

AN ABSTRACT OF THE THESIS OF

James Edward Hall for the Master of Science in Natural Resources  
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Title GEOGRAPHY OF THE LAND USE IN OKANOGAN COUNTY  
(WASHINGTON)

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Abstract approved

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This thesis is an effort to explain Okanogan County's apparent anomalous economic situation. Okanogan County has a wealth of natural resources, but the statistics of economic activity reveal that the county's economic position is at a low level as compared to both the region and state. Okanogan County is a rural county in a rural region and in the past ten to twelve years has regressed in its relative economic position. Okanogan County has been designated by the Federal House Home and Finance Administration as an economically depressed county.

Okanogan County, the largest county in Washington, has 94 percent of its land area occupied by "non-developed" land use types. The county's physiography, land capabilities, and climate have strongly influenced the spatial distribution of the land use patterns. The county's irrigated croplands are along the major stream valleys

where the topography, climate, and soil are conducive to intensive agricultural development. The nonirrigated croplands are on the higher benchlands where suitable soil and climatic conditions prevail. The county's forest lands are located on the higher elevations and slopes where the soil conditions are poorer and precipitation more abundant. Dispersed throughout the county are considerable outdoor recreational resources of major importance.

Most all intensive development that has occurred in Okanogan County is located in the county's major valleys. The county's development is based almost entirely upon the production and sale of raw materials. Agriculture is the most important industry in Okanogan County and employs more people and creates more economic activity than any other single industry. Orcharding and the sale of fresh fruit is the most important agricultural enterprise. Forestry and wood products is the county's second most important industry. The forest lands are mostly controlled by governmental agencies, and the wood products industry is therefore very aware of governmental policy regulating the development of these lands. Outdoor recreation is the third most important industry. Recreation in Okanogan County is growing at a considerable rate and is expected to increase even more. The mineral industry is small and fluctuates markedly depending upon the number of operating construction projects.

GEOGRAPHY OF THE LAND USE IN OKANOGAN COUNTY  
(WASHINGTON)

by

JAMES EDWARD HALL

A THESIS

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APPROVED:

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Thanks are also extended to the many residents of Okanogan County who contributed information and assistance for this study. The personnel of the Okanogan County Planning Commission are especially recognized for their cooperation. Without their willing assistance this study would have been a far greater task.

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# GEOGRAPHY OF THE LAND USE IN OKANOGAN COUNTY (WASHINGTON)

## CHAPTER I

### INTRODUCTION

The economic well-being of a county's people must certainly be in large part resultant of a complex combination of character of resource endowments, and of decisions made through time for their development and use. Okanogan County in North Central Washington has what seems to be a wealth of resource endowments, but the statistics of economic activity show that the county's economic position is at a low level as compared to both the region and state and reveal that Okanogan County has actually regressed in its relative economic position in North Central Washington. The Federal House Home and Finance Administration has designated this county as being economically depressed. This seems to be an anomalous situation for a county blessed with apparent wealth.

#### Purpose of Study

This thesis entitled "Geography of the Land Use in Okanogan County (Washington)" is an effort to explain this apparent anomalous situation. The thesis has three objectives. The first is to bring together the facts on the resource environment, the second is to

appraise the development of these resources and their role in the economy with special emphasis on spatial land use patterns, and the third is to draw conclusions which might aid further development. Thus, Chapter II is a basic overview of the natural endowments of the county, Chapter III and IV appraise the development of the population and resources, and Chapter V draws together conclusions and presents recommendations for future action.

### Research Methods

This thesis is a result of field studies and personal contacts in Okanogan County since June of 1961. The author has been the Assistant Director of the Joint Planning Program in Wenatchee, Washington since June of 1961 and has been responsible for all planning work that has been done in the county. Much of the work in Okanogan County was field work which included compiling information on the use of land, preparing maps and diagrams relating to the use of land, and the analyzing of many documents. Most all of the maps in this thesis are original works and have been drafted after many hours of preparation and research. The cropland map (Plate VII) is a good example; it was compiled from aerial photographs and field checking. The patented mineral claims (Plate VIII) and government owned lands (Plate XIV) were compiled from the ownership file cards in the county assessor's office. Most of the statistical data presented



in this thesis, as well as the original maps and charts, were reviewed by specialists in the agencies and by individuals, and their suggestions incorporated.

Plate I  
LOCATION OF OKANOGAN COUNTY



SOURCE: Washington State Department of Highways

## CHAPTER II

### THE RESOURCE ENVIRONMENT

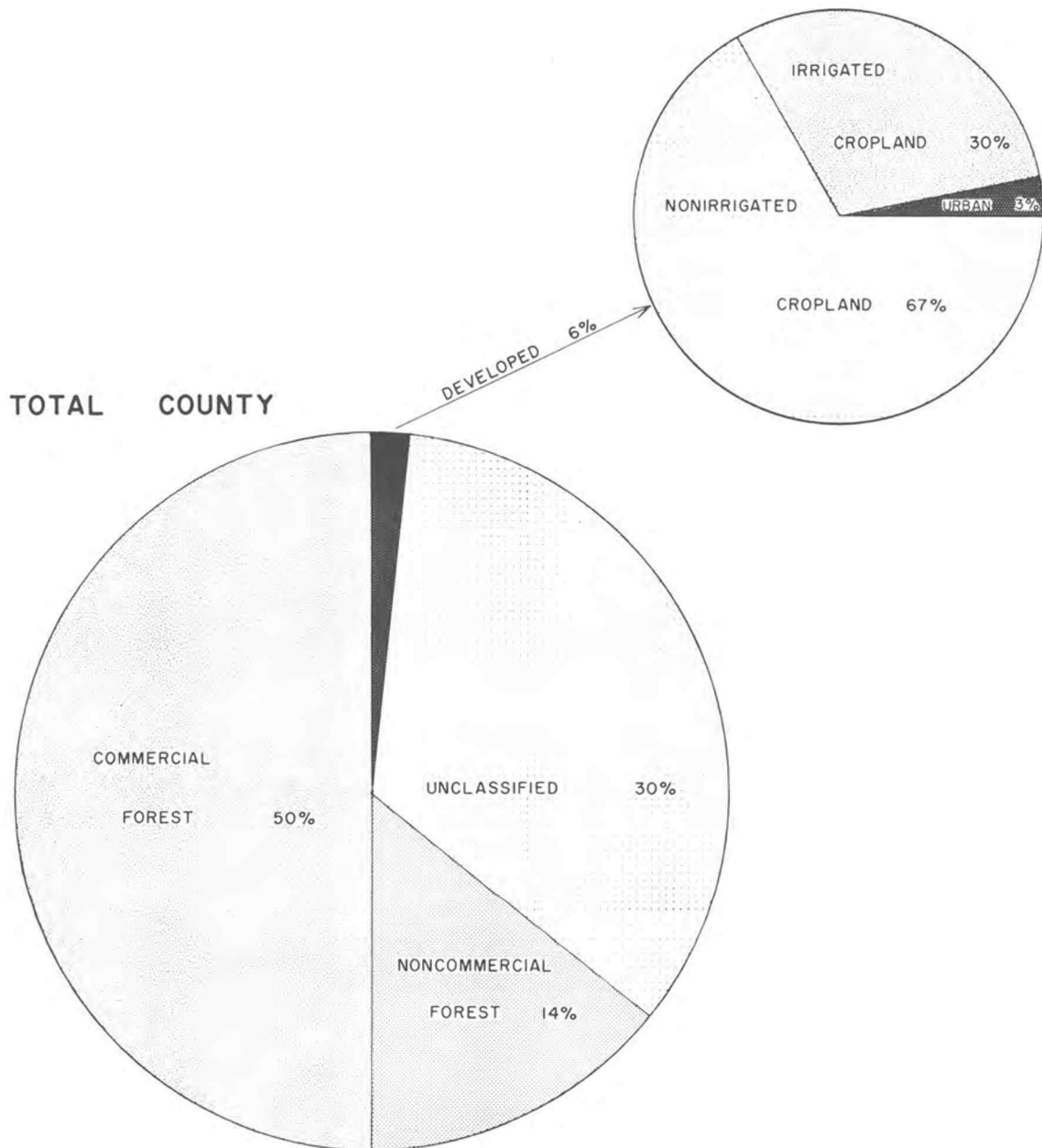
A major theme of geography deals with the human organization and use of the natural environment. In the very essence of this theme are two sets of variable influences--on the one hand the characteristics of the resource environment and on the other the people who assess the environment and make the decisions respecting its use. Hence any geographic study dealing with area development can well begin with an assessment of these two sets of variables.

Okanogan County, with a land area of 5,295 square miles, is the largest county in Washington. By far the majority of the land in Okanogan County is occupied by "non-developed" land use types as can be seen from Plate II. The developed land uses occupy only 6 percent of the county's land area, and of this 97 percent is cropland. This chapter is a consideration of Okanogan County's native endowments.

#### Physiography and Climate

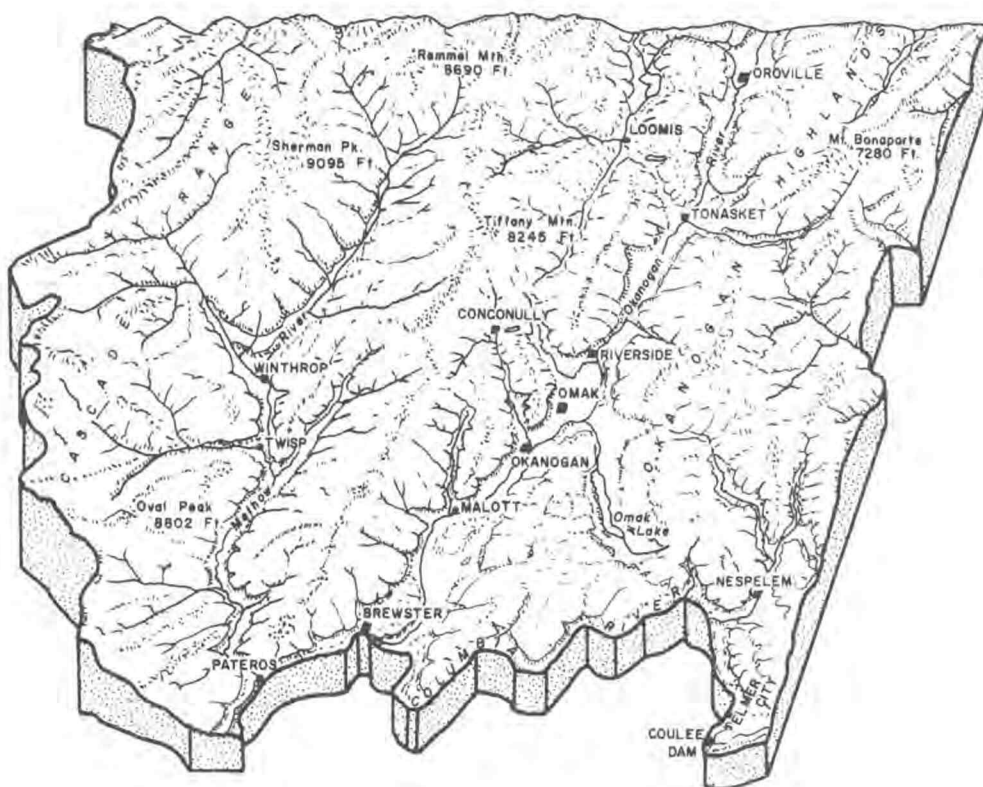
Okanogan County, as is shown in Plate III, includes parts of three physiographic provinces which have been glaciated and subsequently modified by youthful stream action. The western part of the

PERCENT DISTRIBUTION  
MAJOR LAND USE TYPES



SOURCE: U. S. Forest Service  
1959 Census of Agriculture  
Joint Planning Office  
Field Work - 1963

# Plate III PHYSIOGRAPHIC DIAGRAM



0 10 20  
Scale of Miles

AGRICULTURAL DATA SERIES  
WASHINGTON STATE UNIVERSITY

county is a rugged section of the Cascade Mountains, the northeastern section is the older and less-rugged Okanogan Highlands, and the southeastern section is a portion of the basaltic Waterville Plateau. Most of the southern border of Okanogan County is the gorge-like canyon of the Columbia River.

Elevations in the county range from about 700 feet above sea level along the Columbia River to 9,095 feet at the summit of Sherman Peak in the Cascades. The summit of Mt. Bonapart, 7,280 feet, is the highest point in the Okanogan Highlands. The Okanogan Valley slopes gently from north to south. The elevation of the county's northern border is 980 feet, and the southern border is 760 feet above sea level.

Due to the topographic features of Okanogan County, the climatic conditions vary considerably within the county. In the broad consideration Okanogan County has a climate with features of both the continental and marine types. As can be seen from Tables I and II, Okanogan County's climate is characterized by warm, dry summers and cold winters with a maximum of precipitation coming in the winter, much of it in the form of snow. There is a secondary spring precipitation maximum in the months of May and June which occurs as rain. Because of variations in elevation and exposure to prevailing winds, temperatures, frost conditions, and precipitation vary sharply within short distances. Okanogan County's pattern of

precipitation is illustrated in Plate IV. This map was drawn on the basis of limited station data and is more inferred from topography than actual station recordings. The relationship of elevation to precipitation is clearly revealed on the map and is particularly apparent in the Methow and Okanogan Valleys.

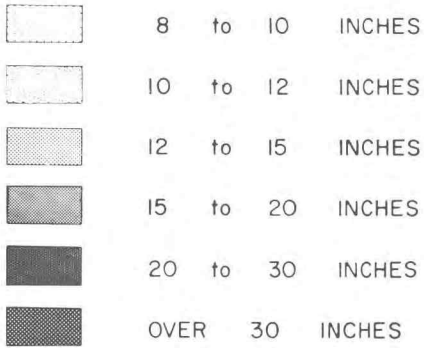
Table I  
Climatological Summary for Omak, Washington  
(1930-1959)

	Temperature			Precipitation (inches)	
	Average Daily Maximum	Average Daily Minimum	Monthly Average	Average Snow Depth	Average Total
Jan.	30.5	17.2	23.9	7.8	1.42
Feb.	37.4	20.6	29.0	7.7	1.17
Mar.	51.6	28.9	40.3	0.7	0.86
Apr.	65.2	36.2	50.7	T	0.91
May	74.2	43.7	59.0		0.91
Jun.	80.0	50.3	65.2		1.48
Jul.	88.5	55.2	71.9		0.41
Aug.	86.3	53.3	69.0		0.43
Sep.	77.2	45.2	61.2		0.60
Oct.	61.7	36.0	48.9	T	1.00
Nov.	43.4	27.4	35.4	2.6	1.42
Dec.	34.5	22.4	28.5	9.2	1.59
Year	60.9	36.4	48.7	28.0	12.20

Source: U. S. Weather Bureau



PLATE IV  
AVERAGE ANNUAL  
PRECIPITATION



● MUNICIPALITIES  
■ COMMUNITIES

SOURCE U S WEATHER BUREAU

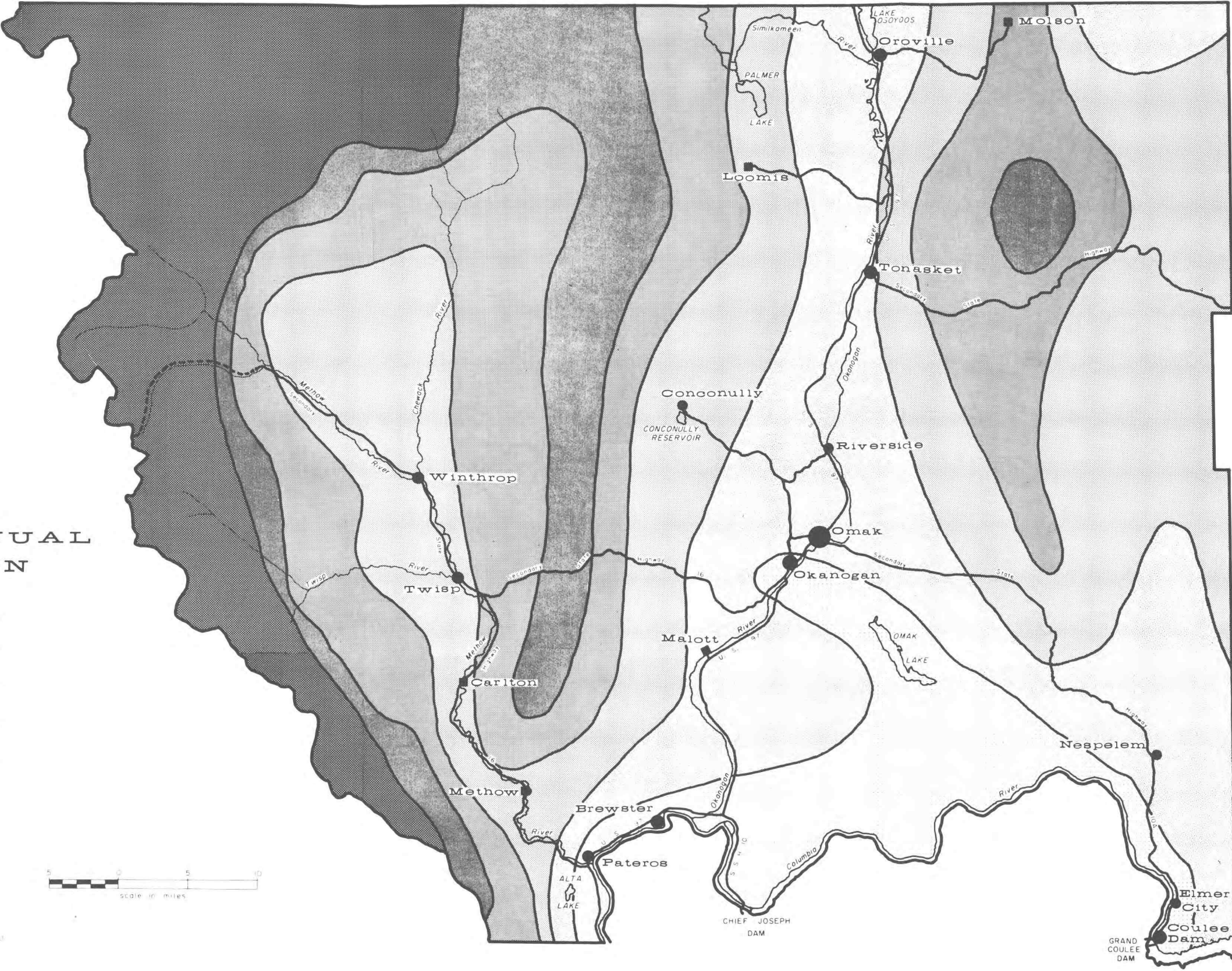




Table II  
Climatological Summary for Winthrop, Washington  
(1931-1960)

	Temperature			Precipitation (inches)	
	Average Daily Maximum	Average Daily Minimum	Monthly Average	Average Snow Depth	Average Total
Jan.	27.9	8.9	18.4	23.8	2.04
Feb.	35.8	13.0	24.4	15.1	1.59
Mar.	47.9	22.8	35.3	4.8	0.89
Apr.	62.5	32.0	47.2	0.3	0.67
May	71.2	39.2	55.2		1.01
Jun.	77.0	45.6	61.3		1.23
Jul.	86.4	50.0	68.2		0.52
Aug.	84.6	48.0	66.3		0.48
Sep.	76.2	41.0	58.6		0.66
Oct.	61.7	32.7	47.2	1.0	1.02
Nov.	42.1	23.2	32.6	12.3	1.94
Dec.	31.0	14.8	22.9	24.4	2.50
Year	58.7	30.9	44.8	81.7	14.55

Source: U. S. Weather Bureau

### Commercial Forest Land

Surveys by the United States Forest Service classify almost half of Okanogan County as commercial forest land (see Plate II). In 1959 the Forest Service estimated that Okanogan County had 1,685,700 acres of commercial forest and 456,100 acres of non-commercial forest with a live saw timber volume of 11,264,000,000

board feet. Table III shows live saw timber volume by major species.

Table III

## Live Saw Timber Volume by Major Species

Species	Million Board Feet	Percent
Douglas fir	4,957	44
Ponderosa pine	3,019	27
Western larch	1,279	11
Engelmann spruce	1,159	10
All others	840	8
Total	11,264	100

Source: U. S. Forest Service

Table IV shows area of the major classes of forest land in Okanogan County, and Plate V illustrates the spatial relationship of the major types.










Table IV

## Commercial Forest Land Area by Major Types

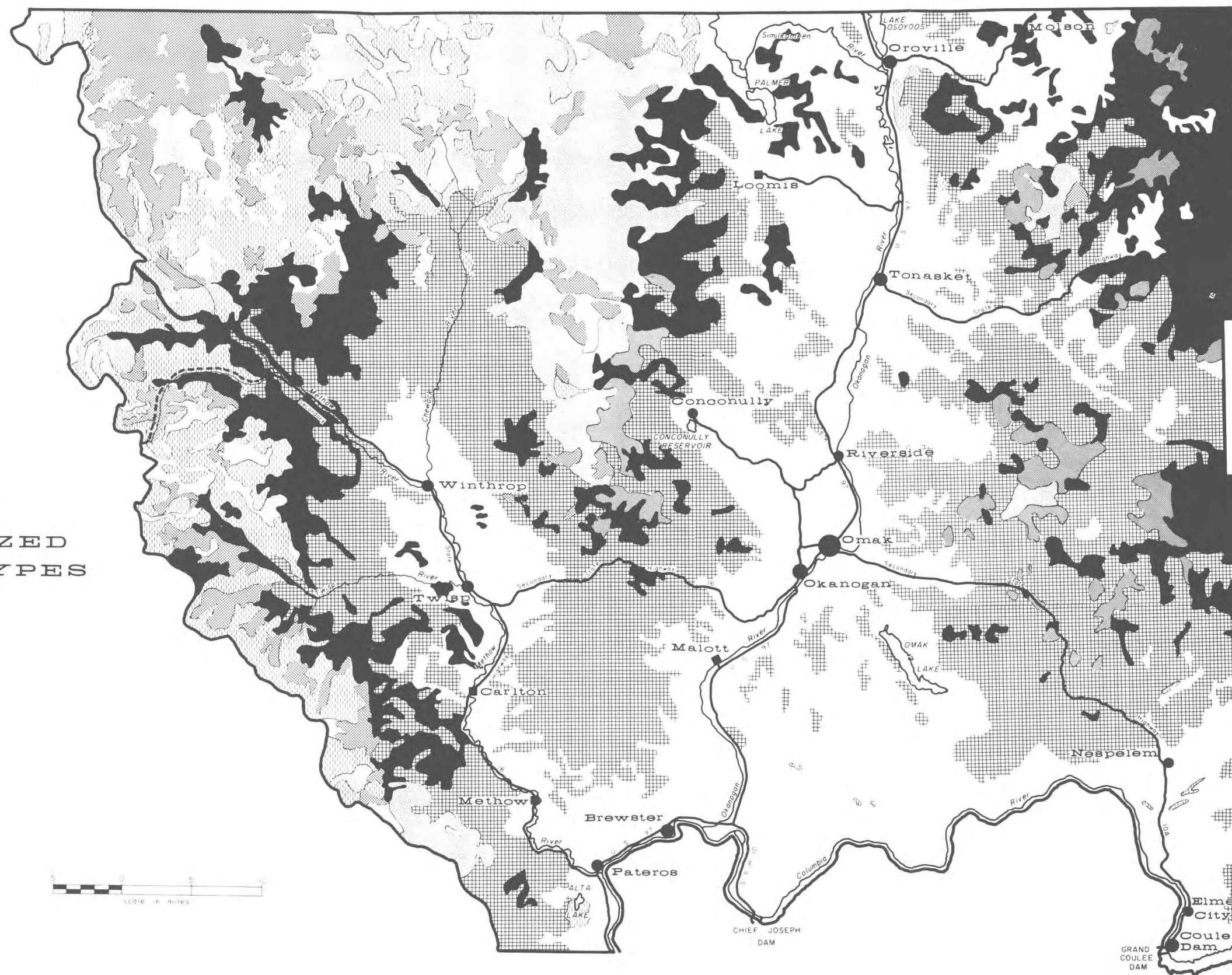
Types	Acres	Percent
Ponderosa pine	668,700	40
Douglas fir	570,200	34
Lodgepole pine	150,600	9
Fir - Spruce	130,600	8
Western larch	115,600	7
All others	50,000	2
Total	1,685,700	100

Source: U. S. Forest Service

PLATE V  
GENERALIZED  
FOREST TYPES

-  DOUGLAS FIR
-  PONDEROSA PINE
-  LODGEPOLE PINE
-  WESTERN LARCH
-  FIR - SPRUCE
-  NONCOMMERCIAL
-  NONFOREST
-  MUNICIPALITIES
-  COMMUNITIES

SOURCE U S FOREST SERVICE



The ownership of Okanogan County's forest land is illustrated in Table V. The most outstanding reality of the ownership pattern is that 74 percent of the county's commercial forest land is federally owned or administered.

Table V

Commercial Forest Land Ownership		
Ownership	Acres	Percent
Federal	1,241,500	74
Private	250,400	15
State	193,800	11
Total	1,685,700	100

Source: U. S. Forest Service

The ownership of the live saw timber volume is illustrated in Table VI. Comparison of Tables V and VI reveals that while 74 percent of the forest area is in federal ownership, 82 percent of the volume is federally administered.

Table VI

Saw Timber Volume Ownership		
Ownership	Million Board Feet	Percent
Federal	9,192	82
State	1,292	11
Private	780	7
Total	11,264	100

Source: U. S. Forest Service

The forest land resources of Okanogan County have considerable value for purposes other than timber. The forest areas are available for grazing and recreational uses as well as for mineral exploration.

### Cropland Resources


There is relatively little level to moderately sloping land in the county, and not even all of it is suitable for agricultural uses. The only Class I and II land capability areas in the county are two narrow strips. The largest strip is in the Okanogan River Valley and runs from just north of Riverside southwest to the Columbia River. The other strip is a very small area in the northeast corner of the county. By far the majority of Okanogan County's cropland is located on Class III and IV land as can be seen from comparing Plates VI and VII.

The spatial pattern of the cropland areas in Okanogan County can be described as along or parallel to the Methow, Columbia, and Okanogan River Valleys (Plate VII). The map, Plate VII, was prepared by plotting of all tilled land from aerial photos and extensive field checking to maintain accuracy of interpretation.

The irrigated croplands are generally either contiguous to or within a short distance of the county's major streams. The nonirrigated croplands are on the higher benchlands where it is not feasible



# PLATE VI LAND CAPABILITY

-  CLASS I and II LAND
-  CLASS III LAND
-  CLASS IV LAND
-  CLASS VI LAND
-  CLASS VII and VIII LAND

-  MUNICIPALITIES
-  COMMUNITIES



SOURCE OKANOGAN COUNTY EXTENSION OFFICE and  
SOIL CONSERVATION SERVICE

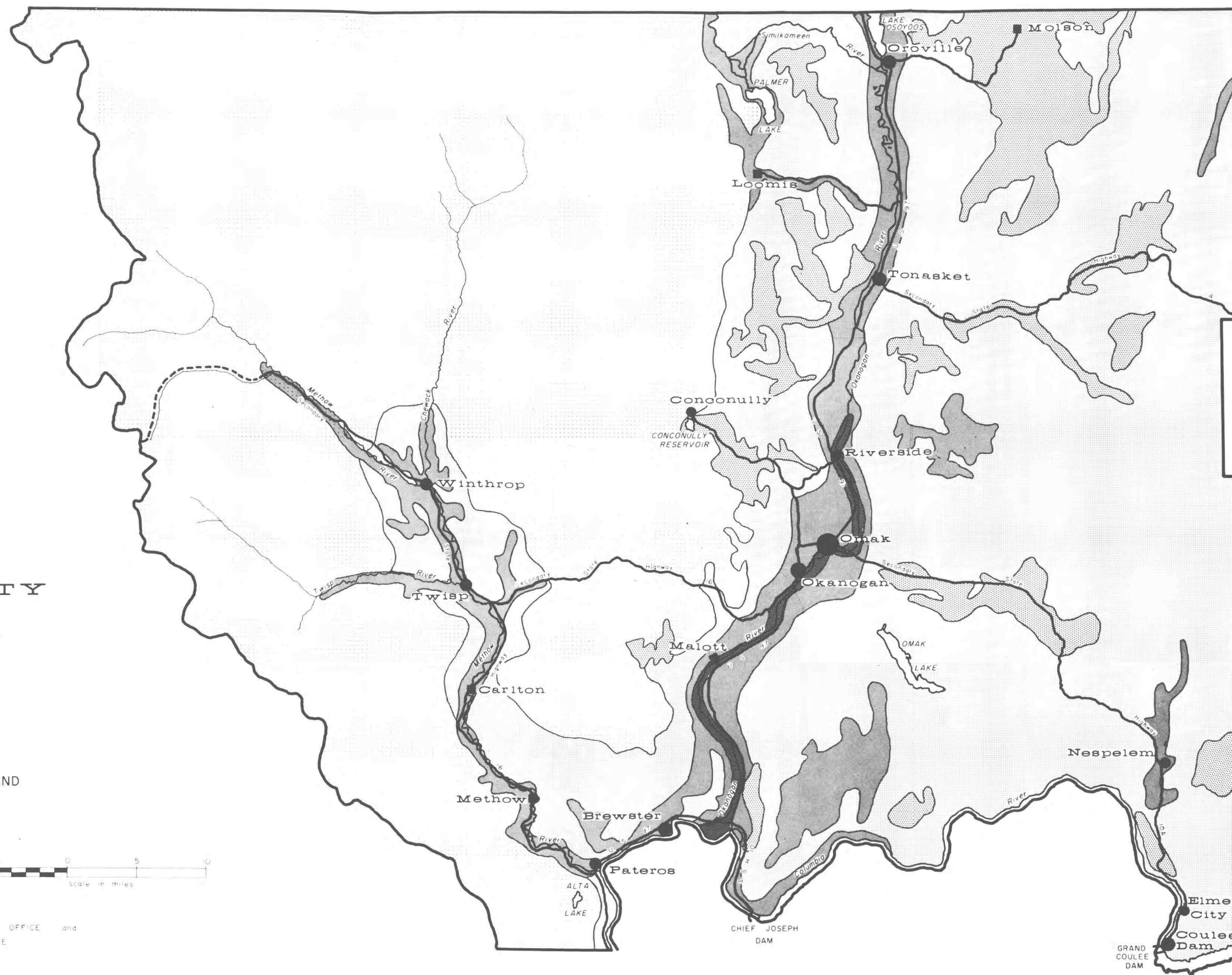
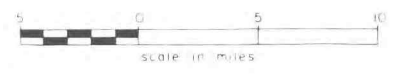


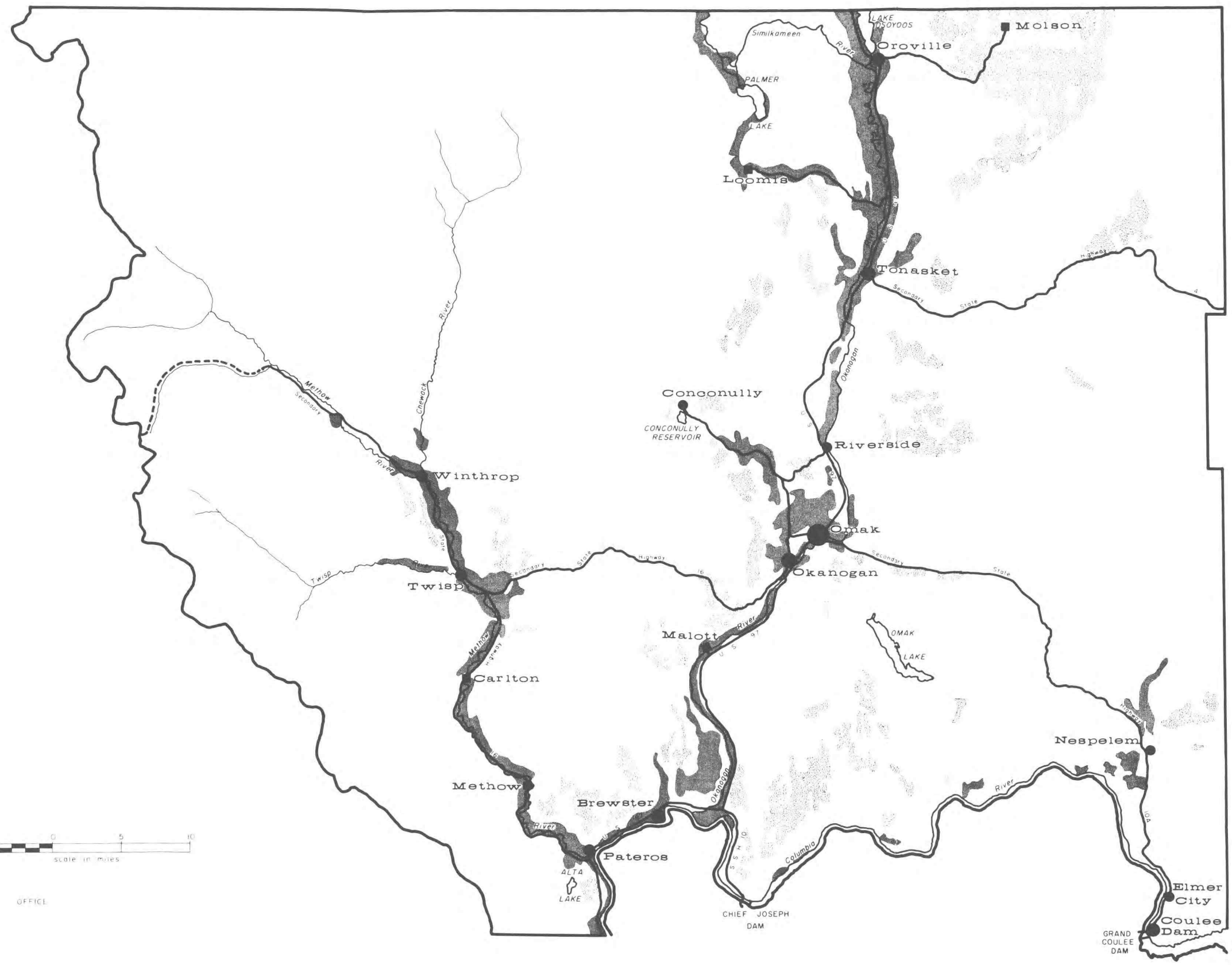
PLATE VII  
CROPLAND

- IRRIGATED CROPLAND
- DRY CROPLAND

- MUNICIPALITIES
- COMMUNITIES



SOURCE: OKANOGAN COUNTY EXTENSION OFFICE  
OKANOGAN COUNTY ASSESSORS  
JOINT PLANNING OFFICE



to supply water for irrigation purposes. It was estimated by planimetric calculations from aerial photos and field checking that Okanogan County has 59,300 acres of irrigated cropland and 128,400 acres of nonirrigated cropland. The 1959 Census of Agriculture shows only 55,566 acres of irrigated cropland and 101,706 acres of nonirrigated cropland. The discrepancies are attributed to the time of data collection; the census data were collected in 1959 and the thesis data in 1962 and 1963. The United States Corps of Engineers has estimated there is an additional 13,000 acres of potential irrigable land. This suggests a total of some 72,000 acres of irrigable land in Okanogan County.

### Mineral Resources

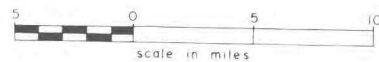
Even though Okanogan County has a large number of recorded mineral deposits, the county lacks known high quality mineral resources. Many reports of gold, silver, lead, zinc, copper, tungsten, and iron have been reported throughout the county as well as non-metallics such as sand, gravel, and evaporites of gypsum and epsom salts. Mineral activity in the county is partially revealed in Plate VIII which shows the location of patented mineral claims. This map was drafted in consultation with the county assessor and by plotting locations from the assessor's land ownership file cards. Even though all of the claims indicated on the map are patented, very



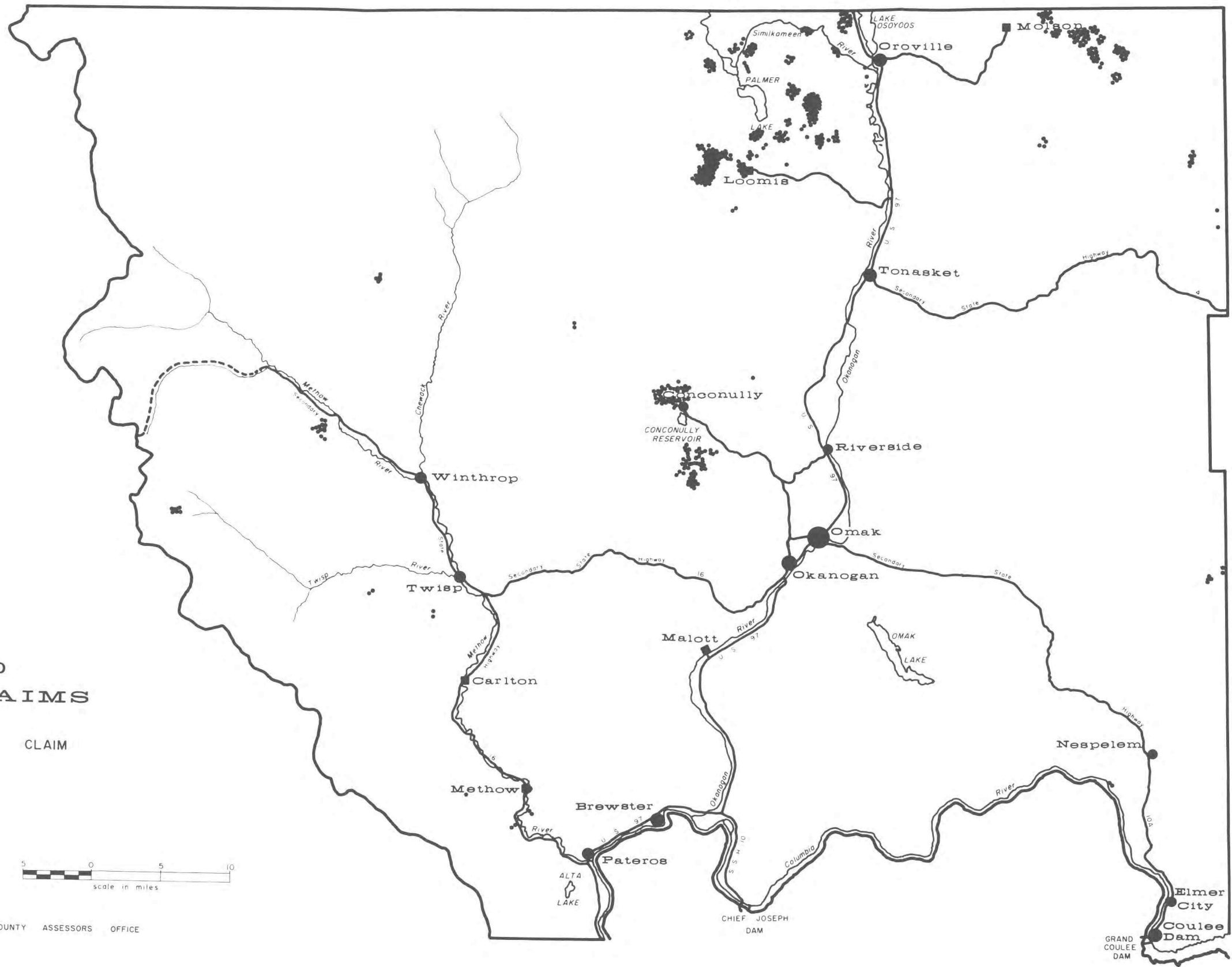
PLATE VIII  
PATENTED  
MINERAL CLAIMS

EACH DOT REPRESENTS ONE CLAIM

- MUNICIPALITIES
- COMMUNITIES



SOURCE FILE CARDS, OKANOGAN COUNTY ASSESSORS OFFICE



few if any are presently operating. Most of the patented mineral claims are being used for grazing purposes.

Sand and gravel deposits at present are the most valuable of the county's mineral deposits. Most of these deposits are located in areas that are readily accessible for development and all are morainal deposits.

### Outdoor Recreational Resources

Okanogan County's composite of land forms, vegetation, streams, wildlife, and sunny summer climate form a favorable environment for outdoor recreation. The area developed specifically for outdoor recreation occupies a very small, but important, percentage of the county's area.

Okanogan County, as is shown on Plate IX, has six state parks, 51 federal forest camps, 12 state forest camps with access by roads, and many more high mountain camps and picnic spots located along trails for back-country travelers. In addition there are several privately owned park and recreational facilities as well as those offered by the towns in the county. However, practically the entire county provides for some form of outdoor recreation. The many lakes and streams throughout the county afford excellent fishing and boating. Deer and bird hunting is also available in most parts of the county. In addition the spectacular scenery of Okanogan County is

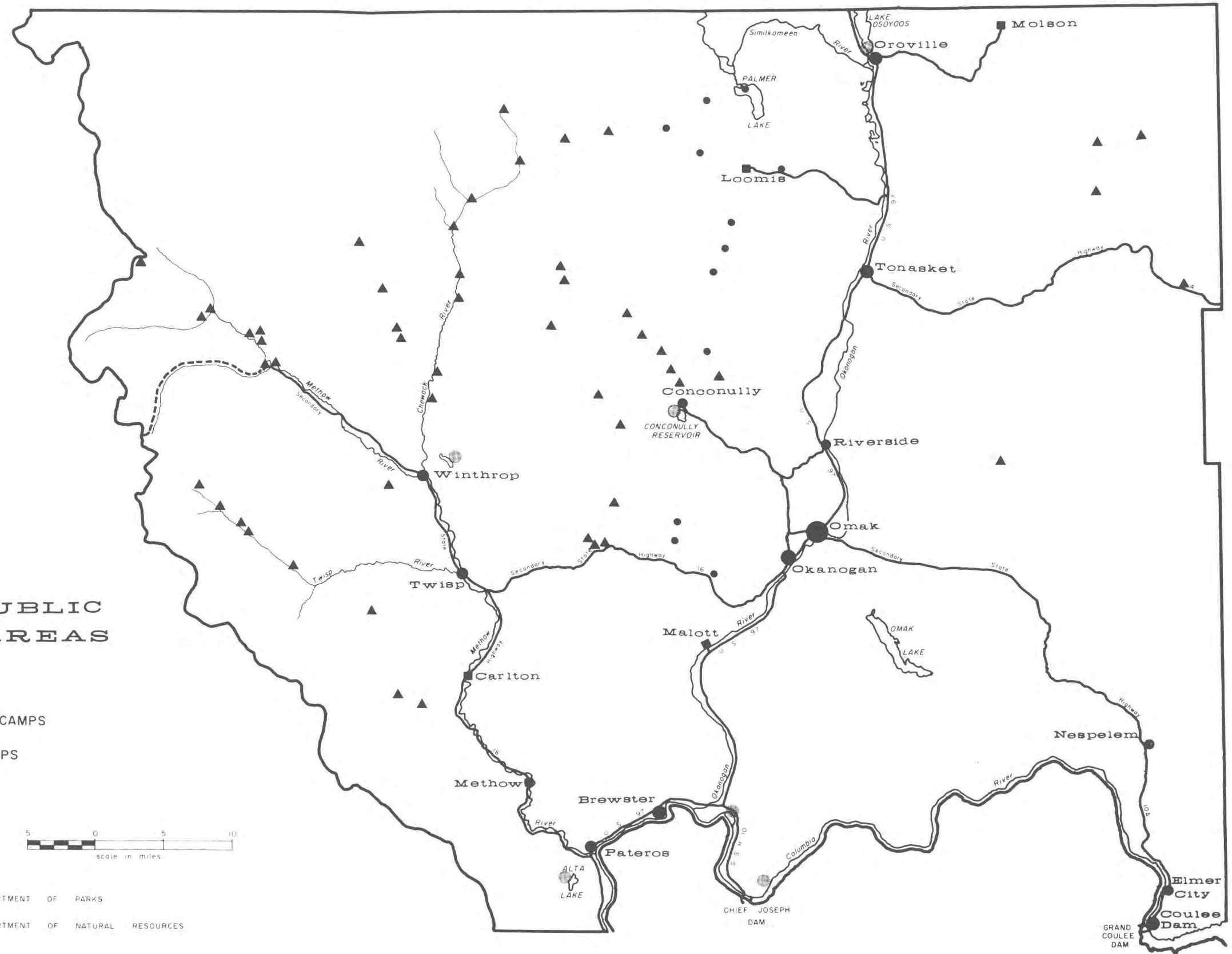
PLATE IX  
DEVELOPED PUBLIC  
RECREATION AREAS

- STATE PARKS
- ▲ NATIONAL FOREST CAMPS
- STATE FOREST CAMPS

- MUNICIPALITIES
- COMMUNITIES



SOURCE WASHINGTON STATE DEPARTMENT OF PARKS  
U S FOREST SERVICE  
WASHINGTON STATE DEPARTMENT OF NATURAL RESOURCES



uncommonly attractive for sightseeing and leisure driving. Okanogan County is one of the few areas in the state with recreational resources that have escaped the advance of sprawling urban areas.

Thus it is evident that Okanogan County does have a wealth of natural endowments. The realities of the economy, however, are the result of the decisions of the people living and working in the county. Chapter III is a brief appraisal of the county's population.

## CHAPTER III

### POPULATION

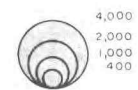
A wealth of natural resources does not in itself lead to a prosperous economic condition. It is man through his endeavors which produces prosperity. Therefore this chapter is a consideration of Okanogan County's population and labor force characteristics.

#### Spatial Arrangement

Okanogan County is a sparsely populated county. The 1960 Census of Population revealed that Okanogan County had 25,520 persons in an area of 5,295 square miles for a density of 4.8 persons per square mile. Only four counties of the state's 39 had fewer people per square mile than did Okanogan County. The population density of the North Central Washington Region was 8.8 persons per square mile and the state 42.8.

The majority of Okanogan County's residents, as can be seen from Plate X, are concentrated in the narrow valleys of the Columbia, Okanogan, and Methow Rivers. The population in the remainder of the county is extremely sparse. Plate X shows that Okanogan County has five major population areas, but it does not have a dominant central population center. The five major population centers are

PLATE X  
POPULATION DISTRIBUTION

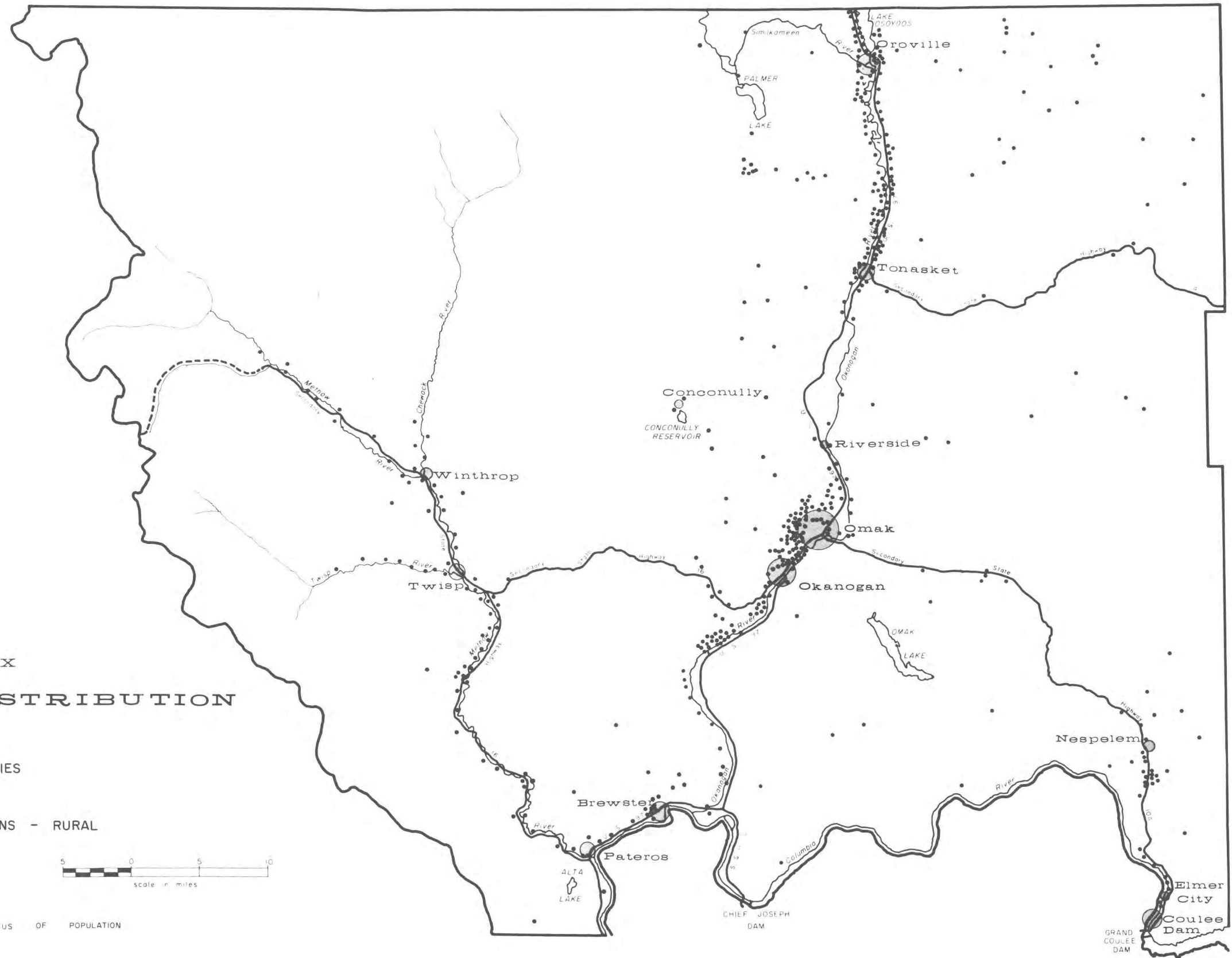


MUNICIPALITIES

• 25 PERSONS - RURAL



SOURCE 1960 U S CENSUS OF POPULATION



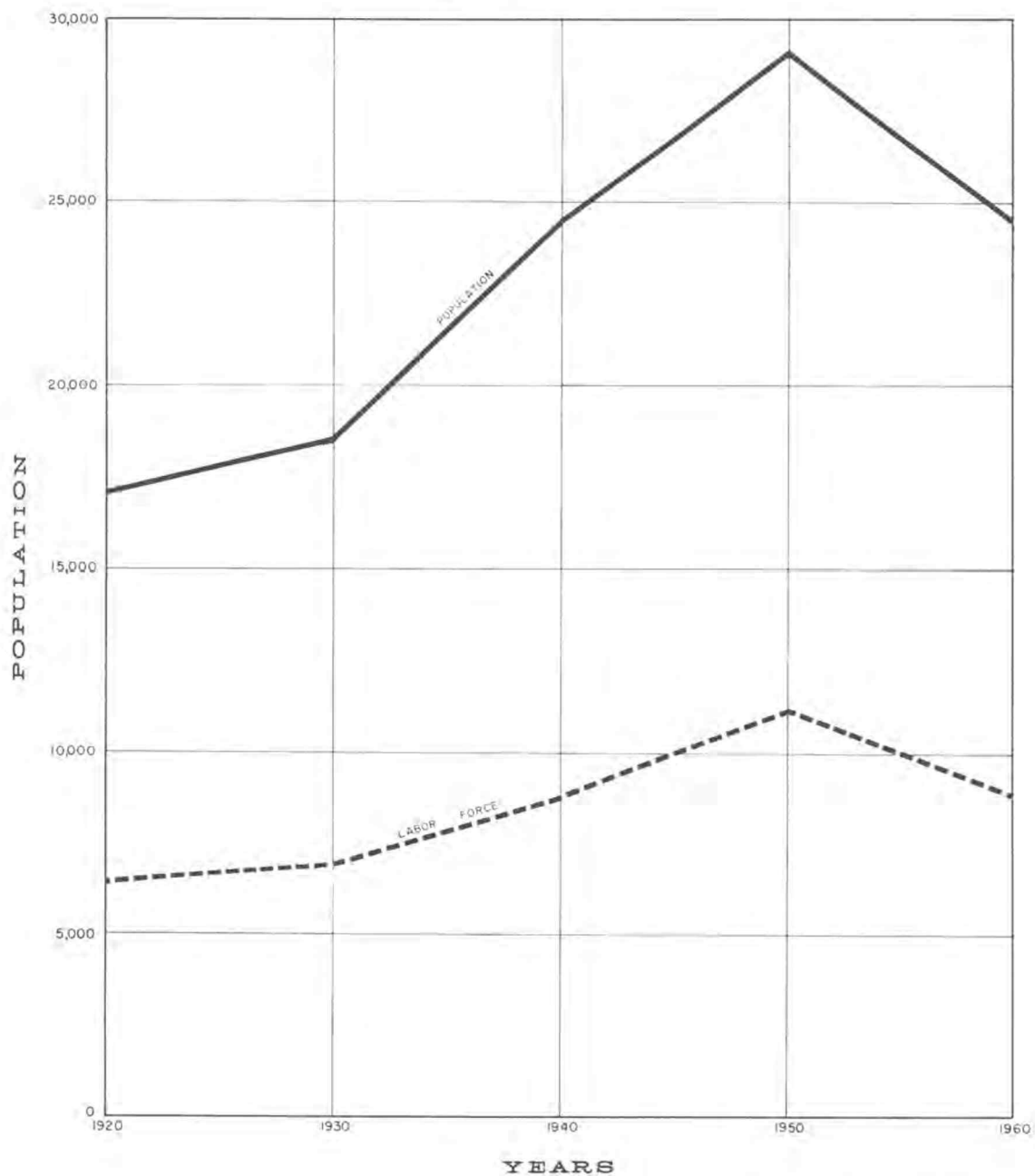
as follows:

1. The irrigated orchard area in the Central Okanogan Valley from Malott to Riverside with the majority of the population in and around the cities of Omak and Okanogan.
2. The irrigated orchard area in the Okanogan Valley from Tonasket to the Canadian Border with the majority of the population in or around the towns of Tonasket and Oroville.
3. The irrigated orchard area along the Columbia River from Pateros to Brewster with the majority of the population in the towns.
4. The Methow Valley from Carlton to Winthrop with the majority of the population in the towns of Twisp and Winthrop.
5. The southeast corner of the county from Nespelem to Coulee Dam with the majority of the population in the towns of Nespelem, Elmer City, and Coulee Dam.

### Growth and Age Groups

Okanogan County's pattern of population growth and total employment is shown in Plate XI. The decline between 1950 and 1960 is due to the completion of major hydroelectric construction projects. Okanogan County's population dropped from its all-time high of 29,131 in 1950 to 25,520 persons in 1960 which is a 12.4 percent decline. The 1960 population is four percent over the 1940 population. The county's total employment correspondingly declined 12.5 percent during the same period. The ratio of population to the

Plate XI  
POPULATION AND LABOR  
FORCE GROWTH  
1920 - 1960



SOURCE: U.S. Census of Population



employed labor force for both 1950 and 1960, however, remained constant at 2.88 persons per employed person even though both the population and employed labor force declined by considerable amounts.

Over the last 20 years there has been a definite increase in the percentage of Okanogan County's population which is either over 65 years of age or under 18. From 1940 to 1960 the percentage of the total population which is over 65 has risen from 6.4 percent to 10 percent. The percentage which is under 18 has risen from 32.4 percent to 38.4 percent. The increase in the percentage of younger and older persons in the county's population has resulted in a sharp decline in the percentage of that portion of the population most commonly referred to as the labor force; persons from age 18 to 64. In 1940, 61.3 percent of the population was between 18 and 64, but by 1960 this had dropped to 51.5 percent. This same trend is also true on a statewide basis, but the trend in the county toward a greater percentage of older people has increased much faster than it has for the entire state. Table VII and Plate XII present data on the age groupings for Okanogan County's population.

Table VII  
Distribution of the Population by Age Group  
1950 and 1960

Age Group	Number		Percent	
	1950	1960	1950	1960
0-4	3,667	2,750	12.6	10.8
5-9	2,995	2,920	10.3	11.4
10-14	2,597	2,706	8.9	10.6
15-19	2,157	1,972	7.4	7.7
20-24	1,871	1,205	6.4	4.7
25-29	2,198	1,361	7.5	5.3
30-34	2,215	1,444	7.6	5.7
35-39	2,262	1,478	7.8	5.8
40-44	1,923	1,591	6.6	6.2
45-49	1,578	1,735	5.4	6.8
50-54	1,410	1,485	4.8	5.8
55-59	1,258	1,208	4.3	4.7
60-64	958	1,105	3.3	4.3
65-69	780	933	2.7	3.7
70-74	557	701	1.9	2.7
75 and over	705	926	2.4	3.6
Total	29,131	25,520		

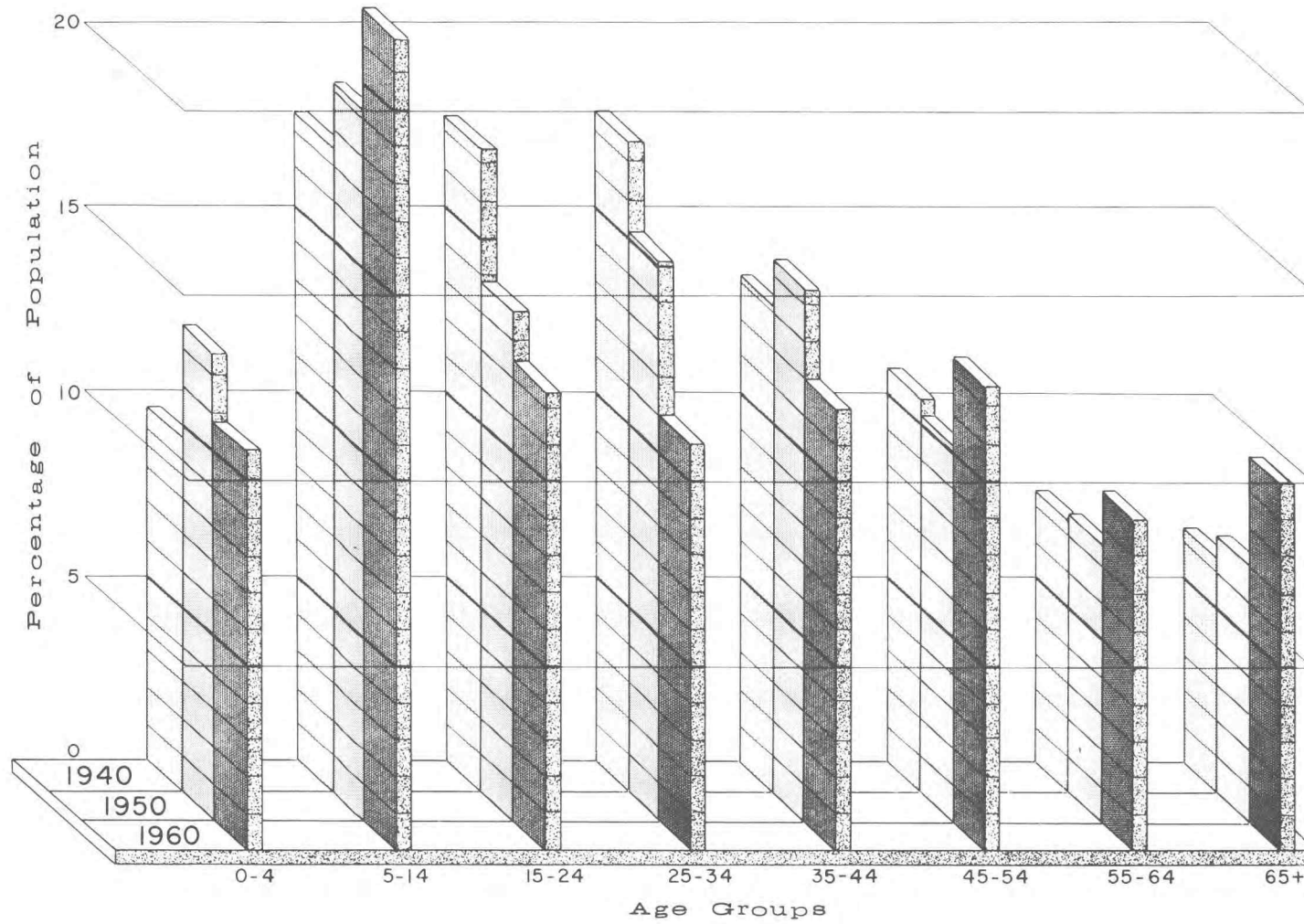
Source: U. S. Census of Population

#### Employment Categories

Employment statistics of Okanogan County's labor force reveal the agricultural character of the county. Okanogan County's major industry is agriculture. In fact, in 1960 workers in agricultural enterprises represented 25.9 percent of the employed labor force whereas forestry and wood products, the nearest competitor, only

Plate XII

POPULATION BY AGE GROUPS  
1940 - 1960



employed 15.7 percent of the labor force (see Table VIII).

Table VIII  
Employment by Industry Group  
1960

	Labor Force Employment	Percent of Labor Force
Agriculture	2,290	25.9
Forestry and Fisheries	122	1.4
Mining	12	0.1
Construction	442	5.0
Manufacturing	1,494	16.9
Wood Products	1,266	14.3
Other Durable Goods	39	0.4
Food and Kindred Products	125	1.4
Other Nondurable Goods	64	0.7
Transportation and Utilities	595	6.7
Wholesale Trade	349	3.9
Retail Trade	1,147	13.0
Finance, Insurance and Real Estate	186	2.1
Services	2,050	23.2
Industry Not Reported	165	1.9
Total	8,852	

Source: 1960 U. S. Census of Population

## CHAPTER IV

### DEVELOPED LAND USE PATTERNS AND ENTERPRISES

The patterns of developed land use reveal the interrelationships between the influences of the natural environment and the cultural environment. The natural impactors such as rugged terrain with relatively little flat land, sub-humid climate, and remote location have been important factors in the development of the county. On the other hand, cultural factors such as land tenure, especially public ownership, and transportation facilities have been equally important factors.

This chapter is a brief appraisal of the government ownership factors, transportation facilities, and developed land use patterns and their role in the economy.

#### Governmental Influence

Public lands and the reality that three-fourths of Okanogan County is owned by public agencies is the most potent force for development of the county's present and future land use. Plate XIV was compiled to show the spatial distribution of all government land. The majority of the government owned land, except for the Colville Indian Reservation, is in the higher elevations, and the United States

Forest Service administers jurisdiction over the majority of these areas. The government lands are by-in-large used for forest and recreational uses along with some grazing. Both timber production and recreation are important uses of public land in Okanogan County, and any changing of policy regarding the lands has an effect on the county's economy.

### The Pattern of Transportation Facilities

Transportation is the means by which commodities are imported and exported from an area. Okanogan County is not on the main routes of transportation, but is north of the main east-west routes of cross-state travel. This out-of-the-way location is a major liability. At present there is only one significant highway and only one rail line in the county which both run north-south, the length of the county.

#### Highway Transportation

The major mode of transportation and commodity shipments in Okanogan County is motor vehicles on highways and roads. The map, Plate XV, shows the pattern of roads within the county. It can be seen from the map that the major routes of transportation in the county are along the county's major river valleys. With the exception of the state highways, all other roads in the county follow the stream

drainage patterns and usually are not paved. The state highways, of which there are 259 miles, are by far the most important roads in the county since they carry the bulk of the county's commerce and link all of the communities in the county together. These roads provide the access for the commerce that is essential for the continued existence of the communities. The county roads, of which there are 1,640 miles, are the feeder roads for the state highways. These roads provide access to the agricultural areas of the county and to the hinterlands outside of the federal forest areas. The Forest Service roads, of which there are 1,050 miles, provide access to the federal forest areas and are used basically for logging, recreation, and fire control. The location and type of roads in Okanogan County is illustrated in Plate XV.

The majority of commodities imported or exported for Okanogan County by highway carrier are shipped to points within the state. Most commodities imported from or exported to outside the state are shipped by rail. Okanogan County averages 87 million pounds of exported commodities and 118 million pounds of imported commodities every year. Okanogan County's import and export of specific commodities by highway carrier is illustrated in Table IX.

Table IX

Import and Export of Total Specific Commodities  
for Okanogan County via Highway Carrier  
1957

Commodity	Pounds (thousands)		Percent	
	Export	Import	Export	Import
General Freight	5,912.9	37,522.4	6.79	31.79
Household Goods	172.5	260.1	0.20	0.22
Heavy Machinery	413.3	713.2	0.47	0.60
Liquid Petroleum Products	85.9	67,297.7	0.10	57.02
Agricultural Commodities	15,613.4	3,857.1	17.94	3.27
Building Materials	8,047.5	7,026.0	9.24	5.95
Forest Products	56,019.9	---	64.35	---
Other Commodities	785.1	1,340.6	0.90	1.14
Total	87,050.5	118,017.1		

Source: Report on Study of Directional Movement of Freight and Equipment Provided by Common Carriers by Motor Vehicles in the State of Washington; Washington Public Service Commission, 1957.

### Railroad Transportation

Okanogan County is served by one line which runs north-south through the county. The majority of the interstate commodities that Okanogan County is responsible for is shipped by rail. That portion of interstate traffic that is not shipped by rail is limited to the west coast area. Any commodity that comes from, or is destined for, east of Montana is shipped by rail.

Of the total commodities that are shipped by rail to or from



Okanogan County, 83.3 percent are exports. The largest exported product from Okanogan County is fruit, primarily apples. The apples represent 53 percent of all the exports and are bound for eastern markets. This is shown in Table X.

Table X  
Import and Export of Total Specific Commodities  
for Okanogan County via Rail  
1961

Commodity	Carloads	Percentage
<u>Exports</u>		
Fruit (mostly apples)	3,300	53.05
Grain	250	4.02
Logs	150	2.41
Lumber	2,500	40.19
Livestock	20	0.33
Total	6,220	
<u>Imports</u>		
Petroleum	525	92.92
Lumber	15	2.65
Grain and Feed	25	4.42
Total	565	

Source: Traffic Master; Great Northern Railroad Company.

#### Airline Transportation

Okanogan County had air service by West Coast Airlines at Omak until the summer of 1962; at which time the service was curtailed due to the lack of patronage.

Transportation in Okanogan County is very important.

Highways will probably continue to serve the county's imports and exports to the state in the future with more interstate travel within the Pacific Northwest. Rail is expected to continue the long haul shipments. The only major change in Okanogan County's transportation seen in the near future is the completion of the North Cross-State Highway. However, the influence this new highway will have on commodity shipments is not known at this time since it has not been determined if it will be an all-weather highway. Also, at present Okanogan County has very little if any economic tie to the two counties on the west side of the Cascades.

#### Urban Land Use

Urban land uses occupy a relatively small percentage of the county's area. Virtually all of the urban development is limited to the valleys of the Columbia, Okanogan, Methow, and Nespelem Rivers. Urban land use in Okanogan County is of minor significance. The municipalities have developed in the valleys in response to transportation. None of the communities have developed to the point that they dominate the entire county.

After a careful field survey of all the land use types in all of the cities and towns in Okanogan County and plotting of the information on specially prepared base maps, the cities and towns in Okanogan County were found to occupy 4.774 acres or about 0.14

percent of the county's total area. Of the land area in the towns, approximately 53 percent is used for urban purposes with the remaining 47 percent either in agriculture or vacant areas. The amount of vacant land in the municipalities is significant but is not much different from similar towns in similar areas. Table XI shows the use of land in the 13 municipalities of Okanogan County, and Plate XIII shows the developed urban land areas in the county.

### Agricultural Land Use and Enterprises

Agricultural land uses of all types occupy only about 6 percent of the total county, but in 1960 agriculture employed 25.9 percent of the county's labor force. Agriculture employs more people and brings in more capital than any other single industry in Okanogan County. Agricultural enterprises in Okanogan County can be divided into three categories: fruit crops, livestock, and field crops.

#### Fruit Crops

Okanogan County's fruit enterprises are dominated by apple production which accounts for better than 98 percent of all fruit production as is shown in the 1959 Census of Agriculture. Pears were the second most important crop, but they represented less than one percent of the total fruit tonnage. This is illustrated in Table XII.

Table XI  
Land Use in the Incorporated Towns  
1962

Land Use	Acres	Percent of Developed Area	Percent of Land Area
Residential	773.49	31.70	16.85
Single-family	736.36	30.18	16.04
Two-family	15.45	.63	.34
Multi-family	21.68	.89	.47
Commercial	103.37	4.24	2.25
Tourist	23.88	.98	.52
Retail and Office	79.49	3.26	1.73
Industrial	309.02	12.66	6.73
Commercial and Light Industrial	31.30	1.28	.68
Heavy Industrial	172.16	7.06	3.75
Railroad	105.56	4.33	2.30
Public and Semi-Public	312.63	12.82	6.81
Parks and Recreation	114.85	4.71	2.50
Public	167.16	6.85	3.64
Semi-public	30.62	1.25	.67
Streets and Alleys	941.46	38.58	20.51
Developed Area	2,440.19		53.16
Vacant	1,611.38		35.11
Agricultural	538.42		11.73
Orchard	238.22		5.19
Other	300.20		6.54
Land Area	4,590.01		
Water	184.39		
Total Area	4,774.40		

Source: Joint Planning Office  
Land Use Survey, Okanogan County, 1962

PLATE XIII  
URBAN LAND



SOURCE BASED ON FIELD WORK - 1963

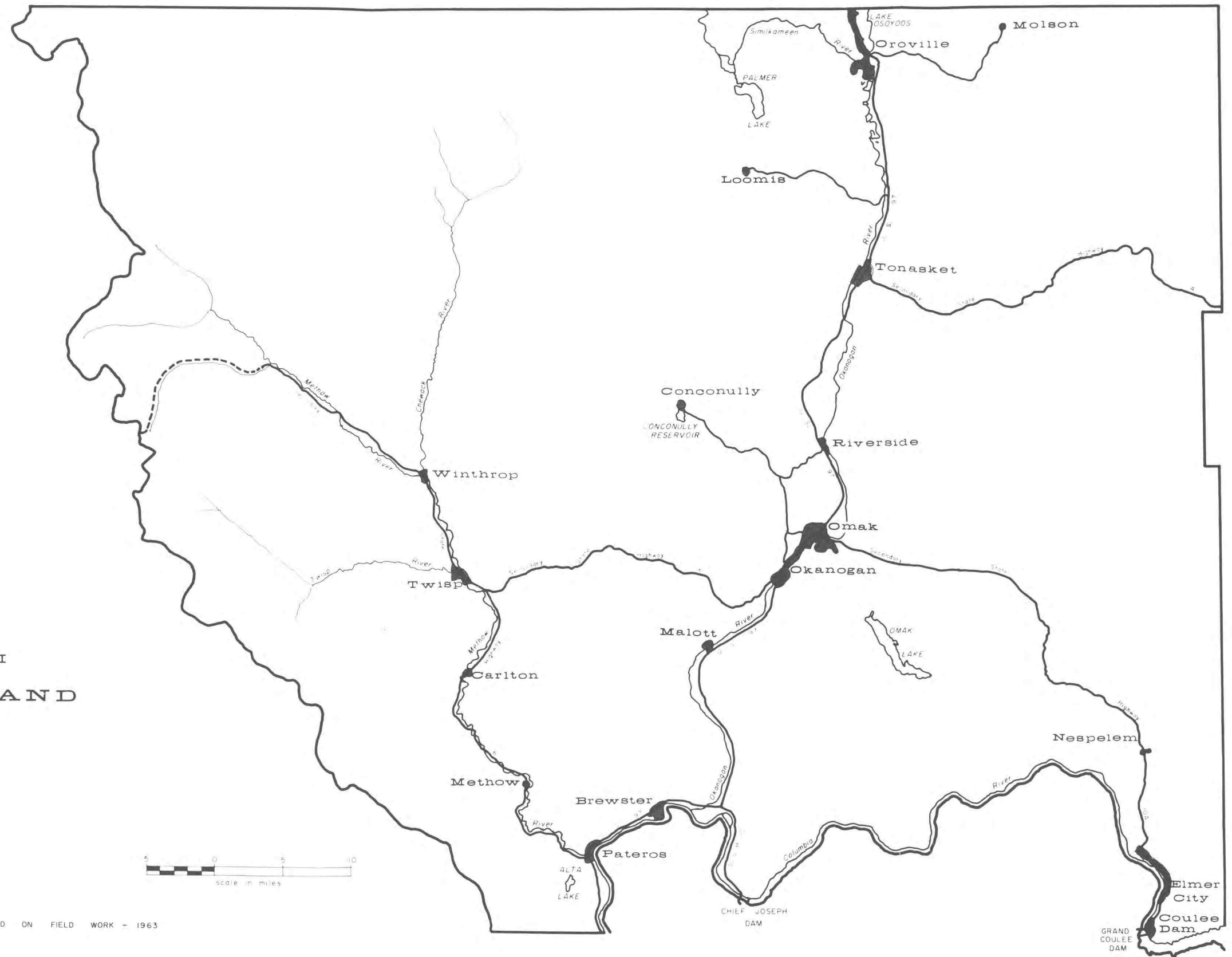







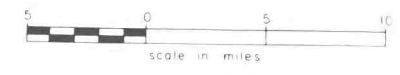


PLATE XIV  
GOVERNMENT  
OWNED LAND

-  OKANOGAN NATIONAL FOREST
-  COLVILLE INDIAN RESERVATION
-  WASHINGTON STATE DEPARTMENT OF NATURAL RESOURCES
-  BUREAU OF LAND MANAGEMENT
-  STATE PARKS
-  STATE FISH AND GAME COMMISSION
-  PRIVATE LAND

- MUNICIPALITIES
- COMMUNITIES



SOURCE OKANOGAN COUNTY ASSESSOR

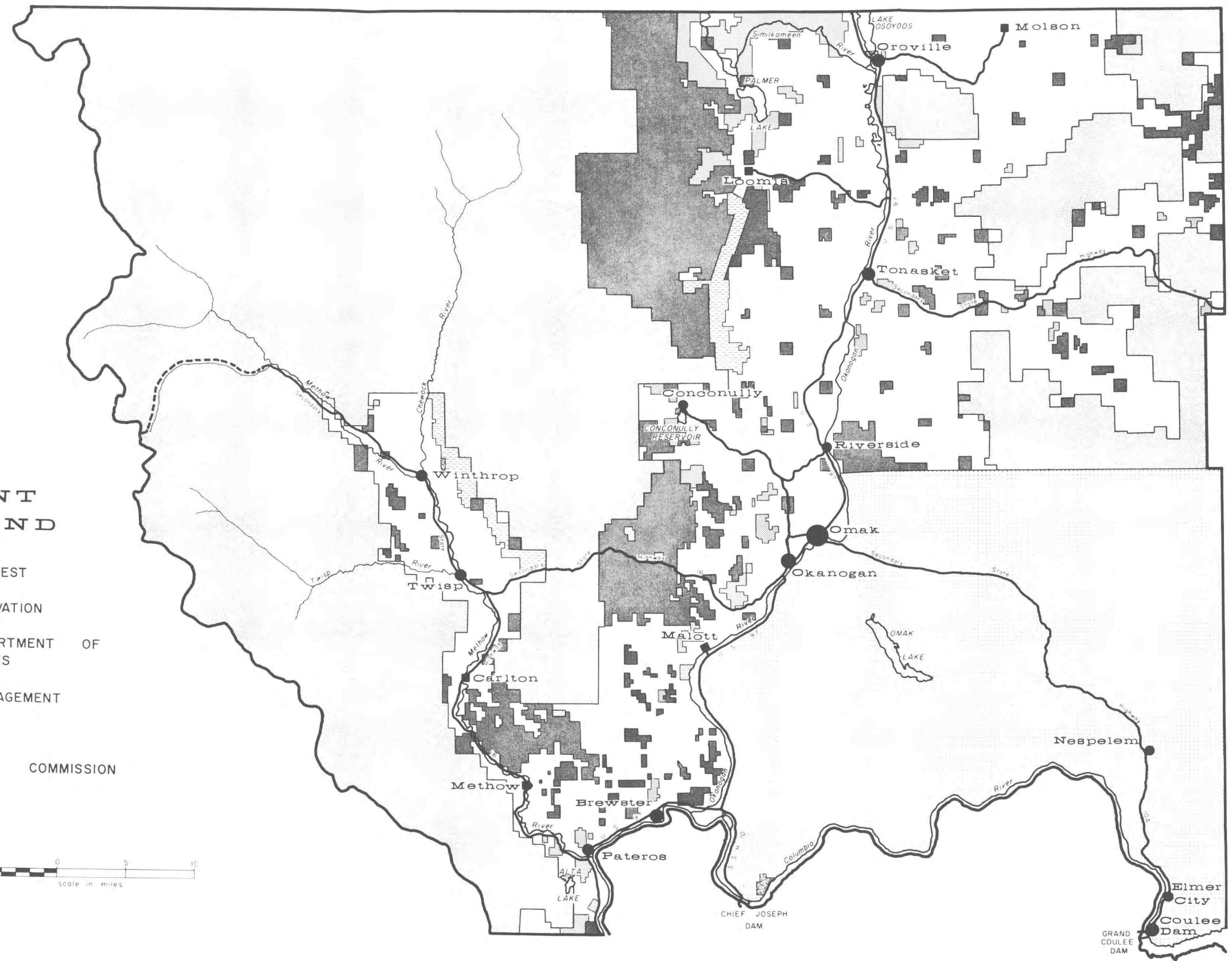
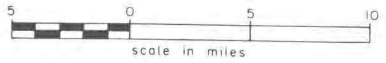


PLATE XV  
ROAD PATTERN

- Paved
- U. S. HIGHWAY
  - STATE ROADS
  - COUNTY ROADS
- Unpaved
- COUNTY ROADS
  - U. S. FOREST and INDIAN SERVICE ROADS
- MUNICIPALITIES
- COMMUNITIES



SOURCE WASHINGTON STATE HIGHWAY COMMISSION  
OKANOGAN COUNTY ENGINEER  
U. S. FOREST SERVICE  
COLVILLE INDIAN AGENCY

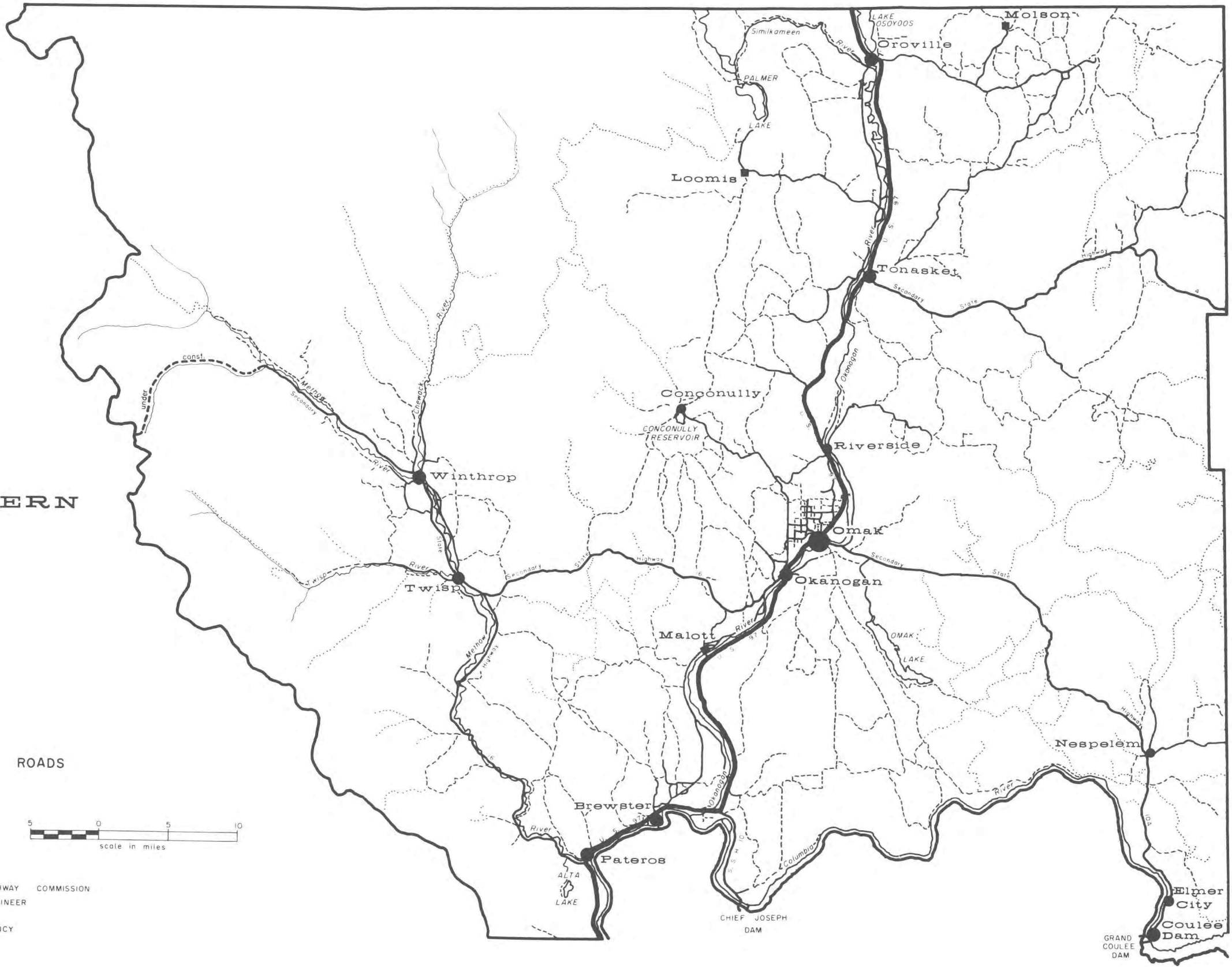




Table XII

Amount of Fruit and Nut Shipments  
Okanogan County and Washington  
1939, 1944, 1949, 1954, and 1959

	1939	1944	1949	1954	1959	Percent Growth 1939-1959	County Percent Total (1959)
Apples (tons)							
Okanogan County	72,841	156,069	163,589	69,618	113,027	55.2	98.36
State	496,783	820,404	831,087	586,885	659,426	32.7	
Okanogan County's Percent of State	14.66	19.02	19.68	11.88	17.14	2.48	
Pears (tons)							
Okanogan County	2,408	2,329	571	543	1,055	-56.2	0.92
State	121,681	195,909	118,889	127,627	93,986	-22.8	
Okanogan County's Percent of State	1.98	1.19	0.48	0.43	1.12	- 0.86	
Peaches (tons)							
Okanogan County	947	1,072	342	177	530	-44.0	0.46
State	37,350	58,052	39,406	31,078	49,041	31.3	
Okanogan County's Percent of State	2.54	1.83	0.87	0.57	1.08	- 1.46	
Apricots (tons)							
Okanogan County	236	---	92	27	50	-78.8	0.04
State	13,060	---	15,279	10,417	11,153	-14.6	
Okanogan County's Percent of State	0.16	---	0.07	0.11	0.04	- 0.12	
All Other Fruit and Nuts (tons)							
Okanogan County	1,004	---	474	253	252	-74.9	0.22
State	47,949	---	60,157	61,403	89,907	53.3	
Okanogan County's Percent of State	2.09	---	0.79	0.41	0.28	- 1.81	
Total Okanogan County (tons)	77,436	159,470	165,068	70,618	114,914	48.39	

Source: U. S. Census of Agriculture



Apple production in Okanogan County has risen by 55 percent since 1939, however, in 1949 Okanogan County raised 50,562 tons more apples than in 1959. The production of apples is trending upwards, but it fluctuates greatly from year to year depending upon climatic and marketing conditions. Okanogan County's portion of the state's apple production has risen 2.5 percent since 1939, but Okanogan County contributed more to the state's total tonnage in 1949 than in 1959. Okanogan County contributed 17.1 percent of the total tonnage of apples raised in the state in 1959, 19.7 percent in 1949, and 14.7 percent in 1939.

Other than apples, Okanogan County contributes very little to the state's total fruit production. In 1959 Okanogan County contributed only 1.1 percent of the pears and 1.1 percent of the peaches. The amount of fruit raised in Okanogan County other than apples has declined greatly. The fruit industry in Okanogan County is becoming more dependent upon apples and less dependent on other types of fruit. The amount of acreage planted in different types of fruit is illustrated in Table XIII.

Table XIII  
Acreage of Fruit Trees by Type  
1959

	Acreage	Percent
Apples	16,400	95.4
Pears	490	2.7
Peaches	240	1.4
Cherries	40	0.2
Apricots	30	0.2
Plums and Prunes	20	0.1
Total	17,220	

Note: Acreages are estimates based upon number of trees.

Source: Okanogan County Extension Office

Okanogan County's fruit production will probably continue the trend to apples as more irrigable land is put into production. However, as these new orchard areas, which generally speaking are higher risk areas due to elevation, are brought into production, there is undoubtedly going to be more culls produced than in the past. This will result in the problem of how to use the culls and how to salvage some value from them. Thus, the apple industry in Okanogan County is going to have to investigate the possibility of expanding the county's secondary processing industry to handle the additional tonnage. At present this secondary processing industry is quite small and incidental. Historically, the production of apples in Okanogan County has been fresh fruit, but if secondary processing plants were to be

installed, the industry's base would be broadened and made more stable in the poorer crop years. The fruit industry in Okanogan County should consider processing apples to produce applesauce, jams, jellies, concentrates, cider, applejuice, and whatever else can be realized from the fruit.

### Livestock

The raising of livestock is the second most important agricultural enterprise in the county. Okanogan County is the major livestock producing county in North Central Washington. The 1959 Census of Agriculture showed that the county contributed more than 50 percent of all of the livestock value in the total region. Cattle and calves are the most important, value wise, of all the livestock raised in Okanogan County, and they are becoming increasingly more important. In 1954, the value of all cattle and calves sold alive in Okanogan County represented 88.9 percent of all livestock sold, and by 1959 this had risen to 94.5 percent. Table XIV shows the value of livestock in Okanogan County has gone up by 84 percent between 1954 and 1959.

Table XIV  
Value of Livestock Sold  
1954 and 1959

	Value*		Percent Change 1954-1959	Percent Value of Livestock Sold	
	1954	1959		1954	1959
Cattle and/or Calves -					
Alive	2,507	4,908	95.77	88.9	94.5
Cattle	1,850	3,160	70.81	65.6	60.8
Calves	657	1,748	166.06	23.3	33.7
Horses and/or Mules -					
Alive	11	22	100.00	0.4	0.4
Hogs and Pigs - Alive	111	134	20.72	3.9	2.6
Sheep and Lambs -					
Alive	190	130	- 31.58	6.8	2.5
Total	2,819	5,194	84.25		

\*Value in Thousands of Dollars

Source: 1959 U. S. Census of Agriculture

At present Okanogan County is grazing almost as many head of cattle per acre as is possible due to the contamination of the grazing areas with all sorts of weed brush. For livestock raising in Okanogan County to expand, the brush on the better grazing lands will have to be driven out. The best and cheapest method of doing this is by aerial spraying with 2-4-D butyl ester. In killing the brush the native grasses would be allowed to expand their growth since they would no longer be competing with the brush for water, light, and space. However, if the native grasses have been depleted to the point where they are unable to expand, seeding of the area will then be necessary,

with the most inexpensive method being by air. The cost of ridding areas of brush appears, at first glance, too expensive to consider. However, if the cost is amortized over a several year period, the cost of ridding areas of the noxious brush will more than pay for itself by allowing the rancher to graze more animals on his land. The cost of ridding areas of weed brush and replanting grass is illustrated in Table XV.

Table XV  
Charge for Spraying and Reseeding  
Brush Contaminated Areas

	Pubescent	Siberian	Crusted
<b>Reseeding</b>			
Cost Per 100 Weight (a)	\$52.00	\$45.00	\$27.00
Cost Per Acre (b)	2.60	2.25	1.35
Charge for Plane Per Acre (c)	1.00	1.00	1.00
Total Charge for Reseeding Per Acre	3.60	3.25	2.35
<b>Brush Spraying</b>			
Charge for 2-4-D Butyl Ester Per Acre	2.09	2.09	2.09
Charge for Plane and Transporting Equipment	2.16	2.16	2.16
Total Charge for Spraying (d)	4.25	4.25	4.25
Total Charge for Spraying and Seeding Per Acre	7.85	7.50	6.60

(a) All seeds are number 1 standard.

(b) Standard distribution is 5 pounds per acre.

(c) Charge is for large track; if in small block charge would be \$120 per hour.

(d) Charge is for area of less than 1,000 acres.

Source: Chelan County Extension Office and Wenatchee Air Service.

Another possibility for helping the livestock industry in the county is the expansion of processing establishments including slaughter houses and feeder lots. The feeder lots would not only help the cattlemen, but would also help the field crop farmers in the county. Since hay and other fodders are necessary to fatten the cattle for slaughter and since good quality fodder can be raised in the county, the use of local fodders at the feeder stations would be much cheaper than importing them from some other area. Therefore, the processing of cattle that are raised in Okanogan County would help the cattlemen by reducing the transportation costs of their product and the field crop farmer by giving him a more ready market for his crop.

### Field Crops

Field crops in Okanogan County are divided into two specific types: small grains and hay crops. Generally speaking, these two crops are raised in different areas of the county. The small grains are raised in the dryland farming areas, whereas the hay crops are raised in the irrigated river valleys.

Small Grains. In Okanogan County four general types of small grains are raised: wheat, oats, barley, and rye. Table XVI shows these are cash grain crops. This is particularly true of the wheat and rye crops. More than 85 percent of all the wheat grown in

Table XVI  
Small Grain Crops Raised and Sold  
1954 and 1959  
(In Bushels)

		1954	1959	Percent Change 1954-1959	Percent of Total Crop	
					1954	1959
Winter Wheat	Raised	294, 143	231, 831	-21. 18	47. 78	48. 21
	Sold	275, 608	224, 634	-18. 50	54. 76	56. 53
	Percent Sold	93.70	96. 90	3. 20		
Spring Wheat	Raised	181, 665	109, 005	-40. 00	29. 51	22. 67
	Sold	155, 067	94, 699	-38. 93	30. 81	23. 83
	Percent Sold	85. 36	86. 88	1. 52		
Oats	Raised	73, 213	63, 364	-13. 45	11. 89	13. 18
	Sold	38, 095	33, 119	-13. 06	7. 57	8. 33
	Percent Sold	52. 03	52. 27	0. 24		
Barley	Raised	66, 537	58, 444	-12. 16	10. 81	12. 15
	Sold	34, 486	30, 070	-12. 81	6. 85	7. 57
	Percent Sold	51. 83	51. 45	- 0. 38		
Rye	Raised	--	17, 250	--	--	3. 59
	Sold	--	14, 870	--	--	3. 74
	Percent Sold	--	86. 20	--		
Total	Raised	615, 558	480, 894	-21. 88		
	Sold	503, 256	397, 392	-21. 03		
	Percent Sold	81. 76	82. 64	0. 88		

Source: U. S. Census of Agriculture, 1959

Okanogan County in 1954 and 1959 was sold. The remainder was held for future seeding. Only a little over 50 percent of the oats and barley raised in Okanogan County was sold while the remainder was used for reseeding and to feed livestock on the ranches where it was raised.

The future of small grain production in Okanogan County is impossible to predict with any accuracy since it is completely dependent upon the weather, upon the amount of moisture, and, in the case of wheat, on the policies of the federal government. The federal government decides how many acres of wheat shall be planted, but this does not necessarily reflect the amount of grain harvested. The weather is the deciding factor on the yield per acre. This means the grain production can vary considerably even though the same acreage is planted every year. If the livestock industry expands in the county, the oats and barley crops will expand and be used as feed for the county's livestock.

Hay Crops. Okanogan County raises a considerable tonnage of hay crops. However, hay crops are raised for a different purpose than the small grain crops. Of all the hay crops raised in Okanogan County in 1954 and 1959, only about 9 and 12.5 percent respectively was sold. The remainder stayed on the farm where it was raised and used for fodder (Table XVII). The major hay crop in Okanogan County is alfalfa. Alfalfa in 1959 comprised 67 percent of all the hay tonnage



Table XVII  
Hay Crops Raised and Sold  
1954 and 1959  
(In Tons)

		1954	1959	Percent Change 1954-59	Percent of Total Crop	
					1954	1959
Alfalfa	Raised	56,024	63,588	13.50	61.14	66.81
	Sold	6,769	10,502	55.15	80.39	87.66
	Percent Sold	12.08	16.52	4.44		
Clover and Timothy	Raised	5,138	5,571	8.43	5.61	5.85
	Sold	308	234	-24.03	3.66	1.95
	Percent Sold	5.99	4.20	- 1.79		
Vetch, Peas, and Oats	Raised	130	374	187.69	0.14	0.39
	Sold	26	25	- 3.85	0.31	0.21
	Percent Sold	20.00	6.68	-13.32		
Oats, Wheat, Barley, and Rye	Raised	21,792	15,326	-29.67	23.78	16.10
	Sold	694	650	- 6.34	8.24	5.43
	Percent Sold	3.18	4.24	1.06		
Wild Hay	Raised	4,334	5,078	17.17	4.73	5.34
	Sold	363	319	-12.12	4.31	2.66
	Percent Sold	8.38	6.28	- 2.10		
Other Hay	Raised	4,207	5,237	24.48	4.59	5.50
	Sold	260	251	- 3.46	3.09	2.09
	Percent Sold	6.18	4.79	- 1.39		
Total Hay Crops	Raised	91,625	95,174	3.87		
	Sold	8,420	11,981	42.29		
	Percent Sold	9.19	12.59	3.40		

Source: U. S. Census of Agriculture 1959

which is about a 6 percent increase over 1954. The amount of hay crops raised and sold is illustrated in Table XVII.

The expansion of Okanogan County's hay production will depend upon the growth of the county's livestock industry as well as not putting all irrigable lands into orchard production. Some of these areas should be put into hay crops especially if the livestock industry expands. Hay produced in Okanogan County would be preferred by the local ranchers.

#### Future Developments

Several projects are under construction in Okanogan County that will have a considerable impact on the county's agricultural land use. The projects, except in the case of Wells Dam, will have a stabilizing and broadening effect on the county's agriculture.

Two of the county's existing irrigation districts, Whitestone Coulee and the Oroville-Tonasket Districts, are undergoing revamping construction work. These irrigation projects have been operating for some time but have been underdeveloped. The purpose of the construction projects is to bring them up to a higher standard so they can supply more water at critical times. Some additional land will be added to the irrigation projects, but this is incidental; the main purpose of the construction is to stabilize the amount of water provided to irrigated areas.

The distance from all major cities in Okanogan County to all points in Skagit and Whatcom Counties will be considerably lessened by the construction of the North Cross-State Highway. The distance from the Okanogan Valley communities to Mt. Vernon will be 61 miles less, and the distance to Bellingham will be 69 miles less than on the shortest existing routes. At present Okanogan County has very little economic tie with Skagit and Whatcom Counties. Both of these counties have a well-assured future in the dairy industry. Presently the dairy farmers in these counties have to obtain the major portion of their winter hays and fodders from the Ellensburg and Moses Lake areas. Due to the large decrease in transport distance as a result of the North Cross-State Highway, there is the possibility that Okanogan County could generate some commodity sales in these areas by selling hay and feed grains to the dairy farmers.

The agricultural land use in the Wells Dam Hydroelectric Project Pool Area is going to be significantly changed when the dam is completed. Virtually all of the orchard land along the Columbia River as well as some along the Okanogan River will be flooded out and will result in about a one-third depletion of the total annual orchard production in this area of Okanogan County. For this area to just maintain its present agricultural status, the orchards and other crops are going to have to be replanted on the higher benchlands away from the river. However, these new areas are higher risk areas and

as a general rule are not as high a producing area as the areas that are being inundated. Therefore, to maintain the same amount of production more than one acre of new land will have to be planted for every one acre that is being inundated.

### Forest Land Use

Commercial forest land occupies approximately half of the county's land area. All of the commercial forest land is considered producing land. The forest industry is Okanogan County's second most important industry.

The use of Okanogan County's forest resources is more dependent upon governmental policy than any other single resource since most of the county's commercial timber is in government ownership. The governmental policies regarding size of blocks put up for cutting, method of cutting required, location of blocks, the amount of needed road building, and the size of the required bond to cover the sale of the timber all have a very definite relation to the use of the forest land. In the past the policy has been to put up large blocks of timber and require a bond covering a large percentage of the sale which meant that only Biles Coleman Company of Omak could make bids for the timber. As a result many times the sales were not made because Biles Coleman had all they could handle at that particular time. Lately the policy has been changed to put up smaller blocks of timber for

sale and to require a bond covering a smaller percentage of the sale. As a result of the new policy more companies are able to bid on the timber thereby allowing the smaller mills in the county to also benefit from the government sales.

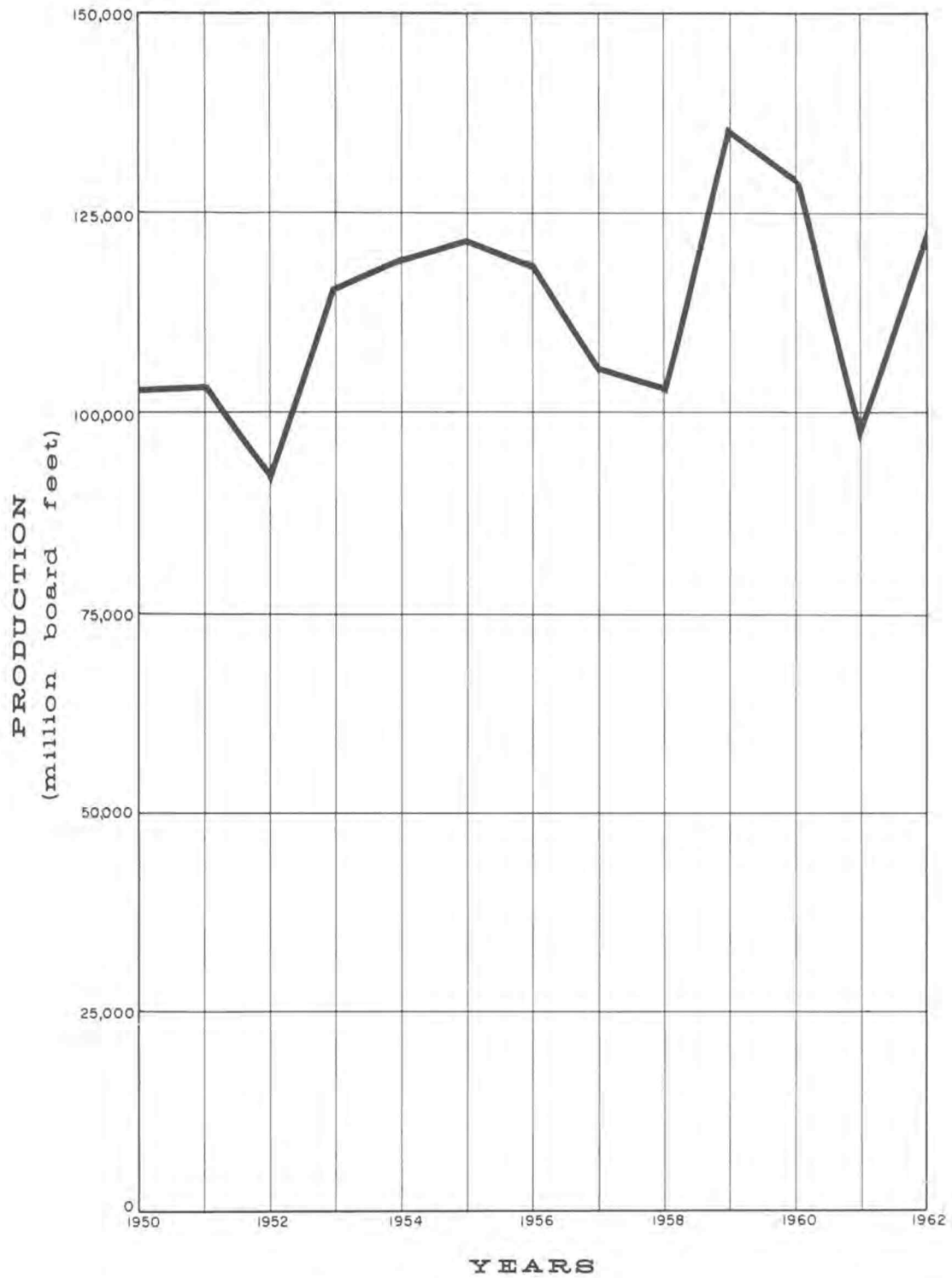
### Log Production

Plate XVI shows Okanogan County's annual log production which has been increasing in past years. In 1962 total log production in Okanogan County was 121 million board feet. For the 13 year period 1950-1962, the log output averaged 114 million board feet annually and ranged from 93 million board feet in 1952 to 136 million board feet in 1959. During the 1950-1962 period, 48 percent of the log production came from National Forest lands. The amount of logs produced from National Forest lands has been steadily rising from 30.7 million board feet in 1950 to 83.1 million board feet in 1962.

### Annual Allowable Log Production

Okanogan County has an annual allowable log production rate which would produce 206.3 million board feet of lumber. In 1962, the log production was 63.2 percent of the allowable cut. This is a higher percentage than in past years and is 4 percent over the 13 year log production average. However, if the timber industry in the county is to expand, a higher percentage of the annual allowable cut

ANNUAL LOG PRODUCTION  
1950 - 1962



SOURCE U S Forest Service

is going to have to be attained. Table XVIII shows the annual allowable rate of log production in Okanogan County.

Table XVIII

Annual Allowable Rate of Log Production  
1962

Jurisdiction of Production	Net Log Scale 1,000 Board Feet
1. Okanogan National Forest, Ponderosa pine and Mixed Conifer types; Tractor Ground	90,000
2. State of Washington, Department of Natural Resources	22,000
3. Colville Indian Reservation	40,000
4. Biles Coleman Tree Farm, Private	7,000
5. Other Private	5,000
6. Additional Cuts	
A. Okanogan National Forest; slopes too steep for safe and practical tractor logging.	12,000
B. State of Washington, Department of Natural Resources, proposal for additional accelerated cut to remove high risk timber on all sawtimber stands in the next ten years.	<u>16,600</u>
Total	192,600

Source: United States Forest Service, Okanogan National Forest, Okanogan, Washington.

### Timber Harvesting Operations

The 1961 Directory of Washington Manufacturers lists 15 separate logging operations. This does not include the Biles Coleman Company since their logging operation was reported as part of their sawmill. All of the logging operators in Okanogan County have a local market for their products. A large share of the timber harvesting is done by contract logging companies. The majority of the timber harvested in the county is shipped to one of five towns in the county for processing: Oroville, Tonasket, Omak, Brewster, or Twisp.

### Mill Production

If Okanogan County's log production attained the annual allowable cut as established in 1962, 206.3 million board feet of lumber per year could be milled. At present Okanogan County's lumber mills only produce some 142.6 million board feet of lumber, as can be seen from Table XIX. This table also indicates the capacity of the county's lumber mills under present operating procedures. Therefore, if Okanogan County was able to attain its annual allowable cut, it is possible there would have to be capital outlays made by the mills for expansion as well as a change in operating procedures to accommodate the additional log production.



Table XIX  
Lumber Mill Production  
1958 - 1960

Lumber Mill	Production (Million Board Feet) (Average 1958-59-60)	Estimated Mill Capacity (Million Board Feet)
Wagner Products	36.1	42.2
Gamble Lumber Company	3.0	3.5
Biles Coleman Lumber Company	64.0	70.0
Clarkston Lumber Company	6.0	7.0
Landreth Timber Company	10.0	11.0
Zosel Lumber Company	9.0	10.0
Oroville Lumber Company	10.0	12.0
Evan Brown	2.0	2.3
Atkinson	1.5	1.7
Elmer Turner	1.0	1.1
Total	142.6	160.8

Source: Report Prepared by G. R. Leavengood to John R. Dissmore, Chairman of the Technical Panel of the Rural Area Development Committee of Okanogan County.

### Sawmill Residues

At the present rate of production (142.6 million board feet of lumber annually) there is approximately 57,000 tons of coarse oven dried chips produced annually (15, p. 25). At the present time these chips are not being used. However, if the log production was to increase to the annual allowable rate of cut, it is estimated there would be approximately 82,000 tons of oven dried chips produced annually (15, p. 27). This is a significant amount of mill residues which at the present are not being used for any purpose. Since such

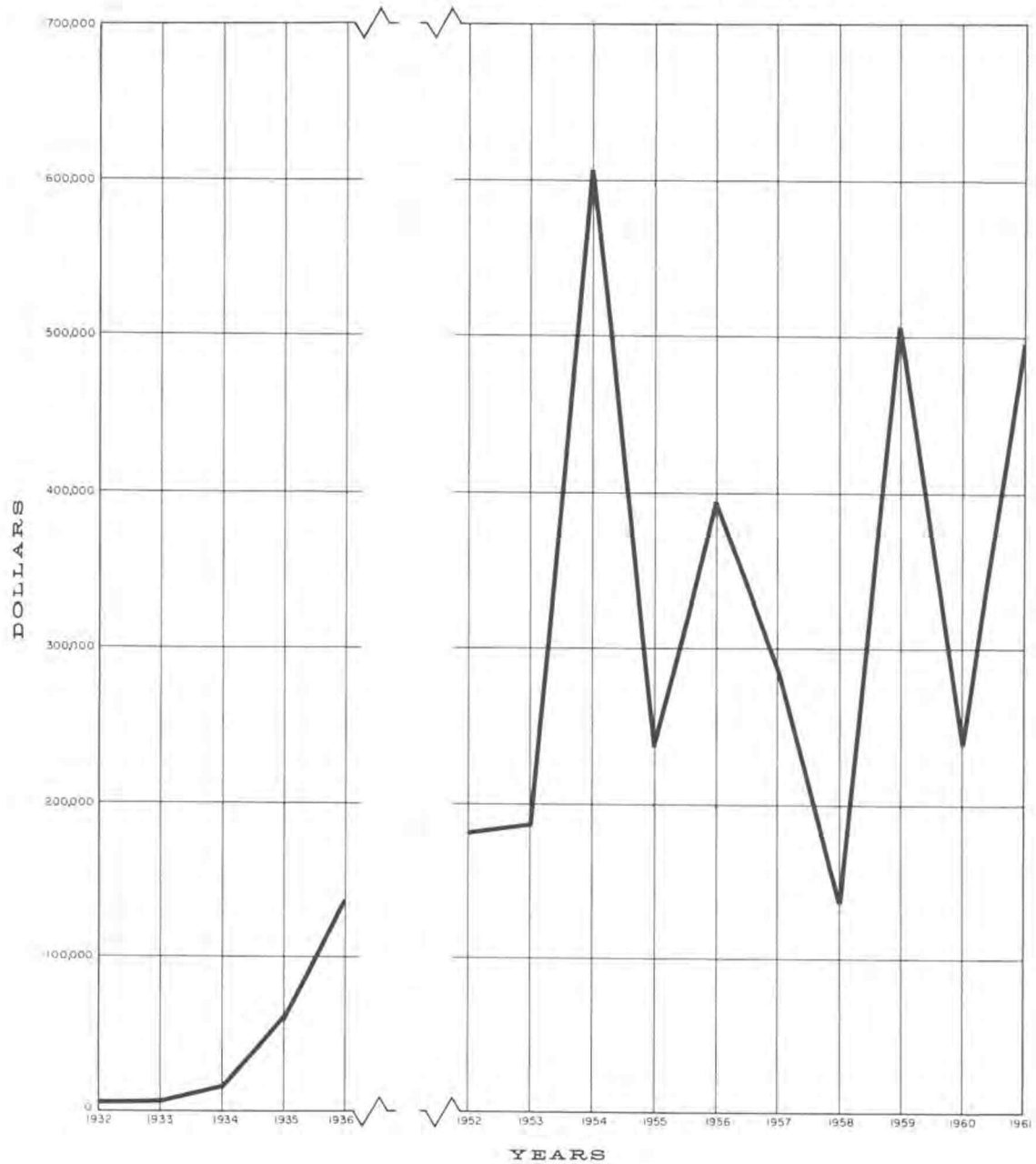
a large quantity of waste products are available, some thought should be given to the utilization of these products whether it be for chip board, presto-logs, pulp, or some other by-product of wood.

Okanogan County's forest land resources are large, and prospects are good. The data presented shows, however, that the county's forest resources are not being fully used. If the county's forest resources were fully developed, they could support more economic activity than they presently do.

### Minerals

The original settlement of Okanogan County was stimulated by the discovery of gold and silver deposits. Between 1856 and 1875 there were several "gold rushes" into the mountainous areas of the county. Even though many prospectors were in the area as early as 1856, large scale mining operations did not begin until after 1887. The major original mining centers were the Molson-Chesaw, Nighthawk-Loomis, and Ruby-Conconully areas. However, due to the low quality of ore the mines were unable to compete during the depression of 1893. Since the 1890's, the mining activity has been sporadic and has reflected the mineral price index. As the price of the metals rise the mining activity shows an increase, and when the price of the metal is low mining activity is at a minimum. This fact is illustrated by Plate XVII which shows the value of mineral

## Plate XVII

VALUE OF MINERAL PRODUCTION  
1932 - 1936 AND 1952 - 1961

SOURCE: Minerals Yearbook

production in the county. The value of production in recent years has ranged from a high of \$607,000 in 1954 to a low of \$138,000 in 1958.

Over the years the major products mined in the county have been zinc, copper, gold, silver, lead, epsomite, gypsum, and the non-mineral products of stone, sand, and gravel. It is estimated that sand and gravel constitutes the majority of the production value for the mining industry in Okanogan County. The sand and gravel industry is entirely dependent upon the amount of construction that takes place, not only in structures, but also in road building. Therefore, the yearly variations in the price index for metals and the amount of construction in the county makes the yearly production of mining products vary considerably.

At present the amount of mineral production in the county (excluding sand, gravel, and stone) is almost negligible. However, there are several locations in the county that warrant further inspection as fast as capital is available. Some of these deposits are the magnetite deposits in the Molson-Chesaw area (the Buckhorn Iron Deposit), the tungsten deposits at Nighthawk and Stubblefield Point, the molybdenum deposits south of Spectacle Lake, and the many playas throughout the county that yield evaporite deposits of industrial minerals.

The potential of the mineral industry of Okanogan County is difficult to assess since so little is known of the mineralization in the

county. Therefore, a comprehensive analysis of the mining prospects of the county for possible future exploration and development would be in the county's best interest. The major deterrents to developing the county's mineral resources are the lack of known high grade ore, the lack of adequate transportation, and the lack of a history of intensive mining activity which would have brought the necessary machinery and capital into the county to develop these resources.

### Outdoor Recreational Land Use

Okanogan County's recreational areas and the people they draw every year have become an increasingly important part of the economic base of the county. Recreation is the third largest industry in the county. In 1962, the reporting recreational facilities had in excess of 1.2 million man-days of use. These were spent in the county's six state parks, 51 federal forest camps, tours of Grand Coulee Dam, the park facilities around Grand Coulee Dam, and the state forest camps. The location of the county's public recreational areas is illustrated in Plate IX. The Grand Coulee Dam area accounted for approximately 38 percent of the county's visitors in 1962, which made this area the largest single tourist attraction in the county. The state parks had approximately 30 percent of the total tourist man-days, the federal forest camps approximately 32 percent, and the state forest camps had considerably less than one percent.

Since 1954, as is shown in Table XX and Plate XVIII, these facilities have recorded an average attendance increase of 14.3 percent per year with an over-all increase of 186.1 percent. The state parks have shown the greatest amount of increased use since 1954 with a 337.7 percent increase. The Grand Coulee Dam area had the next largest gain with a 214.6 percent increase. The federal forest camps roughly doubled their use, and the state forest camps increased their usage by 37 percent.

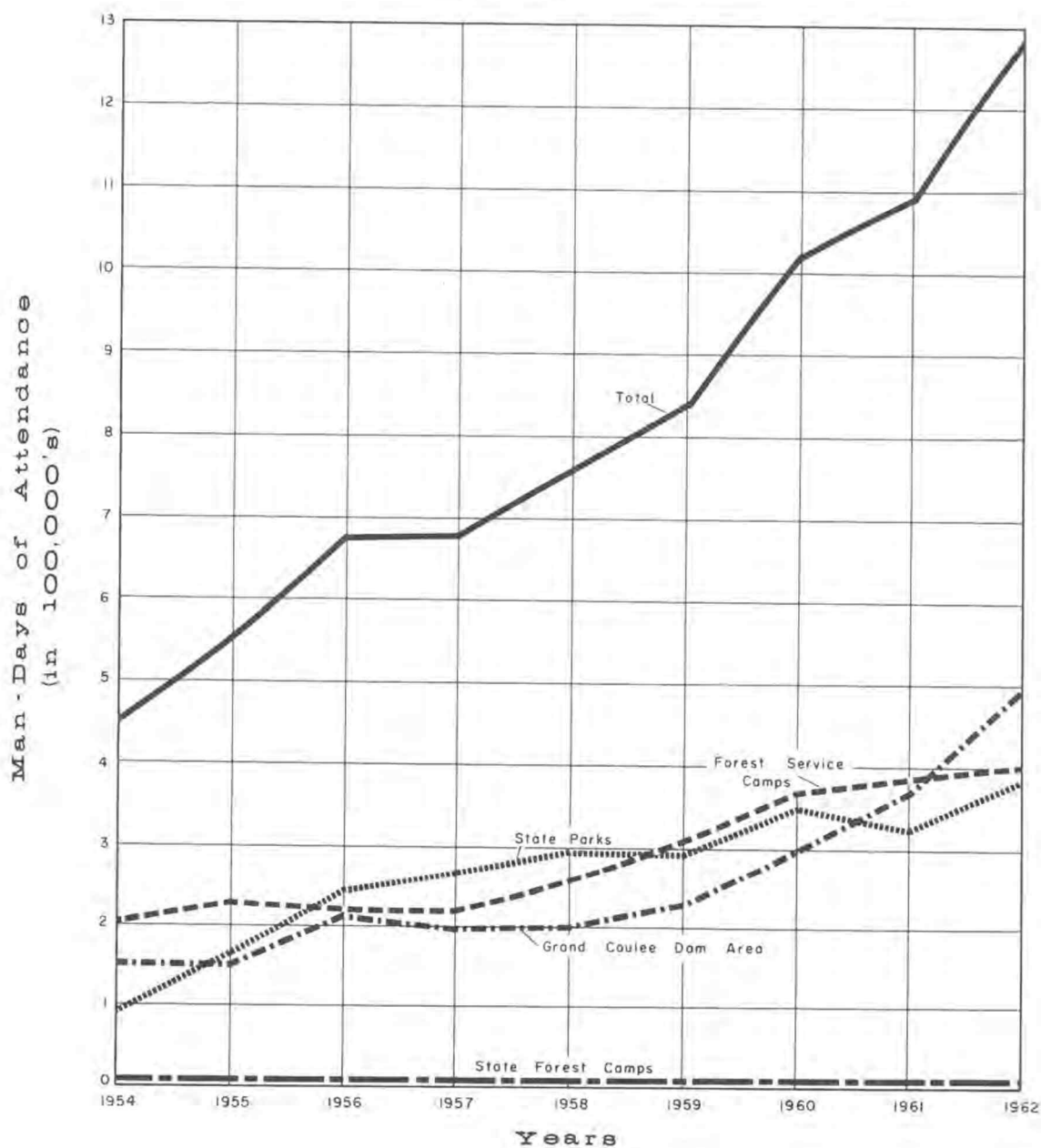
Table XXI shows that the number of overnight campers at the county's developed facilities has increased considerably. Numerically, the use of these facilities has not increased as rapidly as the day visitors, but percentage-wise they have increased much more rapidly. As fast as overnight camping facilities are added, the number of overnight visitors increases. In 1962, 18.11 percent of the total man-days spent in recreational facilities were campers which is a 7.8 percent growth over 1954. The use of overnight camping facilities has shown a 402.4 percent increase since 1954.

Table XX  
Total Tourist Activity Growth in All Types of Recreational Facilities  
1954 - 1962

	1954	1955	1956	1957	1958	1959	1960	1961	1962	Total Percent Increase
State Parks	88, 107	161, 996	243, 737	263, 386	294, 848	291, 963	351, 454	325, 273	385, 667	337. 7
Grand Coulee Dam	150, 392	143, 599	131, 439	129, 511	116, 146	124, 887	122, 785	152, 993	285, 958	
North Marina	6, 450	7, 100	80, 175	62, 292	84, 965	105, 931	174, 993	217, 946	207, 523	
Total	156, 842	150, 699	211, 614	191, 803	201, 111	230, 818	297, 778	370, 939	493, 481	214. 6
Forest Parks	203, 410	233, 765	217, 389	224, 870	259, 400	312, 300	370, 500	388, 100	405, 900	99. 5
State Forest Camps	1, 500	1, 500	1, 300	1, 710	1, 915	2, 120	2, 175	2, 225	2, 055	37. 0
Total	449, 859	547, 960	674, 040	681, 769	757, 274	837, 201	1, 021, 907	1, 086, 537	1, 287, 103	186. 1
Percent Growth From Previous Year	--	21. 81	23. 01	1. 15	11. 07	10. 55	22. 06	6. 32	18. 46	
Average Percent Growth Per Year	- 14. 3									

Sources: Washington State Department of Parks and Recreation,  
Washington State Department of Natural Resources,  
United States Forest Service, and  
United States Department of the Interior

Plate XVIII  
USE OF PUBLIC  
RECREATIONAL FACILITIES  
1954 - 1962



SOURCE Washington State Department Of Parks And Recreation  
Washington State Department Of Natural Resources  
U S Forest Service  
U S Department Of The Interior



Table XXI

Man-Days of Overnight Use  
in Okanogan County's Parks and Camps  
1954 and 1962

	1954		1962		Percent Change
	Total	Percent	Total	Percent	
State Parks	6,240	13.45	75,511	32.40	1,110.11
Coulee Dam Area	--	--	26,169	11.23	--
Federal Forest Camps	38,642	83.31	129,300	55.49	234.61
State Forest Camps	<u>1,500</u>	3.23	<u>2,055</u>	0.88	<u>37.00</u>
Total	46,382		233,035		402.43
Percent of Total Use		10.31		18.11	

Sources: Washington State Parks and Recreation Commission,  
Washington State Department of Natural Resources,  
United States Forest Service, and  
United States Department of the Interior.

### State Parks

Okanogan County has six state parks within its borders. Three of these parks, Alta Lake, Conconully, and Lake Osoyoos, have been established for several years and as a result have had extensive development. Of the remaining three (Perrygin Lake, Fort Okanogan, and Bridgeport) only Perrygin Lake has any type of development for campers. Fort Okanogan is primarily a museum and has no camping facilities. Bridgeport is new and has had very little development. In 1962, 88.9 percent of the tourists who visited

the state parks in Okanogan County visited the three older parks.

In 1962, all of the state parks in Okanogan County showed an increase over 1961 except Conconully which had a 32.2 percent decline due to low water in the reservoir. Lake Osoyoos State Park in 1962 had more man-days of visitors than all of the other state parks in the county put together. The Lake Osoyoos Park had 197,484 man-days of visitors which represented 51.2 percent of all the state park visitors in Okanogan County for 1962. These facts are illustrated in Table XXII.

#### Grand Coulee Dam Area

Two of the recreational facilities in the Grand Coulee Dam area are in Okanogan County. One is the tour of Grand Coulee Dam, and the other is the North Marina Camp Ground. Both of these facilities had a considerable amount of use in 1962. Grand Coulee Dam had 285,598 visitors and North Marina Camp had 207,523 visitors. Many visitors are probably duplicated in the individual counts of the two facilities. In 1962, the two facilities showed a 33 percent increase over the number of 1961 visitors to establish a new high in attendance. Undoubtedly, a large share of the people who visited the area in 1962 were drawn by the Seattle Worlds Fair. The attendance at these facilities is illustrated in Table XXIII.

Table XXII

Tourist Activity in Okanogan County's State Parks  
1954 - 1962

		Alta Lake	Bridge- port	Conconully	Fort Okanogan	Lake Osoyoos	Pearrygin Lake	Total	Percent Change Per Year	Percent of Activity
1954	Day	22,970		38,064		20,833		81,867	--	92.92
	O'Night	2,853		1,009		2,378		6,240	--	7.08
	Total	25,823		39,073		23,211		88,107	--	
1955	Day	21,239		37,542		86,163		144,944	77.05	89.47
	O'Night	7,012		2,449		7,591		17,052	173.27	10.53
	Total	28,251		39,991		93,745		161,996	83.76	
1956	Day	24,036		59,842		132,451		216,329	49.25	88.76
	O'Night	15,742		4,869		6,797		27,408	60.73	11.24
	Total	39,778		64,711		139,248		243,737	50.46	
1957	Day	56,158		60,134		104,732		221,024	2.17	83.92
	O'Night	24,118		6,867		11,377		42,362	54.56	16.08
	Total	80,276		67,001		116,109		263,386	8.06	
1958	Day	62,553		70,700		122,244		255,497	15.60	85.65
	O'Night	24,547		4,811		9,993		39,351	- 7.11	13.35
	Total	87,100		75,511		132,237		294,848	11.95	
1959	Day	55,142		52,287		128,196		235,625	- 7.78	80.70
	O'Night	34,956		8,753		12,629		56,338	43.17	19.30
	Total	90,098		61,040		140,825		291,963	- 0.98	
1960	Day	53,576		57,604	6,951	171,474		289,605	22.91	82.40
	O'Night	37,735		10,675		13,439		61,849	9.78	17.60
	Total	91,311		68,279	6,951	184,913		351,454	20.38	
1961	Day	39,522	258	56,399	14,740	142,502	3,718	257,139	-11.21	79.05
	O'Night	37,422		13,380		16,165	1,167	68,134	10.16	20.95
	Total	76,944	258	69,779	14,740	158,667	4,885	325,273	- 7.45	
1962	Day	56,049	429	38,262	16,162	180,854	18,400	310,156	13.46	80.42
	O'Night	41,976		9,083		16,630	7,822	75,511	2.11	19.58
	Total	98,025	429	47,345	16,162	197,484	26,222	385,667	18.57	

Average Yearly Growth - 23.11 percent

Source: Washington State Department of Parks and Recreation

### State Forest Camps

Washington State Department of Natural Resources has established twelve camp grounds in Okanogan County. However, estimates of use have been made for only eight of them. The estimates are based on the number of fire permits issued annually to the camp ground.

The major use of these facilities is by deer hunters during hunting season. In 1962, there were 2,055 man-days of campers into these areas which is an 8 percent decline from the all time high of 1961. However, since 1954 these facilities have grown in amount of use from 1,500 to 2,055 which is an increase of 37 percent. Use of state forest camp facilities is shown in Table XXIV.

### Federal Forest Camps

Okanogan County has 51 Federal Forest Camps that have been established throughout the National Forest Areas. These camps have shown a considerable increase of use over the years as the routes of transportation and the facilities in the camps have been improved. In 1962, these camps had 405,900 man-days of use, a 5 percent increase over the 1961 attendance. Throughout the years these facilities have shown an orderly upward growth. The attendance at Federal Forest Camps is shown in Table XXV.

Table XXIII

Visitors at the Facilities in the Grand Coulee Dam Area  
1954 - 1962

Year	Tours of Coulee Dam	North Marina			Total	Percent Change From Previous Year
		Day	Overnight	Total		
1954	150,392	6,450		6,450	156,842	--
1955	143,599	7,100		7,100	150,699	- 3.92
1956	131,439	80,175		80,175	211,164	40.42
1957	129,511	60,575	1,717	62,292	191,803	- 9.36
1958	116,146	77,845	7,120	84,965	201,111	4.85
1959	124,887	95,166	10,765	105,931	230,818	14.77
1960	122,785	164,244	10,749	174,993	297,778	29.01
1961	152,993	205,132	12,814	217,946	370,939	27.41
1962	285,958	181,354	26,169	207,523	493,481	30.07

Summations: Average Growth Per Year - 16.66%  
Total Growth - 1954-1962 - 214.64%

Sources: United States National Park Service  
United States Bureau of Reclamation

Table XXIV

Visitors at the State Forest Camp Facilities  
1954 - 1962

Facility	1954	1955	1956	1957	1958	1959	1960	1961	1962
Rock Creek				10	15	20	25	25	30
Leader Lake	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	550
Loup Loup Creek	100	100	100	100	100	100	100	100	75
Fish Lake	200	200	--	400	300	200	200	200	200
Spectacle Lake					200	300	350	400	400
Palmer Lake					100	300	300	300	300
Chopaka Lake									300
North Fork of Toates Coulee	200	200	200	200	200	200	200	200	200
Total	1,500	1,500	1,300	1,710	1,915	2,120	2,175	2,225	2,055
Total Growth - 1954-1962 - 37.00%									

Source: Washington State Department of Natural Resources

Table XXV

Visitors at the Federal Forest Camps  
1954 - 1962

	Number of Visitors	Percent Change From Previous Year
1954 Visitors	79,875	--
Man-days	194,260	--
Average Length of Stay	2.43	--
1955 Visitors	94,280	18.03
Man-days	223,365	14.98
Average Length of Stay	2.37	- 2.47
1956 Visitors	90,496	- 4.01
Man-days	203,369	- 8.95
Average Length of Stay	2.25	- 5.06
1957 Visitors	92,140	1.82
Man-days	214,870	5.66
Average Length of Stay	2.33	3.56
1958 Visitors	115,000	24.81
Man-days	259,400	20.72
Average Length of Stay	2.26	- 3.00
1959 Visitors	147,700	28.43
Man-days	312,300	20.39
Average Length of Stay	2.11	- 6.64
1960 Visitors	195,000	32.02
Man-days	370,500	18.64
Average Length of Stay	1.90	- 9.95
1961 Visitors	208,600	6.97
Man-days	388,100	4.75
Average Length of Stay	1.86	- 2.11
1962 Visitors	223,400	7.09
Man-days	405,900	4.59
Average Length of Stay	1.82	- 2.15
Summations:		
Average Growth Per Year of Visitors		14.40 %
Total Growth Per Year of Visitors		179.69 %
Average Growth Per Year of Man-days		9.79 %
Total Growth Per Year of Man-days		108.95 %
Average Growth Per Year of Average Length of Stay		- 3.48 %
Total Growth Per Year of Average Length of Stay		-25.10 %

Source: United States Forest Service Office Files

The greatest amount of defined use in National Forest facilities is for camping purposes. In 1962, the total use of the facilities offered by the National Forest amounted to 223,400 persons staying for approximately 1.8 days, thereby making a total of 405,900 man-days of visitors in the Federal Forest Camps. These camps have shown an average of 9.79 percent growth per year. However, even though there are more people coming into these facilities every year, they stay for shorter periods of time. The average length of stay for the tourist has declined at the rate of 3.48 percent per year.

#### Origin of Tourists

Okanogan County's recreational facilities draw people from considerable distances. However, the areas along the west coast (particularly the Puget Sound Area and British Columbia) account for the greatest number of visitors. People from the metropolitan areas come to Okanogan County to get away from the pandemonium of urban areas and to enjoy the fine hunting, fishing, sightseeing, and relaxed atmosphere of the county.

The Puget Sound Metropolitan Area probably contributes the largest amount of tourists to Okanogan County. However, due to the lack of adequate information at this time, the origin of the county's visitors is not possible to state with authenticity. The only tourists to the county that can be quantified is the Canadian travel. The

available information is limited but does give some insight into the county's tourist industry.

Canadians contribute considerably to the annual number of visitors to the county. Due to the price of hunting and fishing licenses to these people, they do not come into the county to specifically partake of these activities in great numbers. The use of Okanogan County's recreational areas by Canadian persons is undoubtedly secondary in their trip purpose. These people most often come into the county either to buy specific commodities or to pass through to some more distant destination. Approximately 67 percent of the persons who crossed at the Oroville port of entry in 1959 had their trip origin or destination in Okanogan County or some part of Northeast Washington. About 30 percent of the total number of persons crossing at the Oroville port of entry were on trips of 100 miles or less. Tables XXVI and XXVII show data pertaining to activity at the Oroville port of entry.

#### Expenditures for Recreation

Recreation is estimated to be the third most important industry in Okanogan County. However, there is great difficulty in assigning an actual dollar and cents value received from the use of the county's recreational resources. The State Department of Parks and Recreation estimated that in 1956 all types of visitors to the state parks



Table XXVI

Exit from the Oroville Station  
of the United States-Canadian Port of Entry  
1959

Area of Origin	Number of Automobiles	Percent
Puget Sound	2,000	7.41
Northeast	18,000	66.67
Spokane - East	4,000	14.81
Southeast	1,000	3.70
Lower Columbia	<u>2,000</u>	7.41
Total	27,000	

Source: Washington State Department of Commerce and  
Economic Development

Table XXVII

Local Traffic\* Through the Oroville Station  
of the United States-Canadian Port of Entry  
1959

	Total	Percent of Total Traffic
Automobiles	8,000	29.63
Persons	24,000	23.08
Expenditures	\$43,000	27.42

\*Note: This is traffic that had its origin  
and destination 100 miles or less  
from one another.

Source: Washington State Department of Commerce  
and Economic Development

spent an average of \$7.43 per man-day. However, since 1956 the price index for all commodities has gone up 8.86 percent making an estimated total per man-day expenditure of approximately \$8.00. However, since many of the recreational facilities are in close proximity to one another, the possibility of counting the same group of people twice on any single day is quite high. This is particularly true in the Grand Coulee Dam Area. Since tours of the dam have a separate count as does the North Marina Camp Ground, and since many people who visit this area visit both places on the same day, they are counted twice, thereby inflating the count from the actual number of persons visiting in the area. Also the local residents use the county's recreational facilities and they cannot be counted as tourists. Therefore, it would not be correct to multiply the 1962 reported attendance of some 1.3 million man-days of tourist activity by \$8.00 to estimate the amount of money spent. However, if only 25 percent of the 1,287,103 tourist man-days of use in Okanogan County's recreational facilities in 1962 were persons from outside the county and were not duplicated in any of the county's other facilities, there would have been 321,775 man-days spent in the recreational areas by out-of-county visitors. If each of these tourists spent the average as stated above (\$8.00 per man-day) the use of the county's recreational resources contributed some 2.6 million dollars to the economy of Okanogan County.

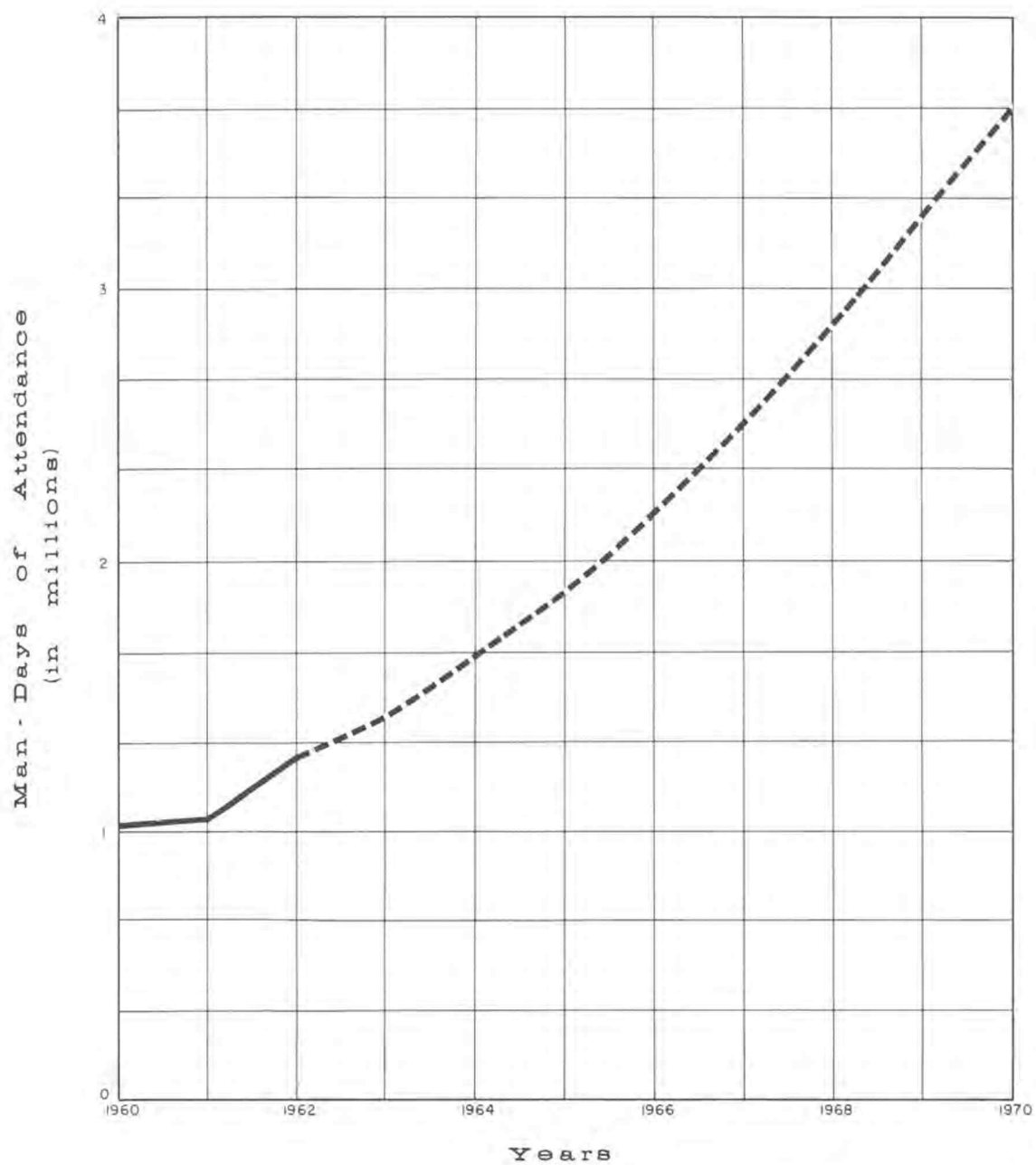
### Future of Outdoor Recreation in Okanogan County

The future of Okanogan County's outdoor recreational resources is very good if they are developed to their fullest potential. At present the developed facilities are being used at near maximum. Therefore, if Okanogan County is to sustain the growth they have had in past years, there will have to be an expansion of the present facilities and development of new ones. The use of the recreational facilities in Okanogan County has grown by 14 percent per year. Therefore, if this growth can be sustained through proper development of the resources, approximately 3.7 million man-days of tourist use could be expected by 1970. Refer to Plate XIX for graphic representation of this. However, this can only be attained if the developed recreational resources in the county are expanded and the economic conditions remain somewhat stable. The Outdoor Recreation Resources Review Commission estimated that over the total United States the use of recreational facilities could be expected to more than double by 1980 (3, p. 46). The recreational use in the county is expected to increase at a much faster rate than the national average since the county is starting at a much lower base.

As has been stated, the Puget Sound Metropolitan Area is assumed to be the largest contributing area to the use of the county's recreational facilities. The population of the Puget Sound Area is

Plate XIX

PROJECTION OF USE  
IN PUBLIC  
RECREATIONAL FACILITIES  
1963 - 1970



SOURCE: Joint Planning Office

expected to reach 1.9 million by 1970 and 2.4 million by 1980 (4, p. 46). The 1960 population was 1.5 million. Further estimates have been made that these same people will have their work week cut from 40 hours to 35 hours and their paid vacations will be roughly one and one-half times longer by 1980 than in 1960, thereby giving them much more leisure time. Also, the distance that they will travel on their vacations will go up by some 450 percent by 1980 (3, p. 45). If proper development of Okanogan County's recreational resources occurs, Okanogan County is bound to share in the expanded use of outdoor recreational facilities.

Two large projects are under construction in Okanogan County which are going to have an important impact on the future use of the county's recreational resources. These two projects are the Wells Dam Hydroelectric Project and the North Cross-State Highway. The North Cross-State Highway will probably have a much larger impact on the county's recreation than will the Wells Dam, but nevertheless both will be important to the future of Okanogan County's outdoor recreational land use.

The greatest impact from the North Cross-State Highway will be in the Methow Valley, but the whole county will feel some impact from the completion of the highway. The greatest impact will be felt in the recreational areas especially along the valleys of the upper Methow River and its tributaries. The service type establishments

in the towns, especially in Winthrop and Twisp, will also notice the additional tourists in the county. Some of the persons who travel this highway will have their destination in the Methow Valley, but the majority of the travelers will go on to other areas in the county and the state. As a result, the use of the recreational facilities in all parts of the county will increase as a direct result of the completion of the North Cross-State Highway, but those uses in the Methow Valley will undoubtedly increase the most.

The Methow Valley is already feeling some impact from the North Cross-State Highway with the people making developments anticipating the completion of the highway. Several summer home subdivisions and public and private recreational developments have been or are being developed. When the highway is completed there will be an increase in the number of summer home plats in the valley. The North Cross-State Highway will make the Methow Valley available to the same type of development that can be seen on all of the other cross-mountain routes in the state. Because of the amount of private development which will probably occur along the riverfront areas in the Upper Methow Valley, the possibility is very good that public access to the water for fishing and other purposes may become limited. Because of this, the United States Forest Service, the state, the county, and all over governmental agencies should develop parks and campgrounds along the Methow River. In developing these

facilities in the county, high priority should be given to the Upper Methow Valley. Without the development of public recreational facilities in the area, the impact of the North Cross-State Highway will be considerably lessened. In addition to the development of public facilities, there is considerable need in the Methow Valley for the development of private recreational facilities such as resorts and dude ranches.

Upon completion of Wells Dam and the resultant pool behind the dam, Okanogan and Douglas Counties will have a sizeable lake with recreational potentials. However, due to the distance that this lake will be from the major population centers of the state, the many more desirable facilities that persons would have to pass on their way to the lake, the temperature of the water, and the swift flow of the river; the amount of recreational use on this lake, at least in the near future, will probably be limited. The pool area that will probably get the most use and has the best recreational potential is at the confluence of the Okanogan and Columbia Rivers. At this point the flow of the river will be slowed and broadened and as a result will be conducive for all sorts of water sports. Therefore, this area should be given a priority in the development of recreational sites. In summary, the amount of use that the pool behind Wells Dam is to receive by tourists and persons seeking recreational areas is expected to be limited in extent, at least in the near future.

Okanogan County is one of the few areas in the state with vast amounts of outdoor recreational potentialities that have not been despoiled by the advance of the sprawling urban areas and where a person can still get away from the nerve-wracking, working world. The facilities in the county must be expanded in a judicious manner so as to meet the future needs of the population and still maintain the character of the county.



## CHAPTER V

### CONCLUSIONS AND RECOMMENDATIONS

The inventory of the basic resources of Okanogan County suggest a generous resource endowment. Due to the character of development, however, the county's economic activity is at a low level. The fact that Okanogan County has limited development while possessing a wealth of natural resources is an anomalous economic situation. The purpose of this chapter is to sum up the county's present status of development based on the preceeding chapters and to make recommendations which might aid development.

#### Conclusions

The following conclusions high-light the status of the county's present development and some of the problems.

1. Okanogan County's development is based almost entirely on three items: agriculture, forestry, and recreation.
2. The county's population relative to the State of Washington is significantly older by age groups, dispersed throughout the major river valleys, and there is no major center of population.
3. Since only 24.3 percent of Okanogan County is privately owned, the policies regarding the management of the government land is very

important to the county's development.

4. Okanogan County is unfavorably located in respect to the major population centers in the state, and the routes of transportation from the county to these areas are poor.
5. The major means of importing and exporting Okanogan County's commodities is by highway.
6. At present the county's fruit industry is centered almost exclusively on the packaging and sales of fresh fruit.
7. The percentage of Okanogan County's cull fruit production is increasing due to more plantings in higher risk areas.
8. At present practically all of the county's processing apples are shipped to other areas to be processed.
9. Almost all of the county's cattle are sent out of the county to be processed.
10. Most of the county's better grazing areas have been depleted of their native grasses resulting in take-over by weed brush.
11. Of the small grain crops that Okanogan County's farmers raise, wheat and rye are cash grain crops whereas oats and barley are feed grain crops.
12. Of the hay crops that Okanogan County's farmers raise, very little is sold; the majority is used on the farms on which they are grown.
13. The forest industry in Okanogan County is harvesting at less than the accepted allowable cut.
14. At present the waste products produced from the lumber mills are put to very little use.
15. Okanogan County has no known high quality metallic mineral deposits but does have considerable

non-metallic deposits. The county has large evaporite deposits of industrial minerals as well as large sand and gravel deposits.

16. The use of the county's developed public recreational resources has been growing very fast and at present are being used at near capacity.
17. There is an obvious lack of strategically located developed public recreational sites along with a lack of local participation in building and maintaining recreational sites.
18. Wells Dam, which is being constructed just south of Okanogan County, is going to have a considerable impact on the county. The dam is going to inundate one-third of this portion of the county's orchard land, it is going to make more electrical power available to Okanogan County, and it will have a limited recreational impact on the county.

### Recommendations

When considering development of a county, it is necessary to make recommendations in areas of need. It is apparent from the conclusions there can be several positive steps taken in improving the county's economic position. Therefore, the following recommendations for further development in Okanogan County are suggested.

1. Okanogan County's added development must initially be undertaken with products and resources that are indigenous to the county.
2. A large percentage of the county's cull fruit should be used in Okanogan County. Since most of the needed raw materials for processing fruit can be obtained within the region, some investigation should be made into the development of plants

which would produce jams, jellies, cider, apple juice, etc. Even if these plants did nothing more than supply the county's fruit stands, they would be producing a considerable amount of merchandise which is presently being purchased from other areas.

3. There is critical need for access roads to permit the forest industry to harvest a larger percentage of the county's annual allowable cut which would mean an expansion of the lumber mills and would in turn open up many desirable recreational areas in the county.
4. There should be a large expansion in coming years of the county's developed public recreational areas so as to meet the future needs of the county's tourist industry. The expansion of the facilities should be made by all levels of government.
5. On completion of the North Cross-State Highway the county will enjoy some added commodity shipments, but the major use of the highway will be for tourism. Therefore, development must be constructed to accommodate the future needs of the persons using this route.
6. Okanogan County should establish a park board which would be empowered to purchase park property and to establish and maintain park sites.
7. All governmental agencies with development plans for Okanogan County should cooperate and coordinate so that the resultant development is the best that can be attained.
8. The better grazing areas in the county should be ridded of the weed brush so the number of head of cattle grazed per acre can be increased.
9. The county's feeder lots and slaughter house operations should be expanded on a limited basis since there is potentially adequate fodder to supply limited development; this would not only assist the livestock industry but would also help the county's feed grain and hay industry to expand.

10. An attempt should be made to use the slag products from the lumber mills in the county to produce some by-product.
11. An aerial magnetometer survey should be conducted for Okanogan County to more adequately assess the county's potential for the base metals.
12. The county should reactivate and revitalize the Okanogan Valley Chamber of Commerce which could be a very influential group in selling Okanogan County to the touring public.
13. The county commissioners, through the state association of county commissioners, should lobby the state legislature for enabling legislation whereby the county road department could maintain county parks.

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