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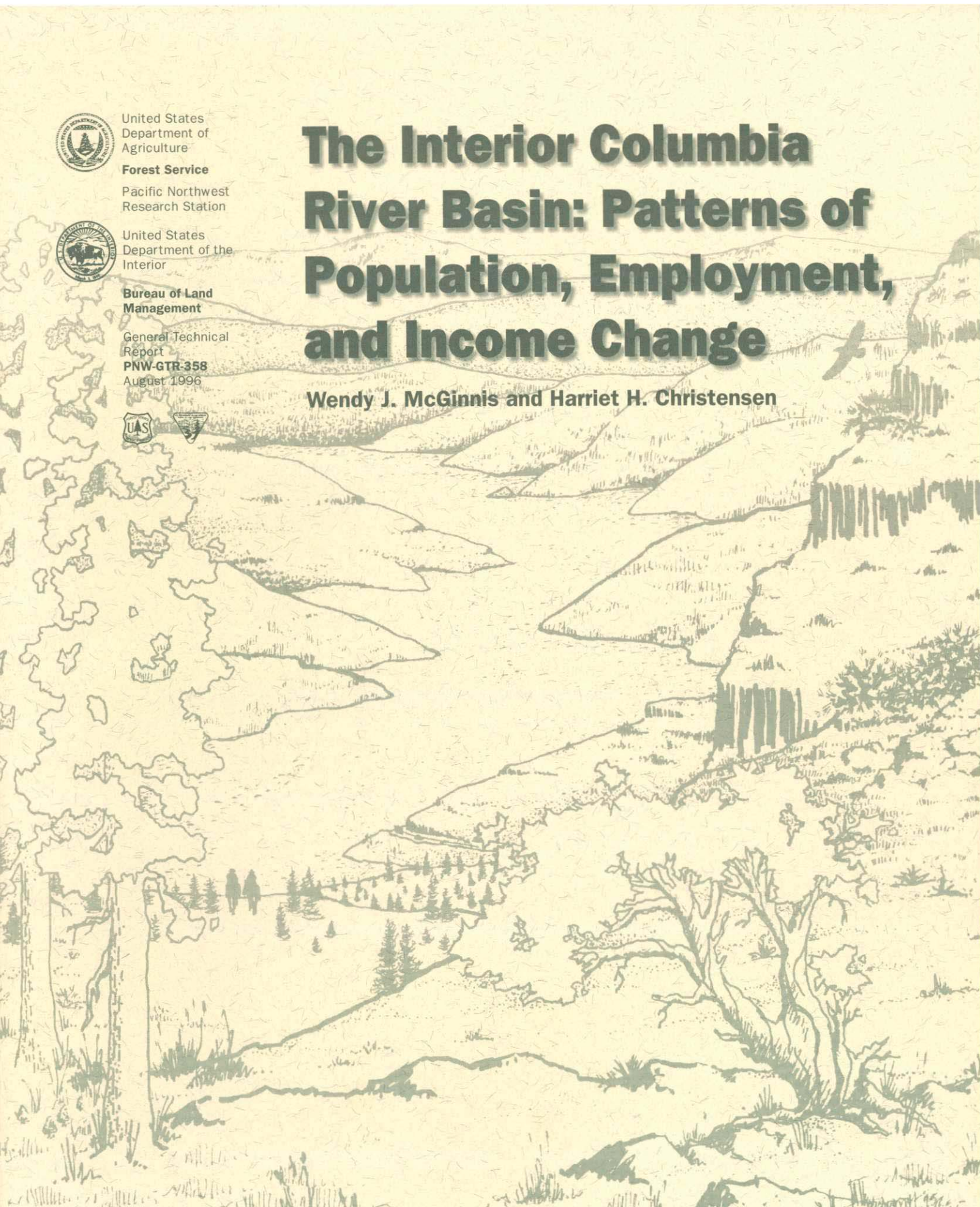
The Interior Columbia River Basin: Patterns of Population, Employment, and Income Change

Wendy J. McGinnis and Harriet H. Christensen



Authors

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Interior Columbia Basin Ecosystem Project: Scientific Assessment

Thomas M. Quigley, Editor

Department of Agriculture
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Abstract

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Public expectations for management of public resources are changing, and public agencies are moving toward sustainable ecosystem management that incorporates information on ecological, economic, and social systems. A broad assessment of these systems is being undertaken for the interior Columbia River basin. This paper describes some basic population characteristics of the area and focuses on the economic conditions there during the last several decades by using population, personal income, nonfarm labor income, and employment as primary indicators.

Keywords: Columbia River basin, economic conditions, population, income, employment.

> We have in the past been concerned about the impacts of economic growth upon the environment. We are now forced to concern ourselves with the impacts of ecological stress—degradation of soils, water regimes, atmosphere, and forests—upon our economic prospects....Ecology and economy are becoming ever more inter-woven—locally, regionally, nationally, and globally—into a seamless net of causes and effects.
>
> The World Commission on Environment and Development, Our Common Future (1987:5)

Preface

The Interior Columbia Basin Ecosystem Management Project was initiated by the Forest Service and the Bureau of Land Management to respond to several critical issues including, but not limited to, forest and rangeland health, anadromous fish concerns, terrestrial species viability concerns, and the recent decline in traditional commodity flows. The charter given to the project was to develop a scientifically sound, ecosystem-based strategy for managing the lands of the interior Columbia River basin administered by the Forest Service and the Bureau of Land Management. The Science Integration Team was organized to develop a framework for ecosystem management, an assessment of the socioeconomic and biophysical systems in the basin, and an evaluation of alternative management strategies. This paper is one in a series of papers developed as background material for the framework, assessment, or evaluation of alternatives. It provides more detail than was possible to disclose directly in the primary documents.

The Science Integration Team, although organized functionally, worked hard at integrating the approaches, analyses, and conclusions. It is the collective effort of team members that provides depth and understanding to the work of the project. The Science Integration Team leadership included deputy team leaders Russel Graham and Sylvia Arbelbide; landscape ecology—Wendel Hann, Paul Hessburg, and Mark Jensen; aquatic—Jim Sedell, Kris Lee, Danny Lee, Jack Williams, Lynn Decker; economic—Richard Haynes, Amy Home, and Nick Reyna; social science—Jim Burchfield, Steve McCool, and Jon Bumstead; terrestrial—Bruce Marcot, Kurt Nelson, John Lehmkuhl, Richard Holthausen, and Randy Hickenbottom; spatial analysis—Becky Gravenmier, John Steffenson, and Andy Wilson.

Thomas M. Quigley
Editor

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Interior Columbia Basin Ecosystem Management Project

Introduction

Public expectations of management of public resources are changing from highly valued resource extraction to conservation ecology and sustainable ecosystem management (Everett and others 1994, Overbay 1992). Clean water and air, soil productivity, wise use of renewable resources, and conservation of wildlife and plant species and their habitats are important. In addition, the public is concerned about potential hazards of insect outbreaks, disease epidemics, and severe fire. Potential loss of sensitive fish stocks and bird and mammalian species from overuse of resources and loss of habitats is a major concern. The health of the ecosystems is at stake according to resource managers, researchers, special interest groups, and the public (Agee 1994, Everett and others 1994, Harvey and others 1994, Jensen and Bourgeron 1994, Johnson and others 1994, Mclntosh and others 1994, Robbins and Wolf 1994). Missing has been a framework linking resources, people, and the economy—a framework interweaving these linkages and based on an ecologically sound, scientifically credible, sustainable management paradigm.

During 1994, the U.S. Department of Agriculture, Forest Service, and U.S. Department of the Interior, Bureau of Land Management (BLM), began an assessment of the National Forests and BLM-administered lands in eastern Washington and Oregon. The objective is to develop a framework for ecosystem management and assess ecological processes and functions, species, and social-economic systems within the interior Columbia River basin (hereafter referred to as the interior basin). For a similar assessment west of the crest of the Cascade Range, see the FEMAT report (Forest Ecosystem Management Assessment Team 1993).

This paper is a companion document to the assessment and framework of the social-economic system in the interior basin. It is about past and present regional conditions as well as potential future conditions. It is not an analysis of communities or individual counties. It is a broad-brush picture of larger scale trends intended to provide a regional context.

Objectives

The objectives of this paper are to:

1. Examine basic population characteristics that relate to labor force and economic development.

2. Describe the economic conditions in the interior basin over the last several decades by using population, employment, personal income, and nonfarm labor income as primary indicators.

3. Describe how these conditions have been affected by degree of urban influence and economic structure.

4. Where possible, provide regional and national context for comparison.

5. Examine population and income projections.

Study Area

The Columbia River begins between the Purcell and Rocky Mountains of British Columbia. It flows northwest roughly 180 miles through Canada before turning south near the outlet of Kinibasket Lake. From there it flows south and eventually crosses the U.S.-Canadian border near the town of Northport in northeastern Washington. It winds its way south and west through east-central Washington and finally turns westward along the Oregon-Washington border and runs to the Pacific Ocean. Along its more than 1,200-mile path, several rivers feed into the Columbia, including the Kootenay, Pend Oreille, Spokane, Okanogan, Wenatchee, Snake, Yakima, Walla Walla, John Day, Deschutes, Hood, and Willamette. The Columbia ultimately carries the drainage from 259,000 square miles of land in the United States alone (Nokes 1991, Roe 1992). It drains valleys on the western slopes of the Rocky Mountains more than 200 miles north of the U.S. border, as well as the sagebrush-wheatgrass steppes of northern Utah and Nevada, nearly 800 miles to the south and from the Continental Divide in western Montana and Wyoming to the Pacific Ocean, more than 700 miles to the west.

[1] U.S. Department of Agriculture, Forest Service; U.S. Department of the Interior, Bureau of Land Management. 1994. Letter dated January 21,1994. On file with: Harriet Christensen, Portland Forestry Sciences Laboratory, P.O. Box 3890, Portland. OR 97208-3890.

This study focused on the domestic interior Columbia River basin. These are the lands drained by the Columbia River south of the U.S.-Canadian border, east of the crest of the Cascade Range, and upstream from Bonneville Dam. The interior basin includes various landscapes from high forested mountains with permanent glaciers and snow-covered peaks to dry desert plateaus and fertile green agricultural valleys.

The interior basin consists of five different major geographic regions: (1) the eastern slopes and foothills of the Cascade Range in Oregon and Washington, (2) the Columbia River Plateau, (3) the Blue Mountains region, (4) the Snake River basin and high desert, and (5) the western northern and central Rocky Mountains (Omernik 1987).

The primary unit of analysis for this paper is the sum of counties that approximates the interior basin, (we refer to individual counties mainly to display ranges of variation). There are 100 counties in the study area—they include all but 2 counties in Idaho, all counties in eastern Oregon and eastern Washington plus Skamania County, Washington and Hood River County, Oregon, which straddle the Cascade crest, 12 counties in Montana, 4 in Wyoming, 2 in Nevada, and 1 in Utah (see fig. 1). The counties in the study area cover 278,068 square miles according to 1990 Census Bureau figures, of which 273,997 square miles is land (7.7 percent of the U.S. land base) and 4,071 square miles is water. The land base is about the size of Texas. Because some counties lie partly outside the assessment boundary (see appendix C), the assessment area is slightly smaller, at about 225,700 square miles. About 52 percent of the assessment area is National Forest or Bureau of Land Management land, according to data provided by the Eastside Ecosystem Management Project spatial analysis team.

[2] Personal communication. 1994. Paul Howard, geographer, Geometromics, Regional Office USDA Forest Service, Pacific Northwest Region, P.O. Box 3890, Portland, OR 972C8-3890.

[3] Unpublished data. On file with: Interior Columbia River basin economic assessment group, Portland Forestry Sciences Lab, PNW Research Station, P.O. Box 3890, Portland, OR 97208-3890.

Definitions

Complete definitions of terms and classifications are found in appendix A.

Population Distribution

The total 1990 population in the counties of the interior basin was 2,913,927 persons (this figure and population and area figures to follow are based on the 1990 Census of Population and Housing unless otherwise specified—see U.S. Department of Commerce 1991d, 1991e). This is less than half of the population residing in more densely settled western Oregon and western Washington (the combined 1990 west-side population was 6.3 million persons). The most populated county in the study area is Spokane, Washington, with 361,364 persons and the least populated is Camas, Idaho, with 727 persons. The counties in the interior basin are quite large in land area. They range from Payette, Idaho, with 408 square miles of land (which is a bit less than half the size of Rhode Island with 1,045 square miles of land) to Elko, Nevada, with 17,182 square miles (which is nearly the size of Vermont and New Hampshire combined—18,218 square miles).

Although the interior basin counties account for about 8 percent of the land area of the United States, they account for only 1.2 percent of the Nation's resident population. Thus, the area is relatively sparsely settled with a population density of about 11 people per square mile (the same figure for the Nation is 70.3). County densities range from 0.4 person per square mile (Clark, Idaho) to 205 persons per square mile (Spokane, Washington). All but three counties (Ada and Canyon in Idaho and Spokane in Washington) are less dense than the U.S. average.

The central and southern counties in eastern Oregon and the counties of mountainous central Idaho are sparsely populated (see fig. 2), as are the Nevada and Wyoming counties in the study area. Eastern Washington, western Montana, and the Snake River Plain of southern Idaho (which also corresponds to the Interstate 84 corridor) have the most densely populated counties in the interior basin. Washington

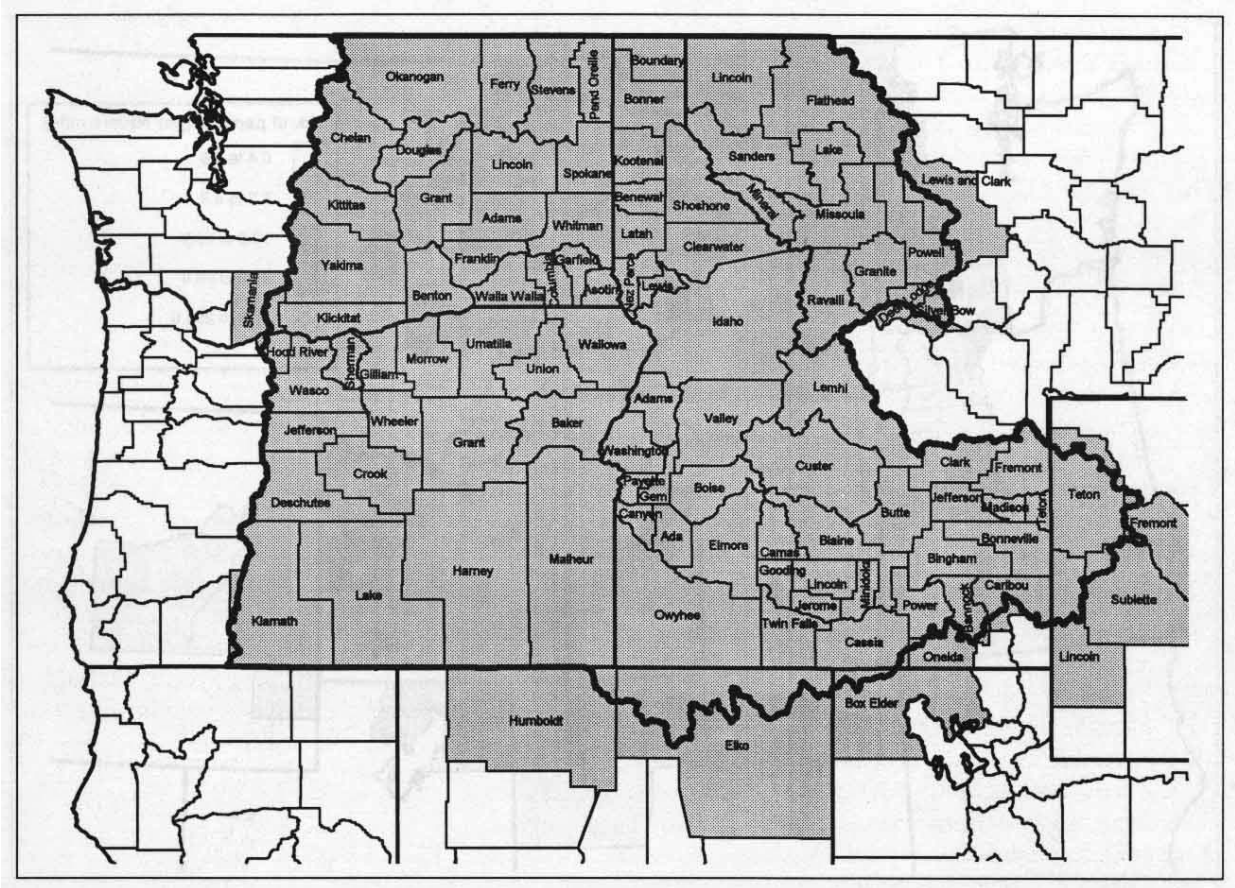


Figure 1—The interior Columbia River basin assessment area.

counties account for 38 percent of the population in the study area, southern Idaho counties 27 percent (that is, counties south of Idaho County), Oregon counties 12 percent, Montana counties 11 percent, and northern Idaho counties 7 percent. Counties in Wyoming, Utah, and Nevada account for the remaining 5 percent (see table 1).

Another aspect of population distribution, somewhat related to population density, is the distribution of people across the landscape and the types of settlements in which they live. This affects and is affected by the economic and social-cultural systems that have evolved and continue to evolve. We explore several frequently used methods of describing these settlement patterns.

One method is based on the metropolitan-nonmetropolitan distribution of the population. Metropolitan counties consist of counties with large population centers and the surrounding economically integrated counties (see appendix A for a more detailed definition). As of June 30, 1990, there were only five metropolitan counties in the interior basin—Spokane, Yakima, Benton, and Franklin Counties in Washington and Ada County in Idaho. In 1990, these counties accounted for 31.1 percent of the interior basin population. None of these are large metropolitan counties, meaning the group of counties comprising the metropolitan

[4] The metropolitan-nonmetropolitan designation we use here is based on U.S. Department of Commerce (1992a) and was the designation m effect on June 30, 1990. Recently, however, the Office of Management and Budget revised these designations by using data from the 1990 Census of Population and Housing. The only county in the interior basin affected by the revision was Canyon County, Idaho, which changed from nonmetro to metro and became part of the Boise Metropolitan Statistical Area. On the west side, Columbia County, Oregon, and Island County, Washington, became metropolitan counties. They are not counted as metropolitan m our estimates of the west-side metro population.

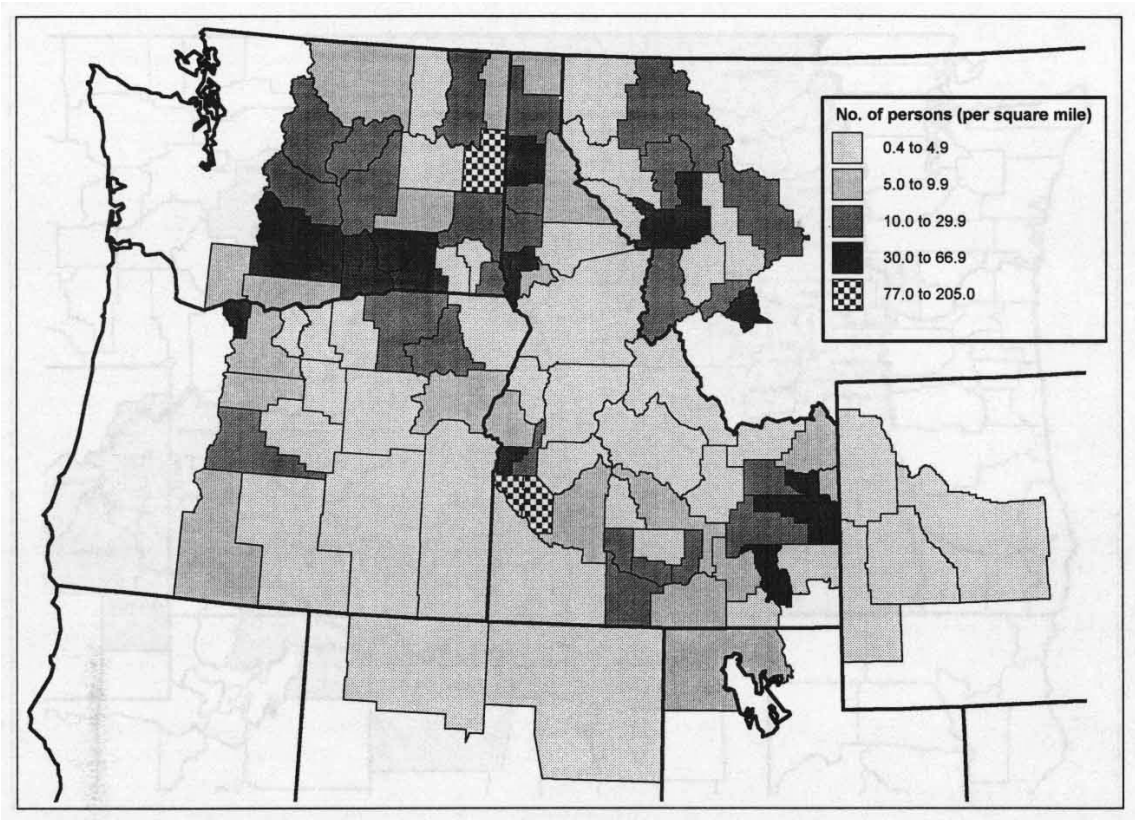


Figure 2—Interior basin population density

Table 1 "Population and area distribution by state, interior basin, 1990

State	Population	Total county area
	percent	
Idaho	340	29.4
Montana	10 8	10.3
Nevada	1.6	97
Oregon	12.5	24.2
Utah	1.3	2.4
Washington	37.7	15.9
Wyoming	2 1	8.1

Source: Census Bureau STF1A CD-ROM, U S. Department of Commerce 1991b.

statistical area (MSA) does not have over a million people. In comparison, there are 15 metro counties in western Oregon and Washington, 7 of "which are part of MSAs with a million or more people, and the metropolitan population accounts for over 80 percent of the combined west-side population of the two States. Nationwide, metropolitan counties account for about 77 percent of the population. Later we will further disaggregate metro and nonmetro counties to explore the experience of counties according to degree of urbanization.

The metro-nonmetro classification gives some indication of the types of areas people live in. Many counties in the West are large, however, and there are both rural and urban areas within both metro and nonmetro counties. The definition of rural population by the Census Bureau, on the other hand, crosses county designations; in general, rural residents are those who live in places with less than 2,500 people or in open countryside (see appendix A for a more precise definition). About 42 percent of the interior basin population is rural by this definition. This compares with 25 percent for the United States and 14 percent for the West census region (see appendix B for states in each census region). Of rural residents in the interior basin, only about 10 percent live on farms, though more are probably involved in agriculture because most farm laborers live off-farm (and many who live on farms likely are employed in other occupations in addition to farming; see Dahmann and Dacquel 1992).

The Census Bureau definition of rural, however, is somewhat restrictive. For example, persons living in communities of 5,000 would be considered urban. Thus, it may be helpful to look at the size of communities as tracked by the Census Bureau to better understand settlement types. These communities consist of incorporated places and census-designated places. Census-designated places are entities designed to recognize significant population concentrations that are not in incorporated places but have similar characteristics, such as community identity, high population density, and commercial development.

The rural nature of the interior basin can be seen by the distribution of communities (places) by size class in table 2. About 27 percent of people in the study area live in census-recognized communities with less than 10,000 residents (only a few of these communities could be considered suburbs of larger places). This is a much greater percentage than in western Oregon and western Washington, where only 17 percent of the population lives in communities in that size class, or the nationwide figure of 16 percent (Slater and Hall 1993). A substantial proportion, 35 percent, of interior basin residents live in small settlements (those not tracked by the Census Bureau) or open countryside; this is well above the national proportion of 27 percent. Thus, about 62 percent of interior basin residents live in communities with less than 10,000 people or in small settlements or open countryside. Note also the many communities with less than 5,000 residents and the substantial proportion of the population that lives in communities with between 1,000 and 5,000 people. Of the 539 census-recognized communities in the study area, Idaho and Washington have the most—192 and 167, respectively—whereas Oregon has only 92 and Montana 42. By any measure, the interior basin is a rural region of the country with many relatively small communities.

Population of Lands Under Tribal Jurisdiction

There are 19 American Indian reservations and 1 colony, some with and some without trust lands, that are wholly or partially within the interior basin counties (U.S. Department of Commerce 1991e). Several of these lie outside the interior basin boundary, but are within an interior basin county; for example, the Wind River Reservation in Fremont, Wyoming. The total area of reservations and trust lands in the study area counties (regardless of whether they are inside or outside the basin boundary) is 13,982 square miles or 5 percent of the land base of the interior basin counties. In six counties, reservations and trust lands account for more than 40 percent of the land base. In 1990, the 114,477 people who lived within the borders of the reservations and trust lands in the interior basin counties accounted for 4 percent of the interior basin population. The Yakama Reservation has the largest population with 26,961

Table 2-Population distribution of the interior basin by size of census place, 1990

Size of place	Places in this size class		Population in this size class
Population	*Number*	*Percent*	
100,000 or more	2	0.4	10.4
50,000 to 99,999	1	2	1.9
40,000 to 49,999	4	.7	6.0
30,000 to 39,999	2	.4	2.3
20,000 to 29,999	11	2.0	9.2
10,000 to 19,999	18	-3.3	8 4
5,000 to 9,999	37	6.9	8.8
1,000 to 4,999	171	31.7	13.7
< 1,000	293	54.4	4.1
Not in incorporated or census-designated place	na	na	35.2

na = not available.
Source- Census Bureau STF1A CD-ROM, U.S. Department of Commerce 1991b.

residents (14 percent of the Yakima County population), but residents of the Nez Perce Reservation account for 99 percent of the Lewis County, Idaho, population. In addition, the Klamath Tribal designated statistical area encompasses 109 square miles of Klamath County, Oregon. Tribal designated statistical areas are delineated by Federally and state-recognized tribes without a landbase to provide statistical areas for the Census Bureau to tabulate data. They generally contain the American Indian population over which the tribe has jurisdiction (U.S. Department of Commerce 1992).

Characteristics of Current Population and Labor Force

Age Distribution

The age distribution of the population is directly linked to the size and composition of the current and future labor force and also may be important to the consideration of various other economic and social considerations, such as demand for recreation, provision of social services, and economic development opportunities.

The age distribution for the interior basin is very similar to that of the Nation (see table 3). The main differences are that the interior basin has a larger proportion of people under 18 years of age and a smaller proportion of people in the prime wage earning years of 25 to 49. The interior basin also has a slightly smaller proportion of 18- to 24-year-olds relative to the Nation.

More importantly, the age structure of the interior basin population changed markedly between 1980 and 1990. Growth of the 65-and-over age group (up by 27.6 percent) outpaced both the 18-years-and-under age group (up 0.8 percent) and the 25- to 64-year age group (up 12.5 percent), whereas the 18- to- 24-year age group declined by 20.2 percent. This reflects a national trend in the aging of the population, and in particular the aging of the large "baby boom" cohort born between 1946 and 1964. It also reflects in-and out-migration of different age classes. Though age-specific migration data for 1980 to 1990 are not available uniformly

Table 3-Age distribution for the interior basin and the United States, 1990

Age group	Interior basin	United States
Years of age	*------Percent of population--------*	
< 18	28.9	25.6
1 8 to 24	9.7	10.8
25 to 49	36.0	38.0
50 to 64	12.6	13.1
65 to 74	7.3	7.3
> 74	5.4	5.3

Source: Census Bureau STF1A CD-ROM, U.S. Department of Commerce 1991b.

across the interior basin, estimates of expected population versus observed population show a small amount of the growth in the 65-and-over age group was likely from in-migration.

Age structure by county differs greatly across the interior basin. The portion of the population 65 and over in 1990 ranged from 5.8 percent in Madison County, Idaho, to 22.2 percent in Garfield County, Washington. The same figure for the Nation was 12.5 percent. Similarly, the portion of the population under 18 ranged from 17.8 percent in Whitman County, Washington, to 40.6 percent in Box Elder County, Utah, as compared to 25.6 percent for the Nation. Another measure of the differing age structures in counties is the median age; this measure ranged from 20.0 years in Madison, Idaho, to 44.1 years in Wheeler, Oregon, versus 32.8 years for the Nation. The approximate median age for the interior basin is 32.6 years (calculated as the weighted average of county medians where the weight is the 1990 population).

[5] The observed population exceeded the expected population for those 65 and older in 1990, thereby suggesting in-migration of this age group. We calculated the expected population as follows. For the Nation, we calculated the survival rate of the 1980 55-and-over age class (that is, those who survived to be 65 and older in 1990). We applied this survival rate to the interior basin population that was 55 and over in 1980 to obtain the expected population 65 and older in 1990. Appropriate county age-class data for 1980 were not readily available to estimate if some of the decline in the 18- to 24-year group was due to out-migration.

Race and Hispanic Origin

Table 4 compares the race and Hispanic origin of residents of the interior basin to the United States population for 1990. The interior basin has a larger proportion of whites and Native Americans and a smaller proportion of people of Hispanic origin (the Census Bureau considers Hispanic origin to be an ethnic category rather than a racial category; therefore, Hispanics may be of any race and are counted in the race figures as well). Still, Hispanics are the largest non-Anglo group in the study area. Between 1980 and 1990, the study area became more racially and ethnically diverse as did the Nation. In the study area, the white population had the largest absolute population gain during the decade, but the smallest percentage gain (4 percent). By contrast, the Asian and Pacific Islander population in the study area grew by 61 percent between 1980 and 1990. The Hispanic population grew by 69 percent during this period, which was faster than the national average of 53 percent for this group.

The different racial and ethnic groups are not distributed evenly across counties in the interior basin. Although 31 percent of the total population lives in metro counties in the interior basin, 60 percent of blacks, 45 percent of Asians, and 40 percent of Hispanics live in metro counties, and conversely, only 24 percent of Native Americans do.

Table 4-Race and Hispanic origin of population, interior basin and the United States, 1980 and 1990

Race	Interior basin		United States	
	1980	1990	1980	1990
	Percent of popuiaiion			
White	94.1	91.7	83.1	80 3
Black	.5	.6	11.7	12 1
Native American (incl. Eskimo, Aleut)	1.8	2.4	0.6	.8
Asian, Pacific Islander	.7	1.1	1.5	2 9
Other race	2.8	4.2	3.0	3.9
Hispanic origin (can be of any race}	4.2	6.7	6.4	9 0

Sources: USA counties CD-ROM; Census Bureau STF1A CD-ROM, U.S. Department of Commerce 1991b.

Over half of the counties in the interior basin are more than 95 percent white (note, this does include some people of Hispanic origin), whereas six are less than 80 percent white (for example, Adams County, Washington, is only 67 percent white).

People of Hispanic origin make up less than 1 percent of some county populations and as much as a third of others; Native Americans less than 1 percent of some and a fifth of others. Neither blacks nor Asians make up more than 5 percent of any county population in the interior basin.

Labor Force

The civilian labor force of the interior basin, as measured by the Census Bureau, grew from 1.23 million in 1980 to 1.36 million in 1990—this includes both employed and unemployed persons over the age of 16. The number in the armed forces grew from 11,052 to 11,389 based on decennial census counts (U.S. Department of Commerce 1992a, 1992d). Women made up a larger share of the interior basin labor force in 1990 than they did in 1980 (44 percent versus 40 percent), which corresponds with the national trend as well (46 percent in 1990 versus 43 percent in 1980). Though women have become a larger part of the work force, they are still less likely than their male counterparts to be labor force participants. The female crude labor force participation rate (share of females 16 and older who are in the labor force, both employed and unemployed) for the interior basin in 1990 was 0.55 as opposed to the male labor force participation rate of 0.73. Nationally, the growth of the civilian labor force between 1970 and 1990 (the numbers of both men and women in the labor force increased) was a function of increasing population aged 16 and over of both genders and the increasing participation rate of women; men had a decreasing rate of labor force participation (U.S. Department of Commerce 1992c). Data were not available to calculate participation rates before 1990 for the interior basin.

Other Labor Force Characteristics: Educational Attainment, Occupation, and Industry

Table 5 shows the educational attainment distribution for the study area and the Nation. Educational attainment is one indicator of workforce quality and the ability of the area to attract industries that require highly skilled workers. Relative to the Nation, the study area has a larger share of persons 25-years-old and older who have at least a high school diploma (79 percent versus 75 percent). Although the study area has a slightly smaller share who have obtained bachelor or graduate degrees (18 percent versus 20 percent), it has a larger share who have completed some college or an associate degree (30 percent versus 25 percent).

The occupations of workers are also an indicator of the types of skills and economic activities found in the area. The occupational distribution for the study area relative to the Nation is presented in table 6. The distribution for the interior basin counties closely resembles that for the Nation (at this degree of aggregation of

Table 5—Educational attainment, interior basin and the United States, 1990

Highest level completed	Interior basin	United States
	-Percent of persons 25 years and older-	
Less than 9th grade	*8.2*	10.4
9th to 12th grade, no diploma	12.9	14.4
High school graduate (including GED)	30.7	30.0
Some college, no degree	23.1	18.7
Associates degree	7.3	6.2
Bachelors degree	12.3	13.1
Graduate degree	5.5	7.2

Source: Census Bureau STF3A CD-ROM, U.S. Department of Commerce 1992d.

Table 6-Occupation, interior basin and the United States, 1990

Occupation	Interior basin	United States
	-Percent of employed persons over 16-	
Professional and managerial:		
Executive, administrative, and managerial	10.3	11.8
Professional specialty	13.5	13.9
Technicians and related support	3.2	3.1
Support, sales, and service:		
Sales	10.9	11.8
Administrative support, including clerical	13.7	15.0
Private household services	.3	.4
Protective services	1.5	1.5
All other services	12 5	11.8
Production:		
Farming, forestry, and fishing	7.9	4.5
Precision production, craft, and repair	10.9	10.7
Machine operators, assemblers, and inspectors	5.8	6.5
Transportation and material moving	5.1	4.7
Handlers, equipment cleaners, and laborers	4.4	4.4

Source: Census Bureau, STF3A CD-ROM, U.S. Department of Commerce 1991d.

occupations at least). The greatest difference is the larger proportion of people in the study area who are in farming, forestry, and fishing occupations. Employment by industry from the decennial census confirms the importance of the agriculture, forestry and fishing industries to the residents of the area (9 percent of Interior basin employees were in these industries versus 3 percent for the United States). This does not include related primary or secondary processing, which is included under manufacturing.

Population, Employment, and Income Trends

Population, employment, and income are broad measures of social and economic conditions and trends. Population changes in particular also may be important in the consideration of various social and economic issues, including public land use, development on or near public lands, conditions affecting economic development, and changing social structures.

Population Trends: 1960 to 1990

The United States population grew by over 69 million people between 1960 and 1990, and much of this growth occurred in the South and in the West (these are decennial census figures reported in USDA 1993). The West had the greatest rate of change from one decennial census to the next of all the regions in each of the last three decades. This led to the population of the West becoming a larger share of the U.S. population since 1960, though the South and the Midwest still have larger shares (see table 7). Much of the growth in the West has taken place in California, which accounted for 57 percent of this Census region population growth between 1960 and 1990. With nearly 30 million people in 1990, California is the largest of the 13 states in the West and dominates the West in terms of absolute population changes. The Northwest (Idaho, Oregon, Washington, and Montana) experienced population growth rates higher than that of the National rate during all three decades, but only on a par with California growth rates during the 1970s (state and interior basin populations are from the decennial census, U.S. Department of Commerce 1992d). Of the four States, Washington had consistently high rates of change from one census to the next and Montana consistently low, though it had a higher rate than did the United States as a whole between the 1970 and 1980 censuses (see table 8).

The interior basin population grew slower than that of the West or the United States in the 1960s but experienced rapid growth during the 1970s commensurate with growth in the West during that decade. Growth slowed again in the 1980s in the study area, and the rate of population change between 1980 and 1990 was slower than that for the Nation. The slow growth periods resulted in the interior basin population becoming a smaller share of the population of the West over the last three decades.

Recent Population Trends: 1990 to 1992

Recent trends show continued strong population growth in the West, with some of the fastest growing states being in the Northwest (1992 state estimates provided by the Bureau of the Census, Population Division, July 1994). Although California still dominates the West in terms of absolute population gains—it accounted for about 48 percent of the population gain in the West between April 1, 1990, and July 1, 1992—many other states in the West grew at a faster rate during this period. In fact, 1993 estimates show California's annual rate of population growth below the U.S. average for the first time in 20 years (O'Malley 1994). Between the decennial census in 1990 (April 1) and the intercensal estimate for 1992 (July 1), Nevada led the Nation with an 11.1-percent increase in population, and Idaho (5.9 percent), Washington (5.7 percent), Utah (5.1 percent), and Oregon (4.6 percent) all grew at rates well above California's growth rate of 3.8 percent and the U.S. growth rate of 2.6 percent.

Unlike the 1980s when the study area experienced much slower growth than that experience in the Northwest as a whole, the 1990 to 1992 data show the study area sharing in the rapid growth with an increase of 5.4 percent. This portends a significant development in Washington State: the rising rate of population growth in eastern Washington since 1987 (Schillinger 1993). Between April 1,1990, and July 1, 1992, Census Bureau estimates show that

Table 7-United States regional population trends, 1960 to 1990

Region	Share of U.S. population				Population change		
	1960	1970	1980	1990	1960-70	1970-80	1980-90
	Percent						
United States	100	100	100	100	13.3	11.5	9.8
West	15.6	17.1	19.0	21.2	24.1	24.0	22.3
South	30.6	30.9	33.2	34.3	14.2	20.0	13.4
Midwest	28.8	27.8	26.0	24.0	9.6	4.1	1.4
Northeast	25.0	24.1	21.7	20.4	9.8	.2	3.4

Source: Rural Conditions and Trends, USDA ERS 1993.

Table 8-Population trends within the West, 1960 to 1990

State and int. basin	Total resident population				West share of the population				Population change		
	1960	1970	1980	1990	1960	1970	1980	1990	1960-70	1970-80	1980-90
California	15,717	19,791	23,668	29,760	56.0	57.4	54.8	56.4	27.1	18.5	25.7
Northwest:	5,964	6,912	8,496	9,515	21.3	24.6	30.3	33.9	15.9	22.9	12.0
Idaho	667	713	944	1,007	2.4	2.5	3 4	3.6	6.9	32.4	6.6
Montana	675	694	787	799	2.4	2.5	2.8	2.8	2.9	13.3	1.5
Oregon	1,769	2,092	2,633	2.842	6.3	7.5	9.4	10.1	18.3	25.9	7.9
Washington	2,853	3,413	4,132	4,867	10.2	122	14.7	173	19.6	21.1	17.8
Interior basin	2,049	2,166	2,741	2,914	7.3	6.2	6.3	5.5	5.7	26.6	6.3

Sources: USA counties CD-ROM; Census Bureau STF1A CD-ROM, U.S. Department of Commerce 1991b.

western Washington (including Skamania County) grew by 5.8 percent, and the population of eastern Washington grew by 5.3 percent; whereas between 1980 and 1990, the west-side population grew by 21.5 percent and the east side by only 6.5 percent. Between 1980 and 1990, eastern Washington accounted for 9 percent of the population growth of the state; but between 1990 and 1992, it accounted for 21 percent.

Eastern Oregon also experienced increased growth rates in the late 1980s, which continued into the early 1990s. East-side growth in Oregon accounted for about 13 percent of the population gain in Oregon between 1990 and 1992 as opposed to 5 percent between 1980 and 1990.

Idaho gained nearly as many people between April 1, 1990, and July 1, 1992, as it did during the entire decade of the 1980s (61,000 versus 62,622), and Montana gained almost twice as many as it did between 1980 and 1990. Only 10 counties in the study area lost population between 1990 and 1992, and 5 of them had population losses during the last three decades as well. County rates of population change in the interior basin ranged from -3.0 to 15.0 percent between April 1, 1990, and July 1, 1992.

Population Changes and Degree of Urban Influence

Above we noted some of the county variation in recent population changes. This variation is masked when we look at changes for the interior basin as a whole. Between 1980 and 1990, population changes by county in the interior basin ranged from -28 percent to 94 percent, and even during the growth period of the 1970s, 11 counties lost population. Nationally, the degree of urban influence and local economic structure help explain some of the variation in trends across counties (USDA 1993). We explore whether these factors help explain trends in the interior basin.

The degree of urbanization classification system used here was developed by the USDA Economic Research Service (ERS) to reflect the economic opportunities available to metro and nonmetro residents and businesses (USDA 1993). This classification system divides counties into six groups: large metro, small metro, nonmetro adjacent to large metro, nonmetro adjacent to small metro, nonmetro nonadjacent with all or part of a city between 10,000 and 49,999, and nonmetro nonadjacent with no part of a city that size. See appendix A for a more complete explanation of this classification. City populations and metro status are based on 1980 data (metro status did not change for any county in the study area between 1980 and 1990). For that reason, the classification is best used to evaluate changes since 1980, and historical data should be viewed as the history of the 1980 groupings. The metro counties and the nonmetros adjacent to them have several social and economic opportunities due to their economies of scale. For nonadjacent counties, those with larger cities are more likely to have various services and infrastructure leading to greater development potential. There are no large metro counties (part of metro areas of 1 million or more) in the interior basin, and only three nonmetros that are adjacent to large metros outside the interior basin (these three counties account for less than 2 percent of the interior basin population). Thus we collapsed the two nonmetro adjacent categories into one.

Sixty percent of the interior basin counties are in the category of nonmetro nonadjacent without a city of 10,000 or more residents, but they contain a little less than a quarter of the population (table 9). The largest share of the nonmetro population lives in nonadjacent counties with a city of more than 10,000 residents. As many people live in nonadjacent counties with a city of more than 10,000 as in metro counties in the interior basin.

Table 10 shows the population changes in the interior basin and the United States by degree of urban influence. Nationally, the rate of population change was tied to urban influence during the 1960s and 1980s, whereas the "rural renaissance" of the 1970s saw widespread growth across nonmetro counties and small metros. Before the 1970s, metropolitan areas had higher rates of population growth than did nonmetropolitan areas throughout most of the 20th century. This made the turnaround of the 1970s a significant demographic event. Many factors seem to have contributed to this rural renaissance, including the decentralization of manufacturing and health and education ser-

Table 9—Distribution of counties and population in the interior basin by degree of urban influence

Degree of urban	Number of countries	1990 population	Interior basin 1990 population
			Percent
Large metro	0		
Small metro	5	905,995	31.1
Nonmetro:	95	2,007,932	68.9
Nonmetro, adjacent	15	399,624	13.7
Nonmetro, nonadjacent, with city of 10,000 +	20	930,033	31.9
Nonmetro, nonadjacent, without city of 10,000 +	60	678,275	23.3

Sources: Rural Conditions and Trends, USDA ERS 1993; Census Bureau STF1A CD-ROM, U.S. Department of Commerce 1991b.

Table 10-Population change by degree of urban influence, the United States and the interior basin

	Population change							
	1960-70		1970-80		1980-90		1990-92	
Degree of urban influence	U.S.	Int. basin	U.S.	Int. basin	U.S.	Int. basin	U.S.	Int. basin
	Percent							
Large metro	18.3		7.7		11.9		na	
Small metro	15.3	6.0	15.0	30.3	11.1	8.9	na	6.3
Nonmetro	2.5	5.6	14.4	25.0	4.2	5.2	na	4.9
Nonmetro, adjacent	5.2	6.6	15.5	29.3	6.7	6.9	na	5.8
Nonmetro, nonadjacent, with city of 10,000 +	4.6	7.8	14.8	22.9	4.4	5.3	na	4.6
Nonmetro, nonadjacent, without city of 10,000 +	-3.4	2.0	12.2	25.5	- .7	4.0	na	4.9

na = not available.
Sources: Rural Conditions and Trends, USDA ERS 1993; USA counties CD-ROM; Census Bureau.

vices, a slackening of the exodus from agriculture, greater residential sprawl of metropolitan commuters into surrounding nonmetropolitan areas, the modernization of rural communities and roads, and the desire of people to live in smaller communities (Fuguitt and others 1989).

The relation between rates of population change and urban influence is less strongly exhibited in the interior basin. The most rural nonadjacent areas seem to have been at a disadvantage for retaining and attracting population between 1960 and 1970, but differences across the rest of the urban hierarchy were small during this period, and no group approached the national population growth rate of 13.3 percent. The rural renaissance of the 1970s is apparent in the interior basin with all levels of urban influence experiencing greatly increased growth rates (remember the interior basin does not have any large metro counties which were the places that experienced slow growth during this period), but small metros and adjacent nonmetros grew at slightly faster rates than the rest of the counties in the interior basin. Likewise, population growth slowed across all

groups in the 1980s, though those at the top of the urban hierarchy retained slightly higher growth rates. The 1990 to 1992 changes show that the upswing in population growth since 1990 seems to have been widespread with all groups growing faster than the Nation, though metro counties and nonmetro adjacent counties continue to have slightly faster growth rates. Recent evidence shows that this renewed growth in nonmetropolitan areas may be part of a larger National trend. Between April 1990 and July 1992, population of nonmetropolitan counties increased by 880,000, according to the Census Bureau (O'Malley 1994), which was over 40 percent of the 10-year gain made between 1980 and 1990. In addition, 64 percent of U.S. nonmetropolitan counties gained population between 1990 and 1992, up from 46 percent between 1980 and 1990.

Population Changes and Economic Structure

The mix of industries and economic activities that make up the regional economy also can affect economic development and help explain local and regional trends in population, income, and employment. We use another classification developed by the ERS to examine population changes in the context of the economic structure of the nonmetro counties in the interior basin. This typology of nonmetro counties has four groupings based on broad classifications of economic specialization—farming-dependent, manufacturing-dependent, mining-dependent, and specialized government counties—and three groups related to policy concerns in rural areas— destination retirement, Federal lands, and persistent poverty counties (Bender and others 1985). A remaining group that does not meet the criteria for any of these groups is termed unclassified. See appendix A for complete definitions of each group. The interior basin contains no persistent poverty counties by this definition, so no estimates are reported for that group. The classification is based primarily on 1979 data and is most appropriately used to analyze population, income and employment changes since that time. We present earlier data for comparison, but this should be viewed as the history of the 1979 groups as the typology was not respecified at the beginning of each period displayed. Using a typology developed at a particular point in time does not address the question of how the underlying economic structure has changed over time.

None of the economic and policy categories are mutually exclusive. Although there is some double counting within the economic groups (5 counties in the study area are in more than one), most of the overlap is between the economic groups and the policy groups (7 are in both retirement and an economic group and 45 are in both Federal lands and an economic group). Sixty-five counties or about two-thirds in the interior basin are in the Federal lands group (meaning 33 percent or more of the land area in the county was Federal land in 1977), and 20 of those counties fall into no other economic or policy group (which we will call Federal lands-only counties), giving us no other information about their economies. Figure 3 shows the distribution of each group across the study area. There are 31 farming-dependent, 19 manufacturing-dependent, 4 mining-dependent, 11 specialized government, 16 retirement, and 6 unclassified counties.

Table 11 shows population changes for the ERS economic and policy groups. Farming counties grew slowly during the 1980s but in the early 1990s experienced a rate of growth commensurate with the nonmetro rate for the interior basin, which is itself above the national rate. Mining counties experienced the largest population declines in absolute and percentage terms during the 1980s, losing 11,909 people. Though they have gained population since 1990, mining counties continue to show the slowest growth of any group between 1990 and 1992. Manufacturing counties had a slightly negative rate of population change between 1980 and 1990, losing 1,369 people. This loss was more than offset by the 10,775 people added between 1990 and 1992, though this group still grew at a slightly slower rate than all nonmetros in the interior basin during this period. Specialized government counties also grew slowly during the 1980s, and though they gained nearly as many residents between 1990 and 1992 as they did during the whole decade of the 1980s, they continue to grow at a rate well below the other groups. The destination retirement counties

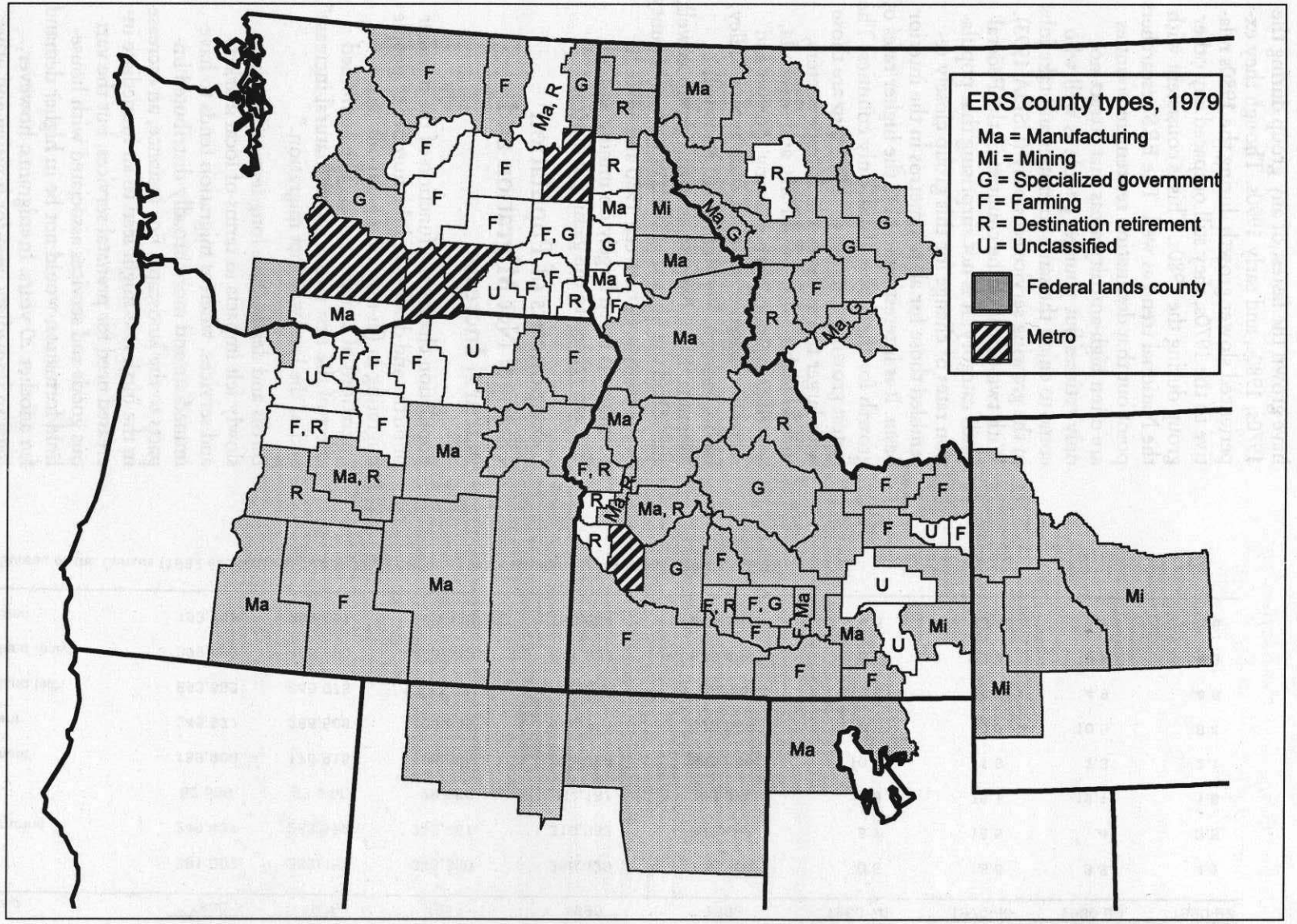


Figure 3—Nonmetro economic and policy county types of the interior basin as reported by the U.S. Department of Commerce, ERS.

Table 11--Population for ERS nonmetro economic and policy groups in the interior basin

ERS group	Population					Percent change in population			
	1960	1970	1980	1990	1992	1960-70	1970-80	1980-90	1990-92
Farming	291,002	289,455	343,380	356,429	370,969	-0.5	18.6	3.8	4.1
Manufacturing	249,437	263,552	312,251	310,882	321,657	5.7	18.5	-.4	3.5
Mining	62,038	63,244	79,090	67,181	68,276	1.9	25.1	-15.1	1.6
Government	159,900	175,916	196,885	201,386	205,666	10.0	11.9	2.3	2.1
Retirement	245,577	266,608	400,805	442,711	479,856	8.6	50.3	10.5	8.4
Federal land (all)	893,689	946,073	1,177,431	1,234,691	1,293,684	5.9	24.5	4.9	4.8
Federal land (only)	379,422	405,339	496,119	541,997	570,638	6.8	22.4	9.2	5.3
Unclassified	193,729	202,051	249,418	256,654	265,981	4.3	23.4	2.9	3.6

Source: Bureau of the Census (1992 estimates are as of July 1; all other years are April 1, Decennial Census counts).

have grown the fastest of any group during the 1970s, 1980s, and early 1990s. Though they experienced slower growth during the 1980s relative to the 1970s, they still outpaced any other group during the 1980s. This is consistent with the National trend as well. The ERS researchers point out that destination retirement counties are often high-amenity areas that attract not only retirees but younger people as well who come to enjoy the same amenities and take jobs in the growing service economy (USDA 1993). With two-thirds of the counties in the Federal lands category, it is not surprising that population rates of change for this group closely resembled those for all nonmetros in the interior basin. It is interesting to note the higher rates of growth for the Federal-lands-only counties. The fastest growing counties in this group are those with larger towns that serve as trade centers, such as Idaho Falls, Twin Falls, and Missoula, as well as counties with growing tourism and recreation-based economies, such as Sun Valley, Idaho, Jackson, Wyoming, and Kalispell, Montana. Elko, Nevada, is in this group as well, and it had the highest growth rate of any county in the study area between 1980 and 1990. Its economy is based largely on mining and on tourism related to the gaming industry.

Components of Population Change: Net Migration and Natural Increase

Population change is a function of the number of births and deaths, and the number of people migrating in (in-migration) and out (out-migration) of a given region. The combined effect of the first two is called "natural increase" and of the last two, "net migration."

Births and deaths have long-term effects but slowly felt impacts in terms of local markets and services, whereas migration tends to have immediate and more broadly distributed impacts to the landscape. For instance, an increase in the birth rate might lead to an immediate increased need for prenatal services, but the various goods and services associated with household formation would not be in higher demand for another 20 years. In-migrants, however, have an immediate need for housing and other services, and net out-migration may decrease

markets for goods and services, and the local tax base.

Migration is an important variable in understanding social and economic change. Migration deals with five questions: How much? Where? Who? Why did it happen? What effect did it have?

The primary sources of data in this section are Long (1988) and ERS (1993) for regional data, and county components of population change provided by the U.S. Census Bureau. We also, however, use other sources as noted to provide further evidence of patterns and trends. For more technical discussions on patterns and trends of geographical mobility, see Long (1988).

Migration in the West

Long (1988) chronicles annual average net migration by census region for every decade from 1880 to 1980. Unlike the Northeast, Midwest, and South, which experienced various periods of net in-migration and net out-migration, the West experienced net in-migration for each decade from the 1880s to the 1970s.

Data reported by the ERS gives us further information about the 1970s and extends to the 1980s (USDA 1993:71). Between 1970 and 1980, the West experienced a net in-migration of about 4.5 million people; and between 1980 and 1990, the region had about 5 million more in-migrants than out-migrants (see table 12). The South also experienced net in-migration during both decades. The Northeast and Midwest experienced net out-migration during both decades, though there was less net out-migration from the Northeast in the 1980s than during the previous decade. Thus the 1980s were a continuation of the 1970s pattern of population redistribution from the Northeast and Midwest to the South and West if not quite to the degree that occurred during the 1970s, which Long (1988) described as unprecedented in magnitude.

Whereas the West had net in-migration during the 1980s, the states within the region had various experiences. A comparison of annual net migration estimates indicates fluctuations and potential turnarounds of migration patterns in the Northwestern states and California. Table 13 displays annual net migration for Washington, Oregon, Idaho, Montana, and California from 1980 to 1981 through 1992 to 1993, as estimated by agencies in each state. Oregon experienced net out-migration early in the 1980s followed by net in-migration in the late 1980s and early 1990s. Except for 1983, Washington experienced net in-migration. In particular, in-migration rates increased in the late 1980s and early 1990s. Idaho and Montana experienced net out-migration during much of the 1980s. This turned around for Idaho in 1989, and the state has seen high rates of in-migration during the early 1990s. Montana began to experience net in-migration in 1991. California had net in-migration throughout the 1980s and early 1990s, but the rate of in-migration began to diminish in 1990.

Data from the 1990 census indicates that Californians are moving to Arizona, Nevada, Oregon, Washington, Utah, and Idaho (Frey 1994). A recent survey of Oregon in-migrants found that 43 percent of the new Oregonians came from California.

Migration in the interior basin

Between 1980 and 1990, the interior basin experienced net out-migration of about 84,300 persons (based on Bureau of Census data, which estimate net migration as the population change not accounted for by births and deaths). During this same period, however, population gains from natural increase more than offset the losses from net out-migration, thereby leading to an overall gain of about 173,000 persons (see table 14). Annual county estimates of net-migration are not available to say with certainty that the late 1980s and early 1990s have brought about a shift to net in-migration in the study area, though state-level estimates and increasing county populations would seem to indicate that this is the case.

Within the study area, four out of every five counties experienced net out-migration be-

[6] Judson, D.H. 1993. The Oregon in-migration survey: summary of the basic results. Oregon State Employment Department: Salem, OR. 3 p. Unpublished report. On file with: Rural Development Research Team, Forestry Sciences Lab, P.O. Box 3890, Portland, OR 97208-3890.

Table 12—Net migration by census region

Region	Net migration 1970-80	1980-90
	Thousands	
West	4,530	4,971
South	6,313	4,817
Northeast	-2,664	-296
Midwest	-2,360	-2754

Source; Rural Conditions and Trends, USDA ERS 1993.

Table 13-Annual net migration for selected states

Year	Washington		Oregon		Idaho		Montana		California	
	Net migr.	Migr. rate	Net migr.	Migr. rate	Net migr.	Migr rate	Net migr.	Migr. rate	Net migr	Migr rate
	Thousands		*Thousands*		*Thousands*		*Thousands*		*Thousands*	
1980-81	60.8	14.7	0 4	0.2	9 7	10.3	-1.2	-1.5	309.4	13 2
1981-82	8.9	2.1	-25.3	-9.5	-8.8	-9 1	4	.5	272 2	11.3
1982-83	-6.2	-1.4	-39.9	-15.0	- 5	- .5	8.1	10.1	287 6	11.7
.1983-84	11.6	2.7	7.3	2 8	-2.8	-2.9	- 4	- .5	264.0	105
1984-85	26.6	6.1	.1	.0	-10.9	-11.0	-5.4	-6.6	273.4	10.7
1985-86	10 2	2.3	-32.5	-12.1	-13.8	-13.9 -	-13.8	-16.7	360.0	13 8
1986-87	30.0	6 7	16 8	6.3	-11 1	-11.2	-16.0	-19.5	367.8	13.8
1987-88	54.8	12.1	36.4	13 5	-4.2	-4.3	-8.9	-11.0	378 2	13.8
1988-89	74.2	16 1	34.7	12.7	2.0	2.0	-8.0	-9 9	393 O	14 0
1989-90	98.5	20 8	343	12.3	8.6	8.6	-6.0	-7.4	433.2	15 1
1990-91	91.2	18.7	64.7	22.8	21.9	21.7	.1	1	369 7	12 4
1991-92	73.2	14.6	31.6	10.8	20.2	19.5	11 O	13.6	261 5	8 5
1992-93	83.3	16.4	424	14.2	22.1	20.7	na	na	179.7	5 8

Note: Net migration is for previous 12 months beginning with April 1 in Washington, January 1 in California, and July 1 in other states. Migration rates are calculated as net migration per 1,000 residents.

Sources: Washington Office of Financial Management, Portland State University Center for Population and Census; Idaho Division of Financial Management; University of Montana Bureau of Business and Economic Research. California Department of Finance Table compiled by Marple's Business Newsletter (1993).

Table 14-Components of population change 1980-90 for interior basin county groups

Groups	Population change 1980-90	Births 1980-90	Deaths 1980-90	Natural increase 1980-90	Net migration 1980-90
Interior basin	172,809	481,725	224,615	257,110	-84,301
Interior basin degree of urbanization classification:					
Small metro	74,058	148,650	66,509	82,141	-8,083
Nonmetro adjacent to metro	25,787	65,657	31,925	33,732	-7,945
Nonmetro nonadjacent with city of	46,677	152,573	70,625	81,948	-35,271
Nonmetro nonadjacent without city of	26,287	114,845	55,556	59,289	-33,002
Interior basin nonmetro economic and policy groups-					
Farming	13,049	60,724	27,844	32,880	-19,831
Manufacturing	-1,369	50,991	26,413	24,578	-25,947
Mining	-11,909	14,236	5,766	8,470	-20,379
Specialized government	4,501	30.639	14,604	16,035	-11,534
Destination retirement	41,906	67,358	36,098	31,260	10,646
Federal lands (all)	57,260	205,937	97,816	108,121	-50,861
Federal lands (only)	45,878	88,297	41,533	46,764	-886
Unclassified	7,236	46,685	19,713	26,972	-19,736

Source: U.S. Department of Commerce, Bureau of the Census, (net migration estimated as the residual after accounting for natural increase).

tween 1980 and 1990, and a couple experienced natural decrease (that is, when deaths outnumber births).

Migration and Degree of Urban Influence

Table 14 shows that each group in the interior basin experienced net out-migration between 1980 and 1990 but also had sufficient natural increase to offset the loss and actually post an overall gain in population. The only deviation from this pattern was nonmetros adjacent to large metros (not shown in the table). This group experienced slight net in-migration between 1980 and 1990.

Migration and Economic Structure

Table 14 also shows net out-migration for each economic and policy group except destination retirement counties between 1980 and 1990. In addition, natural increase was not sufficient to offset losses due to out-migration for both the manufacturing and mining groups leading to population losses for these groups.

Reasons for Moving

Migration flows, as described above, are the combined effect of many people deciding to move. People move into communities for many reasons: job, family, cost of living, quality of life, shared values and a sense of community (USA Today 1994), other unidentified factors, or a combination of reasons. The perception of getting away from drugs, violence, and congestion also may be other reasons for moving. Developing technology and necessary resources also may "pull" in-migrants to specific communities. For instance, Lewiston, Idaho, a resource-dependent community and recently called the "ski-boat capital of the world" pulls participants of this relatively new activity to the community. The social organization developed

around skiboating and the developing technology contributes to economic diversification and changes the social-cultural milieu of the town (Wall Street Journal 1994). Hood River, Oregon, is another example of developing technology, in this case wind surfing, and changes in the social-cultural milieu of the community. In-migrating wind surfers getting housing and jobs (whether seasonal or year-round) add to the mix of values in the predominantly timber and agricultural community.

Migration decisions are typically complex, making it difficult to separate out the influence of any one factor. Long (1988) reports the results from National surveys conducted in 1979, 1980, and 1981 in conjunction with the American Housing Survey. These results show about half of household moves between states were primarily attributable to economic reasons (though secondary reasons often were specified as well) and the other half to various reasons, including being closer to relatives and a desire for a change in climate. The role of these noneconomic motivations (particularly those related to climate and amenities) in the migration decision, and whether that role has changed, has been a subject of controversy in the migration literature. Long (1988: 250) states:

> From surveys of reasons for moving there is no firm evidence for or against the widespread notion that reasons for moving have changed over the last several decades in favor of noneconomic motives like a desire to live where the weather is nice, where recreational opportunities are present or where other quality-of-life amenities exist. Places possessing such attributes...have tended to grow in population in recent years, but their growth may reflect an increasing ability of employers to relocate near such areas.

Further research may help us understand this issue better.

Migration research has developed around two approaches to better understand the theoretical underpinnings of migration and the reasons people move (Garkovich 1989). In the macro approach, migration is a function of aggregate or area attributes, whereas migration in the micro approach-is a function of individual attributes such as position in the social structure, or attitudes regarding their decision to move, selection of destination, and so forth. Readers are referred to Long (1988) and Garkovich (1989) for further discussion of issues and methods of migration research.

Employment: 1970 to 1990

Employment is an indicator of general labor market conditions. We use the U.S. Department of Commerce, Bureau of Economic Analysis (BEA) estimates of total employment (U.S. Department of Commerce BEA 1993) to examine changes in the interior basin over the last two decades. These estimates are available annually (with a 2+ year lag) from 1969 by county and are more comprehensive than state-produced estimates of covered employment because the BEA includes estimates for railroad employees and proprietors. There are several limitations associated with this indicator. Though called total employment, it is actually a tally of full-time and part-time jobs, so that a person holding two jobs is counted twice. It is not in full-time equivalents, so a part-time job counts the same as a full-time job, and an increase in jobs does not necessarily imply a corresponding increase in the number of people employed. Structural changes in the labor market that affect job quality, wages, or the nature of work are also not distinguishable in these data. Since 1970, several jobs have become part-time jobs and service sector jobs, and these changes would not be apparent in the employment data presented.

Between 1970 and 1980, total employment grew by 40 percent for the interior basin versus 25 percent for the United States; whereas between 1980 and 1990 the same figures are 17 percent for the basin and 22 percent for the United States. Relative to the 1970s, employment growth during the 1980s slowed dramatically for the study area and only slightly for the Nation. Figure 4 shows the annual changes that underlie these decadal changes. Each series is indexed so that its 1969 value is 100, thereby enabling both series to be displayed on the same chart despite their differing magnitudes. This chart shows job growth in the interior basin outpaced that of the United States throughout the 1970s with hardly a slowdown for the 1974-75 recession. Job growth in the interior

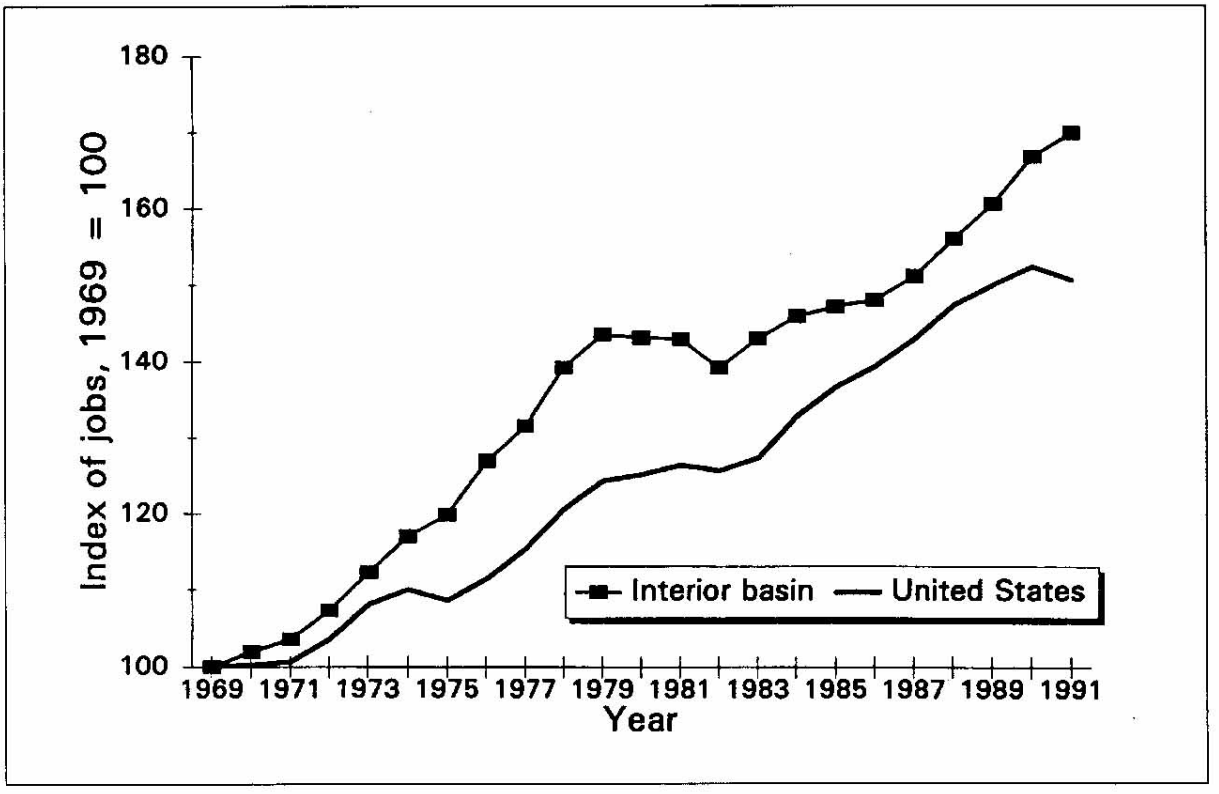


Figure 4-Index of total employment.

basin, however, slowed more dramatically during the recessionary period of the early 1980s relative to the Nation and remained slower until about 1987 or 1988. From 1988 to 1991, the rate of job growth over the previous year in the basin once again matched or exceeded that for the Nation, and the 1990-91 recession is much less apparent for the basin than for the Nation in terms of employment. Thus, the 1980-82 recessionary period greatly affected the labor market in the interior basin, and job growth did not recover until the late 1980s.

Employment and Degree of Urban Influence

Table 15 shows the percentage of change in number of jobs between 1970 and 1980 and between 1980 and 1990 by degree of urbanization. All categories experienced a larger percentage of change in jobs than the Nation did between 1970 and 1980 and a smaller percentage of change than the Nation did between 1980 and 1990. Job growth in metropolitan counties, however, substantially outpaced job growth in all three groups of nonmetro counties in both time periods.

Employment and Economic Structure

Table 15 also shows the percentage of change in the number of jobs for the nonmetro ERS economic and policy county groups. Once again, all groups show markedly slower growth during the 1980s as opposed to the 1970s. Farming, manufacturing, and specialized government counties, however, had rates of job growth slightly below the national rate for 1970 to 1980, whereas rates of job growth for mining, retirement, and Federal-lands-only counties grew faster than for the Nation. Only retirement counties had faster job growth than the metro counties in the interior basin during the 1970s. Retirement and Federal-lands-only counties remained the leaders in nonmetro rates of job growth during the 1980s whereas mining counties were the only group with fewer jobs in 1990 than in 1980 (mining counties went from

Table 15-Change in total employment

Groups	Change in total employment 1970-80	1980-90
	Percent	
United States	24.8	21.8
Interior basin	40.4	16.7
Interior basin degree of urbanization classification:		
Small metro	50.9	21.2
Nonmetro adjacent to metro	35.9	14.6
Nonmetro nonadjacent with city of 10,000 +	37.2	15.5
Nonmetro nonadjacent with no city that large	34.4	13.2
Interior basin nonmetro economic and policy groups:		
Farming	23.5	8.5
Manufacturing	20.1	8.6
Mining	44.1	-18.1
Specialized government	22.0	12.2
Destination retirement	56.9	27.9
Federal lands (all)	36.1	15.6
Federal lands (only)	41.8	21 5
Unclassified	37.0	4.5

Source: Bureau of Economic Analysis, REIS CD-ROM, U.S. Department of Commerce 1993.

one of the highest to the lowest rate of job growth between the two periods).

Income as an Indicator

Total personal income and nonfarm labor income are commonly used indicators of local economic activity and economic performance for substate areas. Total personal income as measured by the BEA is a comprehensive measure of income from all sources accruing to the residents of an area. As such, it is a broad indicator of the size and growth of the local or regional economy, and perhaps even more appropriately, a measure of local buying power (because transfers and dividends, interest, and rent are not generated locally). Total personal income includes farm income, nonfarm labor income (adjusted to place of residence), property income (dividends, interest, and rent), and transfer payments. The labor income component of personal income reflects changes in the labor market that employment does not, such as interindustry wage differentials. Per capita personal income takes into account both population and income changes and is a measure of economic well-being, though it does not address income distribution. It also can be an indicator of fiscal capacity in that places with higher per capita incomes generally have a larger tax base. Nonfarm labor income is also a measure of economic activity and is more directly related to local production of goods and services than is personal income. It is a better indicator of how the local-regional economy responds to national business cycles because total personal income is tempered somewhat by transfer payments and property income. The farm component of labor income, though important and directly related to local production, is ex-

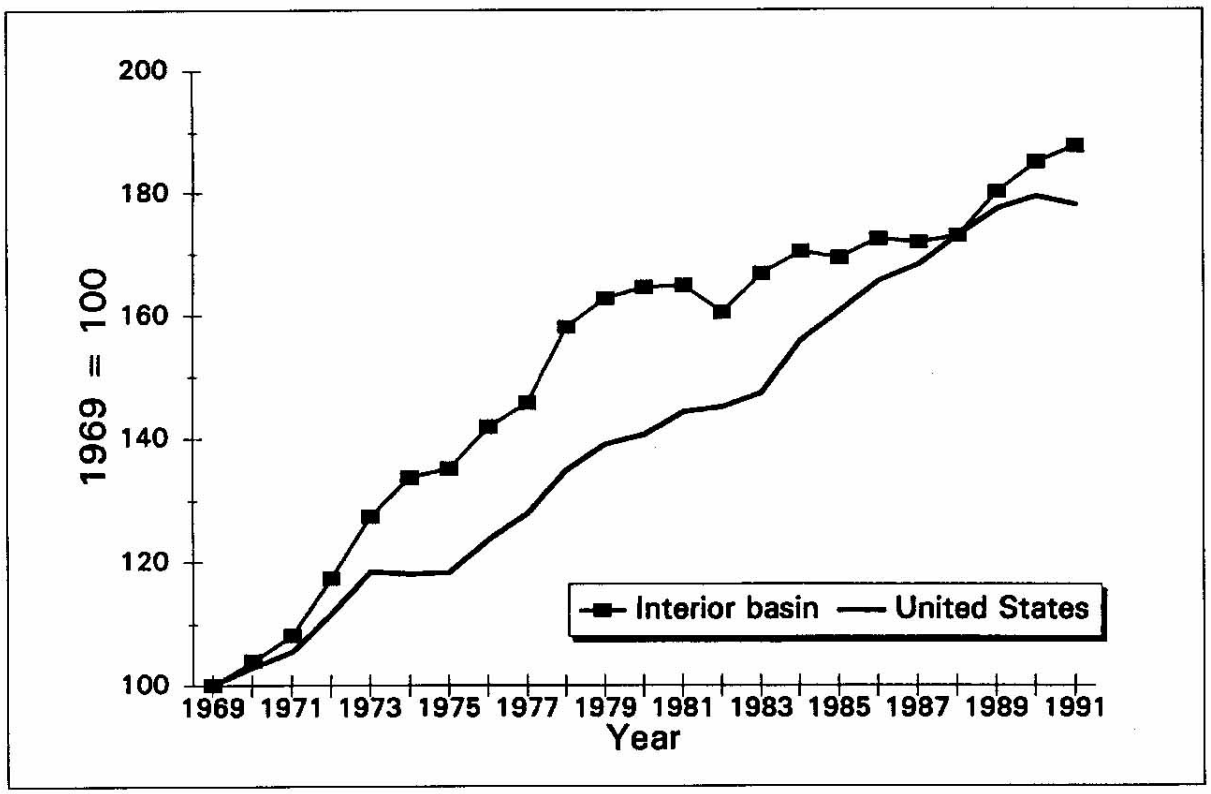


Figure 5 — Index of total personal income.

cluded from this measure because its erratic behavior tends to obscure trends. We will examine the changes in total personal income, its components, and per capita income over the last two decades, as well as the response of nonfarm labor income to National business cycles. All estimates were adjusted for inflation by using the personal consumption expenditure index (U.S. Government Printing Office 1993).

Total Personal Income: 1970 to 1990

Figure 5 shows that both the interior basin and the Nation experienced an upward trend in inflation-adjusted personal income over the last two decades. The interior basin's total personal income, however, was growing faster than that of the Nation during the 1970s and slower than that of the Nation during the 1980s. Total personal income for the interior basin grew by 58.4 percent between 1970 and 1980 (versus 36.6 percent for the United States) and only 12.5 percent between 1980 and 1990 (versus 27.8 percent for the United States).

Total Personal Income and Degree of Urban Influence

All groups experienced the relatively rapid growth of personal income in the 1970s (all had a larger percentage of increase than the United States did between 1970 and 1980) and the greatly reduced rates of growth during the 1980s (see table 16). Metro and nonmetro adjacent counties, however, maintained an advantage across both periods.

Total Personal Income and Economic Structure

Although all county types grew faster in the 1970s and more slowly (or even declined) in the 1980s in terms of personal income, there were differences among the types in each period. Mining and retirement counties experienced large percentage increases in personal income in the 1970s, even larger than the metro counties

Table 16-Changes in total personal income

Groups	Change in total personal income	
	1970-80	1980-90
	----------*Percent*----------	
United States	36.6	27.8
Interior basin	58.4	12.5
Interior basin degree of urbanization classification:		
Small metro	67.6	15.7
Nonmetro adjacent to metro	56.7	13.6
Nonmetro nonadjacent with city of 10,000 +	53.1	10 3
Nonmetro nonadjacent with no city that large	54.4	10.4
Interior basin nonmetro economic and policy groups:		
Farming	40.9	9.7
Manufacturing	41.0	6.2
Mining	73.9	-25 3
Specialized government	37.5	9.4
Destination retirement	82.8	22.9
Federal lands (all)	53.9	12.5
Federal lands (only)	55.9	15.9
Unclassified	56.1	2.2

Source: Bureau of Economic Analysis, REIS CD-ROM, U.S. Department of Commerce 1993.

in the interior basin; but between 1980 and 1990, total personal income fell by 25 percent in the mining counties, whereas retirement counties continued to have a higher percentage increase in personal income than any other group. Farming, manufacturing, specialized government, and unclassified counties all had smaller percentage increases in total personal Income than did the metro counties during both periods.

Components of Total Personal Income

Figure 6 show several things. Farm income is a larger share of the total personal income of the study area than for the United States as a whole, underscoring the importance of agriculture (both crops and livestock) to the region. Despite the growth in transfers and property income (both in absolute terms and as proportions of personal income), nonfarm labor income is still the dominant source of personal income, for both the interior basin and the Nation. Whereas transfer payments and property income have grown as a proportion of total personal income for both the interior basin and the Nation, they have become an even greater share for the interior basin. The bulk of transfer payments are from social security and medicare-medicaid, so part of the increase in transfers is associated with the aging of the population. Whether from the aging of the local population or from in-migrating retirees, this component of income has become more important in the interior basin economy.

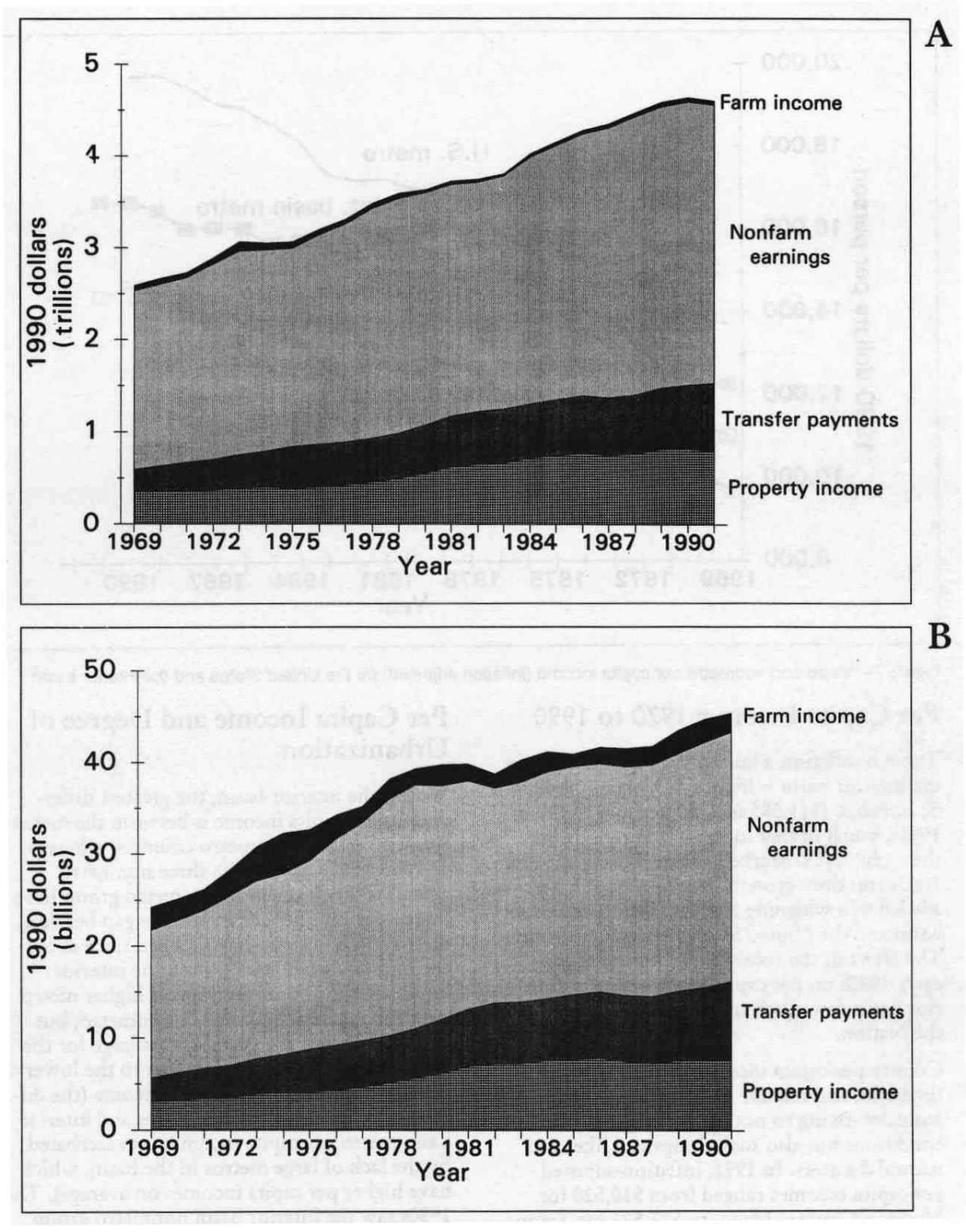


Figure 6—Total personal income (inflation adjusted) by component: A. United States, B. Interior basin.

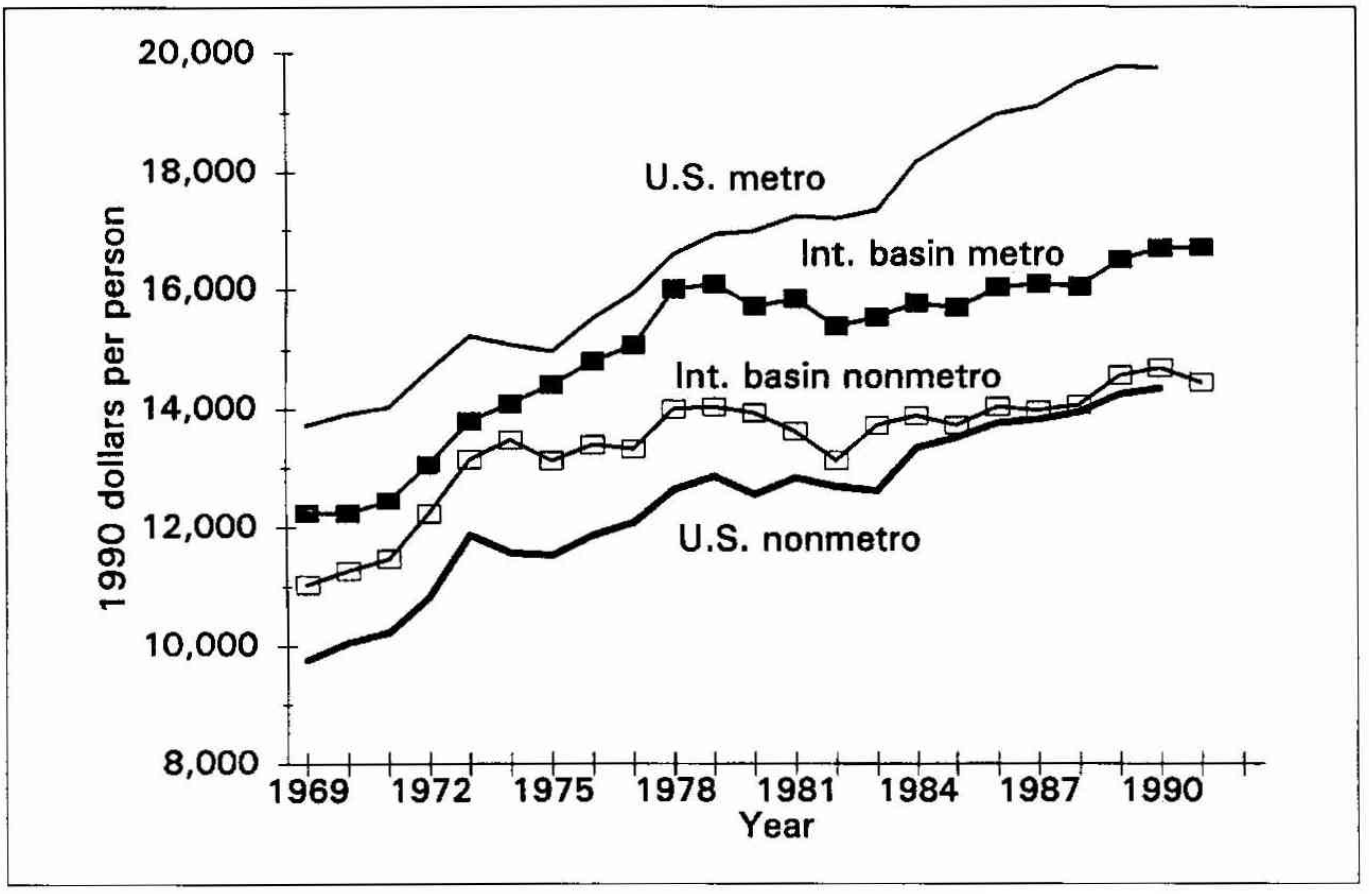


Figure 7—Metro and nonmetro per capita income (inflation adjusted) for the United States and the interior basin

Per Capita Income: 1970 to 1990

Though inflation-adjusted per capita income in the interior basin is higher now than it was two decades ago ($11,385 in 1969 versus $15,149 in 1991), much of that increase occurred during the early 1970s. Marked decline during the early 1980s and slow growth the rest of the decade led to a widening gap between the interior basin and the United States per capita income. The effect of the recessionary period in the early 1980s on per capita income for the interior basin was much more pronounced than for the Nation.

County per capita incomes differ throughout the basin, and relative rankings can fluctuate annually owing to not only changing economic conditions but also such things as strikes and natural disasters. In 1991, inflation-adjusted per capita incomes ranged from $10,520 for Madison County, Idaho, to $27,521 for Teton County, Wyoming.

Per Capita Income and Degree of Urbanization

Within the interior basin, the greatest difference in per capita income is between the metro counties and the nonmetro counties, whereas the differences among the three nonmetro groups is much smaller. The metro group has a higher per capita income, and the gap between metro and nonmetro has widened since about the mid-1970s (see fig. 7). Both the interior basin and the United States have higher metro per capita incomes relative to nonmetro, but the gap between the two is not as large for the interior basin. This is largely due to the lower interior basin metro per capita income (the difference between the United States and interior basin metro per capita incomes is exacerbated by the lack of large metros in the basin, which have higher per capita incomes on average). The 1980s saw the interior basin nonmetro group lose its advantage over United States nonmetros, and the interior basin metros fall even further behind United States metros in terms of per capita income.

Per Capita Income and Economic Structure

The Federal-land-only group, which contains some of the larger trade centers and destination recreation areas, has fairly consistently had the highest per capita income relative to the other nonmetro economic and policy groups, though it is still below the metro level (see fig. 8). Farming and mining counties have had the most volatile per capita incomes. Destination retirement counties had the lowest per capita income of any group until the last 5 years when mining counties were lower. The growing population and employment in destination retirement counties coincides with a larger economy in terms of total personal income but has not improved the status of the group in terms of per capita income relative to the other groups in the interior basin. The lower per capita income of this group is probably due in part to the lower incomes of retirees, but also may be a function of other factors as well, including the types of employment found in these areas.

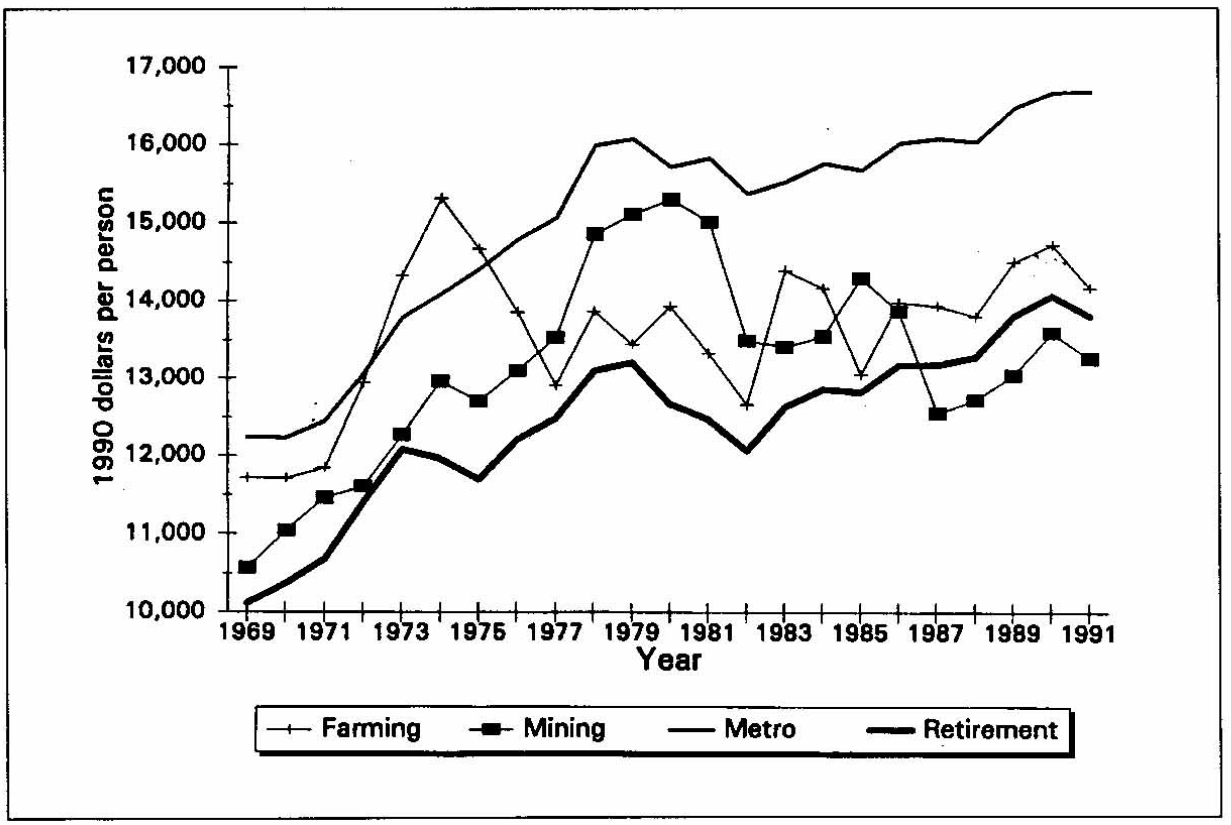
Business Cycles and Nonfarm Labor Income

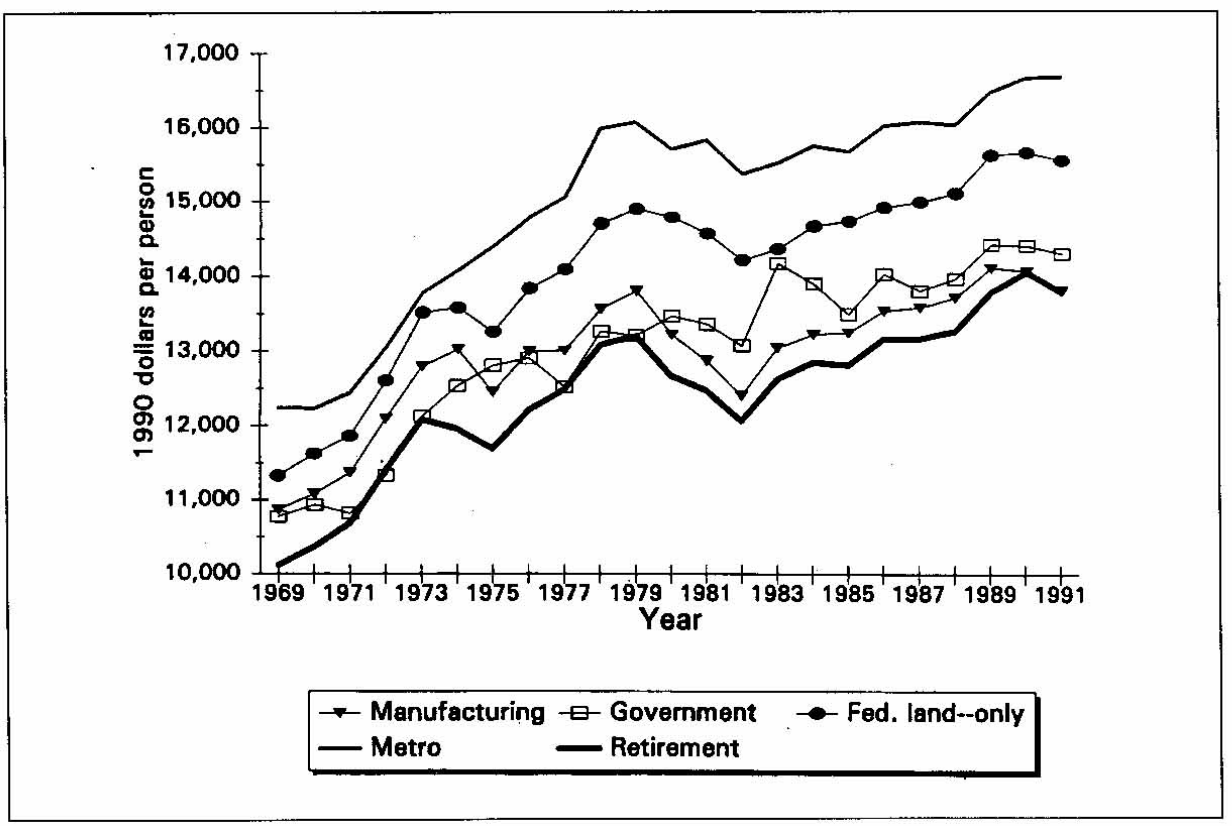
How the regional economy responds to national business cycles lends further insight into the functioning of the economy of the area. The National Bureau of Economic Research chronicles the business cycles of the Nation. The business cycles of the last 20 years roughly equate to three expansionary periods from 1972 to 1973, 1976 to 1979, and 1983 to 1989; and four recessionary periods from 1970 to 1971, 1974 to 1975, 1980 to 1982 (there were technically two recessions during this period), and 1990 to 1991 (Smith 1991 and U.S. Department of Commerce BEA 1994). For reasons mentioned earlier, we use inflation-adjusted annual nonfarm labor income reported on a place-of-work basis as a measure of the response of the local economy to national business cycles.

Table 17 shows that during the 1970s, the interior basin had an average annual rate of growth greater than that of the Nation during expansions and experienced less severe slow downs during recessions. As was alluded to earlier, however, the 1980-82 recession was much more severe for the interior basin economy than for the national economy, and the region continued to have much slower growth during the expansion that followed. The 1990-91 recession, however, did not impact the interior basin as much as it did the Nation. This is consistent with the experience of many rural areas in the country because of the disproportionate impacts of the 1990-91 recession on businesses more likely to be located in urban areas, such as large banks, commercial real estate developers, and defense contractors (Dagata 1992).

Business Cycles and Degree of Urban Influence

Table 17 also shows that nonmetro counties in the interior basin sustained greater losses in nonfarm labor income than did the metro counties during the 1980-82 recessionary period. All four groups grew slowly during the 1983-89 recovery, though nonmetros adjacent to metros grew slightly faster than the others. There seems to be no consistent pattern by degree of urbanization during expansions. During recessions, metro counties in the interior basin tended to fare better than nonmetros, though all groups fared worse than the Nation did during the 1980-82 recession and better than the Nation did during the other recessions. The fact that metro counties outperformed nonmetros during the 1990-91 recession may seem to be at odds with the statement above that, nationally, rural areas sustained greater losses; however, the interior basin contains no large metro counties, which may account for the difference. Also, note that three of the four groups had greater average annual growth rates of nonfarm labor income during the 1990-91 recession than they did during the 1983-89 expansion.





Figures 8—Per capita income (inflation adjusted) by economic and policy county type for the interior basin: A. economic types, B. policy types.

Table 1 7—Business cycle response' average annual percentage of changes in nonfarm labor income during expansions and recessions

Groups	Expansions			Recessions			
	1972-7	1976-79	1983-89	1970-71	1974-75	1980-82	1990-91
United States	5.5	4.4	3.1	1.7	-1.3	-0.6	-0 3
Interior basin	6 6	6.6	1 6	3.5	3 1	-3 7	2.5
Interior basin degree of urbanization:							
Small metro	6.5	7.6	1 1	2.7	4 7	-1.8	3 7
Nonmetro—	6.6	6.1	1.8	3.9	2.3	-47	1.8
Nonmetro adjacent	7.9	7 0	2.6	2 8	2 4	-4 7	1 3
Nonmetro, nonadjacent, with city of 10,000 +	6.9	5.9	1.6	3.7	24	-46	2 2
Nonmetro, nonadjacent, without city of 10,000 +	5 6	5.9	1 7	4.7	2.2	-49	1 4
Interior basin economic and policy groups:							
Farming	6.0	3 8	1 5	4 1	2.0	-4.9	2.9
Manufacturing	5.4	5.6	2.1	3.1	5	-6 5	- 4
Mining	1 5	8 1	-3.9	5.3	9.7	-5 3	-1 6
Government	5.6	2.9	1.1	2.7	2.3	-2.3	.6
Retirement	10.3	8.6	4.2	5.2	2.0	-6 5	3.0
Federal land (all)	6.5	6.1	1 8	3.9	2.0	-48	1 7
Federal land (only)	7.3	6.3	2.3	3.9	2.2	-3.9	2.6
Unclassified	6 1	6 5	.3	3.0	3.6	-3.8	9

Source. Bureau of Economic Analysis, REIS CD-ROM, U.S. Department of Commerce 1994.

Business Cycles and Economic Structure

Because the 1980-82 recession disproportionately affected manufacturing industries nationwide (Dagata 1992), it is not surprising that manufacturing-dependent counties in the interior basin suffered disproportionately as well. Note also, however, that destination retirement counties also experienced a large annual average percentage of decline in nonfarm labor income (even when the four manufacturing counties in the group are removed, the result is the same). Mining counties had the most erratic changes, and the cycle of this group did not necessarily coincide with national business cycles. Specialized government counties tended to have slightly more damped oscillations than did the other economic or policy groupings.

Exploring the Future

Population Projections

It is important to examine potential futures of the region if we are to plan for them. Yet, we cannot know the future with certainty, and our projections must be recognized as possibilities grounded on particular sets of assumptions. There are various population projection techniques, each of which can give different results depending on the assumptions used. Projections are more readily available for larger units of geography than for smaller units (states rather than counties or communities), so much of the information we present is for states.

Projections of state populations are available from several sources, which employ different methods. The Census Bureau uses a cohort-component method that projects births, deaths, and interstate and international migration, separately, for each single-year age class by sex, race, and Hispanic origin (Campbell 1994). They report four series, each based on different assumptions about interstate migration. We present the series A preferred, which in general projects the highest population growth in the Northwest, and series D, which projects the lowest growth for this region. Series A is based on a time series model of state-to-state migration that uses historical data from 1975 through 1992. Series D assumes zero net internal migration.

For comparison, we also report population projections from the BEA (U.S. Department of Commerce 1992). These projections are keyed to the agency projections of employment. National projections of employment and earnings by industry are made and then distributed down to states, substate areas, and counties based on damped extensions of relevant historical growth rates and more recent information.

In addition, we compare projections made by the states where available. The Office of Financial Management (OFM) in Washington State uses a 5-year cohort component technique (OFM 1992) to make state and county projections for Washington. The Center for Population Research at Portland State University (PSU) employs a similar technique in making projections for Oregon and its counties (PSU 1993).

Table 18 shows state population projections from these different sources. The BEA projections are consistently the lowest, whereas series A projections from the Census Bureau are generally the highest with the others falling somewhere in between.

Series A from the Census Bureau shows the population growth in the West outpacing that of the rest of the country over the next 25 years and projects that the West will make up a quarter of the U.S. population by 2015. These same population projections for the Northwest (Idaho, Oregon, Washington, and Montana) show the population increasing at about the same rate as that in the West (slightly faster than for the West before 2000 and slightly slower thereafter), and this region just maintaining its share of the population of the West over the next 25 years. Relative to 1990, this constitutes about 2.1 million additional residents in the four-state region by 2000 and another 3.3 million between 2000 and 2020. Projections by BEA, on the other hand, show an increase of 0.8 million between 1990 and 2000 and an additional 1.1 million between 2000 and 2020.

Table 19 shows east-side Oregon and Washington projections from the state agencies and BEA. The method used by BEA leads to lower projections. Projected population gains are in the range of 120,000 to 200,000 for eastern Washington between 1990 and 2010; and gains of roughly 40,000 to 110,000 for eastern Oregon for the same period. The OFM county projections for Washington do not total to the state projections in the previous table because the state projections were updated more recently (November 1993). Note also that Hood River County, Oregon, and Skamania County, Washington, are not included in the east-side totals.

Population projections by BEA for the counties of the interior basin show a gain of 182,000 people between 1990 and 2000; 135,000 between 2000 and 2010; and 122,000 between 2010 and 2020. This totals to 439,000 additional residents between 1990 and 2020. No other consistent long-term county projections are available across the entire study area for comparison. To approximate the implications of the Census Bureau series A projections for the interior basin, however, we used the county share of the state population as projected by BEA at each period to distribute the census state projections to the study area counties. This method projects population gains on the order of 650,000 between 1990 and 2000; 440,000 between 2000 and 2010; and 426,000 between 2010 and 2020 or a total gain of about 1.5 million people between 1990 and 2020.

Table 18-Population projections by state, 2000 to 2020

Projections by state	Projected population		
	2000	2010	2020
	Thousands of person		
Washington:			
Census, series A	6,070	7,025	7,960
Census, series D	5,539	6,005	6,479
OFM	5,782	6,463	7,169
BEA	5,379	5,760	6.038
Oregon:			
Census, series A	3,404	3,876	4,367
Census, series D	3,151	3,360	3,574
PSU	3,358	3,774	na
BEA	3,094	3,279	3,433
Idaho:			
Census, series A	1,290	1,454	1,600
Census, series D	1,158	1,282	1,405
BEA	1,068	1,116	1,164
Montana:			
Census, series A	920	996	1,071
Census, series D	859	906	952
BEA	820	810	868

na = not available.
Sources: U.S. Department of Commerce, Bureau of the Census, Washington State Office of Financial Management (OFM) 1992; Portland State University Center for Population and Census (PSU) 1993; U.S Bureau of Economic Analysis (BEA) 1994.

Table 19—Population projections for Oregon and Washington counties east of the Cascade crest

Area by agency	Projected population			
	1995	2000	2005	2010
	Thousands of person			
Eastern Washington:				
OFM	1,145	1,190	1,238	1.287
BEA	1,131	1,162	1,189	1,212
Eastern Oregon:				
PSU	382	410	437	462
BEA	361	370	378	386

Sources: Washington State Office of Financial Management (OFM) 1992; Portland State University Center for Population and Census (PSU) 1993.

Age, Race, and Ethnicity Projections

The population projections by race and Hispanic origin show an increasingly diverse population both nationally and in the Northwest. Asian and Pacific Islanders and Hispanics (of any race) are projected to be the fastest growing groups between 1993 and 2020 in the Northwest. By 2020, these groups are projected to make up nearly twice the proportion of the population that they made up in 1993 in the four-state area.

The aging of the baby boom cohort, who were ages 26-44 in 1990, will be one of the most significant demographic changes in the future to affect both metro and nonmetro areas in all regions of the country. The oldest "boomers" will reach 65 by 2011, and the over-65 age group will grow rapidly from then until about 2030. Changing age structures can affect labor supply, alter demand for both publicly and privately provided goods and services, and change the income structure of an area. The Census Bureau reports age and race projections only for series A. These projections show the percentage of the population over 65 in the Northwest, growing from 12 percent in 1993 to 16 percent in 2020; this represents a gain of over a million people in this age class (as opposed to a gain of 3.5 million in all other age classes combined). The Census Bureau makes longer term projections for the Nation, and these show the percentage of the population that is 65 years and over rising from 12.5 percent in 1990 to 20.2 percent by 2030. When and where "boomers" decide to retire, how much income they have, and how and where they choose to spend it will be important to regional and local economies.

There is a direct link between the aging of the population and the sources of personal income. The BEA projects personal income by component for states and the Nation, with the most recent projections being to 2040 (U.S. Department of Commerce 1990). The national projections show transfer payments accounting for 22 percent of total personal income by 2040 as opposed to 14 percent in 1988. This is largely due to the aging of the population, because transfers are dominated by payments to retirees (such as social security, medicare, and medicaid). In some counties the percentage of income from transfer payments is already over 20 percent, and it can be expected to go even higher as the population ages. The ages of in- and out-migrants also will influence this change.

Summary

The interior basin has followed national demographic trends such as an aging population; a more racially and ethnically diverse population; and women making up an increasing percentage of the labor force. Age structures and racial diversity differ greatly within the interior basin, however.

Population, employment, and income measures all showed the 1970s were, in general, a time of growth and expansion for the interior basin, whereas the recessionary period of the early 1980s greatly affected the economy and ability of the area to retain and attract population. By the end of the 1980s, however, conditions had changed and population growth seems to have been widespread since 1990 (though certainly not every place has had this experience). Differences in growth rates of population, employment, and personal income by degree of urban influence are most pronounced between metro and nonmetro counties and less perceptible within the nonmetro stratification (though nonmetros adjacent to metros tended to have somewhat higher rates). Nonmetro destination retirement counties experienced rapid population growth (and hence employment and personal income growth) over the last two decades, but still have one of the lowest per capita incomes. Mining counties experienced the most dramatic oscillations in population, employment, and personal income.

Long-term population projections indicate growth for the Northwest and the interior basin, an aging population, and a more racially and ethnically diverse population.

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Appendix A

Definitions

Census designated places—Census designated places (CDPs) are entities designed to recognize significant population concentrations that are not in incorporated places but have similar characteristics, such as community identity, high population density, and commercial development. For the 1990 census, the minimum population size for a CDP was 2,500 people if the CDP was located within a 1980 urbanized area and 1,000 elsewhere (exceptions are Alaska, Hawaii, and American Indian Reservations). Boundaries for CDPs may change with changes in the settlement pattern; a CDP with the same name as in previous censuses does not necessarily have the same boundaries.

Farm income—Farm income consists of the net income of the proprietor, the wages and salaries of farm labor (except farm labor contractors which is classified as agricultural services), the pay-in-kind of hired farm labor, and the salaries of corporate farm officers. Net income of the proprietor is gross farm income less production expenditures (both being for noncorporate farms only). Gross farm income includes cash receipts from marketing, government payments to farmers, rental value of farm dwellings, the value of food and fuel produced and consumed on farms, and the value of the net change in inventories of crops and livestock. These data rely heavily on the census of agriculture and estimates of farm income made by the ERS.

Incorporated places—Incorporated places (IPs) are entities incorporated under the laws of each state and that were legally in existence on January 1 of the census year. Incorporated places (IP) never cross state boundaries but may cross county boundaries. Seven IPs in the interior basin counties cross county boundaries—these were assigned to the county that had the largest proportion of the IP population where it was necessary to stratify IPs by county.

Labor income—Labor income is composed of wages and salaries, other labor income (mainly employer contributions to private pension and welfare funds), and proprietor income. A more complete discussion of what farm income includes can be found below.

Metropolitan (metro) counties—A metropolitan county is any county in a metropolitan statistical area (MSA). The MSAs are counties in and around a large population center, including adjacent communities, that are economically and socially integrated with the central city. An MSA must have a central city with a population of at least 50,000 or an urbanized area (a group of places and densely settled surrounding territory with a minimum population of 50,000) and a total MSA population of at least 100,000. These designations are based on Census data but are defined by the Office of Management and Budget.

Nonfarm labor income—Nonfarm labor income represents the component of personal income generated through nonfarm economic activity. Labor income (also called earnings by BEA) is made up of wages and salaries paid to employees and corporate officers, as well as estimates of pay-in-kind, tips and commissions, estimates of other labor income (employer contributions to private pension and welfare funds), and estimates for the self-employed (proprietor income). The measure we use here, is nonfarm labor income by place of residence (termed net nonfarm earnings by BEA). This measure is labor income by place of work, less personal contributions for social insurance, plus an adjustment for residence. Farm income, despite its importance to some local economies, is excluded here because of its erratic nature which obfuscates trend analysis.

Rural population—The rural population is the portion of the population not classified as urban by the Census Bureau. Urban residents live in urbanized areas (a group of incorporated and census-designated places that together *with* the densely settled surrounding territory have a minimum population of 50,000) or in incorporated and census designated places of 2,500 or more outside urbanized areas. Thus all places of 2,500 or more are considered urban. Some places of less than 2,500 and some populated areas outside of places, however, fall inside urbanized areas and are counted as urban rather than rural. There are generally both urban and rural residents within both metropolitan and nonmetropolitan counties.

Total personal income—Total personal income is a comprehensive estimate by the BEA of income from all sources, and thus a measure of economic resources accruing to residents of the county. Total personal income for the residents of a county is composed of transfer payments (see below), property income (dividends, interest, and rent), and labor income (including farm income, net of personal contributions to social insurance and adjusted to place of residence—termed net earnings by BEA).

All income measures are adjusted for inflation (to 1990 dollars) by using the personal consumption expenditure index (PCE) developed by BEA and reported in the Economic Report to the President (U.S. Government Printing Office 1993).

Transfer payments—The BEA reports estimates for more than 25 categories of transfer payments paid to county residents and nonprofit institutions on behalf of individuals. Transfer payments are payments for which current services were not rendered. Seventy-five percent is based on directly reported data at the county level. These include social security, medicare and medicaid, income maintenance payments, unemployment benefits, veterans benefits, and others.

Economic Research Service nonmetro economic and policy county types:

Farming-dependent counties—Farming contributed a weighted annual average of 20 percent or more of total labor and proprietor income over the 5 years from 1975 to 1979.

Federal lands counties—Federal land was 33 percent or more of the land area in a county in 1977.

Manufacturing-dependent counties—Manufacturing contributed 30 percent or more of total labor and proprietor income in 1979.

Mining-dependent counties—Mining contributed 20 percent or more to total labor and proprietor income in 1979.

Persistent-poverty counties—Per capita personal income in the county was in the lowest quintile in each of the years 1950, 1959, 1969, and 1979.

Retirement-destination counties—For the 1970-80 period, net in-migration rates of people aged 60 and over were 15 percent or more of the expected 1980 population aged 60 and over.

Specialized government counties—Government activities contributed 25 percent or more to total labor and proprietor income in 1979.

Economic Research Service classification of degree of urban influence:

Large metro—Counties that are part of metro areas of 1 million or more, using 1980 metro-nonmetro classification (see metro definition above).

Small metro—Counties that are part of metro areas of less than 1 million residents, using 1980 metro-nonmetro classification.

Nonmetro, adjacent to metro—Nonmetro counties that are physically adjacent to a metro county and have at least 2 percent of employed persons commuting to the metro county containing the central city.

Nonmetro, not adjacent to metro, with city greater than 10,000—Nonmetro counties that do not meet metro adjacency criteria but do have all or part of a nonmetro city of 10,000 to 49,999 based on the 1980 Census of Population. By definition, nonmetro counties have no city of 50,000 or more.

Nonmetro, not adjacent, without city greater than 10,000—Nonmetro counties that do not meet metro adjacency criteria and do not have all or part of a city with more than 10,000 residents based on the 1980 Census of Population and Housing.

Appendix B

Census Regions and Divisions

Northeast Region:

New England Division—

Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, Connecticut

Middle Atlantic Division—

New York, New Jersey, Pennsylvania

Midwest Region:

East North Central Division—

Ohio, Indiana, Illinois, Michigan, Wisconsin

West North-Central Division—

Minnesota, Iowa, Missouri, North Dakota, South Dakota, Nebraska, Kansas

South Region:

South Atlantic Division—

Delaware, Maryland, District of Columbia, Virginia, West Virginia, North Carolina South Carolina, Georgia, Florida

East South Central Division—

Kentucky, Tennessee, Alabama, Mississippi

West South-Central Division—

Arkansas, Louisiana, Oklahoma, Texas

West Region:

Mountain Division—

Montana, Idaho, Wyoming, Colorado, New Mexico, Arizona, Utah, Nevada

Pacific Division—

Washington, Oregon, California, Alaska, Hawaii

Appendix C

Counties included in the interior Columbia River basin in this report:

County	1990 population	Land area in int. basin
		Percent
Ada, ID	205,775	100
Adams, ID	3,254	100
Bannock, ID	66,026	91
Benewah, ID	7,937	100
Bingham, ID	37,583	100
Blame, ID	13,552	100
Boise, ID	3,509	100
Bonner, ID	26,622	100
Bonneville, ID	72,207	100
Boundary, ID	8,332	100
Butte, ID	2,918	100
Camas, ID	727	100
Canyon, ID	90,076	100
Caribou, ID	6,963	82
Cassia, ID	19,532	97
Clark, ID	762	100
Clearwater, ID	8,505	100
Custer, ID	4,133	100
Elmore, ID	21,205	100
Fremont, ID	10,937	100
Gem, ID	11,844	100
Gooding, ID	11,633	100
Idaho, ID	13,783	100
Jefferson, ID	16,543	100
Jerome, ID	15,138	100
Kootenai, ID	69,795	100
Latah, ID	30,617	100
Lemhi, ID	6,899	100

County	1990 population	Land area in int. basin [i]
		Percent
Lewis, ID	3,516	100
Lincoln, ID	3,308	100
Madison, ID	23,674	100
Minidoka, ID	19,361	100
Nez Perce, ID	33,754	100
Oneida, ID	3,492	7
Owyhee, ID	8,392	100
Payette, ID	16,434	100
Power, ID	7,086	97
Shoshone, ID	13,931	100
Teton, ID	3,439	100
Twin Falls, ID	53,580	100
Valley, ID	6,109	100
Washington, ID	8,550	100
Deer Lodge, MT	10,278	57
Flathead, MT	59,218	100
Granite, MT	2,548	100
Lake, MT	21,041	100
Lewis and Clark, MT	47,495	20
Lincoln, MT	17,481	100
Mineral, MT	3,315	100
Missoula, MT	78,687	100
Powell, MT	6,620	100
Ravalli, MT	25,010	100
Sanders, MT	8,669	100
Silver Bow, MT	33,941	52
Elko, NV	33,530	28
Humboldt, NV	12,844	4
Baker, OR	15,317	100
Crook, OR	14,111	100

County	1990 population	Land area in int. basin
		Percent
Deschutes, OR	74,958	100
Gilliam, OR	1,717	100
Grant, OR	7,853	100
Harney, OR	7,060	100
Hood River, OR	16,903	96
Jefferson, OR	13,676	100
Klamath, OR	57,702	96
Lake, OR	7,186	100
Malheur, OR	26,038	100
Morrow, OR	7,625	100
Sherman, OR	1,918	100
Umatilla, OR	59,249	100
Union, OR	23,598	100
Wallowa, OR	6,911	100
Wasco, OR	21,683	100
Wheeler, OR	1,396	100
Box Elder, UT	36,485	6
Adams, WA	13,603	100
Asotin, WA	17,605	100
Benton, WA	112,560	100
Chelan, WA	52,250	100
Columbia, WA	4,024	100
Douglas, WA	26,205	100
Ferry, WA	6,295	100
Franklin, WA	37,473	100
Garfield, WA	2,248	100
Grant, WA	54,758	100
Kittitas, WA	26,725	100
Klickitat, WA	16,616	100
Lincoln, WA	8,864	100

County	1990 population	Land area in int. basin
		Percent
Okanogan, WA	33,350	100
Pend Oreille, WA	8,915	100
Skamania, WA	8,289	13
Spokane, WA	361,364	100
Stevens, WA	30,948	100
Walla Walla, WA	48,439	100
Whitman, WA	38,775	100
Yakima, WA	188,823	100
Fremont, WY	33,662	2
Lincoln, WY	12,625	28
Sublette, WY	4,843	9
Teton, WY	11,172	81

Data provided by Interior Columbia River Basin Ecosystem Management Project Spatial Analysis Team, September 13, 1994.

McGinnis, Wendy J.; Christensen, Harriet H. 1996. The interior Columbia River basin: patterns of population, employment, and income change. Gen. Tech. Rep. PNW-GTR-358. Portland, OR: U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station. 43 p. (Quigley, Thomas M., ed.; The interior Columbia basin ecosystem management project: scientific assessment).

Public expectations for management of public resources are changing, and public agencies are moving toward sustainable ecosystem management that incorporates information on ecological, economic, and social systems. A broad assessment of these systems is being undertaken for the interior Columbia River basin. This paper describes some basic population characteristics of the area and focuses on the economic conditions there during the last several decades by using population, personal income, nonfarm labor income, and employment as primary indicators.

Keywords: Columbia River basin, economic conditions, population, income, employment.

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