

F. SOCIAL SETTING

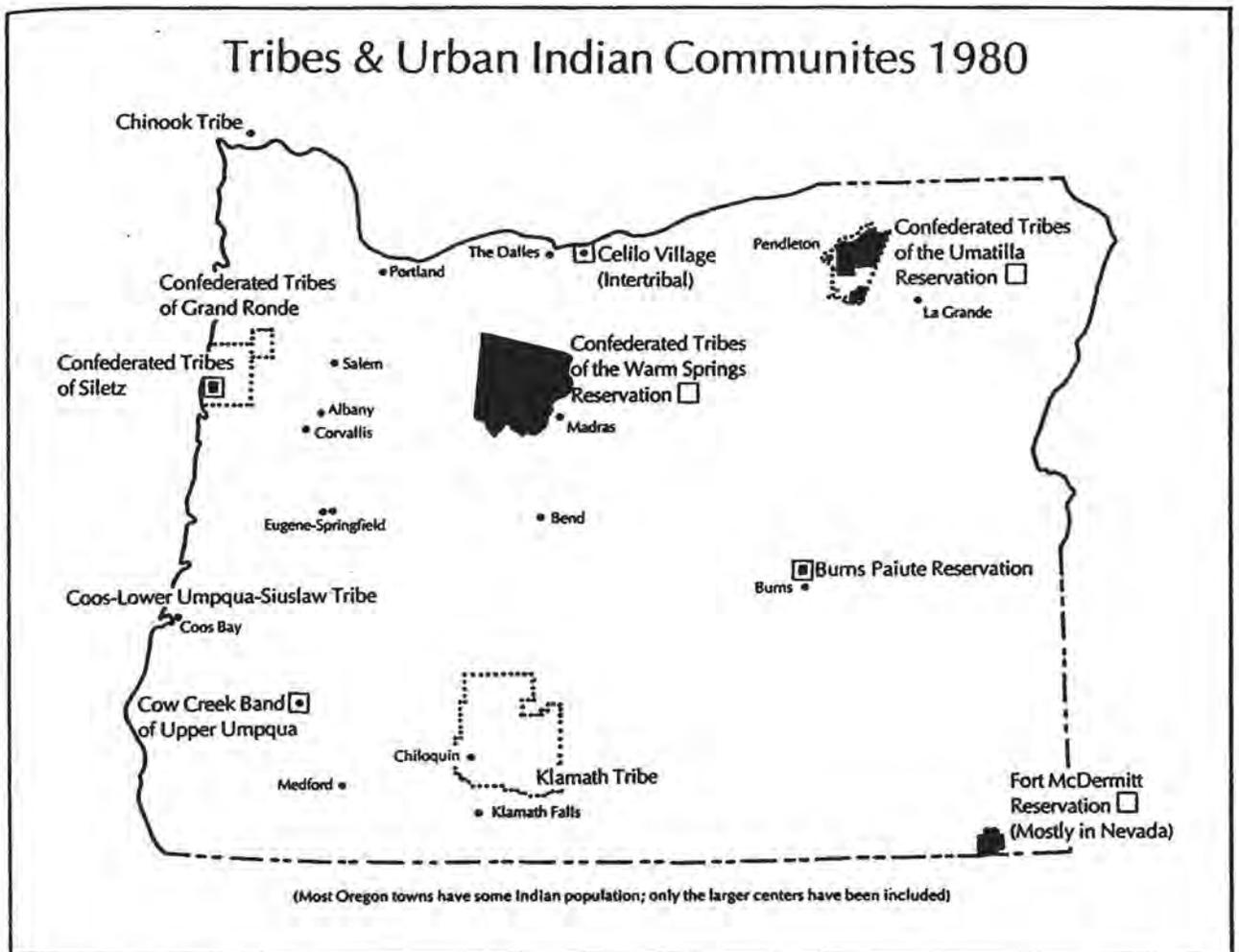
HISTORY OF HUMAN SETTLEMENT

American Indian Societies and Current Issues

The coastal and interior valleys of western Oregon have been the homeland of culturally and economically diverse American Indian societies for millenia (Beckham et al. 1982). The Euroamerican settlement of western Oregon resulted in catastrophic population decline and displacement among the region's Indian peoples. During the mid-1850s, surviving Indians from throughout western Oregon were placed on a large, multi-tribal Indian reserve encompassing parts of the Oregon coast and Coast Range. Throughout the late-1800s, in an effort to bring tribal peoples into the "American mainstream", and to open the area to white settlers, the size of the reserve was drastically reduced. Tribes living there were finally "terminated" from federal supervision and control in the early 1950s; that is, western Oregon's reservations were closed. A reversal of American Indian policy in the mid-1970s has led to federal re-recognition of western Oregon's tribal peoples. Today, western Oregon's Indians are grouped into tribal confederations (Figure F.1) whose centers of government and small reservations are located in Coos Bay, Grand Ronde and Siletz (Zucker et al. 1983).

Given the complex history of these tribal peoples, present reservation boundaries do not accurately reflect the far-reaching cultural, economic and political interests of past or contemporary tribal governments. Today, delineating geographic areas with exclusive interest to a single confederated tribe is not easy. For purposes of describing tribal interests in the Study Area, the Confederated Tribes of the Grand Ronde Community express greatest concern for lands from Lincoln City northward. Members of the Confederated Tribes of the Siletz, many of whom occupy its 3,666 acre reservation, are concerned with lands west of Corvallis to the Oregon Coast, and south to Tenmile Creek near Cape Perpetua Scenic Area. The Confederated Tribes of the Coos, Lower Umpqua, and Siuslaw are concerned with lands from Cape Perpetua to Coos Bay, including the Oregon Dunes National Recreation Area. In addition, the Coquille Tribe has interests in lands around Coos Bay. None of the Tribes has reserved treaty rights on federal lands, but much of this land is composed of former Indian allotments and was once included in the Coast Reservation.

The Study Area includes places once used by American Indian peoples as villages, fishing and shellfish gathering stations, religious sites, and cemeteries, and thus is rich in archaeological evidence and artifacts (Beckham et al. 1982; Minor et al. 1985; Minor and Toepel 1986; Minor 1992). Land ownership maps and archival data document the boundaries of the Coast Range Reserve and the later location of Indian Allotments. Current natural resource management issues of interest to the tribes involve fisheries, wildlife, water quality, and timber. Thus, the confederations have a vested and far-reaching interest in the lands encompassed by the Study Area. Western Oregon tribal governments should be included in NEPA scoping analysis, and public review of Forest Service projects affecting natural and heritage resources within the



- KEY**
- Reservations
 - ⋯ Former Reservations (Boundaries at termination)
 - Federally Recognized

Source: Zucker, Jeff, K. Hummel and Bob Hogfoss. 1983. Oregon Indians: Culture, History and Current Affairs.

Figure F.1 Locations of Indian Tribes (1980)

Study Area. Key sources of information about tribal contacts, protocol, and consultation are the Siuslaw National Forest archaeologist, the Oregon State Historic Preservation Office Commission on Indian Services (located in Salem). Two important Forest Service sources about working effectively with the tribes are available from the Forest Service: "Desk Guide to Tribal Government Relations" (R-6 Regional Office 1991); and "Forest Service National Resource Book on American Indian and Alaska Native Relations" (Washington Office 1995). Archaeological remains, sacred sites, and human burials are protected under both state and federal historical preservation statutes and therefore require special consideration and consultation among the tribes, the State Historic Preservation Office, and the agency during project analyses, planning, and implementation.

White Settlement and Influence on Current Landscape Patterns

The first European maritime explorers arrived on the Oregon coast in the late 1700s. Soon thereafter, land-based explorations and the fur trade brought mountain men, fur traders, and missionaries into the Willamette Valley and Coast Range. Trading outposts in the wilderness, such as Fort Vancouver on the Columbia River, eventually attracted settlers to the fertile soils of the Willamette Valley. By 1845, some 6,000 people had traveled the 1,900 miles across the "Oregon Trail". The Donation Land Act of 1850 and the Homestead Act of 1862 provided incentives for settlement in the Willamette Valley and the Coast Range. Large tracts of timberland, and homesteads that never "proved up", became incorporated in the National Forest system. Eventually, agriculture, logging, and commercial fishing provided the economic foundation for developing communities and the current way of life in the Willamette Valley, Coast Range, and coast.

Pioneer cemeteries, historical trails and wagon roads, homestead remains, and fruit orchards are remnants of Willamette Valley and Coast Range pioneer history throughout the Study Area. Federal acts such as the Forest Homestead Act of 1906 and the Western Scattered Settlers Project of 1906 required close government scrutiny of "homesteads", fortunately resulting in inspection records, inventories, and detailed maps denoting building locations, land features, and vegetation types (Juntunen and Roberts 1994). These records add insight into local pioneer and settlement history, and they are an invaluable source of baseline data about the area's natural environment at the turn of the century.

The Study Area contains an abundance of historical sites dating from the mid-1850s to the 1930s. Some sites have likely been recorded during previous cultural resource inventories for timber sales and other projects. These records are housed in the Forest Supervisor's and Ranger District Offices and should be consulted before any project is begun in the Study Area. Additional compliance-level cultural resource inventories may also be required. The Siuslaw NF has a detailed data base of settlement records, which should be used to guide effective field inventories (Juntunen and Roberts 1994). These records would also provide baseline information useful in reconstructing the historical Coast Range environment. For example, Coast Range settlers logged the forest; created innumerable meadows and forest openings for buildings, gardens, and pasture; planted fruit orchards and other "exotic" trees and shrubs; and were responsible for many of the fires that swept through the Coast Range. Although the specific effects of these homesteads may be

difficult to see today, cumulatively they are responsible, in part, for the current condition of the Study Area, and the human land-use patterns within it.

CURRENT SOCIAL SETTING AND EMPLOYMENT

Population characteristics of the Study Area may help identify and explain current and future forest-related human uses. For example, analysts and managers ought to know about population center location, growth rates, and shifts in demographic and economic characteristics, all of which may influence recreation choices and visitation rates on public lands in the future.

Most census and employment data are aggregated at the county or city scale. Although some of the nine counties we describe--Tillamook, Washington, Yamhill, Polk, Lincoln, Benton, Lane, Douglas, and Coos--are not entirely contained within the Study Area, their social characteristics are relevant to the assessment because the people who live in them recreate in, travel through, and contribute to or derive resources from the Study Area.

Demographics

Detailed population data for the nine-county area for 1980, 1990, and 1993 are given in Appendix F.1 (Oregon Housing and Community Services Department, 1993; Center for Population Research and Census, 1994). The data reveal some of the demographic characteristics discussed below. Many of the area-wide figures will mask variation among individual counties; individual county data are also found in Appendix F.1.

Racial/Ethnic Distribution

Although minority populations grew rapidly (by about one third) between 1980 and 1990, the total number of minority residents in the area is still small. The 1990 U.S. census figures show that the population of the area is predominantly (94%) white, with county figures ranging from 92% to 98%. Nationwide, about four out of five persons is white. People of Hispanic origin are included in the White racial group, and comprise 3.5% of the area population. Racial group populations for the entire area are 2.6% Asian, 1.1% Native American, 0.6% Black, and 1.1% "Other".

Population Distribution

In 1993, the nine-county area contained an estimated 1,068,600 people, or 35% of Oregon's population. Fifty-eight percent of the population was classified as living in incorporated and 42% in unincorporated areas. Most of the population living in or close to the Study Area is concentrated in urban, relatively densely populated areas in the Willamette Valley: Portland, Salem, Albany, Corvallis, Eugene, and Springfield. The Coast Range portion of the area is relatively sparsely populated, and the coastal portion contains several small cities and towns.

The northern portion (Tillamook, Washington, and Yamhill counties) and southern portion (Lane, Douglas, and Coos counties) of the area both contain about 42% of the area's total population; just 16% live in the middle three

counties (Polk, Lincoln, and Benton). These population concentrations are largely due to the densely populated Portland metro area in Washington County, and the Eugene-Springfield metro area in Lane County. Washington and Lane Counties are the two most populous counties, with 33% and 28% of the total. Tillamook and Lincoln Counties are the least populous of the nine counties, with 2% and 4% of the area total. Each county's 1993 population and its percentage increase since 1990 are shown in Figure F.2.

Population Growth

Population change is the result of two factors: natural increase (births minus deaths) and net migration (persons moving into an area minus those moving out). Population growth figures for 1980-1990 and 1990-1993 are shown in Table F.1. The nine-county area population increased 10.1% during 1980-1990 and 7.3% (a significantly higher annual rate of increase) in the three years from 1990-1993. This recent increase is striking because most of the Study Area counties grew far more slowly from 1980-1990 than the 10.1% average indicates. Above-average growth in Washington and Yamhill counties during that decade mask very slow growth--and sometimes decline--in the rest of the area.

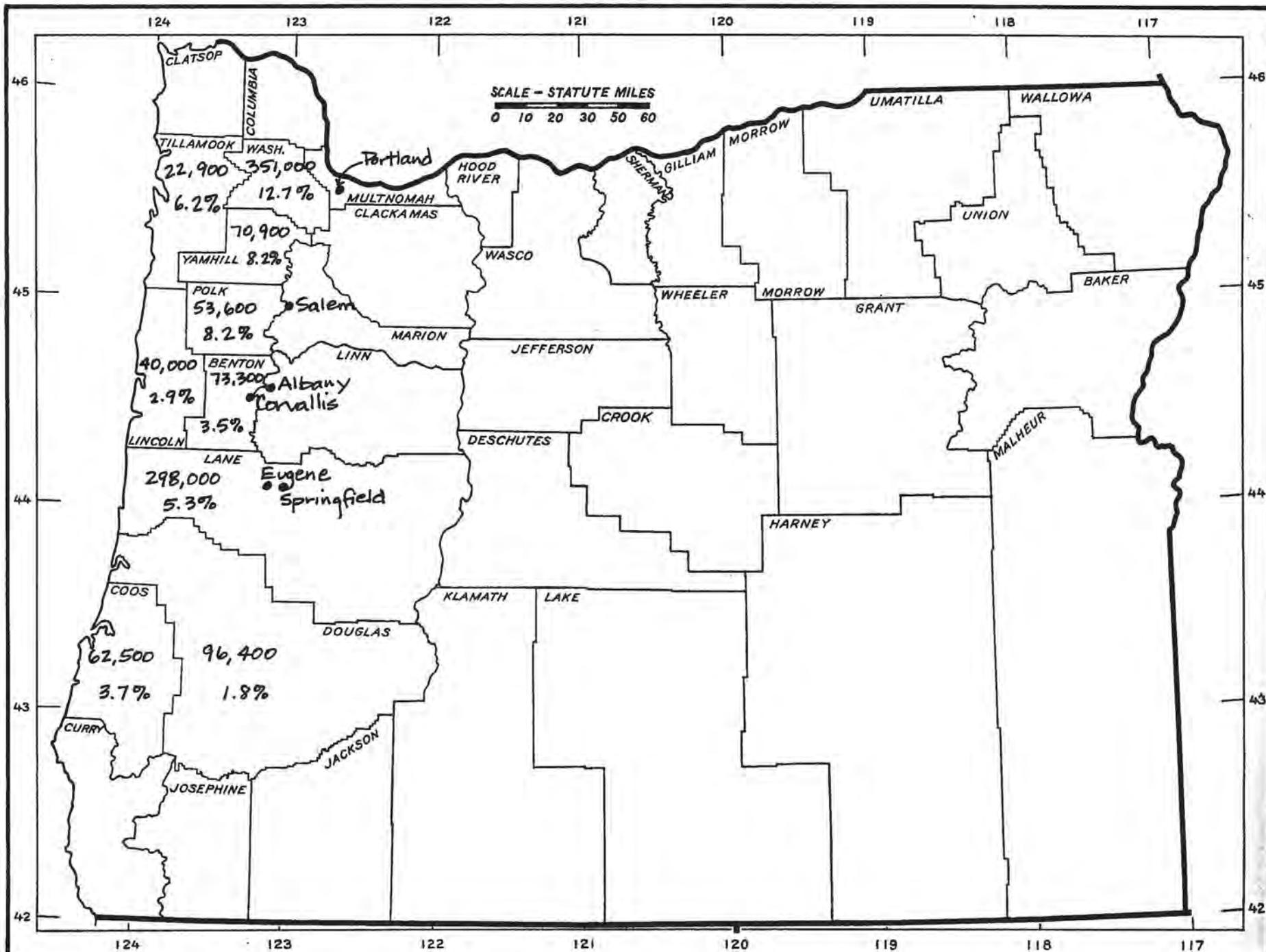
Table F.1 Coastal city population changes (1980, 1990, 1993)

Coastal counties and cities	1980 pop.	1990 pop.	1993 pop.	80-90 Increase	90-93 Increase	80-93 Increase	80-90 % change	90-93 % change	80-93 % change
TILLAMOOK COUNTY	21,164	21,570	22,900	406	1,330	1,736	2%	6%	8%
Bay City	986	1,027	1,055	41	28	69	4%	3%	7%
Garibaldi	999	886	930	(113)	44	(69)	-11%	5%	-7%
Rockaway Beach	906	970	1,105	64	135	199	7%	14%	22%
Tillamook	3,981	4,006	4,180	25	184	209	1%	5%	5%
LINCOLN COUNTY	35,264	38,889	40,000	3,625	1,111	4,736	10%	3%	13%
Depoe Bay	723	870	940	147	70	217	20%	8%	30%
Lincoln City	5,469	5,892	6,195	423	303	726	8%	5%	13%
Newport	7,519	8,437	8,885	918	448	1,366	12%	5%	18%
Waldport	1,274	1,595	1,700	321	105	426	25%	7%	33%
Yachats	482	533	600	51	67	118	11%	13%	24%
LANE COUNTY	275,226	282,912	298,000	7,686	15,088	22,774	3%	5%	8%
Dunes City	1,124	1,081	1,185	(43)	104	61	-4%	10%	5%
Florence	4,411	5,171	5,705	760	534	1,294	17%	10%	29%
DOUGLAS COUNTY	93,748	94,649	96,400	901	1,751	2,652	1%	2%	3%
Reedsport	4,964	4,796	4,875	(188)	79	(109)	-4%	2%	-2%
COOS COUNTY	64,047	60,273	62,500	(3,774)	2,227	(1,547)	-6%	4%	-2%
Bandon	2,311	2,224	2,425	(87)	201	114	-4%	9%	5%
Coos Bay	14,424	15,076	15,170	652	94	746	5%	1%	5%

During the early and middle 1980s, a nationwide recession accompanied by a shortage of local job opportunities resulted in increased out-migration. Incorporated areas actually grew by 17.8%, while unincorporated areas increased by just 1.1%. These percentages illustrate that though total population grew, out-migration was taking place from small towns and rural areas, largely related to reduced timber-based employment.

Figure F.2 Estimated 1993 county populations and % increase from 1990-1993

OREGON



In the late 1980s a recovering economy increased the availability of jobs, resulting in reduced out-migration and increased in-migration, a trend that has continued into the 1990s. Economic and population growth have been due in part to industrial diversification during the 1980s, and to inflows of new residents from California and other places with relatively less healthy economies. Traditionally timber-dependent communities and counties have continued to lose residents or have grown much more slowly in the 1990s than the rest of the area.

Two important features of recent (1990-1993) population growth are significantly increased net migration (as compared to natural increase), and a growing number of older citizens. From 1990 to 1993, population growth in the nine-county area from net migration was 52,139, or 72% of total growth. County figures for this statistic ranged from 48% (Douglas) to 96% (Tillamook) of total growth (Figure F.3).

Between 1990 and 1993, 14% of net migration was by residents age 65 and over, compared to 9% for Oregon. The 1993 proportion of area residents in this age class is 13%, up from 10% in 1980. County residents age 65 and older range from 10% (Washington and Benton) to 21% (Tillamook and Lincoln) of the total population (Figure F.4). Along with a general aging of the population has been an apparent influx of retirees to western Oregon, particularly to some of its coastal communities. Population changes in coastal cities within the Study Area are shown in Table F.1.

Future population growth in the Study Area will be governed by a host of factors operating at national, regional, and local scales. The Northwest Policy Center (1995) projects that growth in technology, communications, trade and services, and construction are expected to create job opportunities in these sectors. In-migration to western Oregon will continue, though more slowly than in the 1990-1993 period, as economic conditions and job prospects elsewhere improve. Continued influx of retirees from out of state is expected to continue (Oregon Employment Department 1993). Retirees tend to contribute to the stability of local economies, because many have sources of income not readily affected by fluctuations in the business cycle.

Employment and Economy

Statistics describing employment levels in different sectors distinguish between agricultural and nonfarm jobs; nonfarm jobs are further separated into manufacturing and nonmanufacturing sectors. In the nine-county area, nonmanufacturing employs far more workers (77%) than do the manufacturing (20%) or agricultural--farm, fishing, forestry--(3%) sectors (Oregon Employment Department 1993). The various nonmanufacturing sectors and their share of jobs in the area are services (22.8%); retail trade (20.1%); government (16.1%); wholesale trade (5.9%); finance, insurance and real estate (4.2%); construction (4.1%); transportation, communication, and utilities (3.5%); and mining (0.2%). Employment for individual counties, which varies widely, is shown in Appendix F.2.

Figure F.3 Percent of 1990-1993 growth due to net migration, by county

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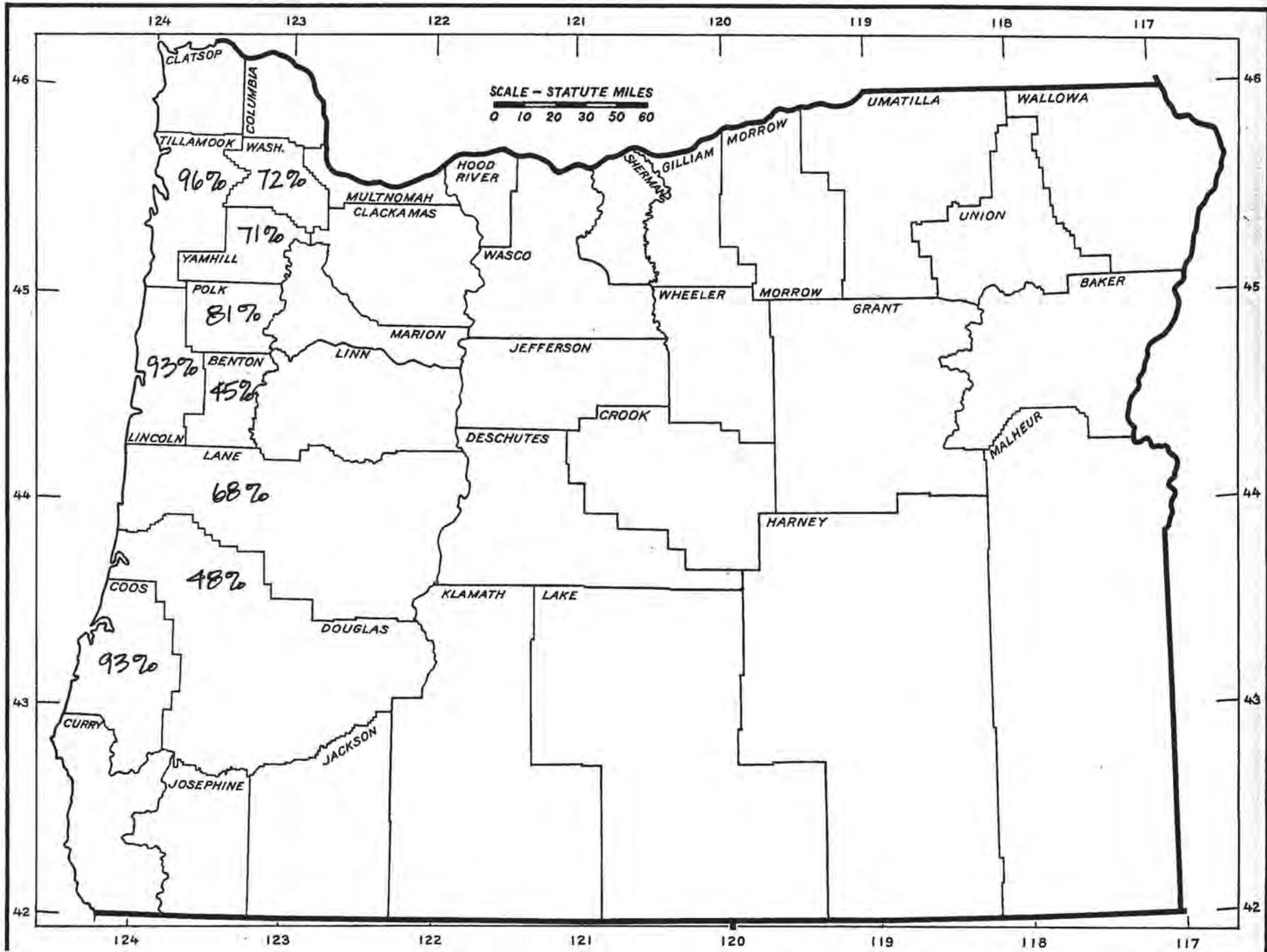
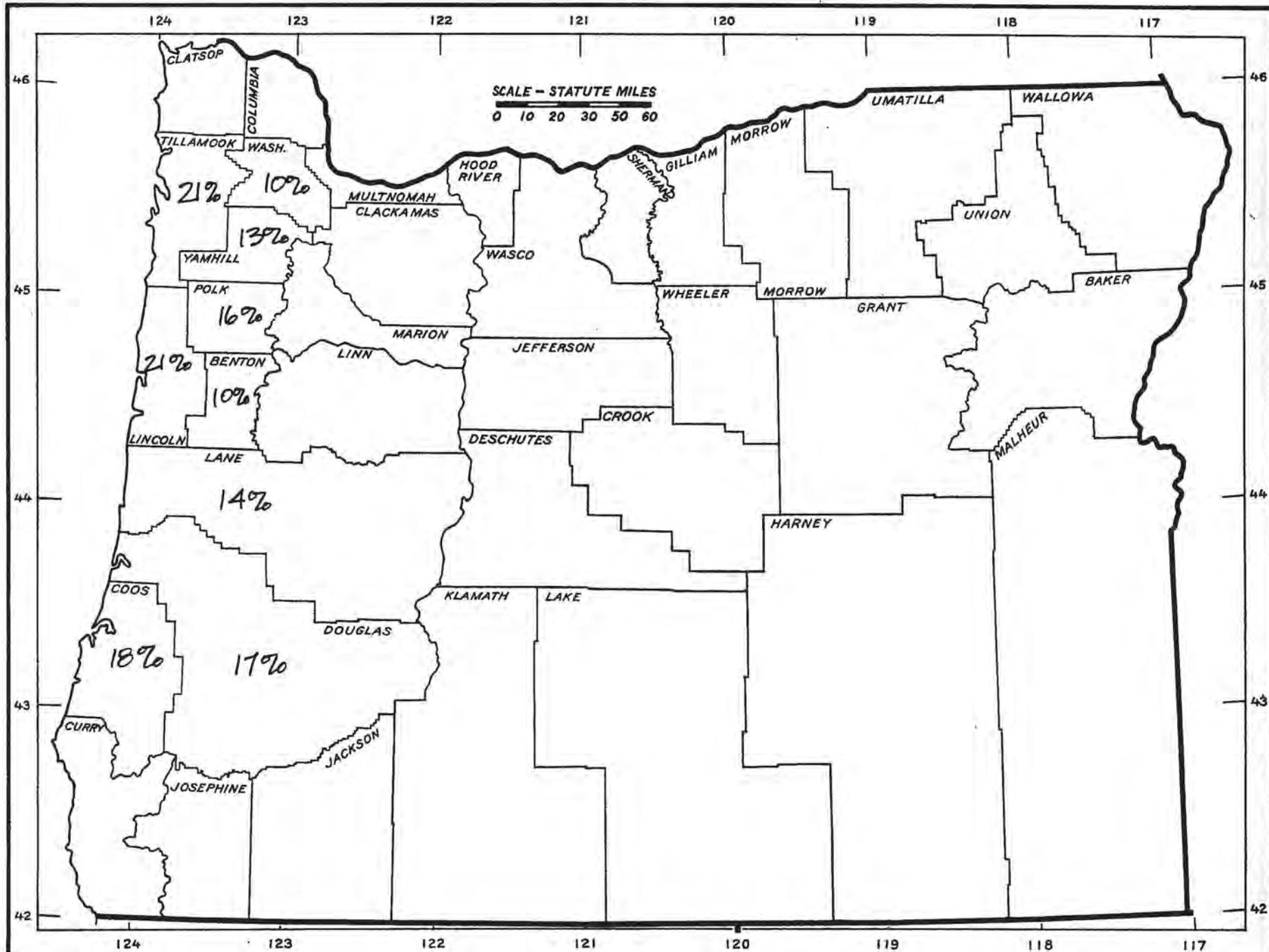


Figure F.4 Percent of population that is greater than 65 years of age, by county (1993)

OREGON



Between 1982 and 1992, farm jobs in the area increased by about 72% (from 6,364 to 10,959) but remained a small proportion of the total workforce, increasing from 2.2 to 2.8% of the total. Total jobs in the nine-county area grew by 38%, but jobs in manufacturing grew far more slowly (8%), dropping from 26 to 20.3% of all employment. Although manufacturing employment grew slowly in the past decade, its composition shifted markedly. Employment in the lumber and wood products sector shrunk by almost 4,000 jobs between 1982 and 1992, dropping from 9.1 to 5.6% of all employment. These losses were balanced by a gain in nontimber manufacturing jobs scattered across a wide range of industries.

The declining relative importance of the manufacturing sector in Oregon reflects a nationwide trend, caused in part by: growth of manufacturing in other countries; introduction by U.S. manufacturers of labor-displacing technologies; and declining supplies of inexpensive and easily accessible raw materials. The substitution of technology for labor and the declining supply of cheap natural resources have had especially important effects on local resource-based industries: lumber and wood products, paper, and fishing. In Oregon, the recession of the early 1980s brought about the introduction of more automated production processes and a phasing out of older mills, resulting in a need for fewer workers. Reduced timber supply from public lands in the 1990s has contributed to lower lumber and wood products employment. The 1982 and 1992 proportion of jobs in the lumber and wood products sector for each county is shown in Figure F.5. 1992 county figures range widely, from a high of 23.1% in Coos County, to a low of 1.3% in urban Washington County.

As the proportion of resource-based jobs has declined, services, trade, construction, and manufacture of electronic equipment, machinery, and manufactured housing have shown above-average growth. The increased role in the economy of activities related to information transfer and technology is expected to continue, as is growth in secondary processing of forest products (Northwest Policy Center 1995).

ROAD NETWORK

Roads through the Study Area form a grid. Highway 101 along the coast is parallel to major roads in the Willamette Valley. East-west oriented roads, roughly parallel to each other, cross the Coast Range and link the coast and the valley, and their major population centers. Many smaller, winding roads cover the intermediate area, where the topography is hilly.

Road access to federal lands in the Study Area will decrease. Many federal and county roads were built to transport harvested timber. Within the Siuslaw National Forest, miles of road peaked at about 2,400. Because of recent declines in federal timber sales and accompanying reductions in road maintenance funding, the Forest will be reducing open roads to one-fourth of its historical maximum over the next several years. County and state roads through the Study Area are expected to remain static; the county is not building new roads. Any new roads built in the immediate future in the Study Area are likely to be private.

Emphasis on trails has increased throughout the Study Area, primarily for recreation, but also with some interest in providing alternatives to roads as transportation routes.

CURRENT USES

Scenery

The Study Area falls within the Coast Range characteristic landscape. A characteristic landscape or landscape character type is a geographical area that has "similar visual characteristics of land form, rock form, vegetation, and water form. No single landscape feature alone determines a character type; all features combine to create a certain visual image, but land form is usually more influential than other characteristics" (Pollock et al 1981). The Coast Range landscape:

"contains steep mountain slopes with ridges that are often extremely sharp. The ridge system is usually parallel to the coast, but is dissected so much that it may not be readily apparent. Steep mountain slopes often drop directly to the ocean edge especially at headlands, but most river mouths and bays have flat coastal plains. The extensive dunes area is nearly level at the ocean edge. Gentle valley lands are also found on the eastern fringes of the mountains as they join with the Willamette basin.

"In both the mountains and the coastal margin, the vegetation is generally a dense stand of coniferous forest with dense understory. The pattern is broken in the mountains by hardwoods in hillside masses and along drainages. Natural openings also occur on barren peaks and small meadows. Along the coastal margin, the sand dunes, salt marshes and rocky barren areas frequently break the dense vegetation. Vegetation is characterized by Sitka spruce, western hemlock, western red cedar, Douglas-fir, grand fir and red alder.

The coastal margin has a wide variety of water features including bays, river mouths, streams and some fresh water lakes. The inland mountains have no lakes, some rivers and numerous streams and creeks.

Rock features are numerous along the coastal margin in the form of headlands and sea stacks. Inland, only occasional rock features appear along rivers or as rock outcrops and cliffs on mountain slopes or peaks." (Pollock et al 1981)

Experience of the Landscape

People perceive broad distinctions in scenery in the Study Area. The large landscape image is of three landforms--valley edge, Coast Range, and ocean side--and the corridors that cross the Range. These landscape divisions parallel the coast line and divide the land west to east.

Tidal river flats with associated pasture and farmland are a finer distinction in land type and associated use. People are interested in these areas seen when nearing the coast traveling east to west, and that also break up the coastline south to north. Such valuable and beautiful tidal-influenced lands are seen east of Coos Bay along the Umpqua, east of Florence along the Siuslaw, and near Cascade Head and Tillamook. In the Study Area, these tidal-influenced lands are wider in the north, and broadest around Tillamook where five rivers meet the ocean.

More subtle divisions in landscape character can be seen north to south. Three major scenery divisions can be distinguished along the coast. Farthest south, are sandy, rolling dunes. Here, the ocean is at a distance and generally not seen from the major highway (US 101), except at bays, when travelers are passing through towns. The dunes, associated marshes, beaches, and tree islands are viewed mostly away from the Highway. Here color, light, motion--the forces or effects of change--in the natural landscape are beautiful, what people come to see, and what is watched. The mid-coast has rocky headlands, sandy beaches, and dramatic, picturesque ocean views. Rock walls along the Highway accent the rocky headlands.

North of Lincoln City, the flat, tidal-influenced land widens, and scenery is more dominantly a cultural landscape that includes pastures, barns, and calm, contained pastoral views. The Statewide Comprehensive Outdoor Recreation Plan (1988) states, "The agricultural landscape is ...a strong component of the scenic beauty of the state." Salmon River and Highway 18 mark a distinction that divides the scenery as well as Landtype Association north and south in the Study Area. To the north, ridges are not as predominately oriented north and south. Breaks in the ridges create valleys which tend to run north and south; as a result, the scenery is more open and accessible.

Actually and experientially, the Coast Range has been a barrier between the Willamette Valley and the coast. Crossing through it to the coast, the mountains serve to accent a feeling of arrival at the ocean after the journey from the Valley. They create a transition or sense of passage that highlights the experience of arrival from the relatively dark, winding narrow river corridors traveling through the Coast Range to the light, open, expansive ocean side.

People generally view the scenery in the Study Area in two ways: along corridors and from open high points. Study-Area wide, roads, rivers, and the oceanside form the corridors. The primary viewing corridor is along the coast. The scenic value of the coast corridor is characterized year-round by these experiences:

- Looking for the view to the west;
- Traveling perpendicular to the view;
- A changing angle of view;
- Traveling winding narrow cliffside roads;
- Viewing and crossing natural landforms;
- Crossing over rivers and bays on bridges;
- Seeing middens and travelways showing long evidence of people on the landscape;
- Visiting small picturesque towns by bays and rivers;
- Seeing masses of native plants,
- Viewing animals in water, air, meadow, pasture; and
- Observing the dramatic atmospheric effects of weather on land and water, light and air and often open view.

Generally, routes through the Coast Range are winding and narrow. Travel is usually at a slower pace than north-south Willamette Valley or coastline travel. Views enroute are short and are generally focused within 1/4 to 1/2 mile of the road. Trees often arch over the road, creating a tunnel effect. Route 6 crosses the Coast Range to the north, and differs in character from other corridors. Land here is higher and the road changes elevation so that travel is more dramatic, with longer views where the viewer is above the view, and more dramatic landscape. The narrow, winding roads to the coast heighten the experience of the ridged landform, as well as highlighting the importance of small towns that break up the route along the way. Road corridors are associated with river corridors and traveling across rivers and along rivers is part of the scenic experience of viewing the coast landscape. The contrast of experience inland to oceanside and the slow pace and country highway scale of travel are components of the scenic value of the Study Area.

The second major way of viewing scenery in the Study Area is from the high points, that offer wide views of valleys, distant mountains, and the ocean. Viewpoints and landmarks are important to people as a means to locate themselves and to escape from the confining topography of the Coast Range where "ridges seem to run in every direction" (Dicken and Dicken 1979). The meadows associated with some peaks, such as Kings Mountain, Russell Point, Larch Mountain, Mount Hebo, and Marys Peak, are also of scenic interest.

Inland, away from major corridors, are a number of destination sites in forested areas of interest for their scenic value. Waterfalls and old-growth groves are the primary points of scenic interest. Examples are Niagara Falls, old growth stands on Marys Peak, Kentucky Falls, and old growth groves on the Mapleton Ranger District.

Concentrations of people and communities are mainly in the Willamette Valley and along the coast. "Hamlets", small clusters of settlement at road intersections where there are valleys or spots of flat land, are

characteristic of the Study Area. Scenery can also be viewed from towns, hamlets, houses, and recreation sites, though again primarily in association with corridors.

Scenic Features

Highlights of the Study Area scenery are the natural landmarks, scenic areas, scenic viewpoints, and scenic corridors. Appendix F.3 provides a list and description of the most important sites.

Scenery Management and Status

Scenery in the Study Area is managed by the Bureau of Land Management, the Siuslaw National Forest (managed by sites, corridors, and viewsheds), the state Department of Transportation (managed by sites and corridors), Oregon State Parks and Recreation (managed by sites), the Oregon Department of Forestry (managed by objectives), and to various extents by different counties and cities. An example of viewshed management objectives is displayed on Map F.1 (Viewsheds for the Siuslaw National Forest).

Scenery management is guided by the Oregon State Department of Land Conservation and Development's statewide planning goals (latest revision in 1994), the Coastal Zone Management Act (1972); by the National Scenic Byways Program (Forest Service), the Backcountry Byway Program (B.L.M.), by Senate Bill 643 (1983,1985) which concerns preservation of major historical and scenic features of the state highway system, Oregon Scenic Waterways Act of 1969 (1985,1987,1988); the National Wild and Scenic Rivers Act (1968); the National Forest Management Act (1976); the Act establishing Cascade Head Scenic-Research Area (1974); the Act establishing the Oregon Dunes National Recreation Area (1972), and county and city zoning.

Number of Viewers

Viewing scenery on the coast is the primary tourist attraction in the state, as noted by the 1988 State Board of Tourism survey. Most major US and state highways in the Study Area are classified as "sensitivity level I roads" by the Forest Service. These are roads heavily travelled, in addition to which, the major purpose of about one-fourth of the users is to view scenery while traveling along these roads. In the Study Area these roads include US Highway 101, State Routes 126, 38, 36, 34, and 18, and county road 871 to Sand Lake. State highways 6, 8, and 20, and county road 229 have not been classified under this system. The amount of use on Highways 6, 8, 20, and a portion of 229 would make these roads and road segments sensitivity level I roads. Highway 8 has the highest use of any road in the assessment area, up to 44,000 average daily traffic count (number of vehicles per day).

Oregon Department of Transportation traffic volumes for 1993 shows that at a minimum, 2,500 to 5,000 people a day view scenery along the Oregon Coast. Average daily traffic numbers for 1993 show from 3,000 to 19,999 vehicles a day traveling the Coast Highway (Hwy 101) through the Study Area, depending on which segment is measured. Use is heavier near towns and associated stretches of coastlines: Coos Bay, Reedsport, Florence, Waldport, Newport, Lincoln City, and Tillamook. The longest stretches of heaviest use are from south of Coos

Bay to midway along the southern portion of the Oregon Dunes and from Depoe Bay to Otis.

Highway 18 from Valley Junction to Otis is the most heavily used inland-to-coast corridor. Figuring people viewing scenery here based on the Scenery Management system of a quarter of the total viewers for roads of this scenic significance--and figuring only one person per car--at least 1,250 to 2,500 people a day view scenery along Highway 18.

Current Scenic Condition

Much of the federal and private industrial land in the Study Area is in a condition that looks managed. Appendix F.4 summarizes the inventories of scenic quality objectives for the federal lands.

For all corridors and to some extent viewsheds, coherence and consistency of the landscape is a key scenery management issue, which relates obviously to adjacent land management. As noted in the FEIS for the Siuslaw National Forest Plan, pg. III-92,--and also true for the whole Study Area--over half of the land seen in many viewsheds is privately owned. Thus, no one agency or individual can control the appearance of a viewshed. Examples of mixed land ownership and related scenery concerns occur along Highway 34 and on Highway 126 east of Eugene. Highway 126 is an example of a sensitivity level I viewshed that is heavily altered (FEIS, pg. III-93). The Salem District-BLM is highly fragmented with 53% in other ownership. In the Coos District-BLM, as with the Eugene and Salem Districts, "most of the planning area has fragmented land ownership patterns with non-BLM lands dominating the landscape. The majority of the private lands are intensively managed for timber production, limiting the BLM's ability to effectively manage visual qualities on viewsheds." (Coos Bay District Proposed Resource Management Plan, Environmental Impact Statement, North Bend, Oregon: U.S. Dept. of Interior, September, 1994, 3-86).

Attention to elements that characterize the coast landscape experience has resulted in some facilities that strengthen that experience. The Proposed Oregon Coast Highway Corridor Master Plan (January 1995) addresses a number of concerns related to consistency such as vegetation planning. The Alsea Bridge in Waldport is a wonderful example of appropriate cultural reference in a new facility.

Increasingly, however, visual elements in the Study Area landscape are inconsistent with the characteristic coastal landscape experience. Inconsistencies include the following:

Conversion of natural landscape to obviously managed landscape through use of non-native plants and excessive grading and paving. Example: subdivision in coastal communities along 101, conversion to non-native plants as the result of clearing at corridor recreation sites.

Small scale planting and clearing. Example: Spots of development scattered over otherwise natural-appearing stretches of coast land along Highway 101. The coast character would be reinforced by large scale with masses of native plants and areas unbroken by development.

Excessive widening and straightening of roads and highways. Example: Highway 101 north of Florence and south of Reedsport.

Building that does not reference its natural and cultural setting. Example: subdivision development north of Florence and in Yachats.

Mixture of building types, increased number of buildings, and paved area. Example: At scattered locations throughout the Study Area including on Federal lands, the increased number of buildings and paved area and mixture of non-vernacular, non-sympathetic building types and forms, incompatible with local structures and settings.

Disruption of viewing of rivers from bridges. Example: the highway to Tillamook where bridges have been constructed so that people have difficulty seeing the river.

Managing sites with high scenic value for mixed use. Example: Marys Peak, where mixed use makes managing for scenic values difficult in some locations.

Coastal communities are no longer perceived as visually subordinate to their natural setting. As a result of cumulative inconsistencies and fragmentation of the characteristic Coast Range landscape, its scenic and cultural value is diminished, and, in some places, lost.

Management Implications

Federal lands make up much of the natural, beautiful coastal zone scenery. Among its other values, natural-appearing coastal land is the primary value in the state for tourism. Study of federal and adjacent lands in the Oregon coastal landscape shows the great importance of federal lands--and Tillamook State Forest in the northern portion of the Study Area--as providing stretches of natural-appearing landscapes. Areas of natural-appearing land have diminished over time and recently are rapidly disappearing along the Coast overall. Along the Coast, federal land and state-owned beaches are large-scale land forms; in between, the scenery is increasingly broken-up and small-scale.

High quality Coast scenery managed for the overall public interest is an important resource for local communities. Federal management should strengthen relationships with local communities that support the role scenic Federal land has for them, and with all land managers to participate in and encourage consideration of the larger coast setting. Federal land purchases can build on the role federal land currently serves, and help to establish more coherent blocks of natural appearing land as the framework for Oregon scenery. Federal land management should preserve natural scenery, and minimize and restrict development on federal lands along travel corridors and at recreation sites.

The Siuslaw National Forest should review and update, as necessary, the Forest Plan standards and guidelines for viewsheds to reflect the change in timber management direction. Also, a new scenery management system is being adopted by the agency.

The Forest Service and Bureau of Land Management have different scenery management systems. Cooperative efforts to plan scenic resource management across administrative boundaries would better serve the public.

Recreation

Recreation opportunities in the Study Area can be differentiated along north, central, and south coastal areas and the inland area. The sandy dunes outdoor experiences are south of Florence. The central coast is rocky with sandy beaches and offers scenic vistas, forested campgrounds, and long stretches of beaches to walk along. Most of the resort town recreation opportunities are found north of Depoe Bay. Inland in the mountains are forested campgrounds, trails, and occasional viewpoints. Along rivers are waysides, boat launches, fishing spots, and a few campgrounds. Towards the Valley, parks provide more organized sport facilities. At bays, boating and fishing sites and other recreation opportunities are concentrated.

Public recreation opportunities are provided by numerous government agencies, including Forest Service, Bureau of Land Management, Oregon State Department of Forestry, State Parks, nine counties, and several cities and towns. Also, some boating facilities are provided by Port Commissions and Oregon Department of Fish and Wildlife.

Overall recreation guidelines for the Study Area are provided by the Oregon Outdoor Recreation Plan (1988-93 and 1994-99), the Oregon State Comprehensive Outdoor Recreation Plan (1991), and Statewide Planning Goal 5, which is "to conserve open space and protect natural and scenic resources". The Oregon Coastal Zone Management Act also applies particularly to the Study Area, and helps to guide planning and minimize impacts on recreation quality and other resources of recreation elements, such as individual boat ramps and docks.

Recreation Visitors

Data from county and federal agencies show an overall increase in recreation use and in the variety of activities on lands they manage. Use of State Parks has increased at day use and decreased at overnight sites during 1994. Chambers of Commerce report more users and a wider variety of activities in recent years (Chamber of Commerce 1995). Recreation use in the Study Area is highest in July, August, and September.

The highest recreation-use sites in the Study Area are day-use sites at state parks. More than half the state park day-use sites in the Study Area had more than 200,000 visits each in 1994, some over a million. Other sites in the Study Area with high use include Sea Lion Caves--a privately operated facility--and Windy Cove Campground in Douglas County. Appendix F.5 provides a list of developed recreation sites by county and includes visitor use information where available. Appendix F.6 provides a list of highest use sites.

Very high use occurs at many of the Forest Service sites in the Oregon Dunes National Recreation Area (Dunes Overlook, Horsfall and South Jetty Staging Area) and at Cape Perpetua Scenic Area. The high use levels may indicate that these sites are destination recreation sites for people who reside outside the

Study Area boundary. Uses of these sites may be tied to other uses of surrounding recreation attractions.

The Study Area generally has three types of visitors to its recreation sites: local, rural users; urban visitors from all over the country and from other countries; and visitors who travel west, often over the Coast Range from the Willamette Valley and, less often, from eastern Oregon. The state Department of Tourism's visitor profile shows that the Oregon Coast tourist is more interested in scenery than in recreation, and interested in a Sunday drive as a form of recreation (from a visitor profile done in 1988).

An upcoming profile is expected to show some increased interest in recreation. In the United States, in general, recreation "customers" are "increasingly older, urban, and more racially and ethnically diverse" (Dwyer 1994). Travel industry trends report that the number of single parent households continues to increase, the stress factor in travel is increasing, the "mature" market is greater, public concern about the environment is expanding, and the industry needs to learn many different cultures' customs in order to provide better service (from Travel Industry - Talking Points, June 1993).

Recreation Activities

Many different recreation activities are pursued in the Study Area. Most of the undeveloped recreation opportunities, such as hiking, wildlife viewing, mountain biking and other dispersed recreation activities occur on federal or state lands. Organized sports activities are generally pursued on county and city park lands.

Appendices F.7 and F.8 provide lists of recreation activities that occur on public lands in the Study Area. The types of activities available at sites managed by different agencies is generally not distinct, except that organized sports are only listed for County sites. See References for sources of recreation activity data.

Travel Through the Area. Coastal recreation opportunities attract people from out-of-state and central Oregon, as well as local communities. There are, therefore, large numberd of visitors traveling through the Study Area across the Coast Range to oceanside sites, and up and down the coast corridor. Use of Tillamook County Parks by Portlanders is described as "fluctuating with the weather," where people leave the city on good weekends and use county recreation sites on their way to the coast (Bradley 3-9-95). A large portion of recreationist's time is spent in the activity of "driving for pleasure" or driving to a destination site.

Developed Recreation. Most of the developed recreation sites are located adjacent to water. The recreation attraction and amenity value of the coast is shown by the density of parks, campgrounds, and waysides found there, compared to sites farther inland and elsewhere in Oregon. Recreation sites along the coast are adjacent to water, sand, or both. All, but a few developed recreation sites inland, are located adjacent to water. The few exceptions are on mountains which serve as observation points--Mary's Peak, Mount Hebo, Roman Nose--or in or near expanses of sand and sand dunes as along South Jetty (wetlands and water are also attractions to the area).

The recreation sites tend to be in clusters along a corridor of recreation opportunities associated with a natural feature -- creek, river, coast, peak, dune. Along these corridors, there are a series of recreation sites managed by various agencies. Even on land operated by one agency, there are corridors of sites as at Sand Lake, Sutton Lake, Siltcoos River, South Oregon Dunes, and the Wilson River.

Many, if not all, recreation sites have been used historically and pre-historically. A number are old homesteads of settlers and earlier were sites used by Native Americans. Forest examples are Cape Perpetua, Mt. Hebo's Pioneer Indian Trail, and Canal Creek which was a homesite and had been used by Native American prior to white settlement.

Trails. Most trails in the Study Area link recreation features within ten or fewer miles on land managed by one agency. A few trails are planned that cross agency boundaries on a more local scale, such as the trail planned by the BLM and the Forest Service in the area of Wassen Creek.

The Oregon Coast Trail and the Corvallis-to-the-Sea Trail are planned as long distance routes through the Study Area. Portions of these trails exist today and serve to link areas north to south, and east to west. Planning has been done cooperatively by several agencies.

Dispersed Recreation. The majority of federal lands is available for dispersed recreation. Large areas of semi-primitive to primitive land (described in the following section on recreation settings) offer dispersed recreation opportunities. Much of the Oregon Dunes NRA is used for dispersed recreation, and special designated areas, such as Drift Creek and Cummins Creek Wildernesses, and Cascade Head Scenic Research Area are used for dispersed recreation. All recreation use in Elliot State Forest is dispersed.

While types of recreation activities do not vary much between land management agencies, recreation settings do vary. The Siuslaw National Forest provides the only Wilderness settings in the Study Area and the only large primitive recreation settings for dispersed recreation. Federal land provides the only semi-primitive settings greater than 3,000 acres, and consequently may be called the most ideal semi-primitive recreation settings for dispersed recreation. The Forest contains most of the semi-primitive settings, as well as the largest areas of semi-primitive setting.

Wildlife Viewing. The Study Area has a variety of opportunities to view wildlife. On the coast, people watch birds, whales, and sea lions. Elk are watched along the Umpqua River corridor and at other flat lands along the coastal creeks. Prime whale-watching sites are found at Yaquina Head, Cape Perpetua, and from boats outside of Depoe Bay. At and near the Sea Lion Caves and on the docks of Newport, people can observe sea lions. People watch fish at fish hatcheries, particularly in the fall to see the salmon runs. Two fish hatcheries are on the Alsea River, one on the Siletz, one on Tillamook, one on Three Rivers/Cedar Creek of the Nestucca, and one at Lake Creek Falls (BLM).

Off-Highway Vehicles. The primary off-highway vehicle areas on public land in the Study Area are south of Marys Peak on BLM land (6000 visitors reported for

1994), Sand Lake, Tillamook State Forest, and the Oregon Dunes NRA. All face similar issues concerning the desire to separate OHV use from other uses and the need to minimize impacts of disturbance on adjacent lands.

Recreation Setting Condition

Much of the BLM land is in a roaded-natural or roaded-modified condition (BLM, 1995). (See Appendix F.9 for definitions of recreation opportunity spectrum classifications.) On the Siuslaw Forest, most land is inventoried as roaded modified. Most National Forest land in the Study Area has been given a recreation opportunity spectrum objective of rural, based on modified appearance -- modified vegetation patterns and roaded condition -- but is semi-primitive or roaded natural in social characteristics and setting. Classification of these land areas would more closely follow National Recreation Opportunity Spectrum definitions if classified as roaded natural or semi-primitive. With recent road closures, this land may become more roaded natural or primitive in appearance over time.

Five large blocks of forested land in the Study Area are in a semi-primitive to primitive condition:

Drift Creek Wilderness Area with Drift Creek Adjacent land, 11,707 acres. An adjacent owl habitat area has about 2000 acres.

Wassen Creek Area, 11,204 acres, includes Siuslaw NF and Coos BLM lands. On BLM land in the Wassen Creek Area, there are some well maintained roads and other roads that have completely revegetated. The area has been previously logged. Wassen Creek is designated by BLM as an "Area of Critical Environmental Concern." Wassen Creek can be linked with developed recreation opportunities offered by Sweet Creek Trailheads, Kentucky Falls.

Hebo - Nestucca, 13,172 acres ca. 1990, not included as undeveloped area in the Siuslaw NF Plan. Use of Hebo - Nestucca area is linked with developed recreation on Mount Hebo.

Cummins Creek Wilderness, 9,173. Cummins Creek Wilderness is associated with Cape Perpetua Scenic Area.

Rock Creek Wilderness, 7,486 acres.

For further discussion of management implications of these large areas of undeveloped land and adjacent land, see section G.

Four tracts of land in the Oregon Dunes National Recreation Area are semi-primitive and total 19,993 acres. They are separated by road corridors which have intensive recreation use. The least roaded area on Eugene BLM is the Upper Lake Creek Special Resource Management Area (Williams 3-24-95).

A number of smaller areas of undeveloped or "primitive" condition were noted during the Study:

The South Fork of the Kilchis River and the ridge top north of the Kilchis River (gross estimate 3,200 acres) - two tracts of undeveloped ground in the Tillamook State Forest.

Little North Fork of the Willis and Salmonberry River Canyon, important for "primitive" recreation value, particularly as related to fisheries - undeveloped land in the Tillamook State Forest.

Many unroaded tracts of 5 acres on Eugene BLM land.

Baker Beach/Lily Lake on the Oregon Coast, of interest for its primitive setting.

Threemile Lake and the Horsfall to Beale Lake area in the Oregon Dunes National Recreation Area are important for "primitive" recreation value related to fisheries (M.Clady 1995).

Primitive areas within State Parks, designated as natural areas or heritage areas (Johansen 3-27-95).

The number and size of recreation facilities is increasing. The number and size of buildings and paved surfaces continues to increase in existing recreation areas, and new areas are being developed for recreation. In developed recreation sites with a natural to rural setting, the tendency is to become more urban in materials and density. Some sites in the Study Area have become more urban in character than is appropriate to their recreation setting and may no longer provide the expected recreation experience.

Management Implications

Many of the the recreation opportunities along the coast are on federal land. The Department of Tourism finds that the public would like more recreation programs combined with education , more guided recreation opportunities, and some business opportunities such as outfitter guiding federal land (Roberts 1995). Other sources find that bicycle touring and mountain biking are not adequate to meet future demands (Chambers of Commerce and others 1995). The types of opportunities provided in the future may need to be changed to meet needs of older recreationists and the more varied population (Dwyer 1994).

The State Comprehensive Outdoor Recreation Plan (1994) continues to identify a shortage of primitive and semi-primitive recreation opportunity. The supply is consistently below the demand. The Plan recommends providing primitive recreation on smaller acreages as a way of increasing availability to more people.

The State Committee on Outdoor Recreation Plan and Goal 5 of the Statewide Planning Goals guide recreation planning in the Study Area. For federal land in the Study Area, the Northwest Forest Plan now also influences recreation planning and operations. Of the social conditions evaluated as part of this Study, some recreation activities appear to be contrary to the Aquatic Conservation Strategy objectives. Data on current condition included here shows that the same river, creek, and lakeside sites that the Aquatic Conservation Strategy aims to protect from human impact are the places most heavily used and enjoyed for recreation. Currently, no clear sense exists

among federal managers on how to resolve these opposing interests. We are seeking to protect creeks and riparian systems from human impacts and also to recognize and allow people to enjoy and benefit in health and spirit from these waterside sites. They are natural attractions for people who have instinctively felt them to be necessary to their existence since people have existed in the Study Area. Ample evidence shows that such places have always been seen as eminently habitable. The Northwest Forest Plan emphasizes the critical social values of the Forest, as well as serving to direct implementation of the Aquatic Conservation Strategy. We need to determine where the impact is unacceptable for other resources, and adjust recreation uses to balance the resource use. It would be difficult, and probably not desirable for human well-being, to eliminate recreation use at locations where social values have long been demonstrated by use.

The BLM reviews proposed recreation construction using criteria of the Aquatic Conservation Strategy (Foti 2-22-95). For National Forest management, this review has become a more clear step in planning. To help reduce impacts of new sites on riparian areas and implement the Aquatic Conservation Strategy, standards and guidelines concerning protection of riparian areas (FW-087 to 093) could be developed to apply to recreation and other human impacts, covering placement of built features relative to creeks, including placement of developed camping sites. An exception could be made where the built feature serves to reduce human impact. Some National Forests currently have a 100-foot setback from riparian areas for recreation development to meet soil and water concerns.

Watershed restoration projects have worked to reduce some human impacts to riparian areas at dispersed camping sites and from trail use. On Federal lands, Recreation Opportunity Setting (Appendix F.9) gives insight into site environmental quality. Sites which have developed beyond their appropriate Recreation Opportunity Setting may also have recreation use that exceeds the capacity of the site in its present condition. In the Study Area, as elsewhere, sites where recreation use has exceeded site capacity also contain evidence of environmental impacts. Currently, on Forest Service land, some obvious human environmental impacts at existing developed recreation sites are monitored and corrected (repaired, mitigated, restored) through annual surveys of site condition. A further systematic means of reducing human impacts is through the "Meaningful Measures" monitoring process which requires that standards of site ecological quality be met.

Within the Study Area, cities, counties, and the state--especially in the coastal zone--have for almost 20 years been evaluating and limiting potential impacts to water quality under the Land Conservation and Development Commission and the Coastal Zone Management Act. Both the Coastal Zone Management Act and the Statewide Planning Goals have the same emphasis as the Northwest Forest Plan on social values, interagency cooperation, and water quality and the way land planning must consider natural systems. Through implementing these laws and guidelines, the public and these agencies have evolved a local experience and knowledge of the natural systems, cultural resources, local people, and communities. This framework, which includes extensive cooperation, can aid current federal management efforts. The agencies have a systematic process for public involvement, where public involvement is incorporated, even institutionalized as part of planning, and where social concerns tend to be central to management.

Other Uses

Small Forest Products

In the Study Area, small or special forest products can be gathered on Tillamook State Forest, Elliot State Forest, BLM land, and on the Siuslaw National Forest. Appendix F.10 provides a list of special forest products available under permit in the Study Area. People also gather special forest products on private forest land.

The state Department of Forestry sells permits for collection of special forest products. On state Forest land products available vary according to the District where a permit is purchased. Special forest product information is kept by District, according to where permits are sold. The portion of Tillamook State Forest in the Study Area is in Tillamook and Forest Grove State Forestry Districts. Elliot State Forest is in western Lane and Coos Districts, immediately south of the Study Area. Salal, fern, moss, beargrass, and boughs are known to be gathered on Tillamook State Forest. Moss collection has increased substantially from 1993 to 1994. Bear grass permits have increased from 1990 to 1994, but few salal and bough permits have been issued. Elliot State Forest has had small brush leases for salal (Mortonsen 3-10-95). On State Forest land, most special forest product collection was done in the north part of the Study Area. Beargrass, cascara bark, ferns, firewood, moss, and poles were collected mostly in the northern State Forest land, on Tillamook District in 1993 (most recent data available). Salal, cedar products, boughs, cones, vine maples, small alder trees, and mushrooms were collected, mostly from the northeast on Forest Grove District.

On BLM land, sales of special forest products are down in 1994 from previous years because of policy changes (Hegg 1995). Similarly, policy changes have recently been made by the Forest Service. All special forest products are generally available everywhere across the forest (Hegg 1995). Beargrass (when collected) may be more available towards the coast. The Salem District, which is adjacent to the northeast portion of the Siuslaw Forest, issues the most permits for poles and rails, moss, and boughs. The Eugene District, adjacent to the central part of the Study Area, issues the most permits for greens. The Coos District which is adjacent to the Forest in the southern portion of the Study Area has the most permits for sawtimber/pulp wood, fuel wood, Christmas trees and ferns. The Coos District has the most revenue from ferns and fuelwood, and the most revenue from special forest product sales/permits. Salem has the greatest revenue from boughs, firewood and moss. Boughs on Salem District brought the most revenue of any one product on BLM managed land.

Special Forest Product collection also varies north to south on the Siuslaw National Forest. Poles (cedar and other), moss, mushrooms, alder stakes, transplants (vine maple, salal, shore pine, evergreen huckleberry, waxmyrtle), boughs, cascara bark, firewood (commercial, personal, and free, and further categorized into weekend and find your own), and Christmas trees are gathered on the Forest. Pole collection is greatest on Hebo. Moss collection and Christmas tree cutting are greatest to the north, on Hebo District. Alder stake collection is greatest on Hebo and Mapleton. More boughs are collected

on Waldport District than elsewhere on the Forest. Commercial firewood collection is greatest at Waldport. Firewood collection is greatest on the Waldport, Hebo, and Mapleton Districts. Mushroom collection is greatest at the Oregon Dunes. Transplant collection is highest on the NRA, but it is also high on the Waldport, Mapleton, and Hebo Districts. Data is given for 1993, and was not available for 1994.

The Siuslaw Forest Plan was amended in 1994 to include standards and guidelines for Special Forest Products. The new standards were developed with consideration for the Northwest Forest Plan, including the Aquatic Conservation Strategy. Special consideration was given to protection of riparian areas from the impacts of special forest products collection.

Hunting

The Study Area provides hunting opportunities for small and large game animals and birds, including bear, cougar, deer, elk, blue and ruffed grouse, cock pheasant, valley quail, mountain quail, turkey, mourning dove, band-tailed pigeon, duck and merganser, coot, geese (only in specific permit hunt areas), black brant, common snipe, and crow.

There were 2,531 archery hunters in the general vicinity of the Study Area in 1993 (see note below describing area). 33,686 people hunted deer with rifles. The Tillamook Area (Trask Game Unit) was hunted most within the Study Area for black tail deer (when hunters were asked which units they hunted most). For all deer, numbers of licenses show most deer hunters within the Study Area on the land between Highway 229 up by Lincoln Beach to Highway 36 down by Florence (the Alsea Game Unit).

The most archery elk hunters within the Study Area are north of Tillamook area (Wilson Game Unit). In the general Study Area in 1993, there were 2591 general archery hunters, or 5238 total elk archery hunters when restricted hunting is included. There were 17,054 rifle elk hunters in the general Study Area in 1993.

Bear were hunted in the northern most part of the Study Area (Wilson Unit) and in the Alsea/ Stott Mountain area in 1993. There were a total of 431 bear hunters with most in the Alsea/Stott Mountain area. Ninety-five bears were killed.

In 1993, there were 36 cougar hunters and 8 cougar killed in the South Coast hunting area. (Less than a sixth of the "South Coast area" is within the Study Area.)

Since 1952, statewide, the number of deer killed has decreased. In 1993, the number was about 29% lower, but the number goes up and down. The number of deer hunters in 1993 is 1.2 times what it was in 1952. The number also varies. The number of elk hunters has increased to more than 50 times what it was from 1933 to 1993. The number of deer killed is 37 times the number in 1933. The increase has been happening over the years. The number of cougar hunters has increased more than 20 times from 1976 to 1993. The number of cougar killed in 1993 is 39 times the number in 1976. The number has increased over the years.

Fishing

Fishing is a prime activity noted for developed recreation sites throughout the Study Area. The Area has fishing opportunities in creeks, rivers, estuaries, ocean, and lakes. See also "Recreation."

Estuaries within the Study Area are: Tillamook, Netarts, Sand Lake, Nestucca, Siletz, Yaquina, Alsea, Lower Siuslaw, Winchester, Depoe and immediately south of the Study Area, Coos. There are fifty some rivers and major creeks within the Study Area. Lakes include Sand, South, North, Hebo, Devil's, Mercer, Munsel, Clear, Sutton, Lily, Alder, Buck, Dune, Woahink, Siltcoos, Tahkenitch, Threemile, Beale, Horsfall, Butterfield, and Saunders. Lakes are concentrated east and west of Highway 101, where the creeks hit the sand dunes, with a few lakes in the hills inland. Fisheries are one of the primary resources of these water bodies and there are fisheries issues related to their management.

The Study Area includes the Northwest Oregon Department of Fish and Wildlife Fishery Zone with a small portion of the Southwest Zone (a portion of the Dunes and the part of the Umpqua River drainage). Fish caught include chinook, coho, other salmon, steelhead, warmwater game fish, other fish (Fish Division). In general, all wild (non fin-clipped) steelhead are required to be released.

In 1993, a total of 79,989 salmon and 16,400 steelhead were caught for sport and personal use within the Study Area according to the Oregon State Department of Fish and Wildlife Fish Division. Umpqua River and Bay (11,518) and Tillamook River and Bay (7819) have the highest number of sport fish caught among river bays within the Study Area. Among "regions" and "basins" in the Study Area, Tillamook Bay Region has the highest number of salmon and steelhead sport fish caught in the assessment area in 1993 (21,472), Nestucca Basin second highest (8090). (This is higher than the Coos Bay Basin total, 4095.)

Comparing 1981 to 1993, the sport fish catch of Chinook is down in all ports, but Garibaldi Bay. Coho sport catch numbers have gone down in all ports within Study Area (Fish Division, 1994). Numbers for these and other port species are the most accurate of fish historical statistics (Corrarino 1995) so were only used rather than also using individual river numbers which also generally show numbers down. Sport fish catch is down in Coos Bay, also. Chartered fishing boats numbers are observed to be lower in Coos Bay (Chamber of Commerce, 1995). For the ports within the Study Area, however the numbers have fluctuated over these years.

Note: The Study Area covers a small portion of Wilson Game Management Unit (#12), most of Trask G.M.U. (#14), Stott Mountain G.M.U. (#17), Alsea G.M.U. (#18), Siuslaw G.M.U. (#20), and a very small portion of Tioga G.M.U. (#24). The numbers of hunters and animals given here are based on counting all of Wilson, Trask, Stott Mountain, Alsea, and Siuslaw. Coos numbers are not included because the area within the Study Area is so small.