
Executive Summary
Concordance
Glossary
The 1992 Pacific Northwest Residential Energy Survey
Phase I
(PNWRES92-I)

Executive Summary
Concordance
Glossary

Office of Energy Resources
Bonneville Power Administration
End-Use Research Section
U. S. Department of Energy
P.O. Box 3621
Portland, OR 97208-3621

Contacts: Wendy Lin-Kelly - (503) 230-8458
Roger H. Moore - (503) 230-4264
Telephone Data File (TDF) contains records of interviews which were begun and in which respondents passed the screening questions but still for some reason did not complete the survey. (See Telephone Call Outcome Files)

Telephone Successful Completions File (TSCF) contains all completed surveys. (See Telephone Call Outcome Files)

Upper Columbia Area Office is located in Spokane, Washington.

Utility is an organization which sells energy to the general public. For the purpose of this study, three types of Pacific Northwest electric utilities were designated: public generating (PG), public non-generating (PN), and investor-owned (IO).

Weekly Reports is a series of documents sent to BPA by AMPG every week to report on the progress of PNWRES92-I. Information was reported by task and included descriptions of work completed for the previous week and projections for work to be completed during the upcoming week.

Weights are values associated with respondents' raw data. They are used to estimate population and sub-population totals by "weighting up" the raw data. For PNWRES92-I, the designed weighting system was based upon regional and sub-regional counts of Occupied Housing Units (OHUs) that were derived from 1990 U.S. Census data and upon the sample frequencies in the New Domains. A second set of weights was developed for BPA's four Area Offices. (See OHUs, Area Office, New Domains)

Weighted Data are data which have been derived by applying a set of weights to the raw data. The weighted PNWRES92-I data are displayed in the lower tables in Volumes C-AG. (See Raw Data, Weights)

PREFACE

This document contains the Executive Summary, the Concordance, and the Glossary from the primary documentation for the 1992 Pacific Northwest Residential Energy Survey, Phase I (PNWRES92-I). Its few pages are designed to serve as an introduction to and as an overview of the survey, its processes, and its results.

The complete 33-volume set of primary documentation provides information needed by energy analysts and interpreters with respect to planning, execution, data collection, and data management of the PNWRES92-I process. Thirty of these volumes are devoted to different "views" of the data themselves, with each view having a special purpose or interest as its focus. Analyses and interpretations of these data will be the subjects of forthcoming publications.

Conducted during the late summer and fall months of 1992, PNWRES92-I had the overarching goal of satisfying basic requirements for a variety of information about the stock of residential units in Bonneville’s service region. Surveys with a similar goal were conducted in 1979 and 1983 and were respectively designated PNWRES79 and PNWRES83.

1 From its planning stages, PNWRES92 was conceived as and intended to be a two-phase study: Phase I, the Telephone Survey, was to provide a modest amount of data on a large number (some 20,000) of Pacific Northwest households; Phase II, the On-Site Survey, was to provide a great deal of data on relatively few (perhaps 2,000-3,000) of the households interviewed in Phase I. Phase I households were intended also to provide a surrogate population of the region's households for specially focused future surveys.
PNWRES92-I differed from its two predecessors in several ways. It was designed to...

...be conducted as a telephone survey—in contrast to an on-site/in-person interview.

...include all classes of housing units in the Pacific Northwest—in contrast to those that could be reached only through cooperating electric utilities.

...assure coverage of six geographic sub-regions2 and three utility types3—in contrast, again, to depending upon the cooperation and effort of a selection of electric utilities.

...provide data on some 20,000 housing units—in contrast to some 4,000-5,000 housing units interviewed in PNWRES79 and PNWRES83.

...provide a surrogate population of Pacific Northwest households as a basis for future, fine-tuned surveys aimed at specific issues or limited data needs.

In order to provide a record of intention and achievement, the 33 coordinated volumes—designated Volume A through Volume AG—were prepared by PNWRES92-I's principal contractor, the Applied Management & Planning Group of Los Angeles, CA. These volumes are collected and published in a series of 12 "books," each of which contains a particular subgroup of the 33 volumes:

Book 1: Volumes A and B. The Executive Summary, the Concordance, and the Glossary (A) and the Report on Methodology and the Technical Appendix (B).

Book 2: Volume C. Item-by-item crosstabulations5 for the Pacific Northwest Region.


Book 4: Volume E. Item-by-item crosstabulations for the four Pacific Northwest states served by Bonneville (Western Montana, Idaho, Washington, and Oregon).

Survey Design is a set of strategies and procedures for conducting a survey. The sample design for PNWRES92-I was a stratified random sample, conducted with CATI technology. In each of the nine public utility domains, a sample size of 1,905 housing units was sought. In each of the six private utility domains, a sample size of 476 housing units was sought. (See Sampling Error)

Survey Instrument is the script devised and used by the surveyors to elicit data.

Telephone Call Disposition File (TCDF) is the largest of five data files designed to track the number of telephone calls placed during fieldwork. This file contains the disposition of all telephone calls, including disconnections, fax machines, non-residential numbers, etc. It also includes the attempts made to potential respondents. (See Telephone Call Outcome Files)

Telephone Call Outcome Files are five files designed to document the outcome of every telephone call placed during the survey. The five files were the Telephone Call Disposition File (TCDF); the Telephone Respondent Information File (TRIF), the Telephone Data File (TDF), the Telephone Successful Completions File (TSCF), and the Flagged Successful Completions File (FSCF). (See Telephone Call Disposition File, Telephone Respondent Information File, Telephone Data File, Telephone Successful Completions File, Flagged Successful Completions File).

Successful Completions File).
their New Domains according to their confirmed ZIP code.

Occupied Housing Units (OHUs), according to the U.S. Bureau of the Census, is the set of housing units that are ... classified as occupied if a person or group of persons is living in [them] at the time of the interview or if the occupants are only temporarily absent, for example, on vacation.... By definition of the count of occupied housing units is the same as the count of households.\(^{71}\)

Quad-Weekly Reports refers to a series of documents, prepared for BPA and generated every four weeks by AMPG, which describe the progress-to-date for PNWRES92-I and projects and activities to be completed in the ensuing four weeks.

Pacific Northwest Residential Energy Survey - Phase I (PNWRES92-I) is the subject of this family of reports. It was a telephone survey that was conducted to obtain data on the energy use of residences in the Pacific Northwest. A total of 20,170 surveys were completed. The results of the study will allow the Bonneville Power Administration and other members of the Pacific Northwest’s energy-planning community to forecast residential energy use in the region and to plan for appropriate conservation programs.

Pretest is a small-scale tryout of a survey’s instrument and field methods. The pretest allows for changes and improvements to be made in the survey instrument and the methodologies prior to launching the full effort.

Puget Sound Area Office is located in Seattle, Washington.

Random Digit Dialing (RDD) is the process of dialing randomly-generated telephone numbers. Properly conducted, RDD planning yields a sample such that every telephone number within the desired population has the same probability of being selected.

Raw Data are data generated during the conduct of a survey’s fieldwork. With respect to PNWRES92-I, these data are maintained in SAS datasets in BPA’s mainframe computer. The term also applies to the display of counts contained in the upper tables of Volumes C-AG. (See Weighted Data)

Response Rate is the number of respondents who completed the survey to the number of eligible residential telephone numbers which were dialed.

Return Rate is the ratio of the number of respondents who completed the survey to the total number of telephone numbers which were dialed.

Rounding, for this study, is the process of converting fractional numbers to whole numbers. Weighted estimates in PNWRES92-I are published as integers (i.e., they are rounded to the nearest whole number). (See Weighted Data)

Rounding Error is an error resulting from rounding.

Sample, as used in surveys, is a subset of a population under study. The population for PNWRES92-I was all housing units located in the Pacific Northwest which, at the time of the survey, had telephone service; the sample is the set of 20,170 household for whom completed surveys were obtained.

Sampling Domain. (See Domain)

Sampling Error, for PNWRES92-I, was defined to be the maximum standard error of an estimated binomial parameter. This

---

6 "Selected crosstabulations" refers to a set of nine survey items of wide interest ( Dwelling Type, Ownership Type, Year-of-Construction, Dwelling Size, Primary Space-Heating Fuel, Primary Water Heating Fuel, Household Income for 1991, Utility Type, and Space-Heating Fuels: Systems and Equipment) that were crosstabulated among themselves and thus yielded 36 two-way tables for each of the several views displayed in Volumes F through AF.

---
Foundation refers to the survey's Question 26 in which respondents were queried regarding their dwellings' type of foundation. When respondents tried to give multiple responses, interviewers probed for the foundation of the largest area of the dwelling. The primary foundation types were concrete slab, crawl space, and basement.

Flagged Successful Completion File (FSCF) contained results of interviews which were completed but did not pass quality control (due to conflicting or illogical responses). ISA staff cleaned data and, when necessary, recontacted respondents to remove as many files as possible from the FSCF and place them in the Telephone Successful Completions File. (See TSCF, Telephone Call Outcome Files)

Frequencies are counts of individual values attained by a variable. (See Crosstabulation Tables, Raw Data, Weighted Data)

Fuel Type is one of the following commodities: electricity, wood, natural gas, fuel oil, propane/bottled gas, kerosene, and coal. Respondents were asked to name the fuel used most in their homes to heat space and water.

Group Quarters, according to the U.S. Bureau of the Census, "... are living arrangements for institutional inmates or for other groups containing nine or more persons not related to the person in charge...."

Household, according to the U.S. Bureau of the Census, "... consists of all persons who occupy a housing unit. By definition, the count of households is the same as the count of occupied housing units." (See Occupied Housing Units)

Housing Unit, according to the U.S. Bureau of the Census, "... is a house, an apartment, a group of rooms, or a single room occupied or intended for occupancy as separate living quarters. Separate living quarters are those in which occupants do not live and eat with any other persons in the structure and that have direct access from the outside of the building or through a common hall that is used or intended for use by the occupants of another unit or by the general public. The occupants may be a single family, one person living alone, two or more families living together, or any other group of related or unrelated persons who share living arrangements (except as ... group quarters)."

Interviewing Services of America (ISA) conducted the fieldwork for PNWRES92-I as a subcontractor to AMPG. ISA is located in Van Nuys, California. (See CATI, Fieldwork)

Lower Columbia Area Office is located in Portland, Oregon.

Methodology covers all activities related to the planning, design, data collection, analysis, and reporting of PNWRES92-I.

New Domains is a term coined during the processing of PNWRES92-I data. It was created to accommodate respondents whose data could reasonably place them in a different domain than expected by their telephone number. Thus, at the design stage, each possible telephone number was placed in one of the 15 "Design Domains." During fieldwork, respondents reported their actual domains when they were queried about their utility; these were used to determine each respondent's New Domain. Those respondents who were not queried about their utility were allocated to

---

power wholesale to utilities. Located in Portland, Oregon, BPA's main service territory includes Washington, Oregon, Idaho, Western Montana, and portions of surrounding states. Bonneville contracted the conduct of PNWRES92-I in order to support the forecasting of future energy needs in the Pacific Northwest. (See States)

Bonneville Power Plus (BPP) is a software system which allows personal computer access to the tables and reports of PNWRES92-I through a Microsoft Windows-based system.

Computer-Aided Telephone Interviewing (CATI) employs interactive computing systems to assist interviewers and their supervisors in performing the basic data-collection task of telephone interview surveys.

Concordance, as used here, is a specific text-and-graphics display which provides an index to PNWRES92-I's volumes of tables and reports; it appears in each of the 33 volumes.

Crosstabulation Tables show combined frequency distributions of two or more variables. In PNWRES92-I, item-by-item crosstabulation tables were produced for the 15 sampling domains, for the three utility types within Bonneville's four Area Offices, and for the three utility types within the four states. Crosstabulation tables also were produced to examine nine specific survey items: type of dwelling; ownership type; year of construction; size (in square feet); type of space-heating fuel; type of water-heating fuel; household income; utility type; and type of space-heating equipment. These are presented for the region, the 15 sampling domains, the four area offices, the four states, and the three utility types. (See Frequencies)

Data are those elements of information that are either (a) quantified by their basic nature (e.g., floor area or annual income) or (b) capable of being quantified (e.g., type of dwelling or strength of an opinion. For the most part, the word "data" is used in these documents to refer to the values collected during the conduct of PNWRES92-I.

Domain is used in sampling and survey practice to designate a particular subset of a population that is of special interest. In PNWRES92-I, the domains (also called sampling domains) refer to the 15 strata of the initial survey design. These domains were determined by stratifying the target population of Pacific Northwest households according to three utility types (investor-owned, public generating and public non-generating) and six geographical areas (Idaho; Western Montana; the 19 Oregon counties west of the Cascade ridge; the 17 Oregon counties east of the Cascade ridge; the 19 Washington counties west of the Cascade ridge; and the 20 Washington counties east of the Cascade ridge). Three of the possible domains were empty (in late 1992, there were no public generating utilities in Eastern Oregon, Idaho, or Montana); therefore, there were 15 active sampling domains in the survey itself. (See New Domains)

Dwelling (See Housing Unit)

Fieldwork is a term used to cover the data-collection aspects of a survey. For PNWRES92-I, the fieldwork consisted of telephoning residences in the Pacific Northwest to conduct the survey and recording the responses. The effort lasted approximately 14 weeks during the fourth quarter of 1992 and was conducted using ISA's CATI system. During fieldwork, a record of every call that was made was entered into one of five telephone-record files. (See CATI, ISA, Telephone Call Outcome Files)
GLOSSARY

<table>
<thead>
<tr>
<th>Acronyms, Initialisms, and Jargon</th>
<th>General Terminology</th>
</tr>
</thead>
<tbody>
<tr>
<td>AMPG (See Applied Management &amp; Planning Group)</td>
<td>Applied Management &amp; Planning Group (AMPG) is a small business enterprise contracted by the Bonneville Power Administration to conduct the Pacific Northwest Residential Energy Survey, Phase I (PNWRES92-I). AMPG is located in West Los Angeles, California.</td>
</tr>
<tr>
<td>BPA (See Bonneville Power Administration)</td>
<td>Area Offices are four geographic-based entities (Lower Columbia, Puget Sound, Snake River, and Upper Columbia) which oversee the field operations of the Bonneville Power Administration.</td>
</tr>
<tr>
<td>BPP (See Bonneville Power Plus)</td>
<td>Bonneville Power Administration (BPA) is one of the U.S. Department of Energy’s five power marketing agencies. BPA supplies</td>
</tr>
<tr>
<td>CATI (See Computer-Aided Telephone Interviewing)</td>
<td></td>
</tr>
<tr>
<td>Crosstabs, Crosstabulations (See Crosstabulation Tables)</td>
<td></td>
</tr>
<tr>
<td>FSCF (See Flagged Successful Completion File)</td>
<td></td>
</tr>
<tr>
<td>ISA (See Interviewing Services of America)</td>
<td></td>
</tr>
<tr>
<td>OHUs (See Occupied Housing Units)</td>
<td></td>
</tr>
<tr>
<td>PNWRES92-I (See Pacific Northwest Residential Energy Survey - Phase I)</td>
<td></td>
</tr>
<tr>
<td>RDD (See Random Digit Dialing)</td>
<td></td>
</tr>
<tr>
<td>SAS (See SAS)</td>
<td></td>
</tr>
</tbody>
</table>
TABLE OF CONTENTS

EXECUTIVE SUMMARY 11

BACKGROUND 13

PROFILING THE RESPONDENTS 15
  Demographics 15
  Housing Units 16
  Rooms 17
  Appliances 18
  Air-Conditioning, Space-Heating, and Water-Heating 19
  Opinion 20

REPORTS AND CROSSTABULATIONS 21

BONNEVILLE POWER PLUS 21

CONCORDANCE 22

GLOSSARY 25
Concordance
Tables

<table>
<thead>
<tr>
<th></th>
<th>Volume F</th>
<th>Volume G-U</th>
<th>Volume V-Y</th>
<th>Volume Z-AC</th>
<th>Volume AD-AF</th>
<th>Volume AG</th>
</tr>
</thead>
<tbody>
<tr>
<td>Region</td>
<td>Selected Crosstabulations</td>
<td>Selected Crosstabulations</td>
<td>Selected Crosstabulations</td>
<td>Selected Crosstabulations</td>
<td>Selected Crosstabulations</td>
<td>Volume AG: Study of Non-Respondent Survey</td>
</tr>
<tr>
<td></td>
<td>for Domains</td>
<td>for Area Offices</td>
<td>for States</td>
<td>for Utility Types</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>AD: Investor-Owned</td>
<td></td>
<td>AD: Montana</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Key: PC = Public Generating Utility, PN = Public Nongenerating Utility, IO = Investor-Owned
CONCORDANCE

This Concordance is a "road map" to the material generated as primary documentation to PNWRES92-I.

Its basis is the set of 33 reports, Volume A through Volume AG, produced at the conclusion of the data-collecting activity.

These volumes are collected and published in a series of 12 books whose contents are indicated in the rectangle displayed in the Concordance's lower right corner. The books are available through the channels indicated at the end of the Preface.

EXECUTIVE SUMMARY

This Executive Summary outlines the general processes employed in and the major findings from the conduct of Phase I of the Pacific Northwest Residential Energy Survey (PNWRES92-I) during the last quarter of 1992. This study was Bonneville’s third comprehensive residential survey of the region, conducted to provide data on energy usage, conservation awareness and behaviors, and associated consumer characteristics for use in forecasting and planning.

The summary is divided into four sections:

BACKGROUND sets the stage with respect to the need for the survey, relates it to previous work, outlines the implementation processes, and summarizes the data products.

PROFILING THE RESPONDENTS summarizes the survey results under these six categories:

- Demographics
- Housing Units
- Room Inventory
- Appliance Inventory
- Air-Conditioning/Heating
- Water-Heating
- Opinion

REPORTS AND CROSS-TABULATIONS describes the various individual documents.

BONNEVILLE POWER PLUS provides a short description of an Excel-spreadsheet-based software program that contains all of the tabulated material in a format that encourages browsing among the tables and charts, with special feature that they can be copied directly into other Windows-based documents.
Numerous reports and crosstabulations are available from this study. There are 33 printed volumes in the primary documentation; they are also accessible from menu-driven software (Bonneville Power Plus). Volume A includes this Executive Summary, the Concordance, and the Glossary. Volume B includes the Report on Methodology and the Technical Appendices. Volumes C through AF show tables and charts from the study.

Item-by-item crosstabulations are provided for the 15 sampling domains within the region (Volume C), the three utility types within the four Area Offices (Volume D), and the three utility types within the four states (Volume E).

Selected crosstabulations examine nine survey items: type of dwelling, ownership type, years of construction, size (in square feet), type of space-heating fuel, type of water-heating fuel, household income, utility type, and type of space-heating equipment. These items are tabled separately for the region (Volume F), the 15 sampling domains (Volumes G-U), the four Area Offices (Volumes V-Y), the four states (Volumes Z-AC), and the three utility types (Volumes AD-AF). Each table is accompanied by a bar chart based on the weighted data.

Volume AG is a report on the non-respondents.

The Concordance (pages 18-19) provides an index to the various tables and reports of the study.

BONNEVILLE POWER PLUS

As part of its contracted work, AMPG developed a personal computer system to support the PNWRES92-I reports. Called Bonneville Power Plus, this system operates under Windows 3.1 and uses Microsoft's Excel 4.0 and Word for Windows 2.0c programs. The files consist primarily of a spreadsheet-based system of tabulations which are accessed through a menu-driven format. In addition to the data tables, Bonneville Power Plus provides menu-accessible charts of the weighted data. Although the files used directly by Bonneville Power Plus are protected from being overwritten, each table and chart can be saved from the display screen to new files; from there they can be modified and used in any Windows application.

Documentation for Bonneville Power Plus is contained in Volume B: Technical Appendices.
PROFILING THE RESPONDENTS (continued)

Opinion

Asked to rate the seriousness of five socio-economic issues in their own state on a scale of 1 to 5, with 1 being "Not At All Serious" and 5 being "Extremely Serious," the following percentages of respondents gave "Extremely Serious" ratings to the issues:

<table>
<thead>
<tr>
<th>Issue</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scarcity of Energy</td>
<td>13%</td>
</tr>
<tr>
<td>Cost of Energy</td>
<td>21%</td>
</tr>
<tr>
<td>Environmental Pollution</td>
<td>29%</td>
</tr>
<tr>
<td>Crime</td>
<td>35%</td>
</tr>
<tr>
<td>Unemployment</td>
<td>38%</td>
</tr>
</tbody>
</table>

Our Opinions

13% rated Scarcity of Energy as "Extremely Serious," while 38% rated Unemployment as "Extremely Serious."

<table>
<thead>
<tr>
<th>Scarcity of Energy</th>
<th>13%</th>
<th>21%</th>
<th>27%</th>
<th>15%</th>
<th>13%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cost of Energy</td>
<td>6%</td>
<td>15%</td>
<td>33%</td>
<td>20%</td>
<td>21%</td>
</tr>
<tr>
<td>Environmental Pollution</td>
<td>9%</td>
<td>12%</td>
<td>27%</td>
<td>19%</td>
<td>20%</td>
</tr>
<tr>
<td>Crime</td>
<td>5%</td>
<td>11%</td>
<td>24%</td>
<td>23%</td>
<td>30%</td>
</tr>
<tr>
<td>Unemployment</td>
<td>4%</td>
<td>9%</td>
<td>22%</td>
<td>23%</td>
<td>30%</td>
</tr>
</tbody>
</table>

Background

A necessary element in Bonneville’s forecasting and conservation planning is information about consumers' energy use and factors affecting energy consumption. Energy-use data from residential surveys conducted in 1979 and 1983 have been used extensively by Bonneville, the Pacific Northwest Utilities Conference Committee, the Northwest Power Planning Council, and several of the region’s utilities.

Since 1983, both increased fuel prices and conservation programs have affected consumer behavior and have thus made it necessary to update the residential database used for energy forecasting. To improve the accuracy of these forecasts in the 1990s, more detailed information was required concerning the use of residential energy in the Pacific Northwest. The result was Bonneville’s planning and implementing its third regional residential survey, PNWRES92-I.

A team of Bonneville staff members from the Office of Energy Resources designed the data collection as a telephone survey. The Applied Management & Planning Group (AMPG), Los Angeles, California, was selected to implement the survey, summarize the data, and prepare the primary documentation. Interviewing Services of America (ISA), Van Nuys, California, was subcontracted by AMPG to conduct the telephone interviews.

PNWRES92-I used random digit dialing (RDD) and computer-assisted telephone interviewing (CATI). The sample was stratified into 15 sampling domains defined by six geographic areas and three utility types. Interviews were conducted from September 3, 1992, to December 9, 1992. A total of 20,170 interviews were completed across the 15 domains. Population total weights were created for each domain by the dividing estimated occupied housing counts by the number of interviews in the survey in that domain.

As indicated in the Concordance (pages 18-19), the survey’s full documentation is divided among 33 different volumes, each of which is designed to support the survey process or to address particular

8. Public generating, public non-generating, and investor-owned. Because no public generating utilities operated in Western Montana, Eastern Oregon, or Idaho when PNWRES92-I was conducted, three of the utility/geographic cells were empty, and the sampling design contained a total of 15 domains.
9. Counts were taken from Bonneville’s Financial and Operations (F&O) database for all utilities and adjusted by using state and sub-state vacancy rates as measured by the 1990 census. These calculations were done both at the sampling domain level and at the level of Bonneville’s four area offices, yielding two sets of weights.
special interests in the region. For example, Volume E provides item-by-item cross tabulations of interviewees' responses for each of the four states, while Volume K is devoted to cross tabulations of nine special questions for public non-generating utilities in Idaho. This Executive Summary, however, focuses on region-level estimates for a few selected items of general interest. This information appears in the section, Profiling the Respondents, starting on page 11.

PROFILING THE RESPONDENTS (continued)

Air-Conditioning, Space-Heating, and Water-Heating

Few respondents knew nothing about or refused to comment on their use of various domestic fuels for space-conditioning and water-heating. Thus, these summary percentages are estimates based upon an estimated 3.55 million households.

Air-conditioning System:
- no air-conditioning
  76%
- window or wall units
  8%
- central electric system
  7%
- heat pump
  6%
- evaporative cooler
  2%
- central gas system
  1%

Primary Space-Heating Fuel:
- electricity 46%
- natural gas 24%
- wood or prestige logs 16%
- fuel oil, propane, or bottled gas 11%

Primary Water-Heating Fuel:
- electricity 76%
- natural gas 17%
- wood or prestige logs 0.2%
- fuel oil, propane, or bottled gas 1%
Regarding the types and numbers of appliances in their homes, the following percentages of respondents reported that they had at least one of the indicated types of appliances:

- Refrigerators: 99.9%
- Televisions: 98.5%
- Cooking ovens: 98.0%
- Microwave ovens: 90%
- Clothes washers: 89%
- Clothes dryers: 88%
- Dishwashers: 66%
- Separate freezers: 58%
- Personal computers: 29%

In terms of the numbers of each type of appliance, there was one reversal within the "possession" sequence given above:

The average number of televisions per household was 1.81, while the average number of refrigerators was 1.18.

Of the individuals considered most knowledgeable about energy in their households:

- 57% were female
- 30% had graduated from college, while 7% had not finished high school
- 36% lived in households with two people, while 16% lived alone
- 80% lived in households with no children under 6 years old
- 68% had no children aged 6 to 17
- 77% lived with no one aged 65 or older
- 7% had income less than $10,000
- 2% had income greater than $100,000
- 61% would authorize release of their utility billing information

Median family income for 1991 was slightly larger than $30,000.

More specifically, the quantifications used here are derived from the domain-weighted frequencies that appear in Volume C: Item-by-Item Results: Region and Domains.
PROFILING THE RESPONDENTS (continued)

Housing Units

In describing their housing units, respondents reported that:

- 72% of the households lived in single-family dwellings
- 22% of the housing units were constructed before 1950
- 74% of the respondents owned their homes
- 39% had moved into their homes since 1989

21% of their dwellings had vaulted ceilings
37% of their dwellings were built on foundations with crawl space

When Our Homes were Built

Of the Region's estimated 3.55 million homes, two-thirds were built between 1950 and 1985

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Single-Family (71.5%)</td>
<td>19.8%</td>
<td>8.9%</td>
<td>9.0%</td>
<td>15.0%</td>
<td>7.5%</td>
<td>8.2%</td>
<td>7.3%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Multi-Family (15.0%)</td>
<td>1.7%</td>
<td>0.6%</td>
<td>1.1%</td>
<td>2.0%</td>
<td>1.3%</td>
<td>1.9%</td>
<td>0.6%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Manufactured (12.3%)</td>
<td>0.1%</td>
<td>0.2%</td>
<td>1.3%</td>
<td>4.4%</td>
<td>2.8%</td>
<td>2.1%</td>
<td>1.3%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other (0.5%)</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0.1%</td>
<td>0.1%</td>
<td>0.1%</td>
<td>0.1%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: Rounding has an effect on sums

25% did not know the floor area of their dwellings.

Of the 75% those who did know the floor area:
- 17% reported less than 92.9 square meters (1,000 square feet), while
- 28% reported more than 186 square meters (2,000 square feet).

26% had basements

Median dwelling size was 171 square meters (1,857 square feet).

PROFILING THE RESPONDENTS (continued)

Rooms

When asked about the numbers of types of rooms in their homes, respondents reported:

- 99.9% of the households had at least one bathroom, while
- 57% had more than one bathroom
- 99.9% had kitchens, but 1 in 1,000 had none
- 99.7% had at least one bedroom, while
- 65% had 3 or more bedrooms

99.9% had living rooms
60% had utility or work rooms
62% had dining rooms
34% had family rooms
25% had dens, studies, libraries, or sewing rooms

The "average" Pacific Northwest home had 2.86 bedrooms and 1.73 bathrooms.