economic impact on the basin's economy.

Agriculture

Agricultural activity represents the largest generator of income in the basin. Estimates of the number of farms, total cropland and irrigated cropland

within the basin were made. There are approximately 675 farms within the Salmon River Basin which encompass 208,500 acres of total cropland and 143,000 acres of irrigated lands.

The market value of all agricultural products sold in the basin was \$13,560,000. A breakdown indicates that 83.8% results from livestock and livestock products, 15.9% from crops and 0.3% from forest products of private lands. The Salmon River Basin agricultural sector produces 3.2% of the state's production of livestock and livestock products, 0.7% of crops and 3.1% of farm forest products. Only 2% of the state's total agricultural production occurs within the basin.

Public grazing plays a major role in the livestock production which is the important agricultural activity in the Salmon River Basin. There are 585 livestock operators holding permits for grazing on public lands in the basin for an estimated 255,725 AUMs annually. The productive value of most AUMs in the Salmon River Basin is decidedly above the national average of federal lands. Thus, even when the national average market value is reached, many basin ranchers will still be receiving grazing at less than its true market value. The estimated amount of this subsidy for the Salmon River Basin is \$209,000. Removal of this \$209,000 subsidy would cause a considerably greater reduction in related business activity and income through the multiplier effect. An even greater loss of economic activity would occur if total animal numbers are reduced because this would reduce the economic base as well as income.

Mining and Minerals

The Salmon River Basin is a highly mineralized area which is generally agreed among mineral experts to possess large potential for mineral development. Active mineral claims are estimated to number 25,000. Only six ac-

tively producing operations were reported. Extensive prospecting and development work is presently being conducted, but mining employment is sharply reduced from the levels of 20 years ago.

The environmental impact of mining operations varies with the type of operation. Small scale shaft or drift mines are much easier to control. Large open pit mines have such great potential for environmental consequences that present laws appear inadequately to handle the situation.

Forestry

The estimated total timber inventory in non-reserved areas of the basin is 22,598.9 million board feet. In 1971 158.9 million board feet were harvested from Salmon River forest districts which includes a slightly larger land area than basin boundaries.

Approximately 3,400 men are employed in timber harvest and wood products manufacturing in the seven county study area. The stumpage value of timber cut in Salmon River forest district in 1971 was estimated to be \$1,114,255. The timber harvested is estimated to have a direct national impact of \$28 million.

National forest spokesmen indicate that timber sales will be decreased as much as 30% of 1972. This will have serious consequences in many basin towns. When the total effect is felt through the multiplier, 5% of the work force of some counties could be displaced.

Recreation

Virtually all of the outdoor recreation in the basin occurs within the national forests on the basin's rivers and streams. Recreational developments within Salmon River forest districts include 1,139 family camping units at 178 developed sites, 6,728 miles of trails and 3,611 miles of roads. Over 2.6 million visitor days were reported in the basin forest districts in 1971

with 36% of reported visitor days spent in camping and other personal accommodation activities, 23% in land travel activities and 14% in fishing. The Sawtooth Valley and Stanley Basin areas received the heaviest use.

A 1968 survey shows fishermen spent an estimated 509,000 fishing days in the basin in 1968; 47% fishing for trout, 17% for steelhead and 10% for salmon. It also reports that in that year, current expenditures by fishermen for basin fishing amounted to \$3,255,000 which represented 29% to the total fishing expenditure for the state.

The Salmon River Basin produced 18% of the deer and 24% of the elk taken in the state in 1970. The average kill from 1963 through 1970 in the basin was 15,280 deer and 3,540 elk. In 1968 36,500 state residents and 5,900 non-residents hunted for deer, and 14,600 residents and 2,700 non-residents hunted for elk.

The economic impact of basin recreation is considerably greater outside the basin than in it. Most recreation that occurs here has low onsite costs. Approximately 75% of the travel expenses and equipment purchases involved occur outside of the basin. State Department of Highway travel counts indicate that highway travel in the basin will increase from 20% to 250% in the next 20 years, depending on location, with recreational routes showing the greatest increase.

Development of increased winter recreation activity would have significant economic impact by increasing length of employment season and increasing return on private investment catering to recreation trade.

Strong activity in the sales of recreational residences is one of the most interesting economic occurrences in the basin at present. Over 3,800 lots have been subdivided. Reports indicate over half are already sold and plans

for additional developments are under way. Although the environmental and aesthetic impact is large, real economic benefit to the basin is small.

Conclusions

Finally, it appears that much of the future economic potential of the Salmon River Basin will be related to 1) continued recreational development, 2) the possibility of increased mining activity, 3) increased exploitation of the timber resources, and 4) increased agricultural potential through the development of the water resource potential. The recreational development is dependent upon the national policies toward preserving natural and wilderness areas, national recreation areas and the income and leisure time available to the public. The mining potential is a function of whether or not the prices of minerals advance rapidly or slowly and the decisions made concerning whether these mineral areas will be designated national parks, wildernesses or NRA's. Any increase in the timber production over present levels would be short run because of the low to medium quality of the timber land resources in the Salmon River Basin. If the annual cut were increased, it would for a short period of time - say 20 to 30 years - increase employment, output and income of the basin. This increase in economic activity would be at the expense of sustained yield of the timber resources and could be detrimental in the long-run. Finally, the potential increase in agricultural production would come from an improved supply of water for irrigation in the basin. The impact would largely occur in the upper basin - Lemhi and Custer Counties - and would result in a more uniform distribution of water on existing irrigated land and in developing additional water for new land. This type of increase in the economic activity of the basin would definitely be of a long term nature. The economic benefit would be limited by the amount of new land

available to be irrigated which is relatively small. The additional land area having immediate potential for new irrigated development is 65,670 acres.

In addition a word should be said about out of basin irrigation using Salmon River water. At the present this does not appear to be economically feasible. The major obstacle is the cost of inter-basin diversion. No detailed studies have been made on these costs, but the minimum lift would be between 2,000 and 5,000 feet which implies that the cost of pumping would be prohibitive under the current costs and returns for agricultural production in southern Idaho.

The potential economic growth of the Salmon River Basin appears to be limited. The major constraints are 1) the nature of the resources, 2) the limitations of the transportation system, 3) the economic dependences on agriculture, forestry and mining, and 4) the seasonal nature of recreational pursuits. The potential for expanding the economic base appears to be small as long as these limitations hold.

APPENDICES

Appendix 1-A

AVERAGE ANNUAL EMPLOYMENT FOR SALMON RIVER COUNTIES

7 COUNTY TOTALS	1957	1962	1968	1969	1970
Civilian Labor Force		25,982	27,231	27,441	27,708
Unemployed		1,839	1,398	1,281	1,807
Annual Rate		7.7	5.9	5.4	7.1
Total Employment	27,445	22,869	25,767	26,160	25,901
Agricultural Employment	5,783	4,581	3,903	3,738	3,758
Non-Ag Self Employed and Domestics	3,320	2,926	3,621	3,683	3,655
Non-Ag Wage and Salary Workers	15,342	16,574	18,338	18,739	18,484
Total Manufacturing		5,085	5,466	5,607	5,320
Food Processing		491	374		309
Lumber		4,021	3,659	3,441	3,221
Other		1,079	1,409	1,804	651
Total Non-Manufacturing	10,035	10,965	12,873	13,132	13,169
Mining	676	133	18	17	108
Construction	374	516	698	605	530
Transportation, Comm. & Utl.	1,085	929	873	1,110	1,132
Trade	3,166	3,605	4,119	4,232	4,283
Finance, Insurance & Real Estate	396	471	481	539	553
Services and Miscellaneous	1,231	2,174	2,651	2,612	2,371
Government	3,080	3,157	3,895	4,017	4,183

* Source: Idaho Department of Employment. Basic Economic Data, Series published irregularly.

Appendix 1-B

AVERAGE ANNUAL EMPLOYMENT-ADAMS COUNTY

	1957	1962	1968	1969	1971
Civilian Labor Force		1,233	1,584	1,562	1,523
Unemployment		128	129	126	190
Annual Rate		10.4	8.1	8.1	12.5
Total Employment	1,533	1,105	1,455	1,436	1,333
Agricultural Employment	523	339	312	315	315
Non-Ag Self Employed and Domestic	146	140	225	181	173
Non-Ag Wage & Salary Workers	864	624	918	940	845
Total Manufacturing		316	331	351	313
Food Processing					
Lumber	518	314	330	350	313
Other			1		
Total Non-Manufacturing	343	310	587	589	532
Mining		*			5
Construction	11	7	232	136	73
Transportation, Comm. & Util.	33	6	13	14	13
Trade	85	62	46	48	54
Finance, Insurance and Real Estate	9	12	14	14	15
Service and Miscellaneous	29	131	77	82	80
Government	176	94	267	295	292

*Included in Services and Miscellaneous

Appendix 1-C

AVERAGE ANNUAL EMPLOYMENT-CUSTER COUNTY

	1957	1962	1968	1969	1970
Civilian Labor Force		1,389	1,261	1,248	1,247
Unemployment		85	69	55	53
Annual Rate		6.1	5.5	4.4	4.3
Total Employment	1,251	1,304	1,192	1,193	1,194
Agricultural Employment	551	552	447	417	434
Non-Ag Self Employed & Domestic	238	196	144	141	136
Non-Ag Wage & Salary Workers	462	556	601	635	624
Total Manufacturing	10	15	23	10	5
Food Processing	1				
Lumber	9	11			
Other		*			
Total Non-Manufacturing	452	541	578	625	619
Mining	17	61			83
Construction	3	22			5
Transportation, Comm. & Util.	47	38	41	40	39
Trade, Wholesale and Retail	85	93	103	120	107
Finance, Insurance and Real Estate	12	17	19	19	19
Services and Miscellaneous	27	44	127	158	87
Government	261	270	287	288	279

Appendix 1-D

AVERAGE ANNUAL EMPLOYMENT-IDAHO COUNTY

	1957	1962	1968	1969	1970
Civilian Labor Force		5,118	5,099	5,101	5,263
Unemployment		430	302	281	438
Annual Rate		8.4	5.9	5.5	8.3
Total Employment	4,376	4,688	4,797	4,820	4,825
Agricultural Employment	1,358	1,314	905	906	908
Non-Ag Self Employed and Domestic	666	694	770	778	788
Non-Ag Wage and Salary Workers	2,352	2,680	3,122	3,136	3,130
Total Manufacturing	967	930	963	1,009	925
Food Processing	*				
Lumber	940	878	926	956	876
Other		42	37	53	49
Total Non-Manufacturing	1,385	1,760	2,159	2,127	2,205
Mining	28	12	16	17	11
Construction	54	119	90	88	92
Transportation, Comm. & Util.	124	124	89	82	74
Trade - Wholesale and Retail	430	487	496	515	515
Finance, Insurance and Real Estate	59	72	83	79	80
Services & Miscellaneous	109	271	413	391	367
Government	581	675	972	955	1,067

Appendix 1-E

AVERAGE ANNUAL EMPLOYMENT-LEMHI COUNTY

	1957	1962	1968	1969	1970
Civilian Labor Force		2,273	2,289	2,321	2,347
Unemployment		158	126	125	125
Annual Rate		7.0	5.5	5.4	5.3
Total Employment	2,811	2,115	2,163	2,196	2,222
Agricultural Employment	989	761	733	726	740
Non-Ag Self Employed and Domestic	442	336	255	266	252
Non-Ag Wage and Salary Workers	1,380	1,018	1,175	1,204	1,230
Total Manufacturing	74	131	185	235	226
Food Processing	16	16	13	52	36
Lumber	52	109	164	176	182
Other			8	7	8
Total Non-Manufacturing	1,306	887	990	969	1,004
Mining	500	23			
Construction	21	18	21	22	29
Transportation, Comm. & Util.	34	48	37	37	40
Trade - Wholesale and Retail	291	265	260	263	287
Finance, Insurance and Real Estate	16	20	20	21	25
Services & Miscellaneous	92	202	244	221	198
Government	352	317	408	405	425

Appendix 1-F

AVERAGE ANNUAL EMPLOYMENT-LEWIS COUNTY

	1957	1962	1968	1969	1970
Civilian Labor Force		1,676	1,333	1,383	1,432
Unemployment		134	66	53	76
Annual Rate		8.0	5.0	3.8	5.3
Total Employment	1,492	1,542	1,261	1,330	1,356
Agricultural Employment	511	468	359	347	346
Non-Ag Self Employed and Domestic	186	155	120	123	128
Non-Ag Wage and Salary Workers	795	919	782	860	882
Total Manufacturing	288	389	173	209	237
Food Processing					
Lumber	272	376	160	186	210
Other		13	12	23	27
Total Non-Manufacturing	507	530	610	651	645
Mining	*	*		0	0
Transportation, Comm. & Util.	57	28	23	20	18
Construction	12	16	12	11	14
Trade-Wholesale and Retail	186	176	213	239	250
Finance, Insurance and Real Estate	22	26	30	34	35
Services & Miscellaneous	31	83	68	77	70
Government	199	201	264	270	257

Appendix 1-G

AVERAGE ANNUAL EMPLOYMENT-NEZ PERCE COUNTY

	1957	1962	1968	1969	1970
Civilian Labor Force		12,409	13,783	13,981	13,964
Unemployment		732	576	519	754
Annual Rate		5.9	4.2	3.7	5.4
Total Employment	14,418	11,697	13,207	13,462	13,210
Agricultural Employment	1,552	1,023	910	897	881
Non-Ag Self Employed and Domestic	1,435	1,272	1,870	1,946	1,923
Non-Ag Wage and Salary Workers	8,431	9,382	10,427	10,619	10,401
Total Manufacturing	3,136	3,376	3,478	3,468	3,314
Food Processing	309	475	361	299	273
Lumber	1,873	1,877	1,777	1,459	1,349
Other		1,024	1,340	1,710	558
Total Non-Manufacturing	5,295	6,006	6,949	7,151	7,092
Mining	*	25	*	*	*
Construction	240	316	314	316	281
Transportation, Comm. & Util.	737	616	571	833	861
Trade-Wholesale and Retail	1,960	2,356	2,814	2,856	2,859
Finance, Insurance and Real Estate	264	307	286	341	349
Services & Miscellaneous	873	1,272	1,527	1,472	1,366
Government	1,221	1,114	1,236	1,333	1,369

Appendix 1-H

AVERAGE ANNUAL EMPLOYMENT-VALLEY COUNTY

	1957	1962	1968	1969	1970
Civilian Labor Force		1,884	1,882	1,845	1,932
Unemployment		172	130	122	171
Annual Rate		9.1	7.1	7.0	8.9
Total Employment	1,564	1,712	1,692	1,723	1,761
Agricultural Employment	299	124	142	130	134
Non-Ag Self-Employed and Domestic	207	193	237	248	255
Non-Ag Wage and Salary Workers	1,058	1,395	1,313	1,345	1,372
Total Manufacturing	311	464	313	325	300
Food Processing	*	*			
Lumber	308	456	302	314	291
Other			11	11	9
Total Non-Manufacturing	747	931	1,000	1,020	1,072
Mining	131	12			7
Construction	33	18	29	32	36
Transportation, Comm. & Util.	53	69	99	84	91
Trade	129	166	187	191	211
Finance, Insurance & Real Estate	14	17	29	31	30
Services and Miscellaneous	97	171	195	211	203
Government	290	486	461	471	494

Appendix 2

TOTAL RETAIL TRADE IN SALMON RIVER BASIN COUNTIES
IN 1958, 1963 and 1967

	ALL ESTABLISHMENTS NO.	TOTAL SALE	% CHANGE 1957 - 1968	% OF STATE
STATE				
1958	7,546	816,611	40.5	
1963	7,311	947,044		
1967	7,628	1,148,870		
ADAMS				
1958	37	2,269		.003
1963	38	2,359	-14.0	.002
1967	37	1,952		.002
CUSTER				
1958	58	2,628		.003
1963	62	2,786	02.5	.003
1967	57	2,695		.002
IDAHO				
1958	147	8,542		.010
1963	156	16,748	81.7	.018
1967	141	15,523		.014
LEMHI				
1958	87	7,164		.009
1963	84	6,385	19.9	.007
1967	93	8,593		.007
LEWIS				
1958	73	3,940		.005
1963	64	4,836	10.3	.005
1967	64	4,347		.004
NEZ PERCE				
1958	334	48,115		.059
1963	354	57,472	49.0	.061
1967	358	71,687		.062
VALLEY				
1958	71	5,035		.006
1963	69	4,973	-19.2	.005
1967	73	4,070		.004
TOTAL				
1958	807	77,693		.095
1963	827	95,559	40.1	.101
1967		108,867		.0948

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