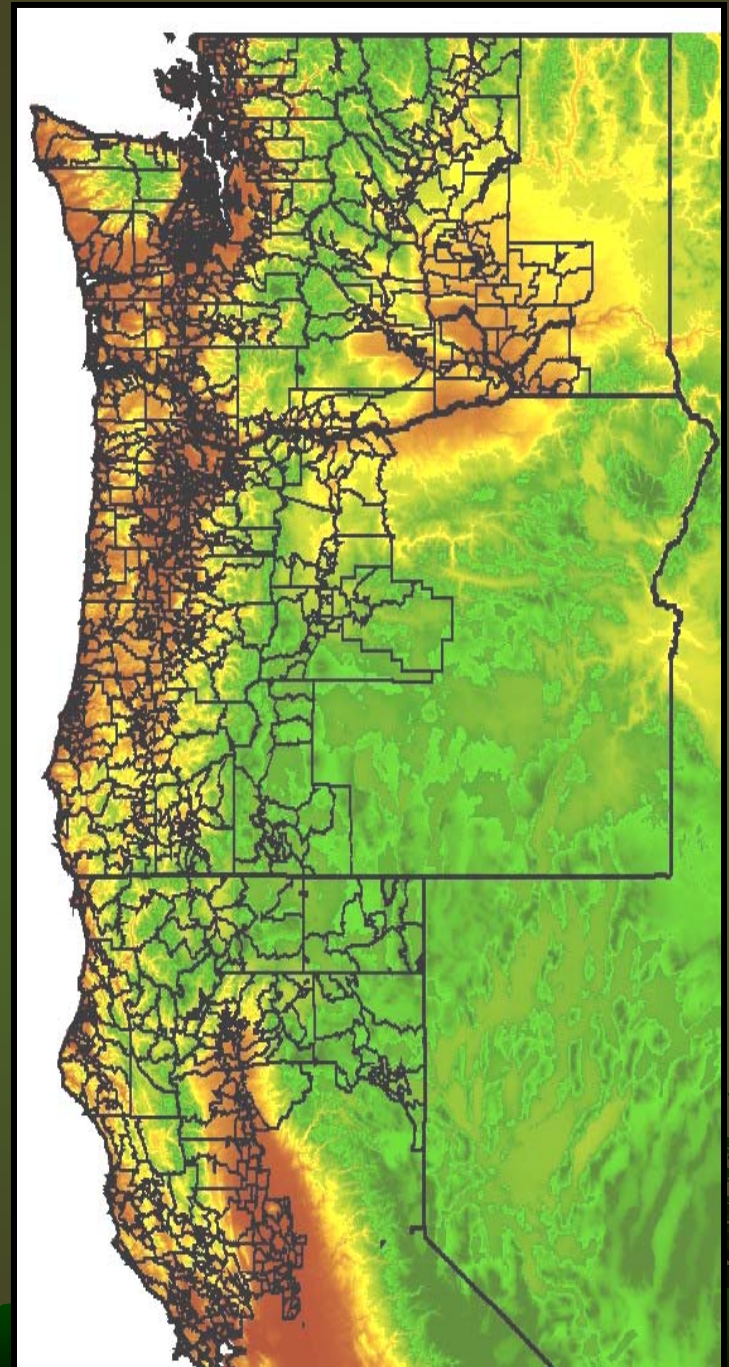# Socioeconomic Conditions and Trends for Communities in the NWFP Region

Ellen Donoghue
N. Lynnae Sutton
USDA Forest Service
PNW Research Station

Objectives

To delimit communities in the Plan region to facilitate socioeconomic monitoring and research.

To assess socioeconomic conditions and trends for communities in the Plan region.

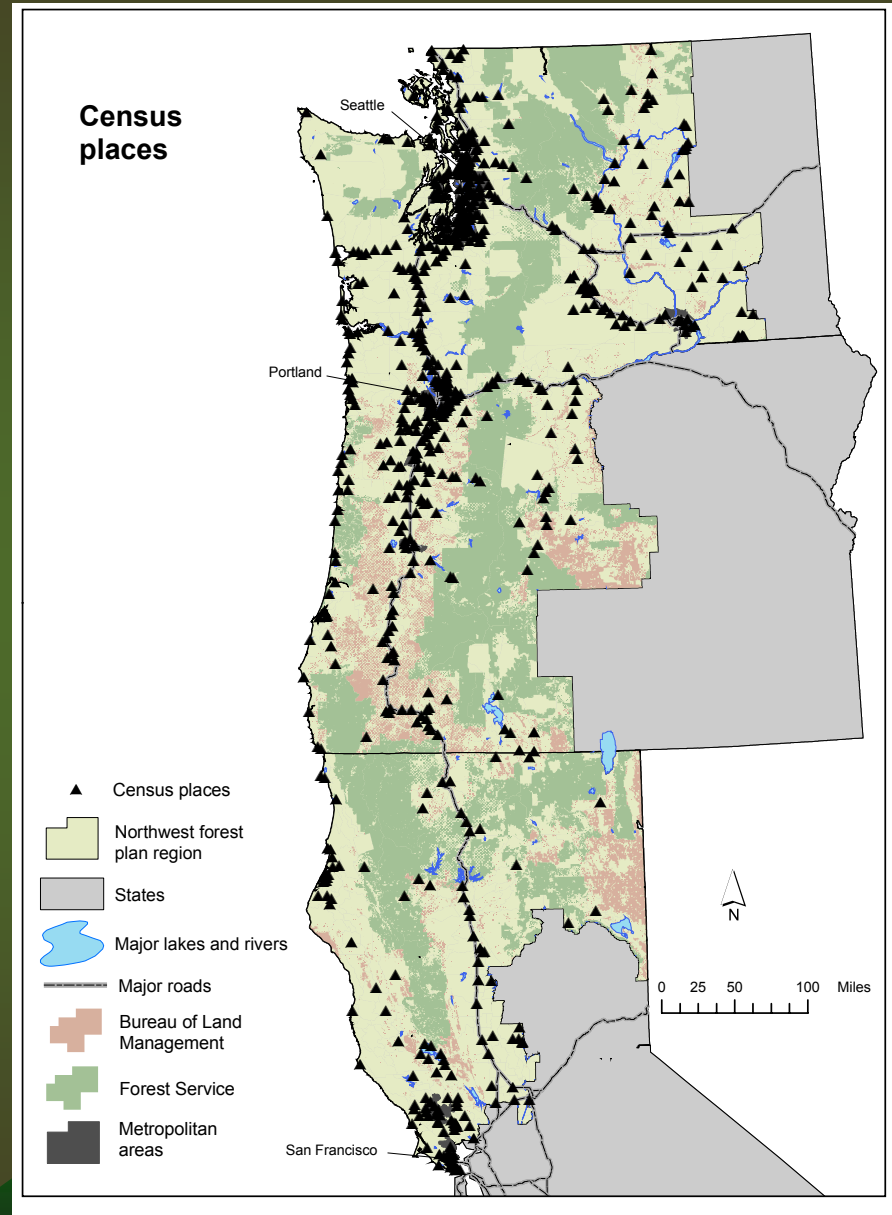# Challenges of defining communities in the Plan region

- Size of the region (72 counties)
- 10 million people
- Need for trend data
- Census data
- Issues of secondary data

Issues with Secondary Data

- ☀ "Availability of data" does not mean easy to work with at low costs

- ☀ Census does not emphasize making data comparable from one decade to the next

- ☀ Challenges and opportunities for using Census data to define the unit of analysis

One challenge of census places as the unit of analysis:

Who is left out?

Census places

Seattle

Portland

San Francisco

▲ Census places

Northwest forest plan region

States

Major lakes and rivers

Major roads

Bureau of Land Management

Forest Service

Metropolitan areas

N

0 25 50 100 Miles

An opportunity: aggregating census block groups

☀ Combine adjacent and related block groups into meaningful social units

☀ Data availability – BGs are the smallest unit for which all census summary statistics are reported

☀ Track record – Sierra Nevada Ecosystem Project (Doak and Kusel 1996)

☀ Issue: 1990 – 2000 data compatibility

Aggregating census block groups

1) GIS analysis

2) Visual review

3) Issue of 1990 and 2000 data compatibility
   ② used population and housing proportions and multipliers

For detailed description of defining the unit of analysis:
www.fs.fed.us/pnw
Publication number: PNW-GTR-570

Unit of analysis

1,314 community block group aggregations

"Communities in the Plan region"

Community boundaries and population centers within NWFP region

- Population centers
- Community boundaries
- Northwest forest plan region
- States
- Major lakes and rivers
- Major roads
- BLM
- Forest Service
- Metropolitan areas

Seattle

Portland

San Francisco

I-90

I-84

I-80

0 25 50   100   Miles

N
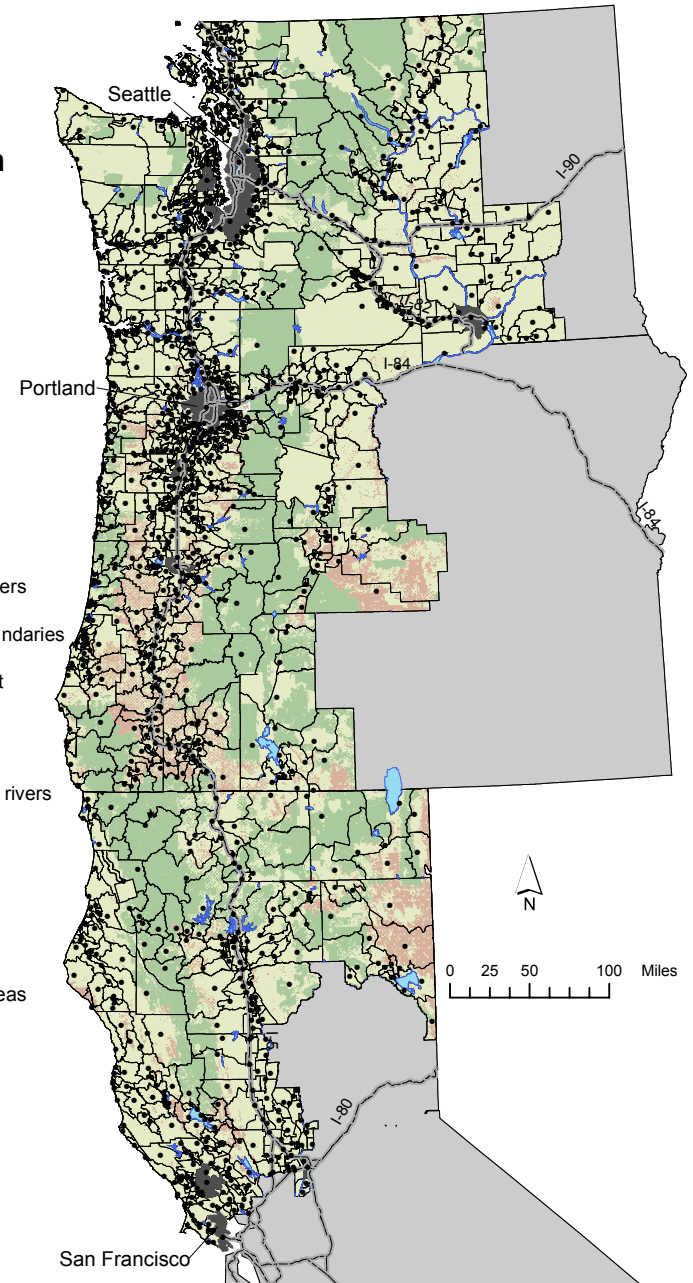
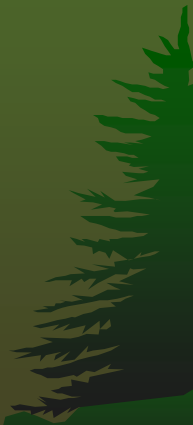# Community block group aggregations vs. census places

- ☀ 1,314 vs 517 places
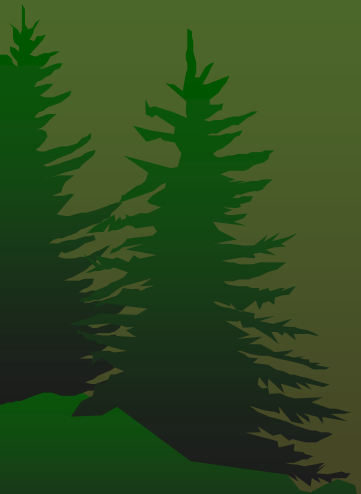- ☀ 4.0 million people vs 2.5 million people
- ☀ Note the proximity of red dots ● to public forestlands

Communities and census places

Legend:
- ⬠ Communities
- ▲ Census places
- Northwest forest plan region
- States
- Major lakes and rivers
- Major roads
- Bureau of Land Management
- Forest Service
- Metropolitan areas

Seattle

Portland

San Francisco

N

0 25 50 100 Miles
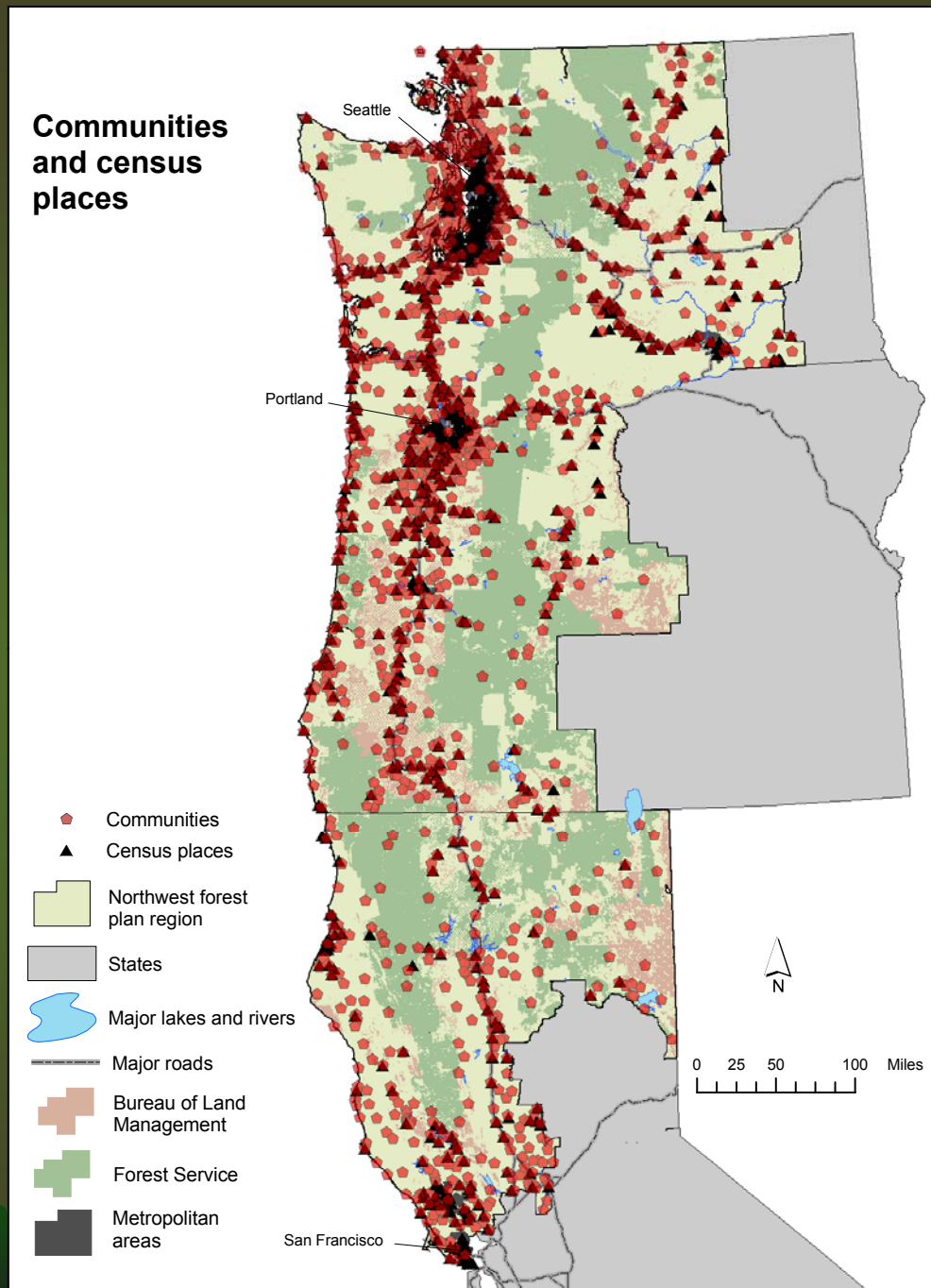
Socioeconomic conditions and trends for communities in the Plan region

Population Plan Communities, 2000

Population, 2000
- ● 88 - 500
- ● 501 - 2,000
- ● 2,001 - 5,000
- ● 5,001 - 50,000
- ● 50,001 - 144,306

Metropolitan areas

Northwest Forest Plan region

States

Major lakes and rivers

Major roads

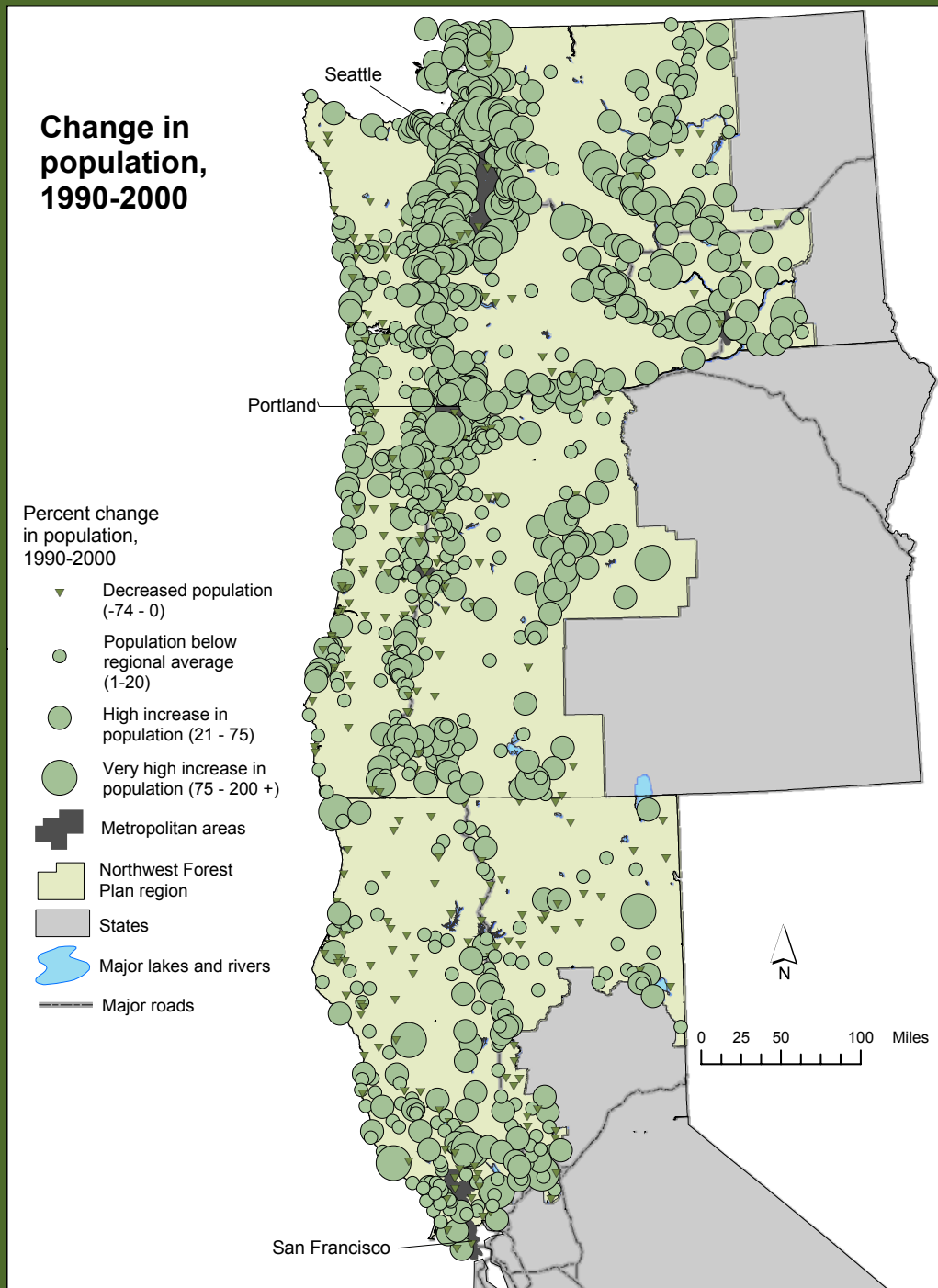Seattle

Portland

San Francisco

N

0 25 50 100 Miles
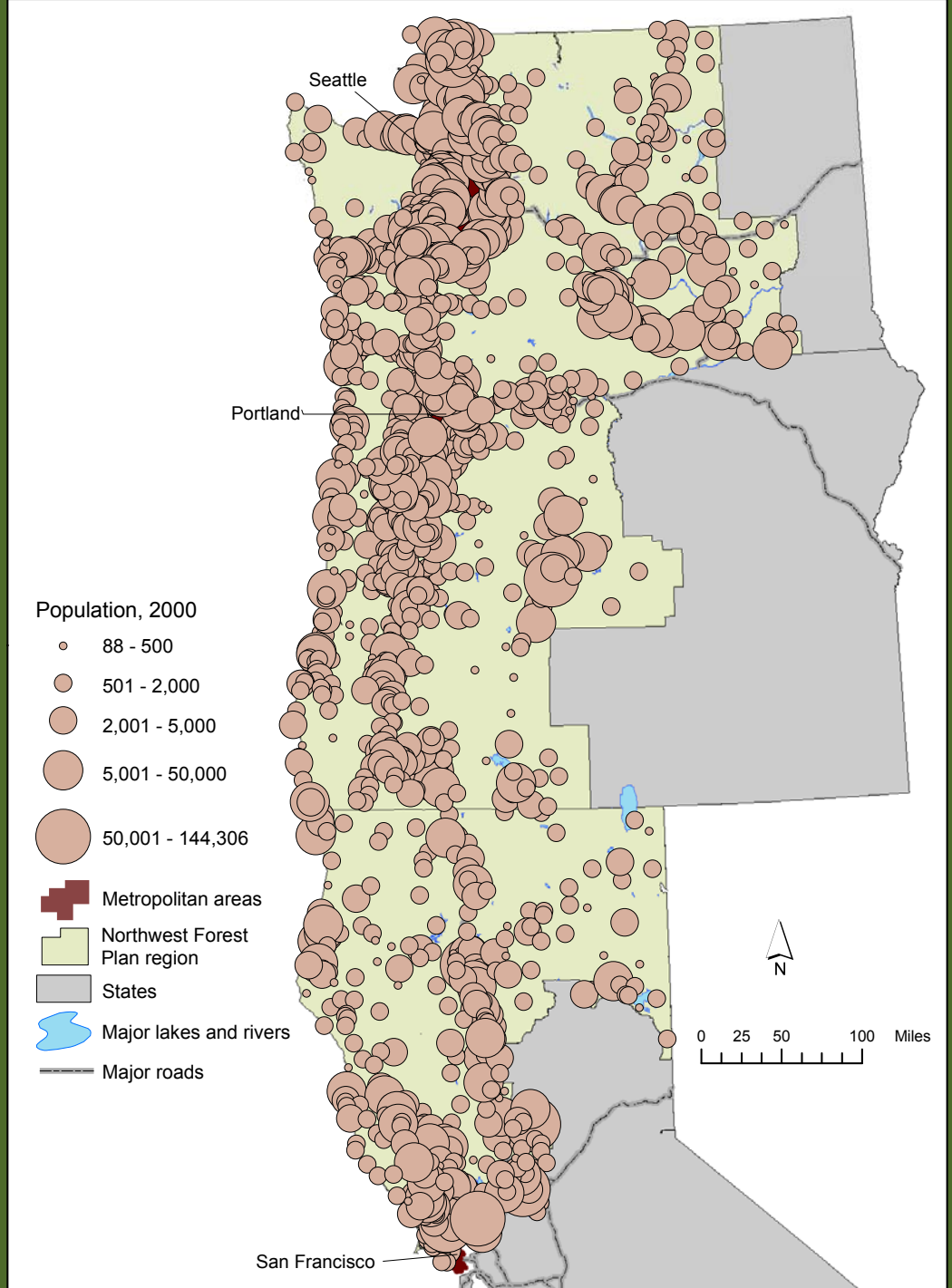
54% of communities had between 500 and 2000 people
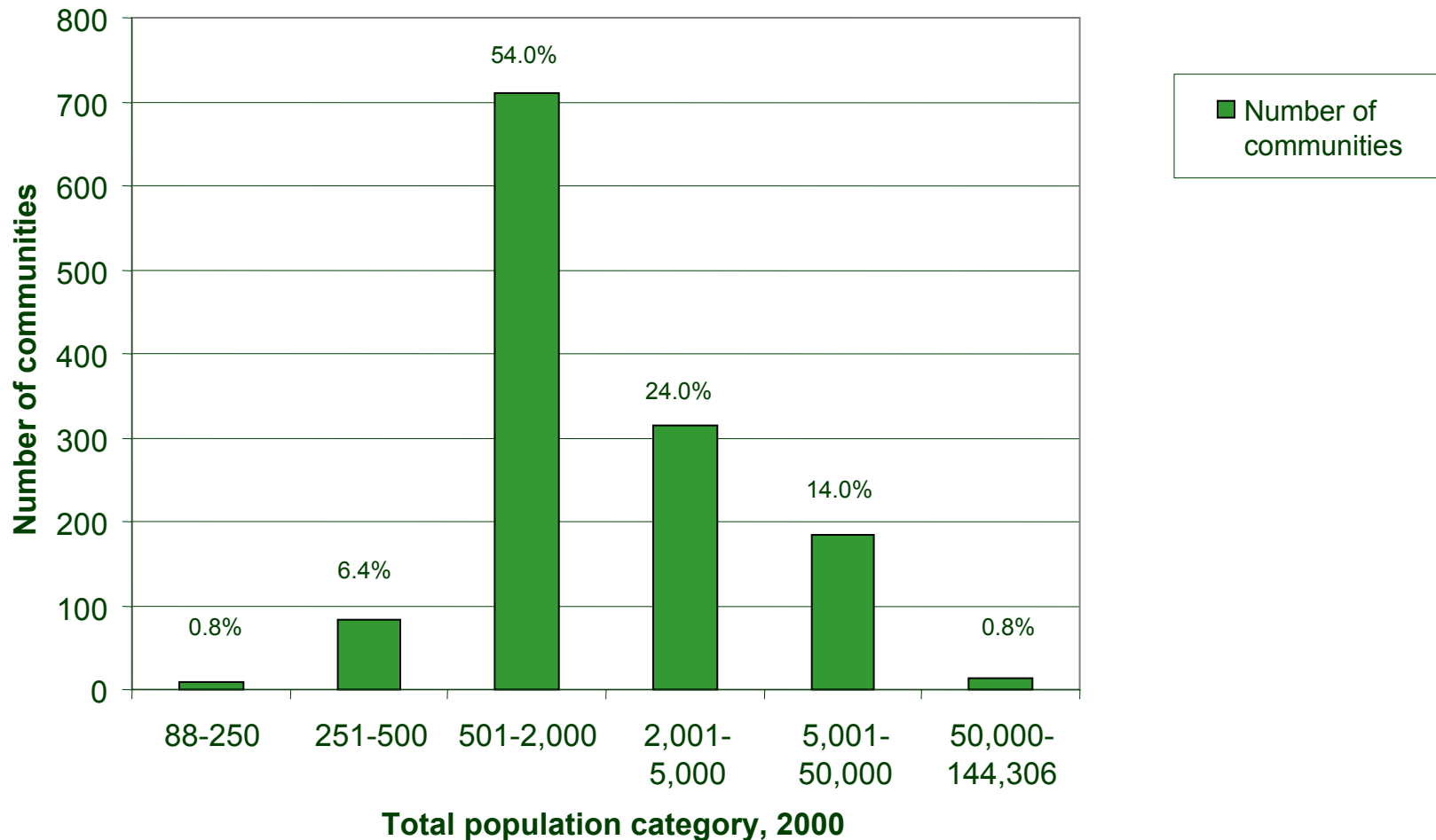
Population Change in the Plan Region, 1990 – 2000

* Communities in Plan region: 4.13 million people in 1990, 4.98 million in 2000

* Population increased 20.6 %

* Entire region: 8.57 to 10.26 million people (10 metro + 1,314 nonmetro)

* U.S. population increased 13.2 %

Change in Population, Plan Communities 1990 - 2000

Change in population, 1990-2000

Seattle

Portland

Percent change in population, 1990-2000

▽ Decreased population (-74 - 0)

∘ Population below regional average (1-20)

○ High increase in population (21 - 75)

⬤ Very high increase in population (75 - 200 +)

◼ Metropolitan areas

▢ Northwest Forest Plan region

▢ States

≋ Major lakes and rivers

--- Major roads

San Francisco

N

0 25 50 100 Miles

Community Population Change

	% change	# of comms	% of comms
Decrease in population	-74 - 0	275	(21%)
Increase below regional average	1 – 20	518	(39%)
High increase	21 – 75	472	(36%)
Very high increase	75 – 200+	49	(4%)

Change in community age distribution
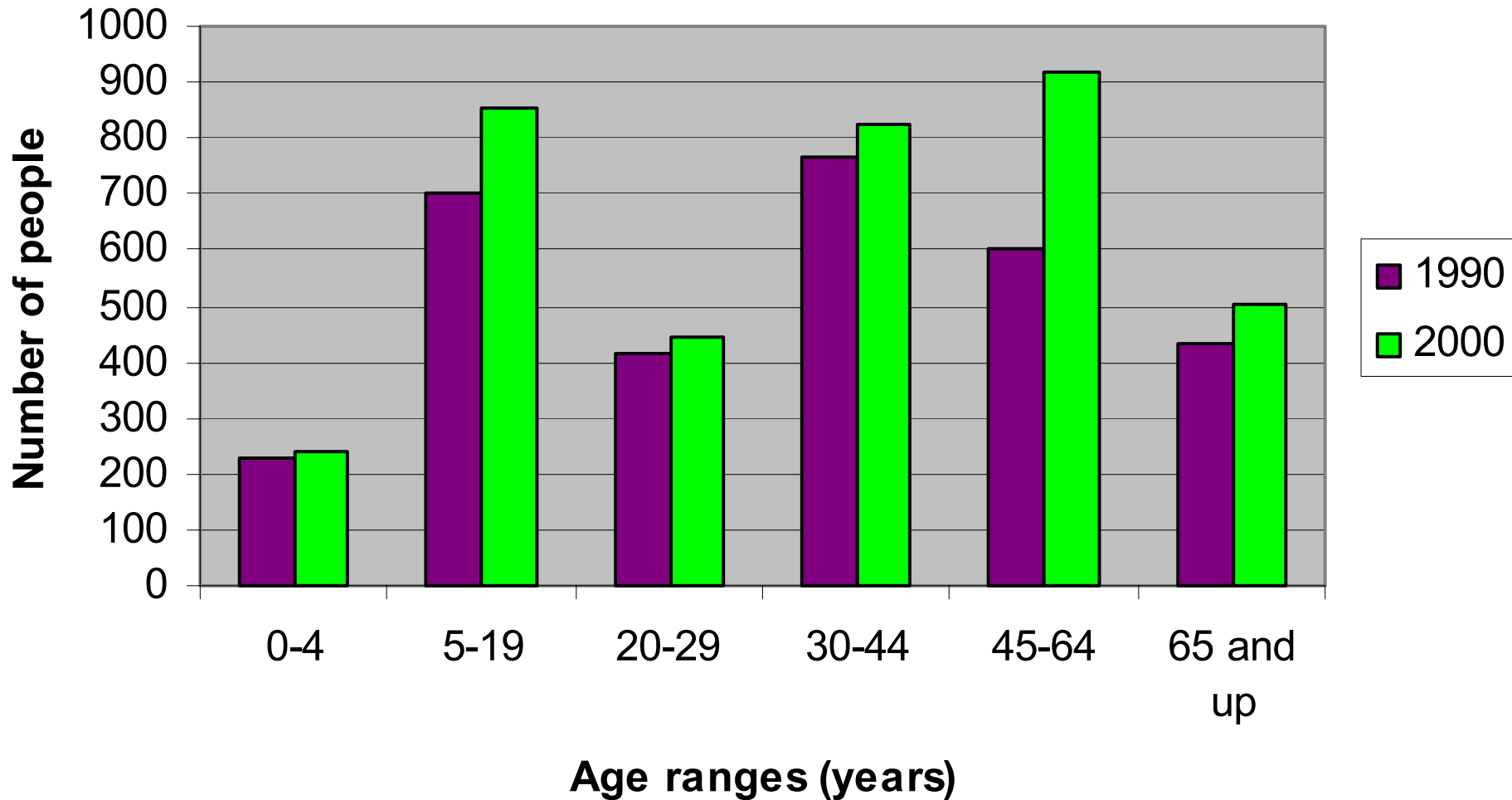
Percent of population by race

Native American, 2.07

Asian and Pacific Islands, 2.08

Two or more races, 3.30

Other, 5.63

Black, 0.88

White, 86.04
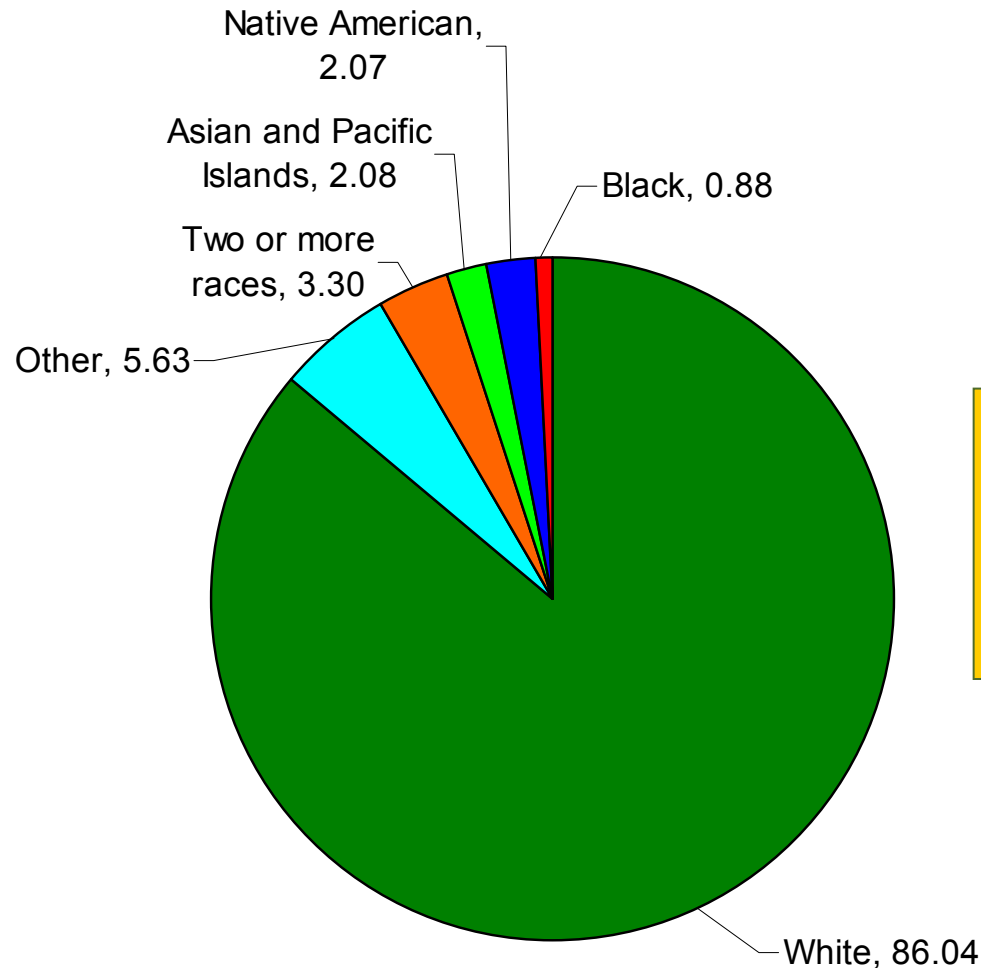
Hispanic origin
1990   5.8%
2000   8.5%

Year: 2000

Education

	1990	2000	Percent change
Percent completed high school	77.6	82.8	6.7
Percent with a Bachelor's degree or higher	15.4	19.3	25.3
School enrollment (average # persons per community)	621	811	30.7

Economic indicators

	1990	2000	Percent change
Median household income	$35,214 (in 2000 $)	$37,151	5.5%
Percent unemployment	7.3%	7.3%	0.0%
Percent poverty	12.9%	11.8%	-8.5%

Employment by industry, 1990 and 2000
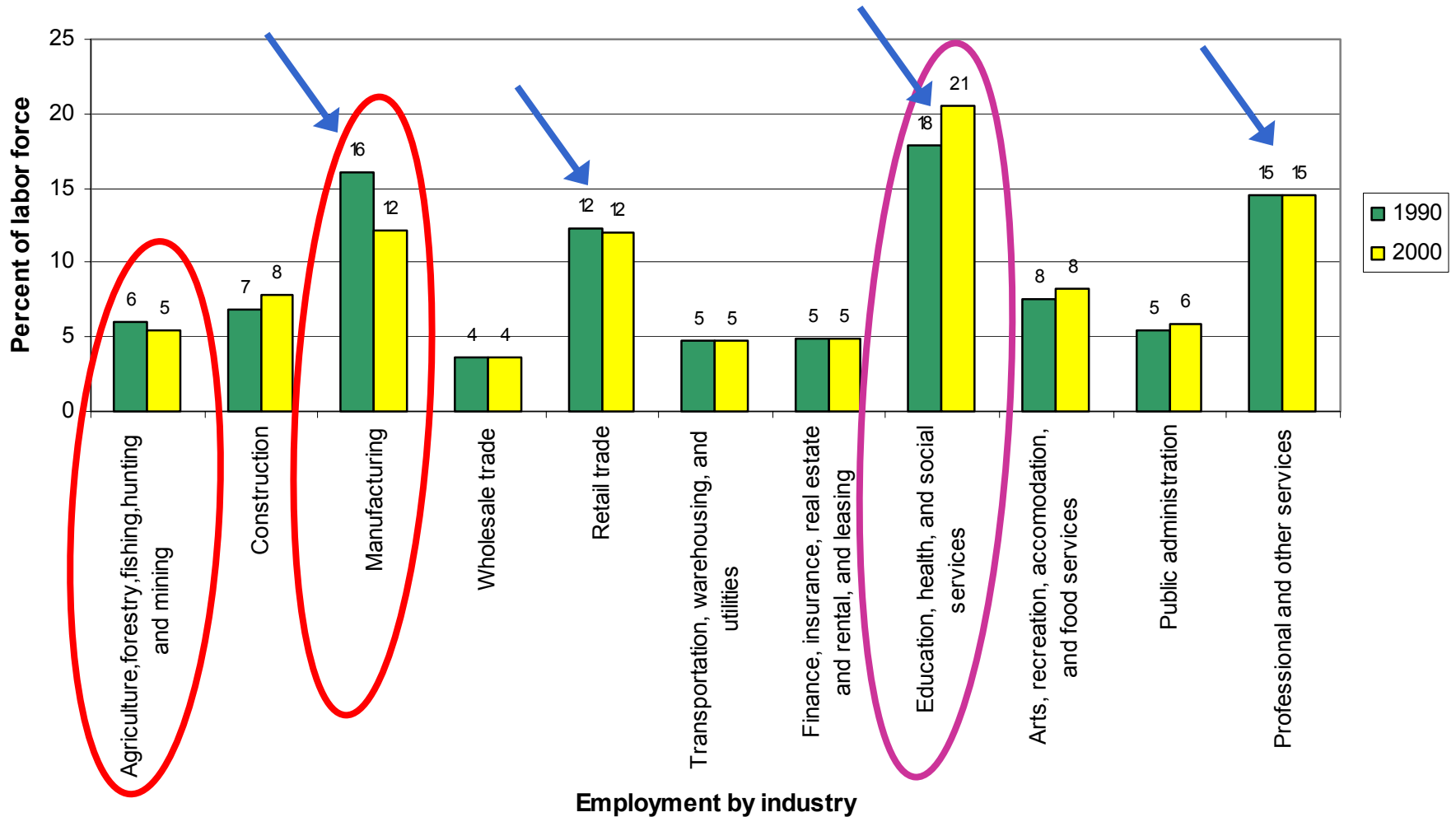
Community socioeconomic well-being index

- ✸ Employment diversity
- ✸ Education
- ✸ Unemployment
- ✸ Poverty
- ✸ Household income inequality
- ✸ Travel time to work

$(SEWB = EmD + Ed - Unem - Pov - InIn - TT)$

Community socioeconomic well-being categories, 1990 and 2000

Categories	Standard deviations from the mean (x = 67.2)	Socioeconomic well-being score range
Very low	> -1.5	0 to 48.72
Low	>= -1.5 and < -0.5	48.73 to 61.07
Medium	>= -0.5 and < 0.5	61.08 to 73.36
High	>= 0.5 and < 1.5	73.37 to 85.58
Very high	>= 1.5	85.59 to 100.00

Average size of community population by socioeconomic well-being category, 1990 and 2000
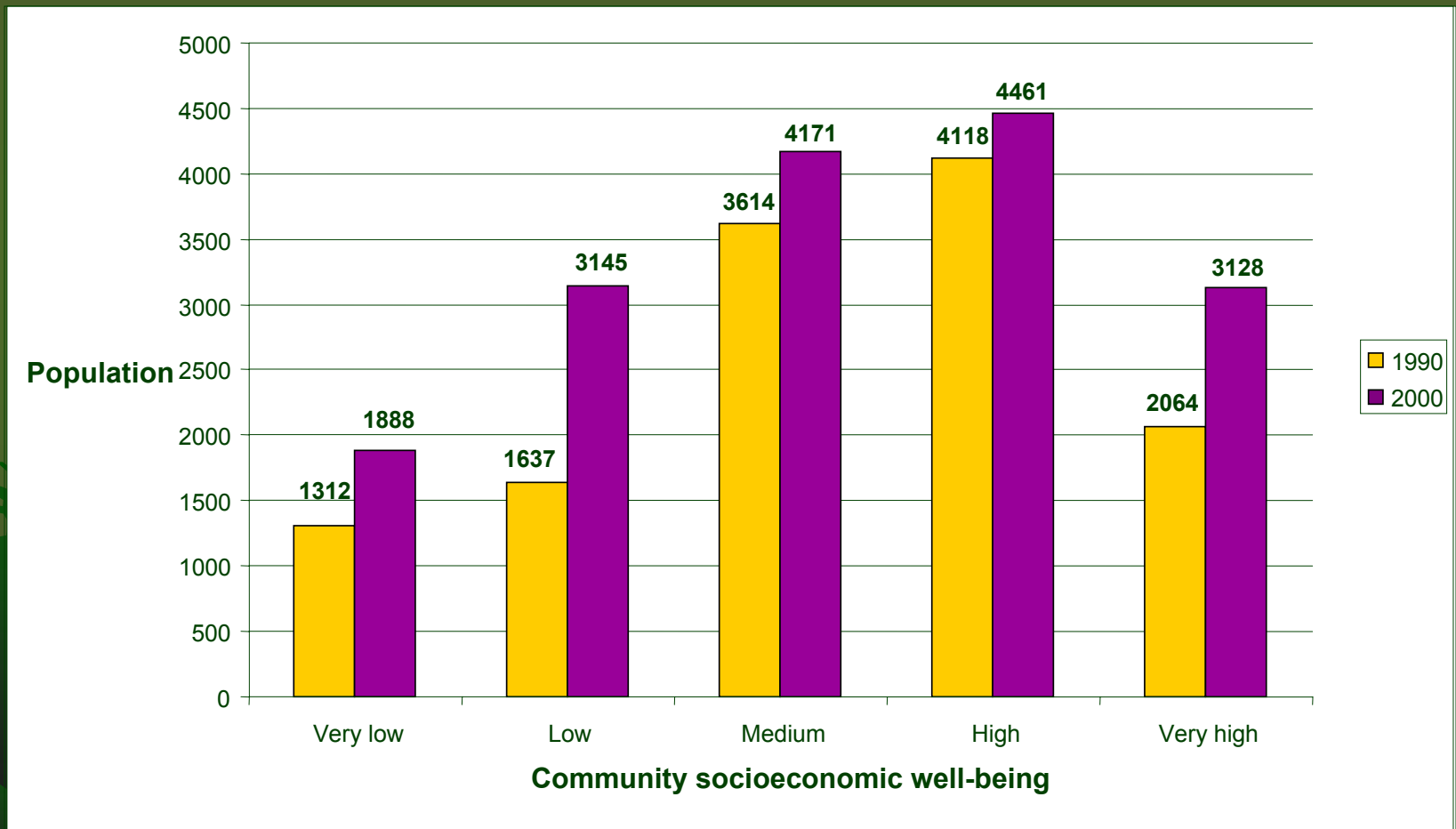
The rankings
(very low to very high)
allow us to see how
communities are
doing relative to
their neighbors.

Socioeconomic
well-being categories, 1990
■ Very low, low
▲ Medium
✚ Very high, high
Northwest Forest
Plan region
States
Major lakes and rivers
Major roads
Bureau of Land
Management
Forest Service
Metropolitan
areas

Seattle
Portland
San Francisco

N

0   25   50   100   Miles
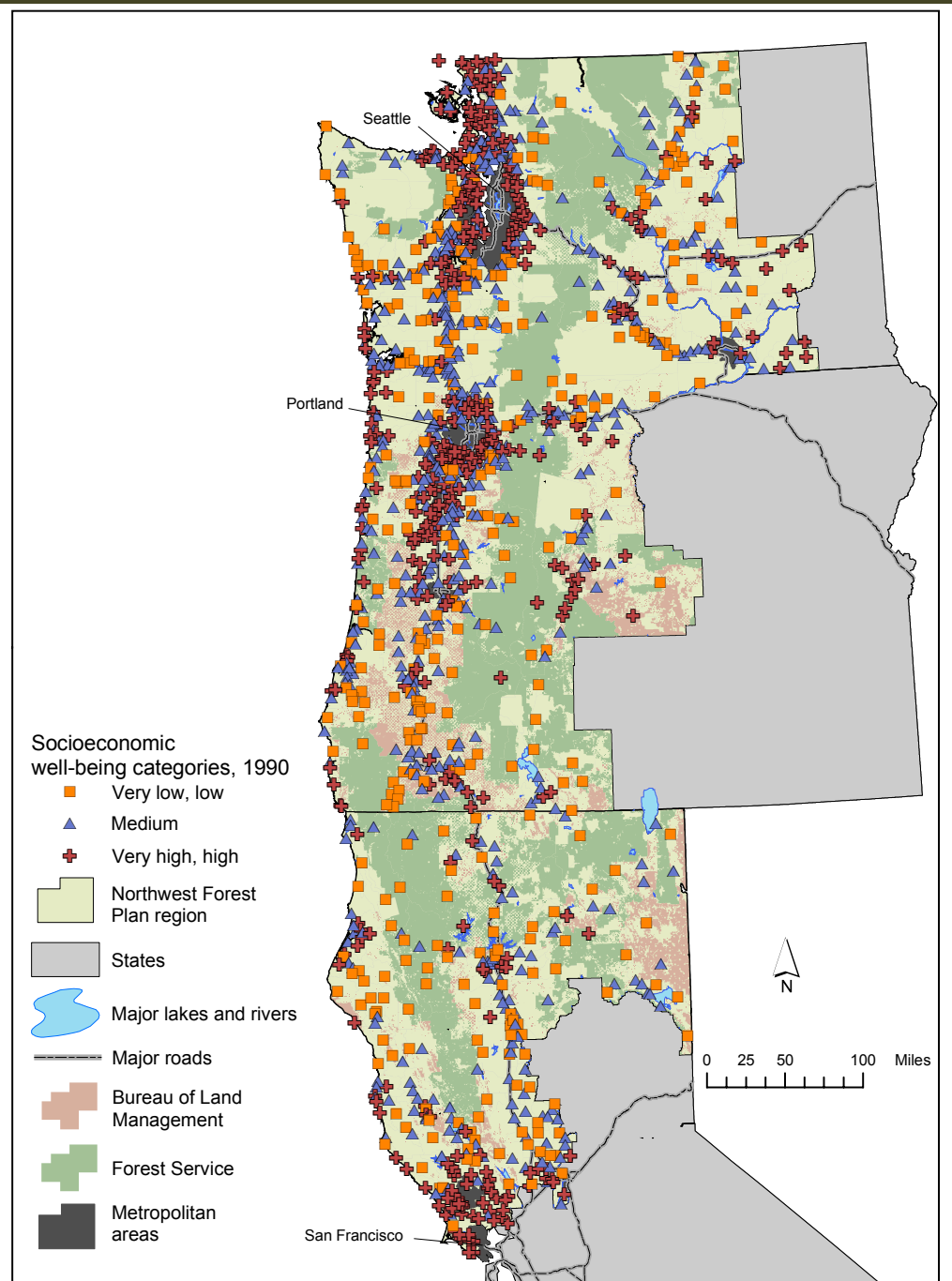
Change in community socioeconomic well-being score between 1990 and 2000

Community socioeconomic well-being change	Change in score (scale of 0 to 100)	Number of communities	Percent of communities
Decrease	-51 to < -3	484	37
Little change	>= -3 and <= 3	353	27
Increase	> 3 to 44	477	36

Change in average socioeconomic well-being score between 1990 and 2000.

1990 socioeconomic well-being category	Number of communities 1990	1990 score	2000 score	Difference
Very Low	100	40.5	53.0	12.5*
Low	250	55.9	58.8	2.9*
Medium	543	67.7	66.2	-1.5*
High	368	78.3	75.8	-2.5*
Very High	53	89.5	84.3	-5.2*

*Significant at p <.05 level.

# Regional population and socioeconomic well-being categories

Regional population and socioeconomic well-being categories

| Socioeconomic well-being category	Total population 1990	Percent of population in SEWB category 1990	Total population 2000	Percent of population in SEWB Category 2000
Very low	131,211	3.2	215,191	4.3
Low	409,336	9.9	833,340	16.7
Medium	1,962,201	47.5	2,064,668	41.5
High	1,515,526	36.7	1,641,515	33.0
Very high	109,385	2.7	225,197	4.5
Total	4,127,659	100.00	4,979,911	100.00

Doubled

21%

37.5%
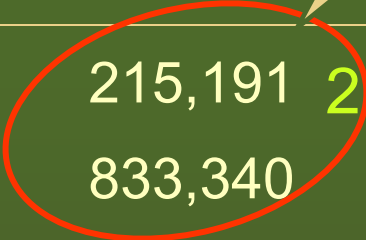
Proximity of Communities to Forest Service and BLM lands

Community boundaries and population centers within NWFP region

Seattle

Portland

San Francisco

Legend:
- · Population centers
- Community boundaries
- Northwest forest plan region
- States
- Major lakes and rivers
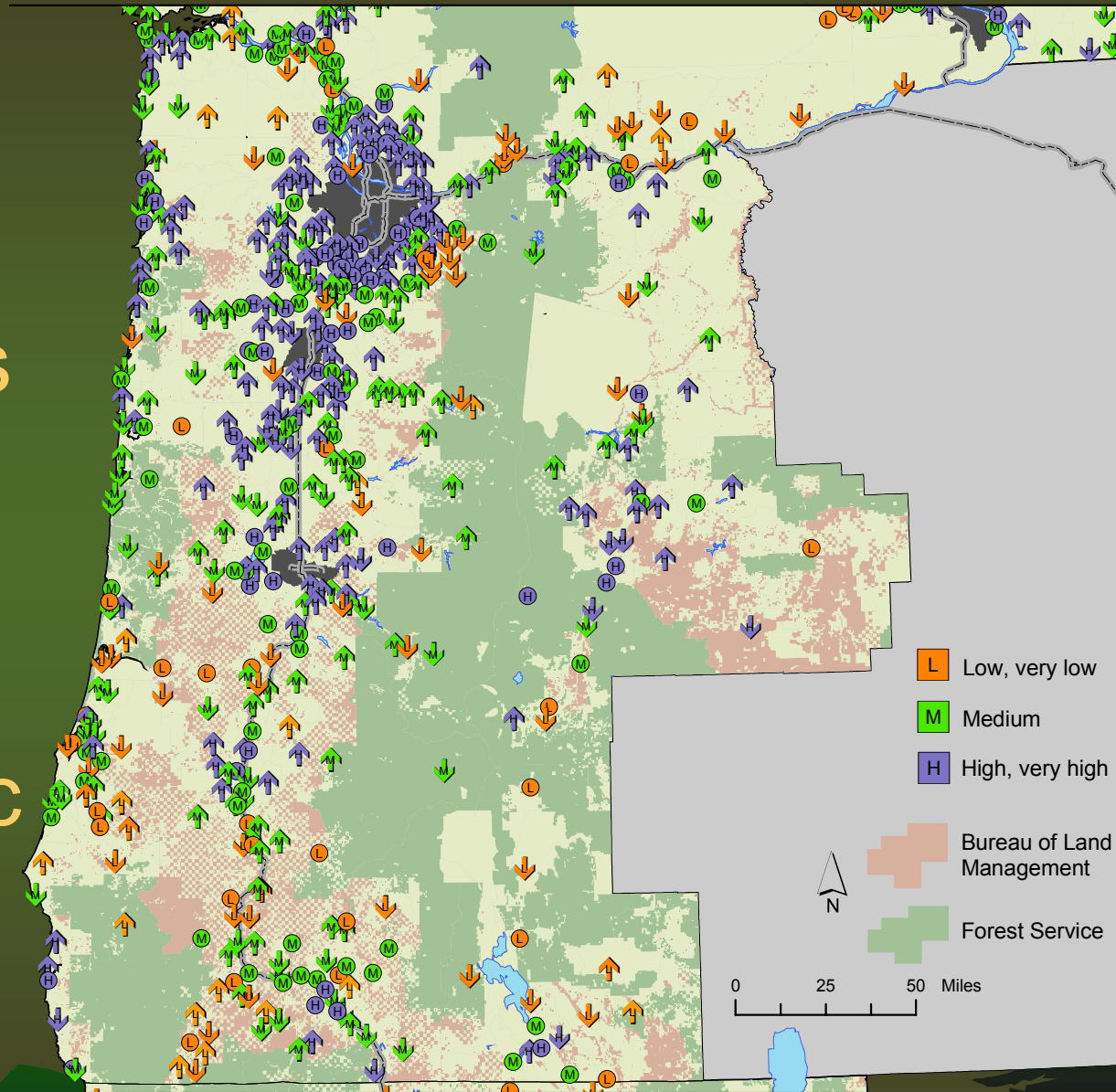- Major roads
- BLM
- Forest Service
- Metropolitan areas

0 25 50 100 Miles

N

I-90
I-84
I-80
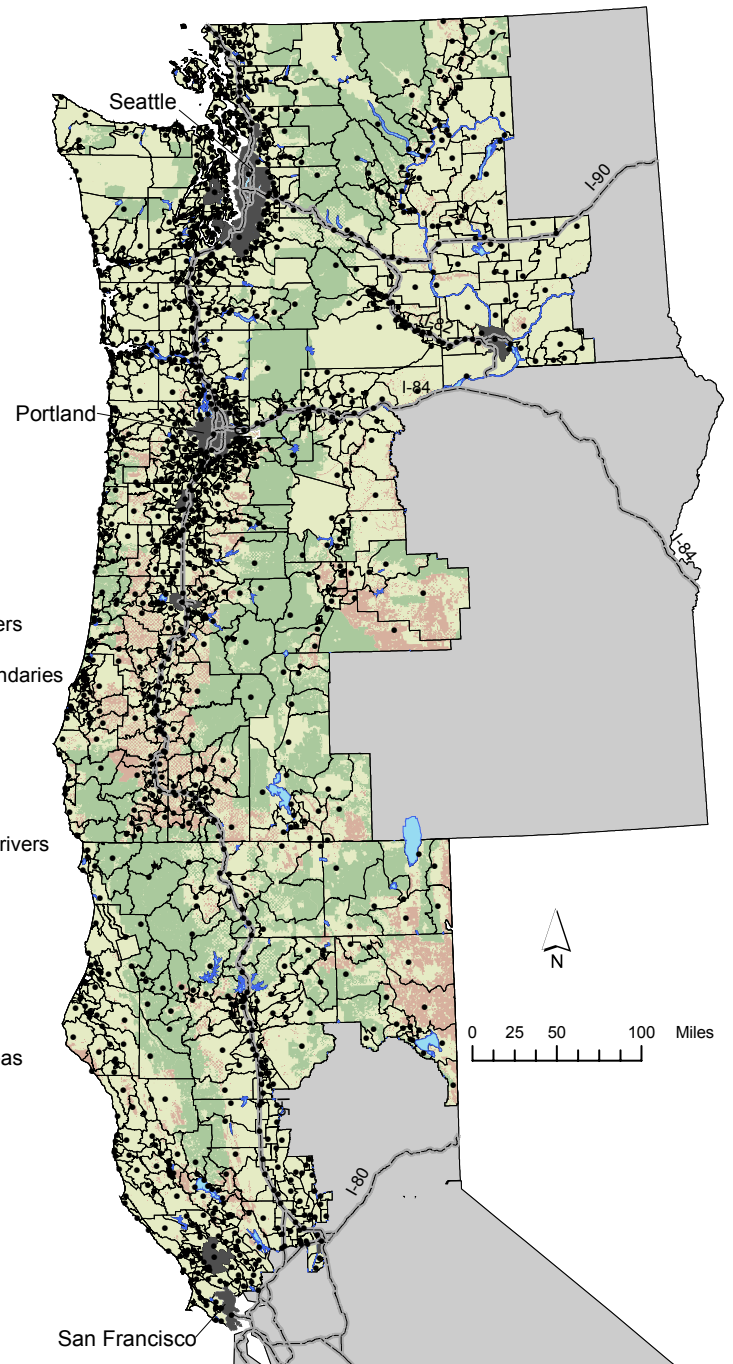
Proximity to Public Forestlands

* 57% (750 of 1,314) communities are within 5 miles of FS or BLM lands

* 2 million people – just under half the population (not including 10 metro areas)

Proximity to Forest Service and BLM lands

and

Community Socioeconomic Well-being

L Low, very low

M Medium

H High, very high

Bureau of Land Management

Forest Service

N

0   25   50   Miles

Socioeconomic well-being & proximity to public forestlands

SEWB 2000	Communities < 5 miles FS and BLM lands		Communities > 5 miles FS and BLM lands	
Very low & low	270	36%	109	19%
Medium	291	39%	204	36%
High & very high	189	25%	251	45%
Total	750	100%	564	100%

Socioeconomic well-being & proximity to public forestlands

SEWB 2000	Communities < 5 miles FS and BLM lands		Communities > 5 miles FS and BLM lands	
Very low & low	270	36%	109	19%
Medium	291		204	36%
High & very high	189	25%	251	45%
Total	*750*	*100%*	*564*	*100%*

270/379 = **71%**

189/440 = **43%**

Summary of Proximity & SEWB

☀ Of the 1.05 million people in Plan-area communities that had very low or low socioeconomic well-being scores in 2000, 61 percent were living in close proximity to FS and BLM lands.

☀ 71 percent of communities with very low or low socioeconomic well-being scores in 2000 were communities with 5 miles of FS and BLM lands.

☀ 43 percent of the communities that received high or very high socioeconomic well-being scores, however, were also in close proximity.

Summary of Proximity & SEWB

* On average, communities farther away had higher socioeconomic well-being scores than those in close proximity.

(differences between means 1990, 2000 sig, p<.001)

* On average, communities farther away had
  * higher percentage of the population with bachelor's degrees or more,
  * less poverty,
  * less unemployment,
  * less income inequality,
  * higher 1990 employment by industry diversity,
  * and higher commute times.