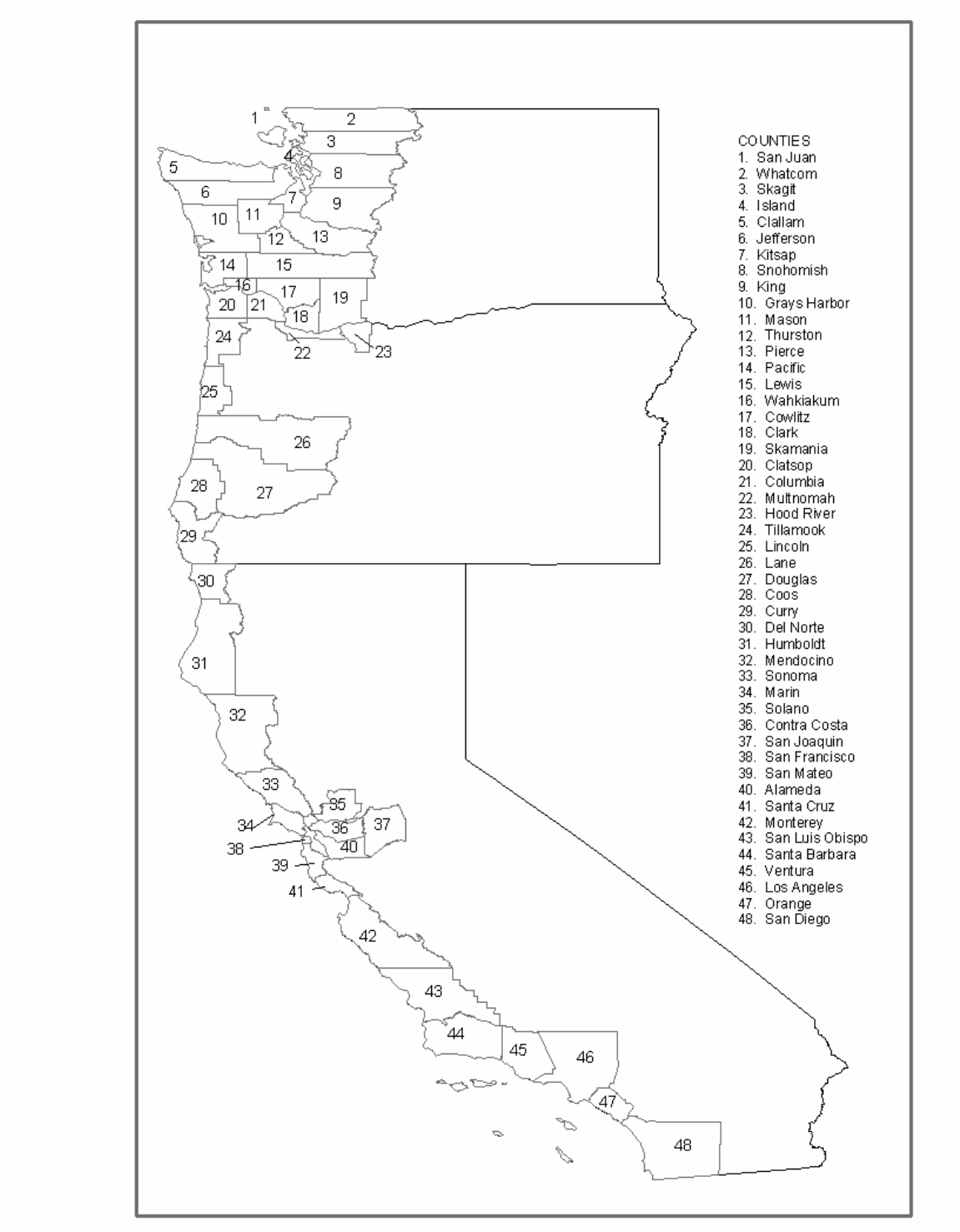
SECTION III

Results

Geographic Information Systems (GIS) Demographics

Results of demographic mapping of each county are discussed below. Maps that describe population, per capita income, percent of unemployment, percent of poverty, percent of vacant housing units, median year a house was built, isolated cities, recreational fishing ports and commercial ports are displayed below for Washington, Oregon and California. For a complete list of Washington, Oregon and California counties included in this report, please see Figure 1.

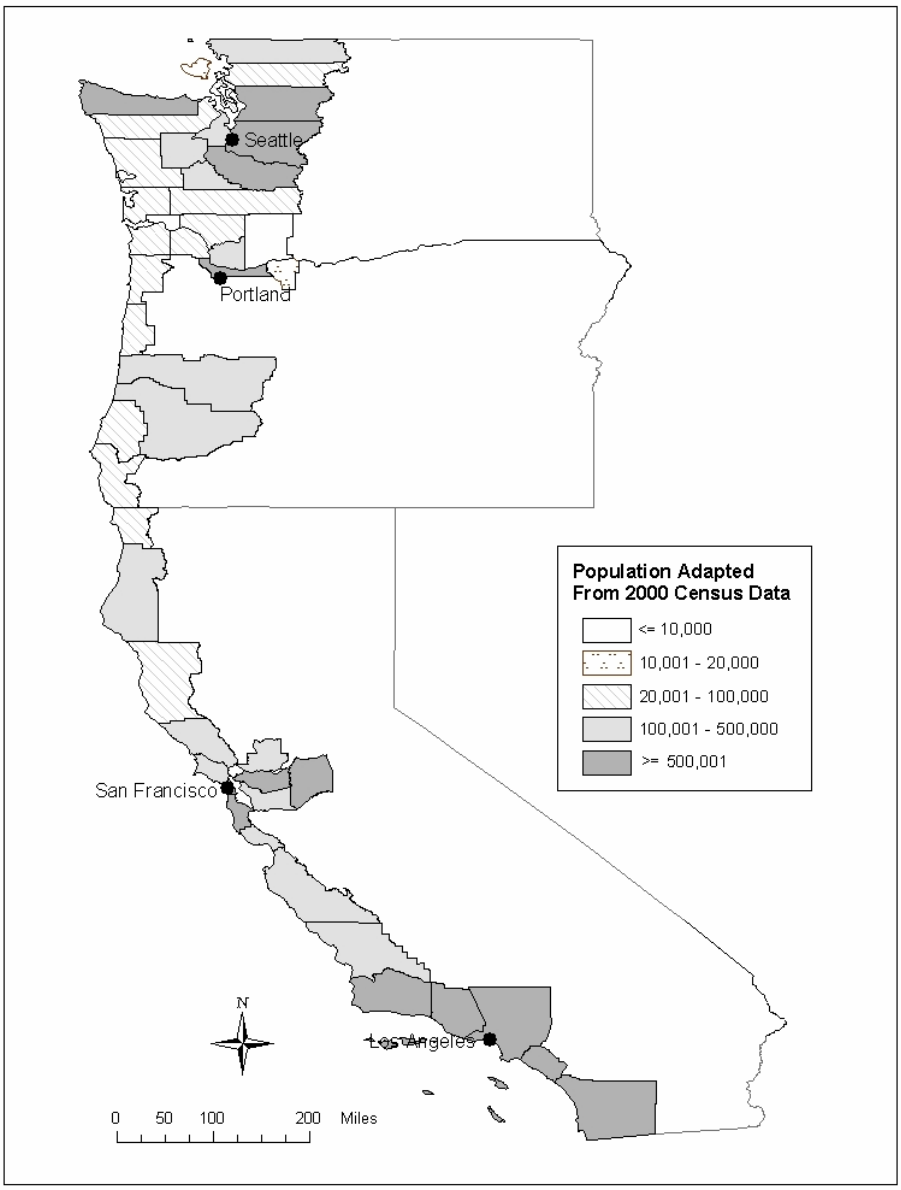
Figure 1. List of Washington, Oregon and California counties.



Population

The GIS map in Figure 2 displays population information from 2000. The mean population among the counties is 2,085,544, with the minimum being 3,824 and the maximum at 9,519,338. Median populations by county in Washington, Oregon and California fall in the range from 20,000 to 500,000 people. The highest population is concentrated in Clallam, King, Pierce and Snohomish counties in Washington, in Multnomah County in Oregon, and in Los Angeles, Orange, San Diego, Santa Barbara and Ventura counties in California. The county with the smallest population is Whakiakum, in Washington.

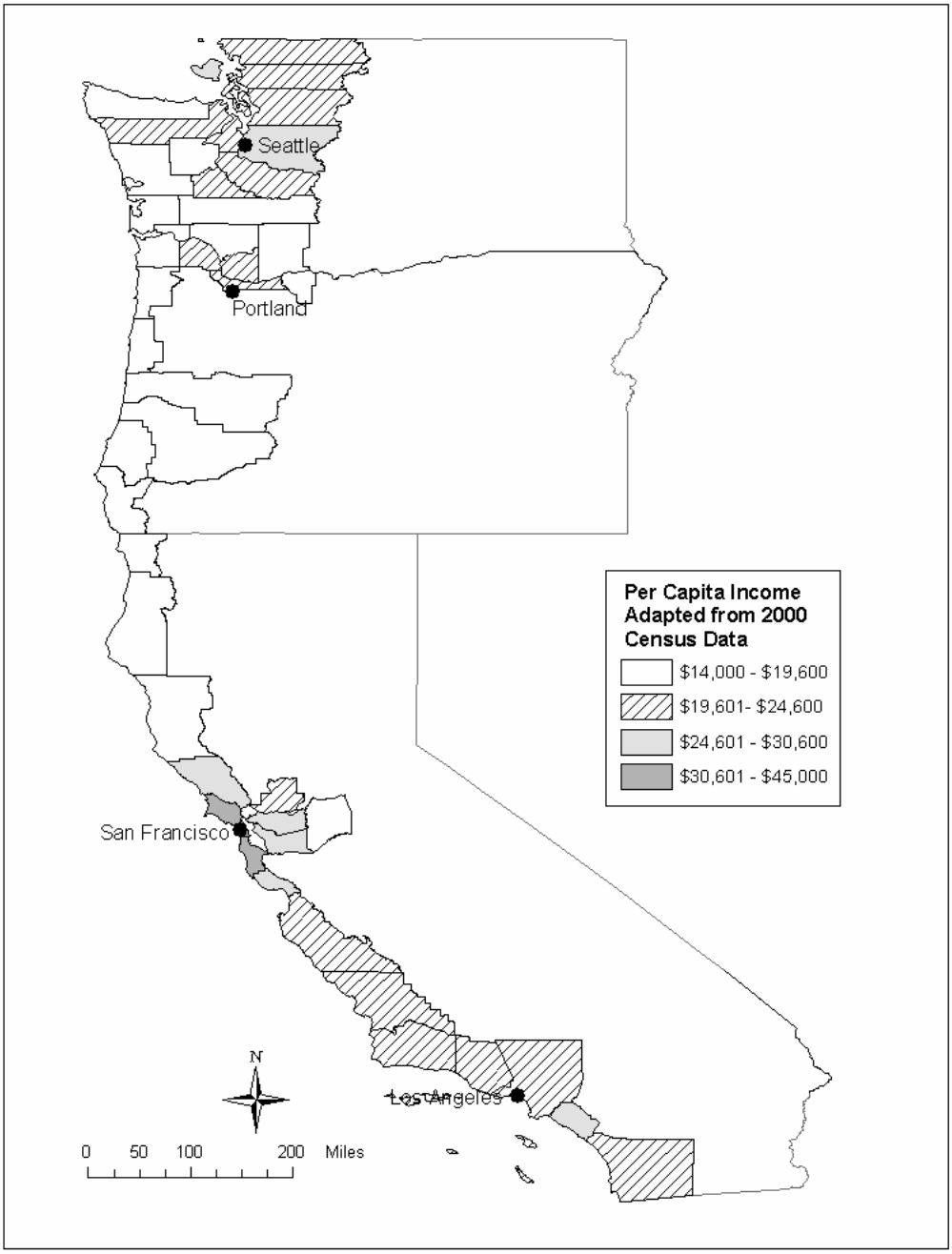
Figure 2. Population.



Per Capita Income

In Figure 3 below, per capita income is represented in Washington, Oregon and California from 2000 Census data. The mean income is $19,004 with the minimum at $14,573, and the maximum at $44,962. A total of 18 counties fall in the per capita income category of $19,601 to $24,600.

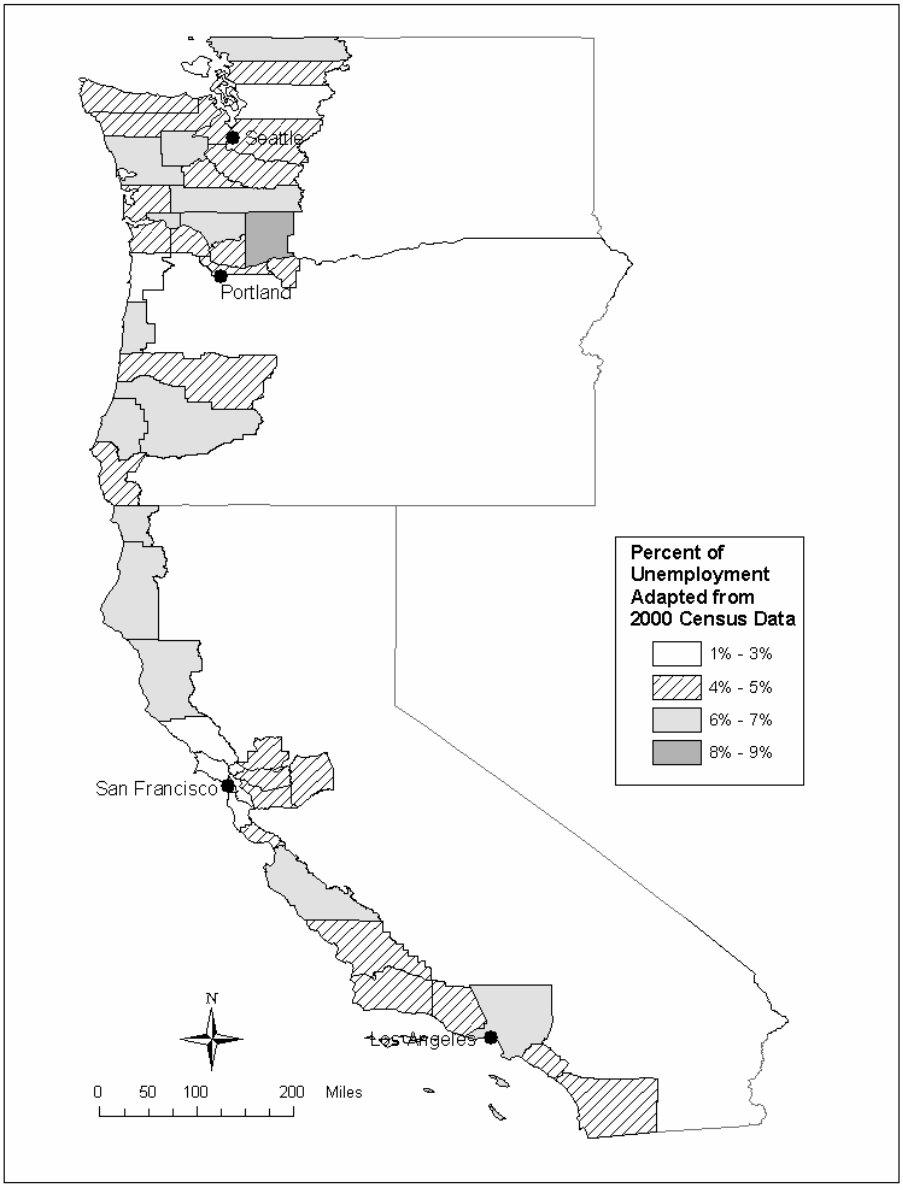
Figure 3. Per capita income.



Unemployment

Unemployment rates in 2000 ranged from two to nine percent, with a mean of four percent. With the lowest unemployment rate at two percent, one county in Washington and Oregon and four counties in California fell into the lowest range of unemployment. These counties included: Snohomish, Tillamook, Sonoma, Marin, San Francisco and San Mateo. Additionally, Washington contained one county that had a nine percent unemployment rate (Skamania) (Figure 4). Overall, more counties fall within the four to five percent unemployment range than any other (WA=52%, OR=50%, CA=53%).

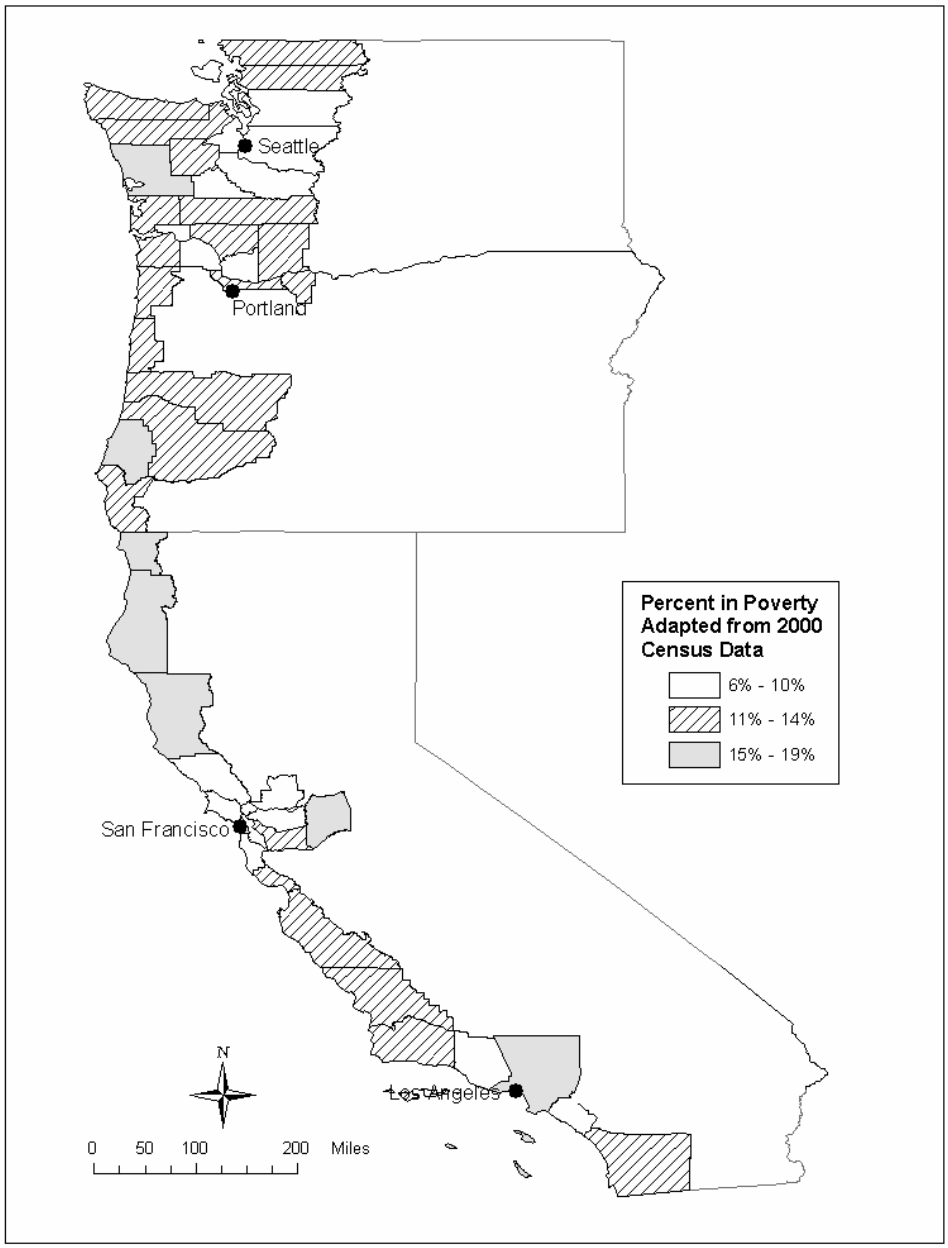
Figure 4. Unemployment.



Poverty

Percent below poverty for Washington, Oregon and California counties are presented in Figure 5 below. The mean percent was ten while the minimum was six and the maximum percent below poverty was 19. California had five counties with the highest percent below poverty; these were Del Norte, Humboldt, Los Angeles, Mendocino and San Joaquin. Both Washington and Oregon had only one county each that fell in the highest range of poverty; these counties are Grays Harbor and Coos.

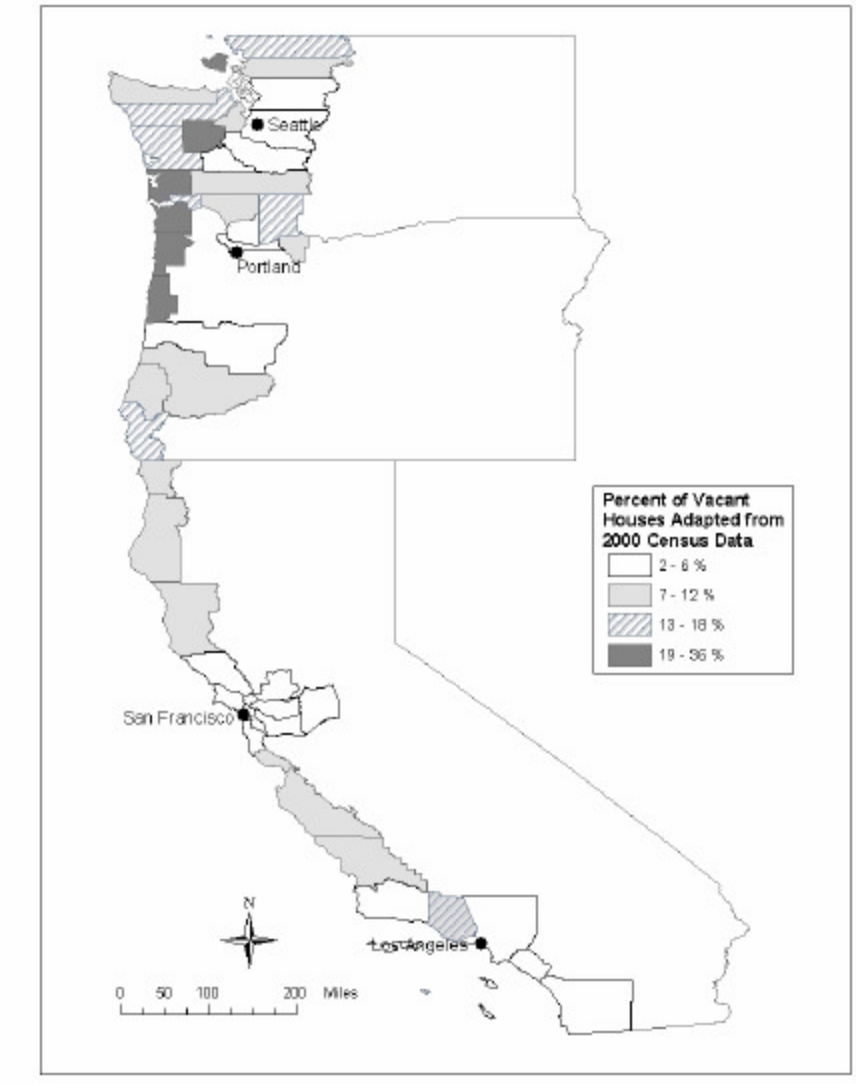
Figure 5. Poverty.



Vacant Housing Units

The percent of vacant housing units ranged from 11 to 29 percent, with a mean of five percent. Washington contained three counties that fell within the largest range of vacant housing units (Jefferson, Skamania and Whakiakum), Oregon contained only two (Clatsop and Tillamook), while California had none. An interesting observation to note is that over half of Washington, Oregon and California's counties fall within the lowest range of vacancy rates in 2000, while only 20 percent of Oregon's counties and 16 percent of Washington's counties fall within the highest range of vacancy (Figure 6). Locating counties with high vacancy rates may lead to a greater understanding of fishing seasons and work availability. For example, if fishermen and crewmembers reside/work in a port during the summer fishing season, this might explain why houses are empty during non-fishing seasons.

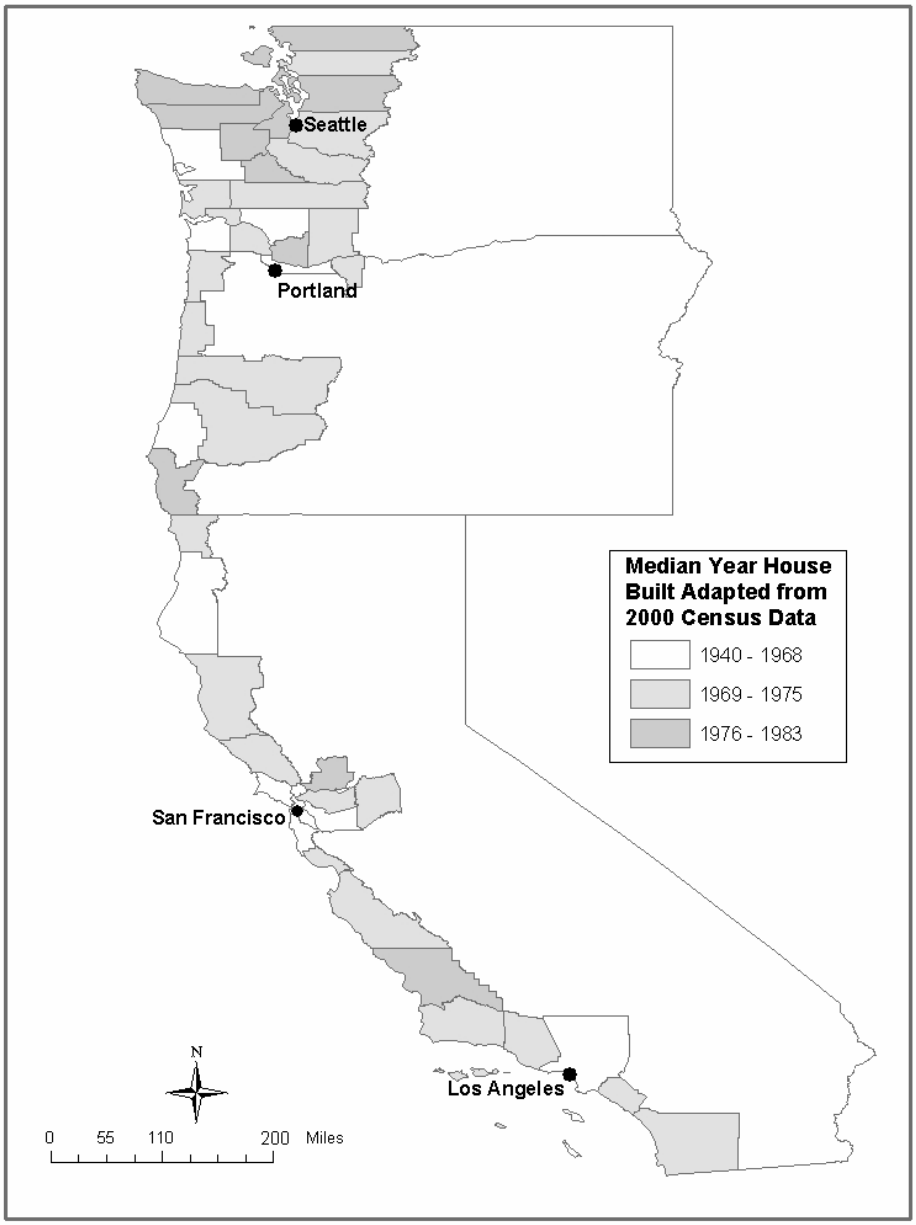
Figure 6. Vacant housing units.



Median Year House Built

For the most part, Washington, Oregon and California contained counties with the bulk of homes built between 1969 and 1975. Washington and Oregon had only two counties each with homes built between 1940 and 1968, while California had seven counties fall within this category. Conversely, Washington contained the most counties with homes built most recently (between 1976 and 1983) (Figure 7). Understanding the median age of houses by county might shed light on the economic state of a community.

Figure 7. Median year house built.



Isolated Cities

A total of 17 cities were identified as geographically isolated using ICBEMP's parameters (Figure 8a). These cities had a population of 1,900 or less, were not located on a major highway and fell outside of the 35-mile buffer of cities over 20,000. The isolated cities in Washington include: Neah Bay (population 794), La Push (population 364), Tahola (population 824), Moclips (population 598), Copalis Beach (population 448), Ocean City (population 179), Markham (population 73), Junction City (population 95), Cohassett Beach (population 621), Grayland (population 992), Tokeland (population 275), Ocean Park (population 1,459), and Naselle (population 361). In Oregon four isolated cities were identified: Oceanside (population 351), Cape Mears (population 49), Netarts (population 705) and Powers (population 737). California did not have any geographically isolated cities.

PSMFC took ICBEMP's analysis one-step further to explore the concept of commuting via roads, compared to commuting by boat. To do this, two different buffers (30 and 40-miles) were placed around cities with a population greater than 25,000. Results did not change significantly in the number of geographically isolated communities in Washington with the 30 and 40-mile buffers; however, Oregon cities became more sensitive with the change in buffer size (Figure 8b). In Washington, Naselle was the only identified isolated city to fall outside of the 40-mile buffer, while Oregon resulted in three isolated cities (Oceanside, Cape Mears and Netarts) (Table 2).

Table 2. Cities identified with three different variables.
Note: this table compared the isolated cities identified by the three buffers.

Isolated City	30-Mile Buffer and Population >=25,000	35-Mile Buffer and Population >=20,000	40-Mile Buffer and Population >=25,000
Neah Bay, WA	Yes	Yes	Yes
La Push, WA	Yes	Yes	Yes
Tahola, WA	Yes	Yes	Yes
Moclips, WA	Yes	Yes	Yes
Copalis Beach, WA	Yes	Yes	Yes
Ocean City, WA	Yes	Yes	Yes
Markham, WA	Yes	Yes	Yes
Junction City, WA	Yes	Yes	Yes
Cohassett Beach, WA	Yes	Yes	Yes
Grayland, WA	Yes	Yes	Yes
Ocean Park, WA	Yes	Yes	Yes
Tokeland, WA	Yes	Yes	Yes
Naselle, WA	Yes	Yes	No
Oceanside, OR	Yes	Yes	No
Cape Mears, OR	Yes	Yes	No
Netarts, OR	Yes	Yes	No
Powers, OR	Yes	Yes	Yes

Other reasons why a city might be geographically isolated may include a windy, narrow road, a mountain range, frequent mudslides on roads, etc.

Figure 8a. Isolated cities identified with a 35-mile buffer around cities with a population greater than 20,000 people.

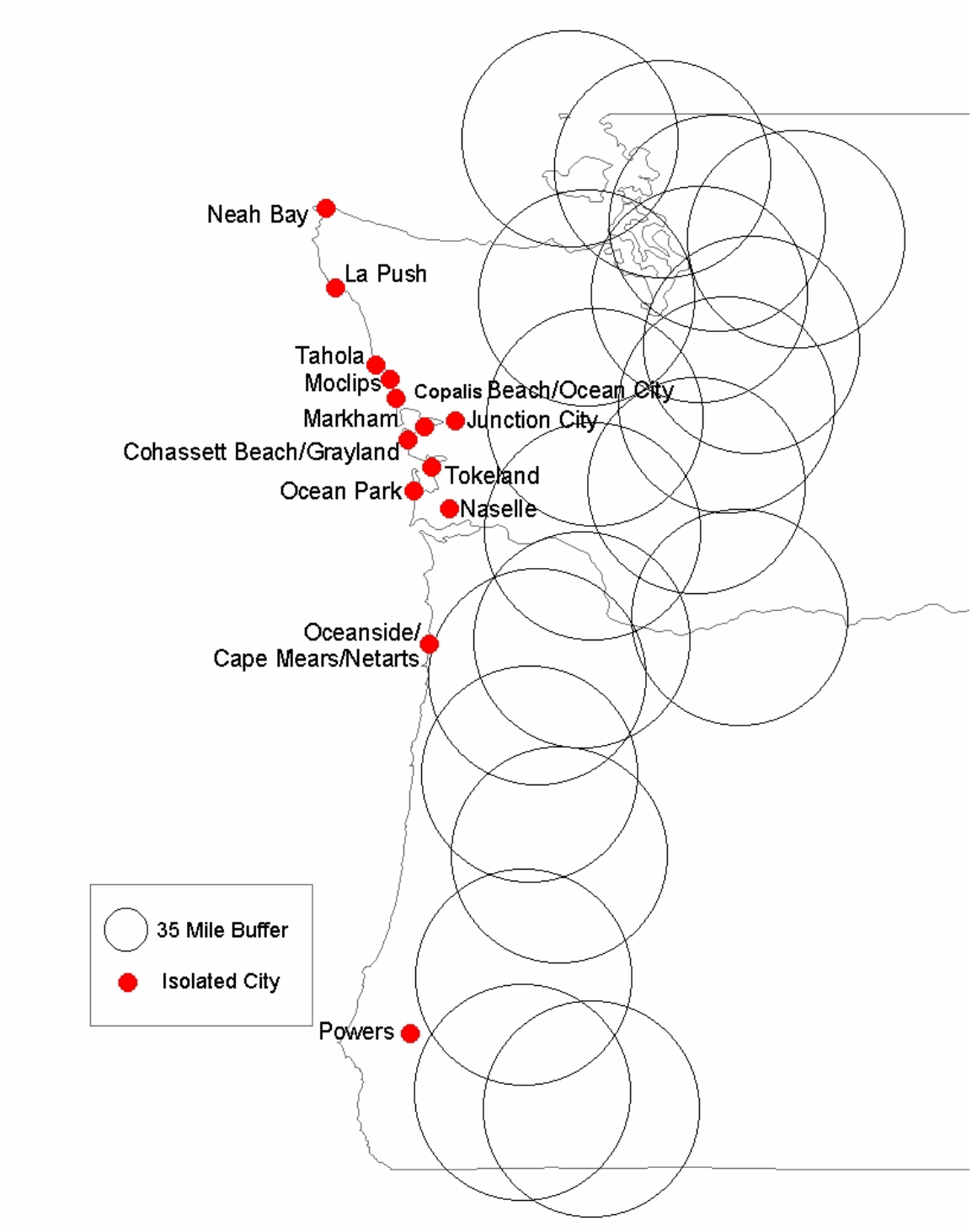
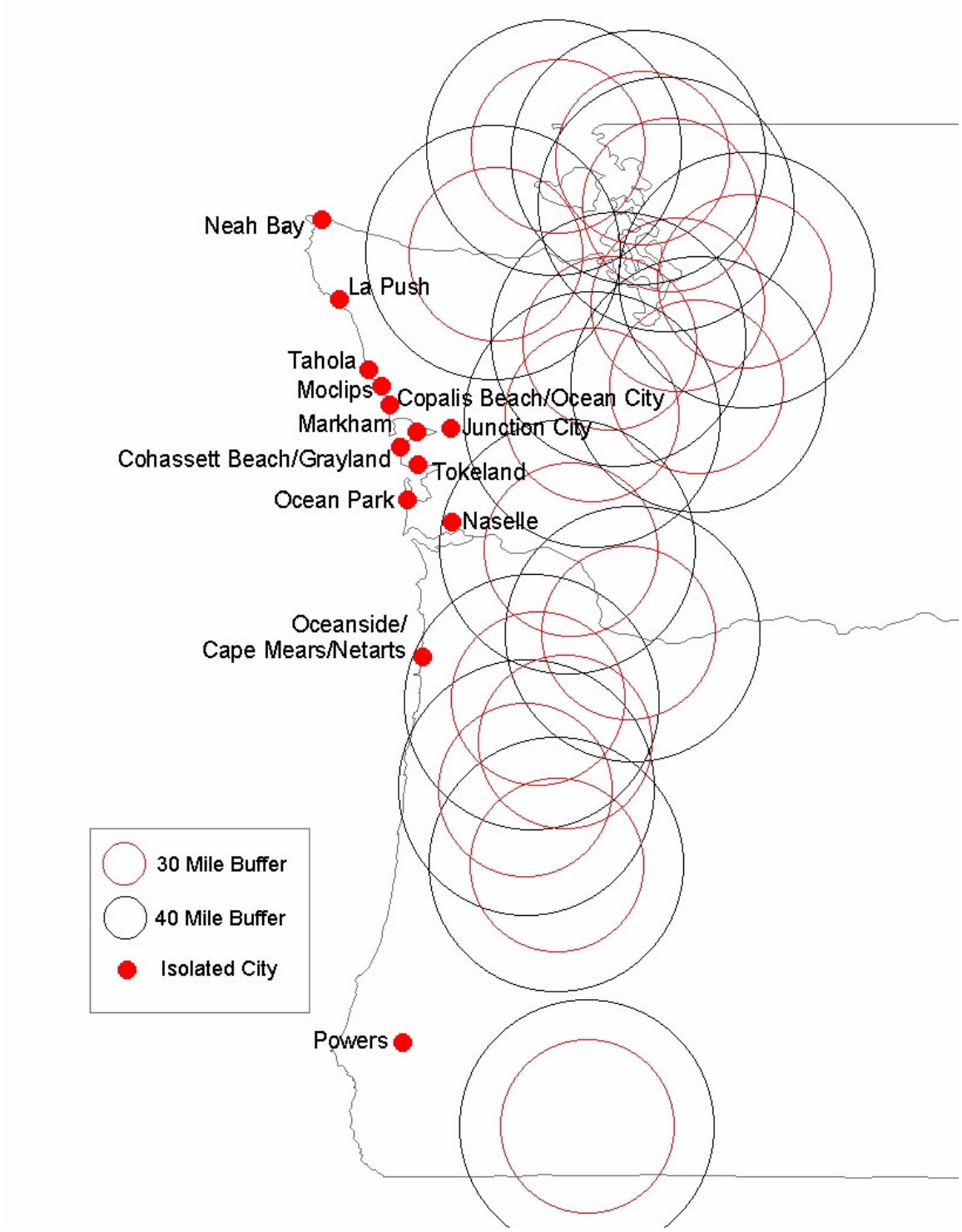


Figure 8b. Isolated cities identified with a 30 and 40-mile buffer around cities with a population greater than 25,000 people.



Commercial and Recreational Fishing Ports

The following two maps (Figure 9a and 9b) report the location of commercial and recreational fishing harbors/ports based on interviewee responses. The interviewees themselves will not be revealed due to confidentiality. The results are founded on the answers given by participants from the question: what percent of boats in your harbor/port are recreational and commercial? If a harbor/port was made up of more than five percent of commercial fishing vessels, it is reported in Figure 9a. If a harbor/port was made up of less than five percent of commercial fishing vessels, it is reported in Figure 9b. There are a total 46 recreational fishing ports and 19 commercial ports reported by interviewees. The last map in this section (Figure 9c) reports the location of commercial ports based on 2001 PacFIN data.

One issue to acknowledge, however, is the example of Ilwaco, WA. In Figure 9b Ilwaco is listed as a recreational fishing port. This is because the interviewee's response to the above question resulted in the port containing less than five percent of commercial fishing vessels. This response, however, does not imply that Ilwaco is not also a commercial fishing port. In fact, the fish processing plant located there is one of the largest employers in the county. Ilwaco is simply listed in Figure 9b because the port contains more recreational boats than commercial.

Figure 9a. Commercial fishing ports based on interviewee response (more than five percent of the vessels at these harbors/ports are commercial). Please note if a port is not listed in Figure 9a, it is because an interview did not take place there, not because the port is recreational. For a more complete map of commercial fishing ports based on 2001 PacFIN landings data, please see Figure 9c.

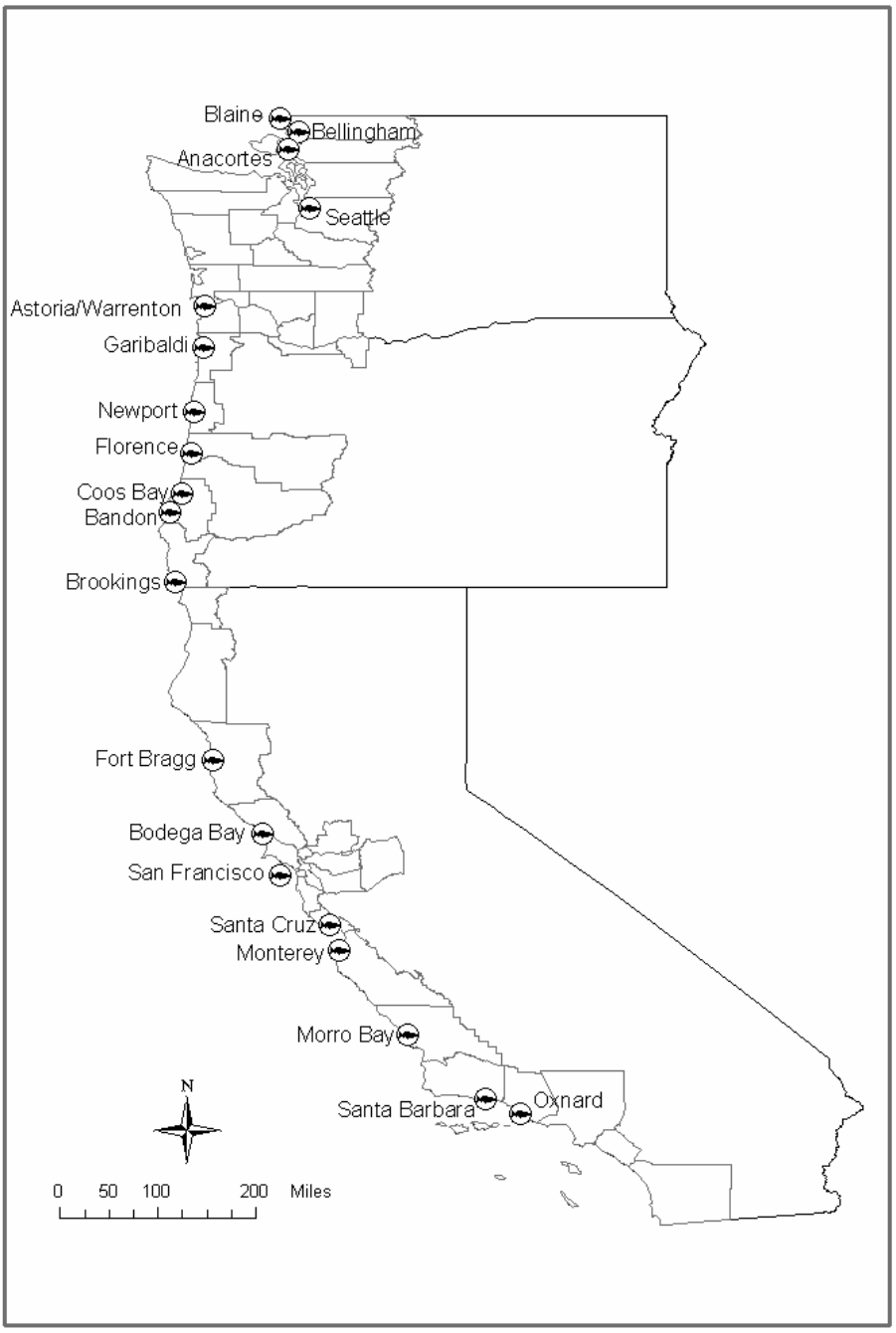


Figure 9b. Recreational fishing ports based on interviewee response (more than 95 percent of the vessels at these harbors/ports are recreational). Please note if a port is not listed on the map, it is because an interview did not take place there.

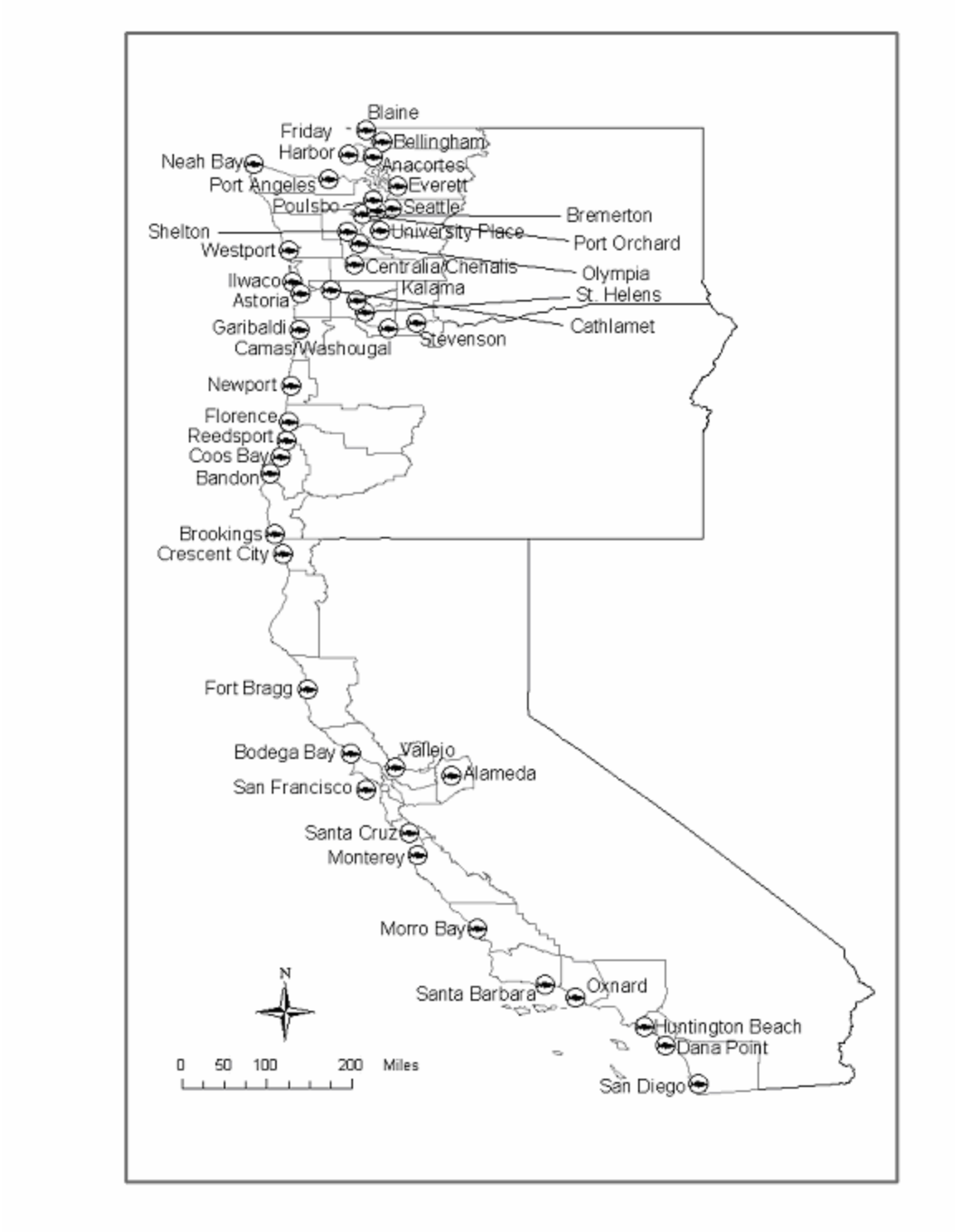


Figure 9c. Commercial fishing ports based on 2001 PacFIN data.