

Chapter 2: Socioeconomic Conditions and Trends for Communities in the Northwest Forest Plan Region, 1990 to 2000

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This chapter assesses the status and change of socioeconomic conditions for communities in the Northwest Forest Plan (the Plan) area between 1990 and 2000. We examine community socioeconomic status and change from a regional perspective to address the question: How did social and economic conditions change in communities in the Plan region between 1990 and 2000? To speak to the community level, we first define “communities” in the Plan area. We then provide information on community socioeconomic conditions and trends for communities in the Plan region. We also introduce a composite measure of socioeconomic well-being and present results on this measure for the Plan region and for two types of communities, characterized by proximity to Forest Service (FS) and Bureau of Land Management (BLM) lands.

Approach

The first step in conducting a regional analysis of community conditions is to define the unit of analysis, the community. The concept of community is a sociological phenomenon that continues to be shaped by differing interpretations of social structures, processes, relations, actions, and change related to human groupings. Understanding the relational and territorial dimensions of community life (Gusfield 1975) as part of defining the community unit of analysis may be important, but it rarely is used in large social assessments because resources are lacking. Social interactions contribute to defining a community as much as, or arguably more than, the place itself (Kaufman 1959, Luloff 1998, Wilkinson 1991), but such interactions are difficult to measure in a single community case study let alone hundreds of communities in a regional assessment. Thus, broad-scale social assessments often rely on secondary data sources with predefined boundaries of communities and limited socioeconomic measurements.

We defined place-based communities, rather than communities of interest (groups of like-minded people who gain strength from their relations and associations). We recognize that place-based communities are not the only form of community affected by changes in resource management, but agree it may be an appropriate unit of analysis for assessing the effects of landscape-scale resource management on local people (Force and Machlis 1997). Assessments that address the conditions and trends of other forms of community, such as mobile communities and other communities of interest, are important but are beyond the scope of this part of the report.

In the United States, social science research at the small scale is influenced by the availability of census and other secondary data. Secondary data influence how the geographic boundary of the unit of analysis is defined and what indicators and measures are used to assess socioeconomic conditions and processes. One of the most commonly used designations of communities in social assessments is a census place. Census places include incorporated places and census-designated places, which are unincorporated communities that meet criteria defined by the U.S. census. Census places only represent a portion of the population, however. Although this limitation may not be problematic for some social science research, it may be problematic for socioeconomic monitoring, particularly when the objective is to better understand relations between rural communities and the management of public lands. The high population of rural residents in the Plan region who do not live in census places, but live close to public lands prompted us to develop our own delimitation of communities in the region (Donoghue 2003).

Defining Communities in the Plan Region

Many people in the Plan region live in unincorporated localities near public forest lands. Large-scale monitoring and social assessment projects that examine the relations between forest management and communities may need to pay particular attention to defining the unit of analysis so that people living in rural, unincorporated places with

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close connections to public lands are represented. Had we chosen a frequently used designation of community for our analysis, namely census places, many communities in rural areas would have been left out of the analysis.

Thus, we developed our own definition of communities to represent **all communities and all people in the Plan region**. To aggregate the census block groups into communities, we modified an approach used in the social assessment for the Sierra Nevada Ecosystem Project (Doak and Kusel 1996). We developed a process for aggregating 7,776 block groups from the 1990 census into 1,314 communities and 10 metropolitan areas in the region. An expanded discussion of the methods and procedures for aggregating the census block groups can be found in appendix C and Donoghue (2003), although a brief overview is presented here.

To aggregate the census block groups, we combined geographic information system analyses with a considerable amount of visual verification to aggregate the census block groups into meaningful units of analysis. This verification included information about roads, school districts, population size, public lands, census designations, and other spatial and demographic features, including a geographic names information system list of populated places. Some distinct advantages accrue from using census block groups as building blocks for defining communities. They are the smallest unit for all census summary statistics, including short-form data (100 percent of the population) on population and housing characteristics, as well as long-form data (sample of population) that includes social characteristics, such as education and ancestry, and economic characteristics, such as income, employment, place of work, and public assistance. Block-group boundaries, particularly in rural areas, follow along roads, telephone lines, fences, streams, and other geographic features and do not necessarily coincide with socially meaningful geographic places. Fortunately, block groups are small enough that they can be aggregated into something more representative of a community, but not so small that aggregating them creates an unruly data management task.

In general, when the criteria to aggregate did not point to an obvious aggregation of block groups, we tended not to aggregate.² Thus, numerous, relatively small communities are in this analysis. The boundaries of the communities were not “ground truthed” by community residents. Such a process was beyond the scope of this work, given the size of the region. Fieldwork related to the Plan socioeconomic monitoring project (see other volumes of this report) revealed that, for some communities, local residents perceived their community to have different boundaries than those provided through the block group aggregation. Local residents and officials of the 12 case-study communities concluded that four communities coincided with the original block group aggregation, seven required additional aggregation to better reflect the boundary of the community, and one required dividing the original block group aggregation into two communities. Although this fieldwork suggests that further aggregation may have more accurately reflected some communities, we believe that using the original 1,314 communities in a regional analysis will provide an adequate perspective of socioeconomic change for a large and diverse set of populations and may reveal differences among smaller localities that otherwise would be masked if additional aggregation was done.

Throughout this chapter, the descriptor “communities in the Plan region” refers to the 1,314 communities that exist in 72 counties of western Washington, western Oregon, and northern California, as defined through a process of aggregating census block groups. The region includes the lands in the range of the northern spotted owl (*Strix occidentalis caurina*) and counties that were eligible for economic assistance through the Northwest Economic Adjustment Initiative. We do not assess change in the 10 metropolitan areas identified through the aggregation process because the direction from the Record of Decision was on rural communities (USDA and USDI 1994).³

² Given the application of this work for other social science research, we determined that it would be easier to further aggregate block groups rather than disaggregate communities.

³ The 10 metropolitan areas include San Francisco, Santa Rosa, and West Sacramento, California; Portland, Eugene, and Salem, Oregon; and, Bremerton, Richland-Kennewick-Pasco, Seattle, and Tacoma, Washington.

Data from the 1990 and 2000 censuses were used to examine socioeconomic change at the community scale, as defined by the aggregations of census block groups. The data from 1990 and 2000 were not immediately comparable, however. The U.S. census modified the 1990 block group boundaries for the 2000 census to reflect changes in population and boundary revisions resulting from local input. For instance, the 53 community block group aggregations that we identified in the Olympic Peninsula area in Washington contained 124 block groups in 1990. The boundaries for about 33 percent of those block groups changed in the 2000 census. To make community socioeconomic data comparable from one year to the next, we developed an approach that approximated the spatial allocation of population and housing by estimating the proportion of population in the 2000 block groups that overlapped with the 1990 block groups. Proportions were calculated for each of the 2000 census block groups that overlapped the 1,314 community aggregations. They were developed by calculating the proportion of the population or housing of each 2000 block (the smallest census geography containing on average 100 people) found in each community. The 2000 community block populations were grouped and totaled by block group, producing 2000 block group populations within the communities. The community populations were divided by the total block group populations, producing the proportion of the 2000 population in each community. A similar procedure was completed for households and house units to produce housing proportions. These proportions were used as multipliers for 2000 socioeconomic data so that these data approximated the same 1,314 community boundaries defined by aggregating the 1990 block groups.

For analytical purposes, each community has been spatially represented as a polygon and a point. The community polygons are contiguous and span the entire region (fig. 2-1). As such, the boundaries of many communities contain public lands. Some communities relatively small in population may appear geographically large. Also, many polygons contain several centers of populations or small localities. One community point was located in each polygon to reflect the largest population center, but it should not be interpreted to reflect the only location of population in a community.

Block group aggregation allowed us to examine socioeconomic data for all residents in the region. To illustrate, in 1990, 517 census places (nonmetropolitan) existed in the Plan area, comprising approximately 2.5 million people. By comparison, because we aggregated census block groups into meaningful communities, we were able to reflect the socioeconomic conditions of more than 4.0 million people (1,314 communities) in the Plan region.

Socioeconomic Conditions and Trends for Communities

This section describes socioeconomic conditions and trends for the communities in the Plan region by examining aggregate community data. The socioeconomic indicators discussed in this report were derived from 1990 and 2000 census data and reflect population, education, employment, income, and other sociodemographic indicators. Data were derived from the long-form census survey, which went to a sample of about one in six households during each census.⁴ The U.S. census uses data from the sample to produce estimates for different units of analysis, such as block groups. To arrive at one measure for the region, averages were taken of the socioeconomic data at the community scale.

Northwest Forest Plan Region

Population—

Total population for the entire United States increased between 1990 and 2000 by 13.2 percent, with the highest increase in the West (20 percent) and South (17 percent) and the lowest increases in the Midwest (8 percent) and Northeast (6 percent). Combining the communities in the Plan region with the 10 metropolitan areas in the region, the total population in the Plan area went from 8.57 million in 1990 to 10.26 million in 2000, an increase of 19.8 percent. The total population of communities in the Plan region—the 1,314 communities—went from 4.13 million in 1990 to 4.98 million in 2000, an increase of 20.6 percent. The population of communities in the Plan region ranged

⁴Each person whose usual residence is in the United States is included in the decadal census, regardless of the person's legal status or citizenship. Migrant agricultural workers who did not report a usual residence elsewhere were counted as residents of the place where they were on census day (U.S. Census Bureau 2004).

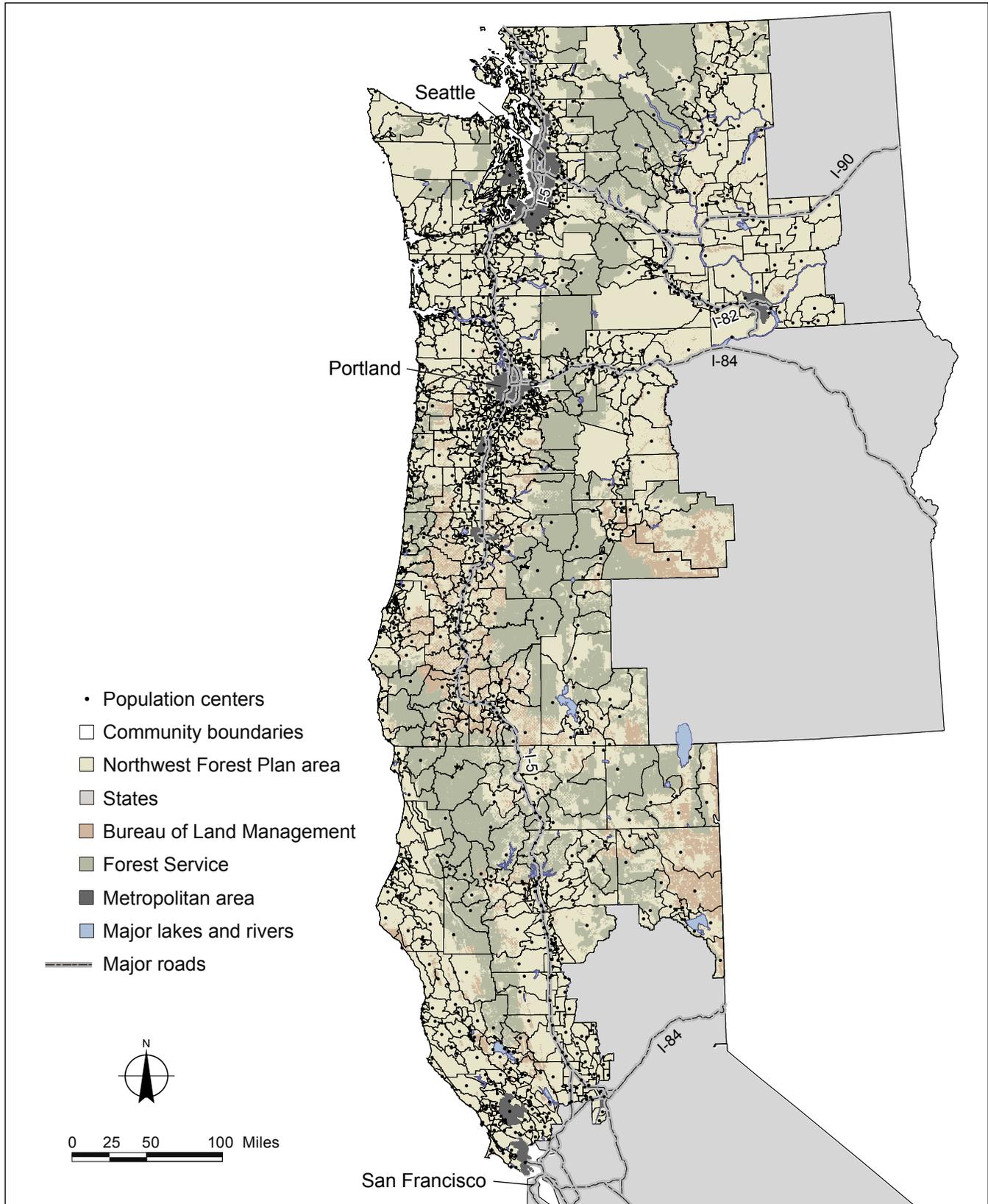


Figure 2-1—Community boundaries and community population centers for the Plan region.

from 75 to 114,806 in 1990, and 88 to 144,306 in 2000, with the majority of communities having between 501 and 2,000 people (fig. 2-2). The average population in the communities in 1990 was 3,141 and in 2000 was 3,790. The population for the 1,314 communities in 2000, using the point associated with each community polygon as a reference, is shown in figure 2-3.

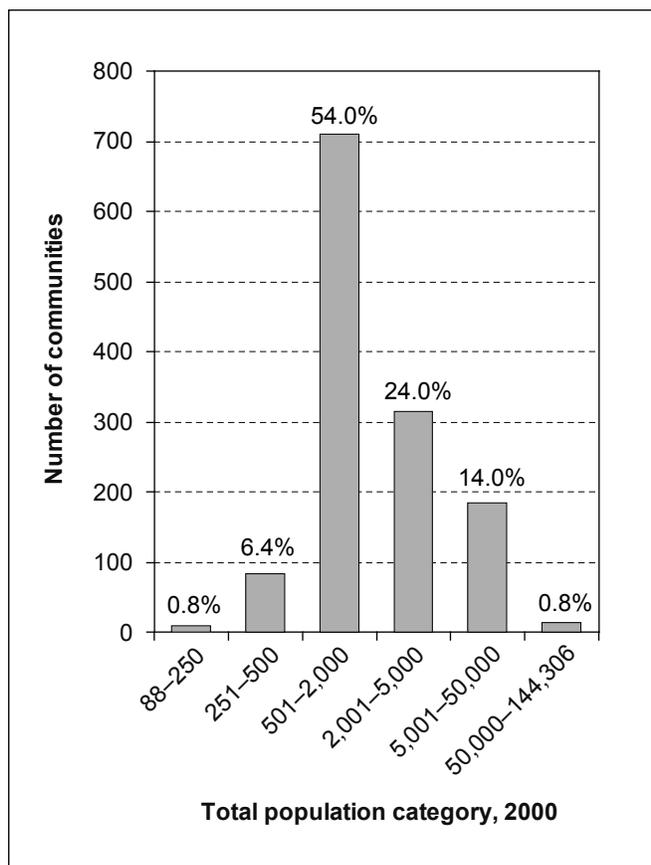


Figure 2-2—Number of communities by total population categories, 2000.

Population change—

Changes in population and population density are important because of the possible effects on land use planning and quality of life. Although population is increasing in the region, about one-fifth of the communities (21 percent) had a negative change in population (up to -74 percent) between 1990 and 2000 (fig. 2-4). The communities that lost population in 2000 tended to be fairly small, 16 percent with

populations between 88 and 500 people, 68 percent with populations between 500 and 2,000 people, and 14 percent with between 2,001 and 5,000 people. About 40 percent of the communities had population increases at lower rates than the region as a whole (between 0.01 and 20 percent). The range of population sizes for communities with a lower than average population increase is consistent with the distribution of community sizes for the region. The remaining 40 percent of communities had population increases from 20 to over 200 percent between 1990 and 2000. This group had proportionately more communities in the larger population-size categories, namely the 2,000–5,000 and 5,001–50,000 categories. Thus, the bigger communities tended to have faster rates of population increase, and the communities losing population tended to be relatively smaller.

Population density—

Population density for 2000 is shown in figure 2-5. Population density is calculated as the total community population divided by the area of the community polygon not including acres of public lands. Public lands are FS, National Park Service, BLM, U.S. Fish and Wildlife Service, state lands, and military lands. Population density measures, such as those for the counties, often include public lands, however. Such measures provide a sense of rurality that an area might have, but do not provide information about limits to growth in rural areas. The contribution of public open spaces to a sense of rurality is important, and can be interpreted from land ownerships displayed on the map. Our measure of density does not include public lands. Community boundary polygons reflect the census protocol to make block group boundaries contiguous and thus include both public and private lands. However, community development does not occur on public lands. Removing public lands from our measure of population density reflects how much a community can grow within the boundaries of private lands. For instance, some communities may have high percentages of public lands and only limited developable lands, but they may be near metropolitan areas and experiencing high population growth, resulting in a higher population density than areas with more developable land.

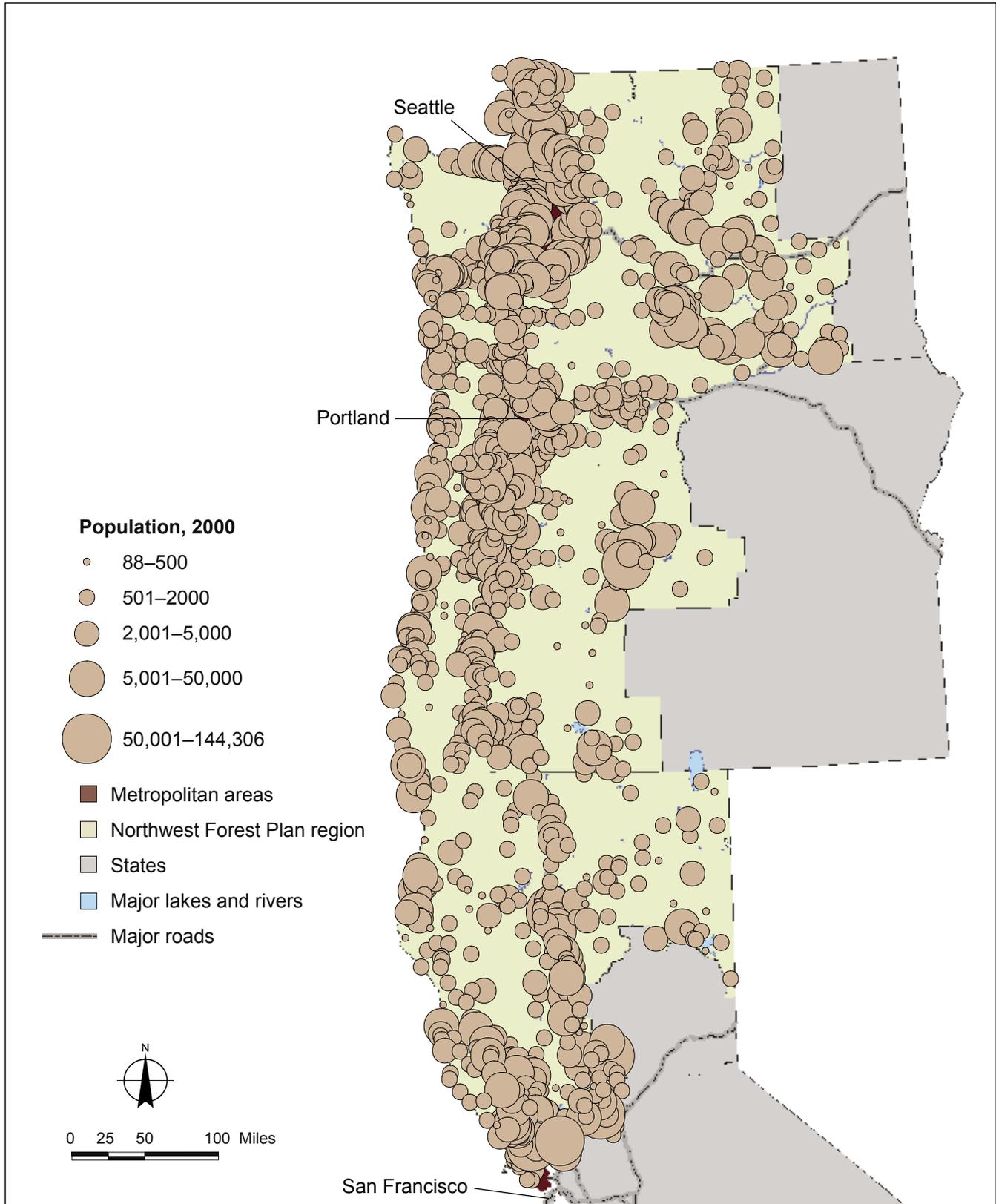


Figure 2-3—Community population, 2000.