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### Federal Public Land Laws and Policies Relating to Intensive Agriculture, Volume VI. Working Paper: Probable Effects of New Cropland on Local and Regional Economies in Western United States

Economics Department

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**Federal Public Land Laws  
and Policies  
Relating to Intensive Agriculture**

**VOLUME VI**

**WORKING PAPER**

**Federal Public Lands:  
Probable Effects of New Cropland on Local  
and Regional Economies in  
Western United States**

**Prepared for the  
Public Land Law Review Commission  
Washington, D. C.**

**By  
The Economics Department  
Agricultural Experiment Station  
South Dakota State University  
Brookings, South Dakota 57006**

**APRIL 30, 1969**

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## TABLE OF CONTENTS

	Page
I. INTRODUCTION . . . . .	1
II. THE ROLE OF AGRICULTURE IN THE WESTERN ECONOMY . . . . .	3
III. POSSIBLE CONTRIBUTION OF NEW FEDERAL LANDS TO THE WEST AND TO STATE ECONOMIES . . . . .	5
IV. SOME CHANGES IN THE RURAL SECTORS OF THREE SELECTED COUNTIES IN ARIZONA, IDAHO, AND MONTANA. . . . .	7
V. CHANGES IN THE URBAN SECTORS OF THREE SELECTED COUNTIES . . . . .	8
VI. CHANGES IN THE PUBLIC SECTORS OF THE THREE COUNTIES . . . . .	11
VII. PROBABLE EFFECTS OF NEW FEDERAL LANDS ON THE SELECTED COUNTIES . . . . .	11
VIII. SUMMARY AND CONCLUSIONS . . . . .	13
IX. TABLES . . . . .	15
BIBLIOGRAPHY . . . . .	39

This study is part of the research being done by the University under contract with the Public Land Law Review Commission. The opinions, findings, conclusions and data expressed in this publication are those of the authors and not necessarily those of the Public Land Law Review Commission. This publication constitutes only one of a number of sources of information utilized by the Commission in the conduct of its public land study program.

See last page for titles of other volumes in this report

FEDERAL PUBLIC LANDS: PROBABLE EFFECTS OF NEW CROPLAND ON LOCAL  
AND REGIONAL ECONOMIES IN THE WESTERN UNITED STATES

C. M. Johnson and R. L. Berry

I. INTRODUCTION

Should arable federal public lands be developed for crop production at this time? The answer depends on at least three important considerations:

1. The amount of lands that are likely to be available.
2. The need for these lands to help meet the expected demand for food and fiber in 1980 and 2000.
3. The probable effect of the development of new lands on regional, State, and local economies of the West.

A survey made of seven major federal agencies revealed that 2.0 million acres of federal lands are suited for dryland crop production, and 1.3 million acres are suited for irrigated crops in 17 Western States. (The location by States is shown in Table 1, and the results of the survey are in Volume IV of this report.) However, only lands held by the Bureau of Reclamation, the Bureau of Land Management, and the Corps of Engineers are considered available. These total 1.6 million acres--705,000 for dryland and 941,000 for irrigated crops. Arable lands held by other federal agencies are reserved as forests or for game, recreation, or national defense and are unlikely to be considered for intensive agriculture.

The need for these arable public lands to meet national food and fiber demands of 1980 and 2000 has been explored in Volume V of this report. That study indicates that, despite an expected increase in population of 75 percent by 2000, there will be no need for these 1.6 million acres for crop production in the foreseeable future. At present only 300 million acres of cropland are being harvested, and 61 million have been retired under government programs. Another 338 million are

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available for regular crop production when needed, and there are about 160 million acres of other lands that could be used for occasional crop production! In addition, crop and livestock yields are expected to continue to increase in the years ahead.

Even though these arable federal lands are not needed nationally, should they be developed to benefit the Western States and their local economies? Since the Public Land Law Review Commission is expected to make a recommendation regarding this question, this study was made to provide the Commission with indications of the possible benefits of such land development to three local economies of the West. Specifically, the contract (Appendix A, 4g) calls for the joint selection of three areas and specifies that "the economy of the county or counties selected for study will be essentially oriented to agriculture, but with an urban trade center large enough to allow the contractor to identify and analyze the multiplier effect of changes in the agricultural sector upon the other sectors of the local economy. The analysis is to be based on information available from various government and other reports and shall provide answers to the following questions:

(1) What changes have taken place in the economy of the study area between 1950 and the present in terms of such measures as population, employment, per capita, and per family income, and local property tax collections?

(2) What changes have taken place in the agriculture sector of the study area, including changes in number of farms, average size of farms, farm and per farm income, farm employment, and cropping patterns?

(3) To what extent can the economic development of the study area and changes in area and individual wealth positions be attributed to the development of agriculture on new lands? Segregate effects on population, employment and income for agriculture, agriculture-related industry, and other export base industry or activity. Identify major developments that have taken place in the nonagriculture sector that have influenced development of the regional economy.

(4) On the basis of available information, identify and quantify, to the extent possible, changes in the economy of the study area that could take place during the next decade as a result of the development of additional new agricultural lands."

The three areas selected for intensive study were Yavapai County, Arizona; Cassia County, Idaho; and Phillips County, Montana. These counties were chosen because:

- (1) they have public land areas large enough so that a change in use could have an important effect on the local economy,
- (2) they are typical of many counties in the West,



- (3) they are relatively free from other factors which might influence economic activity in the community,
- (4) they have arable lands that can be bought into production without excessive costs, and
- (5) they had a relatively large increase in agriculture between 1949 and 1964.

Subsequently it was decided to show, insofar as data permitted, the probable effects of development of the new lands on the West as a region and on 11 Western States as well as on the three local economies.<sup>1</sup> Briefly, this report will attempt to answer these questions:

What is the relative role of agriculture in the West? (Part II)

What would be the likely contribution of arable federal lands to regional and State economies? (Part III)

What changes have occurred in the rural economies of the three selected counties? (Part IV)

What are some of the changes in urban and public areas of the three selected counties? (Part V)

What effect would the development of arable federal lands have on the selected counties? (Part VI)

## II. THE ROLE OF AGRICULTURE IN THE WESTERN ECONOMY

Typically, many people think of the Western United States, except for the Pacific coast, as being vast treeless prairies, tumbled mountain ranges, and primeval forests. Such a view is correct even today, but it fails to recognize the changing demographic, economic, and geographic faces of the West. Other people think of the Western States as being dominated by agriculture, particularly cattle ranching. Such a view was, of course, essentially correct for the West of yesteryear. However, the agricultural industry of the region today can be characterized as being both broadly diversified and highly specialized, for example, the citrus fruit and garden crop area in southern California, the apple growing sections of Oregon and Washington, the potato area in southern Idaho,

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<sup>1</sup>The total acreage of arable federal lands in these 11 Western States is 1.5 million--the other 100,000 acres of the 1.6 million in the 17 Western States are in the six States not included in this part of the study.



wheat areas in Montana, and garden crop production on irrigated land in Arizona. There remain, of course, considerable generalized farming and specialized range cattle production in extensive areas of the West not suited to specialty crop production.

Total agricultural production has increased in both physical and monetary terms since the West was settled, and it undoubtedly is still increasing. Products of western agricultural industry help to feed the rapidly growing population of both the Western States and the nation as a whole. Nevertheless, agricultural production is not dominant even though such production, along with mining and forestry, is still basic to the economy of both the region and the nation.

Direct agricultural production of crops and livestock represents less than 10 percent of the total economic production of the 11 Western States and combined with agricultural product processing it represents one-sixth of the total economic activity (Table 2). The growth of non-agricultural industry and other economic activities has relegated total agricultural production and processing to a relatively minor role which is likely to decline in the future. Although empirical evidence is not presented here, history indicates that as a geographic area develops, it tends to become relatively less agrarian and more urban. Even though agricultural production may increase somewhat, its relative role in terms of total economic activity declines.

The role of agriculture in the economy of each of the 11 Western States varies considerably (Table 2). First, the combined agricultural production and processing enterprise represents one-third or less of total economic activity in any of the several States, including those usually thought of as predominately agrarian. Second, livestock production exceeds other agricultural production in importance in only two States, New Mexico and Utah. Third, other agricultural production equals or exceeds livestock production in importance in Arizona, Montana and Wyoming, all usually considered as specialized range cattle production States. Fourth, agricultural processing is more important than direct agricultural production in California, Oregon, Utah and Washington--indicating products requiring extensive processing, handling, and packaging before they reach the consumer. Fifth, and very surprising, the combined agricultural production and processing enterprise represents 12 percent or less of total economic activity in Nevada, New Mexico, Utah, Washington, and Wyoming--States usually considered primarily agrarian.

Some counties in the West are practically devoid of any hamlet, village, or town, and economic activity is nearly all agricultural. A few counties are entirely urban or nearly so; accordingly, the relative role of direct agricultural production in the economy approaches zero, but the role of the agricultural product processing industry may still

be significant. Most counties fall between these two groups. In many, agricultural production and product processing are the predominant economic activities; in other counties agriculture represents less than 25 percent of the total productive activity.

The effects of bringing new agricultural land into production would be significantly different among the counties depending upon the dominance of agriculture in the economy. If a given county is predominantly agrarian, the primary effect would be on agricultural industry with the secondary effect (business generating effect) primarily benefiting larger geographic economies. The larger the economic area the larger the secondary or business generating effect. Accordingly, the secondary or business generating effect of new agricultural land would tend to be greater for a given State than for any county within the State and greater for the western region as a whole than for any State within the region.

### III. POSSIBLE CONTRIBUTIONS OF NEW FEDERAL LANDS

#### TO THE WEST AND TO STATE ECONOMIES

What would be the probable effect of the development of 1.5 million acres of arable federal lands on the West as a region and on individual Western States? (Table 1) This depends on (1) the acreage of dry and irrigated land, (2) the crops likely to be grown, (3) the yields of these crops, (4) the price or value of the crops, and (5) the indirect effects of this production on the economy. Once these direct and indirect effects have been calculated, they can be compared with current production in the region and in each of the States.

In the 11 States 58 percent of the harvested cropland is irrigated land, while 63 percent of available federal lands suited for crop production are deemed irrigable. Since State by State comparisons in Table 3 reveal that the proportion of these new public lands compares favorably with the present situation, it is assumed that crops and yields on the new lands would be the same as those presently achieved. The new federal lands were, therefore, divided among the various crops on the same basis as planted acres, and the results are shown in Table 4. Hay, fruits and vegetables were all omitted in this analysis.

Crop yields used for new federal lands were 19-year averages for each of the States (Table 5). Estimated total crop production by States and crops is shown in Table 6. Total values of these crops for each State were calculated at 1968 prices and are presented in Table 7.

These total values are the direct effects of developing new federal lands. But economic development is a complex matter since direct effects have indirect effects on all other sectors of the economy. Indirect effects can be determined by a complex, mathematical method called input-output analysis. The result is an output multiplier for each sector of the economy studied. This multiplier indicates how much indirect effect should be added to the direct effect to get the total output effect on the economy.

Output multipliers for various sectors of the economies of 11 Western States are in Table 8. Note that these studies by different research workers have divided the agricultural production of each State into sectors with range livestock, crops, and agricultural processing being the most popular.

While output multipliers have not been developed for the West as a region, the simple averages at the bottom of Table 8 may give some indications as to what might be expected. For every \$100 of new crops produced, \$136 would be the total output effect on the economy--assuming that 1.36 is the correct output multiplier.

The effect of crop multipliers on the estimated production of the federal lands is shown in Table 9. Because Idaho, Montana, Oregon and Utah do not have a "crops" multiplier, their "other agriculture" multiplier was used (excluding range livestock). In States with little, new land, both direct output and total output effects are small. New Mexico with no arable federal lands is the extreme example and is followed by Utah and Nevada.

The total output effect for the 11 Western States is \$114.3 million or \$1.3 million less than if the average crops multiplier of 1.36 had been used. Even this multiplier is probably low since in a region as large as the West, there would be more opportunities for inter-industry trade than within any State.

How much would the direct effects of new federal lands increase the value of crops produced in the 11 Western States? Percentage increases are shown in Table 10. For the West as a region, the increase is only 2.0 percent. Wyoming shows a surprising 32 percent increase. However, this percentage is misleading since Wyoming has only 1.7 million acres of cropland but 0.6 million acres of arable federal lands that could be developed. Idaho is second highest with a 10 percent increase. Colorado ranks third with an increase of only 2.6 percent and is followed by Oregon with 1.7 percent. In all the other States increases are well below 1.5 percent.

When the total value of crops that might be produced on arable federal lands is compared with total output of the economy of each State, any increase is insignificant. For example, the Western States as a

region had a total economic output of 67.3 billion dollars (Table 11), and the 114.3 million dollars from arable federal lands would be less than 0.2 percent of that amount. It should be emphasized, however, that crop production on these lands might be of considerable value to the local communities.

The question remains as to whether these lands should be developed in view of the present 61 million acres of idle cropland along with no need of additional land for producing food and fiber in the foreseeable future. If strengthening the economies of the West is desirable, then alternative possibilities should be explored. This is particularly true where the development of arable federal lands for irrigation may require subsidies that exceed \$1,000 an acre (see Volume V of this report).

#### IV. SOME CHANGES IN THE RURAL SECTORS OF THREE SELECTED COUNTIES IN ARIZONA, IDAHO AND MONTANA

As noted previously, the three counties selected for intensive study were Yavapai County, Arizona; Cassia County, Idaho; and Phillips County, Montana.

Yavapai County, in west central Arizona, is just west of Flagstaff and north-northwest of Phoenix. Prescott, near the center of the county, is the largest city.

Cassia County, Idaho, is in the southernmost tier of counties east of Twin Falls. The Snake River forms its northern boundary. Burley is its largest and only city.

Phillips County, Montana, lies between the Canadian border on the north and Fort Peck Reservoir on the south. U.S. Route 2 crosses the middle of the county; Malta is the largest town and the county seat.

The sizes of these three counties with the percentages devoted to farms and ranches in each are shown in Table 12. It should be recalled that the U.S. Bureau of the Census does not distinguish between farms and ranches, and therefore much of the land in farms may be grazing land. However, federal, State, and county lands used under permit are not included in farms.

There has been considerable increase in lands in farms in all three counties since 1949, but in Yavapai County very little of this additional land has been used for crops (Table 12). While Yavapai had a 2,000-acre increase in cropland, it had a 4,000-acre decrease (33 percent) in

harvested acres during this period. Both Cassia and Phillips had large increases in total cropland and cropland harvested. Irrigated cropland increased only 1,000 acres in Yavapai, 14,000 in Phillips, and 90,000 acres in Cassia (Table 13).

What effect have these changes in cropland acres had on the economies of these three counties? That there were some positive effects cannot be doubted, but specific effects are very difficult to identify. Many other factors besides increases in cropland affect such economies. One of these factors is the decline in the number of farm families (Table 13). There was a sharp decrease in the total number of farm workers between 1940 and 1960, and further sharp decreases are projected for 1970.

One of the reasons for decreasing farm employment is the rapid decline in the number of farms (Table 14). This decline has resulted from new technology which makes it possible and necessary for farm families to operate larger acreages. The decline in farm numbers and the increase in farm sizes are expected to continue with smaller farms being absorbed by larger, more efficient units.

Realized net incomes per farmer are shown in Table 15. In Arizona and Idaho these figures indicate substantial increases, but in Montana incomes in 1964 were somewhat less than in 1949. This difference may have been due to cattle prices, but the cause was not determined. Phillips County (Montana), however, showed some increase in net income per farm but not nearly so much as Cassia County. Despite the large increase in the average farm net income in Arizona as a whole, Yavapai County had a decrease in farm income.

The value of farm real estate increased remarkably in all three States between 1949 and 1964. In Arizona the value per acre went up 340 percent while in Idaho and Montana it increased 200 percent. Part of the rise is undoubtedly due to greater efficiency and productivity of the land, and part is due to inflation and speculation. However, the demand for land to enlarge farms seems to be a basic factor in the rapid increase in land prices all over the nation.

## V. CHANGES IN THE URBAN SECTORS OF THREE SELECTED COUNTIES

Since the three counties, Yavapai in Arizona, Cassia in Idaho, and Phillips in Montana were selected by the same criteria, it is not surprising that they have certain characteristics in common.

In all three counties rural population decreased (Table 16). The decline, part of a national trend caused by the mechanization of agriculture, brought about a similar decline in rural trade areas, but urban

populations increased--from 1 percent in Phillips County to 114 percent in Yavapai County. In the latter an influx of light industry in Prescott and vicinity caused the marked rise. This influx was possible primarily because of the proximity of Prescott to other larger population and manufacturing centers. In Cassia County, increases in the population and labor force were a response to the growing number of agricultural processing plants made possible because of increased irrigated crop production.

Total population in Yavapai and Cassia Counties increased by approximately 10 percent, but Phillips County experienced a decline of almost 25 percent. The population loss in Phillips County reflects not only the decline in farmers but also the decline of small trade centers and consequent loss of population, labor force, and business to larger trade centers. In general, changes in the labor force follow the pattern set by population changes. There was a marked decrease in the number of persons employed on farms in all three counties between 1940 and 1960.

There was considerable improvement in personal income in the three counties from 1950 to 1960 (Table 17). In Yavapai County families with incomes over \$5,000 increased from 15.5 percent in 1950 to 64.2 percent in 1960. In Cassia the increase was from 15.4 percent to 50.5 percent. Even in Phillips County the increase was from 17.0 percent to 40.6 percent. In all three counties the median family income rose by more than 40 percent during the same decade.

Retail trade expanded between 1948 and 1963--both the number of retail establishments and the volume of business increased (Table 18). However, the percentage increase in number of retail outlets was considerably less than for the mountain region as a whole but exceeded that of the United States. In average sales volume all three counties lagged behind their respective States, the mountain region, and the United States.

Wholesale establishments in minor trade area centers would logically tend to be smaller on the average than those in major trade centers. Such a tendency is indicated by the volume indexes which are consistently less for each of the three counties than those for larger geographic-economic areas (Table 19).

Cassia County had the best wholesale trade situation. It not only had the largest, absolute wholesale trade volume increase but also the largest relative increase and a competitive volume increase. Wholesaling in Phillips County was comparable to that in Cassia County but not to the same degree, partially because of a decline in the number of wholesalers. In Yavapai County, wholesaling not only had the smallest absolute and relative growth, but it also had a competitive decline. Trade area competition was partially responsible, but an increased number of wholesalers was the primary reason.



Service establishments were not very numerous in the three counties (Table 20), and small increases in numbers resulted in relatively large percentage increases. However, increases in numbers were fewer than those in larger economic and geographic areas.

The average sales volume also rose in each county, but again the small base resulted in a large percentage increase. Yet the increase in each case was only about half that of the related State and was only about one-third that of the region and nation. Volume indexes for the three counties sharply declined between 1948 and 1963, and the gaps between them and their related larger areas widened.

Manufacturing increased considerably in Yavapai County between 1954 and 1963 (Table 21). The number of manufacturing firms increased from 22 to 39, or 78 percent; the value added by manufacturing rose from \$1,550,000 to \$7,099,000, or about 350 percent; and the number of regular employees increased from 299 to 499, or 67 percent. Major areas of advance were (1) stone, clay, and glass products, from 3 to 12 firms; (2) lumber and wood products, from 2 to 8 firms; and (3) equipment manufacturing, from 2 to 5 firms.

In Cassia County four new manufacturing firms started business between 1954 and 1963, a one-third increase, but both the value added (\$1,099,000 to \$9,165,000) and regular employment (184 to 1,496) were slightly over eight times greater in 1963.

The changes in numbers of firms in various manufacturing categories were rather diverse in Cassia and Yavapai Counties. Increased industrial activity in both counties bolstered their economies and helps to explain, at least in part, their population increases and better personal income situation in comparison with Phillips County.

Retail and selected services sales volume per capita and also population per retail and selected service establishment are presented in Table 22 for each of the selected counties and its related State. As is to be expected, none of the counties compares favorably with its respective State. These counties were selected as representative of the many rural counties in the West that lack natural resources, transportation, favorable location and climate, water, or other essentials for economic growth.

It was hoped that a study of these counties would reveal how the development of arable federal lands might contribute to the economic viability of each. What has been revealed is something of the complexity of simple, largely rural economies that are becoming still more rural under influences beyond their control. Increases in cropland may have slowed the downward trend in economic activities, but they have not reversed it. The development of new farms out of the 1.5 million acres of arable federal lands is not likely to reverse this trend either. At best, it may slow it by some imperceptible amount.



## VI. CHANGES IN THE PUBLIC SECTORS OF THREE COUNTIES

Despite the slight gain in population in Yavapai and Cassia Counties, per capita expenditures for public services increased (Table 23). In Phillips County, which had the highest costs of the three, the increase was partially due to a population decline. As is to be expected, all three counties placed heavy reliance on property taxes which were highest in Phillips County. Moreover, Phillips had the lowest per capita income as well as the highest per capita taxes. Its citizens paid 19 percent of their income for local taxes as compared with 12 percent in the other two counties.

What is the reason for these differences? Phillips County has only one-third the population of Cassia and only one-fifth the population of Yavapai. What is involved here is the "social cost of space" noted by Kraenzel.<sup>2</sup> The more sparsely populated the area, the higher the "social cost of space"—which will tend to be still higher if functions of State and local government in sparsely populated areas are made equivalent to those in more populous areas. The social cost of space is not necessarily confined to social services or to services of government; it is also an inhibiting factor to economic development or community growth and is a partial explanation of differences in incomes in areas of low and high population density.

## VII. PROBABLE EFFECTS OF NEW FEDERAL LANDS ON THE SELECTED COUNTIES

An input-output analysis for each of the selected counties was not attempted. Output multipliers for most counties would be smaller than those for their States. Only in exceptional situations will some county output multipliers exceed those of the State. However, to illustrate the effect of developing new agricultural land on the county level, the State output multiplier will be used even though this will overstate the impact.

In Phillips County, Montana, the Soil Conservation Service estimated that 23,500 acres of federal lands were suitable for dryland crop production. What would this land produce? A study of several farm plans for northeastern Montana indicated that a wheat fallow rotation with some

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<sup>2</sup>Kraenzel, Carl F. The Great Plains in Transition (Norman: University of Oklahoma Press, 1955), pp. 201 ff.

alfalfa and about one-fourth of the land in the federal conservation reserve program would gross \$12 to \$14 an acre including government payments.<sup>3</sup> Wheat yields and price were assumed to be 13 bushels per planted acre at \$1.75 a bushel.

If the new federal lands could gross \$15 an acre, the 23,500 available acres would give a direct output of \$352,500, or 3.9 percent of the \$9.1 million paid to farmers of Phillips County for their 1964 production.

Arizona has only 6,000 acres of federal lands suited for irrigated crop production for which water is physically and legally available. (It has no federal lands suited to dryland crop production.) Whether or not these lands can be economically irrigated is unknown. Also unknown is how many of these 6,000 acres, if any, are in Yavapai County. Hence, to attempt an estimate of the direct and indirect effects of crop production would be to speculate upon a speculation. Obviously, however, if all 6,000 acres happened to be located in Yavapai County, there would be considerable impact upon the local community.

Idaho is reported to have 389,000 acres of arable federal lands-- 83,000 acres usable for dryland and 306,000 acres for irrigated crop production. How much of this is in Cassia County? No estimates are available, but with so much irrigable federal land in the State, it seems quite reasonable to believe that Cassia might have as much as 30,000 acres suitable for irrigation. If a three-year potato, oat, alfalfa rotation were used, the direct output can be calculated as follows:

<u>Crop</u>	<u>Acres</u>	<u>Yield/acre</u>	<u>Price</u>	<u>Total value</u>
Potatoes	10,000	200 bushels	\$ 1.75	\$3,500,000
Oats	10,000	50 bushels	.60	300,000
Alfalfa	10,000	6 tons	17.00	<u>1,020,000</u>
Total direct effect				\$4,820,000

The total direct effect would be about \$5 million as compared with \$33 million in farm product sales for Cassia County (U.S. Census of Agriculture, 1964). If a multiplier of 1.30 were used, the total direct and indirect output effects would be \$6.5 million for the 30,000 acres. Obviously, either of these amounts would have a significant effect on the economy of Cassia County.

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<sup>3</sup>LeRoy C. Rude, Land Use Alternatives for Dryland Grain--Livestock Operators in Northeastern Montana, Montana Agricultural Experiment Station Bulletin 572 (1962).

# VIII. SUMMARY AND CONCLUSIONS

What probable effect would the development of 1.5 million acres of arable federal lands have on the economy of the West? Of each of the 11 Western States? Of three selected counties in central Arizona, southern Idaho and northeastern Montana? These are the questions this study sought to answer.

The 11 Western States have 37 million acres of harvested cropland. Obviously, an increase of 1.5 million acres, or only 4 percent would not have a large impact on the region. Among the 11 States the effect would be greatest in Wyoming with 590,000 acres and Idaho with 390,000 acres. In evaluating the impact one should keep in mind that less than 10 percent of the income of the West comes from livestock and crops. Sources of income are as follows:

<u>Source</u>	<u>Percent</u>
Livestock	3
Other agriculture	6
Agricultural processing	7
Mining and manufacturing	29
Services and utilities	28
Trade and transportation	21
Other industry	<u>6</u>
Total	100

The share of income received by the various States from livestock and other agriculture is as follows:

<u>State</u>	<u>Livestock</u>	<u>Other agriculture</u>	<u>Total</u>
	- - - - - Percent - - - - -		
Idaho	5	13	18
Montana	7	11	18
Arizona	4	9	13
Colorado	4	9	13
Oregon	4	4	8
Wyoming	4	4	8
New Mexico	4	3	7
California	2	4	6
Nevada	1	3	4
Washington	1	3	4
Utah	2	1	3

This study indicates that the 1.5 million acres of arable federal lands might directly produce 85 million dollars of products at current yields and prices. However, this amount would increase the value of all crops harvested in the West by only 2.0 percent (Table 10).

A number of studies of the economies of several Western States suggests that the direct effect of 85 million dollars should be multiplied by 1.36 to account for the increased economic activity such production would stimulate. If so, the total output effect would be 115 million dollars. While this is a large amount, it is only 0.2 percent increase over the present value of all production (agricultural and other) in the 11 Western States (Table 11).

Wyoming and Idaho, with little cropland and considerable arable federal lands, would have the greatest increases in value of all crops harvested. The millions of dollars of crops now produced in the 11 Western States and the percentage increases that might result if federal lands were developed are as follows:

State	Harvested crops	New crops	Percentage increase
- - - - - million dollars - - -			
Wyoming	75	24	32.0
Idaho	360	37	10.0
Colorado	262	7	2.6
Oregon	247	4	1.7
Washington	474	6	1.3
Montana	306	3	1.0
Arizona	272	1	0.2
California	2,077	2	0.2
New Mexico	116	(a)	0.1
Utah	81	(a)	0.1
Nevada	28	0	0.0

a Less than \$500,000.

The direct effects of the new crops are indicated above in millions of dollars. Studies have shown that for every \$100 of new crops produced, the indirect effects on other sectors of the economy make the total output effect range from \$123 to \$192. Stated more technically--the direct effect needs to be multiplied by an output multiplier of 1.23 to 1.92 (Table 9). The average multiplier for these 11 Western States appears to be about 1.40. Thus for every \$100 of crops produced, another \$40 of indirect benefits makes a total output effect of \$140. But even after these indirect effects are taken into account, the \$115 million total output effect is only 0.2 percent of the value of all production (agricultural and other).

An attempt was made to determine the probable effects of the development of arable federal lands on three selected counties: Yavapai in west central Arizona, Cassia on the southern border of Idaho, and Phillips in northeastern Montana. The statistics indicated changes in acres of harvested cropland, but it was impossible to ascertain how much these changes affected trends in population. Studies to determine the output multipliers of these counties were also lacking.

In Phillips County, Montana, a \$15 gross return per acre seems possible on the 23,500 acres of new federal lands in that county. With this return the direct output would be \$352,000, or 3.9 percent of the \$9,100,000 that Phillips County farmers received for their cash sales. If the output multiplier that should be used to account for indirect effects is lower than for that for the State, say 1.30, then the total direct effect would be \$458,000.

In Arizona there are only 6,000 acres of arable federal lands and all these require irrigation. The possibility that much of this land is in Yavapai County does not seem large. Hence no analysis was attempted.

Since Idaho has 389,000 acres of arable federal lands, it seems probable that as much as 30,000 acres might be in Cassia County. An irrigated potato--small grain--alfalfa rotation would give a direct output of \$5 million as compared with \$33 million cash sales by Cassia County farmers in 1964. If the output multiplier were 1.30, then the total output effect would be \$6.5 million.

Would these direct and indirect effects justify bringing the arable federal lands into production at this time? The answer depends upon alternative possibilities and their comparative costs and benefits. One factor not considered in this paper is the cost of bringing these federal lands into production. As previously noted, some federal irrigation projects are now costing more than \$1,000 an acre to develop.

## IX. TABLES

(pp. 16-38)

Table 1.--Effect of available federal lands suited for crop production on total harvested cropland of 17 Western States, 1968

States	Federal public land suited for crop production <sup>a</sup>					Non-federal harvested cropland <sup>c</sup>	Increase in total cropland
	Dryland	Irrigated	Available for crops <sup>b</sup>				
			Dryland	Irrigated	Total		
	----- 1,000 acres -----						Percent
Arizona	0	11	0	6	6	1,025	0.6
California	172	137	4	20	24	7,846	0.3
Colorado	103	88	103	86	189	4,726	4.0
Idaho	85	314	83	306	389	3,935	10.0
Montana	279	6	105	5	110	7,813	1.4
Nevada	4	7	0	3	3	507	0.5
New Mexico	(d)	11	0	0	0	906	---
Oregon	67	72	60	23	82	3,050	2.7
Utah	1	14	0	1	1	1,039	0.1
Washington	15	158	3	104	107	4,423	2.4
Wyoming	469	387	203	387	590	1,702	34.6
Sub-total	1,195	1,204	561	940	1,502	36,972	4.1
Kansas	99	43	26	0	26	18,160	0.1
Nebraska	10	5	1	1	2	15,229	0.01
North Dakota	262	4	22	0	22	17,695	0.1
Oklahoma	44	3	3	0	3	8,344	0.3
South Dakota	237	46	31	0	31	14,445	0.2
Texas	149	6	61	0	61	19,403	0.3
Total	1,996	1,313	705	941	1,646	130,248	1.3

<sup>a</sup>Table 2 in Volume IV of this report. <sup>b</sup>Only lands held by three agencies--Bureau of Reclamation, Bureau of Land Management and Corps of Engineers--are considered available for crop production. <sup>c</sup>U.S. Bureau of the Census, Census of Agriculture, 1964, Vol. 2, Chap. 3, pp. 248-49.

<sup>d</sup>Less than 500 acres. Note: Figures are rounded and do not add to totals shown.

Table 2.--Percentage share of selected industry groups in total net economic activity in 11 Western States

State	Livestock	Other agriculture	Agricultural processing	Mining & mfg.	Services & utilities	Trade & transport	Other industry	Total
Arizona	4	9	5	25	39	18	---	100
California	2	4	10	36	12	16	20	100
Colorado	4	9	5	25	39	18	---	100
Idaho	5	13	14	27	14	18	9	100
12 Montana	7	11	14	27	14	18	9	100
Nevada	1	3	2	10	67	16	1	100
New Mexico	4	3	4	34	32	23	---	100
Oregon	4	4	10	43	27	8	4	100
Utah	2	1	5	25	15	47	5	100
Washington	1	3	8	37	18	20	13	100
Wyoming	4	4	4	35	27	26	---	100
Average	3	6	7	29	28	21	6	100

Source: Unpublished input-output study furnished by the Public Land Law Review Commission.



Table 3.--Irrigated land as a percentage of total harvested cropland  
and irrigable land as a percentage of arable  
federal land in 11 Western States

States	(1) Total harvested cropland <sup>a</sup>	(2) Total arable federal lands <sup>b</sup>	(3) Irrigated land as a percentage of col. (1) <sup>c</sup>	(4) Irrigable land as a percentage of col. (2)
	- - - - 1,000 Acres - - -		- - - - Percent - - - -	
Arizona	1,025	6	100	100
California	7,846	20	97	93
Colorado	4,726	86	57	46
Idaho	3,935	306	71	79
Montana	7,813	5	24	4
Nevada	507	2	100	100
New Mexico	906	0	90	0
Oregon	3,050	23	53	25
Utah	1,039	1	100	100
Washington	4,423	104	26	97
Wyoming	1,702	388	92	66
Totals	36,972	1,501	58	63

<sup>a</sup>U.S. Census of Agriculture, 1964, Vol. 2, Chap. 3, pp. 248-49.

<sup>b</sup>Table 1 of this report.

<sup>c</sup>U.S. Census of Agriculture, 1964, Vol. 2, Chap. 9, p. 916 (acres).

Table 4.--Probable use of available federal land in crop production in 11 Western States

State	Corn	Oats	Barley	Sorghum	Wheat	Rye	Rice	Cotton	Potatoes	Beans	Peas	Beets	Total
	----- acres -----												
Arizona	240	---	1,380	1,920	420	---	---	1,860	60	---	---	120	6,000
California	1,708	1,952	8,540	2,440	1,952	---	1,952	3,172	488	976	---	1,220	24,400
Colorado	17,037	3,786	9,465	22,716	119,259	1,893	---	---	1,893	7,572	---	5,679	189,300
Idaho	11,679	7,786	77,860	---	194,650	3,893	---	---	42,823	11,679	15,572	23,358	389,300
Montana	1,101	4,404	22,020	---	81,474	---	---	---	---	---	---	1,101	110,100
Nevada	275	450	875	---	875	---	---	---	25	---	---	---	2,500
New Mexico	---	---	---	---	---	---	---	---	---	---	---	---	---
Oregon	1,642	7,389	13,957	---	50,902	4,105	---	---	2,463	---	821	821	82,100
Utah	99	55	264	---	594	---	---	---	11	22	---	55	1,100
Washington	1,606	1,821	6,854	---	88,143	1,500	---	---	1,928	214	3,534	1,500	107,100
Wyoming	41,279	94,352	88,455	---	271,262	23,588	---	---	---	29,485	---	41,279	589,700
Totals	76,566	122,095	229,670	27,076	809,531	34,979	1,952	5,032	49,691	49,948	19,927	75,133	1,501,600

Source: For total acres of available federal lands see Table 1. Note: Crops were distributed on the basis of planted non-federal cropland as reported in Crop Production, 1968 Annual Summary by States, U.S. Department of Agriculture, Statistical Reporting Service, 19 December 1968, p. 45 ff. For distribution see appendix tables in Volume V of this report.

Table 5.--Crop yields per acre in 11 Western States, 1949 to 1967

State	Corn	Oats	Barley	Sorghum	Wheat	Rye	Rice	Cotton	Potatoes	Beans	Peas	Beets
	bushels						lbs.	lbs.	cwt.	lbs.	lbs.	tons
Arizona	25	49	60	58	35	--	--	930	232	446	--	20
California	67	37	42	59	24	12	4,170	910	270	1,389	1,236	20
Colorado	49	35	30	22	18	11	--	--	211	860	898	16
Idaho	68	47	37	--	34	19	--	--	193	1,746	1,355	18
Montana	33	35	28	--	20	16	--	--	150	1,608	--	14
Nevada	45	43	41	--	36	--	--	665	198	--	--	--
New Mexico	29	31	38	33	16	11	--	643	141	538	--	--
Oregon	61	37	37	--	31	17	--	--	232	--	1,093	24
Utah	58	49	46	--	23	10	--	--	155	436	--	16
Washington	76	48	38	--	33	16	--	--	274	1,787	1,315	23
Wyoming	36	34	33	--	20	14	--	--	143	1,444	--	15

Source: Crop Production, 1968 Annual Summary by States, U.S. Department of Agriculture, Statistical Reporting Service, 19 December 1968 and earlier reports.

Table 6.--Estimated production on available federal lands by crops in 11 Western States

State	Corn	Oats	Barley	Sorghum	Wheat	Rye	Rice	Cotton	Potatoes	Beans	Peas	Beets
	- - - - - 1,000 bushels - - - - -						- - - - - tons - - - - -					
Arizona	6	--	83	112	15	--	--	865	696	--	--	2
California	114	73	357	143	47	--	4,070	1,444	6,588	678	--	24
Colorado	833	131	286	496	2,123	21	--	--	19,971	3,258	--	92
Idaho	790	369	2,850	--	6,560	72	--	--	413,242	10,195	10,552	425
Montana	36	155	628	--	1,638	--	--	--	--	--	--	16
Nevada	12	20	36	--	31	--	--	--	248	--	--	--
New Mexico	--	--	--	--	--	--	--	--	--	--	--	--
Oregon	100	276	511	--	1,573	70	--	--	28,571	--	449	20
Utah	6	3	12	--	14	--	--	--	85	5	--	1
Washington	122	87	262	--	2,918	25	--	--	26,414	191	2,323	35
Wyoming	1,478	3,199	2,954	--	5,317	323	--	--	--	21,287	--	598
Totals	3,497	4,311	7,979	757	20,233	411	4,070	2,310	495,814	35,613	13,324	1,213

Source: Derived from Tables 4 and 5. Note: Figures are rounded and do not add to totals shown.

Table 7.--Estimated value of crop production on available federal lands by crops in 11 Western States

State	Corn	Oats	Barley	Sorghum	Wheat	Rye	Rice	Cotton	Potatoes	Beans	Peas	S. Beets	Totals
----- 1,000 dollars -----													
Arizona	6	--	75	108	19	--	--	373	28	--	--	37	645
California	120	44	321	137	59	--	400	622	269	55	--	376	2,403
Colorado	875	80	257	476	2,675	21	--	--	815	263	--	1,410	6,872
Idaho	829	225	2,565	--	8,265	71	--	--	16,860	822	1,030	6,517	37,185
Montana	38	94	565	--	2,063	--	--	--	--	--	--	241	3,001
Nevada	13	12	33	--	39	--	--	--	10	--	--	--	107
New Mexico	--	--	--	--	--	--	--	--	--	--	--	--	--
Oregon	105	168	460	--	1,982	69	--	--	1,166	--	44	299	4,292
Utah	6	2	11	--	17	--	--	--	4	--	--	14	53
Washington	128	53	236	--	3,676	24	--	--	1,078	15	227	530	5,967
Wyoming	1,552	1,951	2,659	--	6,699	320	--	--	--	1,717	--	9,175	24,073
Totals	3,671	2,630	7,181	721	25,494	506	400	995	20,229	2,873	1,300	18,598	84,599

Source: Table 6 and prices received by farmers, December 1968. Note: Figures are rounded and do not add to totals shown.

Table 8.--Selected output multipliers for agricultural production and processing in 11 Western States

State	Range livestock	Other livestock	Crops	Cotton	Vegetables	Other agr.	Agr. proc.
Arizona	1.31	1.39	1.32	--	--	--	1.93
California	1.47	--	1.45 <sup>a</sup>	1.24	1.20	1.38	--
Colorado	1.18	1.42	1.32	--	--	--	1.89
Idaho	1.50	--	--	--	--	1.35	1.67
Montana	1.40	--	--	--	--	1.35	1.34
Nevada	1.44	1.75	1.72	--	--	--	2.39
New Mexico	1.30	--	1.30	1.42	1.17	--	1.29
Oregon	1.90	--	--	--	--	1.92	--
Utah	1.79	--	--	--	--	1.52	--
Washington	1.37	--	1.23	--	1.22	--	--
Wyoming	--	--	1.28	1.45	1.15	--	1.25
Averages	1.47	1.52	1.36	1.37	1.18	1.50	1.68

Source: Output multipliers supplied by the Public Land Law Review Commission.

<sup>a</sup>Food and feed grain multiplier.

Table 9.--Total output effect of increased crop production from arable federal lands in 11 Western States

State	Estimated direct output effect <sup>a</sup>	Output multiplier <sup>b</sup>	Total output effect
	1,000 dollars	Ratio	1,000 dollars
Arizona	646	1.32	852
California	2,403	1.45	3,484
Colorado	6,872	1.32	9,071
Idaho	37,185	1.35	50,200
Montana	3,001	1.35	4,052
Nevada	107	1.72	184
New Mexico	---	1.30	---
Oregon	4,292	1.92	3,241
Utah	53	1.52	81
Washington	5,967	1.23	7,339
Wyoming	24,073	1.28	30,813
Totals	84,599	---	114,317

<sup>a</sup>See Table 7, last column. <sup>b</sup>See Table 7. The output multiplier for "other agriculture" was used for Idaho, Montana, Oregon and Utah because a "crops" multiplier was lacking. The California output multiplier is for food and feed grains.



Table 10.--Probable effect of new federal lands on total value of farm crops harvested in 11 Western States, 1967

States	Value of all crops harvested <sup>a</sup>	Value of crops from new federal land <sup>b</sup>	Increase in value due to federal lands
	- - - - -1,000 dollars-	- - - - -	Percent
Arizona	272,300	646	0.2
California	2,076,600	2,403	0.2
Colorado	261,600	6,872	2.6
Idaho	359,900	37,185	10.0
Montana	305,700	3,001	1.0
New Mexico	116,400	107	0.1
Nevada	28,100	- - -	- - -
Oregon	247,400	4,292	1.7
Utah	81,000	53	0.1
Washington	473,800	5,967	1.3
Wyoming	74,100	24,073	32.0
Total	4,297,900	84,599	2.0

<sup>a</sup>Agricultural Statistics, 1968.

<sup>b</sup>Data from Table 9. Note that these figures do not include multiplier effect.

Table 11.--Probable impact of crop production from arable federal lands on total value of all production in 11 Western States

State	Total value of all production (agriculture and other) <sup>a</sup>		Total impact of crops produced on arable federal lands <sup>b</sup>
	- - - 1,000 dollars - - -		Percent
Arizona	3,600,000	852	0.02
California	11,600,000	3,484	0.03
Colorado	3,600,000	9,072	0.30
Idaho	2,600,000	50,200	1.90
Montana	2,600,000	4,052	0.20
New Mexico	4,200,000	184	0.00
Nevada	3,200,000	0	0.00
Oregon	13,400,000	8,241	0.06
Utah	6,900,000	81	0.00
Washington	12,500,000	7,339	0.06
Wyoming	3,100,000	30,813	0.10
Totals	67,300,000	114,317	0.17

<sup>a</sup>Input-output data furnished by Public Land Law Review Commission.

<sup>b</sup>Data from Table 9. Note that these figures include the multiplier effect.

Table 12.--Changes in land use in three selected counties in Arizona,  
Idaho, and Montana, 1949 to 1964

	Yavapai County Arizona	Cassia County Idaho	Phillips County Montana
County land area, acres	5,178,000	1,628,000	3,346,000
Percentage in farms	68	41	68
Land in farms, 1964, acres	3,506,000	664,000	2,274,000
Increase since 1949, acres	905,000	199,000	492,000
Percentage increase	35	43	28
2 Total cropland, 1964, acres	28,000	316,000	372,000
Increase since 1949, acres	2,000	135,000	58,000
Percentage increase	8	75	44
Harvested cropland, 1964, acres	8,000	204,000	200,000
Change since 1949, acres	-4,000	+79,000	+66,000
Percentage change	-33	+63	+49

Source: U.S. Census of Agriculture, 1950, 1964.

Table 13.--Irrigated land and farms, farm employment, and farm labor  
in three selected counties, 1949, 1964

	Yavapai County Arizona	Cassia County Idaho	Phillips County Montana
Irrigated land, 1964, acres	14,813	189,664	45,776
Change from 1949, acres	+946	+89,273	+14,158
Percentage change	+7	+89	+45
Number of farms irrigated	252	898	260
Change from 1949	-51	-252	-27
Percentage change	-17	-22	-9
Average size of irrigated farm, acres	3,887	662	3,373
Change from 1949, acres	+1,625	+333	+1,265
Percentage change	+72	+101	+60
Percentage of farms irrigated			
1949	55	92	36
1964	55	92	42
Total farm workers, 1960, number	695	1,515	942
Change from 1940	-358	-359	-453
Percentage change	-34	-19	32
Projected number for 1970	533	1,095	709
Number of workers per farm			
1950	1.7	1.6	1.4
1960	1.5	1.3	1.4
Hired farm labor working 150 days or more per year			
Number, 1964	343	591	259
Change from 1949	+41	+170	-1
Percentage change	+14	+40	-0.4
Number of workers per commercial farm			
1949	0.8	0.4	0.4
1964	1.2	0.7	0.5

Source: U.S. Census of Agriculture, 1950, 1964.

Table 14.--Farm numbers and size, 1949 and 1964, in three selected counties

	Yavapai County Arizona	Cassia County Idaho	Phillips County Montana
Number of farms, 1964	460	978	621
Decrease from 1949	-87	-270	-182
Percentage decrease	-16	-22	-23
Average size of farms, 1964, acres	7,622	679	3,662
Increase from 1949, acres	+2,867	+307	+1,442
Percentage increase	+60	+82	+65
Trend projection to 1975			
Number of farms	386	836	488
Average size of farms, acres	9,910	881	4,560
Commercial farms			
Number, 1964	283	852	554
Decrease from 1949	-91	-287	-155
Percentage decrease	-24	25	-22
Number of farms by size brackets			
Under 260 acres, 1964	289	595	84
Change from 1949	-44	-387	-41
Percentage change	-13	-39	-33
260 to 1,000 acres, 1964	46	241	267
Change from 1949	-37	+81	-5
Percentage change	-45	+51	-2
Over 1,000 acres, 1964	125	142	270
Change from 1949	-6	+36	-136
Percentage change	-5	+34	-34

Source: U.S. Census of Agriculture, 1950, 1964.

Table 15.--Farm income and farm value, 1949, 1964, in three selected counties

	Yavapai County Arizona	Cassia County Idaho	Phillips County Montana
<u>Farm income</u> (realized net per farm)			
Farm income estimates, 1949 (State)			
All farms	\$11,615	\$ 3,396	\$ 5,282
Commercial farms	15,794	4,007	5,932
County estimates			
All farms	5,983	4,509	4,156
Commercial farms	8,077	4,853	4,486
Farm income estimates, 1964 (State)			
All farms	18,589	4,551	4,486
Commercial farms	25,415	5,927	5,267
County estimates			
All farms	3,378	9,747	4,570
Commercial farms	5,400	10,825	5,081
<u>Farm real estate values</u>			
Value of land and buildings per farm, 1949	36,551	21,521	24,252
Value of land and buildings per farm, 1964	203,804	84,512	83,126
Value per acre, 1949	7.85	61.16	11.05
Value per acre, 1964	26.71	127.25	22.59
Increase ratio per farm	5.6	3.9	3.4
Increase ratio per acre	3.4	2.1	2.0

Sources: U.S. Census of Agriculture, 1950, 1964, Economic Research Service, U.S. Department of Agriculture.

Table 16.--Population and labor force, 1960, and changes from 1940 in selected counties

	Yavapai County Arizona	Cassia County Idaho	Phillips County Montana
<u>Population</u>			
Total, 1960	28,912	16,121	6,027
Change from 1940	+2,401	+1,691	-1,865
Percentage change	+9	+11	-24
Urban, 1960	12,861	7,508	2,239
Change from 1940	+6,843	+2,179	+24
Percentage change	+114	+41	+1
Rural, 1960	14,300	3,383	1,536
Change from 1940	-2,872	+1,354	-452
Percentage change	-16	+67	-23
Farm, 1960	1,751	5,230	2,252
Change from 1940	-1,570	-1,842	-1,437
Percentage change	-47	-26	-39
<u>Labor Force</u>			
Number in labor force, 1960	10,461	6,196	2,380
Change from 1940	+644	+1,324	-814
Percentage change	+7	+27	-26
Proportion of labor force employed in agriculture			
1940 Percentage	11	38	47
1960 Percentage	7	24	40
Number employed on farms, 1960	681	1,430	903
Change from 1940	-318	-300	-409
Percentage change	-32	-17	-31

Source: U.S. Census of Population, 1960.



Table 17.--Personal income, 1950, 1960, in selected counties

Personal income	Yavapai County Arizona		Cassia County Idaho		Phillips County Montana	
	<u>1950</u>	<u>1960</u>	<u>1950</u>	<u>1960</u>	<u>1950</u>	<u>1960</u>
Families by income classes	- - - - - Numbers - - - - -					
Under \$3000	2,950	1,051	1,880	775	770	443
\$3000-4999	2,245	1,648	935	1,134	425	418
\$5000-9999	825	3,949	415	1,590	200	479
Over \$10,000	125	894	95	353	45	109
Families by income classes	- - - - - Percent - - - - -					
Under \$3000	48	14	56	20	54	31
\$3000-4999	36	22	28	29	30	29
\$5000-9999	14	52	12	41	14	33
Over \$10,000	2	12	3	9	3	8
Median family income, 1950	\$3,081		\$2,698		\$2,844	
Median family income, 1960	5,191		5,032		4,353	
Median farm family income, 1960	3,984		5,018		3,952	
Mean personal income per recipient, 1960						
Income from all sources	3,367		3,005		3,827	
Income from wages or salary	3,268		2,304		2,148	
Income from self employment	3,918		3,779		3,848	
Per capita personal income, 1960	1,780		1,424		1,375	

Source: U.S. Census of Population, 1950, 1960.

Table 18.--Retail trade, 1963, with changes from 1948 in selected counties

	Yavapai County Arizona	Cassia County Idaho	Phillips County Montana			
<hr/>						
Number of establishments, 1963	455	237	103			
Change from 1948	+31	+41	+5			
Percentage change						
Selected county	+7	+21	+5			
Related State	+60	-.2	-4			
Mountain region	+16	+16	+16			
United States	+3	+4	+4			
<hr/>						
Average sales volume per establishment, 1963	\$86,571	\$131,291	\$82,728			
Change from 1948	+30,203	+49,169	+22,412			
Percentage change						
Selected county	+54	+60	+37			
Related State	+92	+63	+67			
Mountain region	+88	+88	+88			
United States	+94	+94	+94			
<hr/>						
Volume indexes	<u>1948</u>	<u>1963</u>	<u>1948</u>	<u>1963</u>	<u>1948</u>	<u>1963</u>
Mountain region	100	100	100	100	100	100
Selected county	72	60	105	90	77	56
Related State	105	107	102	88	95	85
United States	95	98	95	98	95	98

Source: U.S. Census of Retail Trade, 1948, 1963.

Table 19.--Wholesale trade, 1963, with changes from 1948 in selected counties

	Yavapai County Arizona	Cassia County Idaho	Phillips County Montana			
<hr/>						
Number of establishments, 1963	46	43	17			
Change from 1948	+10	--	-6			
Percentage change						
Selected county	+28	--	-26			
Related State	+154	+28	+14			
Mountain region	+54	+58	+54			
United States	+27	+27	+27			
Average sales volume per establishment, 1963	\$303,935	\$477,186	\$258,588			
Change from 1948	+85,157	+214,372	+100,805			
Percentage change						
Selected county	+39	+82	+64			
Related State	+67	+46	+26			
Mountain region	+51	+51	+51			
United States	+50	+50	+50			
Volume indexes	<u>1948</u>	<u>1963</u>	<u>1948</u>	<u>1963</u>	<u>1948</u>	<u>1963</u>
Mountain region	100	100	100	100	100	100
Selected county	44	41	53	64	32	34
Related State	98	109	73	71	85	71
United States	156	155	156	155	156	155

Source: U.S. Census of Wholesale Trade, 1948, 1963.

Table 20.--Selected services, 1963, with changes from 1948 in selected counties

	Yavapai County Arizona		Cassia County Idaho		Phillips County Montana	
Number of establishments, 1963	261		121		41	
Change from 1948	+107		+40		+16	
Percentage change						
Selected county	+70		+49		+64	
Related State	+156		+70		+48	
Mountain region	+91		+91		+91	
United States	+60		+60		+60	
Average sales volume per establishment, 1963	\$20,789		\$18,074		\$15,902	
Change from 1948	+6,114		+5,852		+3,102	
Percentage change						
Selected county	+42		+50		+24	
Related State	+96		+69		+47	
Mountain region	+112		+112		+112	
United States	+110		+110		+110	
Volume indexes	<u>1948</u>	<u>1963</u>	<u>1948</u>	<u>1963</u>	<u>1948</u>	<u>1963</u>
Mountain region	100	100	100	100	100	100
Selected county	78	52	65	45	68	40
Related State	100	93	87	69	83	58
United States	106	105	106	105	106	105
Total sales volume, 1963						
Retail trade	\$39.4		\$31.1		\$ 8.5	
Wholesale trade	14.0		20.5		4.4	
Selected services	5.4		2.2		.7	
Total	\$58.8		\$53.8		\$13.6	

Source: U.S. Census of Selected Services, 1948, 1963.

Table 21.--Manufacturing and mining, 1963, with changes from 1954 in selected counties

	Yavapai County Arizona		Cassia County Idaho		Phillips County Montana	
<u>Manufacturing</u>	<u>1954</u>	<u>1963</u>	<u>1954</u>	<u>1963</u>	<u>1954</u>	<u>1963</u>
Number of firms	22	39	12	16	3	3
Value added (thousands)	1,550	7,099	1,099	9,165	86	162
Number of regular employees	299	499	184	1,496	13	17
Number of firms by category						
Food & kindred products (20)	6	6	5	7	--	--
Apparel & related products (23)	2	1	1	1	--	--
Lumber & wood products (24)	2	8	--	--	--	--
Furniture & fixtures (25)	1	--	--	--	--	--
Paper & allied products (26)	--	--	--	1	--	--
Printing & publishing (27)	4	4	4	3	--	--
Stone, clay, glass products (32)	3	12	1	2	--	--
Primary metal industry (33)	--	1	--	--	--	--
Machinery, except electrical (35)	2	2	--	1	--	--
Light industry (36) (37) (38)	--	3	--	--	--	--
Unchanged categories (misc.)	2	2	1	1	--	--
<u>Mining</u>						
Number of firms	73	30	2	1	2	5
Value added (thousands)	9,600	12,540	NA	NA	NA	NA
Number of regular employees	700	833	NA	NA	NA	NA

Source: U.S. Census of Manufacturing and Mining, 1954, 1963.

NA--Not available (census data is not published so as to avoid disclosure for individual firms).

Table 22.--Retail and selected services volume per capita with population  
per retail and selected service establishment in  
selected counties, 1948 and 1963

		Yavapai County Arizona		Cassia County Idaho		Phillips County Montana	
Retail volume per capita		State	County	State	County	State	County
1948		877	956	988	1,100	1,020	933
1963		1,549	1,362	1,420	1,930	1,431	1,414
Selected services volume per capita							
1948		89	90	73	68	78	51
1963		257	188	185	136	149	108
Population per retail establishment							
1948		93	59	80	75	73	65
1963		101	64	91	68	87	59
Population per service establishment							
1948		213	162	224	181	200	253
1963		144	111	150	133	155	147

Source: Derived from data in previous tables.

Table 23.--Costs of local governments in three selected counties, 1957 and 1962

	Yavapai County Arizona		Cassia County Idaho		Phillips County Montana	
	<u>1957</u>	<u>1962</u>	<u>1957</u>	<u>1962</u>	<u>1957</u>	<u>1962</u>
Estimated population	27,735	30,740	15,670	16,745	6,120	5,850
Per capita direct general expenditures	\$165	\$206	\$139	\$190	\$193	\$229
Per capita tax revenues, total	153	213	145	166	212	259
Property taxes	68	111	53	87	126	168
Other taxes	9	11	2	2	11	7
Miscellaneous	24	19	53	34	47	36
Intergovernmental (net)	51	72	36	43	28	48
Personal income per capita, 1960	\$1,780		\$1,424		\$1,375	
Property tax as percentage of total revenue	45	52	37	53	60	65
Property tax as percentage of personal income		6		6		12
Tax revenue as percentage of personal income		12		12		19

Source: United States Census of Governments, Governmental Finances, 1957, 1962. Per capita data were computed on the basis of aggregates.

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