

**Socioeconomic Research & Monitoring  
Olympic Coast National Marine Sanctuary**

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Study Area Profile

DRAFT

1990 to 2010

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June 24, 2013

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Any errors are the responsibility of the authors.

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## Table of Contents

	Page Number
<b>Introduction</b> .....	1
<b>Population and Key Measurements on Economic Status of the Study Area</b> .....	1
<i>Population</i> .....	2
<i>Population Growth</i> .....	2
<i>Projected Population Growth</i> .....	2
<i>Population Density</i> .....	2
<i>Per Capita Income</i> .....	5
<i>Unemployment Rates</i> .....	7
<b>Demographic Profiles</b> .....	8
<i>Gender</i> .....	8
<i>Race/Ethnicity</i> .....	9
<i>Age</i> .....	11
<b>Economic Profile</b> .....	13
<i>Labor Force</i> .....	14
<i>Personal Income</i> .....	15
<i>Employment</i> .....	17
<i>Proprietor's Income and Employment</i> .....	18
<i>Personal Income and Employment by Industry Sector</i> .....	21
<i>Personal Income by Industry</i> .....	21
<i>Employment by Industry</i> .....	21
<b>Future Updates</b> .....	24
<b>References</b> .....	25

Appendices.....	26
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### List of Tables

Table	Page Number
1 Selected Socioeconomic Measures for Description of the Study Area	3
2 Population Growth and Projected Growth.....	3
3 Unemployment Rates and Per Capita Personal Income.....	6
4 Labor Force and Labor Force Growth.....	14
5 Personal Income by Place of Residence and by Place of Work, 2010..	16
6 Personal Income by Place of Residence and Place of Work.....	16
7 Total Employment: 1990, 2000, and 2010.....	17
8 Proprietor’s Income and Employment.....	19

### List of Appendix Tables

A.1 Demographic Profiles .....	27
A.2 Personal Income by Industry, U.S., CA , Study Area and by County in the Study Area 2010.....	30
A.3 Total Full-time and Part-time Employment by Industry and County 2010.....	32
A.4. Unemployment Rates and Labor Force by County.....	34

## List of Figures

Figure	Page Number
1	Counties included in the Olympia Coast National Marine Sanctuary Study Area..... 2
2	Population Density of the Olympia Coast National Marine Sanctuary Study Area 2010..... 4
3	Changes in Real Per Capita Income in the Study Area versus the US and WA. 5
4	Unemployment Rates in the Study Area versus the U.S. and WA, 1990 to 2010 7
5	Gender Distributions in the Study Area versus the U.S. and WA, 1990, 2000 and 2010..... 8
6	Race/Ethnicity in the Study Area versus the U.S. and WA, 2010..... 9
7	Race/Ethnicity in the Study Area, 1990, 2000 and 2010..... 10
8	Age Distributions in the Study Area versus the U.S. and WA, 2010..... 11
9	Age Distribution in the Study Area, 1990, 2000, and 2010..... 12
10	Labor Force Growth 1990-2000 and 2000-2010 in WA versus the Study Area... 14
11	Income by Place of Work as a Percent of Income by Place of Residence in the Study Area versus WA 2000, 2005, and 2010..... 17
12	Total Employment in the Study Area versus WA 1990-2000 and 2000-2010..... 18
13	Proprietor’s Employment as a percent of total employment in the Study Area. Versus WA 1990, 2000 and 2010..... 19
14	Proprietor’s Income as a percent of total income in the Study Area versus WA 1990, 2000, and 2010..... 20
15	Percent of Personal Income by Industry for the Study Area versus WA 2010.... 22

## List of Figures (continued)

Figure		Page Number
16	Percent of Employment by Industry for the Study Area versus WA 2010.....	23

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## **Introduction**

This report is a product of the West Coast Region Socioeconomic Plan 2013 – 2014. “Study Area Profiles” were given a top priority for all Office of National Marine Sanctuary West Coast Region sites. This report also meets the strategy of making existing socioeconomic information available, as called for in the Socioeconomic Action Plan, in the Olympic Coast National Marine Sanctuary’s (OCNMS) 2011 Management Plan.

Study area profiles provide the basis of analyses to establish the dependencies of local communities/economies on sanctuary resource uses and for assessing how people can adapt to or mitigate policy/management changes that are estimated to impact their levels of use. Profiles include a county or collection of counties where the majority of economic impacts (e.g. sales/output, income and employment) and social impacts take place that are associated with use of sanctuary resources. A standard profile includes information on population, population density, demographics of the study area population (e.g. sex, race/ethnicity, and age), poverty rate, unemployment rate, income by place of work/industry, employment by industry, income by place of residence, and per capita income. All of these measurements are available from existing sources and can be easily updated.

The geographic scope i.e. collection of counties that define a study area for a sanctuary is an evolving process. An initial assessment is done based on past studies of sanctuary resource use and where the economic and social (socioeconomic) impacts were known to take place. In many cases, such as in OCNMS, very little is known. Therefore the “Study Area” for OCNMS is a starting point and will be revised as additional research is conducted and more details become known about the extent of where socioeconomic impacts take place from all the different uses of resources within the sanctuary. Figure 1 shows a map with all the counties highlighted that currently define the “Study Area” for OCNMS.

## **Population and Key Measurements on Economic Status of the Study Area**

Population is a major driver of any study area. When assessing the conditions of sanctuary resources in ONMS Condition Reports, population is a key driver behind the pressures placed on sanctuary resources, but many in the population are also beneficiaries of the ecosystem services generated from sanctuary resources. Here we present information on the total population by county, population density by county, population growth for the study area, and projected population growth for the study area. For some key measures of the economic status of the study area, we also present per capita income, poverty rates, and unemployment rates as key indicators in this section. We compare the study area to the U.S. and Washington (WA) for status and trends in selected measures (Table 1).



Figure 1. Counties included in the Olympic Coast National Marine Sanctuary (OCNMS) Study Area.

**Population.** The “Study Area” population covers three Washington counties with a population of over 170,000 in 2010, which is approximately 2.6% of Washington’s total population. The most populated county in the study area is Grays Harbor with over 72,000 people. The least populated county is Jefferson with a population of just under 30,000 (Table 1). Greater detail by county can be found in Appendix Table A.2.

**Population Growth.** For the period of 1970 to 1980, the Study Area’s population grew faster than both the U.S. and WA. For the periods of 1980 to 1990, 1990 to 2000, and 2000 to 2010, the population of the Study Area grew slower than both the U.S. and WA (Table 2).

**Projected Population Growth.** The Study Area’s population is projected to grow at lower rates than the 2000 to 2010 period for the period from 2010 to 2040 according to Woods and Poole (2011) (Table 2).

**Population Density.** Population density is an indicator of the extent of the pressures that the Study Area’s population might have on sanctuary resources. Population density is low relative to the U.S. and WA in all counties. The most densely populated county is Clallam with 41 people per square mile. The least densely populated is Jefferson with 17 people per square mile (Table 1 and Figure 2).

Table 1. Selected Socioeconomic Measures for Description of the Study Area

County	2010 Population	Population Change (%) 2000-2010	2010 Population Density <sup>1</sup>	2010 Per Capita Income (\$)	2010 Persons Below Poverty (%)	2010 Unemployment Rate (%)
Clallam	71,404	9.63	41	35,048	14.30	10.6
Grays Harbor	72,348	7.12	38	28,938	16.14	13.6
Jefferson	29,709	12.64	17	40,444	13.54	9.9
<b>Study Area Total</b>	<b>173,461</b>	<b>9.10</b>	<b>32</b>	<b>33,424</b>	<b>13.57</b>	<b>11.8</b>
<b>Washington</b>	<b>6,742,950</b>	<b>12.59</b>	<b>98</b>	<b>42,024</b>	<b>12.52</b>	<b>10.5</b>
<b>U.S.</b>	<b>308,745,538</b>	<b>9.71</b>	<b>87</b>	<b>39,791</b>	<b>13.25</b>	<b>9.6</b>

1. Number of people per square mile.

Sources: U.S. Department of Commerce, Bureau of the Census and the Bureau of Economic Analysis, Regional Economic Information System

Table 2. Population Growth and Projected Growth

Measurement/Time Period	US	Washington	Study Area
<b>Population Growth (%)</b>			
1970 to 1980	11.59	17.50	21.61
1980 to 1990	9.81	15.09	4.87
1990 to 2000	13.09	17.43	10.71
2000 to 2010	9.53	12.35	9.42
<b>Population Projections (%)<sup>1</sup></b>			
2010 to 2020	--	--	6.59
2020 to 2030	--	--	5.98
2030 to 2040	--	--	5.49

1. Woods and Poole would not authorize NOAA to report US and Washington projections.

Sources: U.S. Department of Commerce, Bureau of the Census and Woods and Poole.

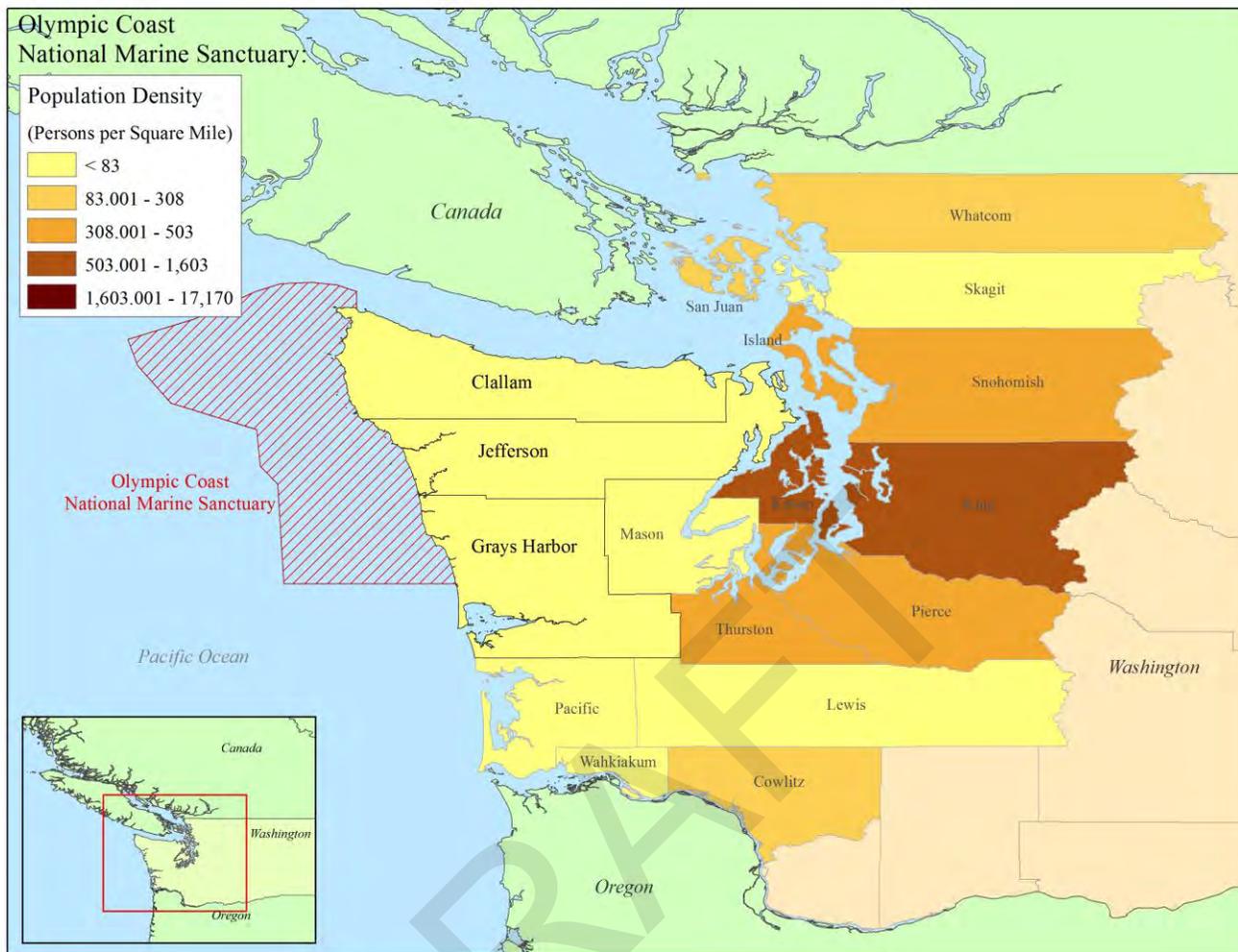


Figure 2. Population Density of the Olympic Coast National Marine Sanctuary (OCNMS) Study Area, 2010

**Per Capita Income.** Per capita income is an indicator for the health and economic status of a community. In 2010, per capita income in the Study Area was \$33,424 and ranged from a high of \$40,444 in Jefferson County to a low of \$28,938 in Grays Harbor. In 2010, per capita income in the Study Area was lower than that of both the U.S. and WA (Table 1). Real per capita income (adjusted for inflation) grew slower in the Study Area relative to the U.S. and WA for the period 1990 to 2000, but grew faster than the U.S. and WA for the periods 2000 to 2005 and 2005 to 2010 (Table 3 and Figure 3). Greater detail by county can be found in Appendix Table A.2.

Real per capita income in the Study Area grew slower relative to the U.S. and WA for the period 1990 to 2000, but grew faster than the U.S. and WA for the periods 2000 to 2005 and 2005 to 2010.

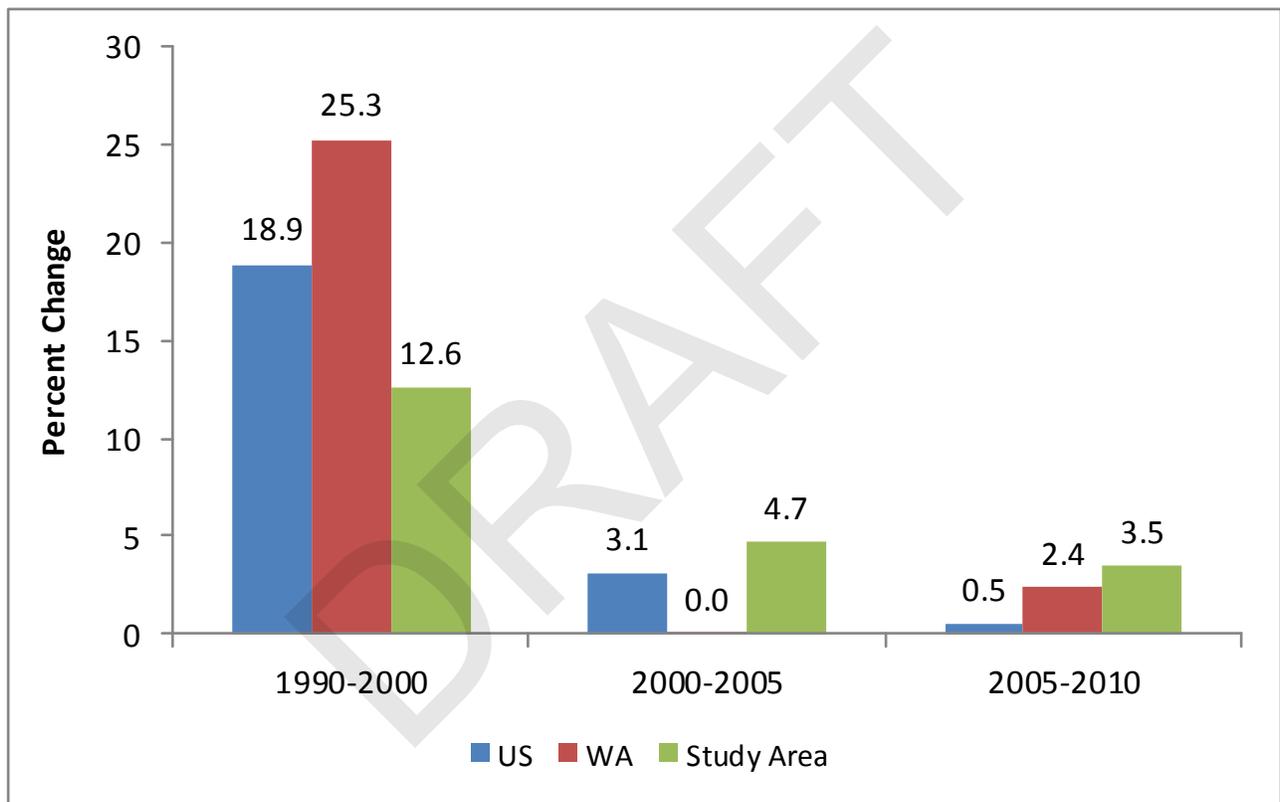


Figure 3. Changes in Real Per Capita Income in the Study Area versus the U.S. and WA

Table 3. Unemployment Rates and Per Capita Personal Income

Measurement/Year	US	Washington	Study Area
<b>Unemployment Rate (%)</b>			
1990	5.60	5.15	7.68
2000	4.00	4.96	6.80
2005	5.10	5.52	6.75
2010	9.60	9.93	11.77
<b>Per Capita Income</b>			
1990	\$19,354.00	\$19,637.00	\$ 16,416.61
2000	\$30,319.00	\$32,410.00	\$ 24,354.54
2005	\$35,452.00	\$36,766.00	\$ 28,923.35
2010	\$39,791.00	\$42,024.00	\$ 33,419.55
<b>Per Capita Income (2013\$)</b>			
1990	\$34,099.76	\$34,598.38	\$ 28,924.39
2000	\$40,545.06	\$43,341.32	\$ 32,568.89
2005	\$41,801.77	\$43,351.12	\$ 34,103.78
2010	\$42,021.64	\$44,379.82	\$ 35,293.01

Sources: U.S. Department of Commerce, Bureau of Economic Analysis, Regional Economic Information System and U.S. Department of Labor, Bureau of Labor Statistics, Consumer Price Index

**Unemployment Rates.** Another indicator of Study Area economic health is the unemployment rate. In 2010, the unemployment rate was 11.8% in the Study Area, ranging from a low of 9.9% in Jefferson County to a high of 13.6% in Grays Harbor County. In 2010, the Study Area’s unemployment rate was higher than the U.S. and WA (Table 1). Historically, unemployment rates were also higher in the Study Area than in the U.S. and WA in 1990, 2000, 2005, and 2010 (Table 3 and Figure 4). Greater detail by county can be found in Appendix Table A.4.

Unemployment rates were higher in the Study Area than in the U.S. and WA for all four years. Since 2000, unemployment rates have either increased or remained the same for all three areas.

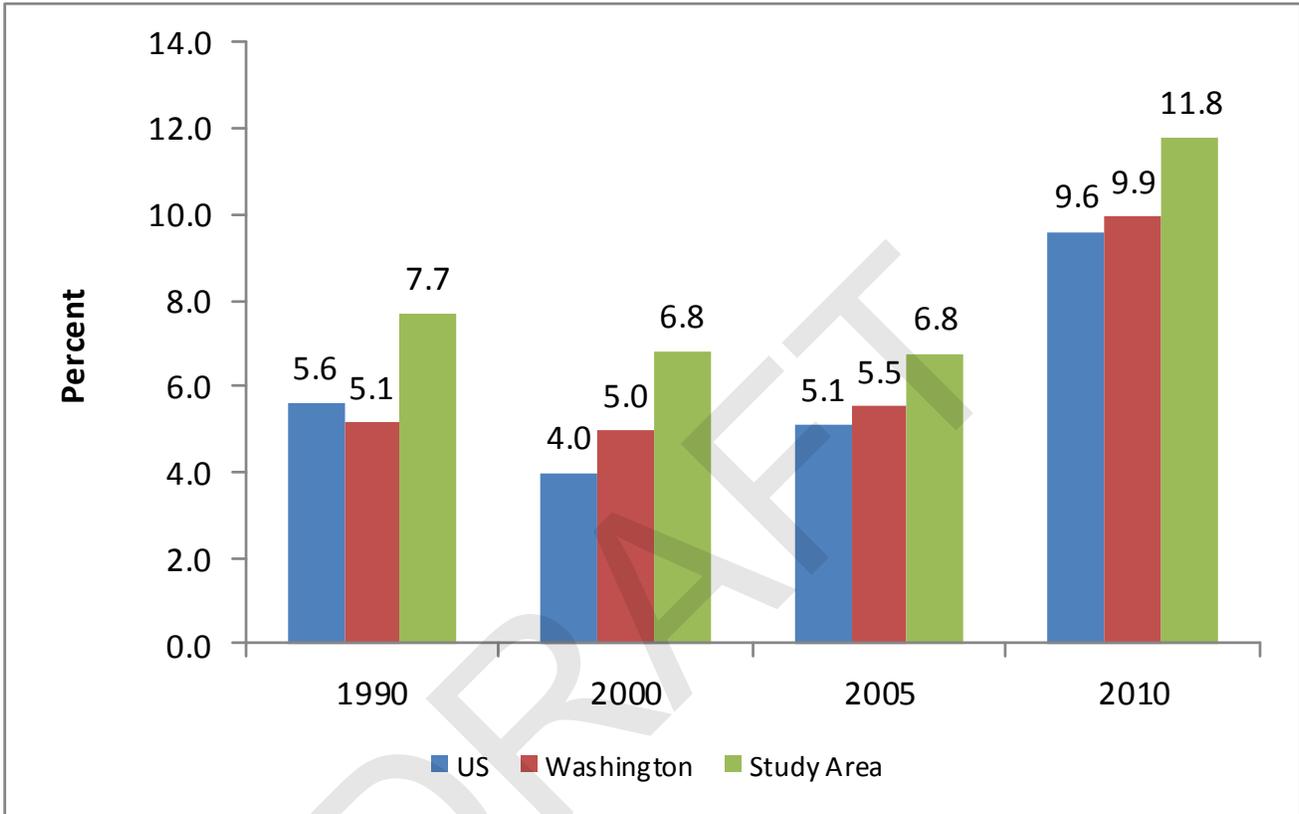


Figure 4. Unemployment Rates in the Study Area versus the U.S. and WA, 1990 to 2010

## Demographic Profiles

For demographic profiles, gender, race/ethnicity and age were chosen as the most important population characteristics. Race and Ethnicity are treated separately in the Census of the U.S. Racial categories include “White”, “Black or African American”, “Asian”, “Alaskan Native or Native American”, “Native Hawaiian or Other Pacific Islander”, and “Multiple Races”. Hispanic represents ethnicity and in the Census is recorded separately from race with any race being eligible for being Hispanic. In the Census, Hispanic is Hispanic, Latino, or of Spanish Origin. Race and Ethnicity were combined in one graph; percentages will not add up to 100%. Greater detail by county can be found in Appendix Table A.1.

**Gender:** Gender distribution has changed over time in the Study Area from 1990 to 2010. In 1990 and 2000, there was a greater proportion of females than males. However, in 2010 the proportion of males was higher than females. In 1990, the proportion of males was higher than both the U.S. and WA, and the proportion of females was lower than both. By 2010, this became more dramatic. Consistently, the Study Area has a higher proportion of males, and a lower proportion of females than the U.S. (Figure 5).

Gender distribution has changed over time in the Study Area from 1990 to 2010. In 1990, the proportion of males was higher than either the U.S. or WA, and the proportion of females lower than both. By 2010, this became more dramatic. Consistently, the Study Area has had a higher proportion of males than the U.S., and a lower proportion of females than the U.S.

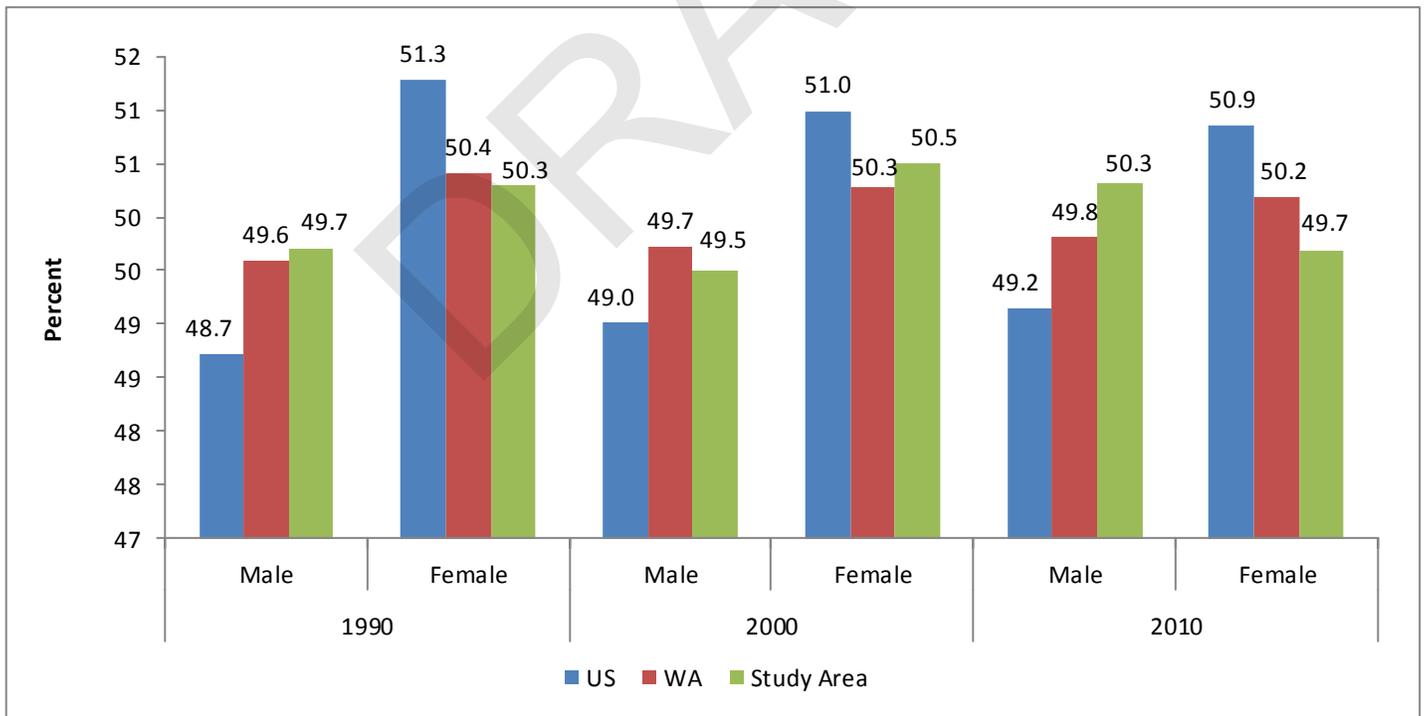


Figure 5. Gender Distributions in the Study Area versus the U.S. and WA, 1990, 2000 and 2010

**Race/Ethnicity.** In 2010, the "White" population of the Study Area was higher than that of the U.S. or WA. The "American Indian" population was also higher, due to several Tribal Reservations in the study area. All other populations were lower than the U.S. and WA (Figure 6). The "White" population in the Study Area has slowly declined from 1990 to 2010. However, "Hispanic" and "Other" populations have increased from 1990 to 2010. The "Black or African American", "American Indian", and "Asian" populations have not drastically changed (Figure 7).

In 2010, the "White" and "American Indian" populations of the Study Area were higher than that of the U.S. or WA. All other populations were lower than the U.S. and WA.

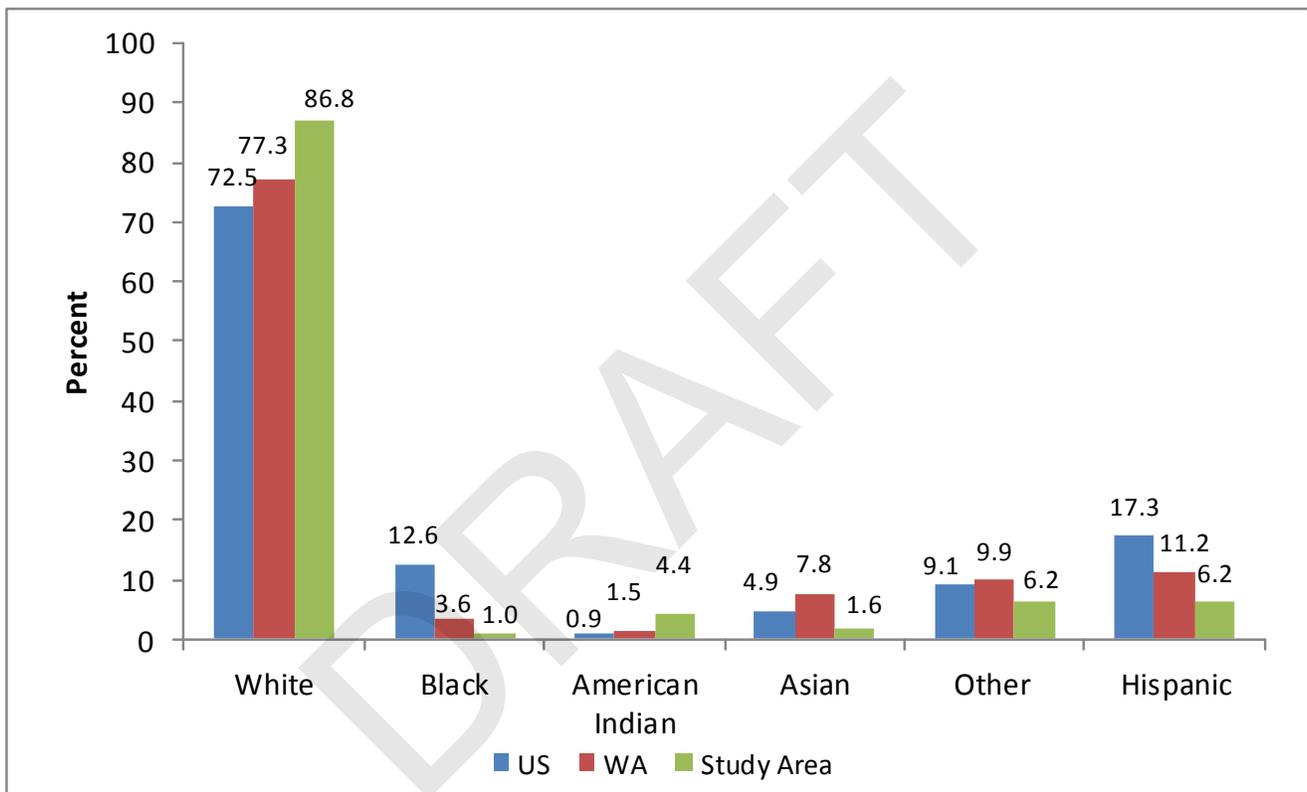


Figure 6. Race and Ethnicity in the Study Area versus the U.S. and WA, 2010

The "White" population in the Study Area has slowly declined from 1990-2010. The "Hispanic" and "Other" populations have increased. Other population groups have not dramatically changed.

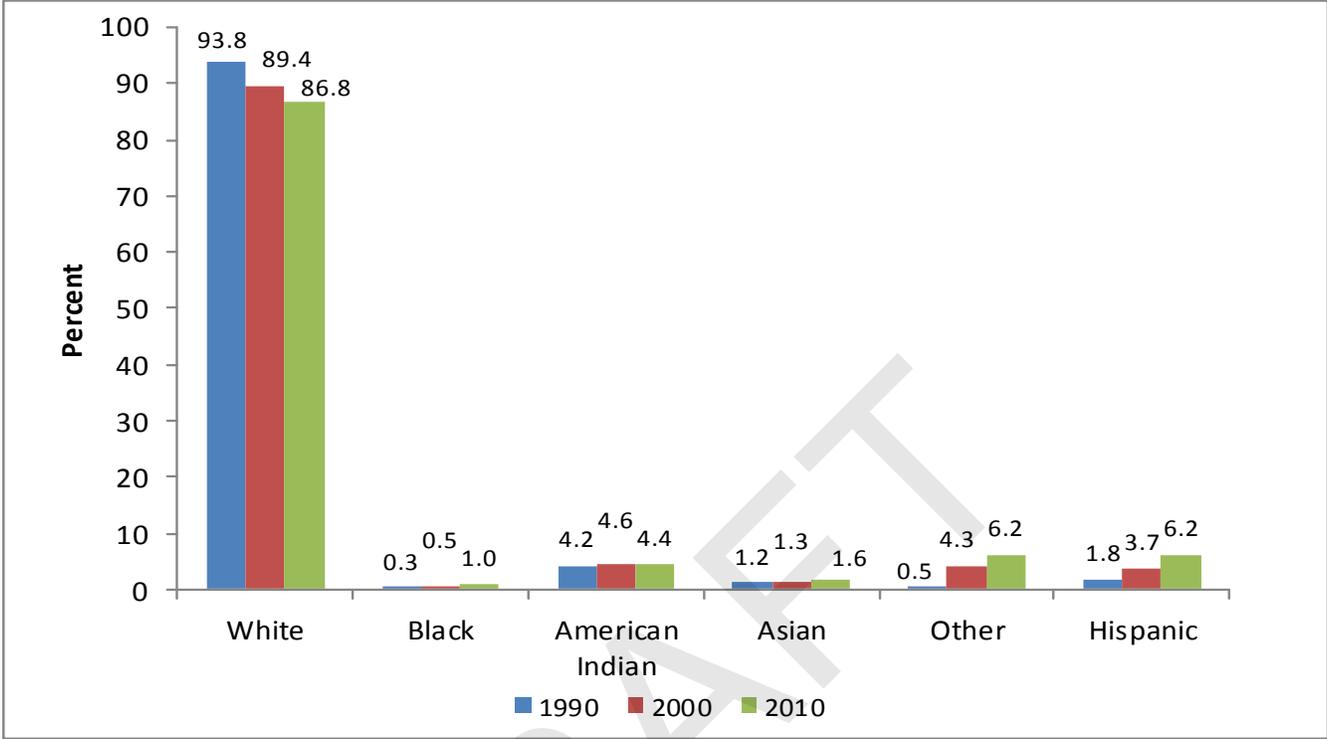


Figure 7. Race and Ethnicity in the Study Area, 1990, 2000, and 2010

**Age.** In 2010, the age distribution of the Study Area was very different than the U.S. and WA. It was skewed to the right, with a much higher proportion of elderly (age 55 or older), and a lower population of children, young adults, and middle age adults (age 35 to 44) (Figure 8). The age distribution of the Study Area has changed over time. The proportion of the population ages 0 to 44 has generally decreased since 1990. The proportion of the population ages 45 and over has generally increased since 1990. The increase of proportion is emphatic in the 55 to 64 age group (Figure 9).

In 2010, the age distribution of the Study Area was very different than the U.S. and WA. It was skewed to the right with a much higher proportion of elderly and a lower population of children, young adults, and adults.

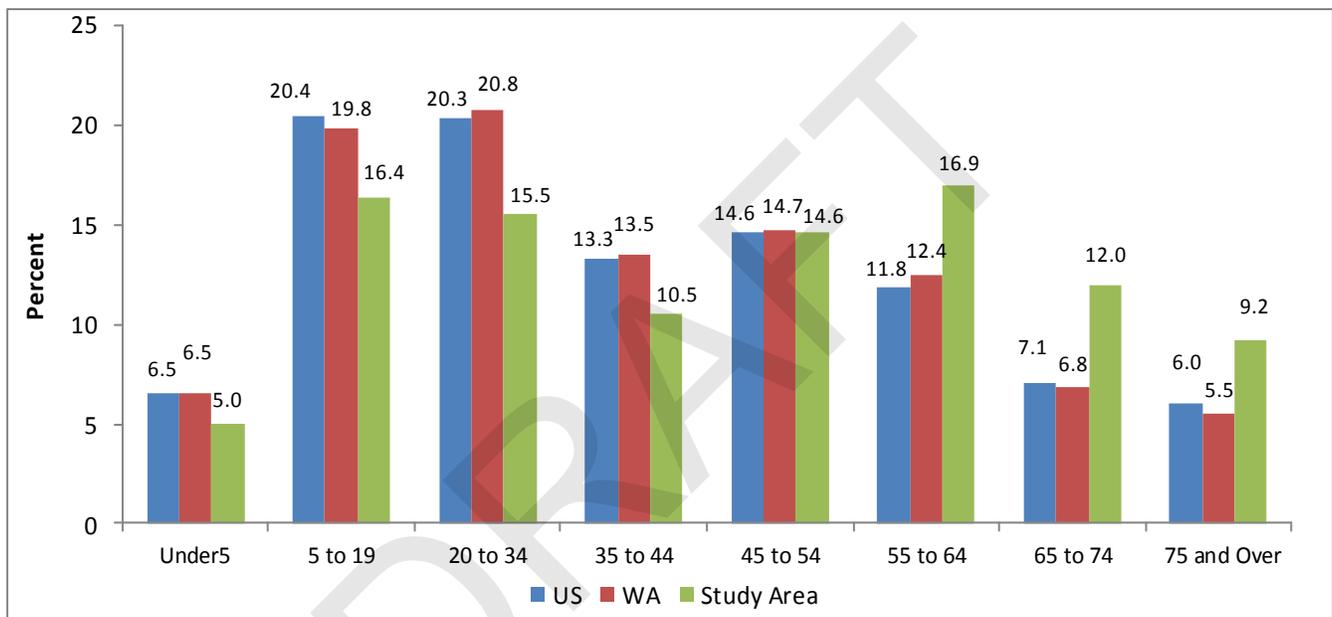


Figure 8. Age Distributions in the Study Area versus the U.S. and WA, 2010

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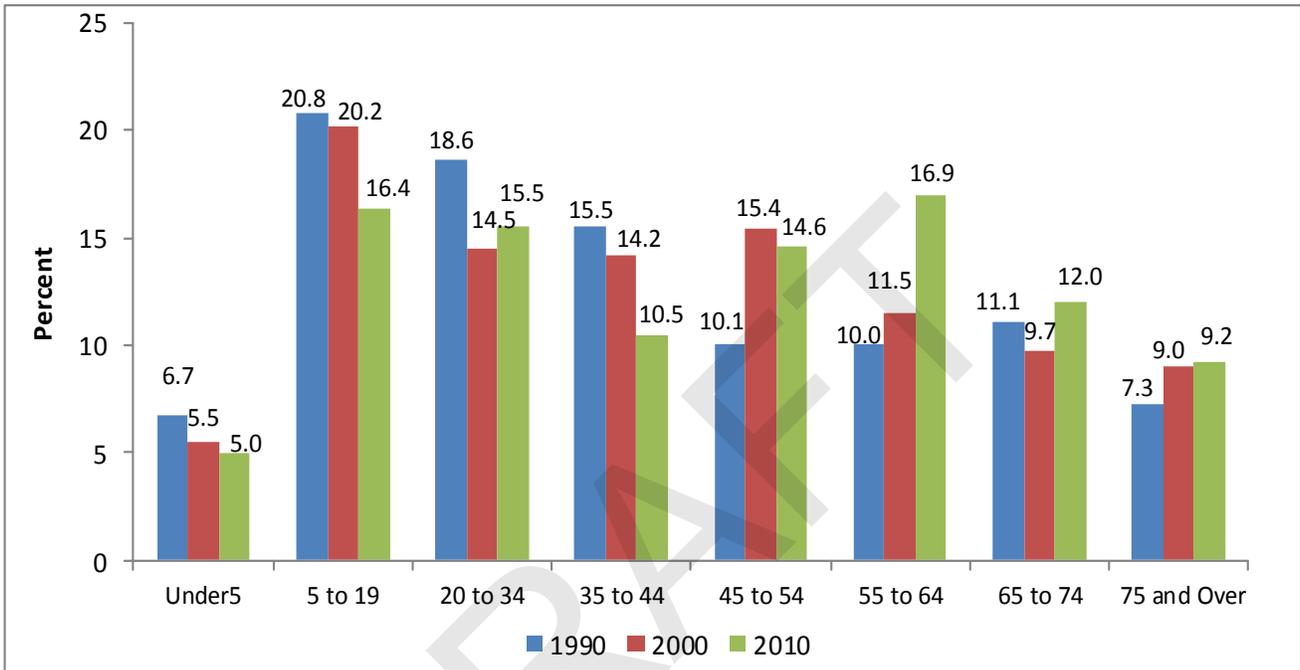


Figure 9. Age Distribution in the Study Area, 1990, 2000, and 2010

## **Economic Profile**

In the previous section, we addressed a couple of key indicators of the health of the economy using per capita income, poverty rates, and unemployment rates. Here we look at the total personal income both generated within the Study Area (income by place of work) and what is received by residents of the Study Area (income by place of residence). The U.S. Department of Commerce, Bureau of Economic Analysis maintains the national income accounts on both these bases. People that live in a given area often receive income not derived by work in the area where they live. Many people commute to places of work outside the county where they live. People receive interest, dividends, and capital gains from investments. Retirees receive pensions and social security payments. The unemployed receive unemployment compensation. Income-by-Place-of-Work as a percent of Income-by-Place-of-Residence is usually a good indicator of whether an area has a significant retirement community. Sources of income not tied to the status of work in the local economy can provide more resilience to the economy, making it less subject to ups and downs of local work.

The labor force, total employment, and their respective growth rates are good indicators of a healthy or stagnant economy and the opportunities for employment. These are important elements in assessing whether people can adapt to changes in resource management/policy decisions that may displace them from resource use.

We also look at proprietors' income, proprietors' employment, and the proportion of the Study Area's income and employment accounted for by proprietors. This is usually a good indicator of small businesses, which are often connected to resource use in the sanctuary (e.g. commercial fishing operations and recreation-tourist related businesses).

We also explore personal income and employment by industry sector. This is important for economic impact analyses of resource management/policy decisions. When we are able to map the spending in the local economy, as related to resource use in the sanctuary, to economic sectors, we can then use input-output models such as IMPLAN. The IMPLAN model allows us to estimate the multiplier impacts on the local economy and assess the proportion of the local economy affected.

There are some problems with obtaining complete information by economic sector for any county since there are rules that don't allow the government to publish data on a sector in a county if there are less than 10 firms in the county. The data gets reported as "D" meaning "Non-disclosure". For Study Area totals, the totals for a sector are reported here as "NA" or not available if at least one county in the Study Area has, within a given sector, less than 10 firms in that sector. It may be possible to get Study Area totals for the sector on special request from the U.S. Department of Commerce, Bureau of Economic Analysis if there are more than 10 firms in the sector throughout the Study Area.

**Labor Force.** In 2010, there were almost 74,000 people in the Study Area labor force, which is approximately 2% of the entire WA labor force. From 1990 to 2010, the labor force grew slower than that of WA. Both experienced less rapid growth from 2000 to 2010 compared to 1990 to 2000 (Table 4 and Figure 10). Greater detail by county is in Appendix Table A.4.

Table 4. Labor Force and Labor Force Growth

Year	Washington	Study Area
1990	2,537,042	59,166
2000	3,050,027	66,713
2010	3,516,010	73,613
<b>Labor Force Growth (%)</b>		
1990-2000	20.2	12.8
2000-2010	15.3	10.3

Source: U.S. Department of Labor, Bureau of Labor Statistics

The Study Area labor force grew more slowly than that of WA over the 1990 to 2010 period. Both experienced less rapid growth from 2000 to 2010 compared to 1990 to 2000.

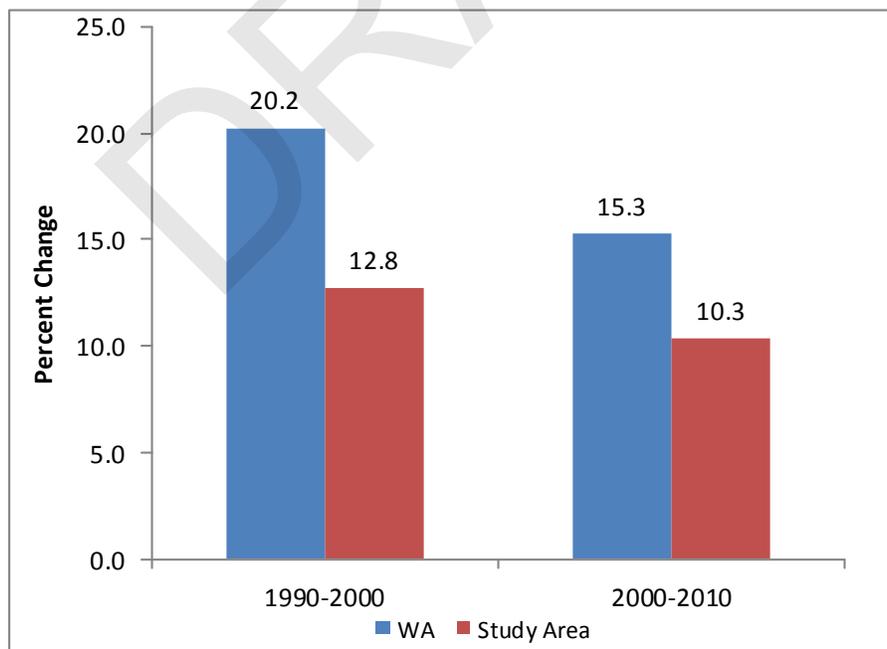


Figure 10. Labor Force Growth 1990 to 2000 and 2000 to 2010 in WA versus the Study Area

**Personal Income.** The U.S. Department of Commerce, Bureau of Economic Analysis (BEA) maintains two concepts of personal income in their Regional Economic Information System. Income is reported by “place-of-work” and by “place-of-residence”. Income by “place-of-work” is the income generated by work in the geographic area of study, and is reported by economic sector (e.g. farm, manufacturing, retail, wholesale, etc.). Income by “place-of-residence” is reported by where the income is received. It is the total amount of income received by those who live in the Study Area. It includes income from investments, pensions, social security payments, and other transfer payments. In addition, it includes income earned in work outside the Study Area. This would include the income a county resident earns working in a county outside the Study Area. The amount of income earned by people who live outside the Study Area is subtracted as they take their incomes home to areas outside the Study Area. This information comes from the “Census of Inter-county Commuters”. BEA uses the information to form what is called the “residence adjustment”, which can be either positive or negative depending on whether people living in and working outside the Study Area are earning more or less than people living outside and working inside the Study Area. Economists often refer to this as the “Bedroom Community Effect”. In using the IMPLAN input-output model to estimate the economic impacts of activity in the Study Area, an important first step is defining the study area of impact. Since IMPLAN assumes that all those who work in the study area live in the study area, and thus spend most of their income there, defining the study area such that the “bedroom community effect” is small makes estimates more accurate. Income by “place-of-work” as a percent of “total income by place-of-residence” serves as an indicator of two key Study Area economic traits: whether it is an economy with a significant “bedroom community” and/or whether there is a large retirement community. When the percent of income by “place-of-work” is low relative to “income by place-of-residence” (below 100%, Table 4), economists then look to the “resident adjustment” and the amount of transfer payments in pensions and social security payments to further describe the nature of the local economy.

In 2010, income by place of work as a percent of income by place of residence was 48.9% in the Study Area. Clallam and Grays Harbor counties show similar income by place of work as a percent of income by place of residence with 50.4% and 55%, respectively. In Jefferson County, income by place of work as a percent of income by place of residence is only slightly over a third at 35.2% (Table 5). All counties in the Study Area have incomes by place of work lower than those of WA. Income by place of work as a percent of income by place of residence was higher in WA than in the Study Area over the 2000 to 2010 time period. From 2000 to 2005 the Study Area percent increased while WA decreased. Both decreased from 2005 to 2010 (Table 6 and Figure 11).

Table 5. Personal Income by Place of Residence and by Place of Work, 2010

County	Income by Place of Residence (\$000)	Income by Place of Work (\$000)	Work as Percent of Residence
Clallam	\$2,506,405	\$1,262,092	50.4
Grays Harbor	\$2,108,704	\$1,160,740	55.0
Jefferson	\$1,209,746	\$425,377	35.2
<b>Study Area Total</b>	<b>\$5,824,855</b>	<b>\$2,848,209</b>	<b>48.9</b>

Source: U.S. Department of Commerce, Bureau of Economic Analysis, Regional Economic Information System

Table 6. Personal Income by Place of Residence and Place of Work

Year/Area	Income by Place of Residence (\$Millions)	Income by Place of Work (\$Millions)	Work as Percent of Residence
<b>2000</b>			
Study Area	\$3,842	\$2,077	54.1
Washington	\$191,562	\$149,954	78.3
<b>2005</b>			
Study Area	\$4,849	\$2,731	56.3
Washington	\$230,057	\$177,252	77.0
<b>2010</b>			
Study Area	\$5,825	\$2,848	48.9
Washington	\$283,368	\$209,894	74.1

Source: U.S. Department of Commerce, Bureau of Economic Analysis, Regional Economic Information System

Income by place of work as a percent of income by place of residence was lower in the Study Area than in WA over the 2000 to 2010 time period. From 2000 to 2005 the Study Area percent increased while WA decreased. Both decreased from 2005 to 2010.

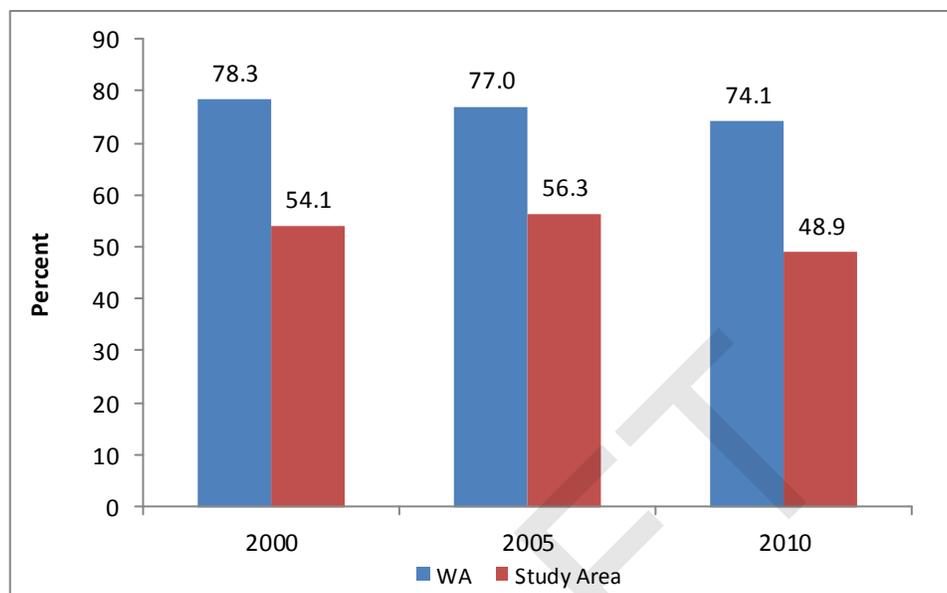


Figure 11. Income by Place of Work as a Percent of Income by Place of Residence in the Study Area versus WA, 2000, 2005, and 2010

**Employment.** In 2010, over 79,600 people were employed in the Study Area, which is approximately 2.1% of all employment in WA (Table 7). Total employment in the Study Area grew slower than that of WA from 1990 to 2010. Both experienced a decrease in total employment growth from the period 1990 to 2000 to the period 2000 to 2010 (Figure 12). Greater detail by county can be found in Appendix Table A.3.

Table 7. Total Employment: 1990, 2000 and 2010

County	1990	2000	2010
Clallam	26,364	32,023	35,080
Grays Harbor	30,353	32,351	30,543
Jefferson	9,262	13,195	13,992
<b>Study Area Total</b>	<b>65,979</b>	<b>77,569</b>	<b>79,615</b>
<b>Washington</b>	<b>2,842,491</b>	<b>3,522,932</b>	<b>3,783,901</b>

Source: U.S. Department of Commerce, Bureau of Economic Analysis  
Regional Economic Information System

Total employment in the Study Area grew slower than that of the state of Washington from 1990 to 2010. Both experienced a decrease in total employment growth from 1990-2000 to 2000-2010

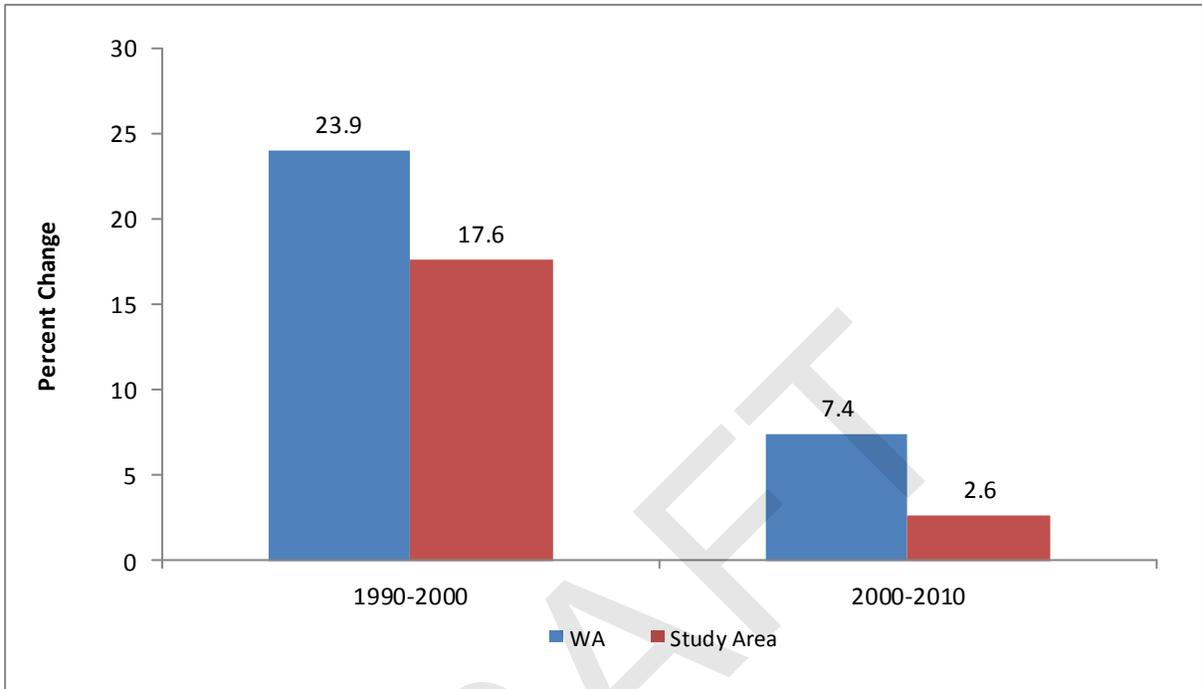


Figure 12. Total Employment in the Study Area versus WA, 1990 to 2000 and 2000 to 2010

**Proprietor’s Income and Employment.** When analyzing the potential impacts of sanctuary management strategies and regulations, it is a requirement under the Regulatory Flexibility Act to analyze the potential impacts on small entities, which are primarily small businesses. Usually, almost all businesses related to either the commercial fishing industry or the recreation-tourist industries are small businesses. Good indicators of the extent of small businesses in the Study Area are the extent of proprietor’s income and employment.

In 2010, there were 22,780 proprietors employed in the Study Area making up 28.6% of total employment in the Study Area. The proprietors earned a little more than \$359 million in that year, which was 12.6% of income earned by place of work in the Study Area (Table 8). The Study Area had both a higher percent of its employment and income from proprietors than WA during the 1990 to 2010 period. From 1990 to 2010, the percent of total income from proprietors decreased in the Study Area. However, both areas demonstrate an increasing proportion of employment from proprietors during the 1990 to 2010 period (Figures 13 and 14). Greater detail by county can be found in Appendix Table A.2.

Table 8. Proprietor's Income and Employment

Year/Area	Proprietor's Income (\$000)	%	Proprietor's Employment	%
<b>1990</b>				
Study Area	\$215,493	15.3	15,598	23.6
Washington	\$8,037,709	10.8	492,406	17.3
<b>2000</b>				
Study Area	\$288,610	13.9	21,088	27.2
Washington	\$16,728,972	11.2	612,225	17.4
<b>2010</b>				
Study Area	\$359,924	12.6	22,780	28.6
Washington	\$22,879,136	10.9	766,834	20.3

Source: U.S. Department of Commerce, Bureau of Economic Analysis,  
Regional Economic Information System

The Study Area had a higher proportion of its employment from proprietors than that of WA during the 1990 to 2010 period.

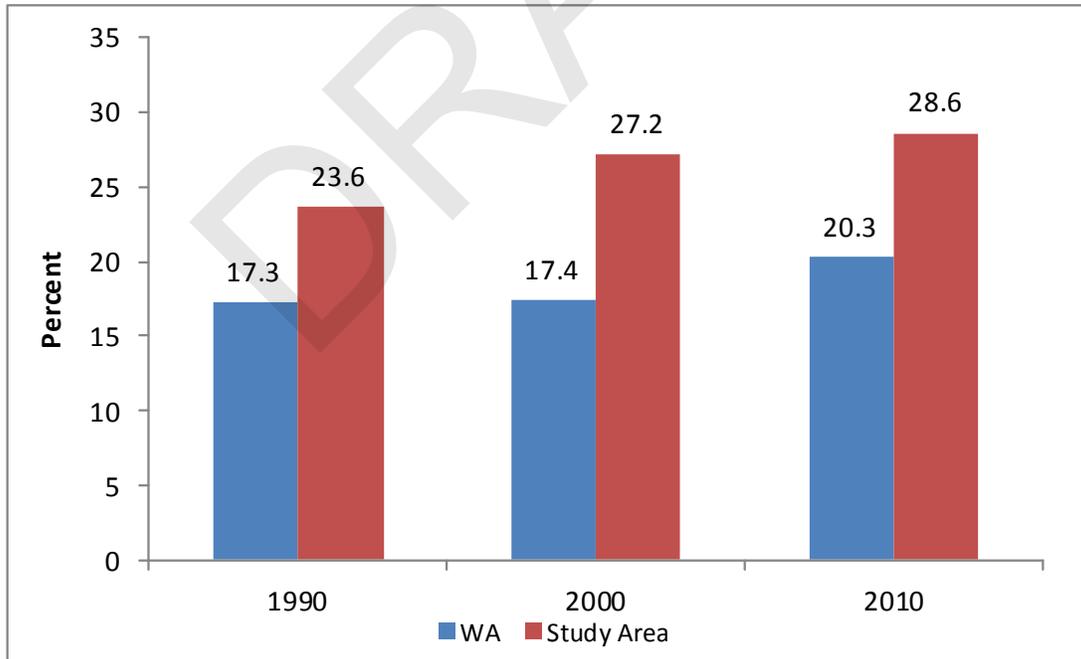


Figure 13. Proprietor's Employment as a percent of total employment in the Study Area versus WA, 1990, 2000, and 2010

The Study Area had a higher proportion of its income from proprietors than WA during the 1990 to 2010 period. From 1990 to 2010, percent of total income from proprietors decreased in the Study Area.

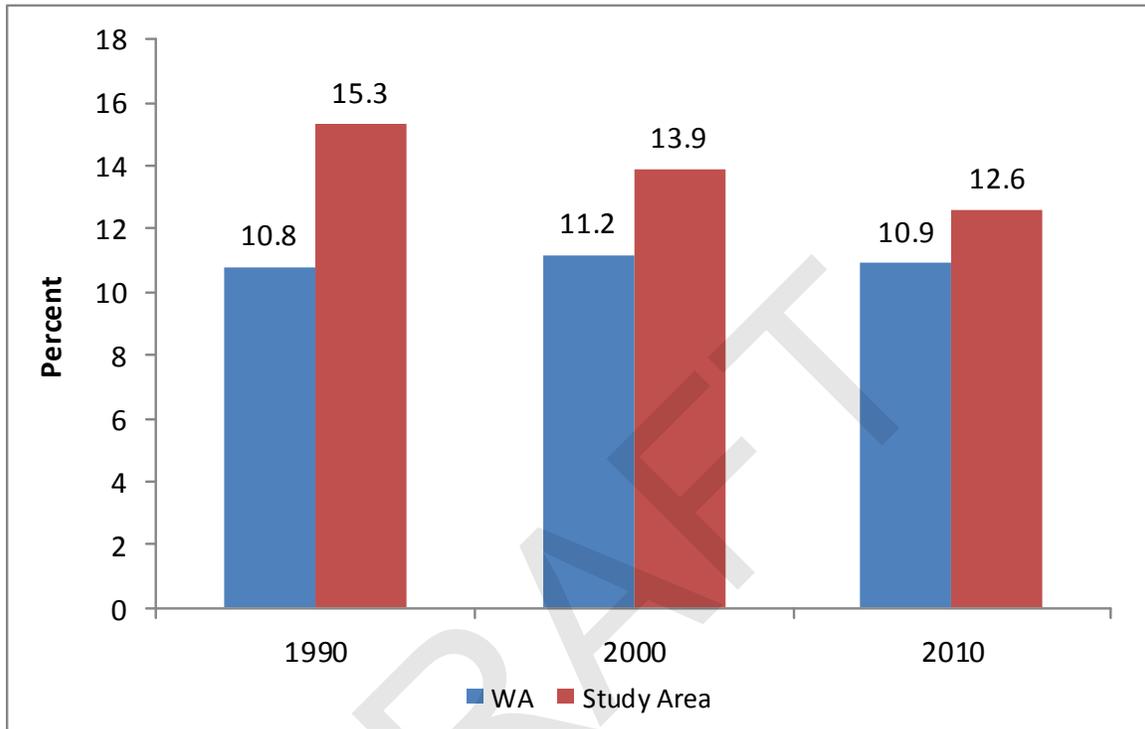


Figure 14. Proprietor's Income as a percent of total income in the Study Area versus WA, 1990, 2000, and 2010

***Personal Income and Employment by Industry Sector.*** The U.S. Department of Commerce, Bureau of Economic Analysis (BEA) in its Regional Economic Information System reports income and employment for different geographic areas by industry or economic sector using the North American Industry Classification System (NAICS) industry classification codes. The NAICS codes identify different sectors of the economy using codes up to four digits. The higher the number is within a sector, the more specific the industry. For example, “retail trade” is the 44-45 series. So at the 44-45 level, all retail trade is included. Code 441 is “motor vehicle and parts dealers” and code 442 is “Furniture and home furnishing stores”. For the counties in our Study Area, we only report at the highest level, i.e. for each series only the “00” level of detail. Even here, for some counties within the Study Area, the information is classified as “D” for non-disclosure meaning the numbers cannot be reported because there are less than 10 firms in that industry or economic sector in the county. Thus, if one county within the Study Area has less than 10 firms in a sector, the whole Study Area will be coded “D” for non-disclosure. If the entire Study Area has less than 10 firms in a given industry or economic sector, it is possible to request a special run by BEA for the Study Area totals. We have not done that here.

***Personal Income by Industry.*** In 2010, the Study Area had a higher proportion of personal income generated in the “Government and government enterprises” and “Forestry, fishing and related activities” sectors than WA with a lower proportion in “Information Services” and “Professional, scientific, and technical services”.

***Employment by Industry.*** In 2010, the Study Area had a higher proportion of employment generated in the “Government and government enterprises”, “Forestry, fishing, and related activities”, and “Retail trade” sectors than WA with a lower proportion from “Wholesale trade”, “Information services”, and “Professional, scientific, and technical services”.

Greater detail by county can be found in appendix tables A.2 and A.3.

In 2010, the Study Area had a higher proportion of personal income generated in “Government and government enterprises” and “Forestry, fishing and related activities” sectors than WA and a lower proportion from “Information Services”, and “Professional, scientific, and technical services”.

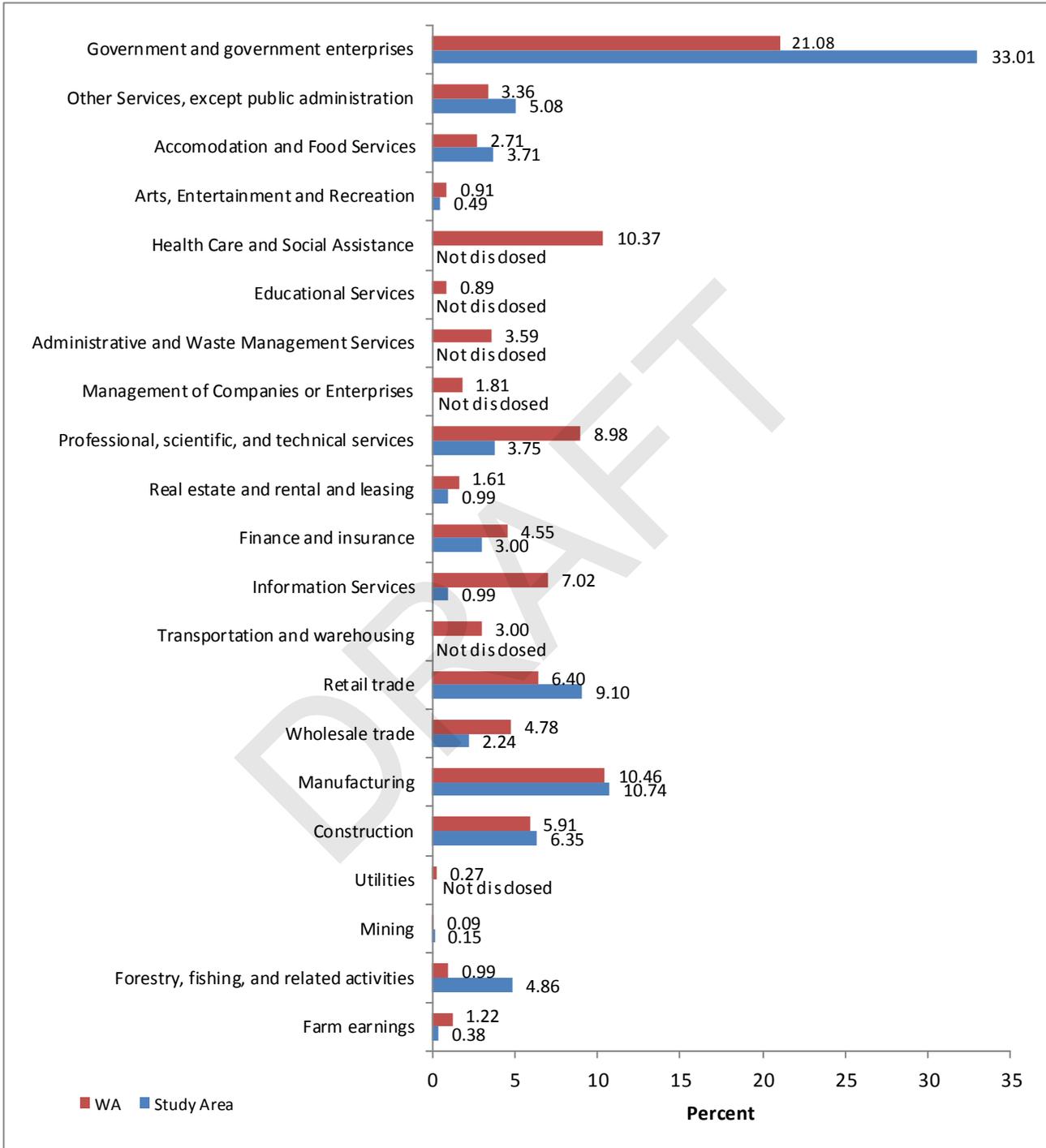


Figure 15. Percent of Personal Income by Industry for the Study Area versus WA, 2010

In 2010, the Study Area had a higher proportion of employment generated in the “Government and government enterprises”, “Forestry, fishing, and related activities”, and “Retail trade” sectors than WA with a lower proportion from “Wholesale Trade”, “Information Services”, and “Professional, scientific, and technical services”.

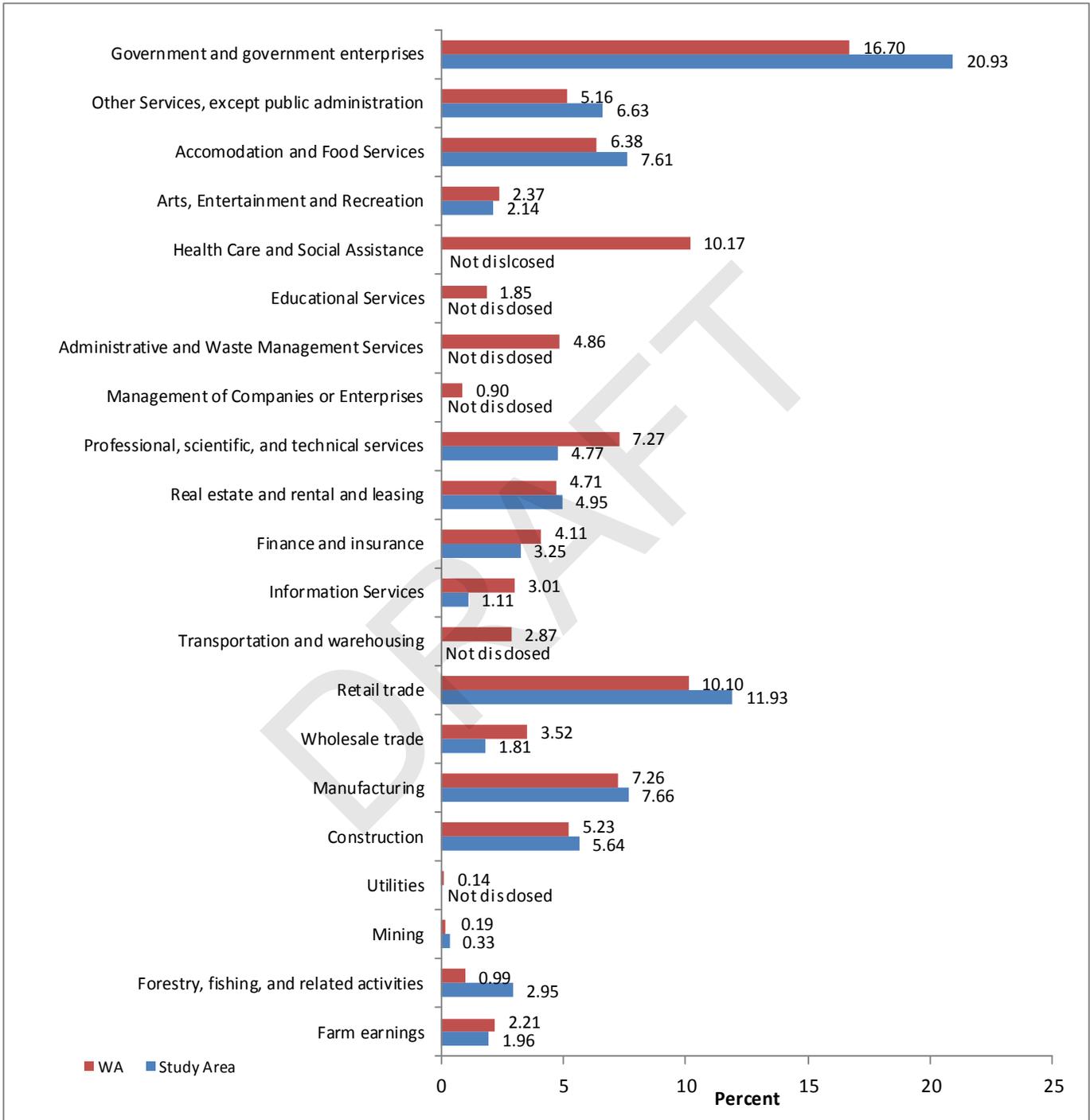


Figure 16. Percent of Employment by Industry for the Study Area versus WA, 2010

## **Future Updates**

ONMS Socioeconomics Staff at HQ is working with the National Ocean Services Special Projects Office to develop the capability to update all the information presented here with one-stop shopping on-line for all National Marine Sanctuaries. ONMS Socioeconomics at HQ has set-up a Microsoft Access database and query system to develop all the tables that appear in this report and is in the process of developing and testing a guide so that an intern or other staff member at a site could update the information in this report. The guide is expected to be completed in the summer of 2013.

Usually, the information by county available from the Bureau of the Census or the Bureau of Economic Analysis is 18 to 24 months behind the current date (2011 data will be available for most counties in June 2013).

ONMS Socioeconomic Staff at HQ will also provide all the final tables and figures in Excel files so updating final table and figure formats are more easily produced. These will be sent out to each site on CD-ROM.

As mentioned in the introduction to this report, the definition of the Study Area for any sanctuary can change based on further learning. For now, we don't currently have any detailed studies indicating the details of where the socioeconomic impacts take place from uses of resources in Olympic Coast. The current Study Area is based on our best guess of the counties likely impacted and this could change as more detailed studies are conducted on resource use from the sanctuary.

## References

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## Appendix Tables

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Table A.1. Demographic Profiles

**United States**

	1990		2000		2010	
	<i>Total</i>	<i>Percent</i>	<i>Total</i>	<i>Percent</i>	<i>Total</i>	<i>Percent</i>
<b>Gender</b>						
Male	121,172,320	48.72	137,916,186	49.01	153,566,497	49.15
Female	127,537,452	51.28	143,505,719	50.99	158,904,830	50.85
<b>Race</b>						
White	199,826,969	80.35	211,353,725	75.10	226,378,365	72.45
Black	29,930,516	12.03	34,361,740	12.21	39,390,817	12.61
American Indian	2,015,143	0.81	2,447,989	0.87	2,952,087	0.94
Asian	7,226,986	2.91	10,550,602	3.75	15,221,466	4.87
Other	9,710,157	3.90	22,707,851	8.07	28,528,592	9.13
<b>Ethnicity</b>						
Hispanic	21,900,090	8.81	35,238,481	12.52	54,166,049	17.33
<b>Age</b>						
Under5	18,264,099	7.23	19,046,753	6.67	20,426,118	6.54
5 to 19	52,932,201	20.96	61,137,533	21.40	63,859,028	20.44
20 to 34	62,112,505	24.59	58,603,337	20.52	63,403,129	20.29
35 to 44	37,619,802	14.90	45,905,470	16.07	41,554,134	13.30
45 to 54	25,465,997	10.08	37,578,610	13.16	45,494,523	14.56
55 to 64	21,120,840	8.36	24,171,231	8.46	36,924,413	11.82
65 to 74	18,219,002	7.21	18,501,149	6.48	22,025,091	7.05
75 and Over	12,976,861	5.14	16,477,823	5.77	18,784,891	6.01

**State - Washington**

	1990		2000		2010	
	<i>Total</i>	<i>Percent</i>	<i>Total</i>	<i>Percent</i>	<i>Total</i>	<i>Percent</i>
<b>Gender</b>						
Male	2,413,345	49.59	2,930,661	49.72	3,349,707	49.81
Female	2,453,347	50.41	2,963,460	50.28	3,374,833	50.19
<b>Race</b>						
White	4,313,601	88.64	4,815,072	81.69	5,196,362	77.27
Black	147,364	3.03	185,052	3.14	240,042	3.57
American Indian	83,212	1.71	91,299	1.55	103,869	1.54
Asian	211,292	4.34	342,717	5.81	521,542	7.76
Other	111,223	2.29	459,981	7.80	662,725	9.86
<b>Ethnicity</b>						
Hispanic	206,018	4.23	439,841	7.46	755,790	11.24
<b>Age</b>						
Under5	364,813	7.50	392,723	6.66	439,657	6.54
5 to 19	1,029,625	21.16	1,282,889	21.77	1,330,238	19.78
20 to 34	1,207,305	24.81	1,230,619	20.88	1,395,293	20.75
35 to 44	804,413	16.53	988,856	16.78	908,305	13.51
45 to 54	504,238	10.36	843,383	14.31	988,205	14.70
55 to 64	380,725	7.82	493,489	8.37	835,165	12.42
65 to 74	338,710	6.96	338,000	5.73	457,220	6.80
75 and Over	236,863	4.87	324,162	5.50	370,457	5.51

**Study Area - Olympic Coast**

	1990		2000		2010	
	<i>Total</i>	<i>Percent</i>	<i>Total</i>	<i>Percent</i>	<i>Total</i>	<i>Percent</i>
<b>Gender</b>						
Male	69,988	49.71	78,042	49.50	87,584	50.31
Female	70,797	50.29	79,630	50.50	86,489	49.69
<b>Race</b>						
White	132,051	93.80	140,968	89.41	151,115	86.81
Black	438	0.31	723	0.46	1,645	0.95
American Indian	5,950	4.23	7,170	4.55	7,636	4.39
Asian	1,700	1.21	2,007	1.27	2,842	1.63
Other	646	0.46	6,804	4.32	10,835	6.22
<b>Ethnicity</b>						
Hispanic	2,488	1.77	5,888	3.73	10,747	6.17
<b>Age</b>						
Under5	9,433	6.70	8,604	5.46	8,691	4.99
5 to 19	29,255	20.78	31,808	20.17	28,466	16.35
20 to 34	26,157	18.58	22,838	14.48	26,944	15.48
35 to 44	21,790	15.48	22,318	14.15	18,281	10.50
45 to 54	14,183	10.07	24,339	15.44	25,363	14.57
55 to 64	14,082	10.00	18,205	11.55	29,448	16.92
65 to 74	15,617	11.09	15,364	9.74	20,815	11.96
75 and Over	10,268	7.29	14,196	9.00	16,065	9.23

**County**

**Clallam County, WA (53009)**

	1990		2000		2010	
	<i>Total</i>	<i>Percent</i>	<i>Total</i>	<i>Percent</i>	<i>Total</i>	<i>Percent</i>
<b>Gender</b>						
Male	28,107	49.78	32,015	49.62	35,429	49.62
Female	28,357	50.22	32,510	50.38	35,975	50.38
<b>Race</b>						
White	52,527	93.03	57,477	89.08	62,092	86.96
Black	336	0.60	464	0.72	596	0.83
American Indian	2,633	4.66	3,244	5.03	3,630	5.08
Asian	744	1.32	931	1.44	1,101	1.54
Other	224	0.40	2,409	3.73	3,985	5.58
<b>Ethnicity</b>						
Hispanic	991	1.76	2,189	3.39	3,627	5.08
<b>Age</b>						
Under5	3,572	6.33	3,314	5.14	3,363	4.71
5 to 19	11,331	20.07	12,457	19.31	11,214	15.71
20 to 34	10,272	18.19	8,972	13.90	10,649	14.91
35 to 44	8,530	15.11	8,758	13.57	6,944	9.72
45 to 54	5,455	9.66	9,604	14.88	9,977	13.97
55 to 64	5,776	10.23	7,653	11.86	12,068	16.90
65 to 74	6,884	12.19	6,981	10.82	9,216	12.91
75 and Over	4,644	8.22	6,786	10.52	7,973	11.17

**Study Area (continued)**  
**Grays Harbor County, WA (53027)**

	1990		2000		2010	
	<i>Total</i>	<i>Percent</i>	<i>Total</i>	<i>Percent</i>	<i>Total</i>	<i>Percent</i>
<b>Gender</b>						
Male	31,941	49.77	33,290	49.54	37,357	51.32
Female	32,234	50.23	33,904	50.46	35,440	48.68
<b>Race</b>						
White	60,308	93.97	59,544	88.62	61,825	84.93
Black	45	0.07	172	0.26	803	1.10
American Indian	2,665	4.15	3,325	4.95	3,325	4.57
Asian	740	1.15	762	1.13	1,214	1.67
Other	417	0.65	3,391	5.05	5,630	7.73
<b>Ethnicity</b>						
Hispanic	1,274	1.99	3,244	4.83	6,272	8.62
<b>Age</b>						
Under5	4,722	7.36	4,239	6.31	4,260	5.85
5 to 19	14,171	22.08	14,833	22.07	13,404	18.41
20 to 34	12,837	20.00	11,092	16.51	12,872	17.68
35 to 44	9,763	15.21	9,822	14.62	8,606	11.82
45 to 54	6,537	10.19	9,983	14.86	10,883	14.95
55 to 64	5,955	9.28	6,893	10.26	10,923	15.00
65 to 74	5,992	9.34	5,365	7.98	6,869	9.44
75 and Over	4,198	6.54	4,967	7.39	4,980	6.84

**Jefferson County, WA (53031)**

	1990		2000		2010	
	<i>Total</i>	<i>Percent</i>	<i>Total</i>	<i>Percent</i>	<i>Total</i>	<i>Percent</i>
<b>Gender</b>						
Male	9,940	49.34	12,737	49.08	14,798	49.54
Female	10,206	50.66	13,216	50.92	15,074	50.46
<b>Race</b>						
White	19,216	95.38	23,947	92.27	27,198	91.05
Black	57	0.28	87	0.34	246	0.82
American Indian	652	3.24	314	1.21	681	2.28
Asian	216	1.07	314	1.21	527	1.76
Other	5	0.02	1,004	3.87	1,220	4.08
<b>Ethnicity</b>						
Hispanic	223	1.11	455	1.75	848	2.84
<b>Age</b>						
Under5	1,139	5.65	1,051	4.05	1,068	3.58
5 to 19	3,753	18.63	4,518	17.41	3,848	12.88
20 to 34	3,048	15.13	2,774	10.69	3,423	11.46
35 to 44	3,497	17.36	3,738	14.40	2,731	9.14
45 to 54	2,191	10.88	4,752	18.31	4,503	15.07
55 to 64	2,351	11.67	3,659	14.10	6,457	21.62
65 to 74	2,741	13.61	3,018	11.63	4,730	15.83
75 and Over	1,426	7.08	2,443	9.41	3,112	10.42

Table A.2 Personal Income by Industry for the US, WA and the Study Area by County 2010

County	Personal income by Place of Residence	Population (persons) 2/	Per capita personal income (dollars)	Personal Income by Place of Work	Proprietors' income 6/	Farm proprietors' income	Nonfarm proprietors' income	Farm earnings	Nonfarm earnings	Private nonfarm earnings
Clallam	\$2,506,405	71,513	\$35,048	\$1,262,092	\$189,871	(\$3,293)	\$193,164	(\$937)	\$1,283,266	\$814,140
Grays Harbor	\$2,108,704	72,870	\$28,938	\$1,160,740	\$108,606	\$5,432	\$103,174	\$10,894	\$1,195,128	\$845,954
Jefferson	\$1,209,746	29,912	\$40,444	\$425,377	\$61,447	(\$854)	\$62,301	\$923	\$424,297	\$289,988
<b>Study Area</b>										
Olympic Coast	\$5,824,855	174,295	\$33,424	\$2,848,209	\$359,924	\$1,285	\$358,639	\$10,880	\$2,902,691	\$1,950,082
WASHINGTON	\$283,367,864	6,742,950	\$42,024	\$209,894,377	\$22,879,136	\$1,071,399	\$21,807,737	\$2,557,232	\$216,963,477	\$172,081,640
UNITED STATES	\$12,308,496,000	309,330,219	\$39,791	\$9,058,373,000	\$1,109,795,000	\$50,739,000	\$1,059,056,000	\$75,843,000	\$8,982,530,000	\$7,337,528,000

Table A.2. Personal Income by Industry for the US, WA, and the Study Area by County, 2010 (Continued)

County	11 Forestry, fishing, and related activities	21 Mining	22 Utilities	23 Construction	31-33 Manufacturing	42 Wholesale trade	44-45 Retail trade	48-49 Transportation and warehousing	51 Information	52 Finance and insurance
Clallam	\$74,811	\$771	\$654	\$81,895	\$90,341	\$17,767	\$125,480	\$25,911	\$11,400	\$30,721
Grays Harbor	\$57,158	\$2,353	D	\$68,302	\$173,843	\$37,756	\$98,565	D	\$9,505	\$33,458
Jefferson	\$6,374	\$1,188	\$4,432	\$30,660	\$41,687	\$8,137	\$35,076	\$3,333	\$7,232	\$21,163
<b>Study Area</b>										
Olympic Coast	\$138,343	\$4,312	D	\$180,857	\$305,871	\$63,660	\$259,121	D	\$28,137	\$85,342
WASHINGTON	\$2,076,767	\$188,992	\$567,149	\$12,395,120	\$21,955,175	\$10,034,789	\$13,439,784	\$6,301,009	\$14,742,323	\$9,550,375
UNITED STATES	\$115,412	\$7,245	\$23,800	\$274,590	\$877,543	\$165,079	\$253,323	\$96,544	\$55,372	\$182,495

Table A.2. Personal Income by Industry for the US, WA, and the Study Area by County, 2010 (Continued)

	53	54	55	56	61	62	71	72	81	
<b>County</b>	Real estate and rental and leasing	Professional, scientific, and technical services	Management of companies and enterprises	Administrative and waste management services	Educational services	Health care and social assistance	Arts, entertainment, and recreation	Accommodation and food services	Other services, except public administration	Government and government enterprises
Clallam	\$13,322	\$53,938	\$12,846	\$20,281	\$7,781	\$118,275	\$5,575	\$43,649	\$66,908	\$460,703
Grays Harbor	\$9,063	\$29,701	\$4,295	\$21,317	D	D	\$4,297	\$41,663	\$52,981	\$344,755
Jefferson	\$5,777	\$23,033	D	D	\$5,711	\$38,754	\$4,210	\$20,477	\$24,768	\$134,768
<b>Study Area</b>										
Olympic Coast	\$28,162	\$106,672	D	D	D	D	\$14,082	\$105,789	\$144,657	\$940,226
WASHINGTON	\$3,370,026	\$18,855,917	\$3,792,647	\$7,538,334	\$1,869,919	\$21,766,492	\$1,906,153	\$5,691,221	\$7,048,815	\$44,246,138
UNITED STATES	\$60,772	\$244,968	\$51,360	\$172,691	\$68,516	\$519,891	\$31,096	\$304,431	\$178,489	\$734,589

Table A.3. Total Full and Part-time Employment by Industry and County, 2010

County	Total employment	Wage and salary employment	Proprietors employment	Farm proprietors employment	Nonfarm proprietors employment 2/	Farm employment	Nonfarm employment	Private nonfarm employment	11 Forestry, fishing, and related activities
Clallam	35,080	24,179	10,901	466	10,435	562	34,518	26,740	850
Grays Harbor	30,543	23,813	6,730	576	6,154	752	29,791	23,198	1,238
Jefferson	13,992	8,843	5,149	192	4,957	247	13,745	11,456	258
<b>Study Areas</b>									
Olympic Coast	79,615	56,835	22,780	1,234	21,546	1,561	78,054	61,394	2,346
Washington	3,783,901	3,017,067	766,834	34,634	732,200	83,524	3,700,377	3,068,316	37,454
United States	173,626,700	136,108,000	37,518,700	1,892,000	35,626,700	2,657,000	170,969,700	146,290,700	846,400

Table A.3. Total Full and Part-time Employment by Industry and County, 2010 (Continued)

County	21 Mining	22 Utilities	23 Construction	31-33 Manufacturing	42 Wholesale trade	44-45 Retail trade	48-49 Transportation and warehousing	51 Information	52 Finance and insurance
Clallam	89	31	2,088	1,915	462	4,471	650	374	1,184
Grays Harbor	87	(D)	1,480	3,380	748	3,562	(D)	266	964
Jefferson	90	58	923	801	234	1,463	164	244	438
<b>Study Areas</b>									
Olympic Coast	266	(D)	4,491	6,096	1,444	9,496	(D)	884	2,586
Washington	7,364	5,325	198,063	274,529	133,294	382,339	108,579	113,844	155,506
United States	1,269,000	582,200	8,863,700	12,107,900	6,045,000	17,702,600	5,519,200	3,229,600	9,224,400

Table A.3. Total Full and Part-time Employment by Industry and County, 2010 (Continued)

	53	54	55	56	61	62	71	72
<b>County</b>	Real estate and rental and leasing	Professional, scientific, and technical services	Management of companies and enterprises	Administrative and waste management services	Educational services	Health care and social assistance	Arts, entertainment, and recreation	Accommodation and food services
Clallam	2,021	1,869	384	1,147	393	3,305	677	2,526
Grays Harbor	1,118	896	51	862	(D)	(D)	442	2,335
Jefferson	798	1,035	(D)	(D)	362	1,323	586	1,201
<b>Study Areas</b>								
Olympic Coast	3,937	3,800	(D)	(D)	(D)	(D)	1,705	6,062
Washington	178,234	274,988	33,942	183,817	69,905	384,917	89,652	241,384
United States	7,739,000	11,800,800	2,014,400	10,447,200	4,088,900	19,096,900	3,787,400	12,058,300

Table A.3. Total Full and Part-time Employment by Industry and County, 2010 (Continued)

	81						
<b>County</b>	Other services, except public administration	Government and government enterprises	Federal, civilian	Military	State and local	State government	Local government
Clallam	2,304	7,778	531	579	6,668	1,226	5,442
Grays Harbor	1,988	6,593	263	272	6,058	1,308	4,750
Jefferson	987	2,289	185	105	1,999	274	1,725
<b>Study Areas</b>							
Olympic Coast	5,279	16,660	979	956	14,725	2,808	11,917
Washington	195,180	632,061	75,713	81,698	474,650	151,751	322,899
United States	9,867,800	24,679,000	3,038,000	2,101,000	19,540,000	5,292,000	14,248,000

Source: U.S. Department of Commerce, Bureau of Economic Analysis, Regional Economic Information System

Table A.4. Unemployment Rates and Labor Force by County, 1990, 2000, 2005, and 2010

County	Unemployment Rates				Labor Force			
	1990	2000	2005	2010	1990	2000	2005	2010
Clallam	6.8	6.9	6.5	10.6	26,533	32,168	29,364	29,908
Grays Harbor	9.3	7.3	7.5	13.6	30,559	32,569	31,039	30,886
Jefferson	4.9	5.4	5.6	9.9	9,325	13,261	13,529	12,819
<b>Study Areas</b>								
Olympic Coast	7.7	6.8	6.8	11.8	66,417	77,998	73,932	73,613
Washington	5.1	5.0	5.5	9.9	2,862,956	3,551,468	3,255,532	3,516,010
United States	5.6	4.0	5.1	9.6				

Source: U.S. Department of Labor, Bureau of Labor Statistics.

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