

## **Compilation of Residential Wood Combustion Surveys and Related Studies**

### **Introduction**

The following is a list by geographical area of residential wood combustion surveys, reports containing the results of surveys and related publications. Reports have included or compiled survey information for use in air quality evaluations, for marketing considerations and for energy utilization studies. The surveys conducted in the last ten years include contact information as well as the survey sample size and the survey area population.

### **Alaska**

Developing a Residential Wood Combustion Emissions Inventory and a Profile of Wood Burning Practices for Fairbanks, Alaska, Environmental Services Division of the Fairbanks North Star Borough, 1984.

### **Arizona**

1994 Regional PM<sub>10</sub> Emission Inventory Study: Residential Wood Combustion Survey, report prepared by CSI Santa Rita Research Center for Systems Applications International, Inc., August 30, 1996.

*Contact: Maricopa Association of Governments, Air Pollution Control, 2406 S. 24<sup>th</sup> Street, Suite E-214, Phoenix, AZ 85034.*

*n = 278, population was not given, current Maricopa County population is 3,296,250.*

MAG 1999 Serious Area Particulate Plan for PM<sub>10</sub> for the Maricopa County Nonattainment Area, Appendix A, Exhibit 6, Section 4, Stationary Area Sources, Maricopa Association of Governments, February 2000.

*Contact: Maricopa Association of Governments, Air Pollution Control, 2406 S. 24<sup>th</sup> Street, Suite E-214, Phoenix, AZ 85034.*

*n = 1,416, population was not given, current Maricopa County population is 3,296,250.*

### **California**

Analysis of Carbon Monoxide and Inhalable Particulate Emissions from Woodburning Devices in Fresno, California, report prepared by Engineering Science for U.S. Environmental Protection Agency, Region IX, 1982.

Installation of Fireplaces, Stoves and Inserts in New and Existing Houses, report prepared by Housing Industry Dynamics, Inc. for Wood Heating Alliance, 1982.



Estimated 1984 Residential Wood Burning in the South Coast Air Basin, South Coast Air Quality Management District, Engineering Division Report, 1985.

Estimation of Carbon Monoxide and Particulate Emissions from Woodburning Devices in the Fresno/Clovis Metropolitan Area, D. Inouye, Fresno State University, 1985.

Healdsburg Wood Heating Survey, Northern Sonoma County Air Pollution Control District, 1987.

The California Residential Wood Consumption Survey, report prepared by Northern California Research Associates for California Air Resources Board, 1988.

Residential Wood Use in California, report prepared by Sierra Research for U.S. Environmental Protection Agency, 1989.

Air Quality Management Plan for the Town of Mammoth Lakes, Great Basin Unified Air Pollution Control District and The Town of Mammoth Lakes, November 30, 1990.

Emission Inventory Procedure Manual, Volume III, Methods for Assessing Area Source Emissions, Section 7.1 Residential Wood Combustion, California Environmental Protection Agency, Air Resources Board, October 1997.

San Joaquin Valley Unified Air Pollution Control District Baseline Survey, job number 8E3213, report prepared by META Information Services for the SJVUAPCD, 1999.

*Contact: Cynthia Echavarria, SJVUAPCD, 1990 E. Gettysburg Ave., Fresno, CA 93726-0244. n = 1,075, the population was not given, current population of represented counties is 595,324.*

San Joaquin Valley District Survey, report prepared by McGuire Research Services for Duraflame, Inc., November 2002.

*Contact: Chris Caron, Duraflame, Inc., 2894 Mount Diablo Blvd., Stockton, CA 95203. n = 300, population was not given, current population of represented counties is 595,324.*

Results of Wood Burning Survey – Sacramento, San Joaquin, and San Francisco Airsheds, UC Berkeley/California Air Resources Board – GIS Study, analysis of survey by OMNI Consulting Services, Inc, 2002.

*Contact: David Broderick, OMNI, PO Box 743, Beaverton, OR 97075. n = 680, population was not given, current population of represented counties is 10,741,955.*

Model Development for Spatial Allocations of PM<sub>2.5</sub> Emissions Including Residential Wood Combustion, report prepared by the University of California Berkeley for the California Air Resource Board, May 2002.

*Contact: Ray Asregadoo, CARB, 2020 L Street, Sacramento, CA 95814. n = 731, population was not given, current population of represented counties is 10,741,955.*

Winter 2002/2003 Spare the Air Tonight Campaign Survey Summary Report, report prepared by Godbe Research and Analysis for the BAAQMD, May 2003.

*Contact: Administrative Services, BAAQMD, 939n Ellis Street, San Francisco, CA 94109.  
n = 400, current population of BAAQMD is 6,460,856.*

## **Canada**

1993 Survey of Household Energy Use, National Results, Efficiency and Alternative Energy Branch, Natural Resources Canada, November 1994.

Residential Fuelwood Combustion in Canada, Canadian Facts report to National Emissions Inventory and Projections Task Group, April 1997.

Étude Sur le Marché du Chauffage D'appoint, Hydro Québec report, Montreal, Quebec, 1997.

1995 Criteria Air Contaminants Emission Inventory Guidebook (Draft Final) report to National Emissions Inventory and projections Task Group (NEIPTG), February 2000.

## **Colorado**

Survey for Home Heating Patterns, Survey Questionnaire, State of Colorado, 1984.

A Survey of Residential Combustion of Wood and Coal in Colorado, report prepared by TRC Environmental Consultants, Inc. for the U.S. Environmental Protection Agency, Region VIII and Colorado Department of Health, January 1985.

Denver Metro Woodburning Survey, report prepared by Community Response, Inc. for the Colorado Department of Health, June 1988.

Metropolitan Denver Woodburning Survey, report prepared by R.B. Hutton and S.W. Hartley for the Colorado Department of Health, December 1991.

Carbon Monoxide Woodburning Inventory for Colorado Springs, Air Pollution Control Division, Colorado Department of Health, November 1992.

Carbon Monoxide Woodburning Inventory for Ft. Collins, Air Pollution Control Division, Colorado Department of Health, November 1992.

Grand Junction Woodburning: Citizen Attitudes about Environmental Quality, University of Colorado at Denver, November 1993.

*Contact: Department of Sociology, University of Colorado at Denver, Campus Box 105, PO Box 173364, Denver, CO 80217-3364.*

*n = 200, population was not given, current population of Grand Junction is 41,986.*

Technical Support Document for the Colorado State Implementation Plan for PM<sub>10</sub> : Steamboat Springs Element, Woodburning Emissions Inventory for the Steamboat Springs Metropolitan Area, Colorado Department of Public Health and Environment, March 1995.

Improving Air Quality in Delta County, A County-Wide Survey, Colorado Department of Public Health and Environment, June 1995.

*Contact: Delta County Air Quality Advisory Committee.*

*n = 250, population was not given, current population of Delta County is 28,421.*

General Air Quality Survey Report July 1997, City of Fort Collins, Natural Resources Department, July 1997.

*Available at <http://www.ci.fort-collins.co.us/airquality/pdf/1997.pdf>.*

*n value was not given, current population of Fort Collins is 126,848.*

Wood Smoke Survey – May 1998 (1998 survey with references to 1996,1994 and 1990 surveys), City of Fort Collins, Colorado, 1998.

*Contact: Fort Collins Natural Resources Department, 281 North College, Fort Collins, CO 80521*

*Available at <http://www.ci.fort-collins.co.us/airquality/survey.php>.*

*n = 812, population was not given, current population of Fort Collins is 126,848.*

General Air Quality Survey June 1999, City of Fort Collins, Natural Resources Department, June 1999.

*Available at <http://www.ci.fort-collins.co.us/airquality/pdf/aq99-report2.pdf>.*

*n = 670, population was not given, current population of Fort Collins is 126,848.*

Outdoor Air Quality Survey 2001 Report: City of Fort Collins, report prepared by Environmental Behavior Consulting for the City of Fort Collins, Natural Resources Department, August 2001.

*Available at <http://www.ci.fort-collins.co.us/airquality/pdf/oaq-survey-2001-report2.pdf>.*

*n = 725, population was not given, current population of Fort Collins is 126,848.*

Metropolitan Denver Woodburning Study, report prepared by Market Analysis Professionals for the Colorado Department of Public Health and Environment, August 2002.

*Contact: Mike Silverstein, Colorado Department of Public Health and Environment, 4300 Cherry Creek Dr., Denver, CO, 80220-1530.*

*n = 1,190, population was not given, current population of the Metropolitan Denver area is 2,160,841.*

## **Delaware**

Report on the 1995 Delaware Fuelwood Survey, Delaware Forest Service, Delaware Department of Agriculture, May 1995.

*Contact: Delaware Forest Service, 2320 S. Dupont Hwy., Dover, DE 19901.*

*n = 879, population given is 666,168.*



## **Idaho**

Evaluation of Residential Wood Energy Use in Idaho, Idaho Department of Water Resources, October 1985.

Pocatello Air Quality RWC Device Usage, Survey Results, Field Services, Inc. for Marketing Research, August 1991.

## **Illinois**

Wood Combustion Survey [Southeast Chicago], report prepared by Manuel D. Plotkin Research and Planning Co. for U.S. Environmental Protection Agency, Region V, March 1989.

## **Indiana**

Residential Fuelwood Consumption and Production in Indiana, 1996, North Central Forest Experiment Station, Forest Service, U.S. Department of Agriculture, 1997.

*Contact: North Central Forest Experiment Station, U.S. Forest Service, 1992 Folwell Ave., St. Paul, Minnesota 55108.*

*Available at <http://www.ncrs.fs.fed.us/pubs/viewpub.asp?key=449>.*

*n value was not given, current population of Indiana is 6,115,000.*

## **Kansas**

Residential Fuelwood Consumption and Production in Kansas, 1994, North Central Forest Experiment Station, Forest Service, U.S. Department of Agriculture, 1996.

*Contact: North Central Forest Experiment Station, U.S. Forest Service, 1992 Folwell Ave., St. Paul, Minnesota 55108.*

*Available at <http://www.ncrs.fs.fed.us/pubs/viewpub.asp?key=434>.*

*n value was not given, current population of Kansas is 2,695,000.*

## **Maine**

Residential Fuelwood Use in Maine, Results of 1998/1999 Fuelwood Survey, Maine State Planning Office, November 1999.

*Contact: Donna Bradstreet, Maine State Planning Office, 38 State House Station, Augusta, Maine 04333-0038.*

*n = 407, population was not given, current Maine population is 1,286,670.*

## **Michigan**

Residential Fuelwood Consumption and Production in Michigan, 1992, North Central Forest Experiment Station, Forest Service, U.S. Department of Agriculture, 1993.

*Contact: North Central Forest Experiment Station, U.S. Forest Service, 1992 Folwell Ave., St. Paul, Minnesota 55108.*

*Available at <http://www.ncrs.fs.fed.us/pubs/viewpub.asp?key=415>.*

*n value was not given, current population of Michigan is 9,991,000.*

## **Minnesota**

Minnesota Residential Fuelwood Study, 1986, Minnesota Pollution Control Agency.

Minnesota Residential Fuelwood Survey, 1988-1989, Minnesota Department of Natural Resources.

Minnesota Residential Fuelwood Survey, 1995-1996 Heating Season, Minnesota Department of Natural Resources.

*Contact: Keith Jacobson, Minnesota Pollution Control Agency, 520 Lafayette Rd. N., St. Paul, MN 55155-4194.*

*n = 1,278, population was not given, current Minnesota population is 4,972,294.*

## **Missouri**

Missouri Residential Fuelwood Survey, Missouri Department of Conservation, Forestry Division, 1982.

Residential Fuelwood Production and Sources from Roundwood in Missouri, 1987, North Central Forest Experiment Station, Forest Service, U.S. Department of Agriculture, 1991.

*Contact: North Central Forest Experiment Station, U.S. Forest Service, 1992 Folwell Ave., St. Paul, Minnesota 55108.*

*Available at <http://www.ncrs.fs.fed.us/pubs/viewpub.asp?key=402>.*

## **Montana**

PM-10 and Carbon Monoxide Emissions from Wood Burning in Butte, Montana, Department of Environmental Engineering, Montana College of Mineral Science and Technology and State Air Quality Bureau, Department of Health and Environmental Sciences, undated.

PM-10 and Carbon Monoxide Emissions from Wood Burning in Libby, Montana, Department of Environmental Engineering, Montana College of Mineral Science and Technology and State Air Quality Bureau, Department of Health and Environmental Sciences, undated.

PM-10 and Carbon Monoxide Emissions from Wood Burning in Thompson Falls, Montana, Department of Environmental Engineering, Montana College of Mineral Science and Technology and State Air Quality Bureau, Department of Health and Environmental Sciences, undated.

1986 Missoula Wood-Use Survey, Residential Wood Burning and Pollutant Emissions, report prepared by Eco-Resource Systems for The Missoula City-County Health Department, June 1986.

Billings Air Quality Survey, report prepared by Economic Consultants Northwest for Montana Department of Health and Environmental Sciences, January 1992.

Great Falls Air Quality Survey, report prepared by Economic Consultants Northwest for Montana Department of Health and Environmental Sciences, January 1992.

Missoula Air Quality Survey, report prepared by Economic Consultants Northwest for State of Montana Department of Health and Environmental Sciences, January 1992.

White Fish Air Quality Survey, report prepared by Dodge Data Systems, Inc. for Montana Department of Health and Environmental Sciences, May 1993.

*Contact: Montana Air Quality Bureau, Cogswell Bldg., 1400 Broadway, Helena, Montana 59620. No information on the n value nor was the population given.*

Residential Wood-Burning Survey in Columbia Falls, Montana, report prepared by the Department of Environmental Engineering, Montana Tech of the University of Montana for the Montana Department of Environmental Quality, August 1996.

*Contact: Montana DEQ, Planning, Prevention and Assistance Division, (406) 444-6697. n = 241, population was not given, current population of Columbia Falls is 3,645.*

## **Multiple States**

Residential Fuelwood Demand Assessments, A Status Report, U.S. Department of Agriculture, Forest Service, Northeastern Area, 1981.

Burn Rate Frequency Distributions for Portland, Oregon; Waterbury, Vermont; and Warrensburg, New York, OMNI Environmental Services, Inc. internal report, 1986.

Residential Fuelwood Consumption in the Southeastern United States, report prepared by The Gallup Organization, Inc., for the Tennessee Valley Authority, Southeastern Regional Biomass Energy Program, August 1991.

Study of Firewood Sources and Costs in Klamath Falls, Oregon and Sandpoint, Idaho, report prepared by OMNI Environmental Services, Inc. for the Air & Waste Management Association, Pacific Northwest International Section, April 1992.

Residential Fuelwood Consumption and Production in the Plains States, 1994, North Central Forest Experiment Station, Forest Service, U.S. Department of Agriculture, Resource Bulletin NC-173, 1996.

*Contact: North Central Forest Experiment Station, U.S. Forest Service, 1992 Folwell Ave., St. Paul, Minnesota 55108.*

*Available at <http://www.ncrs.fs.fed.us/pubs/viewpub.asp?key=437>.*

*n = 3,600, population was not given, current population of North Dakota, South Dakota, Nebraska and Kansas is 5,798,924.*

Woodburning survey for Idaho, Oregon and Washington State, report prepared by Social and Economic Sciences, Washington State University for the Idaho Department of Environmental Quality, August 2001.

*Contact: Idaho DEQ, Boise, ID 83706-1255.*

*n = 2,251, population not given, current population on Idaho and Washington is 7,308,979.*

## **National**

Pickup Trucks as Units for Measuring Firewood, A.P.C. Marsinko and T.E. Wooten, Forest Products Journal, vol.33, no.1, pp.43-44, January 1983.

Residential Firewood Use in the United States, F.W. Lipfert and J.L. Dungan, Science, vol. 219, pp.1425-1427, March 25, 1983.

Estimates of U.S. Wood Energy Consumption 1980-1983, Energy Information Administration, November 1984, DOE/EIA-0341(83).

Room Heating Equipment Exposure Survey, U.S. Consumer Product Safety Commission, Washington, D.C., March 1989.

Estimates of U.S. Biomass Energy Consumption 1990, Energy Information Administration, October 1991, DOE/EIA-0548(90).

Household Energy Consumption and Expenditures 1990, Energy Information Administration, February 1993, DOE/EIA-0321(90).

Household Energy Consumption and Expenditures 1990, Supplement: Regional, Energy Information Administration, February 1993, DOE/EIA-0321(90)S.

1993, 1990 and 1987 residential energy use data available as ASCII files at <http://www.eia.doe.gov/emeu/recs/public.html#other>.

Estimates of U.S. Biomass Energy Consumption 1992, Energy Information Administration, May 1994, DOE/EIA-0548(92).

Household Energy consumption and Expenditures 1993, EIA, 1995.  
*Available at <http://tonto.eia.doe.gov/ftp/root/consumption/032193.pdf>*  
Housing Characteristics in 1993, EIA, 1995.  
*Available at <http://tonto.eia.doe.gov/ftp/root/consumption/031493.pdf>*

Renewable Energy Annual 1995, EIA, 1995.  
*Available at <http://www.eia.doe.gov/cneaf/solar.renewables/page/pubs.html>*

U.S. Fireplace Fuel Usage and Fireplace Usage Frequency, 1994/95 Fall/Winter Season, report prepared by Vista Marketing Research for Duraflame, Inc., March 1996.  
*Contact: Chris Caron, Duraflame, Inc., 2894 Mount Diablo Blvd., Stockton, CA 95203.*

U.S. Household Fireplace Penetration and Fuel Use, report prepared by Nichols Research for Duraflame, Inc., December 1996.  
*Contact: Chris Caron, Duraflame, Inc., 2894 Mount Diablo Blvd., Stockton, CA 95203.*

Consumer Research Results, Duraflame Firelogs, Winter 1997/98, report prepared by Perry Lawson & Associates for Duraflame, Inc.  
*Contact: Chris Caron, Duraflame, Inc., 2894 Mount Diablo Blvd., Stockton, CA 95203.*

Renewable Energy Annual 1996, EIA, 1997.  
*Available at <http://www.eia.doe.gov/cneaf/solar.renewables/page/pubs.html>*

Residential Use of Fireplaces, Andrew Kochera, Housing Economics, pp. 10-11, March 1997.

Residential Wood Combustion, Volume III, Chapter 2, report prepared by Radian Corporation for Emission Inventory Improvement Program, U.S. Environmental Protection Agency, September 1997.

Renewable Energy Annual 1997, EIA, 1998.  
*Available at <http://www.eia.doe.gov/cneaf/solar.renewables/page/pubs.html>*

Renewable Energy Annual 1998 With Data for 1997, EIA, 1998, DOE/EIA-0603(98).  
*Available at <http://www.eia.doe.gov/cneaf/solar.renewables/page/pubs.html>*

A Look at Residential Energy Consumption in 1997, EIA, 1999.  
*Available at <http://www.eia.doe.gov/pub/pdf/consumption/063297.pdf>*

American Housing Survey for the United States 1997, Current Housing Reports, issued September 1999, U.S. Department of Housing and Urban Development and U.S. Department of Commerce, HISO/97.

Simmons Study of Media and Markets, annual reports 1987-1999, Simmons Market Research, New York, NY.  
*Contact: Simmons Market Research, <http://www.smr.com>.*



Mediamark Research, appliances, climate control, annual reports, 1989-1999, Mediamark Research Inc.

Contact: Mediamark Research Inc., <http://www.mediamark.com>.

Recommended Procedure for Compiling Emission Inventory National and County Level Activity Data for the Residential Wood Combustion Source Category, draft report prepared by Eastern Research Group, Inc. and Omni Environmental Services, Inc. for the U.S. Environmental Protection Agency, September 2000.

Renewable Energy Annual 1999 With Data for 1998, EIA, 2000.

Available at <http://www.eia.doe.gov/cneaf/solar.renewables/page/pubs.html>

Renewable Energy Annual 2000 With Data for 1999, EIA, 2001.

Available at <http://www.eia.doe.gov/cneaf/solar.renewables/page/pubs.html>

American Housing Survey, US Census Bureau:

2001 <http://www.census.gov/prod/2002pubs/h150-01.pdf>

1999 <http://www.census.gov/prod/2000pubs/h150-99.pdf>

1997 <http://www.census.gov/prod/99pubs/h150-97.pdf>

1995 <http://www.census.gov/prod/2/constr/h150/h15095rv.pdf>

1993 <http://www.census.gov/prod/1/constr/h150/h150-93m.pdf>

1991 <http://www2.census.gov/prod2/ahsscan/h150-91.pdf>

1989 <http://www2.census.gov/prod2/ahsscan/h150-89.pdf>

1987 <http://www2.census.gov/prod2/ahsscan/h150-87.pdf>

1985 <http://www2.census.gov/prod2/ahsscan/h150-85.pdf>

Renewable Energy Annual 2001, EIA, 2002.

Available at [http://www.eia.doe.gov/cneaf/solar.renewables/page/rea\\_data/rea.pdf](http://www.eia.doe.gov/cneaf/solar.renewables/page/rea_data/rea.pdf)

2002 Hearth Retail Sales, Hearth and Home magazine, pp.32-40, March 2003.

Residential Energy Consumption Survey 2001, EIA, 2003.

Available at <http://www.eia.doe.gov/emeu/recs/contents.html>

## **Nebraska**

Residential Fuelwood Consumption and Production in Nebraska, 1994, North Central Forest Experiment Station, U.S. Forest Service, U.S. Department of Agriculture, Resource Bulletin NC-168, 1996.

Contact: North Central Forest Experiment Station, U.S. Forest Service, 1992 Folwell Ave., St. Paul, Minnesota 55108.

Available at <http://www.ncrs.fs.fed.us/pubs/viewpub.asp?key=433>.

*n* value was not given, current population of Nebraska is 1,713,000.

## **Nevada**

Washoe County, Nevada, Residential Wood Use Survey, 1995-1996, Washoe County District Health Department, August 1996.

*Contact: Washoe County Air Quality Management Division, 401 Ryland St., Suite 331, Reno, NV 89502-1643.*

*n = 392, population was not given, current Washoe County population is 353,336.*

Washoe County, Nevada, Residential Wood Use Survey, 1999-2000, Washoe County District Health Department, 2000.

*Contact: Washoe County Air Quality Management Division, 401 Ryland St., Suite 331, Reno, NV 89502-1643.*

*n = 1,131, population was not given, current Washoe County population is 353,336.*

## **New Mexico**

Report on Woodburning in Bernalillo County, November 1996 through January 1997, City of Albuquerque Environmental Health Department, Air Quality Planning Section, August 1998.

*Contact: Dan Warren, Albuquerque Environmental Health Department, PO Box 1293, Albuquerque, NM 87103.*

*n = 1000, population not given, current population of Bernalillo County is 562,458.*

City of Albuquerque/ Wood Burning Survey May 1998, report prepared by Research & Polling, Inc. for the City of Albuquerque Environmental Health Department.

*Contact: Dan Warren, Albuquerque Environmental Health Department, PO Box 1293, Albuquerque, NM 87103.*

*n = 1000, population not given, current population of Bernalillo County is 562,458.*

## **North Dakota**

Residential Fuelwood Consumption and Production in North Dakota, 1994, North Central Forest Experiment Station, U.S. Forest Service, U.S. Department of Agriculture, Resource Bulletin NC-167, 1996.

*Contact: North Central Forest Experiment Station, U.S. Forest Service, 1992 Folwell Ave., St. Paul, Minnesota 55108.*

*Available at <http://www.ncrs.fs.fed.us/pubs/viewpub.asp?key=432>.*

*n value was not given, current population of North Dakota is 634,000.*

## **Oregon**

Medford Area Wood Heating Survey, 1981, Oregon Department of Environmental Quality and Oregon Department of Energy, March 1982.

Portland Area Wood Heating Survey, 1982, Oregon Department of Environmental Quality, September

1982.

Report on the 1987 Klamath Falls Area Wood Heating Survey, Oregon Department of Environmental Quality, March 1989.

Klamath Falls Wood Heating Survey, 1991, Klamath County Department of Health Services and Oregon Department of Environmental Quality, July 1991.

Medford Area Wood Heating Survey, 1985, Oregon Department of Environmental Quality, October 1985.

Portland Area Wood Heating Survey, 1985, Oregon Department of Environmental Quality, October 1985.

Executive Summary, 1993 Woodheating Survey, Oregon Department of Environmental Quality, December 1994.

Bend, 1993 Oregon Woodheating Survey, Overview Report, Oregon Department of Environmental Quality, December 1994.

*Contact: David Collier, Oregon DEQ, 811 SW 6<sup>th</sup> Ave., Portland, OR 97204.  
n = 652, population is not given, current population is 52,029.*

Klamath Falls, 1993 Oregon Woodheating Survey, Overview Report, Oregon Department of Environmental Quality, December 1994.

*Contact: David Collier, Oregon DEQ, 811 SW 6<sup>th</sup> Ave., Portland, OR 97204.  
n = 565, population is not given, current population is 19,462.*

La Grande, 1993 Oregon Woodheating Survey, Overview Report, Oregon Department of Environmental Quality, December 1994.

*Contact: David Collier, Oregon DEQ, 811 SW 6<sup>th</sup> Ave., Portland, OR 97204.  
n = 706, population is not given, current population is 12,327.*

Lakeview, 1993 Oregon Woodheating Survey, Overview Report, Oregon Department of Environmental Quality, December 1994.

*Contact: David Collier, Oregon DEQ, 811 SW 6<sup>th</sup> Ave., Portland, OR 97204.  
n = 166, population is not given, current population is 2,474.*

Medford-Ashland, 1993 Oregon Woodheating Survey, Overview Report, Oregon Department of Environmental Quality, December 1994.

*Contact: David Collier, Oregon DEQ, 811 SW 6<sup>th</sup> Ave., Portland, OR 97204.  
n = 659, population is not given, current population is 82,676.*

Pendleton, 1993 Oregon Woodheating Survey, Overview Report, Oregon Department of Environmental Quality, December 1994.

*Contact: David Collier, Oregon DEQ, 811 SW 6<sup>th</sup> Ave., Portland, OR 97204.  
n = 553, population is not given, current population is 16,354.*

Prineville, 1993 Oregon Woodheating Survey, Overview Report, Oregon Department of Environmental Quality, December 1994.

*Contact: David Collier, Oregon DEQ, 811 SW 6<sup>th</sup> Ave., Portland, OR 97204.*

*n = 357, population is not given, current population is 7,356.*

Portland, 1993 Oregon Woodheating Survey, Overview Report, Oregon Department of Environmental Quality, December 1994.

*Contact: David Collier, Oregon DEQ, 811 SW 6<sup>th</sup> Ave., Portland, OR 97204.*

*n = 699, population is not given, current population is 529,121.*

Roseburg, 1993 Oregon Woodheating Survey, Overview Report, Oregon Department of Environmental Quality, December 1994.

*Contact: David Collier, Oregon DEQ, 811 SW 6<sup>th</sup> Ave., Portland, OR 97204.*

*n = 553, population is not given, current population is 20,017.*

Sisters, 1993 Oregon Woodheating Survey, Overview Report, Oregon Department of Environmental Quality, December 1994.

*Contact: David Collier, Oregon DEQ, 811 SW 6<sup>th</sup> Ave., Portland, OR 97204.*

*n = 152, population is not given, current population is 959.*

Klamath Falls, 1999 Oregon Woodheating Survey, Overview Report, report prepared by the Oregon Institute of Technology for the Oregon DEQ, 1999.

*Contact: David Collier, Oregon DEQ, 811 SW 6<sup>th</sup> Ave., Portland, OR 97204.*

*n = 499, population is not given, current population is 19,462.*

## **South Dakota**

Residential Fuelwood Consumption and Production in South Dakota, 1994, North Central Forest Experiment Station, U.S. Forest Service, U.S. Department of Agriculture, Resource Bulletin NC-171, 1996.

*Contact: North Central Forest Experiment Station, U.S. Forest Service, 1992 Folwell Ave., St. Paul, Minnesota 55108.*

*Available at <http://www.ncrs.fs.fed.us/pubs/viewpub.asp?key=435>.*

*n value was not given, current population of South Dakota is 757,000.*

## **Utah**

Air Pollution and Heating Methods, report prepared by the Paria Group for the Utah Division of Air Quality, 1993.

*Contact: Steve Parkin, Utah DAQ, 150 North 1950 West, Salt Lake City, Utah 84116.*

*n value was not given, current population of Utah is 2,270,000.*

## **Vermont**

Vermont Residential Fuel Wood Assessment, 1997-1998, Department of Public Service, December 2000.

*Available at <http://www.state.vt.us/psd/DPSLibrary/R98report.PDF>.*

*n = 482, population was not given, current Vermont population is 613,090.*

## **Washington**

Residential Wood Stove Emissions in Yakima and Olympia, State of Washington Department of Ecology, 1984.

Woodsmoke Education Evaluation Survey, report prepared by Carolyn Browne for the Puget Sound Clean Air Agency, June 1988.

Public Opinion Survey, report prepared by Alliance Pacific, Inc. for Spokane County Air Pollution Control Authority, 1993.

*Contact: SCAPCA, West 1101 College Ave., Suite 403, Spokane, WA 99201.*

*n = 511, population was not given, current population of Spokane County is 423,261.*

Public Opinion Survey for the Puget Sound Clean Air Agency, report prepared by Pacific Rim Resources, Inc. for PSCAA, September 1993.

*Contact: Naydene Maykut, PSCAA, 110 Union St., Suite 500, Seattle, WA 98101.*

*n = 1,200, population was not given, current population of King, Pierce, Snohomish and Kitsap counties is 3,317,464.*

Wood Combustion Study, Summary Report, report prepared by Market Trends, Inc. for the Puget Sound Clean Air Agency, July 1993.

*Contact: Naydene Maykut, PSCAA, 110 Union St., Suite 500, Seattle, WA 98101.*

*n = 1,500, population was not given, current population of King, Pierce, Snohomish and Kitsap counties is 3,317,464.*

PSCAA Air Pollution Awareness Study, Executive Summary, report prepared by Edmunds Research Services for Strategic Environmental Management Group, October 1995.

*Contact: Naydene Maykut, PSCAA, 110 Union St., Suite 500, Seattle, WA 98101.*

*n = 800, population was not given, current population of King, Pierce, Snohomish and Kitsap counties is 3,317,464.*

Island, Skagit and Whatcom County Public Awareness Research, prepared by Cole Geyer Research for the Northwest Air Pollution Authority, June 1996.

*Contact: Laura Curley, Northwest Air Pollution Authority, 1600 South Second Street, Mount Vernon, WA 98273-5202.*

*n = 301, population was not given, current population of Island, Skagit and Whatcom Counties is 350,210.*



Puget Sound Air Quality, report prepared by The Gilmore Research Group for the Puget Sound Clean Air Agency, March 1998.

*Contact: Naydene Maykut, PSCAA, 110 Union St., Suite 500, Seattle, WA 98101.*

*n = 901, population was not given, current population of King, Pierce, Snohomish and Kitsap counties is 3,317,464.*

Public Opinion Study, Key Findings Study, Key Findings Summary Report, prepared by Robinson Research, Inc. for Spokane County Air Pollution Control Authority, June 1999.

*Contact: Lisa Woodard, SCAPCA, West 1101 College Ave., Suite 403, Spokane, WA 99201.*

*n = 500, population was not given, current population of Spokane County is 423,261.*

Puget Sound Air Quality, report prepared by The Gilmore Research Group for the Puget Sound Clean Air Agency, April 2002.

*Contact: Naydene Maykut, PSCAA, 110 Union St., Suite 500, Seattle, WA 98101.*

*Available at [http://www.pscleanair.org/news/other/2002\\_survey.pdf](http://www.pscleanair.org/news/other/2002_survey.pdf).*

*n = 900, current population of King, Pierce, Snohomish and Kitsap counties is 3,317,464.*

## **Wisconsin**

Residential Fuelwood Consumption and Production in Wisconsin, 1994, North Central Forest Experiment Station, U.S. Forest Service, U.S. Department of Agriculture, Resource Bulletin NC-172, 1996.

*Contact: North Central Forest Experiment Station, U.S. Forest Service, 1992 Folwell Ave., St. Paul, Minnesota 55108.*

*Available at <http://www.ncrs.fs.fed.us/pubs/viewpub.asp?key=436>.*

*n = 2,436, population was given as 5,401,906.*

Residential Wood Heat Research, report prepared by Matousek & Associates for North Central Hearth Products Association, January 2000.

*Contact: North Central Hearth Products Association, PO Box 259282, Madison, WI 53725-9282.*

*n = 1,207, current population of Wisconsin is 5,401,906.*