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SOCIODEMOGRAPHIC DATA USED FOR IDENTIFYING POTENTIALLY HIGHLY EXPOSED POPULATIONS

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FOREWORD

The National Center for Environmental Assessment (NCEA) of the U.S. Environmental Protection Agency's Office of Research and Development (ORD) has five main functions: (1) providing risk assessment research, methods, and guidelines; (2) performing health and ecological assessments; (3) developing, maintaining, and transferring risk assessment information and training; (4) helping ORD set research priorities; and (5) developing and maintaining resource support systems for NCEA. The activities under each of these functions are supported by and respond to the needs of the various program offices. In relation to the first function, NCEA sponsors projects aimed at developing or refining techniques used in exposure assessments.

This document is being published as a companion to the *Exposure Factors Handbook*. Due to unique activity patterns, preferences, practices, and biological differences, various segments of the population may experience exposures different from those of the general population, and these exposures, in many cases, may be greater. It is necessary for risk or exposure assessors characterizing a diverse population to identify and enumerate certain groups within the general population who are at risk for greater contaminant exposures or exhibit a heightened sensitivity to particular chemicals. This document provides information, where possible, for addressing these populations.

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PREFACE

The National Center for Environmental Assessment (NCEA) has prepared this document to assist scientists and concerned communities in identifying subsets of the general population who might experience more frequent contact with and greater exposures to environmental contaminants. Furthermore, this document provides demographic data to help users determine the number of people in these potentially highly exposed subsets of the general population.

The *1994 Executive Order on Federal Actions to Address Environmental Justice in Minority Population and Low-Income Populations* emphasized the importance of protecting minority and low-income communities from disproportionate environmental hazards and effects. In addition to low-income and minority populations, other populations categorized by age, gender, and location, to name a few, are candidates for potentially increased exposures depending on the given scenario. This document was initiated because previous efforts focused predominantly on factors, data, and scenarios based on national averages for the general population. To provide protection to highly exposed populations, risk and exposure assessments must consider relevant and more accurate data that pertain to these populations.

The current document results from revisions and narrowing of content scope from several NCEA draft documents, including *Exposure Factors for Specific Demographic and Ethnic Subgroups* (March 1995), which presented exposure data that were found to correlate significantly with ethnicity. Significant portions of that document were incorporated into the revised *Exposure Factors Handbook* that was published in the Fall of 1997. Remaining materials became the basis for the draft document *Identifying Susceptible Populations* (March 1996), which provided information to help assessors identify and enumerate populations potentially at risk for increased exposures and at risk due to heightened biological sensitivities to environmental contaminants. The above draft documents were reviewed by staff members from the U.S. Environmental Protection Agency who offered comments that have led to the current document, *Sociodemographic Data Used for Identifying Potentially Highly Exposed Populations*. The major difference between this draft and previous drafts is that biologically sensitive data are not

addressed and the scope has been expanded to include additional categories of highly exposed populations in addition to ethnicity.

The data and population subsets presented are not intended to be comprehensive or prescriptive. This document does not include all possible populations and does not include guidance for identifying and enumerating all populations under every circumstance. The inclusion of a specific population in this document is not intended to imply that the specific population addressed is more likely than the general population to experience potentially high exposures to a given contaminant. Likewise, the reader should not conclude that all members of a population included in the text will necessarily experience greater exposures to a given contaminant.

This document addresses potential exposure to a single contaminant, source, or stressor. To address the areas, multiple and cumulative risks is not within the scope of this document. The guidelines on EPA's risk assessment approach are shifting towards greater consideration for multiple endpoints, sources, pathway and routes of exposure, and all the environmental media, etc. EPA's Science Policy Council has developed a document entitled, "Guidance on Cumulative Risk Assessment, Part 1. Planning and Scoping." This document is available on EPA's web site at the following address: *http://www.epa.gov/ORD/spc/cumrisk2.htm*. The document can be downloaded using Adobe Acrobat software, which is available at no cost from Adobe. The Adobe Internet address is: *http://www.adobe.com*.

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1. INTRODUCTION

The U.S. Environmental Protection Agency (EPA) is charged with protecting human health from adverse effects resulting from exposure to contaminants in the environment. EPA estimates risk to human health by conducting risk assessments, as illustrated in Figure 1-1. An important step in risk assessment is exposure assessment (U.S. EPA, 1992a). The process of exposure assessment involves (1) identification of potential exposure pathways, (2) quantification of chemical intakes/potential doses, and (3) identification/estimation of the exposed population (U.S. EPA, 1992a). This document addresses the third component of an exposure assessment, estimation of the magnitude of the exposed population. It does not address the duration or degree to which a population is exposed to a contaminant(s) of concern. Duration and degree of exposure and other aspects of exposure assessment are presented in *Exposure Factors Handbook* (1997).

A primary goal of risk assessment is to develop a distribution of the range of exposures/risks occurring in the exposed population. In the past, some risk assessments did not characterize the subsets of the exposed population with higher than average exposures/risks. Individual populations can experience greater risk than the general population through higher than average exposure and/or higher than average biological sensitivity. An important limitation in the scope of this document is that it addresses populations who are potentially at greater risk due to high exposure, but not populations with greater risks due to biological sensitivity.

The data and population subsets presented are not intended to be comprehensive or prescriptive. This document does not include all possible populations and does not include guidance for identifying and enumerating all populations under every circumstance. The inclusion of a specific population in this document is not intended to imply that all members of a specific population addressed are more likely than the general population to experience potentially high exposures to a given contaminant.

The specific goals of this document are to (1) help assessors identify potentially highly exposed populations and (2) help assessors estimate the size of these populations. It provides information on the number of individuals or the percent of the general population associated with

dietary preferences, cultural practices, geographic location and setting (i.e., urban vs. rural), and other activities that target populations and individuals as possibly highly exposed candidates. The literature summaries provided are not all-inclusive, but are meant to provide the reader with a general overview of population data reported in recent literature. In most cases, data are from government publications, peer-reviewed literature, and trade associations. Data are presented as they appear in the original studies/reports. No attempt was made to verify or assess the quality of the data beyond what is described in the published reports. Within the constraint of presenting the original material as accurately as possible, terminologies used to describe areas such as racial populations and study results are those presented by the study authors.

The *Exposure Factors Handbook* was first published in 1989 (U.S. EPA, 1989a). The revised handbook was published in 1997. This document is intended to be used in conjunction with the revised *Exposure Factors Handbook* (U.S. EPA, 1997). The handbook provides statistical data on human characteristics and behaviors used in assessing exposure (e.g., ingestion rates of foods, activity duration and frequency, soil ingestion rates, body weight, skin surface area), addressing the second component of the exposure assessment process mentioned above. It focuses primarily on exposure factors pertaining to the general population but also presents, where possible, data specific to various age, gender, racial or ethnic, and occupational subgroups. The procedure for using these two documents in combination is as follows:

- An assessor will use this document to help determine if potentially highly exposed populations may exist in the area of interest and to estimate the size of such groups.
- Once the suspected potentially highly exposed populations are identified, the assessor can then use the *Exposure Factors Handbook* (U.S. EPA, 1997) to select intake and other exposure factor values specific to the groups identified above. These exposure factor values would be combined with site-specific information on environmental concentrations of contaminants to estimate exposure levels.

Other related documents that assessors may find helpful for identifying and evaluating highly exposed populations include, but are not limited to, the following: *Methods for Enumerating and Characterizing Populations Exposed to Chemical Substances* (U.S. EPA, 1985); *Populations of*

Potential Concern in Chemical Exposure and Risk Assessment (U.S. EPA, 1989b); and *Risk Assessment Guidance for Superfund*, Volume 1 (U.S. EPA, 1989c).

Although multitudes of anecdotal and circumstantial evidence suggest that a particular subgroup may be more susceptible than other members within the general population, very little direct evidence exists of what the actual exposures and risk levels are for specific chemicals or physical agents in the environment. Therefore, the data presented in this document for various subgroupings do not imply or necessitate that all or any members of a given group are highly exposed. The data contained in this document should be used as a tool to alert the assessor to subgroups that may potentially experience greater exposures than the general population. The data also should be used to help the assessor determine the number of individuals who potentially may be subjected to increased exposures. When possible, assessors are encouraged to collect site-specific data to help confirm if any groups are experiencing high exposures.

1.1. TERMINOLOGY USED TO DEFINE CONCEPTS RELATING TO EXPOSURE

1.1.1. Exposure

The *Guidelines for Exposure Assessment* define exposure as "the contact of an organism with a chemical or physical agent" (U.S. EPA, 1992a). The document further defines exposure as "contact of a chemical, physical, or biological agent with the outer boundary of an organism." Exposure is quantified as the concentration of the agent in the medium in contact integrated over the time duration of that contact (U.S. EPA, 1992a).

1.1.2. High End, Upper End, Exposure Distribution

A goal of many exposure assessments is to estimate the complete range of exposures occurring in the exposed population and number of people at each exposure level. This concept can be illustrated graphically by a distribution curve showing numbers of people exposed at various levels. Note: persons in the high end of the health risk distribution are not necessarily the same individuals as those in the high end of the exposure distribution (U.S. EPA, 1992a). Individuals represented within what is known as the "upper end" or "high-end" of an exposure distribution are referred to as highly exposed individuals. A high-end exposure estimate is defined

in the *Guidelines for Exposure Assessment* as “a plausible estimate of individual exposure or dose for those persons at the upper end of an exposure or dose distribution, conceptually above the 90th percentile, but not higher than the individual in the population who has the highest exposure” (U.S. EPA, 1992a).

1.1.3. Susceptibility, Highly Exposed, Biologically Sensitive

Definitions for “susceptibility,” “highly exposed,” and “sensitivity” vary according to various professions. For example, toxicologists refer to individuals who respond to the lowest concentrations of a given toxicant as "susceptible" (Hattis et al., 1987). Genetic epidemiologists define susceptible individuals as those who become ill (Khoury et al., 1989). EPA has used the term "susceptible" to refer to both highly exposed and biologically sensitive individuals. An informal survey conducted within EPA showed that many investigators considered susceptible populations to be either sensitive or highly exposed (Grassman, 1995). However, the terms "highly exposed" and "sensitive" are quite different and are not used interchangeably in this document. For example, if a population showing heightened sensitivities towards a particular toxic agent experiences little contact with that agent, the overall risk in this instance could be very low. Conversely, a population with sensitivities similar to those of the general population can be at greater risk if it experiences greater contact with toxic agents.

Individuals are “highly exposed” on the basis of their activities, preferences, and behavior patterns that differ from those established for the general population. For example, high exposure could relate to food choices, frequency of foods consumed, cultural practices, geographic location, residential setting (urban vs. rural), occupation, education, socioeconomic status, proximity to hazardous facilities, and activity patterns. These parameters may vary according to seasonal aspects, age, and other factors.

A “sensitive” individual is one who shows an adverse effect to a toxic agent at lower doses than the general population or who shows more severe or more frequent adverse effects after exposure to similar amounts of a toxic agent as the general population. For example, the fetus is more sensitive to many chemicals than older individuals. Biological sensitivity may result from

age (Calabrese, 1986), gender (Calabrese, 1985), genetics (Omenn, 1984), deficiencies relating to diet and health, or other factors (Rios et al., 1993; Calabrese, 1986).

Figure 1-2 presents the Methodological Approach for Identification and Evaluation of Populations Potentially at Greater Risk. The figure illustrates that populations are potentially at greater risk when they are "more exposed" or "more susceptible" (Sexton et al., 1993). The scope of this document, however, does not include identifying biologically sensitive populations or determining one's susceptibility (or sensitivity) to a chemical. Rather, it examines how activities or behaviors can subject particular segments of the population to greater exposures and more frequent contact with environmental contaminants.

1.2. IDENTIFYING THE POTENTIALLY HIGHLY EXPOSED POPULATION

As discussed previously, one objective of this document is to help assessors identify potentially highly exposed populations. This section summarizes the types of information presented that address this issue. Although the topic is beyond the scope of this document, some discussion is included on how these factors relate to biological sensitivity. These discussions are included as important related issues that assessors can pursue from other sources. Assessors are reminded that if an individual (or population) is exposed to environmental compounds, it does not necessarily result in that individual (or population) being highly exposed relative to the general population.

The fact that data for a particular subgroup are presented does not mean that all members within that subgroup are highly exposed or that such exposure constitutes a high risk. Also, this document does not include all possible groupings of susceptible populations. Direct cause-and-effect relationships are not being claimed; rather, information is presented that has the potential for demonstration of correlations between exposure and the incidence and severity of symptomatic effects. Some of the important factors for identifying potentially highly exposed populations are chemicals of concern, age, gender, and lifestyle. Therefore, these areas are addressed in the following sections of this document.

1.2.1. Chemical(s) of Concern

Identification and characterization of specific chemicals of concern are necessary steps in identifying and enumerating populations with high-end exposures. For example, a chemical classified as a pesticide would prompt assessors to consider populations working in an agriculturally related occupation or people who participate in gardening as possible candidates for receiving higher exposures to pesticides (further discussed in Sections 1.2.3 and 7.4). Because of its prevalence in the environment, lead is another chemical of concern that can be associated with various conditions and groups. For example, older houses often have lead-based paints (Sutton et al., 1995; Barltrop, 1965) (Section 4.1 and Table 4-3). Soils near roadways (Romieu et al., 1995) (Section 3.6) tend to have elevated lead levels from the previous use of lead in gasoline. Not only is lead a chemical to which children are biologically more sensitive than adults, but it is also a chemical that children are more likely to be exposed to because of the prevalence of certain activities in children (ILSI, 1992) such as pica. Pica is defined as the intentional ingestion of nonfood items (Bruhn and Pangborn, 1971; Vermeer and Frate, 1979; NRC, 1993). Children exhibiting pica may experience exposures to lead from ingestion of paint chips and lead-contaminated soils. Thus, children are a population who should be recognized as having possibly higher exposures to lead and other chemicals from ingestion. Additional examples of populations potentially more exposed to specific environmental agents than the general population are presented in Table 1-1. This table is not intended to be comprehensive. Rather, it is presented to show possible examples of chemical-specific population exposures.

1.2.2. Age

The age of the population should be considered when estimating exposure. For example, nursing infants could potentially have more exposure (per unit body weight) to some lipophilic contaminants than the general population through ingestion of breastmilk containing these contaminants. Lipophilic compounds such as pesticides and dioxins have commonly been identified in human milk (NAS, 1991; NRC, 1993). The levels of these compounds in human milk vary with duration of lactation, number of children nursed, and the weight of the nursing mother (NAS, 1991).

Young children may have an increased potential for exposure to soil contaminants as a result of pica and mouthing behaviors. The relatively higher ratio of surface area to body weight of fetuses, neonates, and children, as compared to adults, may result in children being exposed to higher concentrations of chemical per unit body weight than adults (Wester and Maibach, 1982).

Age also can be used to identify biologically sensitive individuals. The effect of age sensitivity to contaminant exposure will vary with the substance (Calabrese, 1986). For example, although sensitivity to skin irritants generally decreases with age, renal function also decreases with age, thereby increasing sensitivity to chemicals that affect kidneys (Calabrese, 1986). Thus, children tend to be more resistant than adults to the harmful effects of renal toxicants (Calabrese, 1986). In addition, adults more than 50 years old generally have a decreased capacity to detoxify and/or excrete some chemical substances, and also exhibit a functional decline in the immune system (Calabrese, 1986). The fetus, in comparison to older individuals, is more sensitive to many chemicals. For example, the developing nervous system of the fetus or neonate has increased susceptibility to the neurotoxic effects of lead (ATSDR, 1992). In addition, children at various stages of development are also more sensitive to exposure to chemicals because of the immaturity of their enzyme detoxification and immune systems (Calabrese, 1986; Lorenz and Kleinman, 1988; NRC, 1993; Gladkte and Heimann, 1975).

Age demographics for the general U.S. population are presented in Section 2. Age-related activities are discussed in Sections 8 and 9.

1.2.3. Gender

Gender-related behavior and activity patterns also can increase an individual’s exposure to toxic agents (Behrman et al., 1987). For example, during pregnancy some women may have increased food consumption because of increased nutritional need and thus can have increased exposure to any toxic contaminant present on or in a food sources. Additionally, pica is practiced by some women during pregnancy and most often involves the consumption of dirt or clay (Neuhauser, 1994). These substances may be contaminated with chemical/toxic compounds.

Gender-related economic factors, specifically those related to living in low-income households, can increase an individual's potential exposure to toxic agents (NRC, 1993;

Starfield, 1982; Mitchell and Dawson, 1973; Starfield and Budetti, 1985; CDHS, 1991). Data presented in Table 10-4 of this document show that for each year studied (1966-1994), a greater percentage of women than men live in poverty (U.S. Bureau of the Census, 1995).

Participation in certain occupations can also increase an individual's exposure to toxic agents. For example, men comprise between 75% and 80% of workers in the farming industry (U.S. DOL, 1994); therefore, they may be exposed more frequently than women to agricultural pesticides. Women comprise more than 90% of workers in the cleaning industry (U.S. DOL, 1994); therefore, women have the potential for more frequent exposure than men to chemicals contained in cleaning products. Occupational data by gender are presented in Section 7 of this document.

Although sex-linked differences in sensitivities to toxic chemicals have not been investigated extensively, the gender differences observed for several toxic substances have been attributed to such factors as differential gastrointestinal absorption (Adrian et al., 1986), plasma protein binding (Rane et al., 1971; Morselli et al., 1980; Morselli, 1989), biliary excretion (Lorenz and Kleinman, 1988; NRC, 1993), tissue distribution (NRC, 1993; Morselli, 1980), and enzymatic bioactivation/detoxification activities (NRC, 1993; Greengard, 1977). With regard to a sensitive population, neither sex universally can be labeled more sensitive or less sensitive to all substances. However, because of the physiological changes (e.g., a marked increase in the requirement for calcium and iron, hormonal alterations, respiratory disease susceptibility) that occur during pregnancy, pregnant women may be predisposed to the toxic effects of such chemicals as beryllium, lead, manganese, and organophosphate insecticides (Romero et al., 1989; Neuhauser, 1994).

1.2.4. Lifestyle, Behavior, and Social Structure

The fact that exposure to a pollutant may be determined, in part, by the behavior of the receptor (i.e., human) is a basic principle of exposure assessment. The risk potential is increased by a behavior that may not place a person in direct contact with a particular pollutant, but nevertheless makes them more susceptible to the pollutant’s effects when exposure to that pollutant does occurs. For example, smoking enhances the toxicity of other chemicals by

restricting airway conductance or making it more difficult to clear volatiles from the lungs (Klaassen et al., 1996). Excessive consumption of alcohol appears to interfere with the detoxification enzyme system of the liver (Klaassen et al., 1996).

Another example of increased risk due to behavioral practices is the use of metallic mercury for medicinal and religious practices in Caribbean and Hispanic populations. Mercury sprinkled on the floor or carpet could result in potentially increased exposure (dermal, inhalation, and ingestion) to mercury for these specific populations (Wendroff, 1990).

Other activities that may lead to individuals having potentially greater than average exposure to pollutants include breastfeeding, normal outdoor play for children, gardening and the consumption of homegrown foods, dirt biking, fishing, and hunting. The potentially highly exposed populations may include groups defined by ethnic origin, race, geographic region of residence, income level, or other demographic factors. Exposure/risk among these populations may differ from that of the general population as a result of behavioral or cultural factors (i.e., ethnic-related activities/traditions, geographic/regional behaviors, or social activities that may contribute to higher risk such as smoking or alcohol or drug use).

1.2.5. Personal Health

An individual's personal health can affect the extent to which they experience adverse effects upon exposure to environmental pollutants. Elements of personal health such as nutritional status, disease history, body weight, body fat, preexisting medical conditions, or genetic predispositions can exacerbate health consequences for individuals exposed to any environmental contaminant. For example, a person with asthma may experience respiratory problems after exposure to a respiratory irritant. This exposure could lead to a potentially life-threatening asthma attack, while a person not afflicted with asthma could experience only minor reactions (Calabrese, 1978). The authors note that issues related to personal health are of potential concern for the exposure/risk assessor; however, addressing potentially susceptible or highly exposed populations based on health concerns is beyond the scope of this document. The reader is referred to the following reference sources for information available on this subject: Calabrese, 1978; Kuczmarski, 1994; CDC, 1994; Montgomery and Carter-Pokras, 1993; Otten et

al., 1990; Rios et al., 1993; U.S. Bureau of the Census, 1995; and Weiss et al., 1992. Full citations are presented in Section 1.6. It should be noted that the references mentioned above are not intended to be all-inclusive, but are presented as examples of available sources addressing health concerns.

1.3. ENUMERATION OF VARIOUS HIGHLY EXPOSED POPULATIONS

A major difficulty encountered in the preparation of exposure assessments is the enumeration and characterization of specific populations exposed to chemical substances. The EPA Office of Toxic Substances 1985 document *Methods for Enumerating and Characterizing Populations Exposed to Chemical Substances* (U.S. EPA, 1985) presents methods and supporting information for enumerating and characterizing populations exposed to chemical substances in each of several exposure categories. Risk assessors should refer to this document for guidance in enumerating populations where site-specific data are not available. The categories of exposed populations addressed are as follows:

- Populations exposed to chemical substances in the ambient environment (all media);
- Populations exposed to chemical substances in the occupational environment;
- Populations exposed to chemical substances via the ingestion of foods;
- Populations exposed to chemical substances via the use of consumer products; and
- Populations exposed to chemical substances via the ingestion of drinking water.

All printed census information is available for purchase through the Government Printing Office (GPO). Other forms of information such as computer tapes, microfiches, maps, and technical documentation can be obtained from the U.S. Department of Commerce, Bureau of the Census.

The Census of Population is the major source for the size, distribution, and demographic characteristics of a geographically defined population. These include detailed characteristics such as age, sex, enumeration of various ethnic groups, and characterization of socioeconomic data.

Not all the population data required to assess highly exposed populations can be obtained from census data. For example, enumeration of populations who are potentially sensitive to contaminant exposure on the basis of personal health factors (preexisting diseases, allergies, or genetic predispositions) cannot be ascertained from census data. These data can sometimes be obtained from local government sources, health agencies, or references from medical journals. (See Table 11-1 for sources of local data.) Likewise, for enumeration of populations with high-risk behavior patterns, such as subsistence fishers, assessors may turn to surveys, State government agencies, or ethnographic field techniques (interviews, oral histories, etc.).

1.3.1. Framework of Methods

The framework for enumerating and characterizing exposed populations is the same for each population of interest and is comprised of three stages (U.S. EPA, 1985):

1. The identification of the exposed population.
2. The enumeration of the exposed population.
3. The characterization of the exposed population according to age, sex, and other demographics.

Figure 1-3 is a flow diagram of the three-stage framework. The first stage involves determining the site locations of the chemical/pollutant of concern from various sources in the environment. The people living at or near these locations can be identified via mapping techniques, site visits, aerial photographs, etc. These tools also can be used to estimate the number of people exposed to various chemicals in the environment. As an example, contaminant concentration isopleths can be plotted on a population density map, and the number of people within a given area of equal chemical concentration can be determined. The final step is to examine the exposed populations to determine the highly exposed populations. The application of this process to specific exposure scenarios is discussed as follows.

1.3.2. Contact With Chemicals in the Ambient Environment (All Media)

Populations potentially exposed to a chemical substance in the ambient environment can be identified through an evaluation of the substance's sources, its behavior in the environment, location of the source, and applicable monitoring data. Populations may be further defined by their participation in specific activities (i.e., occupation, exercise, hobbies, etc.) leading to exposure, and by demographics (age and gender).

1.3.3. Chemical Contact Resulting From Disposal Activities

Exposures resulting from disposal and transportation-related spills of chemical substances are types of exposures occurring in the ambient environment (all media). Populations exposed to chemical substances in these categories are identified either by geographic location or by occupation if site-specific data are not available.

1.3.4. Chemical Contact in Occupational Setting

The enumeration of occupationally exposed populations relies on the direct utilization and combination of numerous databases. This information is largely the result of efforts by the Federal Government (e.g., National Institute for Occupational Safety and Health [NIOSH] and Occupational Safety and Health Administration [OSHA]) to monitor employment and worker practices. The age and sex of a worker can affect physiological parameters that determine exposure (e.g., breathing rate, skin surface area) in the work environment. In addition, detailed exposure assessments may require that populations be described by age and sex distributions.

1.3.5. Ingestion of Chemicals in Foods

Foods and food products have geographic distributions and processing patterns that fluctuate depending on seasonal demand, availability, and personal preference. The population exposed to contaminants found in various foods and other products can be enumerated using information on the size of the consuming population in conjunction with information on the amount of food contamination. One approach for determining the size of the consuming

population is to divide the total amount of food consumed (for a particular food category or subset that is contaminated) by the average per-person or per-household ingestion rate.

1.3.6. Contact With Contaminants in Consumer Products

The identification and enumeration of populations exposed to chemical substances via the use of consumer products necessitates a listing of all products containing the chemical in question. The data needed to compile such a list can be derived from the materials balance for the chemical of concern and through literature searches. Other data sources are governmental agencies (e.g., Consumer Product Safety Commission [CPSC], industry fact sheets, and product labels). The potentially exposed population may be estimated using sources such as consumer product use surveys, which indicate what fraction of the total population uses a particular product or the characteristics of the population that uses the product (i.e., gender or age). Also, exposed population estimates may be made by using total number of products sold divided by the average number of products used per household. The age and sex of the exposed consumers affect the physiological parameters that determine exposure; they also identify sensitive populations. Detailed exposure assessments may require that populations be described by age and sex distribution.

1.3.7. Ingestion of Chemicals in Drinking Water

Identification of populations exposed to chemical substances via the ingestion of drinking water involves examining the sources of the chemical substance. Enumeration involves the use of local information or various computerized databases that contain information on drinking water, such as the sources of the raw water supply, intake locations, treatment methods, and populations served.

1.4. HOW TO USE THIS DOCUMENT

This document was prepared to assist risk assessors and other scientists in identifying subsets of the general population who might experience more frequent contact with, and greater exposures to, environmental contaminants than the general population. The first example presents

a theoretical description of how to use this document. The two scenarios presented at the end of this section illustrate how the tables and figures in this document can be used in conjunction with the *Exposure Factors Handbook* to characterize potentially highly exposed populations. These examples are not intended to be a complete analysis, but are for illustrative purposes only. Reference tables other than ones provided in the example scenarios may be appropriate, as determined by the assessor.

1.4.1. Examples of Exposure Scenarios

The information presented in this section explains how to use this document. The second example is less detailed and only refers the reader to specific tables for analysis.

1.4.2. Identifying Potentially Highly Exposed Population on the Basis of Exposure Pathway

Table 1-2 presents examples of identifying potentially highly exposed population based on exposure pathway. The sample exposure pathways presented are included as examples only, and are not presented as being the most likely pathways by which populations may be exposed.

1.4.3. Identifying Potentially Highly Exposed Population on the Basis of Chemical/Contaminant

Table 1-3 presents examples of identifying potentially highly exposed population based on chemical or contaminant of concern. The 15 contaminants listed in the table are taken from the 1997 Agency for Toxic Substances and Disease Registry (ATSDR)/EPA's Priority List of Hazardous Substances: 1997. The information is from the ATSDR web site, available at the following Internet address: *http://atsdr1.atsdr.cdc.gov:8080/cxcx3.html*. The contaminants presented are included as examples only, and are not presented as being the most hazardous chemicals to which populations may be exposed.

1.5. DOCUMENT ORGANIZATION

This document presents a summary of various factors influencing risk for highly exposed populations. In addition, data sources are explored that can assist exposure/risk assessors in enumerating these highly exposed or susceptible populations.

- Section 2 presents characteristics of the general U.S. population, including sociodemographic, socioeconomic, and health-based factors.
- Section 3 provides population data based on the effects of location of residence.
- Section 4 provides population data based on residential factors.
- Section 5 provides population data based on time in nonresidential buildings.
- Section 6 presents population data for selected recreational activities.
- Section 7 presents occupational population data.
- Section 8 examines cultural and behavioral factors.
- Section 9 provides population data for drinking water and certain food groups.
- Section 10 evaluates population data associated with socioeconomic factors, such as living in poverty.
- Section 11 provides information on accessing information on the Internet useful for identifying potentially highly exposed populations, as well as providing a listing of State environmental protection agencies and a reference source for trade organizations.

Example 1 - Tetrachloroethylene Contamination at a Superfund Site

The Problem:

A Superfund site has caused tetrachloroethylene (also known as perchloroethene) to enter groundwater used as a drinking water source for a community of 10,000 people in Ohio. The risk assessor is interested in knowing if anyone in the affected area may be highly exposed to this chemical.

Identifying the Highly Exposed Populations:

The assessor determines that elevated exposures could occur in two ways:

- High ingestion rates of contaminated water, and
- High background exposures due to activities other than drinking water.

High Ingestion Rate of Contaminated Water:

Using the exposure pathway paradigm in Table 1-2, the assessor identifies three potentially highly exposed populations associated with water consumption: athletes, residents of hot climates, and outdoor workers in hot climates. The groups associated with hot climates will not be of concern, because Ohio has a moderate climate. Athletes may be a concern; using Chapter 6 and Figures 6-1 and 6-2, the assessor learns that approximately 50% of the adult population on a national basis are involved in some form of exercise. Table 1-2 also references the assessor to Table 3-30 in the *Exposure Factors Handbook*, which recommends assuming 6 liters per day (L/day) water consumption for active adults in temperate climates. Clearly, not all of these people exercise aerobically on a regular basis. However, this high percentage suggests that it is reasonable to assume that at least some members of a population of 10,000 will engage in such activities. Therefore, the assessor concludes that some members of the exposed population could have elevated exposures as a result of high water consumption and uses the 6 L/day value to estimate this level of exposure. The nationwide statistics in this document are not adequate for making quantitative estimates of how many people are exposed at this level. Additional sources of information, however, are referenced in Section 11.

High Background Exposures:

The possibility of high background exposures is investigated using Table 1-3. The assessor looks up tetrachloroethylene in this table and sees that a number of people may have elevated background exposures to this chemical (e.g., home repairers or remodelers, house cleaners, painters, and workers at dry cleaning establishments). The assessor then refers to Tables 6-22 through 6-24, 7-7, and Appendix 7B in this document to establish the potentially high background exposed population. Table 6-22 indicates that 48% of people were involved in home improvement/repair during the last 12 months. Table 6-23 indicates that 13 million people paint as a hobby (or X% of population), etc. Accordingly, a high percentage of this population could have elevated background exposures. Tables 5-23 (recommended inhalation rates - select rate based on specific activity level) and 16-13 through 16-18, 16-22, and 16-23 (duration and frequency data of exposure or product use for some categories) from the *Exposure Factors Handbook* can be used. For example, from Table 5-23, one can assume a mean inhalation rate of 1.0 cubic meters per hour (m^3/hr) for a house cleaner who cleans spots on walls or doors based on short-term, light activities. The total exposed time for using specific house cleaning products (all-purpose cleaners) is 64 hours/year (Table 16-16). The duration of performing a specific task (clean spots on walls or doors) is 50 minutes/event (Table 16-15), and the mean frequency for performing this task is 6 times/month. Other tables may be appropriate as determined by the assessor.

Example 2 - Unspecified Soil Contamination in a Residential Community

The Problem:

A residential community is under development in Virginia. For the past 100 years, the land to be developed has been agricultural. Heavy use of pesticides in the past has led to concerns of soil contamination. The risk assessor is interested in knowing whether any subset of the future residents may have high exposures to the soil contaminants.

Identifying the Highly Exposed Populations by Exposure Pathway:

The assessor postulates that elevated exposures to soil contaminants could occur in three ways:

- Inhalation of particulates;
- Dermal contact with soil; and
- Ingestion of soil.

Increased Dermal Contact and Inhalation of Particulates:

Using Table 1-2 , the assessor identifies four potentially highly exposed populations associated with dermal contact with soil: children playing outdoors, gardeners, people engaged in sporting activities (e.g., baseball, softball, golf, football, and soccer), and outdoor workers who may have increased contact with soil (e.g., termite inspectors, highway repairmen, cable repairmen, construction workers, farmers, and nursery workers). These same populations would have elevated exposures via inhalation of suspended soil particles. To characterize the potentially highly exposed groups, the assessor can then use Table 7-7, Appendix 7B, Tables 6-16 and 6-24, and Figure 6-1 in this document. Relevant information in *Exposure Factors Handbook* can be found in Tables 6-2 through 6-8, 6-14, 6-15, 6-16 (exposed skin surface area), and 6-12 (soil adherence value). Duration and/or frequency values for some categories may be obtained from Tables 15-92, 15-93, 15-107, 15-108, and 15-176.

Ingestion of Soil:

Using Table 1-2, the assessor identifies children playing outdoors, pregnant women, migrant workers, and participants in outdoor activities (e.g., gardening, golf, baseball, football, hiking, and camping) as populations who may be highly exposed as a result of soil ingestion. Turning again to Table 1-2, the assessor can use Tables 2-1, 8-2, 8-3, 6-16, 6-19, and 6-24 in this document and Tables 4-11, 4-15, 4-16, 4-22, 15-85, and 4-23 and Section 4.5 for soil ingestion in *Exposure Factors Handbook* as tools to characterize the potentially highly exposed groups. Other tables may be appropriate as determined by the assessor.

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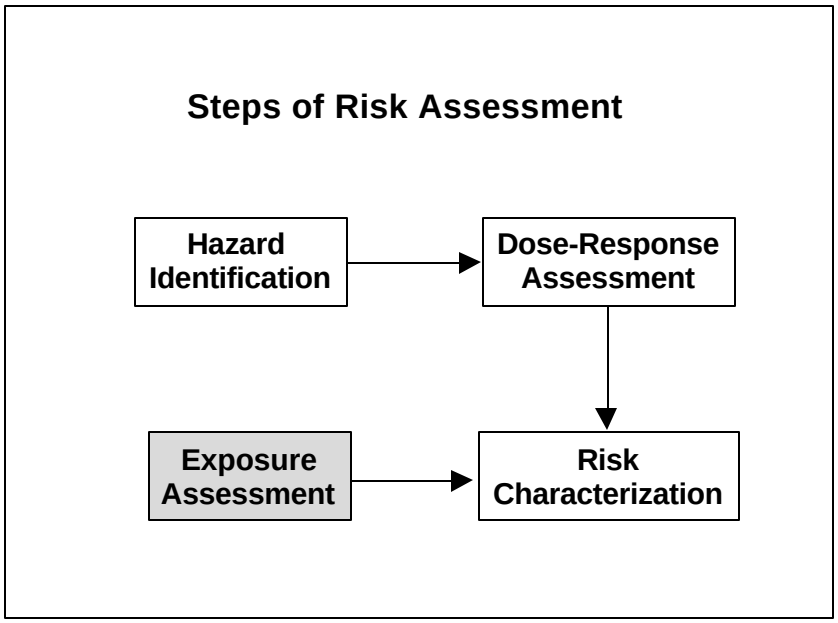

Figure 1-1. Risk Assessment Paradigm

Source: U.S. EPA, 1992.

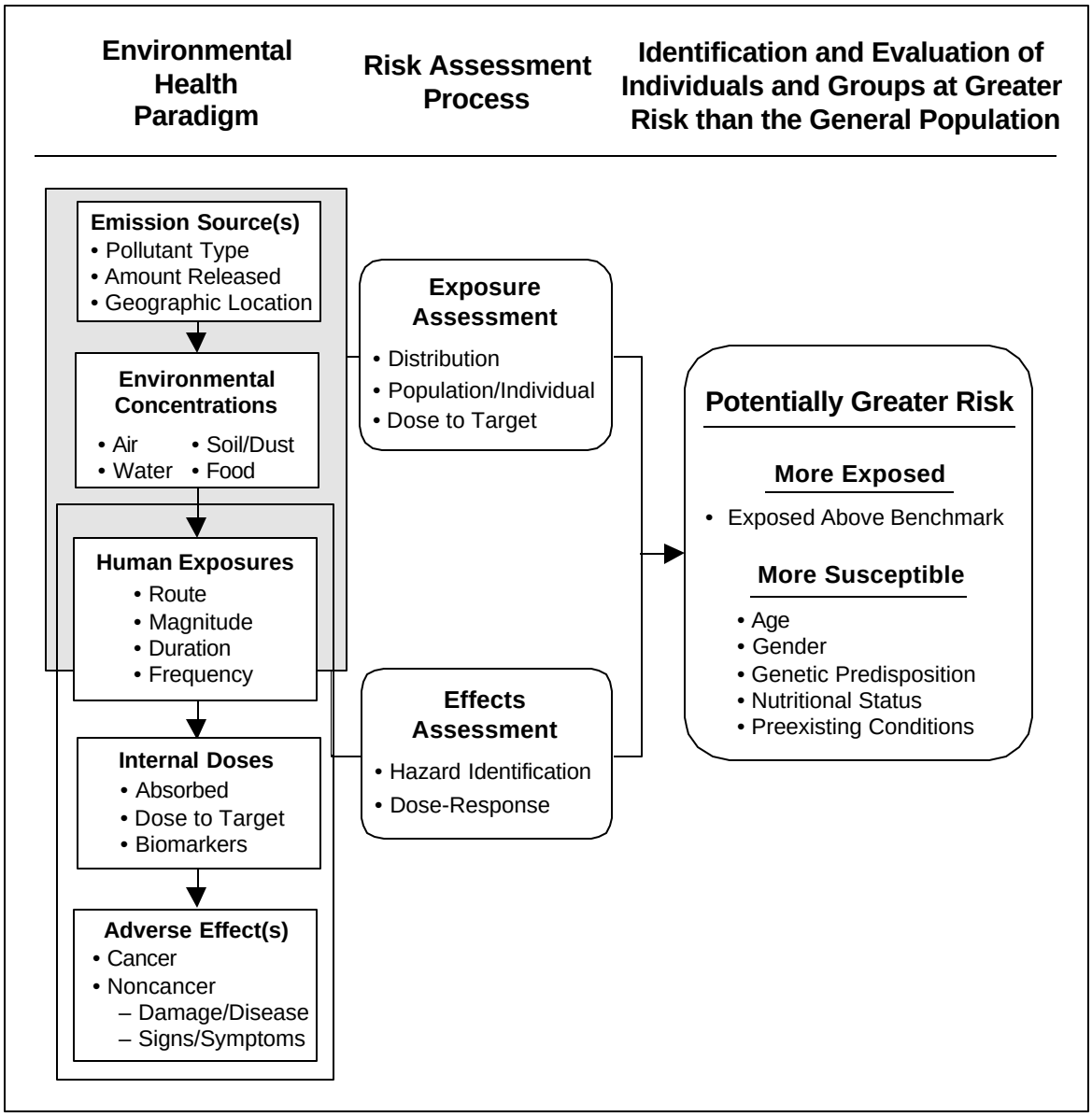

Figure 1-2. Methodological Approach for Identification and Evaluation of Populations Potentially at Greater Risk

Source: Sexton et al., 1993

Table 1-1. Populations Potentially at Risk of Exposure to Specific Chemical(s) of Concern

Population/Activities	Chemical(s) of Potential Concern (Reference)
Infant and Child Activities	
Infant breastfeeding	Aldrin/dieldrin, BHC-beta, BHC-gamma (lindane), cadmium, carbon disulfide, chlordane, DDD, DDE, DDT, 1,4-dichlorobenzene, dichloromethane, dieldrin, dioxin, heptachlor, heptachlor epoxide, hexachlorobenzene, lead, mercury, methylene chloride, nickel, tetrachloroethene, PCBs (4, 5, 10, 11, 18, 22, 25, 28, 38)
Normal outdoor play	Highly to moderately adsorptive substances (e.g., asbestos, beryllium, cadmium, copper, heptachlor, lead, mercury, silver, thallium, zinc) (11, 18, 28, 32, 37, 40)
Dirt biking	Highly to moderately adsorptive substances (e.g., asbestos, beryllium, copper, lead, mercury, silver, thallium, zinc) (11, 18, 40)
Adult Activities	
Household activities:	
Gardening	Aldrin/dieldrin, arsenic, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, cadmium, chrysene, coal tars, creosote, dibenzo(a,h)anthracene, dieldrin, dioxin, heptachlor, lead, selenium (3, 15, 18, 24, 25, 26, 27, 28, 30, 31, 35, 36, 37)
Auto care	Ammonia, benzene, dichlorodifluoromethane, dichloromethane, nitrobenzene, 1,1,1-trichloroethane, trichlorofluoromethane, zinc (16)
Home repair/remodeling	Ammonia, arsenic, bis(2-chloroethyl)ether, bis(chloromethly)ether, coal tars, cresol, dichlorodifluoromethane, dichloromethane, diethyl phthalate, dimethyl phthalate, di-n-butyl phthalate, lead, mercury, methyl ethyl ketone, methyl isobutyl ketone, pentachlorophenol, tetrachloroethene, toluene, xylene, zinc (16, 18)
Sports:	
Hunting	Deer: pesticides Waterfowl: substances with high to moderate bioaccumulation potential (40, 41) Lead (from spent shot) (18)
Fishing	Any substance with high to moderate bioaccumulation potential (11, 14, 40)
Target shooting	Lead (6, 11, 18, 42)
Hobbies:	
Arts and crafts	Ammonia, benzene, bis(2-ethylhexyl)phthalate, chloroethene, creosote, dichloromethane, diethyl phthalate, dimethyl phthalate, di-n-butyl phthalate, lead, mercury, methyl ethyl ketone, methyl isobutyl ketone, phenol, 1,1,1-trichloroethane, 2,4,6-trichlorophenol, toluene, zinc (16, 18, 21, 40)
Film developing	Ammonia, cyanide, dichlorodifluoromethane, 1,1,1-trichloroethane, trichloroethene, trichlorofluoromethane, toluene, xylene (16)
Furniture refinishing	Benzene, bis(2-ethylhexyl)phthalate, dichloromethane, diethyl phthalate, dimethyl phthalate, di-n-butyl phthalate, methyl ethyl ketone, methyl isobutyl ketone, toluene, xylene (16, 21)

(continued)

Table 1-1. Populations Potentially at Risk of Exposure to Specific Chemical(s) of Concern (continued)

Population/Activities	Chemical(s) of Potential Concern (Reference)
Occupations	
Agricultural workers	Aldrin/dieldrin, pesticides (8, 9, 12)
Blacksmiths	Cyanide, PAHs (19, 40)
Chimney sweeps	Coal tars (2)
Commuters	Particulates, carbon monoxide, benzene, formaldehyde, criteria pollutants (1, 7)
Domestics/housecleaning	Ammonia, anthracene, bis(2-chloroethyl)ether, di-n-butyl phthalate, 1,4-dioxane, ethylene oxide, mercury, phenol, styrene, tetrahydrofuran, tetrachloroethene, toluene, trichloroethane, xylene, zinc (16)
Electrical equipment repair	Cadmium, cyanide, nickel, PCBs (19, 28, 29, 38)
Exterminators	Pesticides (40)
Firefighters	Cyanide (19)
Jewelers	Cadmium, lead, nickel (38, 40)
Laboratory technicians	Acrolein, arsenic, asbestos, bis(chloromethyl)ether, benzidine, benzoic acid, chloroethene, chloromethane, cyanide, 2,4-dinitrophenol, 1,4-dioxane, mercury, pyrene, silver, trichloroethene, trichloromethane (17, 19, 20)
Painters/paint store employees	Benzene, cadmium, dichloromethane, methylene chloride, nickel, tetrachloroethene, toluene, trichloroethene, trichloromethane (2, 20, 21, 22, 23, 33, 40)
Road pavers and roofers	Coal tars, nickel, PAHs (38, 40)
Service station attendants	Benzene, cyanide, lead (18, 19, 20, 40)
Welders	Cadmium, chromium, nickel (28, 34, 38)
Adult Risk-associated Behavior	
Alcohol consumption	Lead, trichloroethene, trichloromethane, pesticides, PCBs (2, 11, 18, 20, 33)
Smoking/environmental tobacco smoke	Arsenic, asbestos, benzene, beryllium, cadmium, chrysene, cyanide, lead, nickel, trichloroethene, PAHs (2, 11, 18, 19, 20, 21, 26, 27, 28, 30, 31, 32, 35, 36, 38)
Substance abuse	Pesticides, PCBs (2, 11)

Table 1-1. Populations Potentially at Risk of Exposure to Specific Chemical(s) of Concern (continued)

Population/Activities	Chemical(s) of Potential Concern (Reference)
Residential (housing characteristics)	
Basements	Radon (9, 13)
Kerosene heat	Carbon monoxide, nitrous oxide (9)
Inner city location	Lead, cockroach antigen, benzene, criteria pollutants (1, 7, 9, 39)
Private wells	Pesticides, metals, solvents, mocrobials (9)

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Table 1-1. Populations Potentially at Risk of Exposure to Specific Chemical(s) of Concern (continued)

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40 Best Professional Judgement
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1 IDENTIFICATION OF EXPOSED POPULATIONS

- Evaluate chemical/physical properties
- Identify sources & releases
- Evaluate transport and transformation
- Gather monitoring data

  in order to identify
- Media and exposure route
- Exposure scenarios (i.e., ambient, occupational, consumer, food, drinking water)
- Microenvironments and activities

2 ENUMERATION OF EXPOSED POPULATIONS

Data sources and enumeration methods are used to determine numbers of populations exposed to chemical substances in:

- The ambient environment
- The occupational environment
- Food
- Drinking water
- Consumer products

3 CHARACTERIZATION OF EXPOSED POPULATIONS

Data sources are used to obtain demographic characteristics of exposed populations, e.g., age, sex). Data sources include:

- Geographic or activity-specific data
- Generic data

Figure 1-3. The Three-Stage Framework for Identifying, Enumerating, and Characterizing Populations Exposed to Chemical Substances

Source: U.S. EPA, 1992b.

Table 1-2. Identifying Potentially Highly Exposed Populations on the Basis of Exposure Pathway

Exposure Pathway	Potentially Highly Exposed Population	Tables on Sociodemographics from this Document	Tables on Factor Values from EFH
Water Ingestion			3-30
	Athletes	6-24	3-27, 3-30
	Residents of Hot Climates	2-4	
	Outdoor Activities in Hot Climates		3-27, 3-28
	Recreational Participants in Hot Climates/Weather	6-24	
Soil Ingestion			4-23
	Children	2-1	4-15, 4-22
	Pregnant Women	8-2	Section 4.5
	Migrant Workers	8-3	
	Outdoor Activities (e.g., sports, work, gardening)	6-24 6-16, 6-19	4-11, 4-15, 4-16, 15-85
Inhalation			5-23
	Athletes	6-24	
	Children	2-1	5-25
	Outdoor Sports Participants (e.g., baseball, softball, football, soccer)	6-24	5-26, 5-27, 15-85
	High Activity Level Workers (e.g., farmers)	7-1, 7-3, 7-6, 7-7, Appendix 7B, 7C	
Dermal Contact with Soil			6-14, 6-16
	Children	2-1	6-12, 15-108
	Home Gardeners	6-16	15-92
	Outdoor Sports Participants (e.g., golf, baseball, football, soccer, hiking, camping, running/jogging, softball)	6-24 Figure 1	6-2, 6-8, 15-85, 15-93
	Outdoor Occupations (e.g., pesticide applicators, landscapers, highway repairers, farmers, construction workers)	7-5, 7-6, 7-7, Appendix 7B	15-107
Fish Ingestion			10-81 thru 10-85
	Fishers	6-1, 6-3	
	Eskimos	2-4, 2-10	
	Native Americans	2-4, 2-10	
Dermal Contact with Water			6-14, 6-16
	Fishers, occupational and recreational	7-6, 7-7	6-2 thru 6-8, 10-83, 10-84
	Aquatic Sportsmen (e.g., swimmers, boaters, water skiers, jet skiers)	6-24	6-14, 6-16, 15-176

Table 1-3. Identifying Potentially Highly Exposed Populations on the Basis of Hazardous Substance
(Hazardous Substances from 1997 EPA/ATSDR Priority List of Hazardous Substances)

Hazardous Substance	Potentially Highly Exposed Population[a]	Relevant Tables in this Document	Relevant Tables in Exposure Factors Handbook
Arsenic	***Activities:***		
	Children playing outdoors (esp. on wood treated structures or near contaminated soil)	2-1	5-25, 6-14, 15-59, 15-60
	Drinking well water contaminated by natural sources	9-3	3-30
	Gardeners	6-16	4-15, 4-16, 6-16, 15-61
	Living near metal smelters		
	Occupations:		
	Metal smelters, semiconductor manufacturers, pesticide manufacturers, farm workers, refinery workers	7-5, 7-6, 7-7, Appendix 7B, 7C	5-23
Lead	***Activities:***		
	Children playing outdoors (esp. near roads or freeways)	2-1	5-25, 6-14, 15-59, 15-60
	Dirt bikers		4-23, 5-22, 6-2 thru 6-5, 6-14
	Gardeners	6-16	4-15, 4-16, 15-61, 6-16
	Home repairers/remodelers	6-23	
	Target shooters	6-23	
	Arts and crafts hobbyists	6-23	
	Occupations:		
	House cleaners, service station workers	7-5, 7-6, 7-7, Appendix 7B, 7C	16-2 thru 16-5, 16-23, 16-28
	Behavior Patterns:		
	Pica	8-2, 8-3	4-23
Mercury, Metallic	***Activities:***		
	Children playing indoors (as a result of cultural/religious practices)	2-1	15-79
	Occupations:		
	Chlorine and caustic soda production workers, cosmetic producers, dental personnel, electroplators, explosives manufacturers, felt makers and leather tanners, grinding machine operators, hazardous waste site personnel, ink manufacturers, laboratory personnel, manufacturers of batteries, fluorescent lamps, mercury vapor lamps, switches, rectifiers, metallurgists, miners and processors of cinnabar, gold, silver, copper, zinc, paint and pigment manufacturers, painters, paper millers, pesticide/fungicide production and application workers, pharmaceutical producers, plumbers	7-3, 7-4, 7-7 Appendix 7B, 7C	16-26
	Behavior Patterns:		
	Cultural practices (Hispanic population)	2-1	
Vinyl Chloride	***Occupations:***		
(Other names: chloroethylene, chlorethane, monochloroethylene, ethylene monochloride, monochloroethane, VCM, vinyl chloride monomer)	Plastics manufacturers, vinyl chloride and PVC manufacturers, especially autoclave cleaners in PVC production plants	7-7, Appendix 7B, 7C	16-26

Table 1-3. Identifying Potentially Highly Exposed Populations on the Basis of Hazardous Substance (Hazardous Substances from 1997 EPA/ATSDR Priority List of Hazardous Substances) (continued)

Hazardous Substance	Potentially Highly Exposed Population[a]	Relevant Tables in this Document	Relevant Tables in Exposure Factors Handbook
Benzene	***Activities:***		
	Arts and crafts hobbyists	6-23	16-26
(Other names: benzol, carbon oil, coal tar naphtha, cyclohexatriene, phenyl hydride, pyrobenzole)	***Occupations:***		
	Gasoline storage personnel, shipment and retail operations workers, chemical manufacturers, plastics and rubber manufacturers, shoe manufacturers, printers, petroleum refinery personnel, workers in recovery plants for coke oven by-products, artists, house cleaners, gasoline workers	7-3, 7-4, 7-7, Appendix 7B, 7C	16-23, 16-28
	Behavior Patterns:		
	Smokers	8-6, 8-7	15-141
Polychlorinated Biphenyls (PCBs), including Arochlor 1254 and 1260	***Activities:***		
	Hunters	6-6, 6-7	11-6
	Fishers	6-2	10-83, 10-84, 10-85
	Occupations or Hobbies:		
	Electricians, electric cable repairpersons, electroplators, emergency response workers, firefighters, hazardous waste haulers or site repair workers, maintenance cleaners, metal finishers, pavers and roofers, pipefitters/plumbers, timber products manufacturers, transformer/capacitor repairers, and personnel involved in waste oil processing	7-3, 7-4, 7-7, Appendix 7B, 7C	
Cadmium	***Activities:***		
	Jewelery hobbyists	6-23	
	Occupations:		
	Alloy makers, aluminum solder makers, ammunition makers, auto mechanics, battery makers, bearing makers, braziers and solderers, cable and trolley wire makers, cadmium platers, cadmium vapor lamp makers, pottery makers, copper-cadmium alloy makers, electrical condenser makers, electroplaters, engravers, farm workers, glass makers, incandescent lamp makers, jewelers, lithographers, lithopone makers, mining and refining workers, paint makers, paint sprayers, pesticide makers, pharmaceutical workers, photoelectric cell makers, pigment makers, plastic products makers, metal sculptors, solder makers, textile printers and cadmium alloy and cadmium-plate welders	7-3, 7-4, 7-7, Appendix 7B, 7C	
	Behavioral Patterns:		15-141
	Smokers	8-6, 8-7	
Polycyclic aromatic hydrocarbon (PAH) compounds	***Activities:***		
	Charcoal grillers		15-34
	Fishers	6-2	10-83, 10-84, 10-85
	Furniture refinishing hobbyists	6-23	
(Other names: Acenaphthene, acenaphthylene, anthracene, benz(a)anthracene, benzo(a)pyrene, benzo(b) fluoranthene, benzo(ghi)perylene, benzo(k)fluoranthene, chrysene, dibenz(a,h)anthracene, fluoranthene, fluorene, indeno(1,2,2-cd)pyrene, phenanthrene, pyrene Dibenz[a,h]anthracene)	***Occupations:***		
	Aluminum workers, asphalt workers, carbon black workers, chimney sweeps, coal tar production plant workers, coal-gas workers, coke oven workers, fishermen, graphite electrode workers, machinists, auto and diesel engine mechanics, municipal trash incinerators, printers, road workers, roofers, smoke houses, steel foundry workers, tire and rubber manufacturing workers, workers exposed to creosote such as carpenters, farmers, railroad workers, tunnel construction workers, and utility workers. workers using high-temperature food fryers and broilers	7-3, 7-4, 7-7, Appendix 7B, 7C	

Table 1-3. Identifying Potentially Highly Exposed Populations on the Basis of Hazardous Substance (Hazardous Substances from 1997 EPA/ATSDR Priority List of Hazardous Substances) (continued)

Hazardous Substance	Potentially Highly Exposed Population[a]	Relevant Tables in this Document	Relevant Tables in Exposure Factors Handbook
Chloroform (Other names: trichloromethane, methenyl chloride, methane trichloride, methyl trichloride, formyl trichloride)	***Activities:*** Swimmers Drinking chlorinated water Showering in enclosed stalls ***Occupations:*** Chloroform manufacturers, fluorocarbon-22 and ethylene dichloride manufacturers, internal combustion engine industries, pesticide manufacturers, pulp and paper millers, food processing industry and paint store workers, pharmaceutical manufacturing plants, sewage treatment plants personnel	6-24 7-3, 7-4, 7-7, Appendix 7B, 7C	15-18, 15-65, 15-66, 15-67 15-19, 15-20, 15-21, 15-22, 15-23 6-26
DDT, P'P' (other name: dichlorodiphenyltrichloroethane)	Banned in the U.S. in 1972, however residues can still be detected on agricultural products and other food products ***Occupations:*** Farmers, nursery personnel may be exposed to residues still found in soil	 7-3, 7-4, 7-7, Appendix 7B, 7C	
Trichloroethylene (other names: TCE, trichloroethene, ethylene trichloride, 1-chloro-2,2-dichloroethylene, 1,1-dichloro-2-chloroethylene, 1,1,2-trichloroethylene, TRI)	***Activities:*** Arts and crafts hobbyists Bathing, laundering or cooking with contaminated water ***Occupations:*** Metal degreasing operators, municipal and hazardous waste incinerator workers, manufacturers of adhesive glues, disinfectants, pharmaceuticals, dyes, perfumes, soaps, paints, and coatings, workers in chemical industries that manufacture polyvinyl chloride, pentachoroethane, and other polychlorinated aliphatic hydrocarbons, flame retardant chemicals and insecticides, mechanics, oil processors, printers, resin workers, rubber cementers, shoe makers, textile and fabric cleaners, tobacco denicotinizers, varnish workers, and some dry cleaners	 6-23 9-3 7-3, 7-4, 7-7, Appendix 7B, 7C	 15-18, 15-19 to 15-21, 15-24, 15-89 15-99
Chromium (hexavalent)	***Activities:*** Living on landfill derived from chromium-containing soil Children playing outdoors (esp. near roadways or contaminated landfill) ***Occupations:*** Welding of alloys and steel, chrome electroplating, paints and pigments manufacture, chemical manufacture, industrial cooling towers using chromate chemicals as rust inhibitors , chrome alloy production, textile manufacturing, photoengraving, copier servicing, leather tanning, and airborne emissions from incineration facilities	 2-1 7-3, 7-4, 7-7, Appendix 7B, 7C	 15-25, 15-59, 15-60, 6-14
Hexachlorobutadiene (Other names: HCBD, perchlorobutadiene, Dolen-Pur)	***Occupations:*** Manufacturers of rubber compounds and lubricants, and manufacturers of chemicals such as tetrachloroethylene, trichloroethylene and carbon tetrachloride.	 7-7	
Chlordane, including aldrin, dieldrin, and hepachlor (Trade names: Velsicol-1068, Octachlor, Chlorkil, Ortho-chlor, Dowchlor, Gold Crest C-100, Topiclor 20)	***Activities:*** Living in homes previously treated for termite infestation Eating food prepared from plants grown on chlordane-treated fields and the fat of meat or milk from animals that eat grass from chlordane-treated fields ***Occupations:*** Chlordane pesticide manufacture for export, or chlordane cleanup workers (Chlordane has been banned from commercial use in the U.S)	 7-3, 7-4, 7-7, Appendix 7B, 7C	 16-31, 16-32 5-23, 6-2, 6-3, 6-4, 6-5

Table 1-3. Identifying Potentially Highly Exposed Populations on the Basis of Hazardous Substance (Hazardous Substances from 1997 EPA/ATSDR Priority List of Hazardous Substances) (continued)

Hazardous Substance	Potentially Highly Exposed Population[a]	Relevant Tables in this Document	Relevant Tables in Exposure Factors Handbook
Tetrachloroethylene	***Activities:***		
	House repairers or remodelers	6-23	
(Other names: tetrachloroethene)	Use of spot removers, or exposure to recently dry-cleaned fabrics		
	Possible well water contamination		
	Auto repair	6-23	
	Hobbyists using paint removers and wood cleaners	6-23	
	Occupations:		
	Dry-cleaning workers, machinists, plastic extruders, and electronic assemblers, or workers manufacturing consumer products containing tetrachlorethylene, house cleaners, painters	7-3, 7-4, 7-7, Appendix 7B, 7C	

a Potential highly exposed populations may include these groups, but are not limited to these groupings.

Source: Adapted from Agency for Toxic Substances and Disease Registry, Case Studies in Environmental Medicine (1990-1993).

2. SOCIODEMOGRAPHIC CHARACTERISTICS OF THE GENERAL U.S. POPULATION

This section presents sociodemographic characteristics of the U.S. population that may be useful when assessing highly exposed populations. Characteristics included are gender, age, race, ethnicity, geographic location, economic factors, and institutionalized populations. Some data are included in more than one section because these data may be useful for more than one type of assessment. Relevant terms (e.g., race) are defined when available in the sections where they are presented. Definitions of relevant terms are presented as they appear in the cited reference to avoid misrepresentations.

Much of the data in this section are adapted or derived from the 1995 *U.S. Bureau of the Census, Statistical Abstract of the United States*. It is a standard summary of statistics on the social, political, and economic organizations of the United States. Sources of the information presented include Federal statistical bureaus and other organizations that collect and provide statistics as a principal activity, government regulatory agencies, private research, trade associations, health associations, etc. (U.S. Bureau of the Census, 1995; 1997). Statistics presented were obtained and tabulated by various means: (1) complete enumeration or census, (2) samples, (3) extraction from records kept for administrative or regulatory purposes, and (4) through interviews or mail explicitly for statistical purposes (U.S. Bureau of the Census, 1995; 1997). The following statistical abstract data presented are based on census data collected from the decennial Census of the Population, a monthly population survey, a program of population estimates and projections, and a number of other periodic characteristics. The U.S. Constitution requires that the U.S. Bureau of the Census collect data every 10 years (U.S. Bureau of the Census, 1995). These decennial censuses provide data for many socioeconomic reports on the status of the general U.S. population.

U.S. Census Bureau data are accessible on the World Wide Web via the Internet. The Bureau's home page (Internet address: *www.census.gov*) contains information on the kinds of data available and instructions on how to conduct data searches, extract data, and download data files. Information available includes summaries from the most recent census in database format and search tools such as *Map Stats* and *US Gazetteer*, which generate census data profiles of specific U.S. locations. Another option available is the *Tiger Mapping Service*, which allows the generation of national-scale, street-level maps from publicly available data. Questions on the U.S. Census Bureau's home page can be sent to *webmaster@census.gov* (U.S. Census Bureau Home

Page, Dec. 23, 1996). Section 11 contains information on how to access U.S. Government data on the Internet.

2.1. RESIDENT POPULATION BY GENDER AND AGE

The gender and age distribution of the population in question should be determined to identify populations with potentially high exposures. Table 2-1 presents the U.S. general population by gender and age for the year 1994 (U.S. Bureau of the Census, 1995). Figure 2-1 illustrates the population distribution of the U.S. general population by age and gender for the years 1987, 2000, 2010, and 2030 (Spencer, 1989). Gender- and age-related factors resulting from varying behavior and activity patterns are discussed in Sections 1.2.2 and 1.2.3 of this document.

Gender- and age-related factors can increase exposure to toxic agents. For example, children often exhibit behavior and activity patterns that are different from adults, which may potentially increase their exposure to environmental agents. Infants have a greater surface area to body weight ratio than adults (Calabrese, 1986); thus, infants potentially may be at greater risk from environmental contaminants via dermal exposure. Also, children spend time in outdoor play or structured activities. As a result, they can have higher exposure to contaminants found in the soils on playgrounds, parks and other outdoor recreational areas, and residential yards. In addition, children and infants tend to put objects into their mouths; these objects may contain chemical components or include soil particles containing chemical contaminants, which might increase their risk of exposure to contaminants by ingestion. Infants have faster respiratory rates than adults, resulting in potentially increased risk from contaminants via inhalation. Also, individuals who spend most of their time in an indoor environment (e.g., elderly residents of nursing homes) may experience higher exposures to indoor air contaminants.

2.2. RESIDENT POPULATION BY RACE

The racial composition of a population in question should be determined to ascertain if exposure to certain environmental contaminants may be different for that group based on race or ethnicity. For example, certain cultural practices (e.g., use of mercury for spiritual purposes) are more common in some ethnic groups than in others. The Bureau of the Census is directed by the U.S. Office of Management and Budget, under Statistical Policy Directive No. 15, to collect and publish statistics of the general population by race (U.S. Bureau of the Census, 1995). Common racial classifications include American Indian, Alaska Native, Asian or Pacific Islander, black, and white. The concept of race that the U.S. Bureau of the Census uses reflects self-identification by

survey respondents and is not intended to reflect any biological or anthropological definitions. Respondents who do not identify (themselves) with a specific racial group on the questionnaire are included in the "other race" category. Hispanic is defined, by directive, as an ethnicity, not a race (U.S. Bureau of the Census, 1995). A self-identification question is used in the census questionnaire to identify Hispanic origin, and Hispanic persons may be of any race (U.S. Bureau of the Census, 1995). Persons classified as Hispanic include those who reported their race as Mexican-American, Chicano, Mexican, Puerto Rican, Cuban, Central or South American (Spanish countries), or other Hispanic origin (U.S. Bureau of the Census, 1995). Table 2-2 presents total numbers and percent distribution of the general population by racial categories not of Hispanic origin (white; black; American Indian, Eskimo, Aleutian; and Asian and Pacific Islander) and persons of Hispanic origin for years 1980, 1985, 1990, and 1994.

2.3. RESIDENT POPULATION BY AGE, RACE, AND HISPANIC ORIGIN

Table 2-3 presents the resident general U.S. population by age, race, and Hispanic origin from 1980 to 1994. Race and Hispanic origin are defined in Section 2.2.

2.4. RESIDENT POPULATION BY GEOGRAPHIC REGION

The risk assessor may be concerned with the geographic location of the population of concern. Examples of geographic factors that may be relevant for determining exposure of populations include amount of time spent outdoors and length of growing season (potentially greater in areas of warmer climates), and amount of time spent indoors exposed to indoor air contaminants (potentially greater in colder climate areas). The Bureau of the Census subdivides the United States into four geographic regions of Northeast, Midwest, South, and West. These regions are further divided into divisions containing different States. The regions, divisions, and their corresponding States (using standard U.S. Postal Service abbreviations for States) are shown below. Table 2-4 presents the resident general population by these geographic regions, race, and Hispanic origin, for the year 1990.

Region	Division and Abbreviation	States
Northeast	New England (NE)	CT, ME, MA, NH, RI, VT
	Middle Atlantic (MA)	NJ, NY, PA
Midwest	East North Central (ENC)	IL, IN, MI, OH, WI
	West North Central (WNC)	IA, KS, MN, MO, NE, ND, SD
South	South Atlantic (SA)	DE, DC, FL, GA, MD, NC, SC, VA, WV
	East South Central (ESC)	AL, KY, MS, TN
	West South Central (WSC)	AR, LA, OK, TX
West	Mountain (M)	AZ, CO, ID, MT, NV, NM, UT, WY
	Pacific (P)	AK, CA, HI, OR, WA

2.5. SOCIAL AND ECONOMIC CHARACTERISTICS OF THE GENERAL U.S. POPULATION

Socioeconomic characteristics of a population may affect exposure to certain environmental contaminants. Living in poverty could potentially contribute to increased exposure. For example, populations living in older housing units, and especially those with limited funds available for regular repairs and maintenance, may have lead-based paint and inadequate ventilation systems; both may contribute to increased risk for exposure to environmental contaminants. Various socioeconomic data were available from the U.S. Bureau of the Census (1995) describing the general population. For convenience and consistency, these data are presented by racial categories as provided in the reference cited. Table 2-5 presents socioeconomic data for U.S. white and black populations, and Table 2-6 presents socioeconomic data for the American Indian population. Figure 2-2 presents the Native American populations in thousands residing in the 10 EPA regions by State for 1995. Table 2-7 presents socioeconomic data for the Asian and Pacific Islander population, and Table 2-8 presents socioeconomic data for the Hispanic population.

2.6. RESIDENT POPULATION BY HOUSEHOLD

Many risk assessments are based on exposure to individuals or groups of individuals living in a household or residence. For example, an assessor may wish to determine the percentage of households in a given area with young children who spend time outdoors playing. These children may subsequently be exposed to soil contaminants resulting from deposition of airborne particulates.

A household is described by the U.S. Bureau of the Census as composed of all persons who occupy a housing unit (a house, apartment, etc.) that constitutes separate living quarters (U.S. Bureau of the Census, 1995). A household includes related family members and all the unrelated persons (lodgers, foster children, employees, etc.) who share a housing unit. A family is defined by the Census Bureau as a group of two or more persons related by birth, marriage, or adoption and residing together in a household (U.S. Bureau of the Census, 1995). Table 2-9 presents the numbers (in thousands) of household units in regions, divisions, and States from 1980 to 1994. Table 2-10 presents the numbers (in thousands) of family and nonfamily households by race, Hispanic origin, and type.

2.7. URBAN AND RURAL U.S. POPULATION BY REGION, DIVISION, AND STATE

A risk assessor may wish to enumerate the population residing specifically in urban or rural areas of a State or in a metropolitan area. For example, a risk assessor considering the population exposed to a pesticide as a result of application for agricultural use would choose an appropriate percentage of the nearby rural population. Likewise, living in a rural area that is known to have certain contaminants in its water supply (i.e., groundwater) also can increase risk. Living in urban areas with increased vehicle traffic and the resulting increase in air pollution from auto exhaust can increase risk to certain air contaminants, such as benzene.

The U.S. Bureau of the Census defines urban populations as persons living in incorporated or unincorporated cities or towns of 2,500 or more inhabitants or in urbanized areas defined as adjacent densely settled surrounding areas with a minimum of 50,000 persons (U.S. Bureau of the Census, 1995). Populations not classified as urban are classified as rural (U.S. Bureau of the Census, 1995). Table 2-11 presents the total populations of each region, division, and State, as well as the numbers and percent distribution of urban and rural populations by region, division, and State. The composition of the regions and divisions is provided in Section 2.4.

2.8. RESIDENT POPULATION WITH WORK DISABILITIES

The U.S. Bureau of the Census (1995) considers a disability to be reduced ability to perform tasks one would normally do at a certain stage in life. Table 2-12 presents numbers of disabled persons, ages 21-64 years old, for the total population and by percent employed for 1991, 1993, and 1994.

2.9. NATIVE AND FOREIGN-BORN RESIDENT POPULATIONS

Table 2-13 presents the numbers of persons in the general population who were born in the United States and those born in foreign countries. Data are presented for years 1920 to 1990. These data are presented as an additional population characterization.

2.10. RESIDENT POPULATION ON ACTIVE DUTY IN THE MILITARY

Table 2-14 presents the numbers of individuals serving on active duty in the armed forces, by service, for the years 1950 to 1993. Services included are Army, Navy, Marine Corps, Air Force, and Coast Guard. This population is included not necessarily because they are potentially highly exposed, but as another characterization breakdown of the general population. If an exposure is related to the population of a specific military organization due to some job-related activity, the population potentially exposed can be enumerated. For example, if a contaminant in the insulation (such as asbestos) of a ship is a potential problem, Navy and Coast Guard personnel could potentially have greater exposures than the general population.

2.11. RESIDENT INSTITUTIONALIZED POPULATIONS AND THOSE LIVING IN GROUP QUARTERS

The U.S. Bureau of the Census (1995) classifies a person as living in group quarters if that person is not living in a household. Household is defined in Section 2.6. Persons living in group quarters include those who are institutionalized (e.g., under care or custody in juvenile facilities, jails, correctional centers, or hospitals, or residents in college dormitories, rooming houses, military barracks, etc.). Data pertaining to these specific populations may be useful when a potential exposure is limited to a selected microenvironment. For example, patients in a hospital potentially could be exposed through the dermal or inhalation pathways to chemicals used for sterilization procedures, such as antiseptics in hospital rooms or as sterilization agents for bed linens. Table 2-15 presents numbers for the general population living in institutions by type of group quarters (nursing homes, college dormitories), region, and State. Note: because group quarters include military barracks, there may be some overlap with data presented in Section 2.10. Table 2-16 presents numbers of the general population living in jails by race and detention status

for the years 1978 to 1994. Table 2-17 presents numbers of the general population living in Federal and State prisons for the years 1970 to 1993.

2.12. TRENDS IN SOCIODEMOGRAPHIC CHARACTERISTICS OF THE GENERAL U.S. POPULATION

Population trends are useful if an assessor is estimating an exposed population across time. For example, if the risk for increased exposure is specific to a specific population (e.g., race, gender) the estimated exposed population may be determined in some instances up to 1995 and projected for the years from 2000 to 2050, in increments of 10 years.

2.12.1. Trends in Gender and Age Characteristics of the General U.S. Population

Table 2-18 shows trends in the ratio of males to females for all age groups from 1950, with projections for 2025 (U.S. Bureau of the Census, 1995). Data indicate that there are slightly more males than females under the age of 14 years. Between ages 14 to 24 years, the numbers of males to females are nearly equal; however, after the age of 24 years, the ratio of males to females shows a fairly consistent decrease. The ratio of males to females is lowest at age 65 years and over. The average male-to-female ratio (for all ages) has dropped slightly from 98.6 in 1950 to 95.4 in 1994, and is projected to increase slightly to 96.3 by 2025.

2.12.2. Trends in Demographics of Race and Ethnic Characteristics of the General U.S. Population

Trends in demographics of race/ethnicity are presented in Table 2-19. The percent distribution is provided for the resident population by race from 1980 to 1995, with projections to 2050. Data in this table are adapted from Table 19 in *Statistical Abstract of the United States, 1995* (U.S. Bureau of the Census, 1995). These data indicate an increase in the general population for persons of Hispanic origin since 1980. The percent distribution (of the total distribution of 100 percent) for the Hispanic origin population was 6.54 percent in 1980 and increased to a projected distribution of 22.46 percent for the year 2050.

2.12.3. Trends in Regional Distribution of the General U.S. Population

Table 2-20 presents changes in location of primary residence of the general population. Data in this table are adapted from Table 30 in *Statistical Abstract of the United States, 1995* (U.S. Bureau of the Census, 1995). Census data indicate that percentage increases in population from 1960 to 1994 were highest in the West and South regions. The greatest population decreases occurred in the Midwest and Northeast regions.

2.12.4. Trends in Demographics of Social and Economic Characteristics of the General U.S. Population

Tables 2-5 through 2-8, discussed previously in Section 2.5, indicate changes in the socioeconomic characteristics of the general population. The trends from these tables are summarized as follows:

- White population in 1994, relative to 1980 (Table 2-5):
  - Total population increased by 12.5%;
  - Number of high school graduates dropped by 3%;
  - Number of college graduates increased by 5%;
  - Number employed increased by 3.5%;
  - Relative to 1980, the median income rose by $2,000 in 1990, then dropped to $600 below the 1980 value by 1994;
  - Number of persons below the poverty level increased by 3.2%; and
  - Consistent family types and housing tenure.

- Black population in 1994, relative to 1980 (Table 2-5):
  - Total population increased by 27%;
  - Number of high school graduates increased by 5.4%;
  - Number of college graduates increased by 11.3%;
  - Number employed increased by 3.9%;
  - Number of families headed by women increased by 7.6%;
  - Relative to 1980, the median income rose by $949 in 1990, then dropped to $1,053 below the 1980 value by 1994; and
  - Number of persons below the poverty level increased by 2%.

- American Indian population (Table 2-6): Data from past years were not readily available; therefore, trends could not be evaluated. Data on socioeconomic status of the American Indian population should be available from the Bureau of Indian Affairs in Washington, DC.

- Asian and Pacific Islander population in 1994, relative to 1990 (Table 2-7):
  - Total population increased by 11.5%;
  - Number of high school graduates decreased by 1.7%;
  - Number of college graduates decreased by 1.3%;
  - Number employed decreased by 2.6%;
  - Relative to 1990, the median income dropped by $2565;
  - Number of persons below the poverty level increased by 1.2%; and
  - Consistent family types and housing tenure.

- Hispanic population data trend summary (Note: All tables by number listed for the Hispanic population as data sources are the table numbers presented in the *Statistical Abstract of the United States* [U.S. Bureau of the Census, 1995]):
  - Total population increased by 83% from 1980 to 1995 (data from Table 19);
  - Number of high school graduates increased by 9.3% from 1980 to 1994 (data from Table 238);
  - Number of college graduates increased by 1.5% from 1980 to 1994 (data from Table 238);
  - Number employed increased by 2.1% from 1980 to 1994 (data from Table 627);
  - Relative to 1980, the median income dropped by $1,082 by 1993 (data from Table 723);
  - Percentage of persons below the poverty level increased by 8.8% from 1979 to 1993 (data from Table 744); and
  - Homeowner-occupied housing increased by 46% from 1980 to 1990 (data from Table 1226).

2.12.5. Trends in Demographics of Distribution by Households of the General U.S. Population

Table 2-9, shown in Section 2.6, presents percent change in numbers of households by State. Trends generally parallel those of regional distribution of the general population, in that the greatest increases occurred in the West and South regions, with slight increases in the North and Midwest regions. Table 2-9 also indicates that the number of persons per household nationwide has dropped slightly, from 2.75 persons in 1980 to 2.64 persons in 1994.

2.12.6. Trends in Demographics of Urban and Rural U.S. Population

Table 2-21 indicates that, since 1960, the percent of the general U.S. population residing in urban areas has increased. The population percentage residing in rural areas has decreased.

2.12.7. Trends in Demographics of Resident Population With Disabilities

Trends for persons with disabilities may be inferred from economic data containing the number of persons receiving public assistance. The assumption is that persons with disabilities often are not able to work to fully support themselves. Table 2-22 presents numbers of persons receiving public assistance in the United States from 1980 to 1993. Table 2-23 in this document is a summary of data presented in table number 611 in the 1995 *U.S. Bureau of the Census Statistical Abstract of the United States*, and it indicates that the percentage of persons receiving public assistance increased from 6.5% in 1990 to 7.7% in 1993.

2.12.8. Trends in Demographics of Native and Foreign-Born Resident Populations

Table 2-13, Section 2.9, indicates that the percentage of the general U.S. population born in foreign countries has decreased over the past 70 years from 13.2% in 1920 to 7.9% in 1990. Immigration rates from 1901 to 1993 are presented in Table 2-24 (U.S. Bureau of the Census, 1995). These data show that the rate of immigration was 10.4% between 1901 and 1910, dropped to 0.7% between 1941 and 1950, and since that time has risen to a current rate of 4.8%. The U.S. Bureau of the Census defines immigrants as aliens admitted for legal permanent residence in the United States (U.S. Bureau of the Census, 1995). The category "immigrant" includes persons who may have entered the United States as nonimmigrants or refugees but who subsequently changed status to permanent resident.

2.12.9. Trends in Demographics of Resident Population on Active Duty in the Military

Table 2-25 presents the numbers and percent distribution of the general U.S. population on active duty in the military. Data for this table were adapted from the U.S. Bureau of the Census, 1995. These data indicate that the percent of the general population serving in the military was approximately 0.9% in 1950, increased to about 1.6% between 1955 and 1970, then dropped to approximately 0.8% from 1975 to 1993.

2.12.10. Trends in Demographics of Resident Populations Living in Institutions and Group Quarters

Trends for persons residing in group quarters (college dormitories, rooming houses, etc.) could not be evaluated because data from past years are not readily available. Trends in numbers of persons living in institutions (e.g., under care or custody in juvenile facilities, jails, correctional centers, or hospitals) are summarized as follows (note: numbers of total U.S. population are from Table 2 in the U.S. Bureau of the Census, 1995):

- The number of persons in jails has increased since 1978 (Table 348, U.S. Bureau of the Census, 1995), from 158,394 persons (0.07% of total population) in 1978 to 490,442 persons (0.19% of total population) in 1994.

- The rate (per 100,000 persons of the general population) of persons in Federal and State prisons (Table 2-17) has increased from 96.7 in 1970 to 352.9 in 1993.

2.13. REFERENCES

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Table 2-1. Resident Population by Gender and Age: 1994
[In thousands, except as indicated. As of July 1.]

Age	Total	Male	Female	Age	Total	Male	Female
Total	**260,341**	**127,076**	**133,265**				
				43 yrs	3,716	1,825	1,891
Median age	34.0	32.9	35.2	44 yrs	3,825	1,897	1,927
Under 5 yrs	19,727	10,094	9,633	45-49 yrs	16,679	8,181	8,498
< 1 yr	3,870	1,981	1,889	45 yrs	3,659	1,801	1,858
1 yrs	3,878	1,985	1,893	46 yrs	3,550	1,743	1,807
2 yrs	3,956	2,023	1,933	47 yrs	3,843	1,886	1,957
3 yrs	3,990	2,041	1,949	48 yrs	2,652	1,292	1,360
4 yrs	4,032	2,064	1,968	49 yrs	2,974	1,458	1,517
5-9 yrs	18,859	9,657	9,201	50-54 yrs	13,191	6,410	6,781
5 yrs	3,884	1,989	1,894	50 yrs	2,890	1,409	1,481
6 yrs	3,792	1,940	1,852	51 yrs	2,931	1,430	1,502
7 yrs	3,747	1,917	1,830	52 yrs	2,549	1,238	1,312
8 yrs	3,595	1,841	1,754	53 yrs	2,440	1,182	1,258
9 yrs	3,841	1,969	1,872	54 yrs	2,381	1,152	1,229
10-14 yrs	18,753	9,602	9,150	55-59 yrs	10,936	5,244	5,692
10 yrs	3,744	1,920	1,824	55 yrs	2,283	1,099	1,184
11 yrs	3,770	1,931	1,840	56 yrs	2,281	1,095	1,185
12 yrs	3,768	1,927	1,841	57 yrs	2,178	1,043	1,134
13 yrs	3,722	1,903	1,818	58 yrs	2,021	966	1,055
14 yrs	3,748	1,921	1,828	59 yrs	2,173	1,041	1,132
15-19 yrs	17,616	9,036	8,580	60-64 yrs	10,082	4,740	5,342
15 yrs	3,602	1,848	1,754	60 yrs	1,981	934	1,046
16 yrs	3,515	1,808	1,707	61 yrs	1,953	923	1,030
17 yrs	3,562	1,836	1,727	62 yrs	1,965	921	1,044
18 yrs	3,349	1,714	1,635	63 yrs	2,065	971	1,094
19 yrs	3,588	1,831	1,757	64 yrs	2,118	990	1,128
20-24 yrs	18,326	9,311	9,015	65-69 yrs	9,970	4,500	5,471
20 yrs	3,480	1,776	1,704	65 yrs	2,059	948	1,111
21 yrs	3,492	1,782	1,710	66 yrs	2,071	948	1,124
22 yrs	3,605	1,835	1,770	67 yrs	2,003	905	1,098
23 yrs	3,839	1,943	1,897	68 yrs	1,897	845	1,052
24 yrs	3,910	1,976	1,934	69 yrs	1,940	854	1,086
25-29 yrs	19,177	9,619	9,558	70-74 yrs	8,741	3,790	4,951
25 yrs	3,756	1,894	1,862	70 yrs	1,875	824	1,051
26 yrs	3,680	1,846	1,834	71 yrs	1,801	786	1,015
27 yrs	3,778	1,894	1,884	72 yrs	1,811	791	1,020
28 yrs	3,674	1,837	1,837	73 yrs	1,695	729	966
29 yrs	4,289	2,147	2,142	74 yrs	1,559	659	899
30-34 yrs	22,177	11,058	11,119	75-79 yrs	6,574	2,655	3,919
30 yrs	4,354	2,173	2,181	75 yrs	1,473	614	859
31 yrs	4,332	2,160	2,172	76 yrs	1,369	563	806
32 yrs	4,431	2,209	2,222	77 yrs	1,294	524	770
33 yrs	4,433	2,201	2,232	78 yrs	1,254	496	758
34 yrs	4,626	2,315	2,311	79 yrs	1,184	459	725
35-39 yrs	21,961	10,920	11,040	80-84 yrs	4,351	1,550	2,801
35 yrs	4,523	2,253	2,270	80 yrs	1,048	393	655
36 yrs	4,439	2,208	2,231	81 yrs	966	352	614
37 yrs	4,472	2,223	2,248	82 yrs	855	306	549
38 yrs	4,055	2,007	2,048	83 yrs	784	268	516
39 yrs	4,472	2,229	2,243	84 yrs	699	232	467
40-44 yrs	19,699	9,728	9,970	85-89 yrs	2,274	686	1,588
40 yrs	4,223	2,090	2,133	90-94 yrs	948	235	713
41 yrs	4,013	1,979	2,033	95-99 yrs	249	50	199
42 yrs	3,922	1,936	1,986	> 100 yrs	50	9	41

Source: U.S. Bureau of the Census, 1995.

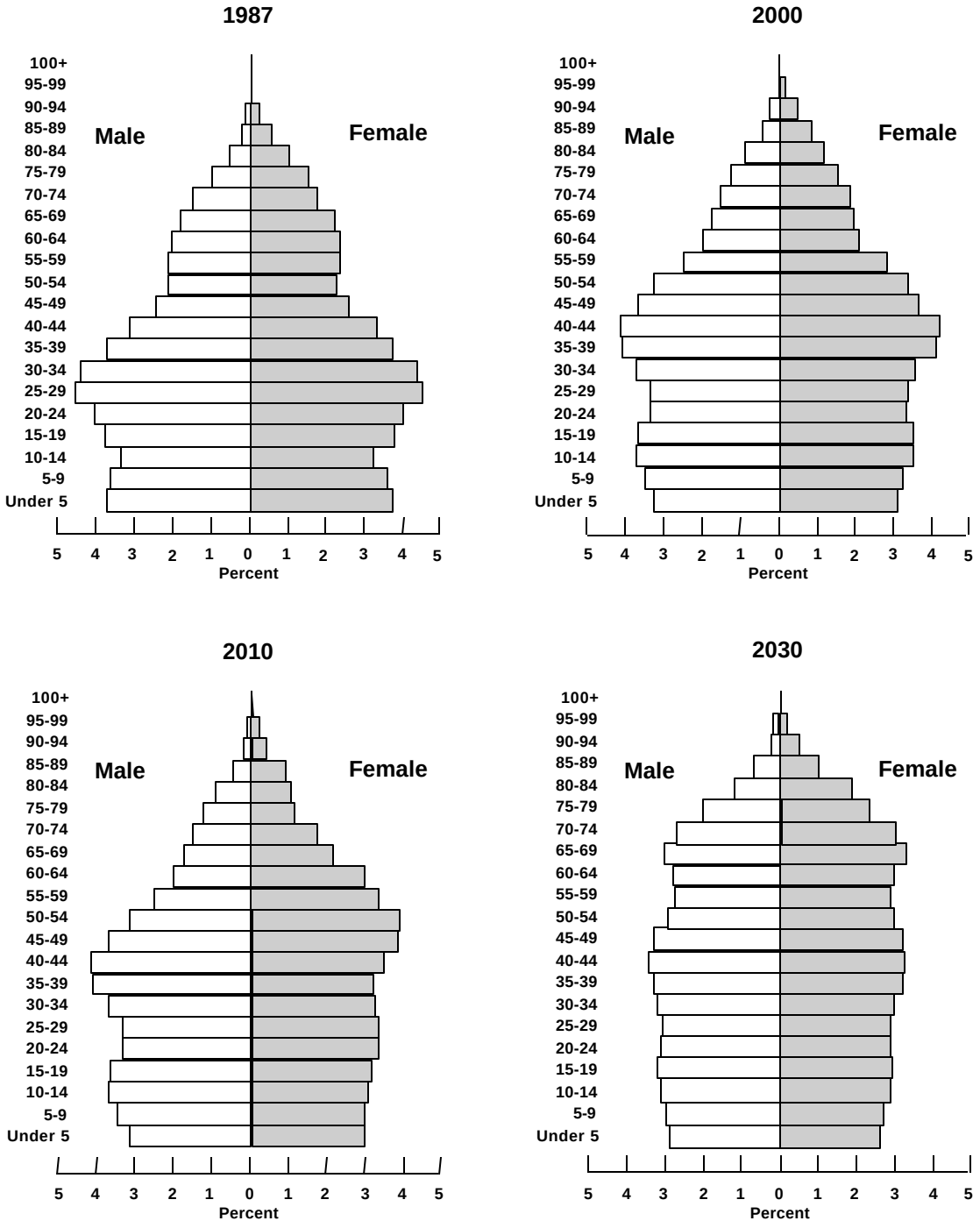

Figure 2-1. Projected Age Distribution of the U.S. Population: 1987, 2000, 2010, and 2030

Source: Spencer, 1989.

Table 2-2. Resident Population by Race, Hispanic Origin Status, and Percent Distribution: 1980 to 1994

[In thousands]

Year	Total	Percent Distri-bution	Not of Hispanic Origin								Hispanic Origin[a]	Percent Distri-bution
			White	Percent Distri-bution	Black	Percent Distri-bution	American Indian, Eskimo, Aleut	Percent Distri-bution	Asian, Pacific Islander	Percent Distri-bution		
1980	227,225	100.0	181,140	79.7	26,215	11.5	1,336	0.6	3,665	1.6	14,869	6.6
1985	237,924	100.0	184,945	77.7	27,738	11.7	1,558	0.7	5,315	2.2	18,368	7.7
1990	249,402	100.0	188,601	75.6	29,374	11.8	1,802	0.7	7,076	2.9	22,549	9.0
1994	260,341	100.0	192,727	74.0	31,192	12.0	1,907	0.7	8,438	3.2	26,077	10.1

[a] Persons of Hispanic origin may be of any race.

Source: U.S. Bureau of the Census, 1995.

Table 2-3. Resident Population by Age, Race, and Hispanic Origin: 1980 to 1994

[In thousands, except percent. As of April, except 1994 as of July. Hispanic persons may be of any race.]

Year and sex	Total, all yrs	<5 yrs	5-9 yrs	10-14 yrs	15-19 yrs	20-24 yrs	25-29 yrs	30-34 yrs	35-39 yrs	40-44 yrs	45-49 yrs	50-54 yrs	55-59 yrs	60-64 yrs	65-74 yrs	75-84 yrs	85 yrs and older
Hispanic origin																	
1980	14,609	1,663	1,537	1,475	1,606	1,586	1,376	1,129	854	712	622	564	454	321	457	203	49
1990[a]	22,354	2,467	2,178	1,989	2,085	2,320	2,337	2,045	1,642	1,276	936	750	633	550	715	340	91
1994	26,077	3,096	2,527	2,355	2,198	2,338	2,483	2,460	2,060	1,632	1,230	913	738	616	904	405	122
Male	13,219	1,583	1,292	1,202	1,128	1,245	1,334	1,291	1,058	818	603	438	348	285	398	155	40
Female	12,857	1,513	1,235	1,153	1,070	1,093	1,149	1,168	1,002	814	627	475	390	332	506	250	82
Non-Hispanic white																	
1980	180,906	11,842	12,262	13,703	16,166	16,574	15,358	14,091	11,315	9,437	9,104	9,824	9,963	8,775	13,614	6,863	2,014
1990[a]	188,306	12,721	12,516	11,854	12,450	13,524	15,508	16,331	15,162	13,839	10,971	9,057	8,548	8,872	15,511	8,767	2,675
1994	192,727	12,764	12,707	12,783	12,033	12,592	13,338	16,056	16,371	15,038	13,130	10,522	8,760	8,208	15,797	9,534	3,094
Male	94,091	6,549	6,525	6,569	6,193	6,390	6,680	8,042	8,206	7,508	6,514	5,172	4,254	3,910	7,049	3,682	847
Female	98,636	6,215	6,183	6,214	5,840	6,202	6,657	8,014	8,165	7,529	6,615	5,350	4,507	4,298	8,748	5,852	2,247
Black																	
1980	26,142	2,399	2,455	2,635	2,944	2,689	2,292	1,865	1,438	1,233	1,127	1,114	1,024	861	1,327	582	157
1990[a]	29,275	2,798	2,596	2,525	2,605	2,528	2,650	2,601	2,265	1,811	1,362	1,138	1,008	945	1,465	758	219
1994	31,192	2,945	2,791	2,733	2,610	2,539	2,475	2,693	2,608	2,210	1,669	1,287	1,069	950	1,554	797	260
Male	14,748	1,492	1,415	1,385	1,322	1,246	1,175	1,255	1,215	1,020	759	577	468	409	646	288	75
Female	16,444	1,453	1,376	1,348	1,289	1,293	1,301	1,438	1,393	1,190	910	710	601	541	908	509	185
Am. Indian, Eskimo, Aleut																	
1980	1,326	136	135	145	158	138	116	100	79	66	55	49	43	32	46	20	6
1990[a]	1,796	185	179	170	165	151	160	156	138	117	90	72	58	48	68	31	9
1994	1,907	179	188	195	166	159	149	159	150	133	107	82	64	51	75	37	13
Male	938	91	96	99	84	81	75	78	73	64	51	39	30	24	34	15	4
Female	969	89	92	96	82	78	74	81	77	69	55	43	34	27	42	22	9
Asian, Pacific Islander																	
1980	3,563	308	311	285	294	332	378	376	279	221	182	158	131	98	136	60	14
1990[a]	6,988	586	566	522	581	612	673	700	640	545	384	297	240	210	287	116	27
1994	8,438	743	646	686	609	697	731	809	772	687	544	387	304	257	381	152	32
Male	4,080	380	330	347	309	348	354	391	368	318	253	184	143	112	163	66	13
Female	4,358	363	316	339	300	349	377	418	404	369	292	204	161	145	218	86	20
1994, Percent																	
Hispanic origin	100.0	11.9	9.7	9.0	8.4	9.0	9.5	9.4	7.9	6.3	4.7	3.5	2.8	2.4	3.5	1.6	0.5
Non-Hispanic																	
White	100.0	6.6	6.6	6.6	6.2	6.5	6.9	8.3	8.5	7.8	6.8	5.5	4.5	4.3	8.2	4.9	1.6
Black	100.0	9.4	8.9	8.8	8.4	8.1	7.9	8.6	8.4	7.1	5.4	4.1	3.4	3.0	5.0	2.6	0.8
Am. Indian, Eskimo, Aleut	100.0	9.4	9.8	10.2	8.7	8.4	7.8	8.3	7.9	6.9	5.6	4.3	3.4	2.7	2.9	2.0	0.7
Asian, Pacific Islander	100.0	8.8	7.7	8.1	7.2	8.3	8.7	9.6	9.1	8.1	6.5	4.6	3.6	3.0	4.5	1.8	0.4

[a] The April 1, 1990, census count (248,718,291) includes count resolution corrections processed through March 1994 and does not include adjustments for census coverage errors.

Source: U.S. Bureau of the Census, 1995.

Table 2-4. Resident U.S. Population by Region, Race, and Hispanic Origin: 1990
[As of April1. For composition of regions, see text section 2.4.]

Race and Hispanic Origin	Population (1,000)					Percent Distribution				
	United States	North-east	Mid-west	South	West	United States	North-east	Mid-west	South	West
Total	248,710	50,809	59,669	85,446	52,786	100.0	20.4	24.0	34.4	21.2
White	199,686	42,069	52,018	65,582	40,017	100.0	21.1	26.0	32.8	20.0
Black	29,986	5,613	5,716	15,829	2,828	100.0	18.7	19.1	52.8	9.4
Am. Indian,	1,959	125	338	563	933	100.0	6.4	17.2	28.7	47.6
Eskimo, Aleut										
American	1,878	122	334	557	866	100.0	6.5	17.8	29.7	46.1
Indian										
Eskimo	57	2	2	3	51	100.0	2.9	3.5	4.9	88.8
Aleut	24	2	2	3	17	100.0	8.1	8.1	11.5	72.3
Asian or Pacific	7,274	1,335	768	1,122	4,048	100.0	18.4	10.6	15.4	55.7
Islander										
Chinese	1,645	445	133	204	863	100.0	27.0	8.1	12.4	52.4
Filipino	1,407	143	113	159	991	100.0	10.2	8.1	11.3	70.5
Japanese	848	74	63	67	643	100.0	8.8	7.5	7.9	75.9
Asian Indian	815	285	146	196	189	100.0	35.0	17.9	24.0	23.1
Korean	799	182	109	153	355	100.0	22.8	13.7	19.2	44.4
Vietnamese	615	61	52	169	334	100.0	9.8	8.5	27.4	54.3
Laotian	149	16	28	29	76	100.0	10.7	18.6	19.6	51.0
Cambodian	147	30	13	19	85	100.0	20.5	8.8	13.1	57.7
Thai	91	12	13	24	43	100.0	12.9	14.2	26.0	46.8
Hmong	90	2	37	2	50	100.0	1.9	41.3	1.8	55.0
Pakistani	81	28	15	22	17	100.0	34.3	18.9	26.5	20.4
Hawaiian	211	4	6	12	189	100.0	2.0	2.6	5.8	89.6
Samoan	63	2	2	4	55	100.0	2.4	3.6	6.4	87.6
Guamanian	49	4	3	8	34	100.0	7.3	6.4	16.8	69.5
Other A/P	263	49	34	54	126	100.0	18.6	12.9	20.5	48.0
Islander										
Other Races	9,805	1,667	829	2,350	4,960	100.0	17.0	8.5	24.0	50.6
Hispanic Origin [a]	22,354	3,754	1,727	6,767	10,106	100.0	16.8	7.7	30.3	45.2
Mexican	13,496	175	1,153	4,344	7,824	100.0	1.3	8.5	32.2	58.0
Puerto	2,728	1,872	258	406	192	100.0	68.6	9.4	14.9	7.0
Rican										
Cuban	1,044	184	37	735	88	100.0	17.6	3.5	70.5	8.5
Other	5,086	1,524	279	1,282	2,002	100.0	30.0	5.5	25.2	39.4
Hispanic										
Not of Hispanic	226,356	47,055	57,942	78,679	42,680	100.0	20.8	25.6	34.8	18.9
Origin										

[a] Persons of Hispanic origin may be of any race.

Source: U.S. Bureau of the Census, 1995.

Table 2-5. Social and Economic Characteristics of the White and Black Populations: 1980 to 1994

[As of March. Excludes members of Armed Forces except those living off post or with their families on post. Data for 1990 are based on 1980 census population controls; 1994 data are based on 1990 census population controls. Based on Current Population Survey.]

Characteristic	Number (1,000)						Percent Distribution			
	White			Black			White		Black	
	1980	1990	1994	1980	1990	1994	1980	1994	1980	1994
Total persons	191,905	206,983	215,221	26,033	30,392	33,040	100.0	100.0	100.0	100.0
Under 5 yrs old	13,307	15,161	16,055	2,444	2,932	3,357	6.9	7.5	9.4	10.2
5 - 14 yrs old	28,828	28,405	30,391	5,190	5,546	6,183	15.0	14.1	19.9	18.7
15 - 44 yrs old	88,570	96,656	97,917	12,247	14,660	15,907	46.2	45.5	47.0	48.1
45 - 64 yrs old	39,302	40,282	43,278	4,112	4,766	5,082	20.5	20.1	15.8	15.4
65 yrs old and older	21,898	26,479	27,580	2,040	2,487	2,510	11.4	12.8	7.8	7.6
Educational attainment										
Persons 25 yrs old and older	114,763	134,687	139,760	12,927	16,751	18,103	100.0	100.0	100.0	100.0
Elementary: 0 - 8 yrs	18,739	14,131	11,796	3,559	2,701	1,860	16.3	8.4	27.5	10.3
High school: 1 - 3 yrs	15,064	14,080	13,340[a]	2,748	2,969	3,048[a]	13.1	9.5[a]	21.3	16.8[a]
4 yrs	43,149	52,449	48,236[b]	3,980	6,239	6,549[b]	37.6	34.5[b]	30.8	36.2[b]
College: 1 - 3 yrs	17,350	24,350	34,331[c]	1,618	2,952	4,310[c]	15.1	24.6[c]	12.5	23.8[c]
4 yrs or more	20,460	29,677	32,057[d]	1,024	1,890	2,337[d]	17.8	22.9[d]	7.9	12.9[d]
Labor force status[e]										
Civilians 16 yrs old and older	146,122	160,415	165,555	17,824	21,300	22,879	100.0	100.0	100.0	100.0
Civilian labor force	93,600	107,177	111,082	10,865	13,493	14,502	64.1	67.1	61.0	63.4
Employed	87,715	102,087	105,190	9,313	11,966	12,835	60.0	63.5	52.2	56.1
Unemployed	5,884	5,091	5,892	1,553	1,527	1,666	4.0	3.6	8.7	7.3
Unemployment rate[f]	6.3	4.7	5.3	14.3	11.3	11.5	X	X	X	X
Not in labor force	52,523	53,237	54,473	6,959	7,808	8,377	35.9	32.9	39.0	36.6
Family type										
Total families	52,243	56,590	57,870	6,184	7,470	7,989	100.0	100.0	100.0	100.0
With own children[g]	26,474	26,718	2,624	3,810	4,378	4,794	50.7	47.7	61.8	60.0
Married couple	44,751	46,981	47,443	3,433	3,750	3,714	85.7	82.0	55.5	46.5
With own children[g]	22,415	21,579	21,874	1,927	1,972	1,925	42.9	37.8	31.2	24.1
Female head of household, no spouse present	6,052	7,306	8,130	2,495	3,275	3,825	11.6	14.0	40.3	47.9
With own children[g]	3,558	4,199	4,742	1,793	2,232	2,630	6.8	8.2	29.0	32.9
Male head of household, no spouse present	1,441	2,303	2,297	256	446	450	2.8	4.0	4.1	5.6
With own children[g]	500	939	1,008	99	173	238	1.0	1.7	1.6	3.0
Family income in previous year in constant (1993) dollars										
Total families	52,243	56,590	57,870	6,184	7,470	7,989	100.0	100.0	100.0	100.0
Less than $5,000	908	1,188	1,432	405	665	856	1.7	2.5	6.5	10.7
$5,000 - $9,999	2,110	2,264	2,765	872	964	1,205	4.0	4.8	14.1	15.1
$10,000 - $14,999	3,097	3,339	3,818	787	896	911	5.9	6.6	12.7	11.4
$15,000 - $24,999	7,906	7,923	8,756	1,326	1,389	1,485	15.1	15.1	21.4	18.6
$25,000 - $34,999	7,963	8,262	8,719	871	1,031	1,093	15.2	15.1	14.1	13.7
$35,000 - $49,999	12,244	11,318	10,865	972	1,091	1,035	23.4	18.8	15.7	13.0
$50,000 or more	18,015	22,296	21,515	952	1,434	1,404	34.5	37.2	15.3	17.6
Median income (dol.)	39,911	41,922	39,308	22,601	23,550	21,548	X	X	X	X
Families below poverty level[h]	3,581	4,409	5,452	1,722	2,077	2,499	6.9	9.4	27.8	31.3
Persons below poverty level[h]	17,214	20,785	26,226	8,050	9,302	10,877	9.0	12.2	31.0	33.1
Housing tenure										
Total occupied units	70,766	80,163	82,387	8,586	10,486	11,281	100.0	100.0	100.0	100.0
Owner-occupied	49,913	54,094	55,879	4,173	4,445	4,791	70.5	67.8	48.6	42.5
Renter-occupied	19,581	24,685	24,955	4,257	5,862	6,268	27.7	30.3	49.6	55.6
No cash rent	1,272	1,384	1,553	156	178	222	1.8	1.9	1.8	2.0

NA = Not available.
X = Not applicable.
[a] Represents those who completed ninth to twelfth grade, but have no high school diploma.
[b] High school graduate.
[c] Some college or associate degree.
[d] Bachelor's or advanced degree.
[e] Data beginning 1994 not directly comparable with earlier years.
[f] Total unemployment as percent of civilian labor force.
[g] Children under 18 years old.
[h] Families and unrelated individuals are classified as being above or below the poverty level using the poverty index originated at the Social Security Administration in 1964 and revised by Federal Interagency Committees in 1969 and 1980.

Source: U.S. Bureau of the Census, 1995.

Table 2-6. Social and Economic Characteristics of the American Indian Population: 1990

[As of April 1. Based on a sample and subject to sampling variability.]

Characteristic	American Indian, total[a]	Cherokee	Navajo	Sioux[b]	Chippewa	Choctaw	Pueblo	Apache	Iroquois[c]	Lumbee
Total persons	1,937,391	369,035	225,298	107,321	105,988	86,231	55,330	53,330	52,557	50,888
Percent under 5 yrs old	9.7	6.3	13.6	12.3	10.3	8.2	10.3	10.2	8.1	8.3
Percent 18 yrs old and older	65.8	73.3	57.7	60.0	64.0	68.8	64.2	64.7	71.1	66.2
Percent 65 yrs old and older	5.9	7.2	4.6	4.4	4.7	8.0	5.8	3.4	6.7	5.6
Educational attainment										
Persons 25 yrs old and older	1,040,955	229,231	100,594	51,014	54,804	49,128	28,597	27,717	30,882	27,343
Percent high school graduates or higher	65.6	68.2	51.0	69.7	69.7	70.3	71.5	63.8	71.9	51.6
Percent bachelor's degree or higher	9.4	11.1	4.5	8.9	8.2	13.3	7.3	6.9	11.3	9.4
Family type										
Total families	449,281	98,610	44,845	22,669	25,077	21,856	11,825	12,314	12,988	12,650
Percent distribution										
Married couple	65.8	73.1	61.1	54.2	58.4	75.2	61.2	66.9	67.5	68.5
Female head of household, no spouse present	26.2	20.8	28.6	36.0	33.1	20.0	29.2	24.7	25.5	23.9
Male head of household, no spouse present	8.0	6.1	10.3	9.8	8.5	4.8	9.6	8.4	7.0	7.6
Income in 1989										
Median income (dol.)	21,619	24,907	13,940	16,525	20,249	24,467	19,845	19,690	27,025	23,934
Median household (dol.)	19,900	21,922	12,817	15.611	18,801	21,640	19,097	18,484	23,460	21,708
Per capita (dol.)	8,284	10,469	4,788	6,508	7,777	9,463	6,679	7,271	10,568	8,625
Families below poverty level[d]	122,237	19,100	21,204	8,939	7,814	4,347	3,691	3,913	2,249	2,554
Percent below poverty level	27.2	19.4	47.3	39.4	31.2	19.9	31.2	31.8	17.3	20.2
Persons below poverty level[d]	585,273	79,271	107,526	45,658	35,231	19,453	17,981	19,246	10,253	10,966
Percent below poverty level	31.2	22.0	48.8	44.4	34.3	23.0	33.2	37.5	20.1	22.1

[a] Includes other American Indian tribes not shown separately.

[b] Any entry with the spelling "Siouan" was miscoded to Sioux in North Carolina.

[c] Reporting and/or processing problems have affected data for this tribe.

[d] Families and unrelated individuals are classified as being above or below the poverty level using the poverty index originated at the Social Security Administration in 1964 and revised by Federal Interagency Committees in 1969 and 1980.

Source: U.S. Bureau of the Census, 1995.

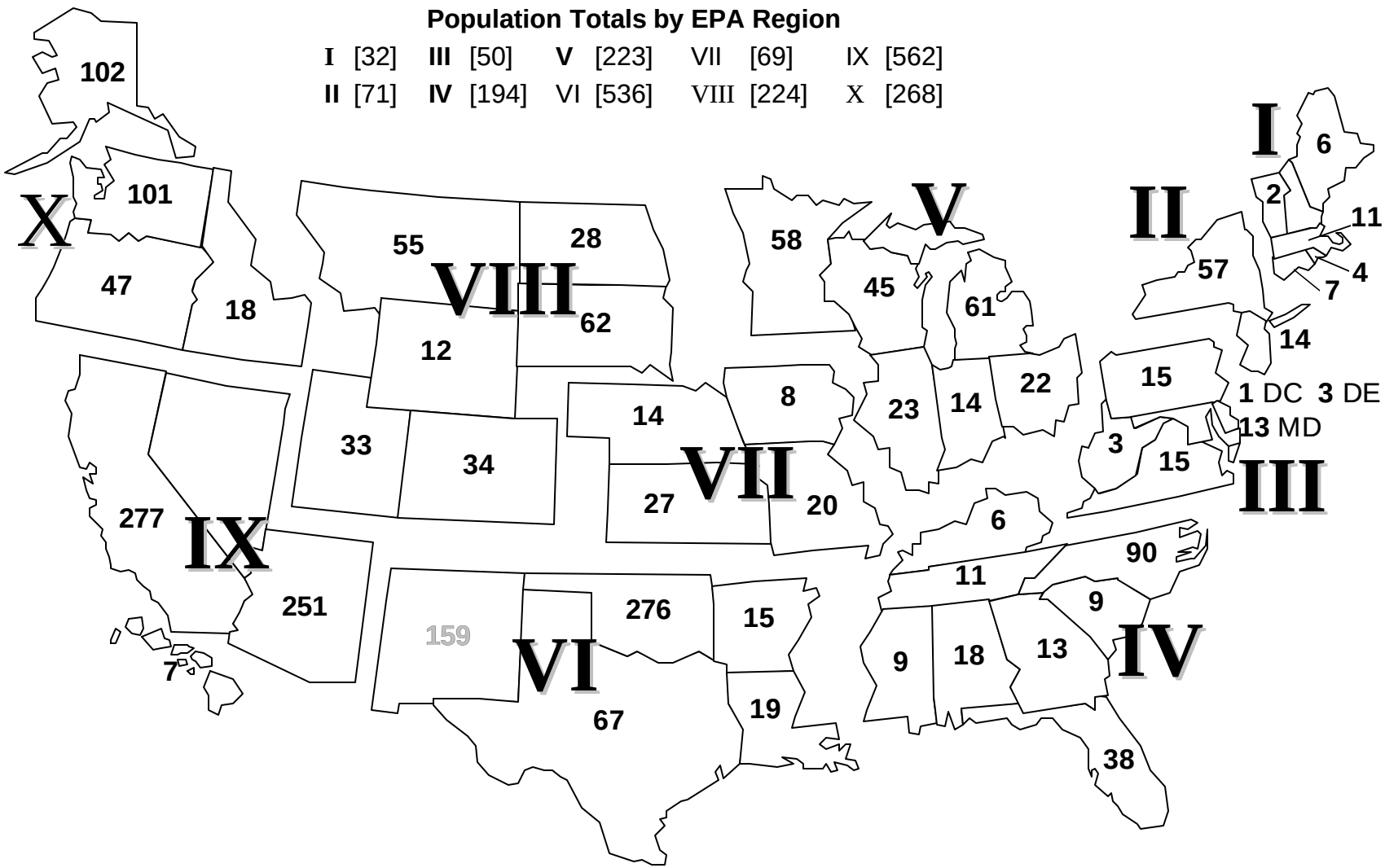

Figure 2-2. Native American Populations Residing in EPA Regions by State: 1995 [In thousands].

Source: U.S. Bureau of the Census, 1995.

Table 2-7. Social and Economic Characteristics of the Asian and Pacific Islander Population: 1990 and 1994

[As of March. Excludes members of Armed Forces except those living off post or with their families on post. Data for 1990 are based on 1980 census population controls; 1994 data are based on 1990 census population controls.]

Characteristic	Number (1,000)		Percent Distribution	
	1990	1994	1990	1994
Total persons	6,679	7,444	100.0	100.0
Under 5 yrs old	602	584	9.0	7.8
5 - 14 yrs old	1,112	1,165	16.6	15.7
15 - 44 yrs old	3,345	3,838	50.1	51.6
45 - 64 yrs old	1,155	1,355	17.3	18.2
65 yrs old and older	465	503	7.0	6.8
Educational attainment				
Persons 25 yrs old and older	3,961	4,545	100.0	100.0
Elementary: 0 - 8 yrs	543	444	13.7	9.8
High school: 1 - 3 yrs	234	248[a]	5.9	5.5[a]
4 yrs	1,038	1,115[b]	26.2	24.5[b]
College: 1 - 3 yrs	568	866[c]	14.3	19.1[c]
4 yrs or more	1,578	1,872[d]	39.9	41.2[d]
Labor force status[e]				
Civilians 16 yrs old and older	4,849	5,562	100.0	100.0
Civilian labor force	3,216	3,540	66.3	63.7
Employed	3,079	3,310	63.5	59.5
Unemployed	136	230	2.8	4.1
Unemployment rate[f]	4.2	6.5	X	X
Not in labor force	1,634	2,022	33.7	36.3
Family type				
Total families	1,531	1,737	100.0	100.0
Married couple	1,256	1,426	82.1	82.1
Female head of household, no spouse present	188	232	12.3	13.1
Male head of household, no spouse present	86	79	5.6	4.6
Family income in previous year in constant (1993) dollars				
Total families	1,531	1,737	100.0	100.0
Less than $5,000	NA	72	NA	4.2
$5,000 - $9,999	NA	107	NA	6.1
$10,000 - $14,999	NA	114	NA	6.6
$15,000 - $24,999	NA	220	NA	12.7
$25,000 - $34,999	NA	195	NA	11.3
$35,000 - $49,999	NA	243	NA	14.0
$50,000 or more	NA	784	NA	45.2
Median income	47,021	44,456	X	X
Families below poverty level	182	235	11.9	13.5
Persons below poverty level	939	1,134	14.1	15.3
Housing tenure				
Total occupied units	1,988	2,233	100.0	100.0
Owner-occupied	977	1,154	49.1	51.7
Renter-occupied	982	1,055	49.4	47.2
No cash rent	30	25	1.5	1.1

NA = Not available.
X = Not applicable.
[a] Represents those who completed 9 to 12 grade, but have no high school diploma.
[b] High school graduate.
[c] Some college or associate degree.
[d] Bachelor's or advanced degree.
[e] Data beginning 1994 not directly comparable with earlier years.
[f] Total unemployment as percent of civilian labor force.

Source: U.S. Bureau of the Census, 1995.

Table 2-8. Social and Economic Characteristics of the Hispanic Population: 1993

[As of March, except labor force status, annual average. Excludes Armed Forces members except those living off post or with families on post.]

Characteristic	Number (1,000)						Percent Distribution					
	Hispanic, total	Mexican	Puerto Rican	Cuban	Central/ South American	Other Hispanic	Hispanic, total	Mexican	Puerto Rican	Cuban	Central/ South American	Other Hispanic
Total persons	22,752	14,628	2,402	1,071	3,052	1,598	100.0	100.0	100.0	100.0	100.0	100.0
Under 5 yrs old	2,523	1,787	251	49	304	133	11.1	12.2	10.4	4.6	10.0	8.3
5 - 14 yrs old	4,207	2,939	496	85	461	226	18.5	20.1	20.6	7.9	15.1	14.1
15 - 44 yrs old	11,529	7,447	1,162	429	1,732	759	50.7	50.9	48.4	40.1	56.7	47.5
45 - 64 yrs old	3,271	1,844	355	291	438	344	14.4	12.6	14.8	27.2	14.3	21.5
65 yrs old and older	1,222	612	138	218	119	135	5.4	4.2	5.7	20.3	3.9	8.4
Educational attainment												
Persons 25 yrs old and older	12,100	7,198	1,280	818	1,776	1,029	100.0	100.0	100.0	100.0	100.0	100.0
High school graduate or higher	6,424	3,324	766	508	1,117	709	53.1	46.2	59.8	62.1	62.9	68.9
Bachelor's degree or higher	1,090	428	103	135	269	155	9.0	5.9	8.0	16.5	15.1	15.1
Labor force status[a]												
Civilians 16 yrs old and older	15,753	9,693	1,676	927	NA	NA	100.0	100.0	100.0	100.0	NA	NA
Civilian labor force	10,377	6,499	950	554	NA	NA	65.9	67.0	56.7	59.8	NA	NA
Employed	9,272	5,805	828	511	NA	NA	58.9	59.9	49.4	55.1	NA	NA
Unemployed	1,104	693	122	43	NA	NA	7.0	7.1	7.3	4.6	NA	NA
Unemployment rate[b]	10.6	10.7	12.8	7.8	NA	NA	X	X	X	X	NA	NA
Not in labor force	5,377	3,194	725	373	NA	NA	34.1	33.0	43.3	40.2	NA	NA
Family type												
Total families	5,318	3,210	653	309	751	395	100.0	100.0	100.0	100.0	100.0	100.0
Married couple	3,674	2,320	349	235	510	261	69.1	72.3	53.4	76.1	67.9	66.0
Female head of household, no spouse present	1,238	622	264	56	186	110	23.3	19.4	40.5	18.2	24.7	27.7
Male head of household, no spouse present	407	269	40	18	56	25	7.7	8.4	6.2	5.7	7.4	6.3
Family income in 1992												
Total families	5,318	3,210	653	309	751	395	100.0	100.0	100.0	100.0	100.0	100
Less than $5,000	320	178	60	14	45	23	6.0	5.5	9.2	4.5	6.0	5.8
$5,000 - $9,999	620	338	123	23	85	50	11.7	10.5	18.8	7.4	11.3	12.7
$10,000 - $14,999	671	423	70	29	116	32	12.6	13.2	10.7	9.4	15.4	8.1
$15,000 - $24,999	1,152	740	140	61	142	71	21.7	23.1	21.4	19.7	18.9	18.0
$25,000 - $34,999	865	550	89	47	124	53	16.3	17.1	13.6	15.2	16.5	13.4
$35,000 - $49,999	802	503	77	50	104	66	15.1	15.7	11.8	16.2	13.8	16.7
$50,000 or more	889	478	96	85	133	98	16.7	14.9	14.7	27.5	17.7	24.8
Median income (dol.)	23,912	23,714	20,301	31,015	23,649	28,562	X	X	X	X	X	X
Families below poverty level[c]	1,395	847	212	47	203	86	26.2	26.4	32.5	15.4	27.0	21.7
Persons below poverty level[c]	6,655	4,404	874	194	815	368	29.3	30.1	36.5	18.1	26.7	23.1
Housing tenure												
Total occupied units	6,626	3,869	841	405	937	574	100.0	100.0	100.0	100.0	100.0	100.0
Owner-occupied	2,654	1,708	197	215	239	294	40.0	44.2	23.4	53.0	25.6	51.2
Renter-occupied	3,973	2,160	644	191	697	280	60.0	55.8	76.6	47.2	74.4	48.8

NA = Not available.

X = Not applicable.

[a] Source: U.S. Bureau of Labor Statistics, *Employment and Earnings*, Jan. 1994.
[b] Total unemployment as percent of civilian labor force.
[c] Families and unrelated individuals are classified as being above or below the poverty level using the poverty index originated at the Social Security Administration in 1964 and revised by Federal Interagency Committees in 1969 and 1980.

Note: Median income is median of yearly total income.

Source: U.S. Bureau of the Census, 1995.

Table 2-9. Resident Population by Households and by State: 1980 to 1994

[Prior to 1991, as of April 1; after 1991, as of July 1. Minus sign (-) indicates decrease. Division names presented in text section 2.4.]

REGION, DIVISION, AND STATE	NUMBER (1,000)							PERCENT CHANGE		PERSONS PER HOUSEHOLD		
						1994						
	1980	1990	1991	1992	1993	Total	Householder 65 yrs. and over	1980-90	1990-94	1980	1990	1994
U.S.	**80,390**	**91,946**	**93,183**	**94,652**	**95,335**	**95,946**	**20,876**	**14.4**	**4.4**	**2.75**	**2.63**	**2.64**
Northeast	**17,471**	**18,873**	**18,964**	**19,092**	**19,067**	**19,045**	**4,506**	**8.0**	**0.9**	**2.74**	**2.61**	**2.62**
N.E	**4,362**	**4,943**	**4,961**	**4,987**	**4,980**	**4,980**	**1,142**	**13.3**	**0.8**	**2.74**	**2.58**	**2.58**
ME	395	465	471	474	475	474	108	17.7	2.0	2.75	2.56	2.54
NH	323	411	413	417	419	424	83	27.1	3.0	2.75	2.62	2.61
VT	178	211	214	217	219	220	44	18.1	4.6	2.75	2.57	2.54
MA	2,033	2,247	2,250	2,263	2,262	2,265	528	10.5	0.8	2.72	2.58	2.57
RI	339	378	379	380	377	374	96	11.6	-1.1	2.70	2.55	2.57
CT	1,094	1,230	1,234	1,235	1,228	1,222	283	12.5	-0.7	2.76	2.59	2.60
M.A	**13,109**	**13,930**	**14,003**	**14,106**	**14,087**	**14,065**	**3,364**	**6.3**	**1.0**	**2.74**	**2.62**	**2.64**
NY	6,340	6,639	6,662	6,703	6,689	6,669	1,494	4.7	0.4	2.70	2.63	2.64
NJ	2,549	2,795	2,812	2,839	2,839	2,845	659	9.7	1.8	2.84	2.70	2.72
PA	4,220	4,496	4,529	4,564	4,559	4,551	1,211	6.5	1.2	2.74	2.57	2.57
Midwest	**20,859**	**22,317**	**22,543**	**22,818**	**22,893**	**22,937**	**5,156**	**7.0**	**2.8**	**2.75**	**2.60**	**2.61**
E.N.C.	**14,654**	**15,597**	**15,776**	**15,970**	**16,021**	**16,051**	**3,539**	**6.4**	**2.9**	**2.78**	**2.63**	**2.62**
OH	3,834	4,088	4,135	4,181	4,189	4,190	949	6.6	2.5	2.76	2.59	2.59
IN	1,927	2,065	2,102	2,133	2,149	2,161	470	7.2	4.6	2.77	2.61	2.59
IL	4,045	4,202	4,243	4,291	4,301	4,308	936	3.9	2.5	2.76	2.65	2.66
MI	3,195	3,419	3,454	3,496	3,498	3,502	754	7.0	2.4	2.84	2.66	2.65
WI	1,652	1,822	1,842	1,869	1,883	1,890	430	10.3	3.7	2.77	2.61	2.62
W.N.C	**6,205**	**6,720**	**6,767**	**6,848**	**6,872**	**6,886**	**1,617**	**8.3**	**2.5**	**2.68**	**2.55**	**2.57**
MN	1,445	1,648	1,667	1,689	1,702	1,711	362	14.0	3.8	2.74	2.58	2.60
IA	1,053	1,064	1,069	1,083	1,084	1,082	277	1.1	1.6	2.68	2.52	2.52
MO	1,793	1,961	1,976	1,996	2,002	2,008	478	9.4	2.4	2.67	2.53	2.56
ND	228	241	240	242	242	241	60	5.8	0.2	2.75	2.55	2.54
SD	243	259	260	263	264	265	68	6.8	2.1	2.74	2.59	2.63
NE	571	602	606	614	614	614	147	5.4	2.0	2.66	2.54	2.56
KS	872	945	948	961	964	966	225	8.3	2.2	2.62	2.53	2.56
South	**26,486**	**31,821**	**32,376**	**32,976**	**33,342**	**33,713**	**7,325**	**20.1**	**5.9**	**2.77**	**2.61**	**2.62**
S.A	**13,160**	**16,502**	**16,826**	**17,149**	**17,331**	**17,530**	**3,970**	**25.4**	**6.2**	**2.73**	**2.56**	**2.58**
DE	207	247	253	258	262	264	56	19.5	6.8	2.79	2.61	2.59
MD	1,461	1,749	1,778	1,807	1,818	1,831	344	19.7	4.7	2.82	2.67	2.67
DC	253	250	247	245	242	237	51	-1.4	-5.2	2.40	2.26	2.24
VA	1,863	2,292	2,333	2,384	2,413	2,439	453	23.0	6.4	2.77	2.61	2.60
WV	686	689	696	703	705	705	188	0.3	2.4	2.79	2.55	2.53
NC	2,043	2,517	2,566	2,608	2,641	2,679	566	23.2	6.4	2.78	2.54	2.55
SC	1,030	1,258	1,292	1,313	1,325	1,337	280	22.1	6.3	2.93	2.68	2.66
GA	1,872	2,366	2,425	2,488	2,531	2,581	451	26.4	9.1	2.84	2.66	2.67
FL	3,744	5,135	5,236	5,341	5,393	5,456	1,581	37.1	6.3	2.55	2.46	2.50
E.S.C.	**5,051**	**5,652**	**5,743**	**5,832**	**5,886**	**5,938**	**1,328**	**11.9**	**5.1**	**2.83**	**2.62**	**2.61**
KY	1,263	1,380	1,398	1,418	1,431	1,440	321	9.2	4.3	2.82	2.60	2.59
TN	1,619	1,854	1,887	1,921	1,942	1,966	424	14.5	6.0	2.77	2.56	2.57
AL	1,342	1,507	1,533	1,558	1,573	1,583	363	12.3	5.1	2.84	2.62	2.61
MS	827	911	925	934	941	949	221	10.2	4.2	2.97	2.75	2.74
W.S.C	**8,276**	**9,667**	**9,807**	**9,996**	**10,124**	**10,245**	**2,027**	**16.8**	**6.0**	**2.80**	**2.69**	**2.71**
AR	816	891	899	910	919	927	235	9.2	4.0	2.74	2.57	2.58
LA	1,412	1,499	1,514	1,534	1,538	1,543	321	6.2	2.9	2.91	2.74	2.72
OK	1,119	1,206	1,211	1,229	1,234	1,236	288	7.8	2.5	2.62	2.53	2.56
TX	4,929	6,071	6,183	6,322	6,433	6,539	1,184	23.2	7.7	2.82	2.73	2.75
West	**15,574**	**18,935**	**19,300**	**19,765**	**20,033**	**20,251**	**3,889**	**21.6**	**6.9**	**2.71**	**2.72**	**2.74**
Mountain	**3,986**	**5,033**	**5,151**	**5,303**	**5,433**	**5,574**	**1,092**	**26.3**	**10.7**	**2.79**	**2.65**	**2.68**
MT	284	306	309	315	321	325	73	7.9	6.1	2.70	2.53	2.56
ID	324	361	372	384	395	405	84	11.3	12.2	2.85	2.73	2.75
WY	166	169	170	174	176	178	34	1.9	5.3	2.78	2.63	2.62
CO	1,061	1,282	1,306	1,348	1,386	1,417	234	20.8	10.5	2.65	2.51	2.52
NM	441	543	553	568	577	587	116	22.9	8.1	2.90	2.74	2.77
AZ	957	1,369	1,390	1,429	1,461	1,503	340	43.0	9.8	2.79	2.62	2.66
UT	449	537	553	571	585	599	107	19.8	11.6	3.20	3.15	3.13
NV	304	466	496	516	532	560	102	53.2	20.1	2.59	2.53	2.56
Pacific	**11,587**	**13,902**	**14,149**	**14,462**	**14,600**	**14,677**	**2,798**	**20.0**	**5.6**	**2.68**	**2.74**	**2.77**
WA	1,541	1,872	1,922	1,977	2,018	2,042	391	21.5	9.1	2.61	2.53	2.56
OR	992	1,103	1,130	1,156	1,178	1,195	267	11.3	8.3	2.60	2.52	2.53
CA	8,630	10,381	10,536	10,752	10,821	10,850	2,042	20.3	4.5	2.68	2.79	2.83
AK	131	189	194	202	206	208	17	43.7	10.3	2.93	2.80	2.81
HI	294	356	367	375	378	381	81	21.2	7.1	3.15	3.01	2.99

Source: U.S. Bureau of the Census, 1995.

Table 2-10. Family and Nonfamily Households by Race, Hispanic Origin, and Type: 1970 to 1994

[As of March, except as noted]

RACE, HISPANIC ORIGIN, AND TYPE	NUMBER (1,000)					PERCENT DISTRIBUTION				
	1970	1980	1985	1990	1994	1970	1980	1985	1990	1994
TOTAL HOUSEHOLDS										
Total [1]	**63,401**	**80,776**	**86,789**	**93,347**	**97,107**	**100**	**100**	**100**	**100**	**100**
White	56,602	70,766	75,328	80,163	82,387	89	88	87	86	85
Black	6,223	8,586	9,480	10,486	11,281	10	11	11	11	12
Hispanic [2]	2,303	3,684	4,883	5,933	7,362	4	5	6	6	8
FAMILY HOUSEHOLDS										
White, total	**46,166**	**52,243**	**54,400**	**56,590**	**57,870**	**100**	**100**	**100**	**100**	**100**
Married couple	41,029	44,751	45,643	46,981	47,443	89	86	84	83	82
Male householder [3]	1,038	1,441	1,816	2,303	2,297	2	3	3	4	4
Female householder [3]	4,099	6,052	6,941	7,306	8,130	9	12	13	13	14
Black, total	**4,856**	**6,184**	**6,778**	**7,470**	**7,989**	**100**	**100**	**100**	**100**	**100**
Married couple	3,317	3,433	3,469	3,750	3,714	68	56	51	50	46
Male householder [3]	181	256	344	446	450	4	4	5	6	6
Female householder [3]	1,358	2,495	2,964	3,275	3,825	28	40	44	44	48
Asian or Pacific Islander, total [4]	**(NA)**	**818**	**(NA)**	**1,531**	**1,737**	**(NA)**	**100**	**(NA)**	**100**	**100**
Married couple	(NA)	691	(NA)	1,256	1,426	(NA)	84	(NA)	82	82
Male householder [3]	(NA)	39	(NA)	86	79	(NA)	5	(NA)	6	5
Female householder [3]	(NA)	88	(NA)	188	232	(NA)	11	(NA)	12	13
Hispanic, total [2]	**2,004**	**3,029**	**3,939**	**4,840**	**5,940**	**100**	**100**	**100**	**100**	**100**
Married couple	1,615	2,282	2,824	3,395	4,033	81	75	72	70	68
Male householder [3]	82	138	210	329	410	4	5	5	7	7
Female householder [3]	307	610	905	1,116	1,498	15	20	23	23	25
NONFAMILY HOUSEHOLDS										
White, total	**10,436**	**18,522**	**20,928**	**23,573**	**24,518**	**100**	**100**	**100**	**100**	**100**
Male householder	3,406	7,499	8,608	9,951	10,602	33	40	41	42	43
Female householder	7,030	11,023	12,320	13,622	13,916	67	60	59	58	57
Black, total	**1,367**	**2,402**	**2,703**	**3,015**	**3,292**	**100**	**100**	**100**	**100**	**100**
Male householder	564	1,146	1,244	1,313	1,452	41	48	46	44	44
Female householder	803	1,256	1,459	1,702	1,840	59	52	54	56	56
Hispanic, total [2]	**299**	**654**	**944**	**1,093**	**1,423**	**100**	**100**	**100**	**100**	**100**
Male householder	150	365	509	587	747	50	56	54	54	52
Female householder	148	289	435	506	676	49	44	46	46	48

NA = Not available.
[1] Includes other races not shown separately.
[2] Hispanic persons may be of any race. 1970 data as of April.
[3] No spouse present.
[4] 1980 data as of April and are from 1980 Census of Population.

Source: U.S. Bureau of the Census, 1995.

Table 2-11. Urban and Rural Population, 1960 to 1990, and by State, 1990

[In thousands, except percent. As of April 1. Resident population.]

REGION, DIVISION, AND STATE	Total	URBAN		Rural	REGION, DIVISION, AND STATE	Total	URBAN		Rural
		Number	Percent				Number	Percent	
1960	179,323	125,269	69.9	54,054	MD	4,781	3,888	81.3	893
1970	[1]203,212	149,647	73.6	53,565	DC	607	607	100.0	-
1980	[2]226,546	167,051	73.7	59,495	VA	6,187	4,293	69.4	1,894
1990, total	**248,710**	**187,053**	**75.2**	**61,656**	WV	1,793	648	36.1	1,145
Northeast	**50,809**	**40,092**	**78.9**	**10,717**	NC	6,629	3,338	50.4	3,291
N.E	**13,207**	**9,829**	**74.4**	**3,378**	SC	3,487	1,905	54.6	1,581
ME	1,228	548	44.6	680	GA	6,478	4,097	63.2	2,381
NH	1,109	566	51.0	544	FL	12,938	10,967	84.8	1,971
VT	563	181	32.2	382	**E.S.C**	**15,176**	**8,531**	**56.2**	**6,646**
MA	6,016	5,070	84.3	947	KY	3,685	1,910	51.8	1,775
RI	1,003	863	86.0	140	TN	4,877	2,970	60.9	1,907
CT	3,287	2,602	79.1	686	AL	4,041	2,440	60.4	1,601
M.A	**37,602**	**30,263**	**80.5**	**7,340**	MS	2,573	1,211	47.1	1,362
NY	17,990	15,164	84.3	2,826	**W.S.C**	**26,703**	**19,894**	**74.5**	**6,808**
NJ	7,730	6,910	89.4	820	AR	2,351	1,258	53.5	1,093
PA	11,882	8,188	68.9	3,693	LA	4,220	2,872	68.1	1,348
Midwest	**59,669**	**42,774**	**71.7**	**16,894**	OK	3,146	2,130	67.7	1,015
E.N.C	**42,009**	**31,074**	**74.0**	**10,935**	TX	16,987	13,635	80.3	3,352
OH	10,847	8,039	74.1	2,808	**West**	**52,786**	**45,531**	**86.3**	**7,255**
IN	5,544	3,598	64.9	1,946	**Mountain**	**13,659**	**10,881**	**79.7**	**2,777**
IL	11,431	9,669	84.6	1,762	MT	799	420	52.5	379
MI	9,295	6,556	70.5	2,739	ID	1,007	578	57.4	429
WI	4,892	3,212	65.7	1,680	WY	454	295	65.0	159
W.N.C.	**17,660**	**11,700**	**66.3**	**5,959**	CO	3,294	2,716	82.4	579
MN	4,375	3,056	69.9	1,319	NM	1,515	1,106	73.0	409
IA	2,777	1,683	60.6	1,094	AZ	3,665	3,207	87.5	458
MO	5,117	3,516	68.7	1,601	UT	1,723	1,499	87.0	224
ND	639	340	53.3	298	NV	1,202	1,061	88.3	140
SD	696	348	50.0	348	**Pacific**	**39,127**	**34,650**	**88.6**	**4,477**
NE	1,578	1,044	66.1	534	WA	4,867	3,718	76.4	1,149
KS	2,478	1,713	69.1	765	OR	2,842	2,003	70.5	839
South	**85,446**	**58,656**	**68.6**	**26,790**	CA	29,760	27,571	92.6	2,189
S.A	**43,567**	**30,231**	**69.4**	**13,336**	AK	550	371	67.5	179
DE	666	487	73.0	180	HI	1,108	986	89.0	122

- Represents zero.

a The revised 1970 resident population count is 203,302,031, which incorporates changes due to errors found after tabulations were completed.

b Total population count has been revised since the 1980 census publications to 226,542,203.

Source: U.S. Bureau of the Census, 1995.

Table 2-12. Disability Status of Persons 21-64 Years Old: 1991 to 1994

Disability Status	1991		1993		1994	
	Number (1,000)	Percent Employed	Number (1,000)	Percent Employed	Number (1,000)	Percent Employed
Persons 21 to 64 years old, total	144,075	75.1	148,244	75.1	149,369	76.2
With no disability	116,641	80.5	119,414	80.6	119,960	82.1
With a disability	27,434	52.0	28,830	52.4	29,409	52.3
Severe	12,494	23.3	13,819	25.0	14,219	26.1
Not severe	14,940	76.0	15,011	77.7	15,190	76.9
With a functional limitation	18,012	48.6	19,400	49.7	17,797	48.6
Severe	6,352	27.6	7,232	29.7	6,841	32.2
With difficulty--						
Seeing words and letters	4,567	45.5	5,155	45.5	4,002	43.7
Hearing normal conversation	5,222	63.7	5,650	65.4	4,489	64.4
Lifting and carrying	7,548	32.1	8,149	34.5	8,026	34.8
Climbing stairs	7,803	30.1	8,584	31.6	8,517	33.9
Walking three city blocks	7,672	31.5	8,600	31.9	8,697	33.5
With an ADL[1] limitation	3,313	25.3	3,820	26.8	3,640	27.2
With an IADL[2] limitation	4,811	22.9	5,375	25.4	5,434	27.1
Needs personal assistanc with and ADL or IADL	3,704	21.2	4,021	23.1	4,065	24.6
Uses a wheelchair	495	18.4	582	20.9	685	22.0
Does not use a wheelchair but uses a cane,crutches, or a walker	1,484	25.2	1,841	29.2	1,609	27.5

[1] ADL's are activities of daily living and include getting around inside the home, getting in or out of a bed or chair, taking a bath or shower, dressing, eating, and using the toilet.
[2] IADL's are instrumental activities of daily living and include going outside the home, keepingtrack of money and bills, preparing meals, doing light housework, and using the telephone.

Note: For period September through December of year shown. Covers civilian noninstitutional population and members of the Armed Forces living off post or with their families on post.

Source: U.S. Bureau of Census, 1997.

Table 2-13. Native and Foreign-Born Population by Place of Birth: 1920 to 1990

[In thousands, except percent. Beginning 1950, data are based on a sample from the census.]

YEAR	Total population	NATIVE POPULATION						FOREIGN BORN	
		Total	Born in State of residence	Born in other States	State of birth not reported	Born in outlying areas [1]	Born abroad or at sea of American parents	Number	Percent of total population
1920	105,711	91,790	71,071	20,274	314	38	93	13,921	13.2
1930	122,775	108,571	82,678	25,388	238	136	131	14,204	11.6
1940	131,669	120,074	92,610	26,906	280	157	122	11,595	8.8
1950	150,216	139,869	102,788	35,284	1,370	330	96	10,347	6.9
1960	178,467	168,806	118,802	44,264	4,526	817	397	9,661	5.4
1970	203,194	193,454	131,296	51,659	8,882	873	744	9,740	4.8
1980	226,546	212,466	144,871	65,452	(NA)	1,088	1,055	14,080	6.2
1990	248,710	228,943	153,685	72,011	(NA)	1,382	1,864	19,767	7.9

NA = Not available.

[1] 1920 to 1950, includes Alaska and Hawaii. Includes Puerto Rico.

Source: U.S. Bureau of the Census, 1995.

Table 2-14. Active Duty Personnel by Service and Year: 1950 to 1993
[In thousands. As of end of fiscal year; includes National Guard, Reserve, and Retired regular personnel on extended or continuous active duty. Other officer candidates are included under enlisted personnel.]

Year	Total [a,b]	ARMY			NAVY [c]			MARINE CORPS			AIR FORCE			COAST GUARD		
		Total [b]	Officers	Enlisted	Total [b]	Officers	Enlisted	Total [b]	Officers	Enlisted	Total [b]	Officers	Enlisted	Total [b]	Officers	Enlisted
1950	1,459	593	73	519	381	45	333	74	7	67	411	57	354	ND	ND	ND
1955	2,935	1,109	122	986	661	75	583	205	18	187	960	137	823	ND	ND	ND
1960	2,475	873	101	770	617	70	545	171	16	154	815	130	683	ND	ND	ND
1965	2,654	969	112	855	670	78	588	190	17	173	825	132	690	ND	ND	ND
1970	3,065	1,323	167	1,153	691	81	606	260	25	235	791	130	657	38.3	5.5	31.5
1975	2,128	784	103	678	535	66	466	196	19	177	613	105	503	37.9	5.6	29.9
1980	2,051	777	99	674	527	63	460	188	18	170	558	98	456	40.2	6.4	32.0
1985	2,151	781	110	667	571	71	495	198	20	178	602	108	489	39.3	6.7	31.0
1990	2,044	732	104	624	579	72	503	197	20	177	535	100	431	37.8	6.8	29.1
1993	1,705	572	88	480	510	66	439	178	18	160	444	84	356	40.1	7.6	30.6

ND = No data listed.
[a] Beginning 1980, excludes Navy Reserve personnel on active duty for Training and Administration of Reserves (TARS). From 1969, the full-time Guard and Reserve.
[b] Includes cadets.
[c] Prior to 1980, includes Navy Reserve personnel on active duty for TARS.

Source: U.S. Bureau of the Census, 1995.

Table 2-15. Populations in Institutions and Other Group Quarters by Type of Group Quarters and State: 1990

[As of April 1]

REGION, DIVISION, AND STATE	Group quarters population, total [1]	INSTITUTIONALIZED PERSONS		College dormitories
		Total [2]	Nursing homes	
U.S. . .	**6,697,744**	**3,334,018**	**1,772,032**	**1,953,558**
Northeast. .	**1,510,088**	**713,335**	**399,329**	**540,689**
N.E	**445,031**	**179,333**	**119,646**	**198,866**
ME . . .	37,169	14,136	9,855	14,118
NH . . .	32,151	11,466	8,202	17,025
VT . . .	21,642	6,161	4,809	13,435
MA . . .	214,307	84,345	55,662	100,487
RI. . . .	38,595	14,801	10,156	18,898
CT . . .	101,167	48,424	30,962	34,903
M.A	**1,065,057**	**534,002**	**279,683**	**341,823**
NY . . .	545,265	267,122	126,175	165,925
NJ . . .	171,368	92,670	47,054	43,711
PA . . .	348,424	174,210	106,454	132,187
Midwest. . .	**1,598,620**	**852,419**	**544,650**	**557,270**
E.N.C . . .	**1,055,689**	**568,050**	**346,243**	**369,009**
OH . . .	261,451	152,331	93,769	88,785
IN. . . .	161,992	81,686	50,845	70,873
IL	286,956	149,842	93,662	86,777
MI. . . .	211,692	112,903	57,622	73,093
WI . . .	133,598	71,288	50,345	49,481
W.N.C. . .	**542,931**	**284,369**	**198,407**	**188,261**
MN . . .	117,621	63,279	47,051	39,280
IA	99,520	47,841	36,455	43,093
MO . . .	145,397	80,854	52,060	44,033
ND . . .	24,234	10,574	8,159	10,377
SD . . .	25,841	13,305	9,356	9,306
NE . . .	47,553	25,620	19,171	16,692
KS . . .	82,765	42,896	26,155	25,480
South	**2,294,420**	**1,145,986**	**558,382**	**615,791**
S.A	**1,243,962**	**577,690**	**270,930**	**322,299**
DE . . .	20,071	8,662	4,596	8,806
MD . . .	113,856	62,760	26,884	30,892
DC . . .	41,717	14,070	7,008	16,126
VA . . .	209,300	84,292	37,762	61,943
WV . . .	36,911	19,469	12,591	15,083
NC . . .	224,470	83,400	47,014	71,266
SC . . .	116,543	44,134	18,228	35,488
GA . . .	173,633	87,266	36,549	39,723
FL . . .	307,461	173,637	80,298	42,972
E.S.C . . .	**392,424**	**194,314**	**102,900**	**131,846**
KY . . .	101,176	47,609	27,874	30,600
TN . . .	129,129	65,389	35,192	43,683
AL . . .	92,402	51,583	24,031	28,859
MS . . .	69,717	29,733	15,803	28,704
W.S.C. . .	**658,034**	**373,982**	**184,552**	**161,646**
AR . . .	58,332	34,223	21,809	16,775
LA . . .	112,578	67,276	32,072	27,990
OK . . .	93,677	51,211	29,666	24,924
TX . . .	393,447	221,272	101,005	91,957
West	**1,294,616**	**622,278**	**269,671**	**239,808**
Mountain	**297,687**	**144,834**	**65,842**	**77,782**
MT . . .	23,747	11,125	7,764	6,195
ID. . . .	21,490	10,478	6,318	6,676
WY . . .	10,240	5,434	2,679	3,414
CO . . .	79,472	35,976	18,506	22,749
NM . . .	28,807	14,024	6,276	8,333
AZ . . .	80,683	41,508	14,472	18,459
UT . . .	29,048	12,739	6,222	10,156
NV . . .	24,200	13,550	3,605	1,800
Pacific . .	**996,929**	**477,444**	**203,829**	**162,026**
WA . . .	120,531	55,313	32,840	27,908
OR . . .	66,205	33,378	18,200	18,970
CA . . .	751,860	376,374	148,362	108,880
AK . . .	20,701	4,574	1,202	1,310
HI. . . .	37,632	7,805	3,225	4,958

[a] Includes persons in other types of group quarters not shown separately.
[2] Includes other institutionalized persons not shown separately.

Source: U.S. Bureau of the Census, 1995.

Table 2-16. Populations in Jail by Race and Detention Status: 1978 to 1994

[Excludes Federal and State prisons or other correctional institutions; institutions exclusively for juveniles; State-operated jails in Alaska, Connecticut, Delaware, Hawaii, Rhode Island, and Vermont; and other facilities that retain persons for less than 48 hours. As of June 30. For 1978 and 1988, data based on National Jail Census; for other years, based on sample survey and subject to sampling variability.]

CHARACTERISTIC	1978	1985	1988	1989	1990	1991	1992	1993	1994
Total inmates[a]	**158,394**	**256,615**	**343,569**	**395,553**	**405,320**	**426,479**	**444,584**	**459,804**	**490,442**
Total U.S. population (in thousands)[b]	222,585	238,466	245,021	247,342	249,911	252,643	255,407	258,120	260,651
Percent of total U.S. population	0.070	0.100	0.140	0.145	0.162	0.169	0.174	0.178	0.188
Male	148,839	235,909	313,158	356,050	368,002	386,865	403,768	415,700	441,219
Female	9,555	19,077	30,411	37,253	37,318	39,614	40,816	44,100	49,223
White[c]	89,418	151,403	166,302	201,732	186,989	190,333	191,362	239,500	255,800
Black[c]	65,104	102,646	141,979	185,910	174,335	187,618	195,156	214,100	227,000
Other races[c]	3,872	2,566	3,932	7,911	5,321	5,391	5,831	6,200	7,600
Hispanic[d]	16,349	35,926	51,455	55,377	57,449	60,129	62,961	69,200	75,500
Non-Hispanic	142,045	220,689	292,114	340,176	347,871	366,350	381,623	390,600	414,942
Adult[e]	156,783	254,986	341,893	393,303	403,019	424,129	441,781	455,500	NA
Awaiting arraignment or trial	77,453	127,059	175,669	204,291	207,358	217,671	223,840	228,900	NA
Convicted	75,438	123,409	166,224	189,012	195,661	206,458	217,940	226,600	NA
Juvenile[f]	1,611	1,629	1,676	2,250	2,301	2,350	2,804	4,300	NA

NA = Not available.

[a] For 1985, 1989-1994, includes juveniles not shown separately by sex, and for 1988 and 1990-1994 includes 31,356; 38,675; 43,138; 52,235; 66,249; and 90,058 persons, respectively, of unknown race not shown separately.

[b] Source: Table 2, U.S. Bureau of the Census, 1995.

[c] For 1993 and 1994, data are estimated and rounded to nearest 100.

[d] Hispanic persons may be of any race. Data for 1993 and 1994 are estimated and rounded to nearest 100.

[e] Includes inmates not classified by conviction status.

[f] Juveniles are persons whose age makes them initially subject to juvenile court authority although they are sometimes tried as adults in criminal court. In 1993, included juveniles who were tried as adults. In 1994, includes all persons under age 18.

Source: Adapted from U.S. Bureau of the Census, 1995.

Table 2-17. Number of inmates in State and Federal correctional facilities, by race and Hispanic origin, midyear 1995

Region and jurisdiction	Race and Hispanic origin of inmates						
	Total	White non-Hispanic	Black non-Hispanic	Hispanic	American Indian/ Alaska Native	Asian/ Pacific Islander	Unknown
U.S. total	1,023,572	363,918	488,222	147,365	10,519	8,436	5,112
Federal*	81,930	36,403	29,178	14,385	1,171	771	22
State	941,642	327,515	459,044	132,980	9,348	7,665	5,090
Northeast	150,794	38,893	74,310	35,349	1,140	584	518
Connecticut	14,758	3,783	6,930	3,986	18	41	0
Maine	1,460	1,385	35	19	17	4	0
Massachusetts	10,755	5,205	3,068	2,204	37	98	143
New Hampshire	2,200	1,661	94	148	2	7	288
New Jersey	19,387	3,640	12,407	3,224	5	30	81
New York	68,471	10,577	34,150	22,443	995	306	0
Pennsylvania	29,666	10,024	16,722	2,808	42	64	6
Rhode Island	3,068	1,663	865	496	12	32	0
Vermont	1,029	955	39	21	12	2	0
Midwest	188,155	80,120	98,307	7,325	1,648	410	345
Illinois	36,950	8,933	24,278	3,627	44	67	1
Indiana	14,475	8,036	6,031	344	50	14	0
Iowa	6,746	4,776	1,652	187	94	34	3
Kansas	6,844	3,588	2,701	395	106	54	0
Michigan	40,416	16,498	22,988	613	111	84	122
Minnesota	4,641	2,378	1,609	250	317	62	25
Missouri	18,330	9,176	8,860	237	39	17	1
Nebraska	2,880	1,619	926	222	110	3	0
North Dakota	677	491	25	31	129	1	0
Ohio	43,900	18,712	24,302	817	25	22	22
South Dakota	1,882	1,391	68	0	423	0	0
Wisconsin	10,414	4,522	4,867	602	200	52	171
South	401,309	130,894	233,420	32,717	1,518	635	2,125
Alabama	17,943	6,016	11,863	33	25	6	0
Arkansas	8,318	3,370	4,919	16	8	5	0
Delaware	4,618	1,460	3,010	143	0	3	2
District of Columbia	8,677	65	8,483	122	0	7	0
Florida	61,767	24,768	34,596	2,086	32	31	254
Georgia	30,058	9,608	20,071	291	42	33	13
Kentucky	9,958	6,065	3,739	33	2	8	111
Louisiana	16,206	4,353	11,804	45	2	2	0
Maryland	20,907	4,648	15,573	99	10	10	567
Mississippi	9,585	2,206	7,364	7	4	4	0
North Carolina	25,576	8,125	15,993	259	456	29	714
Oklahoma	14,809	7,655	5,715	493	904	42	0
South Carolina	18,329	5,447	12,772	63	20	5	22
Tennessee	13,008	6,299	6,546	37	9	5	112
Texas	116,732	31,846	55,129	28,983	0	444	330
Virginia	22,632	7,201	15,431	0	0	0	0
West Virginia	2,186	1,762	412	7	4	1	0
West	201,384	77,608	53,007	57,589	5,042	6,036	2,102
Alaska	3,132	1,512	425	107	1,022	46	20
Arizona	21,210	10,169	3,459	6,680	789	102	11
California	126,014	37,006	40,290	42,340	1,542	3,461	1,375
Colorado	8,117	3,636	2,101	2,144	171	54	11
Hawaii	3,312	729	171	74	45	1,894	399
Idaho	2,891	2,292	54	373	120	20	32
Montana	1,683	1,139	50	66	424	4	0
Nevada	7,289	4,143	2,067	892	102	85	0
New Mexico	3,991	1,114	491	2,217	162	7	0
Oregon	7,447	5,503	1,018	685	146	58	37
Utah	3,787	2,574	330	669	134	52	28
Washington	11,363	6,895	2,494	1,209	327	249	189
Wyoming	1,148	896	57	133	58	4	0

*The number of inmates of Hispanic origin is underreported. In 28 Federal facilities, the race but not Hispanic origin was reported for 21,563 inmates.

Source: Correctional Populations in the United States, 1995.

Table 2-18. Trends in Ratio of Males to Females by Age Group, 1950 to 1994, and Projections, 2000 and 2025
[Number of males per 100 females. Total resident population.]

Age (in years)	1950 (Apr. 1)	1960 (Apr. 1)	1970 (Apr. 1)	1980 (Apr. 1)	1990[a] (Apr. 1)	1994 (July 1)	Projections 2000 (July 1)	Projections 2025 (July 1)
All ages	98.6	97.1	94.8	94.5	95.1	95.4	95.7	96.3
Under 14 yrs	103.7	103.4	103.9	104.6	104.9	104.9	105.2	105.4
14 to 24 yrs	98.2	98.7	98.7	101.9	104.6	104.4	104.4	104.7
25 to 44 yrs	96.4	95.7	95.6	97.4	98.9	99.1	99.1	98.6
45 to 64 yrs	100.1	95.7	91.6	90.7	92.5	93.4	94.1	94.2
65 yrs and older	89.6	82.8	72.1	67.6	67.2	68.5	70.5	82.0

[a] The April 1, 1990, census count (248,718,291) includes count resolution corrections processed through March 1994 and does not include adjustments for census coverage errors.

Note: Ratios presented in this table are the value out of 100.

Source: U.S. Bureau of the Census, 1995.

Table 2-19. Trends in Resident Population by Race, 1980 to 1995, and Projections to 2050

[In thousands, except as indicated. These data are consistent with the 1980 and 1990 decennial enumerations and have been modified from the official census counts. Middle series [a] projections are included.]

Year	Total		White		Black		Hispanic		American Indian, Eskimo, Aleut		Asian, Pacific Islander	
	Population	Percent Distribu-tion	Population	Percent Distribu-tion	Population	Percent Distribu-tion	Population	Percent Distribu-tion.	Population	Percent Distribu-tion	Population	Percent Distribution
1980	227,225	100.0	195,185	85.89	26,771	11.78	14,869	6.54	1,433	0.63	3,837	1.68
1985	237,924	100.0	202,031	84.91	28,569	12.00	18,368	7.72	1,718	0.72	5,606	2.35
1990	249,402	100.0	209,180	83.87	30,599	12.27	22,549	9.04	2,073	0.83	7,550	3.03
1995	263,434	100.0	218,334	82.90	33,117	12.60	26,798	10.17	2,228	0.80	10,002	3.70
2000	276,241	100.0	226,267	81.90	35,469	12.80	31,166	11.28	2,390	0.90	13,140	4.40
2005	288,286	100.0	233,343	80.90	37,793	13.10	35,702	12.38	2,569	0.90	16,541	5.10
2010	300,431	100.0	240,297	80.00	40,224	13.40	40,525	13.48	2,773	0.90	20,200	5.70
2020	325,942	100.0	254,791	78.20	45,409	13.90	51,217	15.71	3,223	0.90	28,212	7.00
2030	349,993	100.0	267,457	76.40	50,596	14.50	62,810	17.94	3,729	1.00	37,271	8.10
2040	371,505	100.0	277,232	74.60	55,917	15.10	75,130	20.22	4,336	1.00	47,516	9.30
2050	392,031	100.0	285,591	72.80	61,586	15.70	88,071	22.46	5,039	1.10	58,930	10.30

[a] Middle series refers to projections using the middle range of fertility and mortality rates, e.g., lifetime births per 1,000 women = 1,800; life expectancy at birth = 81.2 years (Day, 1996).

Source: U.S. Bureau of the Census, 1995; Day, 1996.

Table 2-20. Trends in Resident Population by Region and Division: 1960 to 1994[For composition of divisions, see text section 2.4.]

Region	Division	Percent Distribution						Change in % Distribution
		1960	1970	1980	1985	1990	1994	
Northeast	New England	5.9	5.8	5.5	5.4	5.3	5.1	-0.8
	Middle Atlantic	19.1	18.3	16.2	15.6	15.1	14.6	-4.5
Midwest	East North Central	20.2	19.8	18.4	17.4	16.9	16.6	-3.6
	West North Central	8.6	8.0	7.6	7.3	7.1	7.0	-1.6
South	South Atlantic	14.5	15.1	16.3	16.9	17.5	17.8	+ 3.3
	East South Central	6.7	6.3	6.5	6.3	6.1	6.1	-0.6
	West South Central	9.5	9.5	10.5	11.0	10.7	10.9	+ 1.4
West	Mountain	3.8	4.1	5.0	5.4	5.5	5.8	+ 2.0
	Pacific	11.8	13.1	14.0	14.7	15.7	16.0	+ 4.2

Source: U.S. Bureau of the Census, 1995.

Table 2-21. Trends in Percent Distribution of Total U.S. Population Residing in Urban and Rural Areas: 1960 to 1990

Place of Residence	Percent Distribution of Total U.S. Population			
	1960	1970	1980	1990
Urban [a]	69.9	73.6	73.7	75.2
Rural [a]	30.1	27.4	27.3	24.8

[a] Definitions of urban and rural are provided in section 2.6.

Source: U.S. Bureau of the Census, 1995.

Table 2-22. Trends in Numbers of Public Aid Recipients and Average Monthly Cash Payments Under Supplemental Security Income (SSI) and Public Assistance: 1980 to 1993

[As of December, except as noted. Public assistance data for all years include Puerto Rico, Guam, and Virgin Islands; SSI data are for federally administered payments. Excludes payments made to suppliers of medical care.]

Program	Recipients (1,000)					Avg. Monthly Payments (dol.)				
	1980	1990	1991	1992	1993	1980	1990	1991	1992	1993
SSI, total	4,142	4,817	5,118	5,566	5,984	168	299	321	358	345
Aged	1,808	1,454	1,465	1,471	1,475	128	213	221	227	237
Blind	78	84	85	85	85	213	342	351	362	359
Disabled	2,256	3,279	3,569	4,010	4,424	198	337	361	407	381
Old-age assistance[a]	19	17	17	17	16	39	45	55	41	45
Aid to the blind[a]	Z	Z	Z	Z	Z	36	42	56	37	40
Aid to permanently, totally disabled[a]	21	26	27	28	28	35	40	58	40	41
AFDC:[b] Families	3,843	4,218	4,708	4,936	5,050	288	392	388	382	377
Recipients[c]	11,101	12,159	13,489	14,035	14,257	100	136	135	134	133
Children	7,599	8,208	9,104	9,471	9,598	NA	NA	NA	NA	NA
General assistance cases	796	1,060	1,078	979	971	161	NA	NA	NA	NA

NA = Not available.

Z = Fewer than 500.

[a] Average monthly recipients and payments for the year.
[b] Aid to Families with Dependent Children program.
[c] Includes the children and one or both parents, or one caretaker relative other than a parent, in families where the needs of such adults were considered in determining the amount of assistance.

Source: U.S. Bureau of the Census, 1995.

Table 2-23. Trends in Numbers of Public Aid Recipients as Percent of Total U.S. Population by State: 1990 to 1993

[Total recipients as of June of Aid to Families with Dependent Children and Federal Supplemental Security Income as percent resident population. Based on resident population as of April 1 for 1990 and as of July 1 for 1993.]

Division and State	1990	1993	Division and State	1990	1993
Total in US	**6.5**	**7.7**			
New England	5.6	6.9	WV	8.9	9.6
ME	6.6	7.6	NC	5.6	7.3
NH	2.2	3.4	SC	5.8	6.8
VT	5.7	7.0	GA	7.1	8.4
MA	6.4	7.7	FL	4.6	7.0
RI	6.4	8.3	East South Central	7.9	9.1
CT	4.7	6.2	KY	7.9	9.5
Middle Atlantic	6.7	8.0	TN	7.2	9.4
NY	7.7	9.6	AL	6.5	7.0
NJ	5.3	6.1	MS	11.4	11.3
PA	6.0	7.0	West South Central	6.2	6.9
East North Central	7.0	7.8	AR	6.3	6.6
OH	7.3	8.3	LA	9.8	9.9
IN	3.9	5.1	OK	5.6	6.2
IL	7.1	7.9	TX	5.4	6.3
MI	8.6	9.3	Mountain	4.2	5.3
WI	6.6	6.7	MT	4.9	5.6
West North Central	4.8	5.5	ID	2.7	3.2
MN	4.9	5.5	WY	3.8	5.0
IA	4.7	4.9	CO	4.3	4.8
MO	5.8	6.9	NM	5.8	8.3
ND	3.6	4.2	AZ	4.7	6.5
SD	4.2	4.5	UT	3.3	3.7
NE	3.7	4.2	NV	2.9	3.7
KS	4.1	4.7	Pacific	8.4	10.0
South Atlantic	5.4	7.0	WA	6.0	7.1
DE	4.4	5.3	OR	4.3	5.3
MD	5.1	5.9	CA	9.4	11.2
DC	10.9	15.0	AK	4.6	7.2
VA	3.9	4.8	HI	5.2	6.3

Source: U.S. Bureau of the Census, 1995.

Table 2-24. Trends in Immigration Rates: 1901 to 1993

[In thousands, except rate. For fiscal years ending in year shown. For definition of immigrants see text section 2.9. Data represent immigrants admitted. Rates based on U.S. Bureau of the Census estimates as of July 1 for resident population through 1929, and for total population thereafter (excluding Alaska and Hawaii prior to 1959).]

Period	Number of Immigrants (1,000)	Rate[a]
1901 to 1910	8,795	10.4
1911 to 1920	5,736	5.7
1921 to 1930	4,107	3.5
1931 to 1940	528	0.4
1941 to 1950	1,035	0.7
1951 to 1960	2,515	1.5
1961 to 1970	3,322	1.7
1971 to 1980	4,493	2.1
1981 to 1990	7,338	3.1
1991 to 1993	3,705	4.8

[a] Annual rate per 1,000 U.S. population. Rate computed by dividing sum of annual immigration totals for same number of years.

Source: U.S. Bureau of the Census, 1995.

Table 2-25. Trends in Percent Distribution of Active Duty Personnel by Year: 1950 to 1993

[In thousands]

Year	Total U.S. Population	U.S. Population on Active Duty	Percent Distribution
1950	152,271	1,459	0.958
1955	165,931	2,935	1.769
1960	180,671	2,475	1.370
1965	194,303	2,654	1.366
1970	205,052	3,065	1.495
1975	215,973	2,128	0.985
1980	227,726	2,051	0.900
1985	238,466	2,151	0.902
1990	249,911	2,044	0.818
1993	258,120	1,705	0.661

Source: Adapted from U.S. Bureau of the Census, 1995.

3. LOCATION OF RESIDENCE AS A FACTOR LEADING TO HIGHLY EXPOSED POPULATIONS

Some populations may experience greater potential exposures due to either the location or condition of their residence, or the ambient environment surrounding their residence. This chapter presents the issues that may effect populations living in or near:

- Waste management facilities,
- Inner cities,
- Urban areas,
- Coastal areas,
- Native American reservations or trust areas, and
- Major highways.

3.1. POPULATIONS LIVING NEAR WASTE MANAGEMENT FACILITIES

Populations residing or working near a variety of waste management facilities may experience exposures higher than those of the general population. Types of waste management facilities include solid waste disposal landfills, municipal waste incinerators, medical waste incinerators, and Superfund or Brownfields sites.

Exposure assessors are reminded that factors such as age, cumulative number of years an individual has lived in his or her residence, hours per day spent at one's residence, daily activities, and proximity to waste management facilities can influence the type, duration, and degree of contact with hazardous chemicals (ATSDR, 1996). Data quantifying populations living near waste management facilities may not be readily available; however, data can be generated on a case-by-case or site-specific basis. Information on solid waste landfills, municipal waste incinerators, medical waste incinerators, and other types of waste management facilities can be obtained from Envirofacts. (See Section 11 for a description.)

Information on hazardous waste sites may be obtained from EPA information gathered under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and its 1986 Superfund Amendments and Reauthorization Act (SARA). Especially useful is the Comprehensive Environmental Response, Compensation, and Liability Act Information System (CERCLIS) database that lists the approximately 40,000 hazardous waste sites to be screened by EPA for possible placement on the National Priorities List (NPL). The NPL lists inactive hazardous waste sites eligible for federally funded cleanup. Data on the number of NPL sites per

State in 1994 have been reported by the U.S. Bureau of the Census (1995) and are presented in Table 3-1. Information on locations of major industrial facilities (e.g., manufacturers/processors of steel, chemicals, concrete) is most readily available from trade associations concerned with the specific type of product. Estimates of emissions/releases of many hazardous pollutants to water, air, etc., are available from EPA-maintained databases, such as the Toxics Release Inventory (TRI). The Chemical Information System (CIS) contains information on specific chemical substances, including toxicological, carcinogenic, and environmental data. It also includes other EPA databases, such as ACQUIRE, CERCLIS, and RCRIS.

The U.S. Bureau of the Census is a major population database on size, distribution, and demographic characteristics of the Nation's population. These data can be used to help characterize populations near waste management facilities and other facilities that release chemicals into the environment. Population characteristics, such as sex, race, ethnicity, and household income can be determined from the census data. Population density within a selected proximity to a specific waste management facility can be estimated using the 1990 census data and tools such as a Geographic Information System (GIS). GIS maps can be produced that indicate the proximity of waste management facilities to nearby populations. Another source of demographic/economic information that can be used to characterize population groups are commercial marketing companies, which usually require a fee to provide information. For additional information sources in electronic format or on the Internet, please refer to information on accessing U.S. Bureau of the Census data in Section 11.

The following studies offer data that characterize the populations living near hazardous waste sites according to race/ethnicity and/or income. Some of the studies support the theory that hazardous waste sites are located in predominantly minority or low-income communities, while some do not. Table 3-2 provides a list of studies that evaluate populations living near hazardous waste sites. This table does not provide a complete listing of all sources available, but is presented to provide data sources with examples of various methodologies used to identify or quantify populations around hazardous waste sites. Most of the studies were developed or conducted to address issues of environmental justice. However, an assessor may find that the methodologies used may be useful for addressing population issues other than those related to environmental justice. It should be noted that studies that have been used to examine the residential proximity to a limited number of environmental hazards by race/ethnicity and socioeconomic status should be used with caution. The reader is directed to local, regional, State, and/or Federal agencies maintaining the types of data needed for a site-specific study. No overall conclusion is presented in this document. Two key studies on this issue are described below in

terms of their methodology, data source, conclusions, and limitations. The others are summarized in Table 3-2.

3.1.1. ATSDR Biennial Report to Congress 1991 and 1992 (ATSDR, 1996)

The National Research Council (NRC), using data from EPA, has estimated that approximately 41 million people live less than 4 miles from one or more of the Nation's 1,134 NPL sites. NRC also estimated that an average of 3,325 persons live within 1 mile of any given NPL site. The Agency for Toxic Substances and Disease Registry (ATSDR) conducted public health assessments in 1991 and 1992, and results showed that the number of people who are actually or potentially exposed to hazardous waste at a site can range from 0 to 735,000 people. The exposure of people living near hazardous waste sites can be affected by certain activities. For instance, activities such as children playing near the site and people eating fish and game animals exposed to site contaminants have been associated with an increased potential for exposure to certain contaminants. People living near hazardous waste sites are potentially exposed to multiple substances.

ATSDR, an agency of the U.S. Department of Health and Human Services (DHHS), provides information on effects of public health of hazardous substances in the environment. ATSDR data, documents, and toxicity information are accessible on the World Wide Web via the Internet. (See Section 11.)

3.1.2. Distribution of Industrial Air Emissions by Income and Race in the United States: An Approach Using the Toxics Release Inventory (Perlin et al., 1995)

This study examines several methodological approaches important in the planning and decision-making process relevant to facility emissions and their impact on health and risk to populations in the surrounding communities.

Perlin et al. (1995) conducted a national and regional comparison study to investigate the differences by ethnicity/race and household income using county-level air emissions of chemicals from certain industrial operations in the United States. This study made national and regional comparisons using emission estimates from the 1990 TRI, demographic data from the 1990 census, and 1990 income data from the Donnelley Marketing Information Services (DMIS). The 1990 census data (Public Law 94-171) were employed to enumerate the populations of all U.S. counties by race and ethnicity. The races were categorized as white, black, Native American, Asian or Pacific Islander (A/P), and "other" races, while Hispanic was categorized as an ethnic group. The 1990 DMIS estimates were based on projections from the 1980 Census, adjusting the

values whenever necessary using income data from the Internal Revenue Service and inflation data from the Consumer Price Index.

Table 3-3 presents the distribution of TRI facilities and racial/ethnic populations among EPA regions in 1990. Region 5 had the highest percentage of the Nation's white population (20%); Region 4 had the highest percentage of the black population (30%); Region 6 had the highest percentage of Native Americans (25%); and Region 9 had the highest percentage of Asian and Pacific Islanders (50%) and other races (44%), as well as the highest percentage of the Hispanic population (38%).

Perlin et al. (1995) stressed that residing in a county, Zip Code, or census tract with one or more potential sources of pollution (e.g., hazardous waste site, chemical plant) or with above-average pollutant emissions does not necessarily imply that residents are exposed to higher than average ambient concentrations of environmental agents. The study further states there may, in fact, be no direct relationship within a particular geographic unit of analysis between (1) the presence of potential sources and/or estimated contaminant releases to the environment and (2) actual ambient levels of pollution encountered by people living there (Perlin et al., 1995).

3.2. POPULATIONS LIVING IN THE INNER CITIES OF LARGE METROPOLITAN AREAS

The inner city is defined by researchers as the most densely populated, often older areas of a large metropolitan area, usually geographically located in the central part of the city. Tables 3-4 and 3-5 provide population data from the U.S. Bureau of the Census (1995) for large metropolitan areas nationwide. The population data are also available from the U.S. Bureau of the Census on the Internet. (See Section 11.) If more specific local data are needed, readers are referred to their State, local, and regional governmental agencies or to the U.S. Bureau of the Census population data for the specific study/assessment area. (See Section 11, Table 11-1.) Residing in the densely populated centers of metropolitan areas potentially may increase an individual's exposure to certain toxic agents. Residents of inner cities may have higher exposures to certain air pollutants that are more commonly found in large metropolitan areas. These problem air pollutants may include, for example, carbon monoxide and lead from automobile exhaust, ozone, particulates, and volatile organic compounds.

In addition, for economic reasons, the inner cities of large metropolitan areas may have a higher percentage of housing that generally is older and less well maintained. Individuals living in older homes (especially those in poor repair) may be more exposed to peeling paint, older and less efficient heating systems, lead water pipes, etc.

Inner cities, along with coastal, urban, rural, and Native American reservation or trust land areas, may each experience unique exposures related to the culture, resources, land use practices, or activities associated with that setting.

3.3. POPULATIONS LIVING IN URBAN AREAS

An urban area is defined by the U.S. Bureau of the Census as a place (city, town, village, borough, etc.) having more than 2,500 inhabitants, and an urbanized area is one or more places and the adjacent densely populated surrounding territory that together have a minimum population of 50,000 persons (U.S. Bureau of the Census, 1995). Any area not classified as urban is considered rural. If a specific contaminant is known to occur at higher levels in an urban environment (e.g., dioxins in air), these data can be used to obtain an estimation of the size of the urban population that potentially may be exposed. Table 3-6 presents the urban and rural population of the United States from 1960 to 1990 by region, division, and State. Full descriptions of divisions and regions are provided in Section 2.4 of this report.

3.4. POPULATIONS LIVING IN COASTAL AREAS

Populations living in coastal areas are defined by the U.S. Bureau of the Census as persons living in counties or equivalent areas with at least 15% of their total land in a coastal drainage area (U.S. Bureau of the Census, 1995). Information on coastal drainage areas is obtained from the National Oceanic and Atmospheric Administration (NOAA). Total coastal land area in the United States is more than 3.5 million square miles (U.S. Bureau of the Census, 1995), with major coastal areas existing in the Atlantic, Gulf of Mexico, Great Lakes, and Pacific regions. Populations living very near or in coastal areas may experience higher exposures to contaminants in air and water resulting from industries typically located there, such as petroleum refineries, chemical manufacturing plants, and import/export facilities. Table 3-7 presents the population living in the coastal counties of the United States from 1960 to 1994, along with the total land area of the coastal regions.

3.5. POPULATIONS LIVING ON NATIVE AMERICAN RESERVATIONS OR TRUST LANDS

Based on 1990 census data, the U.S. Bureau of the Census (1995) reports that a total of more than 800,000 persons either live on reservations and trust lands with 5,000 or more residents, or identify themselves as members of a Native American Tribe with 10,000 or more

members. Table 3-8 presents these data by Tribe. The total Native American population numbers include those not living on reservations or trust lands.

The Department of Health and Human Services (DHHS), through the Indian Health Service (IHS) of the Public Health Service, provides federally funded health services to Native Americans and Alaska Natives (U.S. DHHS, 1993). IHS estimates its service population by counting those individuals who have identified themselves in the previous official U.S. census as American Indian, Eskimo, or Aleut and reside on or near reservations or trust lands. IHS's estimates of current and projected service population numbers by area are provided in Figure 3-1. The IHS population, estimated at 1.33 million for 1994, increases at a rate of about 2.35% per year (U.S. DHHS, 1993).

As cited by IHS (U.S. DHHS, 1993), numerous factors contribute to increased risk for individuals living on Native American reservations or trust lands. Some factors increasing risk for this population are as follows:

- Lower median household income;
- High percentage living below the poverty level;
- Higher birth rate; and
- High mortality rate from tuberculosis, alcoholism, diabetes, accidents, homicide, suicide, and pneumonia and influenza.

3.6. POPULATIONS LIVING NEAR MAJOR HIGHWAYS

Data are not readily available on the numbers of individuals living near major (interstate) highways. The most likely sources of data are State and/or local transportation offices or regional/local governmental organizations. For instance, in the Washington, DC, metropolitan area, the Council of Governments (COG) suggested that population numbers of persons living in the DC area near major highways could be determined from information available at its information office. COG uses census data to determine population numbers of small geographic units (subdivisions of counties) within its jurisdiction, maps produced from these data, and maps indicating locations of major highways to determine the numbers of persons living in the DC area near major highways. An assessor could use the same approach as COG to estimate the specific population of concern.

Data are available from the U.S. Bureau of the Census (1995) on highway mileage for interstates and other roadways by State. These data are presented in Table 3-9. Information is also available for motor vehicle registrations and vehicle miles of travel by State as shown in Table 3-10. If an average population per highway mile or vehicle mile can be estimated or

assumed, a potential highly exposed population could be determined. Readers are again referred to their State, local, and regional governmental agencies.

3.7. REFERENCES

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Table 3-1. Hazardous Waste Sites on the National Priority List by State: 1994

State	Total Sites	Rank	Percent Distribution	Federal	Non-Federal
Total	1,296	NA	NA	160	1,136
United States	1,283	NA	100.0	158	1,125
Alabama	13	28	1.0	3	10
Alaska	8	42	0.6	6	2
Arizona	10	36	0.8	3	7
Arkansas	12	32	0.9	0	12
California	96	3	7.5	23	73
Colorado	18	22	1.4	3	15
Connecticut	16	25	1.2	1	15
Delaware	19	20	1.5	1	18
District of Columbia	0	NA	NA	0	0
Florida	58	6	4.5	5	53
Georgia	13	28	1.0	2	11
Hawaii	4	46	0.3	3	1
Idaho	10	37	0.8	2	8
Illinois	37	11	2.9	4	33
Indiana	33	12	2.6	0	33
Iowa	19	20	1.5	1	18
Kansas	10	37	0.8	1	9
Kentucky	20	19	1.6	1	19
Louisiana	14	27	1.1	1	13
Maine	10	37	0.8	3	7
Maryland	13	28	1.0	4	9
Massachusetts	30	13	2.3	8	22
Michigan	77	5	6.0	1	76
Minnesota	41	8	3.2	3	38
Mississippi	5	45	0.4	0	5
Missouri	23	17	1.8	3	20
Montana	9	41	0.7	0	9
Nebraska	10	37	0.8	1	9
Nevada	1	50	0.1	0	1
New Hampshire	17	24	1.3	1	16
New Jersey	108	1	8.4	6	102
New Mexico	11	34	0.9	2	9
New York	85	4	6.6	4	81
North Carolina	23	17	1.8	2	21
North Dakota	2	49	0.2	0	2
Ohio	38	10	3.0	5	33
Oklahoma	11	35	0.9	1	10
Oregon	13	28	1.0	2	11
Pennsylvania	102	2	8.0	6	96
Rhode Island	12	32	0.9	2	10
South Carolina	26	15	2.0	2	24
South Dakota	4	46	0.3	1	3
Tennessee	18	22	1.4	4	14
Texas	30	13	2.3	4	26
Utah	16	25	1.2	4	12
Vermont	8	42	0.6	0	8
Virginia	25	16	1.9	6	19
Washington	56	7	4.4	20	36
West Virginia	6	44	0.5	2	4
Wisconsin	40	9	3.1	0	40
Wyoming	3	48	0.2	1	2
Other areas					
Guam	2	NA	NA	1	1
Puerto Rico	9	NA	NA	1	8
Virgin Islands	2	NA	NA	0	2

NA = Not applicable.

Source: Adapted from U.S. Bureau of the Census, 1995.

Table 3-2. Sources of Data Used in Major Studies Concerning Populations Living Near Hazardous Waste Sites

Study [a]	Study Focus	Hazardous Waste Site [b] Data Source	Population Data Source
Anderton et al., 1994 (study conducted at Univ. of Mass., sponsored by grant from Waste Management Institute)	Census tracts nationwide 454 privately owned/operated TSDFs in 48 contiguous States that opened before 1990, were operating in census tract during 1980, and still in operation at time of study. "Surrounding area" = 2.5 mile radius from center of tract.	Environmental Institute's 1992 "Environmental Services Directory"	Census data; census tract level (authors define tract as ≈ 4,000 persons)
U.S. General Accounting Office, 1983	U.S. Congress requested local study of four hazardous waste facilities in EPA Region 4.	Four off-site landfills (not industrial facilities) in AL, NC, SC	Census data
Geschwind et al., 1992	Authors evaluated possible correlations between congenital malformations in newborns with mother's proximity to hazardous waste sites in NY State.	New York State's Hazardous Waste Site Inspection Program - 917 waste sites in 62 counties of NY State	New York State Dept. of Health's Congenital Malformations Registry for 1983 and 1984, which listed 34,411 cases of congenital malformations
Glickman et al., 1994	Evaluates relationship between location of manufacturing facilities releasing air toxins with socioecon. char. of communities for both communities with and without these facilities in Allegheny Co., PA (including Pittsburgh).	U.S. EPA's Toxic Release Inventory (TRI), 1990 emissions data	Socioeconomic and demographic data: 1990 census
Nieves and Nieves, 1992 (Authors from Argonne National Lab., Argonne, IL)	Facility types include: manufacturers of chemicals, petroleum products, plastics, rubber; pulp mills; smelters; incinerators; chemical weapons; radioactive waste disposal.	Potential air pollutants - 1985 National Acid Precipitation Assessment Program Inventory Commercial haz. waste - EPA's NPL list. Chemical weapon site data - Rouse, 1988. Radioactive waste sites - DOE 1991 Annual Report	1980 U.S. census data - 1983 County and City Data Book (county-level data; 3,109 counties in contiguous U.S.)
Perlin et al., 1995 (Authors with U.S. EPA)	Concerns environmental justice studies, discusses issues to address to strengthen scientific foundation of data. Evaluates nationwide TRI releases, Census data, income data	U.S. EPA's TRI, 1990 emissions estimates	Demographic data: 1990 Census Economic data: Donnelley Marketing Information Services [c]
Sosniak et al., 1994 (Authors from ATSDR and CDC, Atlanta, GA)	Evaluates possible correlation between low birth weight and mother's proximity to NPL sites. Mothers residing <1 mi of NPL were considered "exposed." Authors concluded merging large population data bases with environmental data is not an efficient method of evaluating low birth weight risks.	U.S. EPA's NPL list, 1990 Lat/Long of NPL site determined using EPA's 1987 Geographic Data File	Nationwide survey - 1988 National Maternal and Infant Health Survey (funded by ATSDR, National Center for Health Statistics) Postal Zip Codes determined for 17,407 mothers

Table 3-2. Sources of Data Used in Major Studies Concerning Populations Living Near Hazardous Waste Sites (continued)

Study [a]	Study Focus	Hazardous Waste Site [b] Data Source	Population Data Source
Stockwell et al., 1993	Characterizes releases of toxic chemicals using TRI data in southeastern U.S., by using geographic information system (GIS) mapping.	U.S. EPA's TRI, 1987 emissions data	Demographic data: 1980 census data
United Church of Christ, 1987 (Sponsored by United Church of Christ Commission for Racial Justice)	Nationwide study of 530 facilities and Zip Code areas. Facility site (vs. business address) identified with U.S. EPA's online Right to Know Network Facility Index Data System (FINDS).	U.S. EPA data compiled in "1992 Environmental Information Services Directory" by Environmental Information Ltd.	1990 census data updated to 1993 by marketing firm (Claritas, Inc.); 5-digit Zip code-level population data
Zimmerman, 1993	Distribution of NPL sites and socioeconomic characteristics of areas surrounding NPL sites are compared with national distribution/socioeconomic characteristics.	More than 800 inactive waste disposal sites on NPL	1990 census data; census tracts nationwide

[a] Complete citations are provided in the reference listing for this section.
[b] Facilities for treatment, storage, and disposal of hazardous wastes.
[c] Donnelley Marketing Information Services used 1980 census data, adjusting values using income data from the Internal Revenue Service and inflation data from the Consumer Price Index.

Table 3-3. Distribution of TRI Facilities and Racial/Ethnic Populations [a] Among EPA Regions in 1990

EPA Region	TRI Facilities [b]		Popula-tion [c]	White		Black		Native American [d]		A/P Islander [e]		Other Races [f]		Hispanic [g]	
	Number	Percent [c]	Percent [c]	Number [i] (x1,000)	Percent [c]	Number [j] (x1,000)	Percent [c]	Number [i] (x1,000)	Percent [c]	Number [i] (x1,000)	Percent [c]	Number [i] (x1,000)	Percent [c]	Number [i] (x1,000)	Percent [c]
I	1,528	7.0	13,208	12,033	6.0	628	2.1	33	1.7	232	3.2	282	2.9	568	2.5
II	1,671	7.6	25,721	19,516	9.8	3,896	13.0	78	4.0	966	13.3	1,265	12.9	1,954	13.2
III	2,033	9.3	25,917	21,146	10.6	4,011	13.4	49	2.5	464	6.4	247	2.5	575	2.6
IV	4,286	19.6	44,708	34,814	17.4	8,979	30.0	179	9.1	389	5.4	347	3.5	1,886	8.4
V	5,843	26.7	46,384	39,894	10.0	4,912	16.4	200	10.2	651	8.9	727	7.4	1,492	6.7
VI	2,072	9.5	28,218	21,288	10.7	3,959	13.2	484	24.7	421	5.8	2,066	21.1	5,118	22.9
VII	1,356	6.2	11,950	10,881	5.5	797	2.7	62	3.1	111	1.5	99	1.0	225	1.0
VIII	444	1.0	7,604	6,931	3.5	157	0.5	186	9.5	107	1.5	223	2.3	557	2.5
IX	1,981	9.1	35,734	24,869	12.5	2,425	8.1	470	24.0	3,624	49.8	4,346	44.3	8,582	38.4
X	650	3.0	9,264	8,311	4.2	221	0.7	219	11.2	309	4.3	204	2.1	398	1.8
Total	21,864		248,708	199,683		29,985		1,960		7,274		9,806		22,355	
M/W [j]						0.15		0.01		0.04		0.05		0.11	

[a] Racial/ethnic subpopulation category definitions and counts are from the 1990 census, Public Law 94-171.
[b] Total number of TRI facilities in the region and as a percent of the total number of U.S. TRI facilities. Total number of TRIs in the United States is 21,864.
[c] Percent of the U.S. population of each racial/ethnic group that resides in the specified region.
[d] Native American includes Inuits and Aleuts.
[e] A/P Islander is Asian and Pacific Islanders.
[f] Other races include the remaining races that constitute the nonwhite population. On a racial basis, the Census Bureau divides the total U.S. population into whites, blacks, American Indians, Asian or Pacific Islanders, and other races. On an ethnic basis, the Census Bureau divides the total United States population into people of Hispanic or non-Hispanic origin. Population counts by race do not distinguish between individuals of Hispanic and non-Hispanic origin. For example, a person identified as a white Hispanic would be counted as both white and Hispanic.
[g] Hispanics are counted separately as they are considered to be an ethnic population, not a race, and they are counted separately by the Census Bureau.
[h] For each region, the total U.S. population of all races (white, black, Native American, Asian and Pacific Islander, and other races).
[i] Total number of each racial/ethnic group residing in the specified region.
[j] Ratio of minority to white population for the United States.

Source: Perlin et al., 1995.

Table 3-4. Number and Population of Metropolitan Areas by Population Size-Class in 1990: 1980 to 1990

Level and Population Size-Class of Metropolitan Area in 1990	CMSAs and MSAs[a]				MSAs and PMSAs[a]		
			Population in 1990			Population in 1990	
	Number in 1990	Population in 1980 (mil.)	Total (mil.)	Percent in each class	Number in 1990	Total (mil.)	Percent in each class
Total, all metropolitan areas	**269**	**177.0**	**197.8**	**100**	**324**	**197.8**	**100**
Level A (1,000,000 or more)	40	118.7	132.9	67	51	118.7	60
2,500,000 or more	15	84.3	94.1	48	13	58.2	29
1,000,000 to 2,499,999	25	34.4	38.8	20	38	60.5	31
Level B (250,000 to 999,999)	96	41.2	46.4	23	119	56.9	29
500,000 to 999,999	33	21.4	24.3	12	41	29.4	15
250,000 to 499,999	63	19.8	22.0	11	78	27.5	14
Level C (100,000 to 249,999)	110	15.2	16.6	8	130	20.1	10
Level D (less than 100,000)	23	1.9	2.0	1	24	2.1	1

[a] [As of April 1. Data exclude Puerto Rico. CMSA = consolidated metropolitan statistical area. MSA = metropolitan statistical area. PMSA = primary metropolitan statistical area. Areas are as defined by the U.S. Office of Management and Budget, July 1, 1994.]

Source: U.S. Bureau of the Census, 1995.

Table 3-5. Metropolitan and Nonmetropolitan Population by States: 1980 to 1992

[As of April 1, except 1992, as of July. Metropolitan refers to 251 MSAs (metropolitan statistical areas) and 18 CMSAs (consolidated metropolitan statistical areas) as defined by the U.S. Office of Management and Budget, July 1, 1994. Nonmetropolitan is the area outside metropolitan areas. Minus sign (-) indicates decrease.]

REGION, DIVISION, AND STATE	METROPOLITAN POPULATION						NONMETROPOLITAN POPULATION					
	Total (1,000)			Percent change, 1980-92	Percent of State		Total (1,000)			Percent change, 1980-92	Percent of State	
	1980	1990	1992		1980	1992	1980	1990	1992		1980	1992
U.S.	**176,983**	**197,824**	**203,273**	**14.9**	**78.1**	**79.7**	**49,560**	**50,886**	**51,804**	**4.5**	**21.9**	**20.3**
Northeast	**44,047**	**45,455**	**45,698**	**3.7**	**89.6**	**89.4**	**5,090**	**5,354**	**5,423**	**6.5**	**10.4**	**10.6**
N.E	**10,470**	**11,127**	**11,095**	**6.0**	**84.8**	**84.1**	**1,878**	**2,080**	**2,101**	**11.8**	**15.2**	**15.9**
ME	405	443	441	9.0	36.0	35.7	721	785	795	10.4	64.0	64.3
NH	535	659	662	23.8	58.1	59.4	386	450	453	17.4	41.9	40.6
VT	133	152	154	15.9	26.0	27.0	378	411	417	10.2	74.0	73.0
MA	5,530	5,788	5,763	4.2	96.4	96.2	207	229	230	11.2	3.6	3.8
RI	886	938	937	5.8	93.5	93.6	61	65	64	5.1	6.5	6.4
CT	2,982	3,148	3,138	5.2	96.0	95.7	126	140	141	12.1	4.0	4.3
M.A	**33,576**	**34,328**	**34,603**	**3.1**	**91.3**	**91.2**	**3,212**	**3,274**	**3,322**	**3.4**	**8.7**	**8.8**
NY	16,144	16,515	16,613	2.9	91.9	91.7	1,414	1,475	1,497	5.9	8.1	8.3
NJ	7,365	7,730	7,820	6.2	100.0	100.0	(X)	(X)	(X)	(X)	(X)	(X)
PA	10,067	10,083	10,170	1.0	84.8	84.8	1,798	1,799	1,825	1.5	15.2	15.2
Midwest	**42,557**	**43,691**	**44,522**	**4.6**	**72.3**	**73.4**	**16,310**	**15,978**	**16,117**	**-1.2**	**27.7**	**26.6**
E.N.C.	**33,031**	**33,391**	**33,976**	**2.9**	**79.2**	**79.5**	**8,652**	**8,618**	**8,743**	**1.1**	**20.8**	**20.5**
OH	8,791	8,826	8,966	2.0	81.4	81.3	2,007	2,021	2,056	2.4	18.6	18.7
IN	3,885	3,962	4,052	4.3	70.8	71.6	1,605	1,582	1,606	(Z)	29.2	28.4
IL	9,461	9,574	9,757	3.1	82.8	84.0	1,967	1,857	1,856	-5.6	17.2	16.0
MI	7,719	7,698	7,799	1.0	83.3	82.7	1,543	1,598	1,635	5.9	16.7	17.3
WI	3,176	3,331	3,402	7.1	67.5	68.1	1,530	1,561	1,591	4.0	32.5	31.9
W.N.C	**9,526**	**10,300**	**10,546**	**10.7**	**55.4**	**58.8**	**7,658**	**7,360**	**7,374**	**-3.7**	**44.6**	**41.2**
MN	2,674	3,011	3,096	15.8	65.6	69.3	1,402	1,364	1,372	-2.2	34.4	30.7
IA	1,198	1,200	1,228	2.5	41.1	43.8	1,716	1,577	1,575	-8.2	58.9	56.2
MO	3,314	3,491	3,543	6.9	67.4	68.3	1,603	1,626	1,647	2.8	32.6	31.7
ND	234	257	263	12.4	35.9	41.6	418	381	371	-11.4	64.1	58.4
SD	194	221	231	19.1	28.0	32.6	497	475	478	-3.9	72.0	67.4
NE	728	787	809	11.1	46.4	50.6	842	791	791	-6.0	53.6	49.4
KS	1,184	1,333	1,374	16.1	50.1	54.6	1,180	1,145	1,141	-3.3	49.9	45.4
South	**53,724**	**63,190**	**65,564**	**22.0**	**71.3**	**74.3**	**21,643**	**22,256**	**22,621**	**4.5**	**28.7**	**25.7**
S.A	**28,226**	**34,294**	**35,599**	**26.1**	**76.4**	**78.9**	**8,732**	**9,273**	**9,493**	**8.7**	**23.6**	**21.1**
DE	496	553	571	15.1	83.5	82.7	98	113	120	22.3	16.5	17.3
MD	3,920	4,439	4,563	16.4	93.0	92.8	297	343	354	19.1	7.0	7.2
DC	638	607	585	-8.3	100.0	100.0	(X)	(X)	(X)	(X)	(X)	(X)
VA	3,966	4,773	4,954	24.9	74.2	77.5	1,381	1,414	1,440	4.3	25.8	22.5
WV	796	748	756	-5.0	40.8	41.8	1,155	1,045	1,053	-8.8	59.2	58.2
NC	3,749	4,376	4,535	21.0	63.8	66.3	2,131	2,253	2,301	8.0	36.2	33.7
SC	2,114	2,423	2,514	18.9	67.8	69.8	1,006	1,064	1,089	8.2	32.2	30.2
GA	3,507	4,352	4,587	30.8	64.2	67.7	1,956	2,127	2,186	11.8	35.8	32.3
FL	9,039	12,023	12,532	38.7	92.7	93.0	708	915	950	34.2	7.3	7.0
E.S.C.	**8,147**	**8,662**	**8,916**	**9.4**	**55.5**	**57.4**	**6,519**	**6,515**	**6,615**	**1.5**	**44.5**	**42.6**
KY	1,735	1,780	1,820	4.9	47.4	48.5	1,925	1,906	1,934	0.5	52.6	51.5
TN	3,045	3,298	3,404	11.8	66.3	67.7	1,546	1,579	1,621	4.9	33.7	32.3
AL	2,560	2,710	2,788	8.9	65.7	67.4	1,334	1,331	1,349	1.1	34.3	32.6
MS	806	874	904	12.2	32.0	34.6	1,715	1,699	1,711	-0.2	68.0	65.4
W.S.C	**17,351**	**20,235**	**21,048**	**21.3**	**73.1**	**76.4**	**6,392**	**6,468**	**6,513**	**1.9**	**26.9**	**23.6**
AR	963	1,040	1,071	11.2	42.1	44.7	1,323	1,311	1,323	(Z)	57.9	55.3
LA	3,125	3,160	3,210	2.7	74.3	75.0	1,082	1,060	1,069	-1.2	25.7	25.0
OK	1,724	1,870	1,927	11.7	57.0	60.1	1,301	1,276	1,278	-1.8	43.0	39.9
TX	11,539	14,166	14,840	28.6	81.1	83.9	2,686	2,821	2,842	5.8	18.9	16.1
West	**36,655**	**45,487**	**47,490**	**29.6**	**84.9**	**86.1**	**6,516**	**7,299**	**7,643**	**17.3**	**15.1**	**13.9**
Mountain	**7,645**	**9,605**	**10,155**	**32.8**	**67.2**	**70.6**	**3,726**	**4,054**	**4,225**	**13.4**	**32.8**	**29.4**
MT	189	191	197	4.6	24.0	24.0	598	608	625	4.5	76.0	76.0
ID	257	296	320	24.4	27.2	30.0	687	711	746	8.6	72.8	70.0
WY	141	134	138	-1.8	29.9	29.7	329	319	327	-0.7	70.1	70.3
CO	2,326	2,686	2,832	21.7	80.5	81.8	563	608	632	12.3	19.5	18.2
NM	675	842	886	31.3	51.8	56.0	628	673	696	10.7	48.2	44.0
AZ	2,264	3,106	3,244	43.3	83.3	84.7	453	559	588	29.9	16.7	15.3
UT	1,128	1,336	1,403	24.4	77.2	77.5	333	387	408	22.6	22.8	22.5
NV	666	1,014	1,134	70.3	83.2	84.8	135	188	203	50.5	16.8	15.2
Pacific	**29,010**	**35,882**	**37,335**	**28.7**	**91.2**	**91.6**	**2,790**	**3,245**	**3,418**	**22.5**	**8.8**	**8.4**
WA	3,366	4,036	4,270	26.8	81.5	83.0	766	830	873	14.0	18.5	17.0
OR	1,799	1,985	2,081	15.7	68.3	70.0	834	858	890	6.7	31.7	30.0
CA	22,907	28,799	29,875	30.4	96.8	96.7	760	961	1,021	34.3	3.2	3.3
AK	174	226	246	41.0	43.4	41.8	227	324	342	50.3	56.6	58.2
HI	763	836	863	13.2	79.0	74.7	202	272	293	44.8	21.0	25.3

X Not applicable. Z Less than 0.05 percent.

Source: U.S. Bureau of the Census, 1995.

Table 3-6. Resident Urban and Rural U.S. Population, 1960 to 1990, and by State
[In thousands, except percent. As of April 1.]

Region, Division, and State	Total	Urban		Rural
		Number	Percent	
1960	179,323	125,269	69.9	54,054
1970	203,212 [a]	149,647	73.6	53,565
1980	226,546 [b]	167,051	73.7	59,495
1990, Total	248,710	187,053	75.2	61,656
Northeast	50,809	40,092	78.9	10.717
New England	13,207	9,829	74.4	3,378
ME	1,228	548	44.6	680
NH	1,109	566	51.0	544
VT	563	181	32.2	382
MA	6,016	5,070	84.3	947
RI	1,003	863	86.0	140
CT	3,287	2,602	79.1	686
Middle Atlantic	37,602	30,263	80.5	7,340
NY	17,990	15,164	84.3	2,826
NJ	7,730	6,910	89.4	820
PA	11,882	8,188	68.9	3,693
Midwest	59,669	42,774	71.7	16,894
East North Central	42,009	31,074	74.0	10,935
OH	10,847	8,039	74.1	2,808
IN	5,544	3,598	64.9	1,946
IL	11,431	9,669	84.6	1,762
MI	9,295	6,556	70.5	2,739
WI	4,892	3,212	65.7	1,680
West North Central	17,660	11,700	66.3	5,959
MN	4,375	3,056	69.9	1,319
IA	2,777	1,683	60.6	1,094
MO	5,117	3,516	68.7	1,601
ND	639	340	53.3	298
SD	696	348	50.0	348
NE	1,578	1,044	66.1	534
KS	2,478	1,713	69.1	765
South	85,446	58,656	68.6	26,790
South Atlantic	43,567	30,231	69.4	13,336
DE	666	487	73.0	180
MD	4,781	3,888	81.3	893
DC	607	607	100.0	--
VA	6,187	4,293	69.4	1,894
WV	1,793	648	63.1	1,145
NC	6,629	3,338	50.4	3,291
SC	3,487	1,905	54.6	1,581
GA	6,478	4,097	63.2	2,381
FL	12,938	10,967	84.8	1,971
East South Central	15,176	8,531	56.2	6,646
KY	3,685	1,910	51.8	1,775
TN	4,877	2,970	60.9	1,907
AL	4,041	2,440	60.4	1,601
MS	2,573	1,211	47.1	1,362
West South Central	26,703	19,894	74.5	6,808
AR	2,351	1,258	53.5	1,093
LA	4,220	2,872	68.1	1,348
OK	3,146	2,130	67.7	1,015
TX	16,987	13,635	80.3	3,352
West	52,786	45,531	86.3	7,255
Mountain	13,659	10,881	79.7	2,777
MT	799	420	52.5	379
ID	1,007	578	57.4	429
WY	454	295	65.0	159
CO	3,294	2,716	82.4	579
NM	1,515	1,106	73.0	409
AZ	3,665	3,207	87.5	458
UT	1,723	1,499	87.0	224
NV	1,202	1,061	88.3	140
Pacific	39,127	34,650	88.6	4,477
WA	4,867	3,718	76.4	1,149
OR	2,842	2,003	70.5	839
CA	29,760	27,571	92.6	2,189
AK	550	371	67.5	179
HI	1,108	986	89.0	122

-- Represents zero.
a The revised 1970 resident population count is 203,302,031; which incorporates changes due to errors found after tabulations were completed.
b Total population count has been revised since the 1980 census publications to 226,542,203.

Source: U.S. Bureau of the Census, 1995.

Table 3-7. U.S. Population Living in Coastal Counties: 1960 to 1994

Year	Total Land Area	Coastal Regions Populations (Millions)					Remainder of U.S.
		Total	Atlantic	Gulf of Mexico	Great Lakes	Pacific	
Land area in 1990 Unit = 1,000 sq. mi.	3,536	888	148	114	115	510	2,649
1960	179.3	94.5	44.5	8.4	23.7	17.9	84.8
1970	203.3	110.0	51.1	10.0	26.0	22.8	93.3
1980	226.5	119.8	53.7	13.1	26.0	27.0	106.7
1990	248.7	133.4	59.0	15.2	25.9	33.2	115.3
1994 (July)	260.3	138.5	60.7	16.3	26.4	35.1	121.8

Source: U.S. Bureau of the Census, 1995.

Table 3-8. Populations Living on Selected Reservations and Trust Lands and American Indian Tribes with 10,000 or More Persons: 1990
[In thousands, except percent. As of April 1.]

Reservation and Trust Lands With 5,000 or More American Indians, Eskimos, and Aleuts	Total population	American Indians, Eskimos, and Aleuts		American Indian Tribe	Number	Percent distribution
		Number	Percent of total			
All reservation and trust lands	808,163	437,431	54.1	American Indian population, total [b]	1,878,285	100.0
Navajo and Trust Lands, AZ-NM-UT	148,451	143,405	96.6	Cherokee	308,132	16.4
Pine Ridge and Trust Lands, NE-SD	12,215	11,182	91.5	Navajo	219,198	11.7
Fort Apache, AZ	10,394	9,825	94.5	Chippewa	103,826	5.5
Gila River, AZ	9,540	9,116	95.6	Sioux [c]	103,255	5.5
Papago, AZ	8,730	8,480	97.1	Choctaw	82,299	4.4
Rosebud and Trust Lands, SD	9,696	8,043	83.0	Pueblo	52,939	2.8
San Carlos, AZ	7,294	7,110	97.5	Apache	50,051	2.7
Zuni Pueblo, AZ-NM	7,412	7,073	95.4	Iroquois [d]	49,038	2.6
Hopi and Trust Lands, AZ	7,360	7,061	95.9	Lumbee	48,444	2.6
Blackfeet, MT	8,549	7,025	82.2	Creek	43,550	2.3
Turtle Mtn. and Trust Lands, ND-SD	7,106	6,772	95.3	Blackfoot	32,234	1.7
Yakima and Trust Lands, WA	27,668	6,307	22.8	Canadian and Latin American	22,379	1.2
Osage, OK [a]	41,645	6,161	14.8	Chickasaw	20,631	1.1
Fort Peck, MT	10,595	5,782	54.6	Potawatomi [d]	16,763	0.9
Wind River, WY	21,851	5,676	26.0	Tohono O'Odham	16,041	0.9
Eastern Cherokee, NC	6,527	5,388	82.5	Pima	14,431	0.8
Flathead, MT	21,259	5,130	24.1	Tlingit	13,925	0.7
Cheyenne River, SD	7,743	5,100	65.9	Seminole	13,797	0.7
				Alaskan Athabaskans	13,738	0.7
				Cheyenne	11,456	0.6
				Comanche	11,322	0.6
				Paiute	11,142	0.6
				Puget Sound Salish	10,246	0.5

[a] The Osage Reservation is coextensive with Osage County. Data shown for the reservation are for the entire reservation.
[b] Includes other American Indian Tribes, not shown separately.
[c] Any entry with the spelling "Siouan" was miscoded to Sioux in North Carolina.
[d] Reporting and/or processing problems have affected the data for this Tribe.
[e]

Source: U.S. Bureau of the Census, 1995.

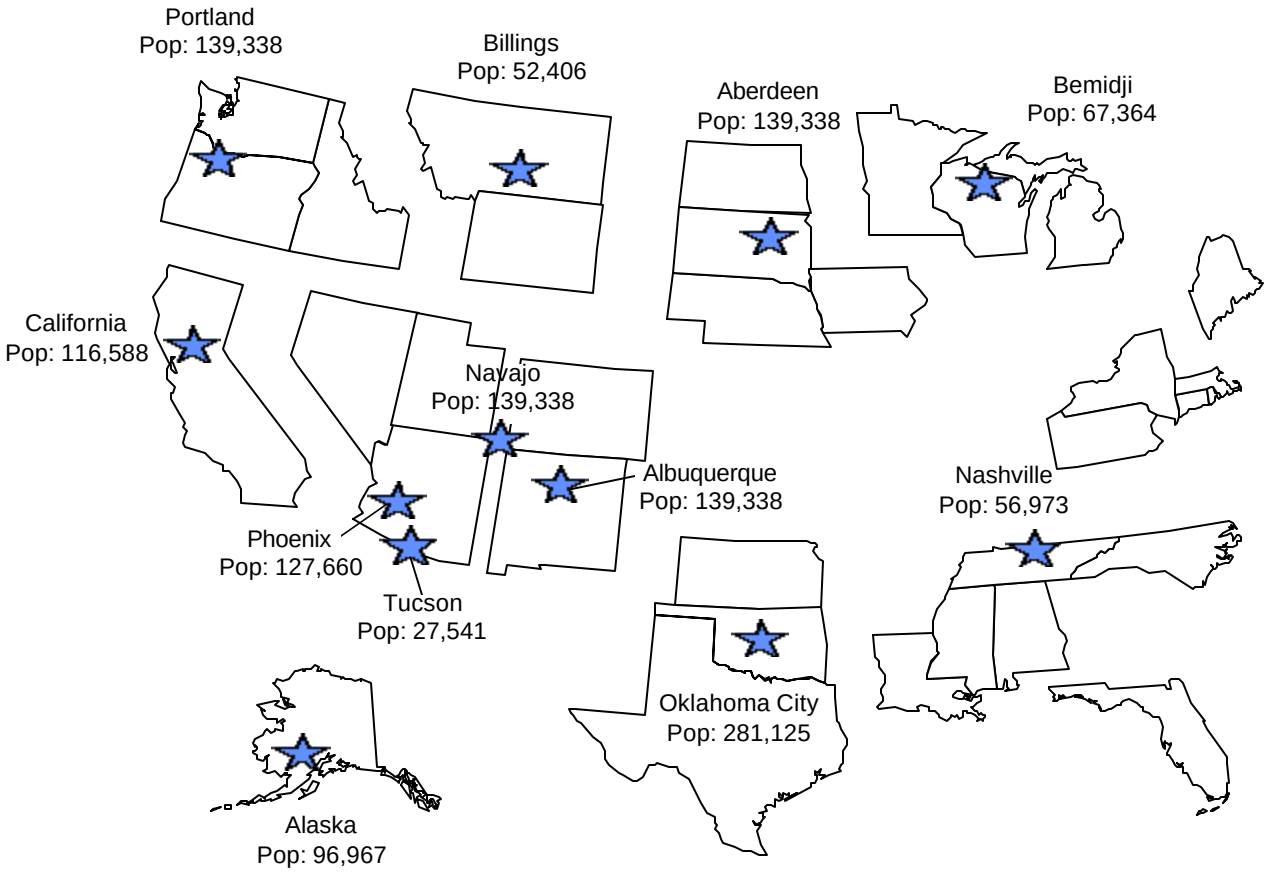

Figure 3-1. Indian Health Service Population: Area Offices and Populations Administered by Each Office.

LEGEND
★ IHS Area Office
NOTE: Texas is administered by the Nashville, Oklahoma City, and Albuquerque Area Offices

Source: U.S. DHHS, 1993.

Table 3-9. Highway Mileage--Functional Systems and Urban/Rural: 1993

[As of Dec. 31. For definition of urban, rural, see text section 2.4.]

STATE	FUNCTIONAL SYSTEMS					Urban	Rural
	Total	Interstate	Other arterial	Collector	Local		
U.S	**3,904,721**	**45,530**	**381,643**	**800,414**	**2,677,134**	**803,078**	**3,101,643**
AL	92,209	899	8,721	20,317	62,272	19,381	72,828
AK	13,849	1,087	1,516	2,487	8,759	1,742	12,107
AZ	55,763	1,189	4,813	8,974	40,787	16,340	39,423
AR	77,192	543	6,821	20,202	49,626	7,595	69,597
CA	169,201	2,423	28,157	32,531	106,090	81,061	88,140
CO	78,721	954	8,286	16,286	53,195	12,903	65,818
CT	20,357	343	2,969	3,145	13,900	11,543	8,814
DE	5,544	41	620	938	3,945	1,869	3,675
DC	1,107	14	280	157	656	1,107	-
FL	112,808	1,443	11,028	14,988	85,349	49,178	63,630
GA	110,879	1,243	13,109	23,084	73,443	26,274	84,605
HI	4,106	44	666	749	2,647	1,799	2,307
ID	58,835	611	3,539	9,695	44,990	3,416	55,419
IL	136,965	2,051	13,967	21,220	99,727	35,181	101,784
IN	92,374	1,138	8,059	22,605	60,572	19,262	73,112
IA	112,708	783	9,396	31,513	71,016	9,218	103,490
KS	133,256	871	9,282	33,006	90,097	9,580	123,676
KY	72,632	761	5,412	17,619	48,840	10,139	62,493
LA	59,599	871	5,331	12,524	40,873	13,766	45,833
ME	22,510	366	2,285	5,987	13,872	2,583	19,927
MD	29,313	482	3,778	4,980	20,073	13,671	15,642
MA	30,563	565	5,821	5,452	18,725	19,636	10,927
MI	117,659	1,240	12,250	26,033	78,136	28,174	89,485
MN	129,959	914	12,408	29,321	87,316	14,886	115,073
MS	72,834	685	7,007	15,519	49,623	7,904	64,930
MO	121,787	1,178	9,514	25,099	85,996	16,150	105,637
MT	69,768	1,190	6,014	16,459	46,105	2,380	67,388
NE	92,702	481	7,888	20,737	63,596	5,054	87,648
NV	45,778	545	2,784	4,899	37,550	4,597	41,181
NH	14,938	224	1,596	2,702	10,416	2,869	12,069
NJ	35,097	413	5,452	4,736	24,496	24,029	11,068
NM	60,812	998	4,524	6,758	48,532	5,851	54,961
NY	111,882	1,500	14,207	20,820	75,355	39,293	72,589
NC	96,028	970	9,125	17,905	68,028	21,723	74,305
ND	86,727	571	5,872	18,784	61,500	1,818	84,909
OH	113,823	1,573	10,323	23,062	78,865	31,568	82,255
OK	112,467	929	7,995	25,357	78,186	12,794	99,673
OR	96,036	727	6,820	18,385	70,104	10,028	86,008
PA	117,038	1,588	13,708	19,646	82,096	32,616	84,422
RI	6,057	70	929	864	4,194	4,723	1,334
SC	64,158	810	6,877	13,393	43,078	10,521	53,637
SD	83,305	678	6,084	19,482	57,061	1,860	81,445
TN	85,037	1,062	8,636	17,756	57,583	16,521	68,516
TX	294,142	3,234	28,883	61,741	200,284	79,132	215,010
UT	40,508	937	3,337	7,689	28,545	6,106	34,402
VT	14,166	320	1,320	3,111	9,415	1,324	12,842
VA	68,429	1,106	7,895	14,008	45,420	15,581	52,848
WA	79,428	763	7,574	16,778	54,313	17,218	62,210
WV	35,045	550	3,173	8,849	22,473	3,137	31,908
WI	110,978	638	11,925	21,458	76,957	15,591	95,387
WY	37,642	914	3,667	10,604	22,457	2,386	35,256

- Represents zero.

Source: U.S. Bureau of the Census, 1995.

Table 3-10. Motor Vehicle Registrations, 1990 to 1993, Vehicle Miles of Travel, 1993, and Drivers Licenses, 1993, by State

[In thousands, except as indicated. Motor vehicle registrations cover publicly, privately, and commercially owned vehicles. For uniformity, data have been adjusted to a calendar-year basis as registration years in States differ; figures represent net numbers where possible, excluding re-registrations and nonresident registrations.]

STATE	AUTOMOBILES, TRUCKS, AND BUSES [1]					1993				
	1990	1991	1992	1993		Motor-cycle [1] regis-tration (incl. official)	Public road and street mileage (1,000 mi.)	Vehicle miles of travel		Drivers licenses
				Total	Auto mobiles (incl. taxis)			Total (bil. mi.)	Per mile of road (1,000)	
U.S	**188,798**	**188,136**	**190,362**	**194,063**	**146,314**	**3,978**	**3,905**	**2,297**	**588**	**173,149**
AL	3,744	3,484	3,304	3,390	2,136	40	92	47.3	513	3,009
AK	477	471	486	489	310	12	14	3.9	283	438
AZ	2,825	2,849	2,801	2,892	2,068	73	56	39.2	702	2,624
AR	1,448	1,480	1,501	1,528	987	14	77	24.0	311	1,751
CA	21,926	22,253	22,202	22,824	17,301	587	169	266.4	1,575	20,123
CO	3,155	3,045	2,915	3,032	2,254	88	79	32.7	416	2,591
CT	2,623	2,589	2,569	2,594	2,456	37	20	27.0	1,326	2,180
DE	526	534	545	555	429	10	6	6.9	1,244	506
DC	262	246	256	264	250	2	1	3.5	3,148	361
FL	10,950	9,980	10,232	10,170	8,072	189	113	120.5	1,068	10,762
GA	5,489	5,714	5,899	5,632	3,960	55	111	78.4	707	4,613
HI	771	785	774	763	659	24	4	8.1	1,966	734
ID	1,054	1,055	1,034	1,023	636	32	59	11.5	195	770
IL	7,873	8,193	7,982	8,070	6,650	201	137	89.7	655	7,462
IN	4,366	4,414	4,516	4,670	3,414	96	92	60.5	655	3,791
IA	2,632	2,668	2,706	2,738	1,948	149	113	25.1	223	1,899
KS	2,012	1,879	1,921	1,922	1,264	53	133	24.1	181	1,774
KY	2,909	2,942	2,983	2,629	1,713	32	73	39.6	545	2,469
LA	2,995	3,046	3,094	3,166	2,010	35	60	36.4	610	2,577
ME	977	979	978	1,028	793	31	23	12.2	541	906
MD	3,607	3,630	3,689	3,560	2,957	41	29	43.3	1,478	3,274
MA	3,726	3,664	3,663	3,837	3,327	68	31	46.7	1,527	4,161
MI	7,209	7,245	7,311	7,399	5,731	137	118	85.7	728	6,527
MN	3,508	3,273	3,484	3,716	2,906	126	130	42.2	325	2,637
MS	1,875	1,887	1,954	2,000	1,526	28	73	26.9	369	1,640
MO	3,905	3,950	4,004	4,066	2,858	57	122	54.8	450	3,472
MT	783	766	907	939	555	22	70	8.7	125	531
NE	1,384	1,404	1,355	1,439	942	19	93	14.8	159	1,141
NV	853	881	921	937	632	20	46	11.6	254	976
NH	946	906	894	959	743	36	15	10.3	692	869
NJ	5,652	5,519	5,591	5,641	5,180	89	35	59.7	1,702	5,459
NM	1,301	1,320	1,352	1,421	856	31	61	18.9	312	1,148
NY	10,196	9,771	9,780	10,163	8,747	195	112	112.2	1,003	10,327
NC	5,162	5,216	5,307	5,365	3,841	64	96	69.5	724	4,725
ND	630	629	655	662	397	18	87	6.2	71	438
OH	8,410	8,685	9,030	9,279	7,483	233	114	97.0	852	7,635
OK	2,649	2,669	2,737	2,771	1,759	56	112	35.5	316	2,336
OR	2,445	2,507	2,583	2,624	2,001	61	96	28.4	295	2,373
PA	7,971	8,038	8,179	8,282	6,599	172	117	90.7	775	8,055
RI	672	628	622	695	589	20	6	7.2	1,193	675
SC	2,521	2,471	2,601	2,684	1,997	34	64	36.1	563	2,431
SD	704	702	720	808	485	26	83	7.4	89	507
TN	4,444	4,542	4,645	4,964	3,989	84	85	52.1	613	3,543
TX	12,800	12,697	12,767	13,118	8,881	144	294	167.6	570	11,876
UT	1,206	1,230	1,252	1,335	840	23	41	17.1	421	1,190
VT	462	447	465	483	362	17	14	6.0	422	431
VA	4,938	5,022	5,239	5,408	4,126	62	68	64.2	938	4,580
WA	4,257	4,404	4,466	4,413	3,123	109	79	46.1	581	3,699
WV	1,225	1,273	1,273	1,345	829	19	35	16.8	479	1,302
WI	3,815	3,685	3,735	3,815	2,460	197	111	49.2	443	3,502
WY	528	469	483	558	283	12	38	6.8	180	350

[1] Excludes vehicles owned by military services.

Source: U.S. Bureau of the Census, 1995.

4. RESIDENTIAL FACTORS AFFECTING EXPOSURE

Many characteristics of a person's primary residence can contribute to increased exposures to environmental contaminants. This section presents population data for persons residing in homes that have varying characteristics, including the following: age of home; resident's tenure (renter, owner, etc.); housing type (public housing, multiple unit, single-family, mobile home, etc.); type of heating and cooking fuel used; presence of attached garage; use of chemicals for pest control, lawn care, etc.; and presence of recreational pools or spas. Data on these housing characteristics are useful for conducting indoor air risk assessments. For example, in areas with high levels of radon in the soils, build-up of radon gas may become a problem in homes with basements. For homes with attached garages, carbon monoxide from automobile exhaust may be an exposure concern. In addition, chemicals used for pest prevention can pose an indoor air exposure risk to persons living in the homes. Persons living in dilapidated, older housing (built prior to the 1978 lead-based paint ban) or persons renovating such a home may be at increased risk of exposure to lead by deteriorating lead-based paint and the dust it generates. The housing characteristics addressed in this section are presented as useful supplemental data for conducting many types of indoor air quality risk assessments. Other useful data may be found in U.S. EPA (1997), the *Exposure Factors Handbook*, Chapter 11.

4.1. POPULATIONS IN HOMES WITH DIFFERENT CHARACTERISTICS

This section presents population data on persons residing in homes with the varying characteristics listed above.

4.1.1. American Housing Survey for the United States in 1993 (U.S. Bureau of the Census, 1993); Statistical Abstract of the United States (U.S. Bureau of the Census, 1997)

The U.S. Bureau of the Census conducted the American Housing Survey from July through December 1993. About 55,000 personal interviews were conducted nationally. Household information was obtained from occupants of the homes; landlords, rental agents, or knowledgeable neighbors provided information on vacant homes. Results obtained from this

national survey are presented in Tables 4-1 through 4-4. Table 4-1 presents the household composition of occupied housing units. Table 4-2 presents the income characteristics of occupied units. Table 4-3 presents data on construction of housing units and location of units. Table 4-4 presents the number of housing units that use various types of fuels for cooking and heating, which may affect indoor air. Table 4-5 presents housing characteristics (e.g., basements, year built, heating equipment) by tenure and region. Figure 4-1 illustrates the percentage of housing units that are occupied and vacant. Figure 4-2 presents a variety of selected features of occupied housing units.

4.1.2. Screening Young Children for Lead Poisoning (CDC, 1997)

The guidance on childhood lead screening was developed by CDC in consultation with the Advisory Committee on Childhood Lead Poisoning Prevention. Lead-based paint in homes is the most important remaining source of lead exposure for U.S. children. Of all homes built in the United States before 1978, a large amount (83%) still contain some lead-based paint (CDC, 1997). The older the house, the more likely it is to contain lead-based paint and to have a higher concentration of lead in the paint. Housing built before 1950 poses the greatest risk of exposure to children (CDC, 1997). Such housing is present in every State as shown in Table 4-6. The following Department of Housing and Urban Development (HUD) calculation is used to determine the number of affordable housing units that are likely to contain lead-based paint (HUD, 1990):

[(# units <1940 * 0.88) + (# units 1940-1960 * 0.92) + (# units 1961-1980 * 0.76)].

4.1.3. National Human Activity Pattern Survey (NHAPS) (Tsang and Klepeis, 1996)

The National Human Activity Pattern Survey (NHAPS), conducted by EPA, is the largest and most current human activity pattern survey available (Tsang and Klepeis, 1996). Data for 9,386 respondents in the 48 contiguous States were collected via minute-by-minute 24-hour diaries between October 1992 and September 1994. The survey collected information on duration and frequency of selected activities. Demographic information was collected for each respondent to allow for statistical summaries to be generated according to specific subgroups of

the U.S. population (e.g., by gender, age, race, employment status, census region, season). The participants' responses were weighted according to geographic, socioeconomic, time/season, and other demographic factors to ensure that results were representative of the U.S. population. The weighted sample matches the 1990 census population for each gender, age group, and census region. In addition, the day-of-week and seasonal responses are distributed equally.

NHAPS data on the time spent in selected activities and the corresponding population participating in these activities are presented in the *Exposure Factors Handbook*, Section 14, Tables 14-19 through 14-92. For example, data are included on the number of persons who spend time either running, walking, standing, or in a vehicle; time spent in indoor and outdoor parking lots and garages; and number of persons working in circumstances where one may come in contact with soil, such as gardening. The reader is referred to the *Handbook* for further information obtained from NHAPS. Advantages of the NHAPS data set are that it is representative of the U.S. population for all ages, genders, and races, and it has been adjusted to be balanced geographically, seasonally, and for day/time. Table 4-7 presents the percentage of the general population living in homes with attached garages. The advantage of NHAPS is that the data were collected for a large number of individuals and are representative of the U.S. general population.

4.2. POPULATIONS WHO USE PESTICIDES AND CHEMICALS FOR LAWN/GARDEN AND POOL/SPA MAINTENANCE

Section 4.2.1 presents the available information on populations using home and garden pesticides and chemicals for lawn/garden and pool/spa maintenance. This information is useful in estimating number of people receiving residential exposure to certain household chemicals, such as insecticides, rodenticides, and fungicides. Section 4.2.2 presents data that can be used to estimate the number of people who might have residential exposure to chlorinated compounds used to treat and disinfect household pools and spas.

4.2.1. National Home and Garden Pesticide Use Survey (Whitmore et al., 1992)

The National Home and Garden Pesticide Use Survey (NHGPUS) was conducted for EPA during August and September 1990. The purpose was to collect data on the use of pesticides in and around homes in the United States. The study was designed as a national probability-based sample of households, with personal interviews conducted at the participants' residence. The target population in the survey was housing units in the conterminous United States occupied as primary residences (home where a person lives for half the year or more), excluding institutions, group quarters, military reservations, and Native American reservations (Whitmore et al., 1992). NHGPUS used the U.S. Bureau of the Census definition of a housing unit as a room or groups of rooms occupied or intended for occupancy as separate living quarters in which the occupants (1) live and eat separately from any other persons in the building and (2) have direct access from the outside of the building or through a common hall. A sample of 2,674 housing units was selected, and 2,447 housing units were eligible for the survey. Individuals representing a total of 2,078 housing units participated in the survey (a response rate of 84.9 percent) and provided information on frequency and types of pesticide use and where and how they were used. Because of the high response rate, the potential for nonresponse bias is low (Whitmore, et al., 1992). NHGPUS is based on a sample of 29 States and 60 counties. Tables 4-8, 4-9, and 4-10 present data collected in NHGPUS. An assessor can develop numerical estimates of potential exposed populations by multiplying the number of households presented in Tables 4-8 thru 4-12 by 2.65 persons/household as provided in the Bureau of Census (1997). Table 4-8 presents the selected characteristics of households in the target population, including urbanization, type of housing, private lawn and swimming pool present, and hot tub present. Table 4-9 presents the number of households that used pest control services and received written precautions in the year preceding the survey. Table 4-10 presents the number of households reporting major pest problems or experiencing pest problems that were treated by a household member in the previous year. Table 4-11 also presents number of households where pesticides were not stored securely and had children <5 years old living there. Table 4-12 provides information on the number of households using pesticides by type of pesticide and site of

application. Table 4-13 presents estimated percentage of households using pesticides by type of pesticide and site of application.

4.2.2. 1993 Pool and Spa Market Study (National Spa and Pool Institute, 1993)

The National Spa and Pool Institute (NSPI) is a trade association that provides market data to its members. The statistical information provided by NSPI in Tables 4-14 and 4-15 is an overview and was extrapolated from the National Spa and Pool Institute Pool and Spa Market Study. This publication is available from NSPI Publications (703) 838-0083 for $250.

The overview data are based on a household consumer survey. NSPI maintains a data base of households in selected U.S. geographic regions. Households were randomly selected, and the data were collected through mail surveys. From a total of 90,000 surveys mailed, 65,000 individuals responded: a response rate of 72%. Table 4-14 presents data for owners of residential pools, and Table 4-15 presents data for owners of residential spas. These data are presented by pool ownership. However, populations using pools/spas may be estimated conservatively by assuming one pool/spa per household and multiplying by the average number of persons per household using the U.S. Bureau of the Census data (2.65 persons/household in 1996) or by multiplying by number of persons per State, presented in Table 2-9.

4.3. REFERENCES

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Table 4-1. Household Composition--Occupied Units

[Numbers in thousands. **Consistent with the 1990 Census.** ... means not applicable or sample too small. - means zero or rounds to zero.]

	Characteristics	Total occupied units	Tenure		Housing unit characteristics				Household characteristics				
							Physical problems						
			Owner	Renter	New construction 4 yrs	Mobile homes	Severe	Moderate	Black	Hispanic	Elderly (65+)	Moved in past year	Below poverty level
1	**Population in housing units**	**246 395**	**166 725**	**79 670**	**14 099**	**14 142**	**5 058**	**11 604**	**29 884**	**22 117**	**35 396**	**40 482**	**36 899**
2	**Total**	**94 724**	**61 252**	**33 472**	**4 990**	**5 655**	**1 901**	**4 225**	**11 128**	**6 614**	**20 438**	**16 102**	**13 787**
	Persons												
3	1 person	22 989	11 353	11 636	759	1 403	590	1 145	3 024	985	8 984	4 165	4 550
4	2 persons	31 304	21 954	9 351	1 677	1 980	515	1 148	2 832	1 496	9 340	5 310	3 074
5	3 persons	16 306	10 651	5 655	1 023	995	266	701	2 242	1 357	1 368	3 007	2 291
6	4 persons	14 396	10 583	3 813	990	796	272	596	1 665	1 166	395	2 240	1 810
7	5 persons	6 272	4 432	1 840	381	327	139	367	801	863	202	884	1 093
8	6 persons	2 176	1 481	695	118	118	55	139	320	416	76	319	520
9	7 persons or more	1 280	798	482	42	36	64	129	244	331	73	176	448
10	**Median**	**2.3**	**2.4**	**2.0**	**2.6**	**2.2**	**2.2**	**2.3**	**2.4**	**3.1**	**1.6**	**2.2**	**2.3**
	Number of Single Children Under 18 Years Old												
11	None	59 295	38 448	20 848	2 651	3 462	1 200	2 404	5 861	2 833	19 558	9 400	7 302
12	1	14 780	9 357	5 423	933	1 007	237	674	2 273	1 356	558	2 931	2 169
13	2	13 194	8 903	4 291	959	758	255	587	1 759	1 226	206	2 396	2 118
14	3	5 210	3 344	1 865	341	323	115	341	777	747	78	937	1 305
15	4	1 578	876	703	90	91	54	136	279	305	19	316	564
16	5	454	230	225	11	16	23	50	119	99	14	88	212
17	6 or more	212	95	118	5	-	18	33	60	46	6	33	116
18	**Median**	**.5-**	**.5-**	**.5-**	**.5-**	**.5-**	**.5-**	**.5-**	**.5-**	**.8**	**.5-**	**.5-**	**.5-**
	Persons 65 Years Old and Over												
19	None	72 395	43 976	28 419	4 333	4 290	1 430	3 373	9 076	5 720	...	15 052	10 214
20	1 person	14 924	10 680	4 244	394	922	315	648	1 637	679	13 164	782	3 022
21	2 persons or more	7 405	6 596	809	263	442	155	204	415	215	7 274	268	551
	Age of Householder												
22	Under 25 years	4 789	605	4 184	234	385	101	343	738	521	...	2 997	1 418
23	25 to 29	8 215	2 863	5 351	695	667	182	414	1 100	901	...	3 252	1 341
24	30 to 34	10 984	5 658	5 326	844	693	215	531	1 396	984	...	2 779	1 446
25	35 to 44	21 797	14 224	7 573	1 437	1 147	415	1 047	2 767	1 733	...	3 596	2 718
26	45 to 54	16 376	12 368	4 008	759	837	285	641	1 844	1 016	...	1 778	1 729
27	55 to 64	12 125	9 766	2 359	447	660	272	464	1 459	764	...	817	1 805
28	65 to 74	11 456	9 264	2 193	350	689	223	452	1 071	411	11 456	529	1 566
29	75 years and over	8 981	6 503	2 478	224	578	206	333	754	285	8 981	355	1 764
30	**Median**	**46**	**51**	**37**	**40**	**44**	**46**	**43**	**43**	**40**	**74**	**33**	**45**
	Household Composition by Age of Householder												
31	2-or-more person households	71 735	49 899	21 836	4 231	4 252	1 311	3 080	8 104	5 629	11 454	11 937	9 236
32	Married-couple families, no nonrelatives	49 683	39 731	9 952	3 330	2 936	784	1 607	3 300	3 360	8 692	6 370	3 869
33	Under 25 years	1 327	355	972	104	205	25	86	81	181	...	769	227
34	25 to 29 years	3 835	1 969	1 866	489	434	51	163	227	472	...	1 356	351
35	30 to 34 years	5 969	4 099	1 869	571	380	102	233	438	567	...	1 237	445
36	35 to 44 years	12 717	10 215	2 502	1 040	655	187	442	927	903	...	1 579	950
37	45 to 64 years	17 142	15 224	1 918	822	748	261	454	1 194	959	...	1 122	1 287
38	65 years and over	8 692	7 868	824	305	513	158	229	433	278	8 692	306	608
39	Other male householder	7 765	3 856	3 910	411	495	161	476	925	792	861	2 139	879
40	Under 45 years	5 078	1 869	3 209	290	334	115	329	583	600	...	1 896	589
41	45 to 64 years	1 826	1 297	529	92	128	23	102	213	156	...	198	191
42	65 years and over	861	690	171	29	33	23	45	130	37	861	45	98
43	Other female householder	14 287	6 312	7 974	489	822	366	998	3 878	1 477	1 901	3 427	4 489
44	Under 45 years	8 654	2 455	6 199	337	507	228	657	2 520	1 013	...	2 927	3 295
45	45 to 64 years	3 732	2 358	1 374	116	228	83	214	941	365	...	438	803
46	65 years and over	1 901	1 500	402	37	87	55	127	417	99	1 901	62	391
47	1-person households	22 989	11 353	11 636	759	1 403	590	1 145	3 024	985	8 984	4 165	4 550
48	Male householder	9 421	3 873	5 548	346	610	330	587	1 461	471	1 941	2 222	1 340
49	Under 45 years	5 009	1 501	3 509	234	268	141	284	748	265	...	1 731	553
50	45 to 64 years	2 470	1 183	1 288	73	175	136	175	449	141	...	380	439
51	65 years and over	1 941	1 190	751	39	167	54	128	263	65	1 941	110	347
52	Female householder	13 569	7 480	6 089	413	793	260	557	1 563	514	7 043	1 943	3 210
53	Under 45 years	3 195	888	2 308	145	108	66	142	476	138	...	1 126	512
54	45 to 64 years	3 331	2 072	1 259	103	218	55	160	505	158	...	456	813
55	65 years and over	7 043	4 520	2 523	165	467	139	256	582	218	7 043	360	1 885
	Adults and Single Children Under 18 Years Old												
56	Total households with children	35 429	22 804	12 625	2 339	2 193	701	1 821	5 267	3 781	880	6 701	6 484
57	Married couples	24 155	18 270	5 885	1 905	1 476	404	958	1 963	2 343	334	3 721	2 331
58	One child under 6 only	3 665	2 333	1 333	380	298	59	146	276	384	45	976	306
59	One under 6, one or more 6 to 17	4 161	3 051	1 110	336	257	94	167	394	477	39	647	433
60	Two or more under 6 only	2 497	1 681	816	261	193	46	101	130	283	20	545	294
61	Two or more under 6, one or more 6 to 17	1 296	827	470	88	68	33	91	120	238	16	261	307
62	One or more 6 to 17 only	12 535	10 379	2 156	841	660	173	453	1 044	960	215	1 292	991
63	Other households with two or more adults	5 050	2 552	2 498	237	338	156	400	1 282	770	351	1 083	1 254
64	One child under 6 only	971	392	579	40	85	33	55	212	127	63	316	182
65	One under 6, one or more 6 to 17	774	352	422	44	38	38	65	191	149	44	157	241
66	Two or more under 6 only	371	155	216	20	18	8	44	92	60	21	136	128
67	Two or more under 6, one or more 6 to 17	296	138	158	17	33	7	36	105	60	14	57	159
68	One or more 6 to 17 only	2 638	1 515	1 123	115	165	70	200	683	376	209	417	545
69	Households with one adult or none	6 224	1 982	4 242	197	379	141	462	2 021	668	195	1 897	2 899
70	One child under 6 only	887	191	696	23	80	18	41	266	57	48	374	423
71	One under 6, one or more 6 to 17	911	201	710	23	57	34	72	330	101	8	323	529
72	Two or more under 6 only	459	51	408	9	28	14	30	215	64	-	209	365
73	Two or more under 6, one or more 6 to 17	336	30	306	2	13	15	55	176	72	-	123	292
74	One or more 6 to 17 only	3 630	1 510	2 121	140	203	59	264	1 034	373	139	868	1 290
75	Total households with no children	59 295	38 448	20 848	2 651	3 462	1 200	2 404	5 861	2 833	19 558	9 400	7 302
76	Married couples	25 930	21 720	4 210	1 445	1 471	390	673	1 376	1 111	8 379	2 717	1 572
77	Other households with two or more adults	10 374	5 377	4 997	447	587	220	587	1 459	738	2 196	2 517	1 180
78	Households with one adult	22 991	11 351	11 641	759	1 403	590	1 145	3 027	985	8 984	4 166	4 550

(continued on next page)

Table 4-1. Household Composition--Occupied Units (continued)

Total occupied units	In (P)MSAs: Central cities	In (P)MSAs: Suburbs	Outside (P)MSAs	Urban: Total	Urban: Outside (P)MSAs	Rural: Total	Rural: Suburbs	Rural: Outside (P)MSAs	Rural: Farm	Regions: Northeast	Regions: Midwest	Regions: South	Regions: West	
246 395	**74 483**	**118 716**	**53 196**	**177 356**	**18 966**	**69 039**	**34 322**	**34 230**	**4 060**	**48 676**	**59 413**	**84 284**	**54 022**	**1**
94 724	**29 838**	**44 060**	**20 826**	**69 090**	**7 741**	**25 633**	**12 368**	**13 085**	**1 423**	**18 906**	**23 031**	**32 936**	**19 850**	**2**
22 989	8 860	9 231	4 898	18 248	2 197	4 741	2 010	2 702	180	4 817	5 774	7 888	4 510	3
31 304	9 281	14 620	7 403	22 025	2 592	9 280	4 402	4 811	576	6 029	7 646	11 121	6 509	4
16 306	5 000	7 874	3 433	11 752	1 231	4 554	2 313	2 202	250	3 315	3 661	6 006	3 325	5
14 396	3 643	7 552	3 202	9 919	1 053	4 477	2 305	2 149	218	2 867	3 586	4 961	2 983	6
6 272	1 800	3 197	1 275	4 508	449	1 764	923	827	136	1 213	1 614	2 017	1 428	7
2 176	703	1 045	428	1 600	144	575	285	284	46	453	491	617	616	8
1 280	551	543	187	1 037	75	242	131	112	18	213	261	326	481	9
2.3	**2.2**	**2.4**	**2.2**	**2.2**	**2.1**	**2.4**	**2.4**	**2.3**	**2.4**	**2.3**	**2.3**	**2.3**	**2.3**	**10**
59 295	19 267	26 834	13 194	43 708	4 989	15 587	7 270	8 205	877	12 265	14 453	20 448	12 130	11
14 780	4 535	7 108	3 137	10 731	1 173	4 049	2 058	1 963	219	2 747	3 417	5 667	2 949	12
13 194	3 614	6 671	2 908	9 172	988	4 022	2 074	1 920	173	2 568	3 239	4 512	2 874	13
5 210	1 605	2 492	1 113	3 781	399	1 428	705	714	113	938	1 360	1 690	1 222	14
1 578	523	699	356	1 169	148	409	199	208	30	286	410	441	441	15
454	189	188	77	362	30	93	45	47	4	69	101	132	152	16
212	104	68	41	167	13	45	17	28	7	33	51	46	83	17
.5-	**.5-**	**.5-**	**.5-**	**.5-**	**.5-**	**.5-**	**.5-**	**.5-**	**.5-**	**.5-**	**.5-**	**.5-**	**.5-**	**18**
72 395	23 199	34 239	14 956	52 980	5 464	19 414	9 770	9 492	987	13 905	17 719	25 249	15 522	19
14 924	4 748	6 355	3 821	11 054	1 553	3 870	1 593	2 267	218	3 437	3 538	5 092	2 857	20
7 405	1 890	3 465	2 049	5 056	724	2 349	1 005	1 326	218	1 564	1 774	2 595	1 471	21
4 789	2 139	1 694	956	3 955	506	835	380	450	20	743	1 301	1 698	1 047	22
8 215	3 156	3 572	1 487	6 419	595	1 796	885	892	78	1 473	2 039	2 936	1 767	23
10 984	3 656	5 267	2 061	8 246	836	2 738	1 474	1 225	97	2 149	2 780	3 703	2 352	24
21 797	6 841	10 604	4 352	15 817	1 530	5 980	3 129	2 822	293	4 185	5 216	7 516	4 879	25
16 376	4 496	8 304	3 577	11 427	1 152	4 949	2 485	2 425	263	3 297	3 839	5 695	3 545	26
12 125	3 511	5 774	2 840	8 517	940	3 608	1 681	1 900	262	2 520	2 879	4 340	2 386	27
11 456	3 300	5 149	3 007	8 114	1 086	3 343	1 402	1 921	261	2 593	2 665	4 000	2 198	28
8 981	2 739	3 697	2 546	6 595	1 096	2 386	932	1 450	148	1 947	2 310	3 048	1 676	29
46	**44**	**46**	**49**	**45**	**49**	**48**	**46**	**50**	**53**	**48**	**45**	**46**	**45**	**30**
71 735	20 977	34 830	15 927	50 842	5 544	20 893	10 358	10 383	1 243	14 089	17 257	25 048	15 340	31
49 683	12 100	25 693	11 889	33 276	3 734	16 407	8 140	8 155	1 093	9 655	12 265	17 409	10 353	32
1 327	412	537	378	943	171	385	178	207	11	163	316	557	292	33
3 835	1 085	1 908	843	2 662	266	1 173	583	576	59	677	948	1 414	797	34
5 969	1 575	3 146	1 248	4 164	429	1 805	970	819	69	1 163	1 572	1 956	1 277	35
12 717	3 098	6 869	2 750	8 512	836	4 206	2 273	1 913	244	2 439	3 148	4 379	2 752	36
17 142	3 876	9 143	4 123	11 221	1 186	5 921	2 940	2 937	436	3 417	4 190	6 019	3 516	37
8 692	2 053	4 091	2 548	5 775	845	2 917	1 195	1 703	274	1 797	2 091	3 084	1 719	38
7 765	2 821	3 387	1 558	5 885	621	1 880	924	937	82	1 371	1 758	2 589	2 047	39
5 078	1 969	2 184	925	3 976	394	1 102	556	531	39	824	1 198	1 691	1 365	40
1 826	550	836	440	1 246	130	581	267	310	24	340	397	622	467	41
861	301	367	193	664	96	197	101	96	20	207	163	276	215	42
14 287	6 056	5 750	2 480	11 681	1 189	2 606	1 295	1 291	68	3 063	3 234	5 050	2 940	43
8 654	3 874	3 282	1 497	7 182	755	1 472	722	742	19	1 693	2 103	3 056	1 802	44
3 732	1 460	1 647	625	2 996	286	735	387	338	28	862	782	1 325	763	45
1 901	722	821	358	1 503	148	399	186	210	22	508	349	669	375	46
22 989	8 860	9 231	4 898	18 248	2 197	4 741	2 010	2 702	180	4 817	5 774	7 888	4 510	47
9 421	3 877	3 786	1 758	7 510	734	1 911	864	1 024	81	2 019	2 295	3 134	1 973	48
5 009	2 220	1 993	796	4 207	389	802	379	408	43	958	1 239	1 712	1 100	49
2 470	959	1 016	496	1 905	191	565	256	305	12	541	569	818	542	50
1 941	698	778	465	1 398	154	543	229	311	26	519	487	604	331	51
13 569	4 983	5 445	3 141	10 738	1 463	2 830	1 146	1 678	99	2 798	3 479	4 755	2 537	52
3 195	1 558	1 219	419	2 792	226	404	207	192	5	632	813	1 089	661	53
3 331	1 161	1 436	733	2 577	298	754	316	435	26	657	780	1 250	643	54
7 043	2 264	2 790	1 989	5 370	939	1 673	623	1 050	69	1 509	1 885	2 416	1 233	55
35 429	10 571	17 226	7 632	25 382	2 752	10 046	5 099	4 880	547	6 641	8 578	12 488	7 721	56
24 155	5 933	12 851	5 371	16 418	1 724	7 737	4 038	3 646	488	4 531	5 882	8 380	5 362	57
3 665	1 025	1 943	697	2 677	280	989	569	417	40	698	787	1 410	770	58
4 161	1 097	2 196	868	2 833	248	1 327	698	620	68	746	1 005	1 390	1 019	59
2 497	644	1 386	467	1 762	165	735	419	302	32	478	663	734	622	60
1 296	415	621	260	956	99	341	176	161	25	240	328	369	360	61
12 535	2 751	6 705	3 079	8 190	932	4 345	2 176	2 147	322	2 368	3 099	4 477	2 591	62
5 050	1 974	2 134	942	3 938	410	1 113	573	532	26	877	1 097	1 828	1 249	63
971	375	412	183	787	83	184	84	100	4	166	230	342	233	64
774	327	302	145	605	68	170	92	77	2	115	173	251	236	65
371	145	162	64	279	27	92	56	37	4	70	85	135	80	66
296	128	108	61	230	25	66	30	36	2	35	76	100	85	67
2 638	999	1 150	489	2 038	207	600	311	282	14	492	533	1 000	614	68
6 224	2 663	2 242	1 319	5 027	618	1 197	488	701	33	1 233	1 599	2 281	1 110	69
887	367	329	190	737	102	150	61	89	7	178	253	314	141	70
911	395	305	212	737	107	174	70	104	3	176	206	355	174	71
459	278	106	75	404	45	55	25	31	3	105	137	168	49	72
336	191	94	51	295	21	42	12	30	-	59	80	124	73	73
3 630	1 432	1 408	790	2 854	343	776	321	447	19	716	922	1 319	673	74
59 295	19 267	26 834	13 194	43 708	4 989	15 587	7 270	8 205	877	12 265	14 453	20 448	12 130	75
25 930	6 311	13 039	6 580	17 159	2 028	8 771	4 160	4 553	610	5 196	6 450	9 121	5 164	76
10 374	4 096	4 562	1 715	8 301	765	2 073	1 098	951	87	2 250	2 230	3 439	2 456	77
22 991	8 860	9 232	4 898	18 248	2 197	4 743	2 012	2 702	180	4 819	5 774	7 888	4 510	78

(continued on next page)

Table 4-1. Household Composition--Occupied Units (continued)

[Numbers in thousands. **Consistent with the 1990 Census.** ... means not applicable or sample too small. - means zero or rounds to zero.]

	Characteristics	Total occupied units	Tenure		Housing unit characteristics				Household characteristics				
							Physical problems						
			Owner	Renter	New construction 4 yrs	Mobile homes	Severe	Moderate	Black	Hispanic	Elderly (65+)	Moved in past year	Below poverty level
	Own Never Married Children Under 18 Years Old												
1	No own children under 18 years	62 445	40 455	21 990	2 734	3 649	1 277	2 626	6 717	3 243	20 305	9 876	8 014
2	With own children under 18 years	32 279	20 797	11 482	2 256	2 006	624	1 599	4 412	3 371	133	6 226	5 773
3	Under 6 years only	7 833	4 163	3 670	704	634	147	354	950	862	16	2 405	1 535
4	1	4 753	2 422	2 332	427	403	88	199	572	490	13	1 560	818
5	2	2 608	1 528	1 080	231	198	45	139	287	290	2	690	541
6	3 or more	472	214	258	46	33	14	16	91	82	-	155	176
7	6 to 17 years only	17 710	12 582	5 128	1 054	957	297	838	2 462	1 619	110	2 437	2 667
8	1	8 538	5 951	2 587	460	500	110	384	1 338	707	78	1 138	1 153
9	2	6 557	4 857	1 701	445	321	127	267	770	573	18	917	908
10	3 or more	2 615	1 774	840	148	136	59	187	354	339	13	383	605
11	Both age groups	6 736	4 051	2 685	499	414	181	407	999	890	7	1 384	1 571
12	2	3 169	1 951	1 218	265	202	81	125	446	280	5	700	494
13	3 or more	3 567	2 100	1 467	234	213	100	282	554	610	2	684	1 077
	Persons Other Than Spouse or Children[1]												
14	With other relatives	20 899	15 559	5 339	828	982	470	995	3 394	2 117	3 600	2 031	2 992
15	Single adult offspring 18 to 29	11 452	8 926	2 526	412	508	224	505	1 738	1 046	478	827	1 506
16	Single adult offspring 30 years of age or over	3 266	2 735	531	63	122	69	174	620	242	1 912	101	454
17	Households with three generations	2 189	1 505	684	71	108	60	149	511	326	309	233	486
18	Households with 1 subfamily	2 313	1 506	806	59	123	84	161	561	401	495	291	549
19	Subfamily householder age under 30	1 233	706	527	29	99	53	108	332	244	120	168	372
20	30 to 64	974	714	260	21	21	32	50	225	142	366	108	165
21	65 and over	106	86	19	9	2	-	3	5	14	8	15	13
22	Households with 2 or more subfamilies	102	66	35	-	9	7	2	25	41	17	14	37
23	Households with other types of relatives	7 156	4 780	2 376	374	372	198	406	1 439	934	1 375	1 036	1 207
24	With non-relatives	7 000	2 497	4 503	318	441	146	480	799	684	440	2 631	887
25	Co-owners or co-renters	2 739	513	2 226	103	105	38	160	253	237	83	1 440	302
26	Lodgers	4 385	1 201	3 184	223	231	88	308	435	428	158	1 887	419
27	Unrelated children, under 18 years old	959	491	469	25	77	19	55	138	104	128	242	223
28	Other non-relatives	1 748	942	806	87	143	39	134	237	193	164	440	296
29	One or more secondary families	606	257	349	30	57	9	45	67	87	25	213	94
30	2-person households, none related to each other	3 957	1 342	2 616	198	253	73	236	352	230	327	1 599	356
31	3-8 person households, none related to each other	676	129	547	30	11	11	58	56	67	28	311	120
	Years of School Completed by Householder												
32	No school years completed	328	140	188	7	21	24	46	46	169	134	58	177
	Elementary:												
33	less than 8 years	4 170	2 358	1 812	108	341	190	459	884	1 224	2 037	539	1 546
34	8 years	3 759	2 565	1 194	90	329	118	217	444	313	2 348	311	987
	High School:												
35	1 to 3 years	9 949	5 601	4 348	250	1 029	279	760	1 816	1 041	3 341	1 710	2 897
36	4 years	33 751	21 828	11 923	1 625	2 623	605	1 420	4 121	2 024	6 895	5 622	4 763
	College:												
37	1 to 3 years	18 955	12 020	6 935	1 097	880	356	720	2 175	1 019	2 696	3 729	2 068
38	4 years or more	23 812	16 740	7 072	1 812	433	329	603	1 642	825	2 987	4 133	1 348
39	**Median**	**12.9**	**12.9**	**12.8**	**14.1**	**12.4**	**12.6**	**12.4**	**12.6**	**12.3**	**12.3**	**13.0**	**12.3**
	Year Householder Moved Into Unit												
40	1990 to 1994	38 106	15 026	23 079	4 658	2 509	731	1 923	5 227	3 632	2 927	16 102	6 581
41	1985 to 1989	19 897	14 130	5 767	257	1 454	411	757	2 079	1 324	2 812	-	2 503
42	1980 to 1984	8 933	6 920	2 013	25	671	195	397	890	525	1 906	-	1 105
43	1975 to 1979	8 385	7 326	1 059	17	509	150	293	914	423	1 989	-	1 061
44	1970 to 1974	5 739	5 144	595	21	335	106	286	717	258	1 835	-	693
45	1960 to 1969	7 244	6 661	583	6	139	141	297	782	259	3 629	-	951
46	1950 to 1959	4 173	3 964	209	5	25	93	139	353	136	3 299	-	505
47	1940 to 1949	1 510	1 406	104	-	6	36	90	117	39	1 375	-	242
48	1939 or earlier	737	674	63	-	7	37	43	49	18	665	-	146
49	**Median**	**1988**	**1984**	**1990+**	**1990+**	**1989**	**1987**	**1989**	**1989**	**1990+**	**1973**	**1990+**	**1989**
	Household Moves and Formation in Last Year												
50	Total with a move in last year	19 490	6 684	12 806	1 916	1 310	337	1 046	2 634	1 975	1 272	16 102	3 715
51	Household all moved here from one unit	13 118	3 929	9 190	1 506	896	225	657	1 841	1 324	855	13 118	2 704
52	Householder of previous unit did not move here	2 729	462	2 268	159	149	69	164	551	276	66	2 729	784
53	Householder of previous unit moved here	10 029	3 374	6 655	1 307	710	147	463	1 222	1 016	765	10 029	1 836
54	Householder of previous unit not reported	360	93	267	40	37	9	29	67	32	24	360	85
55	Household moved here from two or more units	2 348	436	1 913	171	131	26	120	216	231	25	2 348	355
56	No previous householder moved here	617	81	536	47	61	2	26	46	55	4	617	100
57	1 previous householder moved here	447	58	389	21	28	14	15	48	29	5	447	54
58	2 or more previous householders moved here	1 052	247	806	89	32	9	56	77	124	14	1 052	142
59	Previous householder(s) not reported	232	50	182	14	10	-	22	44	23	2	232	60
60	Some already here, rest moved in	3 990	2 310	1 680	239	283	87	267	565	419	390	602	648
61	No previous householder moved here	1 413	750	663	49	106	38	129	240	214	105	159	261
62	1 or more previous householders moved here	2 032	1 241	791	161	149	43	86	224	147	234	431	259
63	Previous householder(s) not reported	545	319	226	30	29	6	52	100	58	51	12	128
64	Number of previous units not reported	33	9	23	-	-	-	3	13	2	2	33	7

[1]Figures may not add to total because more than one category may apply.

(continued on next page)

Table 4-1. Household Composition--Occupied Units (continued)

Total occupied units	In (P)MSAs: Central cities	In (P)MSAs: Suburbs	Outside (P)MSAs	Urban: Total	Urban: Outside (P)MSAs	Rural: Total	Rural: Suburbs	Rural: Outside (P)MSAs	Rural: Farm	Regions: Northeast	Regions: Midwest	Regions: South	Regions: West	
62 445	20 457	28 244	13 743	46 196	5 227	16 249	7 614	8 516	900	12 800	15 081	21 677	12 887	1
32 279	9 381	15 816	7 083	22 894	2 514	9 385	4 754	4 568	523	6 106	7 951	11 259	6 963	2
7 833	2 466	3 877	1 490	5 830	621	2 003	1 117	870	82	1 529	1 946	2 698	1 660	3
4 753	1 488	2 346	920	3 579	402	1 174	651	517	45	907	1 105	1 755	986	4
2 608	802	1 305	500	1 871	189	737	417	312	25	538	726	799	545	5
472	176	226	70	380	30	92	49	41	12	84	115	144	129	6
17 710	4 813	8 706	4 191	12 235	1 409	5 476	2 659	2 783	342	3 364	4 366	6 339	3 641	7
8 538	2 507	4 074	1 957	5 941	650	2 597	1 269	1 306	154	1 577	2 028	3 278	1 654	8
6 557	1 609	3 357	1 592	4 456	519	2 102	1 019	1 072	123	1 310	1 596	2 277	1 375	9
2 615	697	1 275	643	1 838	239	777	371	404	65	476	742	784	612	10
6 736	2 102	3 234	1 401	4 829	485	1 907	979	916	98	1 214	1 639	2 222	1 661	11
3 169	886	1 603	681	2 197	223	972	509	458	23	568	768	1 118	715	12
3 567	1 216	1 631	720	2 632	262	935	470	458	75	646	870	1 104	946	13
20 899	6 688	10 083	4 128	15 471	1 487	5 428	2 746	2 641	331	4 589	4 548	7 372	4 389	14
11 452	3 341	5 783	2 328	8 306	798	3 146	1 588	1 531	196	2 656	2 736	3 831	2 229	15
3 266	1 083	1 534	649	2 451	225	815	386	424	64	793	637	1 201	635	16
2 189	816	1 042	330	1 734	138	455	260	193	8	411	401	825	552	17
2 313	882	1 054	376	1 848	161	464	246	215	10	409	402	906	595	18
1 233	484	532	216	977	108	256	145	109	6	174	241	520	297	19
974	360	470	144	792	49	183	88	95	4	208	152	356	259	20
106	38	52	16	80	4	25	14	12	-	27	10	30	39	21
102	38	51	13	79	8	23	18	5	-	11	16	37	37	22
7 156	2 649	3 209	1 298	5 453	491	1 703	885	808	93	1 395	1 370	2 716	1 676	23
7 000	2 831	3 095	1 074	5 663	495	1 337	733	579	35	1 299	1 630	1 974	2 097	24
2 739	1 202	1 182	355	2 345	204	394	233	151	-	565	633	697	844	25
4 385	1 868	1 943	574	3 697	320	687	418	254	16	778	990	1 214	1 403	26
959	336	440	184	732	83	227	120	101	4	158	237	272	293	27
1 748	640	761	346	1 295	125	453	222	221	15	328	433	497	490	28
606	208	287	110	457	56	149	89	54	-	69	154	175	208	29
														30
3 957	1 665	1 726	566	3 261	285	697	401	282	23	731	967	1 132	1 128	
														31
676	343	263	70	609	45	67	40	24	2	153	127	180	216	
328	132	103	94	259	52	69	27	42	2	40	27	163	97	32
4 170	1 526	1 470	1 174	2 888	372	1 283	481	802	62	644	546	2 136	844	33
3 759	1 041	1 328	1 390	2 330	455	1 429	487	935	146	745	1 119	1 398	497	34
9 949	3 434	3 854	2 661	6 915	898	3 034	1 264	1 763	152	2 083	2 414	3 910	1 543	35
33 751	9 612	15 590	8 548	23 360	3 046	10 391	4 820	5 502	566	7 065	9 243	11 333	6 110	36
18 955	6 254	9 189	3 512	14 410	1 400	4 544	2 399	2 112	272	3 155	4 569	6 252	4 980	37
23 812	7 839	12 526	3 447	18 929	1 518	4 883	2 891	1 929	225	5 174	5 114	7 745	5 779	38
12.9	**12.9**	**13.0**	**12.6**	**12.9**	**12.7**	**12.7**	**12.8**	**12.5**	**12.6**	**12.8**	**12.8**	**12.8**	**13.6**	**39**
38 106	13 812	17 047	7 246	29 649	3 209	8 457	4 318	4 038	195	6 268	8 852	13 793	9 193	40
19 897	5 833	9 801	4 262	14 145	1 492	5 752	2 937	2 771	236	3 829	4 896	6 811	4 361	41
8 933	2 443	4 389	2 101	6 048	639	2 885	1 406	1 462	174	2 113	2 167	3 006	1 647	42
8 385	2 263	3 994	2 128	5 611	637	2 774	1 279	1 490	208	1 748	2 131	2 846	1 661	43
5 739	1 464	2 754	1 522	3 844	493	1 895	859	1 029	151	1 274	1 439	2 031	996	44
7 244	2 172	3 322	1 750	5 318	687	1 926	863	1 063	190	1 804	1 881	2 434	1 125	45
4 173	1 262	1 896	1 015	3 079	334	1 094	406	682	130	1 145	1 072	1 320	637	46
1 510	412	572	525	988	178	521	175	347	71	469	396	482	163	47
737	175	285	277	409	72	328	124	204	68	257	198	213	68	48
1988	**1989**	**1987**	**1986**	**1988**	**1988**	**1986**	**1987**	**1985**	**1977**	**1986**	**1987**	**1988**	**1989**	**49**
19 490	7 336	8 457	3 696	15 404	1 682	4 086	2 012	2 014	94	3 019	4 494	7 181	4 796	50
13 118	4 922	5 629	2 567	10 421	1 220	2 698	1 315	1 347	49	1 997	3 047	4 960	3 115	51
														52
2 729	1 157	1 083	490	2 298	271	431	204	219	8	470	656	997	605	
10 029	3 642	4 399	1 988	7 834	905	2 196	1 086	1 084	36	1 495	2 299	3 811	2 424	53
360	123	148	89	288	44	71	25	45	5	32	91	151	85	54
2 348	998	974	376	1 935	192	413	219	184	8	327	558	802	661	55
617	264	232	121	502	67	114	56	53	-	109	139	214	154	56
447	202	183	62	372	32	75	45	30	-	70	126	134	117	57
														58
1 052	428	467	157	879	77	173	88	80	6	121	242	342	348	
232	105	91	36	182	15	51	30	21	3	27	51	112	43	59
3 990	1 394	1 850	746	3 021	267	969	475	479	37	688	880	1 404	1 018	60
1 413	553	635	225	1 147	110	266	146	115	9	283	298	424	408	61
														62
2 032	642	979	410	1 457	123	575	277	288	16	339	444	745	503	
545	200	235	111	417	34	128	52	76	12	66	137	235	107	63
33	22	4	7	26	2	7	2	4	-	7	10	15	2	64

Source: U.S. Bureau of the Census, 1993.

Table 4-2. Income Charactristics - Occupied Units

[Numbers in thousands. **Consistent with the 1990 Census.** ... means not applicable or sample too small. - means zero or rounds to zero.]

	Characteristics	Total occupied units	Tenure		Housing unit characteristics				Household characteristics				
							Physical problems						
			Owner	Renter	New construction 4 yrs	Mobile homes	Severe	Moderate	Black	Hispanic	Elderly (65+)	Moved in past year	poverty level
1	**Total**	**94 724**	**61 252**	**33 472**	**4 990**	**5 655**	**1 901**	**4 225**	**11 128**	**6 614**	**20 438**	**16 102**	**13 787**
	Household Income												
2	Less than $5,000	5 497	2 346	3 151	93	357	249	512	1 491	543	1 154	1 223	5 497
3	$5,000 to $9,999	9 368	3 970	5 398	222	815	323	766	1 899	892	4 491	1 758	6 135
4	$10,000 to $14,999	8 642	4 503	4 138	202	820	230	633	1 308	770	3 547	1 666	1 628
5	$15,000 to $19,999	7 627	4 085	3 543	333	829	187	438	1 187	708	2 318	1 577	427
6	$20,000 to $24,999	7 837	4 352	3 485	276	646	168	386	964	709	1 964	1 603	75
7	$25,000 to $29,999	8 863	5 565	3 298	382	506	154	333	896	589	2 215	1 544	25
8	$30,000 to $34,999	6 398	4 096	2 302	376	482	112	209	598	418	1 152	1 160	-
9	$35,000 to $39,999	5 521	3 808	1 713	360	365	73	176	528	366	786	921	-
10	$40,000 to $49,999	9 507	6 936	2 571	630	407	121	262	776	565	937	1 484	-
11	$50,000 to $59,999	7 158	5 628	1 530	475	202	88	171	513	371	604	981	-
12	$60,000 to $79,999	8 740	7 310	1 430	753	164	98	199	562	371	588	1 136	-
13	$80,000 to $99,999	4 114	3 625	489	358	49	53	60	196	162	252	449	-
14	$100,000 to $119,999	2 231	2 027	203	204	2	12	29	89	64	167	253	-
15	$120,000 or more	3 222	3 001	221	325	11	33	51	121	86	264	347	-
16	**Median**	**29 734**	**37 244**	**20 725**	**43 969**	**20 048**	**18 960**	**17 303**	**18 649**	**22 775**	**17 216**	**25 724**	**6 138**
	As percent of poverty level:												
17	Less than 50 percent	5 604	2 200	3 404	87	368	269	551	1 661	654	707	1 354	5 604
18	50 to 99	8 183	3 186	4 997	205	730	286	829	1 894	1 139	2 624	1 848	8 183
19	100 to 149	10 033	5 219	4 814	318	988	304	637	1 474	1 044	3 813	1 879	...
20	150 to 199	9 009	5 301	3 709	409	821	184	506	1 203	802	2 861	1 552	...
21	200 percent or more	61 895	45 346	16 549	3 970	2 748	857	1 703	4 896	2 975	10 433	9 468	...
	Income of Families and Primary Individuals												
22	Less than $5,000	5 990	2 450	3 540	113	381	273	553	1 556	603	1 183	1 458	5 716
23	$5,000 to $9,999	9 870	4 043	5 827	232	867	340	832	1 956	959	4 539	2 023	6 028
24	$10,000 to $14,999	9 104	4 650	4 454	224	860	223	631	1 328	816	3 544	1 847	1 540
25	$15,000 to $19,999	7 821	4 138	3 683	330	827	191	460	1 221	709	2 307	1 685	409
26	$20,000 to $24,999	8 011	4 438	3 572	278	654	159	398	966	707	1 956	1 607	68
27	$25,000 to $29,999	8 953	5 618	3 335	405	487	154	328	884	590	2 215	1 541	25
28	$30,000 to $34,999	6 328	4 149	2 178	399	471	111	181	583	396	1 142	1 082	-
29	$35,000 to $39,999	5 403	3 837	1 566	363	343	73	150	500	338	789	852	-
30	$40,000 to $49,999	9 104	6 897	2 207	604	382	110	231	750	541	914	1 307	-
31	$50,000 to $59,999	6 780	5 525	1 255	472	181	78	159	475	342	595	824	-
32	$60,000 to $79,999	8 216	7 110	1 106	731	146	90	177	510	326	578	918	-
33	$80,000 to $99,999	3 916	3 518	397	343	44	53	49	194	142	250	423	-
34	$100,000 to $119,999	2 147	1 973	174	193	-	12	26	87	59	167	230	-
35	$120,000 or more	3 082	2 904	178	303	11	33	49	117	84	259	303	-
36	**Median**	**28 667**	**36 485**	**18 957**	**42 488**	**19 347**	**17 986**	**16 043**	**17 963**	**21 552**	**17 065**	**23 227**	**5 976**
	Income Sources of Families and Primary Individuals												
37	Wages and salaries	69 091	44 342	24 749	4 206	3 999	1 165	2 964	7 721	5 141	4 965	13 535	5 070
38	Wages and salaries were majority of income	61 755	38 985	22 770	3 879	3 608	1 044	2 644	7 055	4 744	2 529	12 574	4 107
39	2 or more people each earned over 20% of wages and salaries	23 264	17 422	5 842	1 734	1 278	359	783	2 258	1 867	692	3 685	579
40	Business, farm, or ranch	11 548	9 627	1 921	624	499	209	368	433	409	1 686	1 216	817
41	Social security or pensions	28 184	21 719	6 464	962	1 828	608	1 092	2 846	1 155	19 571	1 741	4 404
42	Interest	42 332	34 138	8 194	2 560	1 565	597	887	1 801	1 335	12 819	4 516	2 293
43	Stock dividend(s)	16 619	14 276	2 343	1 167	384	222	321	541	343	4 670	1 688	602
44	Rental income	11 493	7 614	3 879	587	367	185	503	851	762	1 974	2 584	810
45	With lodger(s)	4 385	1 201	3 184	223	231	88	308	435	428	158	1 887	419
46	Welfare or SSI	5 963	1 533	4 430	133	414	278	659	2 027	973	953	1 834	3 922
47	Alimony or child support	4 361	2 410	1 951	271	312	85	215	689	279	115	1 028	963
48	Other	13 112	8 226	4 886	660	986	305	726	1 573	1 022	1 621	2 283	1 917

(continued on next page)

Table 4-2. Income Characteristics - Occupied Units

[Numbers in thousands. **Consistent with the 1990 Census.** ... means not applicable or sample too small. - means zero or rounds to zero.]

	Characteristics	Total occupied units	Tenure		Housing unit characteristics				Household characteristics				
			Owner	Renter	New construction 4 yrs	Mobile homes	Physical problems: Severe	Physical problems: Moderate	Black	Hispanic	Elderly (65+)	Moved in past year	Below poverty level
1	**Total**	**94 724**	**61 252**	**33 472**	**4 990**	**5 655**	**1 901**	**4 225**	**11 128**	**6 614**	**20 438**	**16 102**	**13 787**
	Household Income												
2	Less than $5,000	5 497	2 346	3 151	93	357	249	512	1 491	543	1 154	1 223	5 497
3	$5,000 to $9,999	9 368	3 970	5 398	222	815	323	766	1 899	892	4 491	1 758	6 135
4	$10,000 to $14,999	8 642	4 503	4 138	202	820	230	633	1 308	770	3 547	1 666	1 628
5	$15,000 to $19,999	7 627	4 085	3 543	333	829	187	438	1 187	708	2 318	1 577	427
6	$20,000 to $24,999	7 837	4 352	3 485	276	646	168	386	964	709	1 964	1 603	75
7	$25,000 to $29,999	8 863	5 565	3 298	382	506	154	333	896	589	2 215	1 544	25
8	$30,000 to $34,999	6 398	4 096	2 302	376	482	112	209	598	418	1 152	1 160	-
9	$35,000 to $39,999	5 521	3 808	1 713	360	365	73	176	528	366	786	921	-
10	$40,000 to $49,999	9 507	6 936	2 571	630	407	121	262	776	565	937	1 484	-
11	$50,000 to $59,999	7 158	5 628	1 530	475	202	88	171	513	371	604	981	-
12	$60,000 to $79,999	8 740	7 310	1 430	753	164	98	199	562	371	588	1 136	-
13	$80,000 to $99,999	4 114	3 625	489	358	49	53	60	196	162	252	449	-
14	$100,000 to $119,999	2 231	2 027	203	204	2	12	29	89	64	167	253	-
15	$120,000 or more	3 222	3 001	221	325	11	33	51	121	86	264	347	-
16	**Median**	**29 734**	**37 244**	**20 725**	**43 969**	**20 048**	**18 960**	**17 303**	**18 649**	**22 775**	**17 216**	**25 724**	**6 138**
	As percent of poverty level:												
17	Less than 50 percent	5 604	2 200	3 404	87	368	269	551	1 661	654	707	1 354	5 604
18	50 to 99	8 183	3 186	4 997	205	730	286	829	1 894	1 139	2 624	1 848	8 183
19	100 to 149	10 033	5 219	4 814	318	988	304	637	1 474	1 044	3 813	1 879	...
20	150 to 199	9 009	5 301	3 709	409	821	184	506	1 203	802	2 861	1 552	...
21	200 percent or more	61 895	45 346	16 549	3 970	2 748	857	1 703	4 896	2 975	10 433	9 468	...
	Income of Families and Primary Individuals												
22	Less than $5,000	5 990	2 450	3 540	113	381	273	553	1 556	603	1 183	1 458	5 716
23	$5,000 to $9,999	9 870	4 043	5 827	232	867	340	832	1 956	959	4 539	2 023	6 028
24	$10,000 to $14,999	9 104	4 650	4 454	224	860	223	631	1 328	816	3 544	1 847	1 540
25	$15,000 to $19,999	7 821	4 138	3 683	330	827	191	460	1 221	709	2 307	1 685	409
26	$20,000 to $24,999	8 011	4 438	3 572	278	654	159	398	966	707	1 956	1 607	68
27	$25,000 to $29,999	8 953	5 618	3 335	405	487	154	328	884	590	2 215	1 541	25
28	$30,000 to $34,999	6 328	4 149	2 178	399	471	111	181	583	396	1 142	1 082	-
29	$35,000 to $39,999	5 403	3 837	1 566	363	343	73	150	500	338	789	852	-
30	$40,000 to $49,999	9 104	6 897	2 207	604	382	110	231	750	541	914	1 307	-
31	$50,000 to $59,999	6 780	5 525	1 255	472	181	78	159	475	342	595	824	-
32	$60,000 to $79,999	8 216	7 110	1 106	731	146	90	177	510	326	578	918	-
33	$80,000 to $99,999	3 916	3 518	397	343	44	53	49	194	142	250	423	-
34	$100,000 to $119,999	2 147	1 973	174	193	-	12	26	87	59	167	230	-
35	$120,000 or more	3 082	2 904	178	303	11	33	49	117	84	259	303	-
36	**Median**	**28 667**	**36 485**	**18 957**	**42 488**	**19 347**	**17 986**	**16 043**	**17 963**	**21 552**	**17 065**	**23 227**	**5 976**
	Income Sources of Families and Primary Individuals												
37	Wages and salaries	69 091	44 342	24 749	4 206	3 999	1 165	2 964	7 721	5 141	4 965	13 535	5 070
38	Wages and salaries were majority of income	61 755	38 985	22 770	3 879	3 608	1 044	2 644	7 055	4 744	2 529	12 574	4 107
39	2 or more people each earned over 20% of wages and salaries	23 264	17 422	5 842	1 734	1 278	359	783	2 258	1 867	692	3 685	579
40	Business, farm, or ranch	11 548	9 627	1 921	624	499	209	368	433	409	1 686	1 216	817
41	Social security or pensions	28 184	21 719	6 464	962	1 828	608	1 092	2 846	1 155	19 571	1 741	4 404
42	Interest	42 332	34 138	8 194	2 560	1 565	597	887	1 801	1 335	12 819	4 516	2 293
43	Stock dividend(s)	16 619	14 276	2 343	1 167	384	222	321	541	343	4 670	1 688	602
44	Rental income	11 493	7 614	3 879	587	367	185	503	851	762	1 974	2 584	810
45	With lodger(s)	4 385	1 201	3 184	223	231	88	308	435	428	158	1 887	419
46	Welfare or SSI	5 963	1 533	4 430	133	414	278	659	2 027	873	953	1 834	3 922
47	Alimony or child support	4 361	2 410	1 951	271	312	85	215	689	279	115	1 028	963
48	Other	13 112	8 226	4 886	660	986	305	726	1 573	1 022	1 621	2 283	1 917
	Amount of Savings and Investments												
49	Income of $25,000 or less	42 644	20 916	21 729	1 238	3 672	1 230	2 921	7 217	3 916	14 251	8 926	13 771
50	No savings or investments	23 377	8 517	14 860	641	2 261	831	2 244	5 533	3 005	5 257	6 225	9 483
51	$25,000 or less	11 713	6 996	4 717	329	925	241	474	1 122	560	5 365	1 790	2 293
52	More than $25,000	3 154	2 574	581	73	178	67	54	89	73	2 112	189	444
53	Not reported	4 400	2 829	1 571	196	307	90	149	473	279	1 517	723	1 550
	Food Stamps												
54	Income of $25,000 or less	42 644	20 916	21 729	1 238	3 672	1 230	2 921	7 217	3 916	14 251	8 926	13 771
55	Family members received food stamps	7 360	1 646	5 714	150	687	357	892	2 551	1 180	991	2 143	5 517
56	Did not receive food stamps	32 718	17 729	14 990	950	2 818	828	1 945	4 354	2 553	12 668	6 250	7 307
57	Not reported	2 565	1 541	1 025	139	167	45	83	313	184	593	533	946
	Rent Reductions												
58	No subsidy or income reporting	28 141	...	28 141	812	1 088	769	1 962	4 398	3 166	3 245	10 243	5 244
59	Rent control	941	...	941	2	3	56	103	120	179	203	173	135
60	No rent control	27 183	...	27 183	805	1 084	712	1 856	4 276	2 985	3 038	10 064	5 102
61	Reduced by owner	1 786	...	1 786	39	145	51	128	210	156	300	325	458
62	Not reduced by owner	25 344	...	25 344	766	934	659	1 718	4 060	2 818	2 733	9 720	4 635
63	Owner reduction not reported	53	...	53	-	5	3	10	5	11	6	19	8
64	Rent control not reported	17	...	17	5	-	-	2	3	2	4	6	8
65	Owned by public housing authority	2 235	...	2 235	41	-	70	125	939	253	692	467	1 378
66	Other, Federal subsidy	1 667	...	1 667	60	33	34	82	609	192	388	458	1 053
67	Other, State or local subsidy	568	...	568	7	19	16	40	186	104	75	213	398
68	Other, income verification	555	...	555	11	8	16	31	127	74	195	93	217
69	Subsidy or income verification not reported	306	...	306	3	26	4	14	80	37	76	49	110

(continued on next page)

Total occupied units	In (P)MSAs: Central cities	In (P)MSAs: Suburbs	Outside (P)MSAs	Urban: Total	Urban: Outside (P)MSAs	Rural: Total	Rural: Suburbs	Rural: Outside (P)MSAs	Rural: Farm	Regions: Northeast	Regions: Midwest	Regions: South	Regions: West	
94 724	**29 838**	**44 060**	**20 826**	**69 090**	**7 741**	**25 633**	**12 368**	**13 085**	**1 423**	**18 906**	**23 031**	**32 936**	**19 850**	**1**
5 497	2 259	1 920	1 319	4 185	557	1 313	546	762	77	1 116	1 311	2 232	838	2
9 368	3 662	3 007	2 699	6 943	1 128	2 425	843	1 571	102	1 793	2 261	3 625	1 689	3
8 642	3 009	3 239	2 393	6 266	954	2 376	930	1 439	126	1 636	2 094	3 205	1 707	4
7 627	2 664	2 929	2 034	5 503	735	2 125	809	1 299	125	1 316	1 981	2 755	1 575	5
7 837	2 529	3 236	2 071	5 627	792	2 209	923	1 279	105	1 345	1 972	2 929	1 591	6
8 863	2 726	4 084	2 053	6 460	821	2 403	1 154	1 232	188	1 832	2 130	3 091	1 809	7
6 398	1 963	2 907	1 527	4 666	539	1 732	729	988	97	1 140	1 567	2 347	1 343	8
5 521	1 599	2 718	1 204	3 828	368	1 692	845	837	133	1 055	1 419	1 866	1 181	9
9 507	2 743	4 854	1 910	6 811	629	2 696	1 394	1 281	127	1 822	2 432	3 215	2 038	10
7 158	1 945	3 945	1 268	5 164	417	1 994	1 113	851	81	1 517	1 860	2 236	1 545	11
8 740	2 296	5 140	1 304	6 425	460	2 314	1 459	843	110	2 004	2 071	2 616	2 049	12
4 114	955	2 710	448	3 065	151	1 049	742	297	56	1 024	862	1 211	1 017	13
2 231	599	1 399	232	1 693	88	538	391	144	41	563	433	673	563	14
3 222	888	1 972	362	2 454	102	768	491	260	56	742	638	937	906	15
29 734	**26 459**	**36 302**	**24 750**	**29 661**	**23 140**	**29 929**	**36 484**	**25 776**	**29 713**	**31 815**	**29 452**	**27 787**	**32 664**	**16**
5 604	2 451	1 897	1 256	4 384	549	1 220	511	707	83	1 112	1 389	2 190	913	17
8 183	3 285	2 589	2 309	5 975	913	2 208	797	1 396	92	1 457	1 868	3 361	1 497	18
10 033	3 363	3 761	2 908	7 175	1 102	2 858	1 040	1 807	170	1 724	2 409	3 773	2 127	19
9 009	2 797	3 744	2 469	6 349	923	2 660	1 100	1 546	163	1 707	2 177	3 340	1 786	20
61 895	17 942	32 069	11 884	45 208	4 255	16 687	8 920	7 629	916	12 906	15 189	20 272	13 528	21
5 990	2 457	2 123	1 411	4 603	610	1 387	582	801	79	1 196	1 422	2 395	978	22
9 870	3 931	3 156	2 782	7 363	1 165	2 507	880	1 617	103	1 834	2 413	3 774	1 848	23
9 104	3 202	3 439	2 464	6 652	1 006	2 452	984	1 458	126	1 705	2 192	3 347	1 860	24
7 821	2 730	3 025	2 066	5 656	742	2 165	825	1 324	127	1 398	2 029	2 804	1 590	25
8 011	2 559	3 357	2 095	5 733	791	2 278	967	1 304	105	1 410	2 000	2 931	1 670	26
8 953	2 764	4 194	1 994	6 572	787	2 381	1 152	1 207	188	1 882	2 164	3 092	1 814	27
6 328	1 920	2 941	1 467	4 590	505	1 738	761	963	97	1 127	1 566	2 319	1 316	28
5 403	1 549	2 703	1 151	3 744	342	1 659	838	808	136	1 043	1 386	1 825	1 148	29
9 104	2 527	4 702	1 876	6 482	613	2 622	1 345	1 263	122	1 779	2 301	3 068	1 956	30
6 780	1 810	3 738	1 232	4 848	399	1 932	1 071	832	81	1 441	1 736	2 159	1 444	31
8 216	2 088	4 865	1 263	5 969	449	2 247	1 420	815	113	1 867	1 947	2 497	1 905	32
3 916	911	2 564	441	2 919	146	997	691	295	59	965	842	1 160	948	33
2 147	552	1 358	238	1 609	86	538	386	152	38	552	411	652	532	34
3 082	839	1 896	346	2 351	100	731	468	246	51	707	622	912	840	35
28 667	**25 073**	**34 651**	**24 035**	**28 453**	**22 200**	**29 258**	**35 209**	**25 160**	**29 568**	**30 127**	**28 372**	**26 966**	**30 628**	**36**
69 091	21 402	33 506	14 184	50 406	5 229	18 684	9 570	8 955	915	13 365	16 744	24 180	14 803	37
61 755	19 329	30 186	12 240	45 354	4 563	16 400	8 577	7 677	671	11 963	14 777	21 841	13 173	38
														39
23 264	6 248	12 234	4 782	16 216	1 574	7 048	3 794	3 208	253	4 545	5 590	8 445	4 685	
11 548	2 423	5 430	3 695	6 608	855	4 940	2 088	2 840	1 074	1 853	3 117	3 884	2 694	40
28 184	8 140	12 532	7 512	20 046	2 836	8 138	3 426	4 675	519	5 997	6 858	9 979	5 350	41
42 332	11 387	22 141	8 804	30 464	3 165	11 868	6 146	5 639	804	9 243	11 199	12 852	9 038	42
16 619	4 400	9 263	2 956	12 153	1 046	4 466	2 510	1 910	289	3 603	4 268	5 115	3 633	43
11 493	3 900	5 315	2 278	8 646	890	2 847	1 427	1 387	240	2 173	2 664	3 448	3 208	44
4 385	1 868	1 943	574	3 697	320	687	418	254	16	778	990	1 214	1 403	45
5 963	2 803	1 636	1 525	4 709	681	1 254	408	843	16	1 120	1 464	2 187	1 192	46
4 361	1 299	2 045	1 017	3 229	469	1 132	570	549	31	740	1 188	1 673	761	47
13 112	4 007	6 365	2 740	9 516	981	3 596	1 806	1 758	123	2 626	2 952	4 297	3 237	48
42 644	15 431	15 946	11 267	31 312	4 462	11 332	4 475	6 805	587	7 890	10 462	16 009	8 282	49
23 377	9 435	7 832	6 110	17 508	2 542	5 868	2 277	3 568	167	4 094	4 986	9 944	4 352	50
11 713	3 715	4 634	3 365	8 316	1 292	3 398	1 306	2 073	178	2 325	3 386	3 733	2 269	51
3 154	829	1 493	832	2 197	269	958	395	563	162	640	956	843	716	52
4 400	1 452	1 988	960	3 292	359	1 108	498	601	80	831	1 133	1 490	945	53
42 644	15 431	15 946	11 267	31 312	4 462	11 332	4 475	6 805	587	7 890	10 462	16 009	8 282	54
7 360	3 476	2 045	1 840	5 784	816	1 576	550	1 024	13	1 380	1 791	2 984	1 205	55
32 718	11 092	12 760	8 866	23 630	3 462	9 089	3 643	5 404	516	6 042	8 065	12 094	6 517	56
2 565	863	1 141	561	1 898	184	667	283	377	58	468	606	931	560	57
28 141	12 473	11 104	4 564	23 665	2 233	4 477	2 090	2 331	190	5 690	6 093	9 473	6 886	58
941	786	155	–	932	–	9	9	–	–	626	–	47	268	59
27 183	11 676	10 943	4 564	22 720	2 233	4 463	2 077	2 331	190	5 060	6 086	9 424	6 614	60
1 786	560	761	464	1 193	116	592	242	348	74	421	403	574	388	61
25 344	11 102	10 152	4 091	21 492	2 117	3 852	1 825	1 974	117	4 624	5 674	8 835	6 212	62
53	14	30	9	34	–	19	9	9	–	15	9	15	13	63
17	11	6	–	13	–	4	4	–	–	4	6	3	4	64
2 235	1 283	520	432	2 022	277	212	57	155	–	668	538	748	281	65
1 667	791	547	329	1 522	233	144	45	96	2	363	409	534	360	66
568	294	152	122	510	79	58	15	43	–	211	128	131	98	67
555	235	184	136	472	89	84	37	47	–	149	178	109	119	68
306	117	116	73	232	29	74	31	43	7	74	67	101	64	69

Source: U.S. Bureau of the Census, 1993.

Table 4-3. Introductory Characteristics - All Housing Units

[Numbers in thousands. **Consistent with the 1990 Census.** ... means not applicable or sample too small. - means zero or rounds to zero.]

Characteristics	Total housing units	Seasonal	Year-round											New construction 4 yrs	Mobile homes
				Occupied			Vacant								
			Total	Total	Owner	Renter	Total	For rent	Rental vacancy rate	For sale only	Rented or sold	Occasional use/ URE	Other vacant		
Total	**106 611**	**3 088**	**103 522**	**94 724**	**61 252**	**33 472**	**8 799**	**2 651**	**7.3**	**889**	**882**	**2 506**	**1 870**	**5 605**	**7 072**
Units in Structure															
1, detached	64 283	1 808	62 475	58 918	50 490	8 428	3 557	388	4.4	624	396	1 114	1 035	3 405	...
1, attached	6 079	114	5 965	5 375	2 824	2 550	591	195	7.1	70	56	160	108	414	...
2 to 4	10 732	127	10 606	9 279	1 774	7 505	1 327	638	7.7	59	124	229	277	221	...
5 to 9	5 521	76	5 445	4 724	409	4 315	721	388	8.1	21	80	156	77	221	...
10 to 19	5 025	102	4 923	4 190	359	3 831	733	432	10.0	16	79	146	60	267	...
20 to 49	3 826	107	3 720	3 154	335	2 819	566	285	9.0	11	56	181	32	169	...
50 or more	4 072	93	3 979	3 429	579	2 850	551	217	7.0	18	42	218	55	133	...
Mobile home or trailer	7 072	663	6 409	5 655	4 482	1 173	754	107	8.3	69	50	302	226	776	7 072
Cooperatives and Condominiums															
Cooperatives	872	33	839	729	419	311	109	16	5.0	20	12	54	7	12	57
Condominiums	4 806	386	4 420	3 621	2 532	1 089	799	104	8.6	92	79	453	71	407	18
Year Structure Built[1]															
1990 to 1994	5 134	100	5 034	4 576	3 720	855	458	96	10.0	114	89	121	39	5 134	746
1985 to 1989	8 951	237	8 714	7 969	5 324	2 645	745	214	7.4	58	103	291	78	471	879
1980 to 1984	8 143	195	7 948	7 171	4 593	2 579	776	226	7.9	55	88	298	110	...	919
1975 to 1979	11 915	373	11 542	10 708	7 161	3 547	834	221	5.8	89	81	331	112	...	1 425
1970 to 1974	11 559	486	11 073	10 110	6 129	3 981	963	331	7.6	89	89	325	129	...	1 663
1960 to 1969	16 070	538	15 532	14 405	9 482	4 923	1 127	371	6.9	122	110	297	227	...	1 169
1950 to 1959	13 633	406	13 227	12 360	8 855	3 505	867	269	7.1	92	72	216	218	...	214
1940 to 1949	8 529	252	8 276	7 539	4 696	2 843	737	209	6.8	62	64	165	237	...	32
1930 to 1939	6 747	222	6 525	5 853	3 293	2 560	673	184	6.6	73	52	156	208	...	25
1920 to 1929	5 677	98	5 579	5 047	2 819	2 228	532	175	7.2	49	49	92	167	...	-
1919 or earlier	10 252	182	10 071	8 986	5 178	3 808	1 085	353	8.4	87	85	214	346	...	-
Median	**1965**	**1967**	**1965**	**1965**	**1966**	**1964**	**1964**	**1964**	**...**	**1967**	**1971**	**1972**	**1949**	**...**	**1977**
Suitability for Year-Round Use[2]															
Built and heated for year-round use	105 550	2 028	103 522	...	...	...	8 799	...	7.3	889	882	2 506	...	5 592	6 948
Not suitable	973	973	-	...	...	...	-	...	...	-	-	-	...	14	124
Not reported	87	87	-	...	...	...	-	...	...	-	-	-	...	-	-
Time Sharing															
Vacant, including URE	11 887	3 088	8 799	-	-	-	8 799	2 651	86.5	889	882	2 506	1 870	616	1 416
Ownership time-shared	75	15	60	-	-	-	60	10	100.0	4	-	40	7	4	2
Not time-shared	11 812	3 073	8 738	-	-	-	8 738	2 641	86.4	885	882	2 467	1 863	612	1 414
Duration of Vacancy															
Vacant units	10 597	2 632	7 965	...	...	...	7 965	2 651	...	889	882	1 673	1 870	552	1 314
Less than 1 month vacant	2 864	896	1 968	...	...	...	1 968	980	...	98	289	446	154	149	320
1 month up to 2 months	621	93	527	...	...	...	527	272	...	54	84	47	70	28	54
2 months up to 6 months	1 924	398	1 526	...	...	...	1 526	595	...	208	184	268	271	85	292
6 months up to 1 year	890	204	686	...	...	...	686	199	...	125	59	123	180	15	143
1 year up to 2 years	677	103	574	...	...	...	574	145	...	90	72	80	188	11	73
2 years or more	1 891	332	1 559	...	...	...	1 559	229	...	149	71	332	778	21	225
Never occupied	572	218	353	...	...	...	353	31	...	78	71	110	63	196	37
Don't know	1 158	387	772	...	...	...	772	199	...	87	53	268	165	45	172
Last Used as a Permanent Residence															
Vacant seasonal and URE units	3 922	3 088	833	...	...	...	833	...	...	...	...	833	...	161	708
Less than 1 month since occupied as permanent home	65	30	35	...	...	...	35	...	...	...	...	35	...	-	8
1 month up to 2 months	20	10	10	...	...	...	10	...	...	...	...	10	...	-	4
2 months up to 6 months	60	33	26	...	...	...	26	...	...	...	...	26	...	9	16
6 months up to 1 year	51	19	32	...	...	...	32	...	...	...	...	32	...	-	8
1 year up to 2 years	105	60	45	...	...	...	45	...	...	...	...	45	...	-	29
2 years or more	759	556	203	...	...	...	203	...	...	...	...	203	...	3	99
Never occupied as permanent home	2 197	1 958	239	...	...	...	239	...	...	...	...	239	...	119	436
Don't know	530	313	217	...	...	...	217	...	...	...	...	217	...	30	101
Not reported	135	108	27	...	...	...	27	...	...	...	...	27	...	-	6
Metropolitan/ Nonmetropolitan Areas															
Inside metropolitan statistical areas	81 293	1 036	80 257	73 898	46 081	27 817	6 359	2 248	7.4	666	718	1 463	1 263	4 204	3 559
In central cities	33 140	165	32 975	29 838	14 644	15 194	3 137	1 326	7.9	242	314	607	649	907	389
Suburbs	48 153	871	47 282	44 060	31 438	12 623	3 221	923	6.7	425	404	856	614	3 297	3 170
Outside metropolitan statistical areas	25 318	2 052	23 266	20 826	15 170	5 656	2 440	403	6.6	223	164	1 043	607	1 401	3 512
Regions															
Northeast	21 157	811	20 346	18 906	11 751	7 155	1 440	489	6.3	153	154	393	251	610	647
Midwest	25 480	725	24 755	23 031	15 617	7 415	1 724	552	6.8	176	210	433	352	1 214	1 338
South	37 886	1 092	36 794	32 936	21 841	11 096	3 857	977	8.0	374	298	1 211	998	2 368	3 603
West	22 088	460	21 627	19 850	12 043	7 808	1 777	633	7.4	187	220	469	268	1 412	1 483
Urbanized Areas															
Inside urbanized areas	63 355	491	62 863	57 837	33 534	24 303	5 026	2 023	7.6	494	539	1 004	967	2 438	1 427
In central cities of (P)MSA's	32 465	163	32 302	29 232	14 292	14 939	3 070	1 309	8.0	236	312	575	638	840	380
Urban fringe	30 890	329	30 561	28 606	19 241	9 364	1 956	714	7.0	258	227	428	329	1 598	1 046
Outside urbanized areas	43 256	2 597	40 659	36 887	27 718	9 169	3 772	629	6.3	395	343	1 503	903	3 167	5 645
Other urban	12 672	284	12 387	11 253	7 133	4 120	1 134	324	7.2	123	136	349	201	588	653
Rural	30 585	2 313	28 272	25 633	20 585	5 049	2 638	305	5.6	272	207	1 154	701	2 579	4 992

[1]For mobile home, oldest category is 1939 or earlier.
[2]If occupied year-round, assumed to be suitable for year-round use.

Source: U.S. Bureau of Census, 1993.

Table 4-4. Fuels - All Housing Units

[Numbers in thousands. **Consistent with the 1990 Census.** ... means not applicable or sample too small. - means zero or rounds to zero.]

Characteristics	Total housing units	Seasonal	Year-round											New construction 4 yrs	Mobile homes
				Occupied			Vacant								
			Total	Total	Owner	Renter	Total	For rent	Rental vacancy rate	For sale only	Rented or sold	Occasional use/ URE	Other vacant		
Total	**106 611**	**3 088**	**103 522**	**94 724**	**61 252**	**33 472**	**8 799**	**2 651**	**7.3**	**889**	**882**	**2 506**	**1 870**	**5 605**	**7 072**
Main House Heating Fuel															
Housing units with heating fuel	104 967	2 727	102 240	93 813	60 886	32 928	8 427	2 599	7.2	849	876	2 462	1 640	5 549	6 927
Electricity	29 176	1 124	28 052	25 107	14 204	10 903	2 945	929	7.8	251	298	1 076	391	2 431	2 422
Piped gas	51 564	355	51 208	47 669	32 049	15 620	3 540	1 296	7.6	426	423	691	704	2 309	1 753
Bottled gas	4 809	387	4 422	3 922	3 107	815	501	46	5.3	36	37	237	146	398	1 363
Fuel oil	12 311	261	12 049	11 168	7 072	4 096	881	264	6.0	102	82	231	203	198	387
Kerosene or other liquid fuel	1 200	83	1 117	1 021	751	270	97	3	1.2	10	10	46	27	69	460
Coal or coke	318	8	310	297	227	70	13	1	1.3	–	–	–	12	5	8
Wood	4 945	487	4 458	4 104	3 195	909	354	33	3.5	20	21	161	119	119	453
Solar energy	30	–	30	30	23	7	–	–	–	–	–	–	–	–	2
Other	614	21	593	496	257	238	97	26	9.7	6	5	22	39	20	79
Other House Heating Fuels															
With other heating fuels[1]	17 428	79	17 350	17 272	14 057	3 216	77	...	...	...	...	77	...	867	1 024
Electricity	5 718	19	5 699	5 685	4 289	1 397	13	...	...	...	...	13	...	143	350
Piped gas	898	–	898	898	691	207	–	...	...	...	...	–	...	56	29
Bottled gas	580	8	572	572	503	69	–	...	...	...	...	–	...	31	57
Fuel oil	588	–	588	588	472	116	–	...	...	...	...	–	...	8	30
Kerosene or other liquid fuel	1 165	5	1 159	1 159	876	283	1	...	...	...	...	1	...	66	213
Coal or coke	157	–	157	156	131	25	1	...	...	...	...	1	...	5	9
Wood	8 586	46	8 540	8 485	7 395	1 090	55	...	...	...	...	55	...	554	330
Solar energy	101	–	101	100	88	12	1	...	...	...	...	1	...	–	–
Other	386	–	386	378	277	101	8	...	...	...	...	8	...	31	33
Not reported	605	7	597	594	423	172	3	...	...	...	...	3	...	23	27
Cooking Fuel															
With cooking fuel	104 702	2 888	101 815	94 363	61 179	33 184	7 452	2 289	6.4	713	766	2 426	1 258	5 555	6 999
Electricity	62 225	1 818	60 406	55 887	37 318	18 569	4 520	1 283	6.4	430	491	1 648	667	3 773	3 299
Gas	41 781	970	40 811	37 997	23 478	14 519	2 814	1 001	6.4	265	257	730	561	1 722	3 503
Kerosene or other liquid fuel	423	52	371	303	241	63	68	3	4.9	9	14	34	8	44	133
Coal or coke	14	–	14	14	9	5	–	–	–	–	–	–	–	–	–
Wood	76	40	36	17	15	2	19	–	–	2	–	7	10	3	–
Other	184	7	177	145	119	26	32	2	5.9	7	3	8	12	12	62
Water Heating Fuel															
With hot piped water	105 826	2 724	103 102	94 517	61 162	33 355	8 585	2 632	7.2	872	881	2 457	1 742	5 591	6 990
Electricity	40 801	1 851	38 950	35 242	22 406	12 836	3 708	983	7.0	333	326	1 363	703	2 739	4 553
Gas	57 590	753	56 837	52 551	34 696	17 855	4 287	1 499	7.7	479	487	919	903	2 669	2 212
Fuel oil	6 090	68	6 022	5 594	3 328	2 266	428	127	5.3	47	43	122	89	101	46
Kerosene or other liquid fuel	414	22	392	318	262	57	74	5	7.3	7	16	32	14	54	124
Coal or coke	47	–	47	44	38	6	3	1	19.1	–	–	–	2	–	–
Wood	64	4	60	45	36	9	14	–	–	–	–	4	10	3	4
Solar energy	281	–	281	281	230	50	–	–	–	–	–	–	–	3	5
Other	539	27	512	442	166	276	70	16	5.5	5	10	17	22	21	46
Central Air Conditioning Fuel															
With central air conditioning	46 277	762	45 515	42 183	30 560	11 622	3 332	967	7.6	410	399	1 124	433	4 116	2 863
Electricity	43 161	753	42 408	39 234	28 140	11 094	3 174	944	7.7	386	379	1 062	404	3 893	2 767
Gas	2 920	10	2 911	2 777	2 296	480	134	23	4.5	22	18	54	18	216	88
Other	196	–	196	172	124	48	24	–	–	2	2	9	11	6	7
Clothes Dryer Fuel															
With clothes dryer	70 572	922	69 650	67 464	54 334	13 130	2 186	280	2.1	196	172	1 161	378	4 730	4 651
Electricity	54 160	824	53 336	51 487	40 479	11 007	1 850	251	2.2	138	123	1 039	298	3 847	4 237
Gas	16 281	90	16 191	15 861	13 757	2 104	330	27	1.3	57	49	122	75	879	410
Other	130	8	123	116	97	19	6	2	7.9	–	–	–	5	4	4
Units Using Each Fuel[1]															
Electricity	...	...	...	94 691	61 228	33 463	...	2 649	...	...	...	...	...	...	...
All-electric units	...	...	...	19 667	11 430	8 237	...	671	...	...	...	...	...	...	...
Gas	...	...	...	65 624	42 853	22 772	...	1 888	...	...	...	...	...	...	...
Fuel oil	...	...	...	13 475	8 520	4 956	...	437	...	...	...	...	...	...	...
Kerosene or other liquid fuel	...	...	...	2 360	1 774	586	...	5	...	...	...	...	...	...	...
Coal or coke	...	...	...	456	358	97	...	2	...	...	...	...	...	...	...
Wood	...	...	...	12 589	10 590	1 999	...	33	...	...	...	...	...	...	...
Solar energy	...	...	...	383	317	67	...	–	...	...	...	...	...	...	...
Other	...	...	...	1 195	657	539	...	37	...	...	...	...	...	...	...

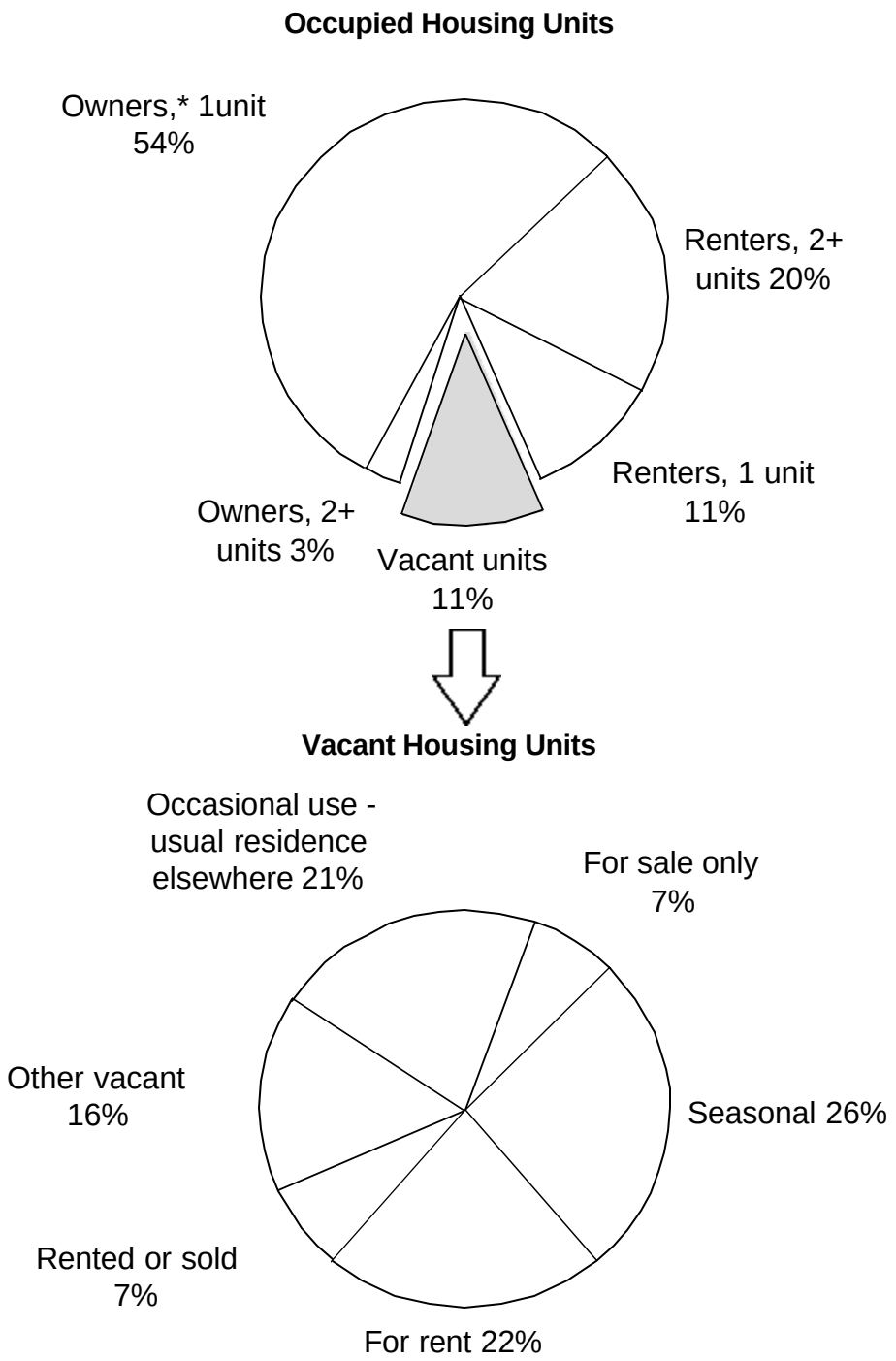
[1]Figures may not add to total because more than one category may apply to a unit.

Source: U.S. Bureau of the Census, 1993.

Table 4-5. Housing Units--Characteristics, by Tenure and Region
[In thousands of units, except as indicated.
As of Oct. 1. Based on the American Housing Survey]

CHARACTERISTIC	YEAR-ROUND UNITS									
	Total housing units	Seasonal	Occupied							Vacant
			Total	Owner	Renter	Northeast	Midwest	South	West	
Total units	109,457	3,054	97,693	63,544	34,150	19,200	23,662	34,236	20,596	8,710
Percent distribution	100.0	2.8	89.3	58.1	31.2	17.5	21.6	31.3	18.8	8.0
Units in structure:										
Single family detached	66,169	1,804	60,826	52,257	8,569	9,818	16,175	22,406	12,427	3,539
Single family attached	6,213	41	5,545	2,936	2,609	1,571	1,053	1,867	1,055	627
2-4 units	10,700	124	9,299	1,734	7,565	3,126	2,168	2,083	1,922	1,277
5-9 units	5,594	102	4,803	520	4,283	970	1,023	1,592	1,218	690
10-19 units	5,092	93	4,342	368	3,974	791	880	1,575	1,096	657
20-49 units	3,901	74	3,244	342	2,903	896	559	856	933	583
50 or more units	4,140	55	3,470	550	2,920	1,470	668	641	691	615
Mobile home or trailer	7,647	761	6,164	4,837	1,328	557	1,136	3,216	1,254	722
Stories in structure: \1										
One story	3,065	35	2,678	279	2,399	158	374	1,204	942	352
2 stories	10,828	149	9,318	1,055	8,263	1,065	1,321	3,594	3,338	1,361
3 stories	8,268	152	7,056	1,179	5,877	2,363	2,451	1,249	992	1,060
4-6 stories	4,652	79	3,904	591	3,312	2,287	793	395	429	670
7 or more stories	2,627	32	2,213	415	1,799	1,382	359	312	160	381
Foundation: \2										
Full or partial basement	32,423	367	30,635	27,080	3,554	9,859	13,077	4,894	2,803	1,420
Crawlspace	18,891	762	16,727	13,155	3,572	573	2,413	9,007	4,735	1,402
Concrete slab	19,255	358	17,722	13,988	3,734	855	1,556	9,610	5,702	1,175
Other	1,813	358	1,287	970	317	101	181	762	243	168
Year structure built:										
1939 and earlier	22,116	544	19,308	11,068	8,239	7,162	6,228	3,574	2,345	2,263
1940 to 1949	8,400	228	7,487	4,671	2,817	1,680	1,750	2,500	1,558	685
1950 to 1959	13,569	371	12,398	8,798	3,600	2,546	3,245	3,936	2,670	800
1960 to 1969	15,806	472	14,267	9,349	4,918	2,415	3,266	5,286	3,300	1,068
1970 to 1979	23,717	784	21,033	13,347	7,685	2,716	4,872	8,358	5,086	1,899
1980 or later	25,849	654	23,201	16,311	6,890	2,679	4,301	10,582	5,639	1,994
Median year	1967	1968	1967	1968	1965	1953	1962	1972	1971	1966
Main heating equipment:										
Warm-air furnace	57,840	838	53,165	38,301	14,863	6,881	17,711	17,212	11,361	3,837
Electric heat pump	10,614	311	9,406	7,027	2,379	433	692	7,003	1,278	897
Steam or hot water system	14,895	87	13,669	7,323	6,345	9,503	2,587	834	745	1,139
Floor, wall, or pipeless furnace	5,674	128	4,963	2,148	2,815	234	389	1,534	2,806	583
Built-in electric units	8,344	422	7,035	2,870	4,166	1,303	1,342	2,286	2,104	887
Room heaters with flue	2,083	178	1,620	869	752	187	245	864	324	285
Room heaters without flue	1,886	49	1,642	964	678	43	31	1,500	69	194
Stoves	2,877	339	2,320	1,735	585	360	379	962	619	218
Fireplaces	1,066	141	850	661	187	37	81	385	347	75
None	1,795	359	1,044	463	581	38	31	457	518	393
Portable elec. heaters	950	78	809	413	395	19	18	576	195	63
Other	1,432	124	1,171	768	403	162	156	623	231	137
Kitchen equipment:										
Lacking complete facilities	3,629	391	1,075	461	614	241	281	302	252	2,163
With complete facilities	105,827	2,662	96,618	63,083	33,536	18,959	23,382	33,934	20,344	6,546
Kitchen sink	108,395	2,903	97,034	63,231	33,803	19,033	23,484	34,065	20,452	8,458
Refrigerator	106,872	2,739	97,433	63,469	33,964	19,133	23,597	34,180	20,523	6,701
Burners and oven	107,394	2,795	97,207	63,443	33,764	19,093	23,528	34,113	20,473	7,392
Burners only	151	21	105	31	74	28	17	40	20	25
Oven only	119	4	99	32	68	14	44	19	22	16
Dishwasher	56,635	818	52,508	40,236	12,272	9,084	11,160	19,210	13,054	3,309
Washing machine	79,403	1,129	75,745	60,034	15,711	13,526	18,804	28,015	15,399	2,530
Clothes dryer	74,165	1,062	70,756	57,184	13,571	12,150	18,341	25,694	14,571	2,347
Disposal in kitchen sink	46,353	717	42,451	28,793	13,659	4,159	10,301	14,086	13,906	3,185
Air conditioning:	50,824	780	46,577	34,161	12,415	3,856	11,694	23,772	7,255	3,467
Percent of total units	46.4	25.5	47.7	53.8	36.4	20.1	49.4	69.4	35.2	39.8
One or more room units	29,141	530	27,181	16,126	11,054	8,732	7,107	8,361	2,982	1,431
Source of water:										
Public system or private company	94,108	1,767	84,818	52,643	32,175	16,307	19,749	29,445	19,318	7,523
Percent of total units	86.0	57.9	86.8	82.8	94.2	84.9	83.5	86.0	93.8	86.4
Well serving 1 to 5 units	14,265	955	12,270	10,463	1,807	2,783	3,778	4,498	1,211	1,041
Other	1,083	332	606	438	167	110	136	293	67	146
Means of sewage disposal:										
Public sewer	83,308	1,222	75,282	44,527	30,755	14,859	18,618	24,111	17,694	6,804
Percent of total units	76.1	40.0	77.1	70.1	90.1	77.4	78.7	70.4	85.9	78.1
Septic tank, cesspool, chemical toilet	25,635	1,521	22,296	18,937	3,359	4,335	5,029	10,041	2,891	1,819
Other	513	311	116	80	36	6	15	83	11	87

\1 Limited to multiunit structures. Includes some multi-unit mobile homes.
\2 Limited to single-family units.
Source: U.S. Bureau of the Census, Current Housing Reports, series, H150/93, and H150/95 American Housing Survey in the United States.



* Includes mobile homes.

Figure 4-1. Percentage of occupied and vacant housing units.

Source: U.S. Bureau of the Census, 1993.

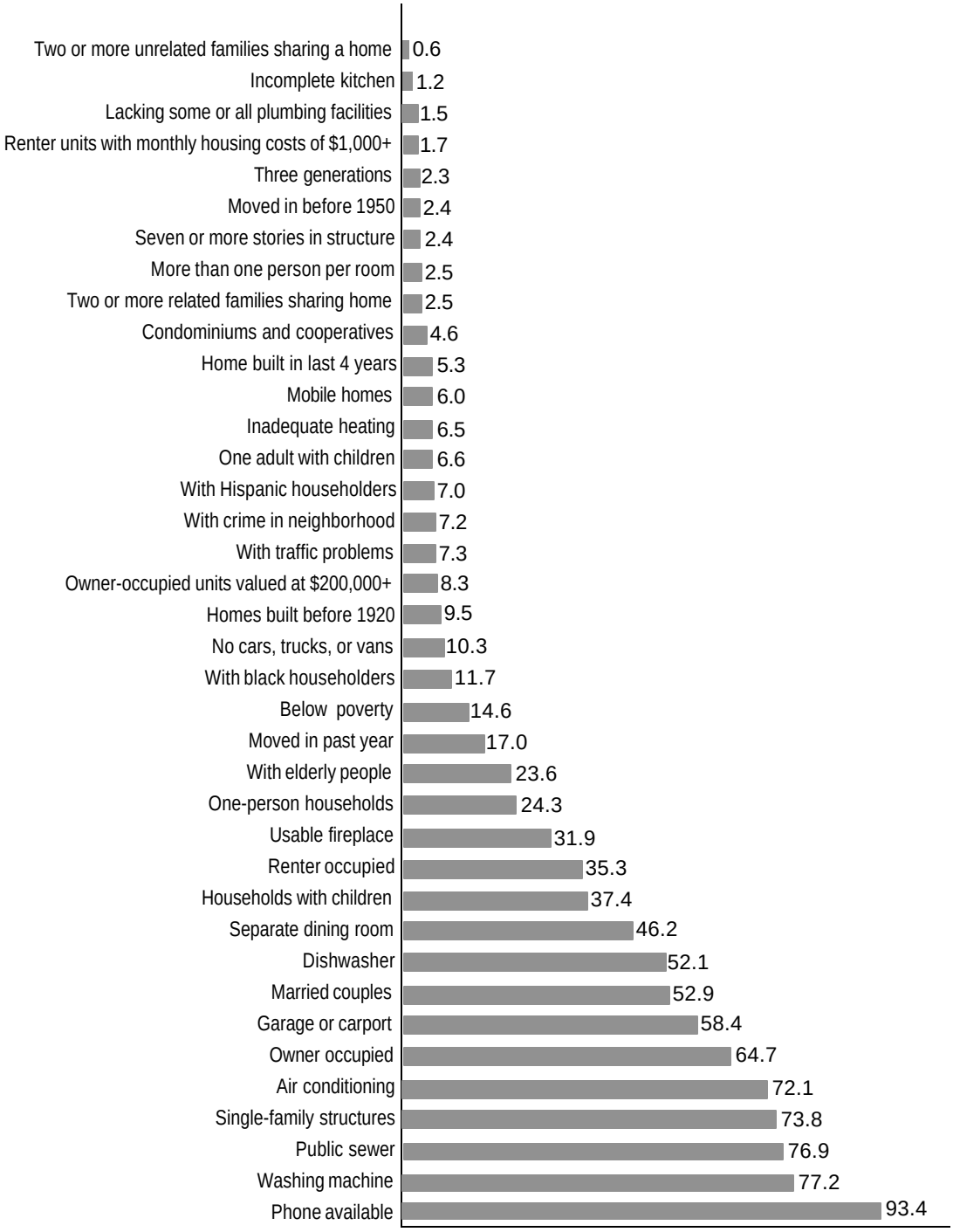


Figure 4-2. Selected Features of Occupied Homes: 1993 (Percent of Occupied Units)

Source: U.S. Bureau of the Census, 1993.

Table 4-6. Percentage of U.S. Housing Built Before 1950 and from 1970-1979[b], by State

State	Total Housing Units	Built Before[a] 1950 (%)	Built[b] 1970 to 1979 (%)
United States	**102,263,678**	**26.9**	**21.8**
Alabama	1,670,379	17.9	25.5
Alaska	232,608	7.0	32.7
Arizona	1,659,430	6.7	30.7
Arkansas	1,000,667	17.7	27.8
California	11,182,882	19.8	21.7
Colorado	1,477,349	18.3	28.9
Connecticut	1,320,850	35.0	15.7
Delaware	289,919	22.3	20.2
District of Columbia	278,489	55.7	8.4
Florida	6,100,262	7.7	29.3
Georgia	2,638,418	14.5	24.5
Hawaii	389,810	13.4	30.5
Idaho	413,327	24.4	32.4
Illinois	4,506,275	36.9	18.4
Indiana	2,246,046	33.7	20.2
Iowa	1,143,669	42.9	20.2
Kansas	1,044,112	33.1	20.3
Kentucky	1,506,845	24.2	25.0
Louisiana	1,716,241	19.5	25.3
Maine	587,045	41.1	19.8
Maryland	1,891,917	25.1	19.6
Massachusetts	2,472,711	46.8	14.1
Michigan	3,847,926	31.9	20.4
Minnesota	1,848,45	31.7	22.1
Mississippi	1,010,423	16.6	27.5
Missouri	2,199,129	28.6	21.5
Montana	361,155	30.1	26.6
Nebraska	660,621	37.8	22.1
Nevada	518,858	6.0	30.5
New Hampshire	503,904	32.2	20.5
New Jersey	3,075,310	35.2	14.9
New Mexico	632,058	15.5	26.5
New York	7,226,891	47.1	11.9
North Carolina	2,818,193	17.6	24.3
North Dakota	276,340	30.8	26.6
Ohio	4,371,945	35.7	18.6
Oklahoma	1,406,499	21.2	25.4
Oregon	1,193,567	26.5	28.7
Pennsylvania	4,938,140	44.8	15.8
Rhode Island	414,572	43.7	14.7
South Carolina	1,424,155	15.4	26.3
South Dakota	292,436	36.7	24.6
Tennessee	2,026,067	18.8	24.8
Texas	7,008,999	14.4	25.9
Utah	598,388	21.3	28.1
Vermont	271,214	40.5	19.6
Virginia	2,496,334	19.3	23.6
Washington	2,032,378	24.6	24.6
West Virginia	781,295	34.6	22.8
Wisconsin	2,055,774	36.8	21.1
Wyoming	203,411	23.7	31.1

Sources: (a) CDC, 1997; (b) U.S. Bureau of the Census, 1997.

Table 4-7. Percentage of Respondents With Attached Garages or Carports

	ALL	ND Respondants		NO Respondants		YES Respondants		DK Respondants	
	N	N	%	N	%	N	%	N	%
Overall	9386	1933	20.6	3693	39.3	3669	39.1	91	1.0
Gender									
	4	ND	ND	4	100.0	ND	ND	ND	ND
Male	4294	861	20.1	1671	38.9	1724	40.1	38	0.9
Female	5088	1072	21.1	2018	39.7	1945	38.2	53	1.0
Age									
	187	35	18.7	76	40.6	46	24.6	30	16.0
1-4	499	99	19.8	193	38.7	204	40.9	3	0.6
5-11	703	91	12.9	308	43.8	303	43.1	1	0.1
12-17	589	51	8.7	257	43.6	281	47.7	ND	ND
18-64	6059	1399	23.1	2300	38.0	2322	38.3	38	0.6
> 64	1349	258	19.1	559	41.4	513	38.0	19	1.4
Race									
	126	17	13.5	47	37.3	18	14.3	44	34.9
White	7591	1381	18.2	3014	39.7	3162	41.7	34	0.4
Black	945	320	33.9	392	41.5	224	23.7	9	1.0
Asian	157	47	29.9	36	22.9	73	46.5	1	0.6
Some Other	182	52	28.6	67	36.8	60	33.0	3	1.6
Hispanic	385	116	30.1	137	35.6	132	34.3	ND	ND
Hispanic									
	103	10	9.7	33	32.0	14	13.6	46	44.7
No	8531	1725	20.2	3383	39.7	3382	39.6	41	0.5
Yes	705	187	26.5	258	36.6	256	36.3	4	0.6
DK	47	11	23.4	19	40.4	17	36.2	ND	ND
Employment									
	1844	249	13.5	770	41.8	792	43.0	33	1.8
Full Time	4096	933	22.8	1528	37.3	1613	39.4	22	0.5
Part Time	802	181	22.6	320	39.9	295	36.8	6	0.7
Not Employed	2644	570	21.6	1075	40.7	969	36.6	30	1.1
Education									
	1968	256	13.0	827	42.0	829	42.1	56	2.8
< High School	834	165	19.8	449	53.8	213	25.5	7	0.8
High School Grad.	2612	541	20.7	1159	44.4	896	34.3	16	0.6
< College	1801	438	24.3	596	33.1	760	42.2	7	0.4
College Grad.	1247	321	25.7	386	31.0	536	43.0	4	0.3
Post Grad.	924	212	22.9	276	29.9	435	47.1	1	0.1
Census Region									
Northeast	2075	590	28.4	863	41.6	603	29.1	19	0.9
Midwest	2102	372	17.7	865	41.2	846	40.2	19	0.9
South	3243	530	16.3	1376	42.4	1303	40.2	34	1.0
West	1966	441	22.4	589	30.0	917	46.6	19	1.0
Day of Week									
Weekday	6316	1290	20.4	2490	39.4	2476	39.2	60	0.9
Weekend	3070	643	20.9	1203	39.2	1193	38.9	31	1.0
Season									
Winter	2524	504	20.0	986	39.1	1003	39.7	31	1.2
Spring	2438	487	20.0	977	40.1	953	39.1	21	0.9
Summer	2536	533	21.0	1004	39.6	973	38.4	26	1.0
Fall	1888	409	21.7	726	38.5	740	39.2	13	0.7
Asthma									
No	8629	1765	20.5	3416	39.6	3399	39.4	49	0.6
Yes	694	161	23.2	266	38.3	265	38.2	2	0.3
DK	63	7	11.1	11	17.5	5	7.9	40	63.5
Angina									
No	9061	1862	20.5	3566	39.4	3584	39.6	49	0.5
Yes	250	61	24.4	109	43.6	79	31.6	1	0.4
DK	75	10	13.3	18	24.0	6	8.0	41	54.7
Bronchitis / emphysema									
No	8882	1807	20.3	3516	39.6	3510	39.5	49	0.6
Yes	433	118	27.3	162	37.4	153	35.3	Nd	nd
DK	71	8	11.3	15	21.1	6	8.5	42	59.2

Note: ND = Missing data; DK = Don't know; % = Row percentage; N = Sample size

Source: Tsang and Klepeis, 1996.

Table 4-8. Selected Characteristics of Households in the Target Population

Population Characteristic		Estimated Thousands of Households	Estimated Percentage of All Households
All households		84,573	100.00
Urbanization[a]			
	Urban	70,468	83.32
	Rural	14,105	16.68
Type of dwelling			
	Single-	63,335	74.89
	family	21,237	25.11
	Multi-family		
Have private lawn			
	Yes	66,828	79.02
	No	17,744	20.98
Have private swimming pool			
	Yes	5,978	7.07
	No	78,595	92.93
Have hot tub			
	Yes	2,500	2.96
	No	82,073	97.04
Grew edible fruit/nut trees or grape vines		18,421	21.78
	Yes	66,151	78.22
	No		
Grew tomatoes, vegetables, berries, or melons in past year[b]			
	Yes		
	No	23,180	27.41
		61,392	72.59
Grew roses in the past year[b]			
	Yes	27,150	32.10
	No	57,423	67.90

[a] The interviewers were instructed to classify each residence as located in either an urban area or a rural area in their best judgment so that homes in suburban neighborhoods located adjacent to rural farmland would be coded as urban, while farm homes would be coded as rural.

[b] Excluding any grown for sale.

Source: Whitmore et al., 1992.

Table 4-9. Number of Households That Used Pest Control Services and Received Written Precautions in the Previous Year

Type of Service/ Utilization/ Written Precautions	Estimated Thousands of Households	Estimated Percentage of Households
Commercial Lawn-Care Company Utilized[a]	8,003	12.07
Informed of Chemicals Used[c]	3,626	59.51
Informed of Safety Precautions[c]	3,746	50.42
Treatment for Fleas, Roaches, Ants Utilized[b]	16,557	19.58
Informed of Chemicals Used[c]	3,637	23.46
Informed of Safety Precautions[c]	3,216	20.67

[a] The inference population for lawn care services is the population of all households with a private lawn.
[b] The inference population for treatment of fleas, roaches, or ants is the population of all private households.
[c] Conditional percentages, given that the service was used.

Source: Whitmore et al., 1992.

Table 4-10. Households Reporting Major Pest Problems or Problems Treated by a Household Member

Pest Problem	Households Reporting Major Problem		Households Reporting Treated Problem		Most Frequently Treated Sites[a] (in order of treatment frequency)
	Estimated Thousands of HH	Estimated Percentage of All HH	Estimated Thousands of HH	Estimated Percentage of All HH	
Microorganisms					
Mildew, mold, bacteria, virus	2,486	2.94	40,361	47.72	Bathroom; kitchen; living area; fabric
Plant diseases	1,826	2.16	8,356	9.88	Roses; ornamentals[b]; lawn; garden[c]
Insects and Related Pests					
Ants[d]	10,830	12.81	30,443	36.00	Kitchen; OOA; bathroom; OIA
Mosquitoes	6,884	8.14	24,056	28.44	Person; OOA; living area; kitchen
Cockroaches	8,320	9.84	20,687	24.46	Kitchen; bathroom; living area; OIA
Fleas	6,482	7.66	20,107	23.77	Cat, dog or kennel; living area; kitchen; bathroom
Flies, gnats, midges	4,961	5.87	17,448	20.63	Person; kitchen; OOA; living area
Bees, hornets, wasps	4,995	5.91	15,611	18.46	OOA; OIA; detached structures; living area
Spiders, crickets, pillbugs, milli/centipedes	5,105	6.04	13,177	15.58	OOA; OIA; kitchen; living area
Plant-chewing insects	3,468	4.10	11,858	14.02	Ornamentals[b]; garden[c]; roses; lawn
Plant-sucking insects and mites	2,994	3.54	11,730	13,87	Ornamentals[b]; roses; garden[c]; lawn
Ticks, chiggers	1,659	1.96	9,542	11.28	Cat, dog or kennel; person; lawn; OOA
Fire ants	4,966	5.87	7,907	9.35	Lawn; OOA; kitchen; OIA
Mice, rats	2,571	3.04	7,388	8.74	Kitchen; OIA; bathroom; living area
Slugs, snails	2,076	2.45	5,100	6.03	Ornamentals[b]; lawn; OOA[b]; garden[c]
Plants					
Broadleaf weeds	3,692	4.37	12,345	14.60	Lawn; OOA; ornamentals[b]; garden[c]
Grass-like weeds	3,158	3.73	11,707	13.84	Lawn; OOA; ornamentals[b]; roses

Abbreviations: HH = households; OOA = other outside area (such as walls, driveway, patio, deck, fences, or roof, including air treated by fogging);
OIA = other inside area (such as attached garage, attic, basement, crawlspace, attached utility room or workshop).

[a] "Treated" or "not treated" refers to treatment by a household member; thus, pests treated only by a pest control service are reported as "not treated" in this table.
[b] Roses are the only ornamental identified separately.
[c] Food crops such as tomatoes and vegetables (excluding fruit or nut trees and grapes).
[d] Excluding fire ants, carpenter ants, and termites.

Source: Whitmore et al., 1992.

Table 4-11. Number of Households with at Least One Pesticide Product Stored Insecurely by Type of Pesticide for Households with Children under 5 Years of Age[a]

Type of Pesticide	At Least One Stored Insecurely		TOTAL	
	Estimated Thousands of HH	Estimated Percentage[b] of HH	Estimated Thousands of HH	Estimated Percent[b] of HH
All Types of Pesticides	6,078[c]	46.88	12,965[c]	100.00
Disinfectant	3,481	41.61	8,366	100.00
Fungicide	2,831	38.12	7,425	100.00
Insecticide	3,740	36.04	10,404	100.00
Molluscicide	43[d]	6.45[d]	660	100.00
Rodenticide	319[d]	40.65	786	100.00
Herbicide	617	21.18	2,912	100.00
Repellent	1,261	24.30	5,189	100.00

Abbreviations: HH = Households.

[a] For pesticide products (excluding those used exclusively for agricultural production, plant growth regulators, pool chemicals, and anti-fouling paints) in storage at residences in the target population at the time of the survey (Aug-Sept 1990).

[b] Conditional percentage, given that at least one product of the designated type was in storage.

[c] An individual pesticide product can be of more than one type (e.g., insecticide and fungicide). Therefore, the estimates for the individual types of pesticides sum to more than the total for all types of pesticides.

[d] Estimate has poor precision because of the small number of observations in this cell.

Source: Whitmore et al., 1992.

Table 4-12. Estimated Thousands of Households Using Pesticides by Type of Pesticide and Site of Application[a]

Type of Pesticide	Site of Application					
	Indoors	Lawn	Food Crops	Ornamentals	Others	All Sites
	Estimated Thousands of Households (Standard Error in Parentheses)					
Fungicide	31,952[b] (2,642)	980 (270)	2,203 (296)	4,361 (613)	1,703 (309)	35,501 (2,606)
Insecticide	41,597 (1,943)	11,951 (1,067)	7,084 (734)	11,908 (1,033)	20,800 (1,488)	52,367 (2,383)
Molluscicide	0[c] (0)	1,098 (388)	969 (197)	2,373 (365)	936 (208)	3,591 (438)
Rodenticide	2,936 (488)	461 (147)	76[d] (55)	81[d] (57)	454 (136)	3,488 (448)
Herbicide	1,199[e] (311)	9,598 (1,083)	691 (167)	1,719 (324)	5,607 (598)	14,032 (1,265)
All the Above	57,245 (2,538)	17,882 (1,472)	8,048 (722)	13,464 (1,113)	24,054 (1,600)	64,250 (2,661)
Disinfectant	40,039 (2,819)	44[d] (44)	0[c] (0)	150[d] (116)	1,236 (268)	40,291 (2,853)
Repellent	15,183 (1,087)	1,181 (250)	77[d] (56)	514 (153)	2,132 (389)	17,066 (1,179)
All Types of Pesticides	63,716 (2,599)	18,432 (1,461)	8,086 (716)	13,662 (1,104)	24,647 (1,651)	69,018 (2,732)

[a] For pesticide products (excluding those used exclusively for agricultural production, plant growth regulators, pool chemicals, and anti-fouling paints) in storage at residences in the target population at the time of the survey (Aug-Sept 1990).

[b] Bleach, cleaning products, and humidifier products classified as fungicides in EPA's Master Product Label File.

[c] None reported in the survey.

[d] Estimate has poor precision (RSE > 50%).

[e] Bleach, cleaning products, and humidifier products classified as algaecides in EPA's Master Product Lael File.

Source: Whitmore et al., 1992.

Table 4-13. Estimated Percentage of Households Using Pesticides by Type of Pesticide and Site of Application[a]

Type of Pesticide	Site of Application					
	Indoors	Lawn	Food Crops	Ornamentals	Others	All Sites
	Estimated Percentage of Households (Standard Error in Parentheses)					
Fungicide	37.78[b] (2.97)	1.16 (0.30)	2.61 (0.35)	5.16 (0.74)	2.01 (0.39)	41.98 (2.84)
Insecticide	49.19 (1.74)	14.13 (1.15)	8.38 (0.79)	14.08 (1.25)	24.59 (1.71)	61.92 (1.90)
Molluscicide	0.00[c] (0.00)	1.30 (0.44)	1.15 (0.23)	2.81 (0.47)	1.11 (0.26)	4.25 (0.53)
Rodenticide	3.47 (0.52)	0.54 (0.18)	0.09[d] (0.07)	0.10[d] (0.07)	0.54 (0.16)	4.12 (0.51)
Herbicide	1.42[e] (0.38)	11.35 (1.26)	0.82 (0.20)	2.03 (0.41)	6.63 (0.75)	16.59 (1.51)
All the Above	67.69 (1.87)	21.14 (1.63)	9.52 (0.77)	15.92 (1.37)	28.44 (1.90)	75.97 (1.51)
Disinfectant	47.34 (3.11)	0.05[d] (0.05)	0.00[c] (0.00)	0.18[d] (0.14)	1.46 (0.33)	47.64 (3.16)
Repellent	17.95 (1.30)	1.40 (0.31)	0.09[d] (0.07)	0.61 (0.18)	2.52 (0.47)	20.18 (1.43)
All Types of Pesticides	75.34 (1.72)	21.79 (1.65)	9.56 (0.77)	16.15 (1.35)	29.14 (1.98)	81.61 (1.48)

[a] For pesticide products (excluding those used exclusively for agricultural production, plant growth regulators, pool chemicals, and anti-fouling paints) in storage at residences in the target population at the time of the survey (Aug-Sept 1990).

[b] Bleach, cleaning products, and humidifier products classified as fungicides in EPA's Master Product Label File.

[c] None reported in the survey.

[d] Estimate has poor precision (RSE > 50%).

[e] Bleach, cleaning products, and humidifier products classified as algaecides in EPA's Master Product Lael File.

Source: Whitmore et al., 1992

Table 4-14. Residential Pool Ownership in the Continental United States

	In-ground	Above-ground	Total Owned
Pool Ownership, Continental U.S.	3.4 million	3.2 million	6.6 million
In-ground Pool Ownership, Top 10 States			
California	818,000	---	
Florida	640,000	---	
Texas	228,000	---	
Arizona	183,000	---	
New York	170,000	---	
New Jersey	134,000	---	
Pennsylvania	103,000	---	
Massachusetts	82,000	---	
Ohio	76,000	---	
Georgia	71,000	---	
Above-ground Pool Ownership			
New York	---	468,000	
Pennsylvania	---	288,000	
California	---	229,000	
New Jersey	---	199,000	
Illinois	---	151,000	
Michigan	---	146,000	
Florida	---	145,000	
Massachusetts	---	139,000	
Ohio	---	133,000	
Texas	---	116,000	
Demographics			
Average Yearly Household Income	$67,000	$46,000	
Average Age: Male Head of Household	49 years	44 years	
Average Age: Female Head of Household	48 years	42 years	
Average Length of Ownership	10.4 years	7.0 years	

Source: National Spa and Pool Institute, 1993.

Table 4-15. Residential Spa Ownership in the Continental United States

		Total Owned
Spa Ownership, Continental U.S.		3.3 million
Spa Ownership, Top 10 States		
California		1,127,000
Florida		293,000
Texas		270,000
Washington		150,000
Oregon		91,000
Arizona		88,000
Michigan		85,000
Pennsylvania		77,000
New York		65,000
Nevada		63,000
Demographics		
Average Yearly Household Income	$67,000	
Average Age: Male Head of Household	47 years	
Average Age: Female Head of Household	45 years	
44% have children at home		
40% are families/couples without children		

Source: National Spa and Pool Institute, 1993.

5. BUILDINGS OTHER THAN RESIDENCES

Contaminants present inside buildings other than residences can pose a risk of exposure to persons occupying these buildings even for short periods of time. "Most people spend 90% or more of their time indoors (e.g., home, work, public, and commercial buildings), and some potentially suseptible subgroups, such as infants, the elderly, and the infirm, are inside virtually all the time" (Sexton et al., 1993). Examples of nonresidential buildings that potentially contain environmental pollutants are schools, colleges, day care centers, hospitals, and nursing homes. Populations in these types of buildings may be exposed to environmental pollutants from multiple sources. Contaminants found in these buildings may be the result of construction, operation, or the use of chemicals for regular maintenance or specific activities (e.g., laboratory work, sterilization) or the use of consumer products, combustion appliances, or from individuals smoking tobacco products. This section presents data enumerating populations found in nonresidential buildings who could potentially be exposed to environmental contaminants associated with these buildings. These data can be useful for conducting human health risk assessments for populations in these types of buildings.

5.1. POPULATIONS IN SCHOOLS/COLLEGES

The U.S. Department of Education regularly compiles statistics on numbers of persons in all types of educational situations, from kindergarten through graduate school (U.S. Department of Education, 1995). Data are collected by surveys and research conducted by both the Federal Government and the private sector. The most relevant data are presented in this section. Table 5-1 presents the estimated number of individuals participating in elementary, secondary, and higher education for the fall of 1995. Table 5-1 also presents the numbers of teachers, faculty, administrative, and support staff in these educational institutions. Table 5-2 presents the enrollment in all types of educational institutions from 1980, with projections to 2000. Enrollment in public and private schools by decade from 1869 to 1950, and by year from 1964 to the present, with projections to 2005 is displayed in Table 5-3. Enrollment in public elementary and secondary schools by race/ethnicity and by State for 1986 and 1993 is presented in Table 5-4.

Table 5-5 presents the enrollment of 3-, 4-, and 5-year-old children in preprimary programs yearly from 1965 to 1994.

The Center for Disease Control and Prevention's Agency for Toxic Substance and Disease Registry (ATSDR) published a National Alert warning of the "increasing numbers of metallic mercury spills and contamination involving schoolchildren " (ATSDR, 1997). The ATSDR National Alert (1997) listed six instances since 1994 in which metallic mercury contamination and possible exposure to school children occurred. The instances, which required decontamination of students and school facilities, occurred when children from elementary to college age found metallic mercury and shared it with other students (ATSDR, 1997).

The U.S. General Accounting Office (GAO) conducted a national survey of public schools and associated districts to determine the extent to which America's 80,000 schools have the physical capacity to support 21st century technology and education reform for all students (GAO, 1996). Questions in the survey addressed areas such as the physical condition of buildings and major building features, such as roofs, framing, floors, and foundations, and the status of environmental conditions, such as lighting, heating, and ventilation. These data are important because the physical and environmental conditions of buildings may contribute to higher exposures to pollutants. For example, inadequate ventilation could contribute to indoor air pollution, and chipped or peeling paint may potentially create exposures to lead in older, less maintained buildings. Questionnaires were sent to 9,956 sample schools in 5,459 associated districts in 50 States and the District of Columbia in May 1994. Of the 9,956 schools in the original sample, 393 were ineligible for the survey. The number of completed, usable school questionnaires returned was 7,478, yielding a school response rate of 78 percent (GAO, 1996).

The results of the survey are presented in Tables 5-6 through 5-11. Table 5-6 and 5-7 provide the number of students who attend schools with unsatisfactory environmental and physical conditions, respectively. Tables 5-8 and 5-9 provide data for the percent of schools and number of students attending schools with unsatisfactory environmental conditions by community type (central city, urban fringe/large town and rural/small town) and geographic region (Northeast, Midwest, South, West). Tables 5-10 and 5-11 present the same type information for schools with inadequate building features.

5.2. POPULATIONS IN DAY CARE CENTERS

Young children may be at increased potential risk of exposure to contaminants present in nonresidential buildings due to behavioral factors common to young children. Young children are much more likely than older children or adults to put objects into their mouths, resulting in increased occurrence and/or duration of oral contact with objects in their environment. In addition, children, unlike adults, often will sit or lie on the floor, thus increasing their potential exposure to contaminants associated with floor coverings. This section presents data useful for estimating exposure to children in day care, nursery schools, and other prekindergarten programs. The U.S. Department of Education's 1995 Digest for Education Statistics provides data on numbers of children in day care, nursery schools, and other prekindergarten programs (U.S. Department of Education, 1995). The percentage of preschool children attending center-based programs (including nursery school, prekindergarten, and Head Start programs) in 1992 is presented in Table 5-12.

5.3. POPULATIONS IN HOSPITALS

Populations receiving care in hospitals may have an increased risk of exposure to certain chemicals commonly used for hospital care. In addition, these individuals have greater exposure to other individuals who potentially may contribute to airborne infections agents, such as tuberculosis. The U.S. Bureau of the Census collects data quantifying frequency and length of hospital stays in the United States. Table 5-13 presents data on hospital utilization rates by the age of patient and by region from 1970 to 1993. Table 5-14 presents summary data by State on community hospitals, including number of facilities, beds, patients admitted, occupancy rates, personnel, and outpatient visits.

5.4. POPULATIONS IN NURSING HOMES

Individuals in nursing homes could potentially have an increased risk of exposure to contaminants in their environment resulting from their compromised health status and from the likely presence of chemicals commonly found in medical institutions, such as sterilization chemicals and/or antiseptics. The U.S. Bureau of the Census collects data enumerating

populations in nursing homes. This section presents data useful for estimating the human health risk of exposures to contaminants for individuals in nursing homes. Table 5-15 presents the numbers of persons receiving care in nursing homes for 1980 and 1990, and Table 5-16 presents the nursing home population by region, division, and State for 1980 and 1990. The U.S. Bureau of the Census subdivides the United States into four regions (Northeast, Midwest, South, and West) and further subdivides each region into divisions. The composition by State of the regions and divisions is presented in Section 2.4 of this report.

5.5. REFERENCES

Agency for Toxic Substance and Disease Registry (ATSDR). (1997) National Alert: A Warning About Continuing Patterns of Metallic Mercury Exposure. Atlanta, GA: U.S. Department of Health and Human Services, Center for Disease Control and Prevention, Agency for Toxic Substance and Disease Registry. ATSDR Internet address: http://atsdr1.atsdr.cdc.gov:8080/alerts/970626.html (Feb. 17, 1998).

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Table 5-1. Estimated Number of Participants in Elementary and Secondary Education and in Higher Education: Fall 1995
[In millions]

Participants	All Levels (Elementary, Secondary, and Higher Education)	Elementary and Secondary Schools			Institutions of Higher Education		
		Total	Public	Private	Total	Pubic	Private
Total	73.3	56.3	50.0	6.3	17.0	13.1	3.9
Enrollment[a]	65.1	50.7	45.0	5.7	14.4	11.3	3.1
Teachers and Facilty	3.8	3.0	2.6	0.4	0.8[b]	0.6[b]	0.3[b]
Other Professional, Administrative, and Support Staff	4.3	2.6	2.4	0.2	1.7	1.2	0.5

[a] Includes enrollments in local public school systems and in most private schools (religiously affiliated and nonsectarian). Excludes subcollegiate departments of institutions of higher education, residential schools for exceptional children, and Federal schools. Elementary and secondary include most kindergarten and some nursery school enrollment. Excludes preprimary enrollment in schools that do not offer first grade or above. Higher education comprises full-time and part-time students enrolled in degree-credit and nondegree-credit programs in universities, other 4-year colleges, and 2-year colleges.

[b] Includes full-time and part-time facility with the rank of instructor or above.

Note: The enrollment figures include all students in elementary and secondary schools and colleges and universities. However, the data for teacher and other staff in public and private elementary and secondary schools are reported in terms of full-time equivalents. The staff data for institutions of higher education include all full-time and part-time professional, administrative, and support personnel. Because of rounding, details may not add to totals.

Source: U.S. Department of Education, 1995.

Table 5-2. Enrollment in Educational Institutions by Level and Control of Institution: Fall 1980 to Fall 2000

[In thousands]

Level of instruction and type of control	Fall 1980	Fall 1985	Fall 1986	Fall 1987	Fall 1988	Fall 1989	Fall 1990	Fall 1991	Fall 1992	Fall 1993[a]	Fall 1994[b]	Projected fall 1995	Projected fall 2000
All levels	58,305	57,226	57,709	58,254	58,485	59,436	60,267	61,605	62,677	63,253	63,939	65,148	69,924
Public	50,335	48,901	49,467	49,981	50,350	51,121	52,061	53,356	54,200	54,665	55,266	56,348	60,510
Private	7,971	8,325	8,242	8,273	8,135	8,316	8,206	8,248	8,477	8,588	8,673	8,800	9,414
Elementary and secondary education[c]	46,208	44,979	45,205	45,488	45,430	45,898	46,448	47,246	48,190	48,947	49,610	50,709	54,402
Public	40,877	39,422	39,753	40,008	40,189	40,543	41,217	42,047	42,816	43,476	44,034	45,037	48,323
Private	5,331	5,557	5,452[d]	5,479	5,241	5,355	5,232	5,199	5,375	5,471	5,576	5,672	6,079
Grades K-8[e]	31,639	31,229	31,536	32,165	32,537	33,314	33,973	34,580	35,292	35,795	36,048	36,698	39,152
Public	27,647	27,034	27,420	27,933	28,501	29,152	29,878	30,506	31,081	31,515	31,703	32,293	34,452
Private	3,992	4,195	4,116	4,232	4,036[d]	4,162[d]	4,095	4,074[d]	4,212[d]	4,280[d]	4,345	4,405	4,700
Grades 9-12	14,570	13,750	13,669	13,323	12,893	12,583	12,475	12,666	12,898	13,152	13,563	14,011	15,250
Public	13,231	12,388	12,333	12,076	11,687	11,390	11,338	11,541	11,735	11,961	12,331	12,744	13,871
Private	1,339	1,362	1,336[d]	1,247	1,206[d]	1,193[d]	1,137	1,125[d]	1,163[d]	1,191[d]	1,232	1,267	1,379
Higher education[f]	12,097	12,247	12,504	12,767	13,055	13,539	13,819	14,359	14,486	14,306	14,329	14,439	15,522
Public	9,457	9,479	9,714	9,973	10,161	10,578	10,845	11,310	11,385	11,189	11,232	11,311	12,187
Undergraduate[g]	8,442	8,477	8,661	8,919	9,103	9,488	9,710	10,148	10,216	10,012	10,005	10,089	10,907
First-professional	114	112	112	110	109	113	112	111	111	114	118	117	117
Graduate[h]	901	890	941	945	949	978	1,023	1,050	1,058	1,064	1,109	1,105	1,163
Private	2,640	2,768	1,790	2,793	2,894	2,961	2,974	3,049	3,102	3,117	3,097	3,128	3,335
Undergraduate[g]	2,033	2,120	2,137	2,128	2,213	2,255	2,250	2,291	2,320	2,312	2,296	2,330	2,504
First-professional	163	162	158	158	158	162	162	169	170	179	175	174	177
Graduate[h]	443	486	494	507	522	544	563	589	611	626	626	624	654

[a] Preliminary.
[b] Based on "Early Estimates" surveys for public elementary and secondary schools.
[c] Includes enrollments in local public school systems and in most private schools (religiously affiliated and nonsectarian), but generally excludes pupils in subcollegiate departments of institutions of higher education, residential schools for exceptional children, and Federal schools. Excludes preprimary pupils in schools that do not offer first grade or above.
[d] Estimated.
[e] Includes kindergarten and some nursery school pupils.
[f] Includes full-time and part-time students enrolled in degree-credit and nondegree-credit programs in universities and 2-year and 4-year colleges.
[g] Includes unclassified students below the baccalaureate level.
[h] Includes unclassified postbaccalaureate students.

Note: Higher education enrollment projections are based on the low and middle alternative projections published by the National Center for Education Statistics. Some data have not been revised from previously published figures.

Source: U.S. Department of Education, 1995.

Table 5-3. Enrollment in Educational Institutions by Level and Control of Institution: 1869-70 to Fall 2005

[In thousands]

Year	Total enrollment, all levels	Elementary and secondary, total	Public elementary and secondary schools			Private elementary and secondary schools[a]			Higher education[b]		
			Total	Kindergarten through grade 8	Grades 9 through 12	Total	Kindergarten through grade 8	Grades 9 through 12	Total	Public	Private
1869-70	---	---	6,872	6,792	80	---	---	---	52	---	---
1879-80	---	---	9,868	9,757	110	---	---	---	116	---	---
1889-90	14,491	14,334	12,723	12,520	203	1,611	1,516	95	157	---	---
1899-1900	17,092	16,855	15,503	14,984	519	1,352	1,241	111	238	---	---
1909-10	19,728	19,372	17,814	16,899	915	1,558	1,441	117	355	---	---
1919-20	23,876	23,278	21,578	19,378	2,200	1,699	1,486	214	598	---	---
1929-30	29,430	28,329	25,678	21,279	4,399	2,651	2,310	341	1,101	---	---
1939-40	29,539	28,045	25,434	18,832	6,601	2,611	2,153	458	1,494	797	698
1949-50	31,151	28,492	25,111	19,387	5,725	3,380	2,708	672	2,659	1,355	1,304
Fall 1959	44,497	40,857	35,182	26,911	8,271	5,675	4,640	1,035	3,640	2,181	1,459
Fall 1964	52,996	47,716	41,416	30,025	11,391	6,300[c]	5,000[c]	1,300	5,280	3,468	1,812
Fall 1965	54,394	48,473	42,173	30,563	11,610	6,300	4,900	1,400	5,921	3,970	1,951
Fall 1966	55,629	49,239	43,039	31,145	11,894	6,200[c]	4,800[c]	1,400[c]	6,390	4,349	2,041
Fall 1967	56,803	49,891	43,891	31,641	12,250	6,000[c]	4,600[c]	1,400[c]	6,912	4,816	2,096
Fall 1968	58,257	50,744	44,944	32,226	12,718	5,800	4,400	1,400	7,513	5,431	2,082
Fall 1969	59,055	51,050	45,550	32,513	13,037	5,500[c]	4,200[c]	1,300[c]	8,005	5,897	2,108
Fall 1970	59,838	51,257	45,894	32,558	13,336	5,363	4,052	1,311	8,581	6,428	2,153
Fall 1971	60,220	51,271	46,071	32,318	13,753	5,200[c]	3,900[c]	1,300[c]	8,949	6,804	2,144
Fall 1972	59,941	50,726	45,726	31,879	13,848	5,000[c]	3,700[c]	1,300[c]	9,215	7,071	2,144
Fall 1973	60,047	50,445	45,445	31,401	14,044	5,000[c]	3,700[c]	1,300[c]	9,602	7,420	2,183
Fall 1974	60,297	50,073	45,073	30,971	14,103	5,000[c]	3,700[c]	1,300[c]	10,224	7,989	2,235
Fall 1975	61,004	49,819	44,819	30,515	14,304	5,000[c]	3,700[c]	1,300[c]	11,185	8,835	2,350
Fall 1976	60,490	49,478	44,311	29,997	14,314	5,167	3,825	1,342	11,012	8,653	2,359
Fall 1977	60,003	48,717	43,577	29,375	14,203	5,140	3,797	1,343	11,286	8,847	2,439
Fall 1978	58,897	47,637	42,551	28,463	14,088	5,086	3,732	1,353	11,260	8,786	2,474
Fall 1979	58,221	46,651	41,651	28,034	13,616	5,000[c]	3,700[c]	1,300[c]	11,570	9,037	2,533
Fall 1980	58,305	46,208	40,877	27,647	13,231	5,331	3,992	1,339	12,097	9,457	2,640
Fall 1981	57,916	45,544	40,044	27,280	12,764	5,500[c]	4,100[c]	1,400[c]	12,372	9,647	2,725
Fall 1982	57,591	45,166	39,566	27,161	12,405	5,600[c]	4,200[c]	1,400[c]	12,426	9,696	2,730
Fall 1983	57,432	44,967	39,252	26,981	12,271	5,715	4,315	1,400	12,465	9,683	2,782
Fall 1984	57,150	44,908	39,208	26,905	12,304	5,700[c]	4,300[c]	1,400[c]	12,242	9,477	2,765
Fall 1985	57,226	44,979	39,422	27,034	12,388	5,557	4,195	1,362	12,247	9,479	2,768
Fall 1986	57,709	45,205	39,753	27,420	12,333	5,452[c]	4,116[c]	1,336[c]	12,504	9,714	2,790

(continued on next page)

Table 5-3. Enrollment in Educational Institutions by Level and Control of Institution: 1869-70 to Fall 2005
[In thousands] (continued)

Year	Total enrollment, all levels	Elementary and secondary, total	Public elementary and secondary schools			Private elementary and secondary schools[a]			Higher education[b]		
			Total	Kindergarten through grade 8	Grades 9 through 12	Total	Kindergarten through grade 8	Grades 9 through 12	Total	Public	Private
Fall 1987	58,254	45,488	40,008	27,933	12,076	5,479	4,232	1,247	12,767	9,973	2,793
Fall 1988	58,485	45,430	40,189	28,501	11,687	5,241	4,036[c]	1,206[c]	13,055	10,161	2,894
Fall 1989	59,436	45,898	40,543	29,152	11,390	5,355	4,162[c]	1,193[c]	13,539	10,578	2,961
Fall 1990	60,267	46,448	41,217	29,878	11,338	5,232	4,095[c]	1,137[c]	13,819	10,845	2,974
Fall 1991	61,605	47,246	42,047	30,506	11,541	5,199	4,074[c]	1,125[c]	14,359	11,310	3,049
Fall 1992	62,677	48,190	42,816	31,081	11,735	5,375	4,212[c]	1,163[c]	14,486	11,385	3,102
Fall 1993[d]	63,253	48,947	43,476	31,515	11,961	5,471	4,280[c]	1,191[c]	14,306	11,189	3,117
Fall 1994[e]	63,939	49,610	44,034	31,703	12,331	5,576	4,345	1,232	14,329	11,232	3,097
Fall 1995[f]	65,148	50,709	45,037	32,293	12,744	5,672	4,405	1,267	14,439	11,311	3,128
Fall 1996[f]	66,371	51,745	45,960	32,863	13,097	5,785	4,483	1,302	14,626	11,476	3,151
Fall 1997[f]	67,776	52,686	46,797	33,420	13,377	5,889	4,559	1,330	15,090	11,850	3,240
Fall 1998[f]	68,559	53,367	47,403	33,825	13,578	5,964	4,614	1350	15,192	11,931	3,261
Fall 1999[f]	69,289	53,937	47,911	34,133	13,778	6,026	4,656	1,370	15,352	12,055	3,297
Fall 2000[f]	69,924	54,402	48,323	34,452	13,871	6,079	4,700	1,379	15,522	12,187	3,335
Fall 2001[f]	70,472	54,807	48,684	34,681	14,003	6,123	4,731	1,392	15,665	12,296	3,369
Fall 2002[f]	70,951	55,155	48,994	34,856	14,138	6,161	4,755	1,406	15,796	12,396	3,400
Fall 2003[f]	71,261	55,413	49,225	34,963	14,262	6,188	4,770	1,418	15,848	12,435	3,413
Fall 2004[f]	71,657	55,681	49,470	34,931	14,539	6,211	4,765	1,446	15,976	12,529	3,447
Fall 2005[f]	71,948	55,871	49,651	34,703	14,948	6,220	4,734	1486	16,077	12,607	3,470

[a] Beginning in fall 1980, data include estimates for an expanded universe of private schools. Therefore, these totals may differ from figures shown in other tables, and direct comparisons with earlier years should be avoided.
[b] Data for 1869-70 through 1949-50 include resident degree-credit students enrolled at any time during the academic year. Beginning in 1959, data include all resident and extension students enrolled at the beginning of the fall term.
[c] Estimated.
[d] Preliminary data.
[e] Public elementary and secondary data are based on "Early Estimates" surveys. Other data are projected.
[f] Projected.

Note: Elementary and secondary enrollment includes pupils in local public school systems and in most private schools (religiously affiliated and nonsectarian), but generally excludes pupils in subcollegiate departments of institutions of higher education, residential schools for exceptional children, and Federal schools. Elementary enrollment includes some nursery school pupils. Higher education enrollment includes students in colleges, universities, professional schools, teachers colleges, and 2-year colleges. Higher education enrollment projections are based on the low and middle alternative projections published by the National Center for Education Statistics. Some data have not been revised from previously published figures. Because of rounding, details may not add to totals.

Source: U.S. Department of Education, 1995.

Table 5-4. Enrollment in Public Elementary and Secondary Schools by Race or Ethnicity and State: Fall 1986 and Fall 1993

State or area	Percent distribution, fall 1986						Percent distribution, fall 1993					
	Total	White[a]	Black[a]	Hispanic	Asian or Pacific Islander	American Indian/Alaska Native	Total	White[a]	Black[a]	Hispanic	Asian or Pacific Islander	American Indian/Alaska Native
United States	**100.0**	**70.4**	**16.1**	**9.9**	**2.8**	**0.9**	**100.0**	**66.1[b]**	**16.6[b]**	**12.7[b]**	**3.6[b]**	**1.1[b]**
Alabama	100.0	62.0	37.0	0.1	0.4	0.5	100.0	62.4	35.8	0.4	0.6	0.8
Alaska	100.0	65.7	4.3	1.7	3.3	25.1	100.0	65.3	4.9	2.4	4.1	23.3
Arizona	100.0	62.2	4.0	26.4	1.3	6.1	100.0	59.7	4.2	27.6	1.6	6.9
Arkansas	100.0	74.7	24.2	0.4	0.6	0.2	100.0	74.1	24.1	0.9	0.7	0.3
California	100.0	53.7	9.0	27.5	9.1	0.7	100.0	42.3	8.7	37.0	11.2	0.8
Colorado	100.0	78.7	4.5	13.7	2.0	1.0	100.0	74.1	5.4	17.1	2.4	1.0
Connecticut	100.0	77.2	12.1	8.9	1.5	0.2	100.0	73.3	13.0	11.1	2.4	0.2
Delaware	100.0	68.3	27.7	2.5	1.4	0.2	100.0	66.2	28.5	3.4	1.7	0.2
District of Columbia	100.0	4.0	91.1	3.9	0.9	0.1	100.0	4.0	88.5	6.1	1.3	([c])
Florida	100.0	65.4	23.7	9.5	1.2	0.2	100.0	59.6	24.7	13.8	1.7	0.2
Georgia	100.0	60.7	37.9	0.6	0.8	([c])	100.0	59.9	37.0	1.5	1.4	0.2
Hawaii	100.0	23.5	2.3	2.2	71.7	0.3	100.0	23.7	2.6	5.0	68.4	0.3
Idaho	100.0	92.6	0.3	4.9	0.8	1.3	100.0	92.6	0.3	4.9	0.8	1.3
Illinois	100.0	69.8	18.7	9.2	2.3	0.1	100.0	64.8	21.0	11.1	2.9	0.1
Indiana	100.0	88.7	9.0	1.7	0.5	0.1	100.0	85.9	11.1	2.1	0.8	0.2
Iowa	100.0	94.6	3.0	0.9	1.2	0.3	100.0	93.4	3.1	1.6	1.5	0.4
Kansas	100.0	85.6	7.6	4.4	1.9	0.6	100.0	83.4	8.4	5.3	1.8	1.0
Kentucky	100.0	89.2	10.2	0.1	0.5	([c])	100.0	89.3	9.8	0.3	0.5	([c])
Louisiana	100.0	56.5	41.3	0.8	1.1	0.3	100.0	51.7	45.4	1.1	1.3	0.5
Maine	100.0	98.3	0.5	0.2	0.8	0.2	---	---	---	---	---	---
Maryland	100.0	59.7	35.3	1.7	3.1	0.2	100.0	58.9	34.2	2.9	3.7	0.3
Massachusetts	100.0	83.7	7.4	6.0	2.8	0.1	100.0	79.3	8.1	8.8	3.7	0.2
Michigan	100.0	76.4	19.8	1.8	1.2	0.8	100.0	78.1	17.1	2.4	1.4	1.0
Minnesota	100.0	93.9	2.1	0.9	1.7	1.5	100.0	88.8	4.2	1.7	3.5	1.9
Mississippi	100.0	43.9	55.5	0.1	0.4	0.1	100.0	47.9	50.9	0.3	0.5	0.4
Missouri	100.0	83.4	14.9	0.7	0.8	0.2	100.0	82.3	15.7	0.9	0.9	0.2
Montana	100.0	92.7	0.3	0.9	0.5	5.5	100.0	87.8	0.5	1.4	0.8	9.6
Nebraska	100.0	91.4	4.4	2.4	0.8	1.0	100.0	88.3	5.7	3.6	1.2	1.3
Nevada	100.0	77.4	9.6	7.5	3.2	2.3	100.0	70.5	9.2	14.3	4.0	2.0
New Hampshire	100.0	98.0	0.7	0.5	0.8	0.1	100.0	96.9	0.8	1.0	1.0	0.2
New Jersey	100.0	69.1	17.4	10.7	2.7	0.1	100.0	63.4	18.6	12.8	5.1	0.1
New Mexico	100.0	43.1	2.3	45.1	0.8	8.7	100.0	40.5	2.3	46.0	0.9	10.2
New York	100.0	68.4	16.5	12.3	2.7	0.2	100.0	58.3	20.1	16.5	4.7	0.4

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Table 5-4. Enrollment in Public Elementary and Secondary Schools by Race or Ethnicity and State: Fall 1986 and Fall 1993 (continued)

State or area	Percent distribution, fall 1986						Percent distribution, fall 1993					
	Total	White[a]	Black[a]	Hispanic	Asian or Pacific Islander	American Indian/Alaska Native	Total	White[a]	Black[a]	Hispanic	Asian or Pacific Islander	American Indian/Alaska Native
North Carolina	100.0	68.4	28.9	0.4	0.6	1.7	100.0	65.7	30.3	1.3	1.1	1.6
North Dakota	100.0	92.4	0.6	1.1	0.8	5.0	100.0	90.3	0.7	0.8	0.7	7.5
Ohio	100.0	83.1	15.0	1.0	0.7	0.1	100.0	82.7	14.9	1.3	1.0	0.1
Oklahoma	100.0	79.0	7.8	1.6	1.0	10.6	100.0	71.6	10.3	3.3	1.2	13.7
Oregon	100.0	89.8	2.2	3.9	2.4	1.7	100.0	86.6	2.4	5.8	3.1	2.0
Pennsylvania	100.0	84.4	12.6	1.8	1.2	0.1	100.0	81.1	13.8	3.3	1.7	0.1
Rhode Island	100.0	87.9	5.6	3.7	2.4	0.3	100.0	81.1	6.8	8.6	3.1	0.4
South Carolina	100.0	54.6	44.5	0.2	0.6	0.1	100.0	57.2	41.4	0.6	0.7	0.2
South Dakota	100.0	90.6	0.5	0.6	0.7	7.6	100.0	84.9	0.7	0.6	0.7	13.0
Tennessee	100.0	76.5	22.6	0.2	0.6	(c)	100.0	75.6	22.9	0.5	0.9	0.1
Texas	100.0	51.0	14.4	32.5	2.0	0.2	100.0	47.7	14.3	35.5	2.2	0.2
Utah	100.0	93.7	0.4	3.0	1.5	1.5	100.0	91.5	0.6	4.5	2.0	1.4
Vermont	100.0	98.4	0.3	0.2	0.6	0.6	100.0	97.5	0.7	0.3	0.9	0.6
Virginia	100.0	72.6	23.7	1.0	2.6	0.1	100.0	67.9	25.8	2.8	3.3	0.2
Washington	100.0	84.5	4.2	3.8	5.1	2.3	100.0	79.9	4.4	6.9	6.2	2.6
West Virginia	100.0	95.9	3.7	0.1	0.3	(c)	100.0	95.3	4.0	0.2	0.4	0.1
Wisconsin	100.0	86.6	8.9	1.9	1.7	1.0	100.0	84.3	9.1	2.9	2.4	1.3
Wyoming	100.0	90.7	0.9	5.9	0.6	1.9	100.0	89.4	1.0	6.2	0.7	2.7
Other areas												
American Samoa	---	---	---	---	---	---	---	---	---	---	---	---
Guam	---	---	---	---	---	---	100.0	9.1	1.9	0.6	88.4	0.1
Northern Marianas	---	---	---	---	---	---	100.0	1.1	(c)	(c)	98.9	(c)
Puerto Rico	--	---	---	---	---	---	100.0	(c)	(c)	100.0	(c)	(c)
Virgin Islands	---	---	---	---	---	---	100.0	1.0	85.4	13.2	0.5	(c)

— Data not available.
a Excludes persons of Hispanic origin.
b Includes estimate for nonresponding State.
c Less than 0.05%.

Note: The 1986-87 data were derived from the 1986 Elementary and Secondary School Civil Rights sample survey of public school districts. Because of rounding, details may not add to totals.

Source: U.S. Department of Education, 1995.

Table 5-5. Enrollment of 3-, 4-, and 5-Year-Old Children in Preprimary Programs by Level and Control of Program and by Attendance Status: October 1965 to October 1994

[In thousands]

Year and age	Total population, 3 to 5 years old	Enrollment by level and control						Enrollment by attendance		
		Total	Percent enrolled	Nursery school		Kindergarten		Full-day	Part-day	Percent full-day
				Public	Private	Public	Private			
Total, 3 to 5 years old										
1965	12,549	3,407	27.1	127	393	2,291	596	---	---	---
1970	10,949	4,104	37.5	332	762	2,498	511	698	3,405	17.0
1975	10,185	4,955	48.7	570	1,174	2,682	528	1,295	3,659	26.1
1980	9,284	4,878	52.5	628	1,353	2,438	459	1,551	3,327	31.8
1982	9,873	5,105	51.7	729	1,423	2,459	494	1,574	3,531	30.8
1983	10,254	5,384	52.5	809	1,538	2,416	623	1,686	3,700	31.3
1984	10,612	5,480	51.6	742	1,593	2,668	476	1,929	3,550	35.2
1985	10,733	5,865	54.6	846	1,631	2,847	541	2,144	3,722	36.6
1986	10,866	5,971	55.0	829	1,715	2,859	567	2,241	3,730	37.5
1987	10,872	5,931	54.6	819	1,736	2,842	534	2,090	3,841	35.2
1988	10,993	5,978	54.4	851	1,770	2,875	481	2,044	3,935	34.2
1989	11,039	6,026	54.6	930	1,894	2,704	497	2,238	3,789	37.1
1990	11,207	6,659	59.4	1,199	2,180	2,773	509	2,577	4,082	38.7
1991	11,370	6,334	55.7	996	1,828	2,967	543	2,408	3926	38.0
1992	11,545	6,402	55.5	1,073	1,783	2,995	550	2,410	3,992	37.6
1993	11,954	6,581	55.1	1,205	1,779	3,020	577	2,642	3,939	40.1
1994[a]	12,328	7,514	61.0	1,848	2,314	2,819	534	3,468	4,046	46.2
3 years old										
1965	4,149	203	4.9	41	153	5	4	---	---	---
1970	3,516	454	12.9	110	322	12	10	142	312	31.3
1975	3,177	683	21.5	179	474	11	18	259	423	37.9
1980	3,143	857	27.3	221	604	16	17	321	536	37.5
1982	3,387	928	27.4	312	578	27	10	280	648	30.2
1983	3,574	1,004	28.1	314	631	21	39	357	648	35.5
1984	3,609	1,004	27.8	295	658	30	22	401	603	39.9
1985	3,594	1,035	28.8	278	679	52	26	350	685	33.8
1986	3,607	1,041	28.9	257	737	26	21	399	642	38.3
1987	3,569	1,022	28.6	264	703	24	31	378	644	37.0
1988	3,719	1,027	27.6	298	678	24	26	369	658	35.9
1989	3,713	1,005	27.1	277	707	3	18	390	615	38.8
1990	3,692	1,205	32.6	347	840	11	7	447	758	37.1
1991	3,811	1,074	28.2	313	702	38	22	388	687	36.1
1992	3,905	1,081	27.7	336	685	26	34	371	711	34.3
1993	4,053	1,097	27.1	369	687	20	20	426	670	38.9
1994[a]	4,081	1,385	33.9	469	887	19	9	670	715	48.4
4 years old										
1965	4,238	683	16.1	68	213	284	118	---	---	---
1970	3,620	1,007	27.8	176	395	318	117	230	776	22.8

(continued on next page)

Table 5-5. Enrollment of 3-, 4-, and 5-Year-Old Children in Preprimary Programs by Level and Control of Program and by Attendance Status: October 1965 to October 1994 (continued)

[In thousands]

Year and age	Total population, 3 to 5 years old	Enrollment by level and control						Enrollment by attendance		
		Total	Percent enrolled	Nursery school		Kindergarten		Full-day	Part-day	Percent full-day
				Public	Private	Public	Private			
1975	3,499	1,418	40.5	332	644	313	129	411	1,008	29.0
1980	3,072	1,423	46.3	363	701	239	120	467	956	32.8
1982	3,271	1,496	45.7	377	781	225	113	442	1,054	29.5
1983	3,414	1,619	47.4	402	813	231	173	442	1,177	27.3
1984	3,579	1,603	44.8	376	860	257	110	521	1,082	32.5
1985	3,598	1,766	49.1	496	859	276	135	643	1,123	36.4
1986	3,616	1,772	49.0	498	903	257	115	622	1,150	35.1
1987	3,597	1,717	47.7	431	881	280	125	548	1,169	31.9
1988	3,598	1,768	49.1	481	922	261	104	519	1,249	29.4
1989	3,692	1,882	51.0	524	1,055	202	100	592	1,290	31.4
1990	3,723	2,087	56.1	695	1,144	157	91	716	1,371	34.3
1991	3,763	1,994	53.0	584	982	287	140	667	1,326	33.5
1992	3,807	1,982	52.1	602	971	282	126	632	1,350	31.9
1993	4,044	2,178	53.9	719	957	349	154	765	1,413	35.1
1994[a]	4,202	2,532	60.3	1,020	1,232	198	82	1,095	1,438	43.2
5 years old										
1965	4,162	2,521	60.6	18	27	2,002	474	---	---	---
1970	3,814	2,643	69.3	45	45	2,168	384	326	2,317	12.3
1975	3,509	2,854	81.3	59	57	2,358	381	625	2,228	21.9
1980	3,069	2598	84.7	44	48	2,183	322	763	1,835	29.4
1982	3,215	2,681	83.4	40	64	2,207	370	852	1,829	31.8
1983	3,266	2,761	84.5	93	94	2,164	410	887	1,875	32.1
1984	3,423	2,872	83.9	72	76	2,381	344	1,007	1,865	35.1
1985	3,542	3,065	86.5	73	94	2,519	379	1,151	1,914	37.6
1986	3,643	3,157	86.7	75	75	2576	432	1,220	1,937	38.6
1987	3,706	3,192	86.1	124	152	2,538	378	1,163	2,028	36.4
1988	3,676	3,184	86.6	72	170	2,590	351	1,155	2,028	36.3
1989	3,633	3,139	86.4	129	132	2,499	378	1,255	1,883	40.0
1990	3,792	3,367	88.8	157	196	2,604	411	1,414	1,953	42.0
1991	3,796	3,267	86.0	100	143	2,642	382	1,354	1,913	41.4
1992	3,832	3,339	87.1	135	127	2,688	390	1,408	1,931	42.2
1993	3,857	3,306	85.7	116	136	2,651	403	1,451	1,856	43.9
1994[a]	4,044	3,597	88.9	359	194	2,601	442	1,704	1,893	47.4

— Data not available.

[a] Data collected using revised procedures. May not be comparable with figures for earlier years.

Note: Data are based on sample surveys of the civilian noninstitutional population. Although cells with fewer than 75,000 children are subject to wide sampling variation, they are included in the table to permit various types of aggregations. Enrollment data for 5-year-olds include only those students in preprimary programs. Because of rounding, details may not add to totals.

Source: U.S. Department of Education, 1995.

Table 5-6. Students That Attend Schools With Unsatisfactory Environmental Conditions[a]

Environmental Condition	Number of Schools	Number of Students Affected	Percent of Students Affected[b]
Lighting	12,200	6,682,000	13
Heating	15,000	7,888,000	15
Ventilation	21,100	11,559,000	22
Indoor Air Quality	15,000	8,353,000	16
Acoustics for Noise Control	21,900	11,044,000	22
Physical Security	18,900	10,638,000	21

[a] Ranges for building feature condition were excellent, good, adequate, fair, poor, or replace. A building or building feature was considered in less-than-adequate condition if fair, poor, or replace was indicated.

[B] Percent calculated based on a total of 42-million students.

Source: GAO, 1996

Table 5-7. Students That Attend Schools With Less-Than-Adequate Physical Conditions[a]

Building Feature	Number of Schools	Estimate of Students Affected	Percent of Students Affected[b]
Roofs	21,100	11,916,000	28
Framing, floors, foundations	13,900	7,247,000	17
Exterior walls, finishes, windows, doors	20,500	11,524,000	22
Interior finishes, trims	18,600	10,408,000	20
Plumbing	23,100	12,254,000	24
Heating, ventilation air conditioning	28,100	15,456,000	30
Electrical power	20,500	11,034,000	21
Electrical lighting	19,500	10,837,000	21
Life safety codes	14,500	7,630,000	15

[a] Ranges for building feature condition were excellent, good, adequate, fair, poor, or replace. A building or building feature was considered in less-than-adequate condition if fair, poor, or replace was indicated.

[B] Percent calculated based on a total of 42-million students.

Source: GAO, 1996

Table 5-8. Estimated Percent of Schools and Number of Students Attending Schools With Unsatisfactory Environmental Conditions by Community Type[a]

Environmental Condition	Central City	Urban Fringe/Large Town	Rural/Small Town
Lighting			
Percent of schools	20.4	17.3	11.4
Number of students (000s)	2,980[a]	2,072[b]	1,621[a]
Heating			
Percent of schools	22.8	19.0	17.0
Number of students (000s)	3,185[c]	2,249[a]	2,440[c]
Ventilation			
Percent of schools	31.5	28.2	23.6
Number of students (000s)	4,663	3,502[c]	3,380
Indoor Air Quality			
Percent of schools	22.5	19.0	17.2
Number of students (000s)	3,441[a]	2,241[a]	2,482
Acoustics for Noise Control			
Percent of schools	31.6	26.3	26.8
Number of students (000s)	4,250[c]	3,024[a]	3,755
Energy Efficiency			
Percent of schools	46.1	40.3	38.6
Number of students (000s)	6,412	4,944	5,531
Physical Security			
Percent of schools	26.5	22.8	23.5
Number of students (000s)	4,023[c]	3,038[a]	3,562[c]
At Least One Unsatisfactory Environmental Condition			
Percent of schools	65.1	58.5	53.9
Number of students (000s)	9,400	7,322	8,007

[a] Sampling errors for estimates based on percent of schools are less than ±4 percentage points. Sampling errors for estimates based on number of students are less than ±11 percentage in most cases.

[B] A large central city (a central city of a Standard Metropolitan Statistical Area (SMSA)) with population greater than or equal to 400,000 or a population density greater than or equal to 6,000 per square mile) or a mid-size central city (a central city of an SMSA but not designated a large central city).

Urban fringe of a large or mid-size central city (a place within an SMSA of a large or mid-size central city and defined as urban by the Bureau of the Census) or a large town (a place not within an SMSA but with a population greater than or equal to 25,000 and defined as urban by the Bureau of the Census).

Rural area (a place with a population of less than 2,500 and defined as rural by the Bureau of the Census) or a small town (a place not within an SMSA, with a population of less than 25,000, but greater than or equal to 2,500, and defined as urban by the Bureau of the Census). Source: GAO, 1996.

Table 5-9. Estimated Percent of Schools and Number of Students Attending Schools With Unsatisfactory Environmental Conditions by Geographic Region[a]

Environmental Condition	Northeast	Midwest	South	West
Lighting				
Percent of schools	13.8[A]	12.8	13.7	23.8
Number of students (000s)		1,456[b]	1,992[c]	2,502[c]
Heating				
Percent of schools	20.3	18.2	16.3	24.3
Number of students (000s)	1,327[b]	1,878[c]	2,360[d]	2,322[c]
Ventilation				
Percent of schools	31.4	27.8	20.9	32.3
Number of students (000s)	2,204[c]	3,025	3,059	3,270[c]
Indoor Air Quality				
Percent of schools	19.9	18.4	16.8	23.5
Number of students (000s)	1,351[b]	2,057[c]	2,486[d]	2,458[c]
Acoustics for Noise Control				
Percent of schools	29.6	29.3	24.4	30.9
Number of students (000s)	1,859[c]	2,893	3,315	2,977[c]
Energy Efficiency				
Percent of schools	37.0	38.7	40.3	49.5
Number of students (000s)	2,342[c]	3,854	5,940	4,769
Physical Security				
Percent of schools	21.1	21.2	23.9	31.4
Number of students (000s)	1,519[b]	2,216[d]	3,524[d]	3,378[d]
At Least One Unsatisfactory Environmental Condition				
Percent of schools	56.8	57.3	54.2	67.5
Number of students (000s)	4,038	5,924	8,050	6,743

[a] Sampling errors for estimates based on percent of schools are less than ±4 percentage points. Sampling errors for estimates based on number of students are less than ±11 percentage in most cases.

[B] **Northeast** Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, Connecticut, New York, New Jersey, and Pennsylvania
Midwest Ohio, Indiana, Illinois, Michigan, Wisconsin, Minnesota, Iowa, Missouri, North Dakota, South Dakota, Nebraska, and Kansas
Missouri North Dakota, South Dakota, Nebraska, and Kansas
South Delaware, Maryland, District of Columbia, Virginia, West Virginia, North Carolina, South Carolina, Georgia, Florida, Kentucky, Tennessee, Alabama, Mississippi, Arkansas, Louisiana, Oklahoma, and Texas
West Montana, Idaho, Wyoming, Colorado, New Mexico, Arizona, Utah, Nevada, Washington, Oregon, California, Alaska, and Hawaii

Source: GAO, 1996.

Table 5-10. Estimated Percent of Schools and Number of Students Attending Schools With Inadequate Building Features by Community Type[a]

Building Feature	Central City	Urban Fringe/Large Town	Rural/Small Town
Roofs			
Percent of schools	32.8	26.9	23.9
Number of students (000s)	4,907	3,421[a]	3,575
Framing, Floors, and Foundations			
Percent of schools	22.2	15.1	16.7
Number of students (000s)	3,207[b]	1,868[c]	2,160[a]
Exterior Walls, Finishes, Windows, and Doors			
Percent of schools	34.3	24.8	22.4
Number of students (000s)	5,148	3,116[a]	3,246[a]
Interior Finishes			
Percent of schools	29.8	23.4	20.8
Number of students (000s)	4,604[a]	2,959[b]	2,833[a]
Plumbing			
Percent of schools	34.2	27.0	28.6
Number of students (000s)	5,014	3,274[a]	3,952
HVAC			
Percent of schools	41.7	36.0	33.1
Number of students (000s)	6,022	4.516	4,900
Electrical Power			
Percent of schools	31.8	26.7	22.7
Number of students (000s)	4,626	3,234[a]	3,166
Electrical Lighting			
Percent of schools	29.4	26.3	21.7
Number of students (000s)	4,379[a]	3,320[a]	3,125[b]
Life Safety Codes			
Percent of schools	21.9	20.0	16.4
Number of students (000s)	3,032[b]	2,361[b]	2,221[a]
At Least One Inadequate Building Feature			
Percent of schools	66.6	56.8	51.7
Number of students (000s)	9.653	7,137	7,790

[a] Sampling errors for estimates based on percent of schools are less than ±4 percentage points. Sampling errors for estimates based on number of students are less than ±11 percentage in most cases.

[b] A large central city (a central city of a Standard Metropolitan Statistical Area (SMSA)) with population greater than or equal to 400,000 or a population density greater than or equal to 6,000 per square mile) or a mid-size central city (a central city of an SMSA but not designated a large central city).

Urban fringe of a large or mid-size central city (a place within an SMSA of a large or mid-size central city and defined as urban by the Bureau of the Census) or a large town (a place not within an SMSA but with a population greater than or equal to 25,000 and defined as urban by the Bureau of the Census).

Rural area (a place with a population of less than 2,500 and defined as rural by the Bureau of the Census) or a small town (a place not within an SMSA, with a population of less than 25,000, but greater than or equal to 2,500, and defined as urban by the Bureau of the Census).

Source: GAO, 1996.

Table 5-11. Estimated Percent of Schools and Number of Students Attending Schools With Inadequate Building Features by Geographic Region[a]

Building Feature	Northeast	Midwest	South	West
Roofs				
Percent of schools	28.3	23.3	26.2	33.8
Number of students (000s)	2,125[a]	2,449[b]	3,889	3,453[b]
Framing, Floors, and Foundations				
Percent of schools	14.8	16.4	17.9	22.6
Number of students (000s)	1,038[c]	1,531[d]	2,352[b]	2,327[d]
Interior Finishes				
Percent of schools	21.7	21.5	22.1	32.7
Number of students (000s)	1,584[d]	2,153[b]	3,126	3,544[b]
Plumbing				
Percent of schools	25.5	30.3	27.5	36.4
Number of students (000s)	1,731[d]	3,015	3,890	3,618[b]
HVAC				
Percent of schools	35.6	38.0	32.7	40.7
Number of students (000s)	2,403[b]	3,999	4,984	4,070
Electrical Power				
Percent of schools	22.2	28.9	22.9	31.8
Number of students (000s)	1,379[d]	3,106	3,397	3,151[b]
Electrical Lighting				
Percent of schools	18.6	24.6	22.9	35.0
Number of students (000s)	1,128[d]	2,617[b]	3,393[b]	3,699[b]
Life Safety Codes				
Percent of schools	15.6	19.8	18.2	21.7
Number of students (000s)	988[c]	2,012[a]	2,456[b]	2,174[d]
At Least One Unsatisfactory Environmental Condition				
Percent of schools	58.6	56.9	53.0	64.0
Number of students (000s)	4,216	5,991	7,919	6,476

[a] Sampling errors for estimates based on percent of schools are less than ±4 percentage points. Sampling errors for estimates based on number of students are less than ±11 percentage in most cases.

[B] **Northeast** Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, Connecticut, New York, New Jersey, and Pennsylvania

Midwest Ohio, Indiana, Illinois, Michigan, Wisconsin, Minnesota, Iowa, Missouri, North Dakota, South Dakota, Nebraska, and Kansas

Missouri North Dakota, South Dakota, Nebraska, and Kansas

South Delaware, Maryland, District of Columbia, Virginia, West Virginia, North Carolina, South Carolina, Georgia, Florida, Kentucky, Tennessee, Alabama, Mississippi, Arkansas, Louisiana, Oklahoma, and Texas

West Montana, Idaho, Wyoming, Colorado, New Mexico, Arizona, Utah, Nevada, Washington, Oregon, California, Alaska, and Hawaii

Source: GAO, 1996.

Table 5-12. Percentage of Preschool Children Attending Center-Based Programs by Child and Family Characteristic: 1991

Child and family characteristic	Number of preschool-eligible children (in thousands)[a]	Percent attending any center-based program[b]	Type of center-based program[b]		
			Day care center, not nursery school	Nursery school, not day care center	Both
Total	**8,442**	**53**	**14**	**35**	**4**
Child's age[c]					
3-year-olds	3,749	42	15	24	4
4-year-olds	3,636	60	13	43	5
5-year-olds	1,044	64	11	46	6
6-year-olds and older	14	—	—	—	—
Child's race / ethnicity					
White, non-Hispanic	5,880	54	13	36	5
Black, non-Hispanic	1,241	58	21	35	3
Hispanic	1,002	39	10	27	3
Other	319	53	10	36	6
Household income					
$10,000 or less	1,495	45	11	31	3
$10,001 to $20,000	1,439	44	13	28	4
$20,001 to $30,000	1,717	45	13	28	3
$30,001 to $40,000	1,325	53	14	34	6
$40,001 to $50,000	936	60	18	38	4
$50,001 to $75,000	975	68	15	47	7
More than $75,000	556	80	15	57	9
Parent's highest education[d]					
Less than high school	789	30	7	23	1
High school graduate or equivalent	2,744	57	12	29	3
Vocational/technical or some college	2,554	56	16	34	5
College graduate	1,281	65	16	44	5
Graduate or professional school	1,020	73	15	51	8
Mother's employment status					
Working 35 hours per week or more	2,795	60	25	28	7
Working less than 35 hours per week	1,908	58	12	40	6
Looking for work	518	43	9	32	2
Not in labor force	3,014	45	5	39	2

— Estimate suppressed because there were fewer than 30 respondents.
[a] Number of children 3 to 6 years of age not enrolled in kindergarten or higher level programs.
[b] Includes children enrolled in nursery school, prekindergarten, and Head Start.
[c] Calculated as of January 1, 1991.
[d] Highest level of schooling completed by either parent or guardian in the household or the only parent or guardian in the household.

Source: U.S. Department of Education, 1995.

Table 5-13. Hospital Utilization Rates: 1970 to 1993

[Represents estimates of inpatients discharged from noninstitutional, short-stay hospitals, exclusive of Federal hospitals. Excludes newborn infants. Based on sample data collected from the National Hospital Discharge Survey, a sample survey of hospital records of patients discharged in year shown; subject to sampling variability. For composition of regions, see text section 2.4.]

Selected Characteristic	Patients discharged (1,000)	Patients discharged per 1,000 persons[a]			Days of care per 1,000 persons			Average stay (days)		
		Total	Male	Female	Total	Male	Female	Total	Male	Female
Year										
1970	29,127	144	118	169	1,122	982	1,251	8.0	8.7	7.6
1980	37,832	168	139	194	1,217	1,068	1,356	7.3	7.7	7.0
1985	35,056	148	124	171	954	849	1,053	6.5	6.9	6.2
1986	34,256	143	121	164	913	817	1,003	6.4	6.8	6.1
1987	33,387	138	116	159	889	806	968	6.4	6.9	6.1
1988[b]	31,146	128	107	147	834	757	907	6.5	7.1	6.2
1989[b]	30,947	126	105	145	815	741	884	6.5	7.0	6.1
1990[b]	30,788	124	102	144	792	704	875	6.4	6.9	6.1
1991[b]	31,098	124	103	144	795	715	869	6.4	7.0	6.0
1992[b]	30,951	122	101	142	751	680	818	6.2	6.7	5.8
1993[b]	30,825	120	98	141	720	644	792	6.0	6.5	5.6
1994[b,c]	30,843	119	98	139	684	619	755	5.7	6.2	5.4
Age (in years)										
Under 1	710	181	206	156	1,155	1,265	1,041	6.4	6.1	6.7
1 to 4	654	41	46	37	163	169	157	3.9	3.7	4.3
5 to 14	777	21	22	20	108	110	105	5.1	5.1	5.2
15 to 24	3,088	87	37	138	309	204	416	3.5	5.5	3.0
25 to 34	4,655	113	53	171	446	313	575	4.0	5.9	3.4
35 to 44	3,457	85	72	99	431	424	438	5.1	5.9	4.4
45 to 64	6,283	127	132	123	785	831	742	6.2	6.3	6.1
65 to 74	4,890	262	284	245	1,927	2,033	1,844	7.4	7.2	7.5
75 and older	6,310	446	476	430	3,665	3,764	3,609	8.2	7.9	8.4
Region										
Northeast	6,965	136	119	152	952	876	1,023	7.0	7.4	6.7
Midwest	7,097	116	98	134	706	638	771	6.1	6.5	5.8
South	11,580	131	104	156	749	658	834	5.7	6.3	5.4
West	5,183	93	72	114	473	419	527	5.1	5.8	4.6

[a] Based on U.S. Bureau of the Census estimated civilian population as of July 1. Estimates for 1980-1990 do not reflect revisions based on the 1990 Census of the Population.

[b] Comparisons beginning in 1988 with data for earlier years should be made with caution as estimates of change may reflect improvements in the design rather than true changes in hospital use.

[c] 1994 data based on Bureau of Census, 1997.

Source: U.S. Bureau of the Census, 1995; 1997.

Table 5-14. Community Hospitals[a]: 1993

Region, Division, and State	Number of Hospitals	Beds (1,000)	Patients Admitted (1,000)	Average Daily Census (1,000)[b]	Occupancy Rate[c]	Personnel[d]	Outpatient Visits (mil.)
UNITED STATES	**5,261**	**916.2**	**30,748.1**	**591.7**	**64.6**	**3,676.6**	**366.9**
NORTHEAST	788	204.8	6,896.6	157.3	76.8	886.5	92.9
New England	227	43.1	1,602.7	30.6	71.0	206.5	23.4
Maine	39	4.4	145.1	3.0	68.0	18.5	2.2
New Hampshire	15	1.9	57.5	1.2	64.2	7.0	0.9
Vermont	28	3.4	109.7	2.1	63.7	13.8	1.8
Massachusetts	99	21.1	817.3	15.1	71.5	107.8	12.4
Rhode Island	11	3.0	126.8	2.2	73.3	14.7	1.4
Connecticut	35	9.2	346.3	6.9	74.4	44.8	4.8
Middle Atlantic	561	161.8	5,293.9	126.7	78.3	680.0	69.5
New York	231	77.4	2,359.9	64.1	82.8	328.7	33.7
New Jersey	97	31.1	1,103.2	23.9	77.0	121.0	11.2
Pennsylvania	233	53.4	1,830.7	38.7	72.6	230.3	24.6
MIDWEST	1,523	238.8	7,421.8	146.5	61.4	933.8	99.9
East North Central	809	155.1	5,221.6	96.6	62.3	653.3	73.8
Ohio	192	41.1	1,413.7	24.9	60.5	176.2	19.4
Indiana	115	21.3	712.3	12.5	58.7	90.6	10.8
Illinois	208	44.1	1,467.8	28.0	63.5	180.0	19.6
Michigan	167	30.9	1,059.4	20.0	64.7	140.9	16.4
Wisconsin	127	17.7	568.4	11.2	63.4	65.5	7.5
West North Central	714	83.7	2,200.3	49.9	59.6	280.5	26.1
Minnesota	145	18.4	496.1	12.1	66.0	55.0	5.3
Iowa	119	13.4	348.4	7.7	57.9	44.1	5.1
Missouri	130	23.6	705.1	13.9	58.9	95.9	8.2
North Dakota	45	4.4	90.8	2.8	64.2	12.2	0.8
South Dakota	51	4.3	94.9	2.6	60.6	11.4	0.9
Nebraska	90	8.4	175.1	4.6	55.2	25.7	2.1
Kansas	134	11.3	289.8	6.1	54.2	36.3	3.6
SOUTH	1,982	329.1	11,025.3	201.9	61.3	1,265.1	104.9
South Atlantic	790	159.1	5,502.6	103.3	64.9	632.8	52.7
Delaware	8	2.2	79.3	1.5	70.9	10.9	1.2
Maryland	50	13.0	559.3	9.8	75.3	60.9	4.5
District of Columbia	11	4.2	156.4	3.1	73.2	20.1	1.3
Virginia	96	19.5	690.7	12.5	64.2	76.4	6.6
West Virginia	58	8.3	278.3	5.2	61.9	30.4	3.5
North Carolina	117	22.7	785.5	15.8	69.6	97.0	7.7
South Carolina	68	11.4	394.2	7.7	67.3	45.9	3.9
Georgia	159	26.5	853.1	16.8	63.4	977	8.8
Florida	223	51.3	1,705.6	31.0	60.4	193.6	15.2
East South Central	449	69.8	2,255.5	42.4	60.8	248.9	21.4
Kentucky	106	15.9	532.6	9.9	62.2	58.5	6.0
Tennessee	130	22.8	747.3	13.9	60.8	861	7.4
Alabama	116	18.5	604.9	11.3	60.7	66.0	5.2
Mississippi	97	12.5	370.8	7.4	59.3	38.3	2.8
West South Central	743	100.3	3,267.1	56.1	56.0	383.4	30.8
Arkansas	87	11.0	342.1	6.4	58.3	37.5	3.0
Louisiana	132	19.1	598.0	10.9	57.0	73.0	7.1
Oklahoma	110	11.7	363.2	6.4	54.5	44.4	2.9
Texas	414	58.5	1,963.9	32.5	55.5	228.5	17.8

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Table 5-14. Community Hospitals[a]: 1993 (continued)

Region, Division, and State	Number of Hospitals	Beds (1,000)	Patients Admitted (1,000)	Average Daily Census (1,000)[b]	Occupancy Rate[c]	Personnel[d]	Outpatient Visits (mil.)
UNITED STATES	**5,261**	**916.2**	**30,748.1**	**591.7**	**64.6**	**3,676.6**	**366.9**
WEST	968	143.5	5,404.4	86.0	60.0	591.2	69.2
Mountain	350	42.1	1,430.7	24.4	57.9	166.1	18.3
Montana	52	4.2	97.5	2.7	64.2	11.9	1.2
Idaho	41	3.4	99.0	1.9	55.4	11.4	1.6
Wyoming	25	2.2	42.8	1.1	48.4	8.7	0.7
Colorado	72	10.3	340.0	6.0	58.6	42.2	4.7
New Mexico	37	4.1	151.1	2.2	54.0	18.5	2.5
Arizona	60	9.9	403.6	5.6	57.1	39.8	3.4
Utah	42	4.4	173.5	2.3	53.4	20.7	3.0
Nevada	21	3.7	123.0	2.5	67.8	12.8	1.2
Pacific	618	101.4	3,973.7	61.7	60.8	425.1	50.9
Washington	90	12.0	494.2	6.9	57.6	53.2	7.1
Oregon	63	7.4	293.2	4.1	54.7	33.1	4.6
California	429	77.7	3,052.2	47.6	61.2	320.5	36.7
Alaska	16	1.3	37.3	0.7	52.9	4.5	0.6
Hawaii	20	2.9	96.9	2.4	83.1	13.9	2.0

[a] Community hospitals are defined as non-Federal facilities providing short term (average stay length less than 30 days) general and special care, including obstetrics and gynecology; eye, ear, nose and throat; rehabilitation; etc., except psychiatric, tuberculosis, alcoholism, and chemical dependency. Excludes hospital units of institutions.
[b] Inpatients receiving treatment each day; excludes newborn.
[c] Ratio of average daily census to every 100 beds.
[d] Includes full-time equivalents of part-time personnel.

Source: U.S. Bureau of the Census, 1990.

Table 5-15. Persons Receiving Care in Nursing Homes: 1980 and 1990

Age (in years)	1980		1990		Percent change, 1980 to 1990	1990	
	Number	Percent	Number	Percent		Male	Female
Total	1,426,371	100.0	1,772,032	100.0	24.2	493,609	1,278,423
Under 35	29,418	2.1	19,362	1.1	-34.2	11,880	7,482
35 - 44	20,764	1.5	27,303	1.5	31.5	16,178	11,125
45 - 54	42,857	3.0	40,903	2.3	-4.6	21,662	19,241
55 - 64							
65 - 74	238,962	16.8	244,676	13.8	2.4	97,873	146,803
75 - 79	219,571	15.4	245,972	13.9	12.0	75,542	170,430
80 - 84	286,679	20.1	361,330	20.4	26.0	88,362	272,968
85 - 89	276,251	19.4	378,612	21.4	37.1	135,268	603,517
90 - 94	158,807	11.1	247,648	14.0	55.9	NA	NA
95 and older	52,688	3.7	112,525	6.4	113.6	NA	NA
Under 25	12,902	0.9	4,231	0.2	-67.2	2,399	1,832
Under 55	93,039	6.5	87,568	4.9	-5.9	49,720	37,848
Under 65	193,413	13.6	181,269	10.2	-6.3	96,564	84,705
65 years and older	1,232,958	86.4	1,590763	89.8	29.0	397,045	1,193,718
85 years and older	487,746	34.2	738,785	41.7	51.5	135,268	603,517
Percentage of age groups							
Under 65	--	0.1	--	0.1	--	0.1	0.1
65 - 74	--	1.5	--	1.4	--	1.2	1.4
75 - 84	--	6.6	--	6.1	--	4.4	7.1
85 - 89	--	17.6	--	18.6	--	16.1	27.7
90 - 94	--	29.1	--	33.1	--	NA	NA
95 years and older	--	41.0	--	47.1	--	NA	NA
65 years and older	--	4.8	--	5.1	--	3.2	6.4
85 years and older	--	21.8	--	24.5	--	16.1	27.7
90 years and older	--	31.4	--	36.5	--	NA	NA

-- Not applicable, included in previous age group.
NA Not available.

Note: In the 1990 decennial census, "nursing homes" include skilled-nursing facilities, intermediate-care facilities, long-term care rooms in wards or buildings on the grounds of hospitals, or long-term care rooms/nursing wings in congregate housing facilities. Also included are nursing, convalescent, and rest homes, such as soldiers', sailors', veterans', and fraternal or religious homes for the aged, with or without nursing care.

Source: U.S. Bureau of the Census, 1990.

Table 5-16. Nursing Home Population by Region, Division, and State: 1980 and 1990

Region, Divison, and State	Nursing Homes				
	1980	1990	1990 Percent of Population	Change 1980 to 1990	Percent change, 1980 to 1990
UNITED STATES	1,426,371	1,772,032	0.7	345,661	24.2
NORTHEAST	327,319	399,329	0.8	72,010	22.0
New England	106,344	119,646	0.9	13,302	12.5
Maine	9,570	9,855	0.8	285	3.0
Vermont	4,354	4,809	0.9	455	10.5
New Hampshire	6,673	8,202	0.7	1,529	22.9
Massachusetts	49,728	55,662	0.9	5,934	11.9
Rhode Island	8,146	10,156	1.0	2,010	24.7
Connecticut	127,873	30,962	0.9	3,089	11.1
Middle Atlantic	220,975	279,683	0.7	58,708	26.6
New York	114,276	126,175	0.7	11,899	10.4
New Jersey	34,414	47,054	0.6	12,640	36.7
Pennsylvania	72,285	106,454	0.9	34,169	47.3
MIDWEST	472,568	544,650	0.9	72,082	15.3
East North Central	296,088	346,243	0.8	50,155	16.9
Ohio	71,479	93,769	0.9	22,290	31.2
Indiana	40,112	50,845	0.9	10,733	26.8
Illinois	80,410	93,662	0.8	13,252	16.5
Michigan	55,805	57,622	0.6	1,817	3.3
Wisconsin	48,282	50,345	1.0	2,063	4.3
West North Central	176,480	198,407	1.1	21,927	12.4
Minnesota	44,553	47,051	1.1	2,498	5.6
Iowa	36,217	36,455	1.3	238	0.7
Missouri	37,942	52,060	1.0	14,118	37.2
North Dakota	7,486	8,159	1.3	673	9.0
South Dakota	8,087	9,356	1.3	1,269	15.7
Nebraska	17,650	19,171	1.2	1,521	8.6
Kansas	24,545	26,155	1.1	1,610	6.6
SOUTH	396,554	558,382	0.7	161,828	40.8
South Atlantic	163,080	270,930	0.6	107,850	66.1
Delaware	2,771	4,596	0.7	1,825	65.9
Maryland	19,821	26,884	0.6	7,063	35.6
District of Columbia	2,866	7,008	1.2	4,142	144.5
Virginia	24,323	37,762	0.6	13,439	55.3
West Virginia	6,355	12,591	0.7	6,236	98.1
North Carolina	29,596	47,014	0.7	17,418	58.9
South Carolina	11,666	18,228	0.5	6,562	56.2
Georgia	29,376	36,549	0.6	7,173	24.4
Florida	36,306	80,298	0.6	43,992	121.2

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Table 5-16. Nursing Home Population by Region, Division, and State: 1980 and 1990 (continued)

Region, Divison, and State	Nursing Homes				
	1980	1990	1990 Percent of Population	Change 1980 to 1990	Percent change, 1980 to 1990
East South Central	77,060	102,900	0.7	25,840	33.5
Kentucky	23,591	27,874	0.8	4,283	18.2
Tennessee	22,014	35,192	0.7	13,178	59.9
Alabama	18,702	24,031	0.6	5,329	28.5
Mississippi	12,753	15,803	0.6	3,050	23.9
West South Central	156,414	184,552	0.7	28,138	18.0
Arkansas	18,631	21,809	0.9	3,178	17.1
Louisiana	22,776	32,072	0.8	9,296	40.8
Oklahoma	25,732	29,666	0.9	3,934	15.3
Texas	89,275	101,005	0.6	11,730	13.1
WEST	229,930	269,671	0.5	39,741	17.3
Mountain	47,139	65,842	0.5	18,703	39.7
Montana	5,479	7,764	1.0	22,85	41.7
Idaho	5,084	6,318	0.6	1,234	24.3
Wyoming	2,198	2,679	0.6	481	21.9
Colorado	16,109	18,506	0.6	2,397	14.9
New Mexico	2,585	6,276	0.4	3,691	142.8
Arizona	8,424	14,472	0.4	6,048	71.8
Utah	4,921	6,222	0.4	1,301	26.4
Nevada	2,339	3,605	0.3	1,266	54.1
Pacific	182,791	230,829	0.5	21,038	11.5
Washington	27,970	32,840	0.7	4,870	17.4
Oregon	16,052	18,200	0.6	2,148	13.4
California	134,756	148,362	0.5	13,606	10.1
Alaska	854	1,202	0.2	348	40.7
Hawaii	3,159	3,225	0.3	66	2.1

Source: U.S. Bureau of the Census, 1990.

6. OTHER ACTIVITIES INCLUDING SUBSISTENCE, FISHING, RECREATION, AND HOBBIES

Participation in certain types of activities can increase an individual's risk of exposure to environmental contaminants. Examples of these activities are subsistence fishing, hunting, gardening, recreation, or hobbies. Persons who fish and/or hunt for subsistence, cultural reasons, or recreation and then consume the animals caught could potentially be exposed to contaminants originally ingested by the animals. The habitat in which the animals lived is also important to consider when assessing contaminant exposure. Bottom-feeding fish (e.g., catfish) have greater exposure and higher body burdens of those contaminants found in sediments. Other common recreational activities, such as gardening, home maintenance/ repair, hobbies, and crafts, also can result in increased exposure to environmental contaminants. Gardeners may have greater exposure to pesticides and other chemicals due to dermal contact with soil and treated plants. Depending on the task involved, persons active in home maintenance/repair, hobbies, and crafts can be exposed to many chemicals, including paints, varnishes, solvents, and adhesives. This section presents estimates of the general U.S. population participating in various recreational activities that may increase exposure to environmental contaminants.

It should be noted that participation in an activity in which food items can be obtained, such as hunting, fishing, or gardening, does not necessarily mean that the individual participating is consuming the food items. Intake rates are presented in the Exposure Factors Handbook for the following food groups: fruits and vegetables (Section 9); fish (Section 10); meat and dairy products (Section 11); grain products (Section 12); home produced foods (Section 13); and breast milk (Section 14).

6.1. FISHING AND HUNTING

The National Survey of Fishing, Hunting, and Wildlife-Associated Recreation (U.S. DOI and U.S. DOC, 1993) was designed to provide estimates of the numbers of U.S. residents who participated in recreational hunting and fishing and other forms of wildlife-related activities known as nonconsumptive use in all 50 States and the District of Columbia. The survey was conducted

in two phases by the U.S. Bureau of the Census for the Fish and Wildlife Service. In the first phase, a nationwide sample of 129,500 households was interviewed over the telephone between January and February 1991. Information on household members 6 years old and older who had fished, hunted, or engaged in a nonconsumptive wildlife-related activity in 1990 and who planned to engage in these activities in 1991 were obtained from the interviews. A national response rate of 95.2% was achieved from eligible households. The second phase of the survey consisted of three detailed interviews conducted quarterly from May 1991 to March 1992 with subsamples of anglers, hunters, and nonconsumptive use participants identified in the first phase. Respondents in this phase of the survey were 16 years old and older. The survey was designed to provide State-level fishing, hunting, and nonconsumptive activities for 23,179 anglers and hunters and 22,723 nonconsumptive use participants. Sportsmen were defined in the survey as those who fish and hunt, fish only, or hunt only. Anglers were defined as licensed or unlicensed sportsmen who fish only or fish and hunt. Hunters were defined as licensed and unlicensed sportsmen who hunt only or hunt and fish. Assessors should be aware that the possibility of undersampling exists with telephone surveys (e.g., households without a telephone will not be sampled). The survey revealed that 108.7-million U.S. residents, 16 years old and older participated in some form of wildlife-related recreation activity in 1991. During that year, 35.6-million people in the United States fished, 14.1 million hunted, and 76.1-million had at least one type of nonconsumptive recreation activity involving wildlife as the primary purpose.

Results of the survey for persons 16 years and older are summarized in Tables 6-1 through 6-13. Table 6-1 shows the population estimates of anglers and hunters who participated in the survey, grouped by fishing and hunting activity and days of participation. Table 6-2 presents the angler population, grouped by fishing waterbody and days of fishing. Tables 6-3, 6-4, and 6-5 present freshwater angler, Great Lakes angler, and saltwater angler populations, grouped by types of fish caught and number of days fishing. Table 6-6 presents population estimates for hunters, grouped by type of hunting (i.e., big game, small game, migratory bird, other animals) and by State of residence. Tables 6-7, 6-8, 6-9, and 6-10 present population estimates for hunters of big game, small game, migratory birds, and other animals, respectively, grouped by type of game. Table 6-11 presents demographic characteristics of anglers and hunters, grouped by total

population, sportsmen, those who fished only, those who hunted only, and those who fished and hunted. Table 6-12 presents demographic characteristics of anglers 16 years and older by type of fishing. Table 6-13 presents demographic characteristics of hunters 16 years old and older by type of hunting. Table 6-14 presents demographic characteristics (i.e., age, sex, race, household income, and geographic location) of anglers and hunters 6 to 15 years old, grouped by total population, sportsmen, and those who fished only, hunted only, and fished and hunted in 1990. Table 6-15 presents population estimates of anglers and hunters ages 6 to 15 years old by sportsman's State of residence in 1990. Readers are reminded that the data in these tables present participation rates, not actual consumption rates. Consumption rates can be found in the *Exposure Factors Handbook* for the following: fish (Section 10) and meats (Section 11).

It is possible to further estimate populations involved in these activities by combining demographic census data from Section 2 in this document with the information provided in the handbook tables. As an example, Table 6-12 (U.S. DOI and U.S. DOC, 1993) does not include the number of freshwater anglers residing in New England who are black; however, this can be estimated from the data presented. Table 6-12 indicates that 1,188,000 freshwater anglers are in the New England Census geographic division. If that number is multiplied by the percentage of the population in that area who are black (5 percent) the resulting value of 59,400 provides an estimate of black freshwater anglers in New England.

6.2. HOME GARDENING

Ingestion of contaminated food is a potential pathway of human exposure to toxic chemicals. Local site contamination may lead consumers of home-produced food products to be at greater exposure risk. In addition, incomplete cleaning/preparation of produce may leave a residue of pesticides and other chemicals on the fruits and vegetables grown and prepared in private homes.

According to the Home and Garden Survey conducted by the National Gardening Association (1987), a total of 34-million (38%) U.S. households participated in vegetable gardening in 1986. Table 6-16 contains demographic data on vegetable gardening in 1986 by region/section, community size, and household size. Table 6-17 presents characteristics of

households that had a vegetable garden. Table 6-18 contains information on the types of vegetables grown by home gardeners in 1986. Tomatoes, peppers, onions, cucumbers, lettuce, beans, carrots, and corn are among the vegetables grown by the largest percentage of gardeners. As previously stated, readers are reminded that the data in these tables present participation rates, and not actual consumption rates. Consumption rates for home-produced foods can be found in the *Exposure Factors Handbook*, Section 13.

The U.S. Bureau of the Census (1995) collects data on various recreational and leisure time activities based on sample surveys from several sources. Statistics on U.S. household participation in lawn and garden activities from 1989 to 1993 are presented in Table 6-19. In 1990, 80% of U.S. households engaged in lawn and garden activities, compared with 71% in 1993. Table 6-20 presents the percentage of the U.S. population who participated in gardening in 1992 grouped by gender, race, age, and education. As shown in Table 6-20, 55% of the population participated in gardening in 1992. This represents an increase of 17% over the 1986 figures previously referenced.

6.3. DO-IT-YOURSELFERS

The Do-It-Yourselfers Research Institute (1983) conducted a study of the home improvement and repair do-it-yourselfers (DIY) market in September 1982. The study design provided a comprehensive profile of DIY consumers with particular emphasis on their shopping orientation, buying habits, and lifestyles. Telephone interviews were conducted with 2,000 consumers who were randomly selected throughout the United States. The survey determined that for 1982, 73.5% of all U.S. households could be considered “do-it-yourselfers.” DIY households were defined as households with the household members involved with home improvement and repair activities. The population data obtained were based on estimated 1982 census figures. Table 6-21 presents the population estimates of DIY home improvement and repair projects undertaken between September 1981 and September 1982.

The U.S. Bureau of the Census (1995) presents the percentage of the U.S. population who participated in home improvement/repair in 1992. Table 6-22, which presents the percentage of the population grouped by gender, age, race, and education, indicates that 48% of the

population participated in home improvement/repair during 1992. This represents a decrease of 25.5% over the 1982 figures previously referenced.

6.4. HOBBYISTS

Individuals participating in certain hobbies and crafts (e.g., model building) may have an increased risk of exposure to certain chemicals in the products they use. Typically, these products, which include solvents, adhesives, paints, and varnishes, may be used in greater volumes and frequencies by specific populations resulting in higher levels of exposure to chemicals found in the products (U.S. EPA, 1985). Table 6-23 lists the hobbies that could potentially increase an individual's exposure to chemicals and the population estimates associated with these hobbies.

6.5. EXERCISE/SPORT ACTIVITIES

Participation in exercise and sporting activities can influence one’s exposure to environmental contaminants. People engaging in outdoor exercise may experience greater than expected exposures to air pollutants due to increased respiration rates. These athletes are also likely to have increased water consumption rates, thereby increasing exposure to drinking water contaminants. Also, participation in water sports such as swimming may lead to increased exposure to trihalomethanes (THMs) from the chlorination of swimming pools.

The U.S. Bureau of the Census (1995) gathered data from the National Sporting Goods Association on participation of the U.S. population in various recreational sports activities. Table 6-24 presents the total numbers of the U.S. population who participated in selected sports activities in 1993 grouped by gender, age, and household income. Figure 6-1 shows the percent of population 7 years old and older who participated in the 10 most popular sports activities grouped by gender in 1993. Figure 6-2 shows the percentage of the population 18 years and older participating in various activities in 1992 including exercise, playing sports, various outdoor activities, home improvement, and gardening.

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Table 6-1. Anglers, Hunters, Days of Participation, and Trips, by Type of Fishing and Hunting: 1991
[Population 16 years old and older. Numbers in thousands.]

Type of Game	Participants		Days of Participation		Trips	
	Number	Percent	Number	Percent	Number	Percent
Total Sportsmen	39,979	100	747,135	100	668,327	100
Fishing						
Total, all fishing	35,578	100	511,329	100	453,951	100
Total, all freshwater	31,041	87	439,536	86	389,843	86
Freshwater, except Great Lakes	30,186	85	430,922	84	369,344	81
Great Lakes	2,552	7	25,335	5	20,499	5
Saltwater	8,885	25	74,696	15	64,108	14
Hunting						
Total, all hunting	14,063	100	235,806	100	214,375	100
Big game	10,745	76	128,411	54	104,224	49
Small game	7,642	54	77,132	33	72,487	34
Migratory birds	3,009	21	22,235	9	19,537	9
Other animals	1,411	10	19,340	8	18,127	8

Note: Detail does not add to total because of multiple responses.
These data represent activity patterns, which do not represent consumption rates. Consumption rates can be found in Exposure Factors Handbook, Sections 10 and 11.

Source: U.S. DOI and U.S. DOC, 1993.

Table 6-2. Anglers, Trips, and Days of Fishing, by Type of Fishing: 1991
[Population 16 years old and older. Numbers in thousands.]

Anglers, Trips, and Days of Fishing	Type of Fishing									
	Total, All Fishing		Total, All Freshwater		Freshwater, Except Great Lakes		Great Lakes, Freshwater		Saltwater	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Anglers										
Total in U.S.	35,578	100	31,041	100	30,186	100	2,552	100	8,885	100
In state of residence	32.281	91	28,471	92	27,655	92	2,121	76	6,757	83
In other states	8,442	24	6,426	21	6,038	20	585	29	2,618	23
Trips										
Total in U.S.	453,951	100	389,843	100	389,344	100	20,499	100	64,108	100
1 day trips	398,081	88	342,438	88	324,870	88	17,568	87	55,643	86
2 or more day trips	55,870	12	47,404	12	44,473	12	2,931	13	8,466	14
Days of fishing										
Total days in U.S.	511,329	100	439,536	100	430,922	100	25,335	100	74,696	100
Days in state of residence	451,418	88	391,332	89	380,563	88	21,477	83	62,298	85
Days in other states	59,870	12	48,199	11	50,352	12	3,852	17	12,362	15
Average days per angler	14	X	14	X	14	X	10	X	8	X

Note: Detail for participants does not add to total because of multiple responses. Percent shown for anglers, trips and days of fishing are based on the respective “Total in U.S.” rows. X = Not applicable. These data represent activity patterns, which do not represent consumption rates. Consumption rates can be found in Exposure Factors Handbook, Section 10.

Source: U.S. DOI and U.S. DOC, 1993.

Table 6-3. Freshwater Anglers and Days of Fishing, by Type of Fish: 1991
[Population 16 years old and older. Numbers in thousands. Excludes Great Lakes fishing.]

Type of Fish	Anglers		Days of Fishing		Average Days per Angler
	Number	Percent	Number	Percent	
Total, all types of fish	30,186	100	430,922	100	14
Black bass (largemouth, smallmouth, etc.)	12,857	43	158,226	37	12
White bass, striped bass and striped bass hybrids	6,408	21	63,181	315	10
Panfish	10,149	34	102,184	24	10
Crappie	8,327	28	90,940	21	11
Catfish and bullheads	9,195	30	96,451	22	10
Walleye and sauger	3,278	11	37,302	9	11
Northern pike, pickerel, muskie and muskie hybrids	2,693	9	29,327	7	11
Trout	9,107	30	81,366	19	9
Salmon	989	3	8,548	2	9
Steelhead	493	2	4,025	1	8
Anything[a]	4,984	17	37,744	9	8
Other freshwater fish	2,550	8	21,452	5	8

Notes: Detail does not add to total because of multiple responses.
[a] Respondent identified "Anything" from a list of categories of fish.
These data represent activity patterns, which do not represent consumption rates. Consumption rates for some specie can be found in Exposure Factors Handbook, Section 10.

Source: U.S. DOI and U.S. DOC, 1993.

Table 6-4. Great Lakes Anglers and Days of Fishing, by Type of Fish: 1991
[Population 16 years old and older. Numbers in thousands.]

Type of Fish	Anglers		Days of Fishing		Average Days per Angler
	Number	Percent	Number	Percent	
Total, all types of fish	2,552	100	25,335	100	10
Black bass (largemouth, smallmouth, etc.)	526	21	4,369	17	8
Walleye and sauger	1,028	40	9,489	37	9
Northern pike, pickerel, muskie, muskie hybrids	213	8	2,318	9	11
Perch	983	39	8,170	32	8
Salmon	721	28	4,622	18	6
Steelhead	289	11	2,444	10	8
Lake trout	482	19	2,980	12	6
Other trout	276	11	2,280	9	8
Anything[a]	371	15	2,814	11	8
Other Great Lakes fish	314	12	2,086	8	7

Notes: Detail does not add to total because of multiple responses.
[a] Respondent identified "Anything" from a list of categories of fish. These data represent activity patterns, which do not represent consumption rates. Consumption rates for some specie can be found in Exposure Factors Handbook, Section 10.

Source: U.S. DOI and U.S. DOC, 1993.

Table 6-5. Saltwater Anglers and Days of Fishing, by Type of Fish: 1991
[Population 16 years old and older. Numbers in thousands.]

Type of Fish	Anglers		Days of Fishing		Average Days per Anglers
	Number	Percent	Number	Percent	
Total, all types of fish	8,885	100	74,696	100	8
Salmon	783	9	4,590	6	6
Striped bass	1,117	13	7,639	10	7
Flatfish, flounder, halibut	2,302	26	16,170	22	7
Bluefish	1,915	22	12,147	16	6
Lingcod, rockcod	683	8	3,220	4	5
Seatrout	1,314	15	12,618	17	10
Sturgeon	75[a]	1[a]	531[a]	1[a]	7[a]
Mackerel	881	10	5,488	7	6
Billfish (marlin, swordfish, sailfish, spearfish)	322	4	2,052	3	6
Anything[b]	2,831	32	17,861	24	6
Other saltwater fish	4,279	48	32,368	43	8

Notes: Detail does not add to total because of multiple responses.
[a] Estimate based on small sample size.
[b] Respondent identified "Anything" from a list of categories of fish.

These data represent activity patterns, which do not represent consumption rates. Consumption rates for some specie can be found in Exposure Factors Handbook, Section 10.

Source: U.S. DOI and U.S. DOC, 1993.

Table 6-6. Hunters, Trips, and Days of Hunting, by Type of Hunting: 1991
[Population 16 years old and older. Numbers in thousands.]

Hunters, Trips, and Days of Hunting	Total, All Hunting		Type of Hunting							
			Big Game		Small Game		Migratory Bird		Other Animals	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Hunters										
Total in U.S.	14,063	100	10,745	100	7,642	100	3,009	100	1,411	100
In state of residence	13,370	95	10,167	95	7,215	94	2,861	95	1,321	94
In other states	1,826	13	1,241	12	746	10	256	9	131	9
Trips										
Total in U.S.	214,375	100	104,224	100	72,487	100	19,537	100	18,127	100
1 Day trips	191,466	89	88,504	85	67,728	93	18,006	92	17,228	95
2 Day trips	22,909	11	15,720	15	4,759	7	1,531	8	899	5
Days of hunting										
Total days in U.S.	235,806	100	128,411	100	77,132	100	22,235	100	19,340	100
Days in state of residence	220,125	93	118,338	92	72,824	94	20,908	94	18,102	94
Days in other states	15,681	7	10,072	8	4,308	6	1,327	6	1,237	6
Average days per hunter	17	X	12	X	10	X	7	X	14	X

Notes: Detail does not add to total because of multiple responses. Percents shown for hunters, trips, and days of hunting are based on the representative "Total in U.S." rows.
(X) Not applicable.
These data represent activity patterns, which do not represent consumption rates. Consumption rates can be found in Exposure Factors Handbook, Sections 10 and 11.

Source: U.S. DOI and U.S. DOC, 1993.

Table 6-7. Big Game Hunters and Days of Hunting, by Type of Game: 1991
[Population 16 years old and older. Numbers in thousands.]

Type of Game	Hunters		Days of Hunting		Average Days per Hunter
	Number	Percent	Number	Percent	
Total, all big game	10,745	100	128,411	100	12
Deer	10,277	96	112,853	88	11
Elk	682	6	5,048	4	7
Bear	368	3	2,882	2	8
Wild turkey	1,720	16	13,483	10	8
Other	404	4	3,235	3	8

Notes: Detail does not add to total because of multiple responses.
These data represent activity patterns, which do not represent consumption rates. Consumption rates for some game can be found in Exposure Factors Handbook, Section 11.

Source: U.S. DOI and U.S. DOC, 1993.

Table 6-8. Small Game Hunters and Days of Hunting, by Type of Game: 1991
[Population 16 years old and older. Numbers in thousands.]

Type of Game	Hunters		Days of Hunting		Average Days per Hunter
	Number	Percent	Number	Percent	
Total, all small game	7,642	100	77,132	100	10
Rabbits, hares	3,980	52	35,624	46	9
Quail	1,694	22	13,511	18	8
Grouse/prairie chicken	1,375	18	10,629	14	8
Squirrels	3,569	47	29,602	38	8
Pheasant	2,285	30	16,136	21	7
Other	823	11	6,824	9	8

Notes: Detail does not add to total because of multiple responses.
These data represent activity patterns, which do not represent consumption rates. Consumption rates for some game can be found in Exposure Factors Handbook, Section 11.

Source: U.S. DOI and U.S. DOC, 1993.

Table 6-9. Migratory Bird Hunters and Days of Hunting, by Type of Game: 1991
[Population 16 years old and older. Numbers in thousands.]

Type of Game	Hunters		Days of Hunting		Average Days per Hunter
	Number	Percent	Number	Percent	
Total, all migratory birds	3,009	100	22,235	100	7
Geese	882	29	6,584	30	7
Ducks	1,164	39	8,800	40	8
Doves	1,851	61	9,480	43	5
Other	259	9	1,667	7	6

Notes: Detail does not add to total because of multiple responses.
These data represent activity patterns, which do not represent consumption rates. Consumption rates for some game can be found in Exposure Factors Handbook, Section 11.

Source: U.S. DOI and U.S. DOC, 1993.

Table 6-10. Hunters of Other Animals and Days of Hunting, by Type of Game: 1991
[Population 16 years old and older. Numbers in thousands.]

Type of Game	Hunters		Days of Hunting		Average Days per Hunter
	Number	Percent	Number	Percent	
Total, all other animals	**1,411**	**100**	**19,340**	**100**	**14**
Groundhog (woodchuck)	**471**	**33**	**4,851**	**25**	**10**
Raccoon	**408**	**29**	**7,196**	**37**	**18**
Fox	**204**	**14**	**2,157**	**11**	**11**
Coyote	**427**	**30**	**4,482**	**23**	**10**
Other	**312**	**22**	**3,238**	**17**	**10**

Notes: Detail does not add to total because of multiple responses.
These data represent activity patterns, which do not represent consumption rates. Consumption rates for some game can be found in Exposure Factors Handbook, Section 11.

Source: U.S. DOI and U.S. DOC, 1993.

Table 6-11. Demographic Characteristics of Anglers and Hunters

[Population 16 years old and older. Numbers in thousands.]

Characteristic	U.S. Population		Sportsmen (Fished or Hunted)			Fished Only			Hunted Only			Fished and Hunted		
	Number	Percent	Number	Percent who participated	Percent	Number	Percent who participated	Percent	Number	Percent who participated	Percent	Number	Percent who participated	Percent
Total persons	189,964	100	39,979	21	100	25,916	14	100	4,402	2	100	9,662	5	100
Population density of residence														
Urban	138,191	73	24,378	18	61	17,747	13	68	2,010	1	46	4,621	3	48
Rural	51,773	27	15,602	30	39	8,169	16	32	2,392	5	54	5,040	10	52
Population size of residence														
MSA *	147,339	78	27,372	19	68	19,460	13	75	2,451	2	56	5,417	4	56
1,000,000 or more	81,346	43	12,515	15	31	9,444	12	36	988	1	22	2,084	3	22
250,000 - 999,999	45,601	24	9,667	21	24	6,755	15	26	863	2	20	2,048	4	21
50,000 - 249,999	20,392	11	5,146	25	13	3,261	16	13	601	3	14	1,285	6	13
Outside MSA	42,625	22	12,652	30	32	6,456	15	25	1,951	5	44	4,245	10	44
Census geographic division **														
New England	10,180	5	1,658	16	4	1,214	12	5	114	1	3	330	3	3
Middle Atlantic	29,216	15	4,508	15	11	2,763	9	11	638	2	14	1,108	4	11
East North Central	32,188	17	7,202	22	18	4,412	14	17	937	3	21	1,852	6	19
West North Central	13,504	7	4,143	31	10	2,434	18	9	496	4	11	1,213	9	13
South Atlantic	33,682	18	6,996	21	17	4,913	15	19	555	2	13	1,528	5	16
East South Central	11,667	6	2,984	26	7	1,705	15	7	349	3	8	930	8	10
West South Central	19,926	10	5,125	26	13	3,281	16	13	533	3	12	1,311	7	14
Mountain	10,092	5	2,488	25	6	1,419	14	5	409	4	9	660	7	7
Pacific	29,508	16	4,875	17	12	3,774	13	15	370	1	8	730	2	8
Age														
Total	189,964	100	39,979	21	100	25,916	14	100	4,402	2	100	9,662	5	100
16 to 17 yrs	6,530	3	1,669	26	4	1,007	15	4	188	3	4	474	7	5
18 to 24 yrs	23,023	12	5,245	23	13	3,229	14	12	652	3	15	1,364	6	14
25 to 34 yrs	42,931	23	11,046	26	28	7,115	17	27	1,117	3	25	2,813	7	29
35 to 44 yrs	38,341	20	9,553	25	24	6,185	16	24	969	3	22	2,399	6	25
45 to 54 yrs	27,021	14	5,658	21	14	3,585	13	14	764	3	17	1,309	5	14
55 to 64 yrs	21,085	11	3,682	17	9	2,505	12	10	411	2	9	765	4	8
65 yrs and older	31,032	16	3,127	10	8	2,290	7	9	300	1	7	537	2	6
Sex														
Male, total	90,369	48	29,705	33	74	16,710	18	64	3,995	4	81	9,000	10	93
16 to 17 yrs	3,385	2	1,348	40	3	715	21	3	175	5	4	457	13	5
18 to 24 yrs	11,365	6	3,865	34	10	2,023	18	8	587	5	13	1,255	11	13
25 to 34 yrs	20,791	11	8,023	39	20	4,413	21	17	990	5	22	2,620	13	24
35 to 44 yrs	18,590	10	7,050	38	18	3,938	21	15	877	5	20	2,234	12	23
45 to 54 yrs	13,289	7	4,222	32	11	2,297	17	9	708	5	16	1,216	9	13
55 to 64 yrs	9,933	5	2,834	29	7	1,732	17	7	382	4	9	720	7	7
65 yrs and older	13,017	7	2,365	18	6	1,592	12	6	274	2	6	498	4	5
Female, total	99,595	52	10,274	10	26	9,206	9	36	407	(Z)	9	661	1	7

(continued on next page)

Table 6-11. Demographic Characteristics of Anglers and Hunters (continued)
[Population 16 years old and older. Numbers in thousands.]

Characteristic	U.S. Population		Sportsmen (Fished or Hunted)			Fished Only			Hunted Only			Fished and Hunted		
	Number	Percent	Number	Percent who partici-pated	Percent	Number	Percent who partici-pated	Percent	Number	Percent who partici-pated	Percent	Number	Percent who partici-pated	Percent
16 to 17 yrs	3,145	2	321	10	1	291	9	1	---	---	---	*** 17	*** 1	***(Z)
18 to 24 yrs	11,659	6	1,380	12	3	1,206	10	5	65	1	1	109	1	1
25 to 34 yrs	22,140	12	3,023	14	8	2,703	12	10	127	1	3	193	1	2
35 to 44 yrs	19,751	10	2,503	13	6	2,246	11	9	92	(Z)	2	165	1	2
45 to 54 yrs	13,732	7	1,436	10	4	1,288	9	5	56	(Z)	1	93	1	1
55 to 64 yrs	11,153	6	849	8	2	774	7	3	30	(Z)	1	45	(Z)	(Z)
65 yrs and older	18,015	9	762	4	2	698	4	3	---	---	---	***39	***(Z)	***(Z)
Race														
White	162,367	85	37,026	23	93	23,454	14	90	4,250	3	97	9,323	6	96
Black	18,395	10	1,883	10	5	1,589	9	6	73	(Z)	2	221	1	2
All others	9,202	5	1,071	12	3	874	9	3	79	1	2	118	1	1
Annual household income														
Under $10,000	18,585	10	2,228	12	6	1,555	8	6	247	1	6	426	2	4
$10,000 to $19,999	29,864	16	5,296	18	13	3,466	12	13	619	2	14	1,210	4	13
$20,000 to $24,999	15,188	8	3,302	22	8	1,980	13	8	409	3	9	913	6	9
$25,000 to $29,999	18,727	10	4,229	23	11	2,627	14	10	472	3	11	1,130	6	12
$30,000 to $49,999	42,689	22	11,626	27	29	7,336	17	28	1,278	3	29	3,012	7	31
$50,000 to $74,999	24,448	13	6,473	26	16	4,414	18	17	605	2	14	1,455	6	15
$75,000 or more	13,579	7	3,121	23	8	2,174	16	8	284	2	6	663	5	7
Not reported	26,884	14	3,705	14	9	2,364	9	9	488	2	11	853	3	9
Education														
8 yrs or less	14,311	8	1,786	12	4	1,190	8	5	269	2	6	326	2	3
9 -11 yrs	21,595	11	4,730	22	12	2,995	14	12	554	3	12	1,190	6	12
12 yrs	77,293	41	16,140	21	40	9,890	13	38	1,924	2	44	4,325	6	45
1 - 3 yrs college	36,725	19	8,638	24	22	5,742	16	22	937	3	21	1,958	5	20
4 yrs college	22,920	12	5,132	22	13	3,565	16	14	413	2	9	1,155	5	12
5 or more yrs college	17,120	9	3,554	21	9	2,533	15	10	314	2	7	707	4	7

Notes: Percent who participated shows the percent of each row's population who participated in the activity named by the column (the percent of those living in urban areas who fished only, etc.). Percent columns show the percent of each column's participants who are described by the row heading (the percent of those who fished only , who lived in urban areas, etc.).

* Metropolitan Statistical Area

** States within each U.S. Census geographic region are listed in Section 2.4 of this document.

*** Estimate based on a small sample size.

--- Sample size too small to report data reliably.

(Z) Less than 0.5 percent.

These data represent activity patterns, which do not represent consumption rates. Consumption rates can be found in Exposure Factors Handbook, Section XX.

Source: U.S. DOI and U.S. DOC, 1993.

Table 6-12. Demographic Characteristics of Anglers by Type of Fishing

[Population 16 years old and older. Numbers in thousands.]

Characteristic	U.S. population		Total, all fishing			Freshwater Total		
	Number	Percent	Number	Percent who participated	Percent	Number	Percent who participated	Percent
Total persons	189,964	100	35,578	19	100	31,041	16	100
Population density of residence								
Urban	138,191	73	22,368	16	63	18,890	14	61
Rural	51,773	27	13,210	26	37	12,151	23	39
Population size of residence								
MSA	147,339	78	24,877	17	70	20,966	14	68
1,000,000 or more	81,346	43	11,527	14	32	9,551	12	31
250,000 to 999,999	45,601	24	8,804	19	25	7,530	17	24
50,000 to 249,999	20,392	11	4,546	22	13	3,886	19	13
Outside MSA	42,625	22	10,701	25	30	10,075	24	32
Census geographic division								
New England	10,180	5	1,545	15	4	1,188	12	4
Middle Atlantic	29,216	15	3,871	13	11	3,008	10	10
East North Central	32,188	17	6,264	19	18	6,191	19	20
West North Central	13,504	7	3,647	27	10	3,633	27	12
South Atlantic	33,682	18	6,441	19	18	4,887	15	16
East South Central	11,667	6	2,635	23	7	2,509	22	8
West South Central	19,926	10	4,592	23	13	4,039	20	13
Mountain	10,092	5	2,079	21	6	2,030	20	7
Pacific	29,508	16	4,505	15	13	3,556	12	11
Age								
Total	189,964	100	35,578	19	100	31,041	16	100
16 to 17 years	6,530	3	1,481	23	4	1,346	21	4
18 to 24 years	23,023	12	4,593	20	13	4,110	18	13
25 to 34 years	42,931	23	9,929	23	28	8,707	20	28
35 to 44 years	38,341	20	8,584	22	24	7,459	19	24
45 to 54 years	27,021	14	4,894	18	14	4,215	16	14
55 to 64 years	21,085	11	3,271	16	9	2,845	13	9
65 years and older	31,032	16	2,827	9	8	2,360	8	8
Sex								
Male	90,369	48	25,711	28	72	22,670	25	73
Female	99,595	52	9,867	10	28	8,371	8	27
Race								
White	162,367	85	32,776	20	92	28,727	18	93
Black	18,395	10	1,810	10	5	1,583	9	5
All others	9,202	5	992	11	3	732	8	2
Annual household income								
Under $10,000	18,585	10	1,981	11	6	1,839	10	6
$10,000 to $19,999	29,864	16	4,677	16	13	4,286	14	14
$20,000 to $24,999	15,188	8	2,893	19	8	2,636	17	8
$25,000 to $29,999	18,727	10	3,757	20	11	3,309	18	11
$30,000 to $49,999	42,689	22	10,348	24	29	9,072	21	29
$50,000 to $74,999	24,448	13	5,868	24	16	4,874	20	16
$75,000 or more	13,579	7	2,837	21	8	2,274	17	7
Not reported	26,884	14	3,217	12	9	2,751	10	9
Education								
8 years or less	14,311	8	1,517	11	4	1,391	10	4
9 - 11 years	21,595	11	4,186	19	12	3,789	18	12
12 years	77,293	41	14,216	18	40	12,559	16	40
1 - 3 years college	36,725	19	7,700	21	22	6,751	18	22
4 years college	22,920	12	4,720	21	13	3,887	17	13
5 or more years college	17,120	9	3,240	19	9	2,665	16	9

(continued)

Table 6-12. Demographic Characteristics of Anglers by Type of Fishing (continued)

[Population 16 years old and older. Numbers in thousands.]

Characteristic	Freshwater						Saltwater		
	Freshwater, except Great Lakes			Great Lakes					
	Number	Percent who participated	Percent	Number	Percent who participated	Percent	Number	Percent who participated	Percent
Total persons	30,186	16	100	2,552	1	100	8,885	5	100
Population density of residence									
Urban	18,219	13	60	1,804	1	71	6,570	5	74
Rural	11,967	23	40	747	1	29	2,314	4	26
Population size of residence									
MSA	20,248	14	67	2,086	1	82	7,474	5	84
1,000,000 or more	9,113	11	30	1,086	1	43	3,679	5	41
250,000 to 999,999	7,340	16	24	738	2	29	2,481	5	28
50,000 to 249,999	3,794	19	13	263	1	10	1,314	6	15
Outside MSA	9,938	23	33	465	1	18	1,411	3	16
Census geographic division									
New England	1,186	12	4	30	(Z)	1	702	7	8
Middle Atlantic	2,820	10	9	523	2	20	1,446	5	16
East North Central	5,553	17	18	1,833	6	72	307	1	3
West North Central	3,626	27	12	79	1	3	71	1	1
South Atlantic	4,882	14	16	45	(Z)	2	2,916	9	33
East South Central	2,503	21	8	*16	*(Z)	*1	328	3	4
West South Central	4,039	20	13	...	...	...	1,053	5	12
Mountain	2,025	20	7	*13	*(Z)	*(Z)	129	1	1
Pacific	3,552	12	12	...	...	...	1,932	7	22
Age									
Total	30,186	16	100	2,552	1	100	8,885	5	100
16 to 17 years	1,285	20	4	110	2	4	319	5	4
18 to 24 years	3,989	17	13	311	1	12	1,075	5	12
25 to 34 years	8,521	20	28	689	2	27	2,465	6	28
35 to 44 years	7,303	19	24	623	2	24	2,233	6	25
45 to 54 years	4,067	15	13	406	2	16	1,370	5	15
55 to 64 years	2,778	13	9	199	1	8	722	3	8
65 years and older	2,243	7	7	215	1	8	700	2	8
Sex									
Male	22,041	24	73	2,085	2	82	6,628	7	75
Female	8,145	8	27	467	(Z)	18	2,257	2	25
Race									
White	27,922	17	93	2,396	1	94	8,006	5	90
Black	1,550	8	5	109	1	4	441	2	5
All others	714	8	2	*47	*1	*2	438	5	5
Annual household income									
Under $10,000	1,795	10	6	98	1	4	295	2	3
$10,000 to $19,999	4,198	14	14	275	1	11	914	3	10
$20,000 to $24,999	2,573	17	9	178	1	7	544	4	6
$25,000 to $29,999	3,250	17	11	193	1	8	797	4	9
$30,000 to $49,999	8,793	21	29	790	2	31	2,592	6	29
$50,000 to $74,999	4,744	19	16	494	2	19	1,868	8	21
$75,000 or more	2,195	16	7	235	2	9	1,077	8	12
Not reported	2,638	10	9	288	1	11	798	3	9
Education									
8 years or less	1,351	9	4	103	1	4	228	2	3
9 - 11 years	3,691	17	12	260	1	10	811	4	9
12 years	12,218	16	40	1,033	1	40	3,266	4	37
1 - 3 years college	6,507	18	22	640	2	25	2,015	5	23
4 years college	3,797	17	13	313	1	12	1,507	7	17
5 or more years college	2,622	15	9	204	1	8	1,058	6	12

Note: Percent who participated shows the percent of each row's population who participated in the activity named by the column (the percent of those living in urban areas who fished in the Great Lakes, etc.). Percent columns show the percent of each column's participants who are described by the row heading (the percent of those who fished in the Great Lakes who lived in urban areas, etc.).

* Estimate based on a small sample size.

... Sample size too small to report data reliably.

(Z) Less than .5 percent.

Source: U.S. DOI and U.S. DOC, 1993.

Table 6-13. Demographic Characteristics of Hunters by Type of Hunting

[Population 16 years old and older. Numbers in thousands.]

Characteristic	U.S. population		Total, all hunting			Type of hunting: Big game		
	Number	Percent	Number	Percent who participated	Percent	Number	Percent who participated	Percent
Total persons	189,964	100	14,063	7	100	10,745	6	100
Population density of residence								
Urban	138,191	73	6,631	5	47	4,777	3	44
Rural	51,773	27	7,432	14	53	5,969	12	56
Population size of residence								
MSA	147,339	78	7,868	5	56	5,809	4	54
1,000,000 or more	81,346	43	3,071	4	22	2,230	3	21
250,000 - 999,999	45,601	24	2,911	6	21	2,105	5	20
50,000 - 249,999	20,392	11	1,885	9	13	1,473	7	14
Outside MSA	42,625	22	6,195	15	44	4,937	12	46
Census geographic division								
New England	10,180	5	444	4	3	391	4	4
Middle Atlantic	29,216	15	1,746	6	12	1,587	5	15
East North Central	32,188	17	2,789	9	20	2,198	7	20
West North Central	13,504	7	1,709	13	12	1,139	8	11
South Atlantic	33,682	18	2,083	6	15	1,676	5	16
East South Central	11,667	6	1,279	11	9	886	8	8
West South Central	19,926	10	1,843	9	13	1,297	7	12
Mountain	10,092	5	1,069	11	8	843	8	8
Pacific	29,508	16	1,101	4	8	729	2	7
Age								
Total	189,964	100	14,063	7	100	10,745	6	100
16 to 17 years	6,530	3	662	10	5	434	7	4
18 to 24 years	23,023	12	2,016	9	14	1,517	7	14
25 to 34 years	42,931	23	3,930	9	28	3,105	7	29
35 to 44 years	38,341	20	3,369	9	24	2,616	7	24
45 to 54 years	27,021	14	2,073	8	15	1,606	6	15
55 to 64 years	21,085	11	1,177	6	8	893	4	8
65 years and older	31,032	16	837	3	6	574	2	5
Sex								
Male	90,369	48	12,995	14	92	9,920	11	92
Female	99,595	52	1,068	1	8	825	1	8
Race								
White	162,367	85	13,572	8	97	10,441	6	97
Black	18,395	10	294	2	2	170	1	2
All others	9,202	5	197	2	1	134	1	1
Annual household income								
Under $10,000	18,585	10	673	4	5	484	3	5
$10,000 to $19,999	29,864	16	1,830	6	13	1,443	5	13
$20,000 to $24,999	15,188	8	1,322	9	9	1,064	7	10
$25,000 to $29,999	18,727	10	1,602	9	11	1,306	7	12
$30,000 to $49,999	42,689	22	4,289	10	31	3,301	8	31
$50,000 to $74,999	24,448	13	2,059	8	15	1,541	6	14
$75,000 or more	13,579	7	947	7	7	621	5	6
Not reported	26,884	14	1,341	5	10	985	4	9
Education								
8 years or less	14,311	8	595	4	4	436	3	4
9 - 11 years	21,595	11	1,735	8	12	1,346	6	13
12 years	77,293	41	6,250	8	44	5,010	6	47
1 - 3 years college	36,725	19	2,896	8	21	2,174	6	20
4 years college	22,920	12	1,567	7	11	1,064	5	10
5 or more years college	17,120	9	1,020	6	7	716	4	7

(continued)

Table 6-13. Demographic Characteristics of Anglers and Hunters (continued)

[Population 16 years old and older. Numbers in thousands.]

Characteristic	Type of hunting								
	Small game			Migratory bird			Other animals		
	Number	Percent who participated	Percent	Number	Percent who participated	Percent	Number	Percent who participated	Percent
Total persons	7,642	4	100	3,009	2	100	1,411	1	100
Population density of residence									
Urban	3,531	3	46	1,600	1	53	456	(Z)	32
Rural	4,111	8	54	1,410	3	47	955	2	68
Population size of residence									
MSA	4,161	3	54	1,883	1	63	619	(Z)	44
1,000,000 or more	1,533	2	20	757	1	25	187	(Z)	13
250,000 - 999,999	1,653	4	22	666	1	22	271	1	19
50,000 - 249,999	975	5	13	461	2	15	160	1	11
Outside MSA	3,480	8	46	1,126	3	37	792	2	56
Census geographic division									
New England	234	2	3	53	1	2	50	(Z)	4
Middle Atlantic	964	3	13	195	1	6	231	1	16
East North Central	1,599	5	21	372	1	12	299	1	21
West North Central	1,154	9	15	339	3	11	175	1	12
South Atlantic	1,098	3	14	451	1	15	208	1	15
East South Central	803	7	11	313	3	10	153	1	11
West South Central	887	4	12	722	4	24	120	1	8
Mountain	431	4	6	212	2	7	90	1	6
Pacific	472	2	6	353	1	12	85	(Z)	6
Age									
Total	7,642	4	100	3,009	2	100	1,411	1	100
16 to 17 years	452	7	6	154	2	5	77	1	5
18 to 24 years	1,245	5	16	528	2	18	289	1	20
25 to 34 years	2,158	5	28	867	2	29	385	1	27
35 to 44 years	1,775	5	23	752	2	25	338	1	24
45 to 54 years	1,010	4	13	412	2	14	192	1	14
55 to 64 years	555	3	7	182	1	6	85	(Z)	6
65 years and older	447	1	6	115	(Z)	4	47	(Z)	3
Sex									
Male	7,241	8	95	2,854	3	95	1,313	1	93
Female	401	(Z)	5	155	(Z)	5	99	(Z)	7
Race									
White	7,306	4	96	2,920	2	97	1,372	1	97
Black	235	1	3	40	(Z)	1	*31	*(Z)	*2
All others	101	1	1	49	1	2	*8	*(Z)	*1
Annual household income									
Under $10,000	438	2	6	91	(Z)	3	70	(Z)	5
$10,000 to $19,999	957	3	13	224	1	7	211	1	15
$20,000 to $24,999	674	4	9	258	2	9	146	1	10
$25,000 to $29,999	877	5	11	291	2	10	178	1	13
$30,000 to $49,999	2,283	5	30	945	2	31	442	1	31
$50,000 to $74,999	1,161	5	15	562	2	19	184	1	13
$75,000 or more	513	4	7	376	3	12	79	1	6
Not reported	739	3	10	262	1	9	102	(Z)	7
Education									
8 years or less	325	2	4	57	(Z)	2	59	(Z)	4
9 - 11 years	950	4	12	261	1	9	163	1	12
12 years	3,340	4	44	1,094	1	36	649	1	46
1 - 3 years college	1,583	4	21	742	2	25	312	1	22
4 years college	867	4	11	532	2	18	152	1	11
5 or more years college	577	3	8	322	2	11	76	(Z)	5

Note: Percent who participated shows the percent of each row's population who participated in the activity named by the column (the percent of those living in urban areas who hunted big game, etc.). Percent columns show the percent of each column's participants who are described by the row heading (the percent of big game hunters who lived in urban areas, etc.).

(Z) Less than .5 percent.

* Estimate based on a small sample size.

Source: U.S. DOI and U.S. DOC, 1993.

Table 6-14. Demographic Characteristics of Anglers and Hunters 6 to 15 Years Old: 1990

[Numbers in thousands.]

Characteristic	U.S. population		Sportsmen (fished or hunted)			Fished only		
	Number	Percent	Number	Percent who partici-pated	Percent	Number	Percent who partici-pated	Percent
Total persons	35,530	100	14,011	39	100	12,281	35	100
Population density of residence								
Urban	24,720	70	8,441	34	60	7,731	31	63
Rural	10,810	30	5,570	52	40	4,550	42	37
Population size of residence								
MSA	26,817	75	9,681	36	69	8,845	33	72
1,000,000 or more	14,355	40	4,482	31	32	4,196	29	34
250,000 - 999,999	8,642	24	3,409	39	24	3,094	36	25
50,000 - 249,999	3,819	11	1,790	47	13	1,555	41	13
Outside MSA	8,713	25	4,330	50	31	3,436	39	28
Census geographic division								
New England	1,645	5	650	39	5	605	37	5
Middle Atlantic	4,893	14	1,571	32	11	1,463	30	12
East North Central	6,088	17	2,645	43	19	2,328	38	19
West North Central	2,611	7	1,470	56	10	1,231	47	10
South Atlantic	5,906	17	2,125	36	15	1,867	32	15
East South Central	2,307	6	993	43	7	779	34	6
West South Central	4,258	12	1,690	40	12	1,385	33	11
Mountain	2,196	6	977	45	7	844	38	7
Pacific	5,626	16	1,891	34	13	1,781	32	15
Age								
6 to 8 years	11,194	32	4,045	36	29	3,879	35	32
9 to 11 years	10,824	30	4,471	41	32	4,093	38	33
12 to 15 years	13,512	38	5,496	41	39	4,309	32	35
Sex								
Male, total	18,185	51	8,836	49	63	7,292	40	59
6 to 8 years	5,692	16	2,416	42	17	2,279	40	19
9 to 11 years	5,582	16	2,801	50	20	2,469	44	20
12 to 15 years	6,911	19	3,619	52	26	2,545	37	21
Female, total	17,345	49	5,175	30	37	4,989	29	41
6 to 8 years	5,501	15	1,629	30	12	1,600	29	13
9 to 11 years	5,242	15	1,669	32	12	1,625	31	13
12 to 15 years	6,601	19	1,877	28	13	1,764	27	14
Race								
White	28,936	81	12,856	44	92	11,186	39	91
Black	4,453	13	629	14	4	593	13	5
All others	2,141	6	527	25	4	502	23	4
Annual household income								
Under $10,000	3,623	10	837	23	6	761	21	6
$10,000 to $19,999	5,401	15	1,753	32	13	1,533	28	12
$20,000 to $24,999	2,828	8	1,013	36	7	869	31	7
$25,000 to $29,999	3,706	10	1,522	41	11	1,312	35	11
$30,000 to $49,999	9,186	26	4,323	47	31	3,801	41	31
$50,000 to $74,999	4,869	14	2,376	49	17	2,110	43	17
$75,000 or more	2,539	7	1,199	47	9	1,056	42	9
Not reported	3,379	10	988	29	7	837	25	7

(continued)

Table 6-14. Demographic Characteristics of Anglers and Hunters 6 to 15 Years Old: 1990 (continued)

[Numbers in thousands.]

Characteristic	Hunted only			Fished and hunted		
	Number	Percent who participated	Percent	Number	Percent who participated	Percent
Total persons	221	1	100	1,509	4	100
Population density of residence						
Urban	84	(Z)	38	626	3	41
Rural	137	1	62	883	8	59
Population size of residence						
MSA	*102	*(Z)	*46	734	3	49
1,000,000 or more	25	(Z)	11	261	2	17
250,000 - 999,999	28	(Z)	13	286	3	19
50,000 - 249,999	48	1	22	187	5	12
Outside MSA	120	1	54	775	9	51
Census geographic division						
New England	*5	*(Z)	*2	40	2	3
Middle Atlantic	*18	*(Z)	*8	90	2	6
East North Central	*33	*1	*15	285	5	19
West North Central	29	1	13	210	8	14
South Atlantic	43	1	20	215	4	14
East South Central	25	1	11	190	8	13
West South Central	*29	*1	*13	276	6	18
Mountain	25	1	11	108	5	7
Pacific	*15	*(Z)	*7	94	2	6
Age						
6 to 8 years	*13	*(Z)	*6	153	1	10
9 to 11 years	35	(Z)	16	342	3	23
12 to 15 years	174	1	78	1,013	7	67
Sex						
Male, total	188	1	85	1,357	7	90
6 to 8 years	*9	*(Z)	*4	128	2	9
9 to 11 years	30	1	13	303	5	20
12 to 15 years	149	2	67	925	13	61
Female, total	34	(Z)	15	152	1	10
6 to 8 years	...	...	...	25	(Z)	2
9 to 11 years	*5	*(Z)	*2	39	1	3
12 to 15 years	24	(Z)	11	88	1	6
Race						
White	210	1	95	1,460	5	97
Black	...	...	...	29	1	2
All others	*4	*(Z)	*2	21	1	1
Annual household income						
Under $10,000	*16	*(Z)	*7	60	2	4
$10,000 to $19,999	29	1	13	191	4	13
$20,000 to $24,999	*13	*(Z)	*6	131	5	9
$25,000 to $29,999	37	1	17	172	5	11
$30,000 to $49,999	63	1	28	459	5	30
$50,000 to $74,999	*20	*(Z)	*9	246	5	16
$75,000 or more	*20	*1	*9	123	5	8
Not reported	*24	*1	*11	127	4	8

Note: Percent who participated shows the percent of each row's population who participated in the activity named by the column (the percent of those living in urban areas who fished only, etc.). Percent columns show the percent of each column's participants who are described by the row heading (the percent of those who fished only who lived in urban areas, etc.). Data reported are from screening interviews in which one adult household member responded for all household members 6 to 15 years old. The screening interview required the respondent to recall 12 months worth of activity.

* Estimate based on a small sample size.

... Sample size too small to report data reliably.

(Z) Less than .5 percent.

Source: U.S. DOI and U.S. DOC, 1993.

Table 6-15. Demographic Estimates for Anglers and Hunters 6 to 15 Years Old by State of Residence in 1990

[Numbers in thousands.]

Sportsman's state of residence	Population	Fished or hunted		Fished only		Hunted only		Fished and hunted	
		Number	Percent of population	Number	Percent of population	Number	Percent of population	Number	Percent of population
U.S., total	35,530	14,011	39	12,281	35	221	1	1,509	4
Alabama	621	274	44	220	35	...	...	50	8
Alaska	85	61	72	52	61	...	...	8	10
Arizona	543	188	35	171	31	...	...	*13	*2
Arkansas	369	185	50	125	34	...	...	58	16
California	4,274	1,252	29	1,211	28	...	...	*37	*1
Colorado	475	252	53	227	48	...	...	*20	*4
Connecticut	409	147	36	140	34	...	...	*6	*2
Delaware	95	35	37	33	34	...	...	*2	*2
Florida	1,591	595	37	556	35	...	...	*29	*2
Georgia	1,013	335	33	288	28	...	...	39	4
Hawaii	157	50	32	48	30	...	...	*2	*1
Idaho	181	105	58	84	47	*5	*3	16	9
Illinois	1,619	620	38	575	36	...	...	42	3
Indiana	824	390	47	328	40	...	...	60	7
Iowa	411	225	55	186	45	...	...	35	8
Kansas	377	195	52	162	43	...	...	28	7
Kentucky	545	264	48	207	38	*8	*2	48	9
Louisiana	704	266	38	202	29	*14	*2	50	7
Maine	171	90	53	77	45	...	...	12	7
Maryland	630	169	27	154	24	...	...	*11	*2
Massachusetts	706	249	35	238	34	...	...	*11	*2
Michigan	1,354	587	43	514	38	...	...	59	4
Minnesota	644	394	61	334	52	...	...	54	8
Mississippi	433	177	41	123	28	*7	*2	46	11
Missouri	725	388	54	325	45	...	...	58	8
Montana	125	73	59	54	43	*3	*3	16	13
Nebraska	242	140	58	119	49	...	...	18	8
Nevada	162	53	33	47	29	...	...	*4	*3
New Hampshire	155	73	47	69	44	...	...	*3	*2
New Jersey	981	295	30	285	29	...	...	...	...
New Mexico	257	92	36	77	30	*4	*2	*11	*4
New York	2,341	649	28	624	27	...	...	*23	*1
North Carolina	903	330	37	273	30	...	...	47	5
North Dakota	101	64	63	51	50	*2	*2	11	11
Ohio	1,577	632	40	570	36	...	...	58	4
Oklahoma	477	231	48	206	43	...	...	24	5
Oregon	406	190	47	169	42	...	...	*15	*4
Pennsylvania	1,572	628	40	554	35	...	...	59	4
Rhode Island	125	44	35	43	34	...	...	...	...
South Carolina	536	206	38	178	33	...	...	27	5
South Dakota	111	63	57	53	48	*3	*3	*7	*6
Tennessee	708	279	39	229	32	...	...	46	6
Texas	2,708	1,008	37	852	31	...	...	144	5
Utah	376	165	44	142	38	...	...	20	5
Vermont	79	47	59	38	48	...	...	7	9
Virginia	804	328	41	299	37	...	...	*24	*3
Washington	704	337	48	302	43	...	...	31	4
West Virginia	262	119	45	76	29	*8	*3	35	13
Wisconsin	714	416	58	341	48	...	...	66	9
Wyoming	77	49	64	40	52	...	...	8	11

Note: U.S. totals include responses from participants residing "in the District of Columbia, as described in the statistical" reliability appendix. Data reported on this table are from screening interviews in which one adult household member responded for household members 6 to 15 years old. The screening interviews required the respondent to recall 12 months worth of activity.

* Estimate based on a small sample size.

... Sample size too small to report data reliably.

Source: U.S. DOI and U.S. DOC, 1993.

Table 6-16. Vegetable Gardening by Demographic Factors: 1986

Demographic Factor	Percentage of total households that have gardens (%)	Number of households (in millions)
Total	38	34
Sex of gardener		
Male	39	16.6
Female	37	17.0
Age of gardener (in years)		
18-29	31	7.7
30-49	39	12.4
50 and older	43	13.7
Household composition		
Single, separated, divorced, or widowed	54	8.5
Married, no children	45	11.9
Married, with children	44	13.2
Region/section[a]		
East Region	33	7.3
New England	37	1.9
Mid-Atlantic	32	5.4
Midwest Region	50	11.0
East Central	50	6.6
West Central	50	4.5
South Region	33	9.0
Deep South	44	3.1
Rest of South	29	5.9
West Region	37	6.2
Rocky Mountain	53	2.3
Pacific	32	4.2
Size of Community		
City	26	6.2
Suburb	33	10.2
Small town	32	3.4
Rural	61	14.0

[a] Composition of regions/sections was not provided by the NGA.

Source: National Gardening Association, 1987.

Table 6-17. Characteristics of Households With a Vegetable Garden: 1976 to 1986

[Percentage]

	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986
Percent of US households with a vegetable garden	44	43	41	42	43	47	46	42	40	37	38
Number of households with a vegetable garden (in millions)	32	32	31	33	34	38	38	35	34	33	34
Garden size (square feet)[a]	560	770	620	595	663	547	600	505	440	300	325
Characteristic											
Age (in years)											
18 - 29	40	38	34	36	33	41	39	36	33	29	31
30 - 49	46	45	42	43	45	48	46	42	40	36	39
50 and older	45	46	46	46	48	51	50	46	46	44	43
Sex											
Male	52	44	42	43	44	48	49	44	40	38	39
Female	48	41	41	42	41	47	43	40	40	37	37
Race											
White	46	45	41	44	45	50	47	40	42	40	40
Nonwhite	32	39	40	30	28	32	37	28	31	20	27
Yearly income											
$15,000 and over	48	48	49	48	48	52	50	45	42	40	40
$10,000 - 14,999	43	43	37	41	40	44	41	43	46	37	35
$7,000 - 9,999	42	41	32	38	37	49	41	43	33	30	38
$4,000 - 6,999	43	39	37	30	37	37	39	28	35	25	34
Under $4,000	32	35	34	25	31	28	36	34	27	28	42

[a] Median value; mean value for 1986 = 1,690 square feet.

Source: National Gardening Association, 1987.

Table 6-18. Percentage of Gardening Households Growing Different Vegetables: 1986

Vegetable	Percent
Artichokes	0.8
Asparagus	8.2
Beans	43.4
Beets	20.6
Broccoli	19.6
Brussel sprouts	5.7
Cabbage	29.6
Carrots	34.9
Cauliflower	14.0
Celery	5.4
Chard	3.5
Corn	34.4
Cucumbers	49.9
Dried peas	2.5
Dry beans	8.9
Eggplant	13.0
Herbs	9.8
Kale	3.1
Kohlrabi	3.0
Leeks	1.2
Lettuce	41.7
Melons	21.9
Okra	13.6
Onions	50.3
Oriental vegetables	2.1
Parsnips	2.2
Peanuts	1.9
Peas	29.0
Peppers	57.7
Potatoes	25.5
Pumpkins	10.2
Radishes	30.7
Rhubarb	12.2
Spinach	10.2
Summer squash	25.7
Sunflowers	8.2
Sweet potatoes	5.7
Tomato	85.4
Turnips	10.7
Winter squash	11.1

Source: National Gardening Association, 1987.

Table 6-19. U.S. Household Participation in Lawn and Garden Activities: 1989 to 1993[a]

Activity	Percent Households Engaged in Activity				
	1989	1990	1991	1992	1993
Total	75	80	78	75	71
Lawn care	57	66	62	54	54
Indoor houseplants	37	43	42	34	31
Flower gardening	41	48	41	39	39
Insect control	29	39	35	27	24
Shrub care	29	38	32	27	28
Vegetable gardening	32	37	31	31	26
Tree care	23	31	27	20	21
Landscaping	22	31	26	22	24
Flower bulbs	23	31	26	23	22
Fruit trees	14	19	15	13	13
Container gardening	11	15	13	9	11
Raising transplants[b]	11	15	12	8	10
Herb gardening	7	9	9	7	8
Growing berries	7	9	7	6	6
Ornamental gardening	5	7	7	5	6

[a] Based on national household sample survey conducted by the Gallup Organization. Subject to sampling variability.
[b] Starting plants in advance of planting in ground.

Source: U.S. Bureau of the Census, 1995.

Table 6-20. Participation in Gardening: 1992[a]

Item	Adult Population (mil.)	Percentage
Total	185.8	55
Sex:		
Male	89.0	46
Female	96.8	62
Race:		
White	158.8	57
Black	21.1	39
Other	5.9	42
Age:		
18 to 24 years old	24.1	31
25 to 34 years old	42.4	51
35 to 44 years old	39.8	57
45 to 54 years old	27.7	64
55 to 64 years old	21.2	63
65 to 74 years old	18.3	63
75 to 96 years old	12.3	55
Education:		
Grade school	14.3	44
Some high school	18.6	50
High school	69.4	53
graduate	39.2	55
Some college	26.2	61
College graduate	18.1	65
Graduate school		

[a] In percent, except as indicated. Covers activities engaged in at least once in the prior 12 months.

Source: U.S. Bureau of the Census, 1995.

Table 6-21. DIY Home Improvement and Repair Projects Undertaken Within the Past 12 Months[a]

Project	Millions of Households	Percent of DIY Households
Painted the interior of the home	37.5	60.9
Applied weatherstripping or caulking	26.4	43.0
Painted the exterior of the home	20.3	32.9
Varnished or stained woodwork/furniture	19.8	32.2
Repaired electrical wiring or outlets	14.7	23.9
Replaced bathroom faucets	14.2	23.1
Hung wallpaper	14.1	22.9
Repaired or replaced toilet	12.8	20.8
Replaced kitchen faucets	12.7	20.6
Added insulation	12.0	19.5
Repaired drywall	10.5	17.0
Installed carpeting	10.2	16.6
Installed vinyl floor covering	9.3	15.1
Repaired or replaced roof	8.2	13.4
Installed a ceiling fan	8.2	13.4
Installed paneling	7.6	12.3
Did brick or masonry work	5.9	9.6
Installed a bathroom vanity	5.0	8.2
Installed ceiling tile	4.7	7.6
Installed a water heater	4.2	6.9
Installed ceramic tile	3.1	5.0
Installed a kitchen sink	2.9	4.7
Replaced kitchen cabinets	2.3	3.8
Installed exterior siding	2.3	3.7

[a] Between September 1981 and September 1982.

Source: DIYRI, 1983.

Table 6-22. Participation in Various Home Improvement/Repair: 1992[a]

Item	Adult Population (mil.)	Home Improvement/Repair
Total	185.8	48
Sex:		
Male	89.0	53
Female	96.8	42
Race:		
White	158.8	50
Black	21.1	32
Other	5.9	31
Age:		
18 to 24 years old	24.1	33
25 to 34 years old	42.4	47
35 to 44 years old	39.8	58
45 to 54 years old	27.7	57
55 to 64 years old	21.2	53
65 to 74 years old	18.3	42
75 to 96 years old	12.3	20
Education:		
Grade school	14.3	24
Some high school	18.6	34
High school	69.4	47
graduate	39.2	53
Some college	26.2	52
College graduate	18.1	65
Graduate school		

[a] In percent, except as indicated. Covers activities engaged in at least once in the prior 12 months.

Source: U.S. Bureau of the Census, 1995.

Table 6-23. Estimated Populations Involved in Various Hobbies

Hobby	Number of People	Remarks
1. Woodworking		
A. People involved in a leisure woodworking project	13.3×10^6 (6.6% of total U.S. population)	SMRB does not indicate what percentage of this total are specifically involved in other specific woodworking projects.
B. People involved in furniture refinishing	12.2×10^6	
C. Magazine subscribers[a] (Writers Market, 1985)		
• *Hands on*	750,000	All four magazines are specifically directed at active amateur woodworkers.
• *Woodworker's Journal*	100,000	
• *Popular Woodwork*	10,000	
• *Workbench*	825,000	
D. Persons who own power tools (SMRB, 1983)		
• Electric drill	27.4×10^6	Router is best indicator of number of hobbyists.
• Electric router	5.8×10^6	
• Gas chain saw	11.3×10^6	
• Electric chain saw	3.3×10^6	
• Portable electric circular saw	15.1×10^6	
• Portable jig/sabre saw	13.0×10^6	
• Stationary radial/arm saw	3.4×10^6	
• Stationary bench/table circular saw	4.7×10^6	
• Stationary jig/sabre saw	1.9×10^6	
• Electric sander	15.0×10^6	
• Portable workbench	4.1×10^6	
2. Photography		
A. People who develop their own photographs (SMRB 1983)	6.2×10^6	Most will be developing black and white film.
B. People participating in photography (SMRB, 1992)	72.2×10^6 (11.5% of total U.S. population)	Participated in last 12 months.
C. Magazine subscribers[a]		
• *Darkroom Photography Magazine*	100,000	Subscribers are people interested in darkroom techniques.
• *Darkroom Techniques*	40,000	
• *Popular Photography*	925,000	Subscribers are advanced amateurs.
D. *Kodak Consumer Department*	1×10^6 2×10^6	80% of photo hobbyists are estimated to do black and white developing and 20% color developing.

Table 6-23. Estimated Populations Involved in Various Hobbies (Continued)

Hobby	Number of People	Remarks
3. Lapidary Work		
• No population data found		
4. Glass/crystal working		
A. Magazine subscribers[a]		
• *Glass Craft News*	40,000	Subscribers are stained-glass hobbyists.
5. Textile and fiber dyeing		
A. Magazine subscribers[a]		
• *Handweaver*	25,000	Practicing weavers and dyers (includes some professionals).
• *Shuttle Spindle and Dyepot*	16,000	Practicing weavers and dyers (may include some professionals).
• *Spin-off*	6,000	Practicing spinners and dyers (may include some professionals).
6. Painting and drawing		
A. People who paint, draw, or sculpt (SMRB, 1983)	13.7×10^6	
B. People participating in painting, drawing, sculpturing (SMRB, 1992)	12.1×10^6	
C. Magazine subscribers[a]		
• *Art and Artists*	1,000	Subscribers are people interested in oil pastel.
• *Artist's Magazine*	110,000	Subscribers are serious amateurs.
7. Metalworking		
A. Magazine subscribers (Writers Market, 1985)		
• *Home Shop Machinist*	19,000	Subscribers include hobbyists active in sheetmetal work, machining, welding, and foundry.
• *Live Steam*	12,800	Subscribers include hobbyists active in constructing scale locomotives and other steam engineers.
8. Printing		
• No population data found		
9. Pottery and ceramics		
A. People participating in ceramics/pottery	4.4×10^6 (1.6% of total U.S. population)	
B. Magazine subscribers		
• *American Ceramics*	3,200	Subscribers may be collectors as well as makers; the actual population is probably much greater.
10. Scale Models		

(continued on next page)

Table 6-23. Estimated Populations Involved in Various Hobbies (Continued)

Hobby	Number of People	Remarks
A. People participating in model building/miniature projects (SMRB, 1992)	4.9×10^6 (2.7% of total U.S. population)	
B. People participating in model railroading (SMRB, 1992)	2.5×10^6	
C. Magazine subscribers[a] (Writers Market 1985)		
• *Railroad Model Craftsman*	97,000	Most subscribers to railroad models thought to be collectors rather than builders.
• *Finescale Modeler*	30,000	
• *Mainline Modeler*	14,000	
• *Model Railroader*	178,000	
D. People who build model airplanes	300,000-400,000	*Model Aircraft*; these are functional models.
11. Hunting and firearms		
A. Persons who own guns (SMRB, 1983)		
• Hunting rifle	24.4×10^6	
• Shooting rifle	22.2×10^6	
• Target gun	9.6×10^6	
• Factory-loaded ammunition	18.9×10^6	
B. Persons who have engaged in firearms-related hobby within the past year (SMRB, 1983)		
• Hunting	12.6	
• Target shooting	7.4	
C. Magazine subscribers[a]		
• *American Hunter*	150,000	
• *Guns & Ammo*	475,000	
• *Shotgun Sports*	105,000	
• *American Marksman*	8,000	
• *American Shotgunner*	120,000	
• *Guns Magazine*	135,000	
12. Leather Work		
A. Magazine subscribers		
• *Make It with Leather*	60,000	Subscribers are hobbyists who cut and carve leather (which has presumably already been treated and dyed) therefore, potentially exposed to tanning agents and dye.

(continued on next page)

Table 6-23. Estimated Populations Involved in Various Hobbies (Continued)

	Hobby	Number of People	Remarks
13.	**Needlework and fiber arts**		
A.	Persons who sew or do other needlework as a hobby (SMRB, 1983)	29.1×10^6	This probably includes only persons exposed to dyes through handling material or threads already dyed.
B.	Magazine subscribers[a]		
	• *Needle and Thread*	750,000	Subscribers are users of already-dyed materials. However, some dye may potentially leach from thread.
	• *Needlecraft for Today*	1,200,000	
14.	**Boat builders**		
A.	People who build their own boats	20,000	Devlin Boat Building, Co.; approximately 20,000 people a year are involved in building their own boats.
15.	**Plane builders**		
A.	People who build their own planes	20,000	Homebuilt Experimental Aircraft Association.
16.	**Jewelry making**		
A.	People participating in jewelry making (SMRB, 1992)	2.8×10^6 (1.6% of total U.S. population)	

[a] Assumed that persons who subscribe to the hobbyist-type magazines are persons involved/interested in that specific hobby. A percentage of this population can be used to estimate the potentially susceptible or exposed population.

Source: SMRB, 1983; U.S. EPA, 1985; Writers Market, 1985; SMRB, 1992.

Table 6-24. Participation in Selected Sports Activities: 1993[a]

Activity	All Persons		Sex		Age								Yearly Household Income ($)					
	Number	Rank	Male	Female	7-11 yrs	12-17 yrs	18-24 yrs	25-34 yrs	35-44 yrs	45-54 yrs	55-64 yrs	65 yrs and over	Under 15,000	15,000-24,999	25,000-34,999	35,000-49,999	50,000-74,999	75,000 and over
Total	230,406	(X)[b]	111,851	118,555	18,561	21,304	25,650	41,808	40,761	28,644	20,922	32,758	45,150	36,221	33,971	43,701	46,189	25,175
Number participated in																		
Aerobic exercising[c]	24,886	9	3,527	21,359	647	1,837	4,852	7,514	4,996	2,610	1,181	1,250	3,172	3,092	3,692	5,012	6,299	3,618
Backpacking[d]	9,229	24	6,196	3,033	779	1,280	1,501	2,477	2,067	850	170	104	1,424	1,291	1,207	1,817	2,174	1,316
Baseball	16,682	16	13,451	3,232	5,422	5,283	1,834	1,724	1,658	511	87	164	2,499	2,001	2,440	3,832	4,070	1,840
Basketball	29,631	8	21,332	8,299	5,751	9,361	5,305	4,766	3,257	857	146	189	4,163	3,750	4,935	6,254	6,963	3,566
Bicycle riding[c]	47,918	3	24,562	23,357	11,204	8,794	4,551	8,808	6,980	3,441	2,030	2,111	6,897	6,449	6,685	10,606	10,393	6,888
Bowling	41,305	6	20,714	20,591	3,890	5,039	7,222	9,484	7,625	3,919	1,716	2,410	6,684	6,207	6,487	8,498	9,084	4,346
Calisthenics[c]	10,800	21	4,571	6,230	1,132	2,024	1,508	1,824	1,712	1,099	657	844	2,698	1,202	1,422	2,319	2,540	1,619
Camping[e]	42,698	5	23,165	19,533	5,302	5,336	4,767	10,000	8,580	4,135	2,355	2,224	7,182	7,275	6,277	9,338	8,452	4,175
Exercise walking[c]	64,427	1	21,054	43,373	1,848	2,816	5,690	12,525	14,045	10,185	7,782	9,536	10,491	9,802	9,807	12,325	13,593	8,409
Exercising w. equipment[c]	34,900	7	16,901	17,999	425	3,025	6,595	9,105	7,065	4,257	2,217	2,210	3,915	3,948	4,639	7,305	9,412	5,681
Fishing-freshwater	45,333	4	30,449	14,885	4,623	4,945	4,946	9,913	9,561	5,044	3,156	3,146	8,891	7,190	7,158	9,470	9,251	3,373
Fishing-saltwater	12,079	20	8,337	3,743	938	882	1,358	2,276	2,593	1,603	1,251	1,178	2,182	2,002	1,344	2,286	2,833	1,432
Football	14,712	17	12,879	1,843	2,495	5,227	3,410	2,203	1,032	202	94	60	2,457	2,295	2,263	2,813	3,105	1,790
Golf	22,633	10	17,212	5,421	840	1,692	3,074	5,192	4,620	3,180	1,956	2,080	1,439	1,925	2,668	4,159	7,342	5,100
Hiking	19,462	13	10,741	8,721	1,851	2,439	2,224	4,604	4,358	1,873	1,035	1,078	2,717	2,964	2,884	3,530	4,314	3,052
Hunting w. firearms	18,455	14	16,303	2,152	540	1,695	2,575	4,658	4,282	2,380	1,311	1,014	3,234	2,814	3,555	3,939	3,473	1,40
Racquetball	5,407	25	4,161	1,246	162	550	1,704	1,590	936	380	71	15	705	597	595	1,197	1,592	722
Running/jogging[c]	20,283	12	11,429	8,854	1,727	4,008	4,088	4,393	3,489	1,566	680	331	2,795	2,364	2,506	4,047	5,104	3,468
Skiing-alpine/downhill	10,495	22	6,462	4,033	453	1,549	2,766	2,807	1,698	921	230	70	552	734	930	1,763	3,365	3,150
Skiing-cross country	3,727	26	1,738	1,989	298	469	273	530	1,084	580	314	179	291	317	463	718	1,064	874

(continued on next page)

Table 6-24. Participation in Selected Sports Activities: 1993[a] (continued)

Activity	All Persons		Sex		Age								Yearly Household Income ($)					
	Number	Rank	Male	Female	7-11 yrs	12-17 yrs	18-24 yrs	25-34 yrs	35-44 yrs	45-54 yrs	55-64 yrs	65 yrs and over	Under 15,000	15,000-24,999	25,000-34,999	35,000-49,999	50,000-74,999	75,000 and over
Total	230,406	(X)[b]	111,851	118,555	18,561	21,304	25,650	41,808	40,761	28,644	20,922	32,758	45,150	36,221	33,971	43,701	46,189	25,175
Soccer	10,273	23	6,509	3,764	4,543	3,063	889	839	626	254	51	9	1,247	925	1,126	2,387	2,927	1,661
Softball	17,943	15	10,426	7,517	2,886	3,817	3,101	4,446	2,813	532	191	157	2,173	2,335	2,758	3,789	4,530	2,358
Swimming[c]	61,353	2	27,713	33,640	10,507	10,874	7,860	11,293	10,075	4,941	2,756	3,047	8,545	7,936	8,817	13,054	14,284	8,717
Target shooting	12,804	19	10,195	2,609	746	1,640	2,057	3,288	2,723	1,345	546	459	2,086	1,916	2,175	2,877	2,283	1,468
Tennis	14,197	18	8,302	5,896	1,003	2,464	3,375	3,076	2,357	1,091	558	274	2,669	1,390	1,752	2,586	3,758	3,043
Volleyball	20,477	11	9,777	10,700	1,333	5,443	4,402	4,961	3,150	823	252	112	2,890	2,500	3,226	4,289	5,036	2,536

[a] In thousands, except rank. For persons 7 years of age or older. Except as indicated, a participant plays a sport more than once in the year. Based on a sampling of 10,000 households.
[b] Not applicable.
[c] Participant engaged in activity at least six times in the year.
[d] Includes wilderness camping.
[e] Vacation/overnight.

Source: U.S. Bureau of the Census, 1995.

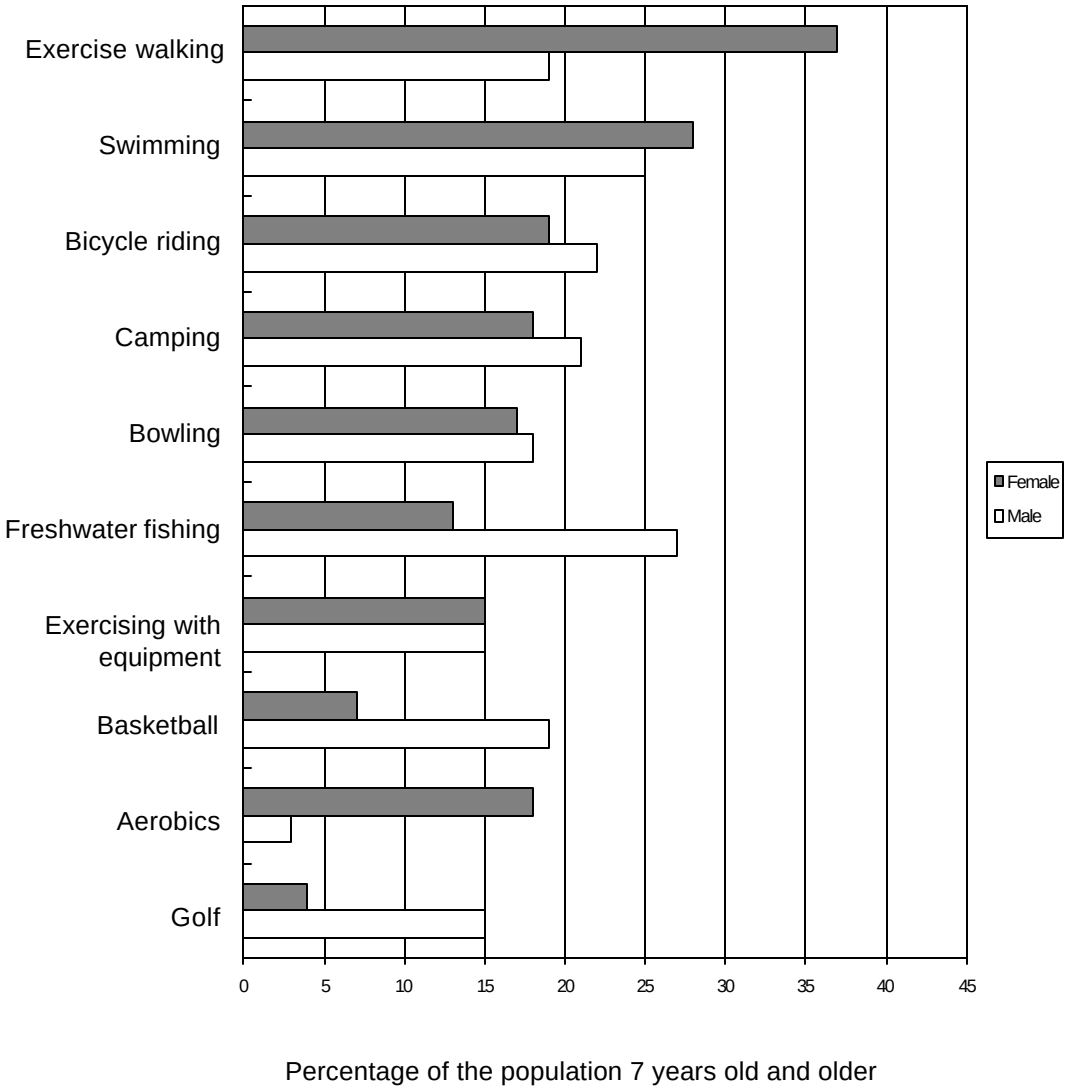

Figure 6-1. Participation in the 10 Most Popular Sports Activities by Sex: 1993

Source: U.S. Bureau of the Census, 1995.

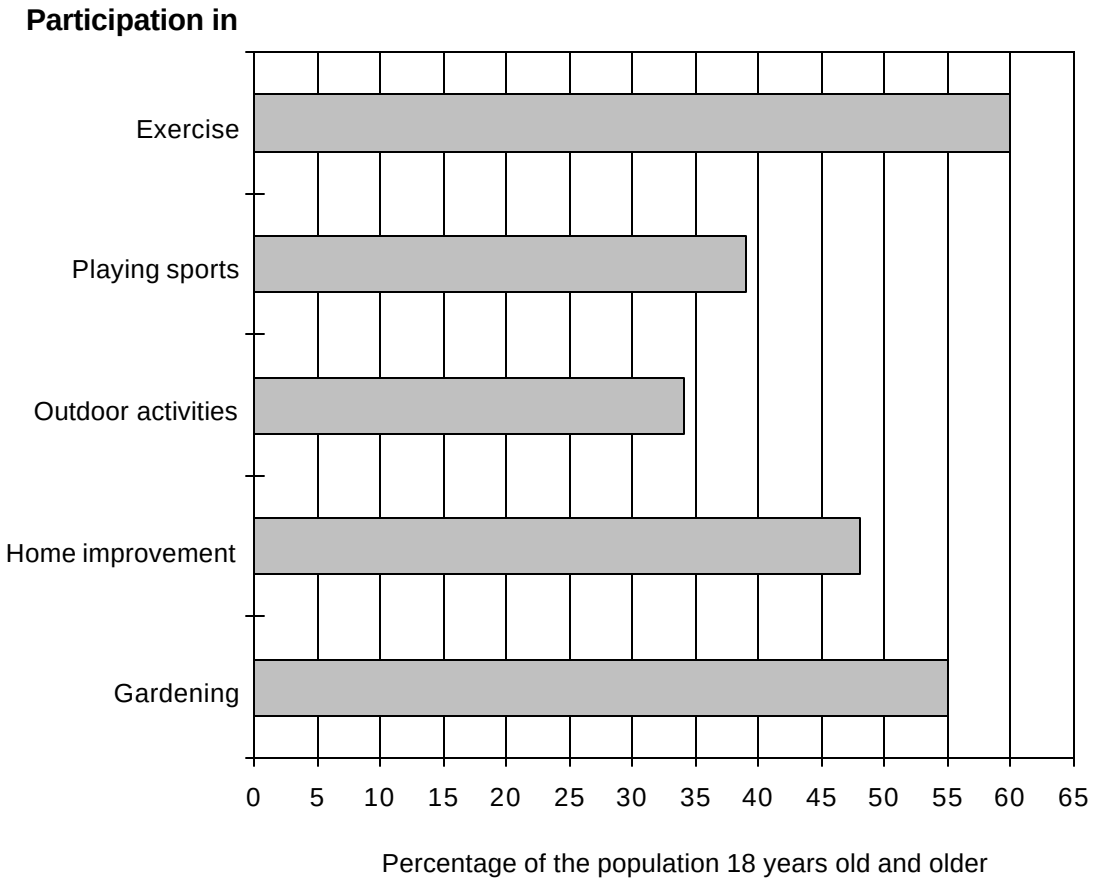

Figure 6-2. Participation in Various Activities by Percentage of the Population 18 Years Old and Older: 1992

Source: U.S. Bureau of the Census, 1995.

7. ACTIVITIES (OCCUPATIONAL)

Working in certain occupations can increase an individual's risk of exposure to environmental contaminants. Some high-risk occupations are farm worker, factory and foundry worker, and mine worker. The U.S. Department of Labor's Bureau of Labor has documented the number of persons employed in a variety of occupations. Data presented in this section can be useful in evaluating an exposed population in a specified occupation or occupational category. The data also can be used to determine the time duration of exposures in certain categories of age, race, and sex and for the general population as well.

U.S. Department of Labor (DOL) data are accessible on the World Wide Web via the Internet. The Department's home page (Internet address: *www.dol.gov*) contains information on the kinds of data available and instructions on how to conduct data searches, extract data, and download data files in table format. Section 11 of this document contains information on how to locate U.S. Government data on the Internet.

All employment statistics generated by DOL are not accessible on the Internet. Some of these data are available in hardcopy format only. A copy of the table of contents from the Department's 1995 *Employment and Earnings* publication is presented in Appendix 7A at the end of this section to show examples of other data that are available. The *Employment and Earnings* document may be ordered by calling Superintendant of Documents at (202) 512-1800.

7.1. POPULATION EMPLOYED

DOL compiles statistics on the U.S. population by occupational categories. Tables presented in this section show population information by employment, annual average household data, and establishment data. Tables shown are presented as samples of the data compiled from household interviews and reports from employers and aggregated by DOL. More detailed data are provided in the publication. (See Appendix 7A.) The household interviews are obtained from the Current Population Survey, a sample survey of the population 16 years old and older, conducted each month. The household interview information is collected from about 60,000 households in 729 sample areas, which represent all counties and independent cities in the United

States with coverage in all 50 States, and the District of Columbia (U.S. DOL, 1995). The data collected are based on the activity or status reported for the calendar week, including the 12th of the month. A household consists of all persons who occupy a housing unit and have no other usual address. This includes related family members and all unrelated persons. A housing unit is regarded as a house, an apartment, a group of rooms, or a single room, when occupied or intended for occupancy as separate living quarters (U.S. DOL, 1995).

The establishment records are compiled each month from mail questionnaires and telephone interviews by the Bureau of Labor Statistics in cooperation with State agencies. These data are for the Nation, States, and metropolitan areas and represent 390,000 establishments employing more than 47-million nonfarm wage and salary workers. The household and establishment data complement one another, with each providing different information. Population characteristics are obtained from the household surveyed and detailed industrial classifications as best obtained from the establishment reports (U.S. DOL, 1995).

Table 7-1 presents employment status of the total general U.S. population for the civilian labor force. It also presents information on whether this population is employed in agriculture or in nonagricultural industries. Table 7-2 presents employment data for persons of Mexican, Puerto Rican, and Cuban-origin by sex and age. Table 7-3 presents data for employed civilians by selected occupational categories for black, white, and Hispanic origin for years 1993 and 1994. Table 7-4 presents the same employment data as in Table 7-3 but for persons of Mexican, Puerto Rican, and Cuban origin. In Table 7-5, data are shown for persons employed in agriculture and nonagricultural industries by age and sex. Table 7-6 displays percent distribution of persons employed by six major occupational industry categories by race and sex.

The terms white, black, and other, used to describe a person’s race, were taken directly from the primary source. Included in the "other" group are Native Americans (American Indians), Alaska Natives, and Asian and Pacific Islanders. Because of the relatively small sample size, data for other races were not published by DOL. Hispanic origin refers to persons who identify themselves as Mexican, Puerto Rican, Cuban, Central or South American, or of other Hispanic origin or descent. Persons of Hispanic origin may be of any race and thus were included in both white and black population groups.

7.2. POPULATIONS EMPLOYED IN DETAILED INDUSTRIAL AND OCCUPATIONAL CATEGORIES

DOL also has compiled statistics for employment in numerous detailed industrial and occupational categories. Table 7-7 presents employment data for selected detailed industrial categories by sex, race, and Hispanic origin. The percent of whites or male categories can be estimated using the data presented. Annual averages for household data by detailed occupation, sex, race, and Hispanic origin are shown in Appendix 7B at the end of this section. Employment data by major industry and manufacturing group are presented in Appendix 7C at the end of this section.

7.3. POPULATIONS IN PUBLIC BUILDINGS

Populations of persons in public buildings can be estimated based on data collected by the U.S. Bureau of the Census (1995) on numbers and characteristics of commercial office space in the United States. Table 7-8 presents information for the population utilizing commercial office space in the largest metropolitan areas in the United States. The inventory of square foot of area used also is shown. Table 7-9 presents information on the characteristics of commercial buildings (>1,000 sq ft) in the United States. These characteristics include total number of buildings, principal activity within the buildings, fuels used, and number of workers.

7.4. OCCUPATIONAL STUDIES ADDRESSING MINORITY POPULATIONS

Numerous researchers, including Rios et al. (1993) and Moses et al. (1993), have evaluated the effects of certain high-risk occupations on certain minorities. Rios et al. (1993) summarized the various factors increasing susceptibility to environmental exposure for minority populations using data from published documents. The factors summarized include genetic, occupational, developmental, disease, and social inequality. According to the authors, workers who may have an increased susceptibility to environmental exposures are coke oven workers in the steel industry, farm workers, and child laborers. The highest exposure to by-products from coke ovens is to the "topside" worker population on top of the oven (Rios et al., 1993).

The authors reported that although it has been estimated that there are 1.5- to 2.5-million

farm workers, the actual number may be as high as 4-million persons, including dependents of hired farm workers and undocumented aliens. In the West, Midwest, and Southwest areas of the United States, migrant farm workers are predominantly young Hispanic men with families; on the East Coast, farm workers often are the inner-city poor and their families or males of Hispanic descent (Rios et al., 1993).

The prevalence of child labor (children under 18 years of age) has increased, with children working in farm fields wet with pesticides (Rios et al., 1993). This is cause for concern because "children are known to be more susceptible than adults to the adverse effects of environmental pollutants and toxins" (Rios et al., 1993). Another high-risk group is those who may be secondarily exposed to occupational pollutants brought home on clothing or other articles by members of their household who work in high-risk occupations. Examples of workers who bring home occupational pollutants are farm workers with pesticide-laden work clothing, construction workers with asbestos, and smelter workers with toxic metals. The number of people can further be defined by ethnicity and gender.

Moses et al. (1993) collected data from scientific literature on human exposure to pesticides. Exposure data summarized include the number and types of pesticide used, rates of exposure to pesticide, exposure of agricultural workers, and exposure of children.

Minorities comprise most of the farm workers in the United States. In 1990, DOL surveyed United States farm workers and found that two-thirds of the farm workers not born in the United States (U.S. DOL, 1995). The ethnic groups comprising the two-thirds of the Nation's farm workers, who were not born in the United States, are as follows: Mexican--92%; other Latinos--4%; Asian--3%; and Caribbean--1%. Of the remaining one-third of the Nation's farm workers, who were born in the United States, 40% are minorities: Latinos--34%; African Americans--5%; and other ethnic groups--1%.

The authors noted that 25% of the summer-hire farm workers are children. This is a concern, because children are at higher risk from exposure to pesticides than are adults (Moses et al., 1993). This increased vulnerability is due to rapid growth rates and critically important sensitive developmental stages. Additional factors increasing a child's risk from exposure to pesticides is a higher respiratory rate, greater exposed surface area, and greater fluid intake

(relative to solid foods). Another possible route of exposure to pesticides for children is the indoor use of pesticides. When the authors calculated pesticide exposure within a child's breathing zone after the use of home foggers, they found pesticide exposure to the children far exceeded equivalent workplace standards for adults (Moses et al., 1993).

Friedman-Simenez (1989) noted that there is minority worker (black, Latino/Hispanic, Asian, Native American, and undocumented workers [most often Latino or Asian] over-representation in the more hazardous jobs, thereby leading to greater risk for occupational-related diseases. Included in the high-risk jobs (classified by the author) were (1) operators, fabricators, and laborers; (2) service occupation; (3) precision production, craft, and repair; and (4) farming, forestry, and fishing -- farm operators and managers, logging, other agricultural operations (Friedman-Simenez, 1989). The author noted that the evidence supporting his conclusion was not as rigorous or massive as most scientists would like, but the association between hazardous exposures and minority population is too consistent to be due to chance. For example, certain epidemics have been related to jobs such as coke oven workers, where the minority worker population on the topside (area of largest exposure) of the coke ovens is larger than for non-whites (Friedman-Simenez, 1989).

7.5. REFERENCES

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Table 7-1. Employment Status of Civilian Noninstitutional Population[a] by Sex, Age, Race, and Hispanic Origin

[In thousands]

Employment status, sex, and age	Total		White		Black		Hispanic origin	
	1993	1994	1993	1994	1993	1994	1993	1994
TOTAL								
Civilian noninstitutional population	193,550	196,814	163,921	165,555	22,329	22,879	15,753	18,117
Civilian labor force	128,040	131,056	109,359	111,082	13,943	14,502	10,377	11,975
Percent of the population	66.2	66.6	66.7	67.1	62.4	63.4	65.9	66.1
Employed	119,306	123,060	102,812	105,190	12,146	12,835	9,272	10,788
Agriculture	3,074	3,409	2,864	3,162	142	136	467	560
Nonagricultural industries	116,232	119,651	99,948	102,027	12,004	12,699	8,805	10,227
Unemployed	8,734	7,996	6,547	5,892	1,796	1,666	1,104	1,187
Unemployment rate	6.8	6.1	6.0	5.3	12.9	11.5	10.6	9.9
Not in labor force	65,509	65,758	54,562	54,473	8,386	8,377	5,377	6,142
Men, 16 years and older								
Civilian noninstitutional population	92,620	94,355	79,080	80,059	10,078	10,258	7,825	9,104
Civilian labor force	69,633	70,817	60,150	60,727	6,911	7,089	6,256	7,210
Percent of the population	75.2	75.1	76.1	75.9	68.6	69.1	80.0	79.2
Employed	64,700	66,450	56,397	57,452	5,957	6,241	5,603	6,530
Agriculture	2,438	2,554	2,254	2,347	128	118	417	494
Nonagricultural industries	62,263	63,896	54,143	55,104	5,829	6,122	5,186	6,036
Unemployed	4,932	4,367	3,753	3,275	954	848	653	680
Unemployment rate	7.1	6.2	6.2	5.4	13.8	12.0	10.4	9.4
Not in labor force	22,987	23,538	18,929	19,332	3,167	3,169	1,569	1,894
Men, 20 years and older								
Civilian noninstitutional population	85,907	87,151	73,711	74,311	9,031	9,171	7,063	8,178
Civilian labor force	66,069	66,921	57,115	57,411	6,498	6,646	5,871	6,747
Percent of the population	76.9	76.8	77.5	77.3	72.0	72.5	83.1	82.5
Employed	61,865	63,294	53,897	54,676	5,710	5,964	5,318	6,189
Agriculture	2,263	2,351	2,091	2,151	120	115	394	466
Nonagricultural industries	59,602	60,943	51,806	52,525	5,590	5,849	4,924	5,722
Unemployed	4,204	3,627	3,218	2,735	789	682	553	558
Unemployment rate	6.4	5.4	5.6	4.8	12.1	10.3	9.4	8.3
Not in labor force	19,838	20,230	16,596	16,900	2,532	2,525	1,192	1,431
Women, 16 years and older								
Civilian noninstitutional population	100,930	102,460	84,841	85,496	12,251	12,621	7,928	9,014
Civilian labor force	58,407	60,239	49,208	50,356	7,031	7,413	4,120	4,765
Percent of the population	57.9	58.8	58.0	58.9	57.4	58.7	52.0	52.9
Employed	54,606	56,610	46,415	47,738	6,189	6,595	3,669	4,258
Agriculture	636	855	610	815	14	18	50	66
Nonagricultural industries	53,970	55,755	45,805	46,923	6,175	6,577	3,619	4,191
Unemployed	3,801	3,629	2,793	2,617	842	818	451	508
Unemployment rate	6.5	6.0	5.7	5.2	12.0	11.0	10.9	10.7
Not in labor force	42,522	42,221	35,633	35,141	5,220	5,208	3,808	4,248

(continued)

Table 7-1. Employment Status of Civilian Noninstitutional Population[a] by Sex, Age, Race, and Hispanic Origin (continued)
[In thousands]

Employment status, sex, and age	Total		White		Black		Hispanic origin	
	1993	1994	1993	1994	1993	1994	1993	1994
Women, 20 years and older								
Civilian noninstitutional population	94,388	95,467	79,631	79,980	11,200	11,496	7,176	8,122
Civilian labor force	55,146	56,655	46,413	47,314	6,668	7,004	3,846	4,421
Percent of the population	58.4	59.3	58.3	59.2	59.5	60.9	53.6	54.4
Employed	51,912	53,606	44,028	45,116	5,962	6,320	3,467	3,989
Agriculture	599	809	574	772	13	17	46	61
Nonagricultural industries	51,313	52,796	43,454	44,344	5,949	6,303	3,422	3,928
Unemployed	3,234	3,049	2,385	2,197	706	685	378	431
Unemployment rate	5.9	5.4	5.1	4.6	10.6	9.8	9.8	9.8
Not in labor force	39,242	38,813	33,218	32,666	4,532	4,492	3,300	3,701
Both sexes, 16 to 19 years old								
Civilian noninstitutional population	13,255	14,196	10,579	11,264	2,099	2,211	1,515	1,818
Civilian labor force	6,826	7,481	5,831	6,357	776	852	660	807
Percent of the population	51.5	52.7	55.1	56.4	37.0	38.5	43.6	44.4
Employed	5,530	6,161	4,887	5,398	474	552	487	609
Agriculture	212	249	199	239	9	1	28	32
Nonagricultural industries	5,317	5,912	4,689	5,158	466	547	459	577
Unemployed	1,296	1,320	943	960	302	300	173	198
Unemployment rate	19.0	17.6	16.2	15.1	38.9	35.2	26.2	24.5
Not in labor force	6,429	6,715	4,748	4,907	1,323	1,360	855	1,010

[a] Civilian noninstitutional population--persons 16 years of age and older residing in the 50 States and the District of Columbia who are not inmates of institutions (e.g., penal and mental facilities, homes of the aged) and not on active duty in the Armed Forces.

Note: Detail for the above race and Hispanic-origin groups will not sum to totals because data for the "other races" group are not presented and Hispanics are included in both white and black population groups. Data for 1994 are not directly comparable with data for 1993 and earlier years. For additional information, see "Revisions in the Current Population Survey Effective January 1994" in the February 1994 issue of *Employment and Earnings.*

Source: U.S. Department of Labor, 1995.

Table 7-2. Employment Status of Civilians of Mexican, Puerto Rican, and Cuban Origin by Sex and Age [In thousands]

Employment status, sex, and age	Total Hispanic origin[a]		Mexican origin		Puerto Rican origin		Cuban origin	
	1993	1994	1993	1994	1993	1994	1993	1994
TOTAL								
Civilian noninstitutional population	15,753	18,117	9,693	11,174	1,676	1,854	927	1,002
Civilian labor force	10,377	11,975	6,499	7,567	950	1,026	554	604
Percent of the population	65.9	66.1	67.0	67.7	56.7	55.4	59.8	60.3
Employed	9,272	10,788	5,805	6,800	828	907	511	555
Agriculture	467	560	409	52	8	3	9	4
Nonagricultural industries	8,805	10,227	5,396	6,298	820	900	502	551
Unemployed	1,104	1,187	693	766	122	119	43	49
Unemployment rate	10.6	9.9	10.7	10.1	12,8	11.6	7.8	8.1
Not in labor force	5,377	6,142	3,194	3,608	725	828	373	398
Men, 16 years and older								
Civilian noninstitutional population	7,825	9,014	4,958	5,803	756	851	433	485
Civilian labor force	6,256	7,210	4,043	4,728	534	575	317	341
Percent of the population	80.0	79.2	81.5	81.5	70.6	67.6	73.3	70.3
Employed	5,603	6,530	3,628	4,277	457	512	293	314
Agriculture	417	494	363	440	7	2	7	4
Nonagricultural industries	5,186	6,036	3,266	3,837	449	506	285	310
Unemployed	653	680	414	450	77	63	25	27
Unemployment rate	10.4	9.4	10.2	9.5	14.4	11.0	7.8	7.9
Not in labor force	1,569	1,894	916	1,075	223	276	115	144
Men, 20 years and older								
Civilian noninstitutional population	7,063	8,178	4,456	5,196	663	744	415	459
Civilian labor force	5,871	6,747	3,774	4,391	495	539	308	331
Percent of the population	83.1	82.5	84.7	84.5	74.7	72.4	74.2	72.2
Employed	5,318	6,189	3,427	4,025	431	488	286	307
Agriculture	394	466	343	415	6	2	7	4
Nonagricultural industries	4,924	5,722	3,084	3,610	425	482	279	304
Unemployed	553	558	347	366	63	50	22	24
Unemployment rate	9.4	8.3	9.2	8.3	12.8	9.4	7.1	7.2
Not in labor force	1,192	1,432	683	805	168	206	107	128
Women, 16 years and older								
Civilian noninstitutional population	7,928	9,014	4,735	5,372	919	1,003	494	517
Civilian labor force	4,120	4,765	2,456	2,839	417	451	237	263
Percent of the population	52.0	52.9	51.9	52.9	45.3	44.9	47.9	50.9
Employed	3,669	4,258	2,177	2,523	372	395	218	241
Agriculture	50	66	46	62	1	--	2	--
Nonagricultural industries	3,619	4,191	2,130	2,461	371	394	217	241
Unemployed	451	508	279	316	45	56	18	22
Unemployment rate	10.9	10.7	11.4	11.1	10.8	12.4	7.7	8.4
Not in labor force	3,808	4,248	2,279	2,533	503	552	257	254
Women, 20 years and older								
Civilian noninstitutional population	7,176	8,122	4,213	4,784	845	912	467	494
Civilian labor force	3,846	4,421	2,256	2,607	397	425	227	255
Percent of the population	53.6	54.4	53.5	54.5	47.0	46.6	48.5	51.6
Employed	3,467	3,989	2,028	2,344	359	376	211	235
Agriculture	46	61	43	57	1	--	1	--
Nonagricultural industries	3,422	3,928	1,985	2,286	358	376	210	235
Unemployed	378	431	228	263	38	49	16	19
Unemployment rate	9.8	9.8	10.1	10.1	9.6	11.4	6.9	7.6
Not in labor force	3,330	3,701	1,957	2,177	448	487	241	239
Both sexes, 16 to 19 years old								
Civilian noninstitutional population	1,515	1,818	1,024	1,195	169	198	44	49
Civilian labor force	660	807	469	569	59	63	20	18
Percent of the population	43.6	44.4	45.8	47.6	34.9	31.9	44.3	36.7
Employed	487	609	351	431	38	43	14	12
Agriculture	28	32	23	29	1	--	1	--
Nonagricultural industries	459	577	327	402	37	43	13	12
Unemployed	173	198	119	137	21	20	6	6
Unemployment rate	26.2	24.5	25.3	24.1	35.1	32.0	([b])	([b])
Not in labor force	855	1,010	555	626	110	135	25	31

[a] Includes persons of Central or South American origin and of other Hispanic origin, not shown separately.
[b] Data are not shown where base is less than 35,000.

Note: Data for 1994 are not directly comparable with data for 1993 and earlier years. For additional information, see "Revisions in the Current Population Survey Effective January 1994" in the February 1994 issue of *Employment and Earnings.*

Source: U.S. Department of Labor, 1995.

Table 7-3. Employed White, Black, and Hispanic-Origin Workers by Sex, Occupation, Class of Worker, and Full- or Part-Time Status
[In thousands]

Category	Total		White		Black		Hispanic origin	
	1993	1994	1993	1994	1993	1994	1993	1994
SEX								
Total (all civilian workers)	119,306	123,060	102,812	105,190	12,146	12,835	9,272	10,788
Men	64,700	66,450	56,397	57,452	5,957	6,241	5,603	6,530
Women	54,606	56,610	46,415	47,738	6,189	6,595	3,669	4,258
OCCUPATION								
Managerial and professional specialty	32,280	33,847	28,859	30,045	2,140	2,405	1,306	1,517
Executive, administrative, and managerial	15,376	16,312	13,888	14,605	959	1,103	694	807
Professional specialty	16,904	17,536	14,971	15,439	1,181	1,302	613	709
Technical, sales, and administrative support	36,814	37,306	32,082	32,232	3,416	3,637	2,305	2,639
Technicians and related support	4,014	3,869	3,437	3,301	387	376	200	205
Sales occupations	14,245	14,817	12,809	13,235	948	1,056	836	1,010
Administrative support, including clerical	18,555	18,620	15,836	15,696	2,081	2,205	1,269	1,424
Service occupations	16,522	16,912	12,969	13,207	2,859	2,890	1,848	2,131
Private household	912	817	721	643	156	136	197	223
Protective service	2,152	2,249	1,728	1,778	374	407	142	167
Service, except private household and protective	13,457	13,847	10,521	10,787	2,329	2,346	1,508	1,741
Precision production, craft, and repair	13,326	13,489	11,955	11,974	985	1,040	1,226	1,407
Mechanics and repairers	4,416	4,419	3,977	3,928	321	351	347	363
Construction trades	5,004	5,008	4,576	4,550	327	327	473	569
Other precision production, craft, and repair	3,906	4,062	3,402	3,496	337	362	405	475
Operators, fabricators, and laborers	17,038	17,876	13,910	14,416	2,535	2,677	2,054	2,474
Machine operators, assemblers, and inspectors	7,415	7,754	5,992	6,166	1,092	1167	1,024	1,151
Transportation and material moving occupations	5,004	5,136	4,186	4,227	699	749	431	511
Handlers, equipment cleaners, helpers, laborers	4,619	4,986	3,732	4,023	743	760	598	811
Construction laborers	658	740	536	614	98	92	110	164
Other handlers, equipment cleaners, helpers, laborers	3,962	4,245	3,195	3,409	646	668	489	647
Farming, forestry, and fishing	3,326	3,629	3,037	3,315	211	187	534	620
CLASS OF WORKER								
Agriculture:								
Wage and salary workers	1,637	1,715	1,484	1,521	103	109	407	495
Self-employed workers	1,332	1,645	1,275	1,593	39	27	61	65
Unpaid family workers	105	49	104	48	--	--	--	--
Nonagricultural industries:								
Wage and salary workers	107,011	110,517	91,545	93,736	11,570	12,236	8,310	9,681
Government	18,504	18,293	14,996	14,675	2,816	2,870	1,119	1,235
Private industries	88,507	92,224	76,549	79,061	8,754	9,366	7,191	8,446
Private households	1,105	966	867	752	198	171	225	248
Other industries	87,402	91,258	75,682	78,309	8,557	9,195	6,966	8,199
Self-employed workers	9,003	9,003	8,211	8,179	429	458	482	533
Unpaid family workers	218	131	192	112	5	5	12	13
FULL- AND PART-TIME STATUS								
Full-time workers	98,439	99,772	84,530	84,870	10,290	10,740	7,786	8,936
Part-time workers	20,868	23,288	18,282	20,320	1,856	2,095	1,487	1,852

-- Data not available.

Note: Detail for the above race and Hispanic-origin groups will not sum to totals because data for the "other races" group are not presented and Hispanics are included in both white and black population groups. Data for 1994 are not directly comparable with data for 1993 and earlier years. For additional information, see "Revisions in the Current Population Survey Effective January 1994" in the February 1994 issue of *Employment and Earnings.*

Source: U.S. Department of Labor, 1995.

Table 7-4. Employed Civilians of Mexican, Puerto Rican, and Cuban Origin by Selected Social and Economic Categories
[In thousands]

Category	Total Hispanic origin[a]		Mexican origin		Puerto Rican origin		Cuban origin	
	1993	1994	1993	1994	1993	1994	1993	1994
SEX								
Total (all civilian workers)	9,272	10,788	5,805	6,800	828	907	511	555
Men	5,603	6,530	3,628	4,277	457	512	293	314
Women	3,669	4,258	2,177	2,523	372	395	218	241
OCCUPATION								
Managerial and professional specialty	1,306	1,517	666	787	158	177	128	141
Executive, administrative, and managerial	694	807	355	426	76	85	72	75
Professional specialty	613	709	311	361	83	92	56	67
Technical, sales, and administrative support	2,305	2,639	1,353	1,526	266	281	168	202
Technicians and related support	200	205	109	105	24	27	17	17
Sales occupations	836	1,010	489	574	78	81	63	83
Administrative support, including clerical	1,269	1,424	754	848	165	173	88	102
Service occupations	1,848	2,131	1,111	1,300	165	163	66	65
Private household	197	223	99	117	5	2	3	4
Protective service	142	167	79	88	28	32	8	14
Service, except private household and protective	1,508	1,741	932	1,095	132	126	56	48
Precision production, craft, and repair	1,226	1,407	838	944	81	92	52	59
Mechanics and repairers	347	363	220	225	30	32	17	28
Construction trades	473	569	333	392	21	28	23	16
Other precision production, craft, and repair	405	475	285	328	30	33	12	14
Operators, fabricators, and laborers	2,054	2,474	1,374	1,698	148	183	87	80
Machine operators, assemblers, and inspectors	1,024	1,151	664	795	77	81	35	26
Transportation and material moving occupations	431	511	274	314	36	49	33	33
Handlers, equipment cleaners, helpers, laborers	598	811	436	589	35	52	19	20
Construction laborers	110	164	82	130	3	6	3	2
Other handlers, equipment cleaners, helpers, laborers	489	647	354	459	31	47	16	17
Farming, forestry, and fishing	534	620	463	544	10	12	11	7
CLASS OF WORKER								
Agriculture								
Wage and salary workers	407	495	367	451	7	2	5	--
Self-employed workers	61	65	42	51	1	1	3	3
Unpaid family workers	--	--	--	--	--	--	--	--
Nonagricultural industries								
Wage and salary workers	8,310	9,681	5,129	5,980	789	860	457	501
Government	1,119	1,235	701	772	162	163	46	54
Private industries	7,191	8,446	4,428	5,208	627	698	411	447
Private households	225	248	119	130	6	3	3	4
Other industries	6,966	8,199	4,309	5,078	621	695	408	443
Self-employed workers	482	533	258	309	31	38	45	50
Unpaid family workers	12	13	9	9	1	1	--	--
FULL- AND PART-TIME STATUS								
Full-time workers	7,786	8,936	4,858	5,626	707	751	445	475
Part-time workers	1,487	1,852	947	1,174	121	156	66	80

[a] Includes persons of Central or South American origin and of other Hispanic origin, not shown separately.
-- Data not available.
Note: Data for 1994 are not directly comparable with data for 1993 and earlier years. For additional information, see "Revisions in the Current Population Survey Effective January 1994" in the February 1994 issue of *Employment and Earnings.*

Source: U.S. Department of Labor, 1995.

Table 7-5. Employed Persons in Agriculture and Nonagricultural Industries by Age, Sex, and Class of Worker: 1994

[In thousands]

Age and Sex	Agriculture			Nonagricultural industries						
					Wage and salary workers					
						Private industries				
	Wage and salary workers	Self-employed workers	Unpaid family workers	Total	Total	Private household workers	Other private industries	Government	Self-employed workers	Unpaid family workers
Total, 16 years and older	1,715	1,645	49	110,517	92,224	996	91,258	18,293	9,003	131
16 to 19 years	164	70	15	5,780	5,486	124	5,362	294	123	9
16 to 17 years	81	43	8	2,310	2,208	80	2,128	101	65	2
18 to 19 years	83	26	7	3,470	3,277	44	3,233	193	59	5
20 to 24 years	262	50	8	12,155	11,086	114	10,972	1,069	272	11
25 to 34 years	520	240	5	29,726	25,717	173	25,544	4,009	1,770	24
35 to 44 years	372	382	5	30,083	24,345	196	24,149	5,738	2,725	32
45 to 54 years	223	324	4	20,632	15,863	151	15,712	4,769	2,136	29
55 to 64 years	114	288	7	9,488	7,524	130	7,394	1,963	1,311	19
65 years and older	60	291	4	2,653	2,203	78	2,125	450	665	8
Men, 16 years and older	1,330	1,197	27	58,300	49,972	99	49,873	8,327	5,560	37
16 to 19 years	133	57	12	2,888	2,757	24	2,733	131	59	6
16 to 17 years	63	34	6	1,152	1,105	17	1,088	47	30	1
18 to 19 years	70	23	6	1,736	1,652	3	1,645	84	28	4
20 to 24 years	211	45	6	6,340	5850	15	5,835	490	162	8
25 to 34 years	412	179	2	16,091	14,188	20	14,168	1,903	1,053	4
35 to 44 years	276	278	--	15,852	13,358	14	13,343	2,495	1,699	5
45 to 54 years	162	213	--	10,741	8,559	11	8,548	2,182	1,319	3
55 to 64 years	90	199	1	5,004	4,102	12	4,090	902	841	7
65 years and older	45	226	3	1,383	1,158	3	1,155	225	428	4
Women, 16 years and older	384	448	23	52,217	42,252	867	41,385	9,965	3,443	95
16 to 19 years	30	13	3	2,891	2,728	100	2,628	163	65	1
16 to 17 years	17	10	2	1,158	1,103	63	1,040	55	34	1
18 to 19 years	13	3	--	1,733	1,625	37	1,588	108	31	--
20 to 24 years	50	5	1	5,815	5,237	99	5,137	579	111	1
25 to 34 years	108	61	3	13,636	11,529	152	11,377	2,106	717	20
35 to 44 years	96	104	4	14,231	10,987	182	10,805	3,244	1,026	27
45 to 54 years	61	111	4	9,890	7,304	140	7,164	2,586	816	26
55 to 64 years	25	89	5	4,484	3,422	119	3,303	1,062	471	12
65 years and older	14	65	--	1,270	1,044	75	970	226	238	4

-- Data not available.

Note: Data for 1994 are not directly comparable with data for 1993 and earlier years. For additional information, see "Revisions in the Current Population Survey Effective January 1994" in the February 1994 issue of *Employment and Earnings.*

Source: U.S. Department of Labor, 1995.

Table 7-6. Employed Persons by Industry, Sex, Race, and Occupation: 1994 [In thousands]

Industry and sex	Total employed	Managerial and professional specialty		Technical, sales, administrative support			Service		Precision production, craft, repair	Operators, fabricators, laborers			Farming, forestry, fishing
		Executive, administrative, managerial	Professional specialty	Technicians and related support	Sales	Administrative support, including clerical	Private household	Other service[a]		Machine operators, assemblers, and inspectors	Transportation and material moving	Handlers, equipment cleaners, helpers, laborers	
TOTAL													
Agriculture	3,409	97	88	38	14	145	--	18	42	5	45	19	2,897
Mining	669	110	76	22	10	67	--	9	222	21	109	21	1
Construction	7,493	1,055	138	60	59	429	--	34	4,263	86	529	818	22
Manufacturing	20,157	2,588	1,814	611	745	2,093	--	290	3,803	6,298	744	1,082	89
Durable goods	11,792	1,555	1,170	412	310	1,146	--	152	2,622	3,415	416	514	80
Nondurable goods	8,365	1,033	644	200	435	946	--	138	1,181	2,883	328	569	9
Transportation and public utilities	8,692	1,065	486	329	248	2,337	--	246	1,270	120	2,049	528	15
Wholesale and retail trade	25,699	2,235	490	155	10,652	2,330	--	4,983	1,440	347	1,012	1,967	87
Wholesale trade	4,713	531	89	37	1,880	775	--	34	296	150	464	398	60
Retail trade	20,986	1,704	402	119	8,772	1,555	--	4,948	1,145	197	548	1,569	27
Finance, insurance, real estate	8,141	2,198	272	160	2,029	2,915	--	282	167	18	17	18	66
Services	42,986	5,649	13,319	2,274	1,032	6,864	817	8,654	2,071	825	567	493	421
Private households	976	4	8	1	--	10	817	69	8	--	4	13	42
Other service industries	42,009	5,645	13,311	2,272	1031	6,855	--	8,584	2,063	825	464	480	380
Professional services	29,030	3,559	11,888	1,968	193	5,083	--	5,134	470	222	314	94	105
Public administration	5,814	1,315	853	221	28	1,440	--	1,579	211	32	64	39	30
MEN													
Agriculture	2,554	66	52	13	8	4	--	10	41	4	42	13	2,300
Mining	564	78	64	17	8	20	--	7	220	21	106	21	--
Construction	6,775	877	122	49	50	55	--	26	4,185	84	518	789	21
Manufacturing	13,686	1,824	1,401	471	484	678	--	212	3,158	3,877	699	799	84
Durable goods	8,688	1,139	990	334	225	399	--	119	2,178	2,409	397	420	77
Nondurable goods	4,998	685	411	137	259	279	--	94	980	1,468	302	378	7
Transportation and public utilities	6,223	690	375	262	139	967	--	120	1,182	99	1,895	480	15
Wholesale and retail trade	13,564	1,256	223	60	5,229	519	--	2,314	1,239	213	948	1,519	44
Wholesale trade	3,350	351	61	26	1,502	196	--	20	279	110	451	330	24
Retail trade	10,213	905	162	33	3,727	323	--	2,293	959	103	498	1,189	21
Finance, insurance, real estate	3,343	1,071	157	69	1,169	426	--	190	157	13	14	16	61
Services	16,425	2,735	5,402	764	443	907	30	2,652	1,867	464	373	411	377
Private households	105	2	1	--	--	3	30	10	7	--	2	12	38
Other service industries	16,320	2,733	5,401	764	443	904	--	2,642	1,859	464	371	399	340
Professional services	9,069	1,462	4,563	543	59	523	--	1,115	397	108	141	65	94
Administration	3,317	702	489	151	14	347	--	1,279	193	25	58	34	26
WOMEN													
Agriculture	855	30	36	25	6	140	--	8	--	--	3	6	597
Mining	105	32	12	5	--	47	--	2	2	--	--	--	--
Construction	718	178	16	10	10	373	--	6	79	2	11	29	1
Manufacturing	6,471	764	413	140	261	1,415	--	78	645	2,421	46	284	2
Durable goods	3,104	416	180	77	85	747	--	33	444	1,006	19	93	1
Nondurable goods	3,367	348	233	63	176	668	--	44	201	1,415	26	190	1
Transportation and public utilities	2,469	375	111	67	108	1,370	--	126	87	21	154	48	--
Wholesale and retail trade	12,136	979	267	96	5,423	1,811	--	2,669	202	134	64	448	43
Wholesale trade	1,363	180	28	10	378	579	--	13	16	40	13	68	36
Retail trade	10,773	799	239	85	5,045	1,232	--	2,655	185	94	51	380	6
Finance, insurance, real estate	4,798	1,127	115	90	860	2,489	--	92	10	5	2	1	5

(continued)

Table 7-6. Employed Persons by Industry, Sex, Race, and Occupation: 1994 (continued)
[In thousands]

Industry and sex	Total employed	Managerial and professional specialty		Technical, sales, administrative support			Service		Precision production, craft, repair	Operators, fabricators, laborers			Farming, forestry, fishing
		Executive, administrative, managerial	Professional specialty	Technicians and related support	Sales	Administrative support, including clerical	Private household	Other service[a]		Machine operators, assemblers, and inspectors	Transportation and material moving	Handlers, equipment cleaners, helpers, laborers	
WOMEN (continued)													
Services	26,561	2,912	7,916	1,510	589	5,958	787	6,001	204	361	194	82	44
Private households	871	1	7	1	--	7	787	59	--	--	2	--	1
Other service industries	25,689	2,912	7,910	1,509	588	5,951	--	5,942	204	361	193	81	40
Professional services	19,961	2,097	7,325	1,425	135	4,560	--	4,020	73	114	172	29	11
Public administration	2,497	614	364	70	15	1,093	--	300	19	8	6	5	3
WHITE													
Agriculture	3,162	93	86	35	14	136	--	16	37	5	39	17	2,685
Mining	626	106	70	21	10	61	--	9	209	21	99	18	1
Construction	6,810	1,000	123	56	58	400	--	20	3,900	79	470	679	19
Manufacturing	17,230	2,421	1,654	523	695	1,845	--	237	3,302	5,000	608	867	76
Durable goods	10,253	1,463	1,067	354	294	1,023	--	122	2,300	2,791	342	429	68
Nondurable goods	6,977	958	588	169	401	822	--	115	1,002	2,209	267	438	8
Transportation and public utilities	7,168	943	429	290	212	1,847	--	181	1,089	97	1,665	404	12
Wholesale and retail trade	22,370	1,977	445	139	9,439	2,080	--	4,149	1,313	289	852	1,613	73
Wholesale trade	4,226	498	75	33	1,751	696	--	25	271	122	387	321	47
Retail trade	18,144	1,479	370	107	7,688	1,383	--	4,124	1,042	167	465	1,292	26
Finance, insurance, real estate	7,100	1,953	239	139	1,893	2,428	--	214	139	13	14	16	53
Services	36,095	5,045	11,687	1,910	890	5,798	643	6,481	1,809	639	439	384	370
Private households	761	4	5	--	--	9	643	41	6	--	4	11	38
Other service industries	35,333	5,041	11,682	1,910	888	5,790	--	6,440	1,804	639	435	373	333
Professional services	24,396	3,164	10,413	1,653	164	4,271	--	3,766	397	169	240	73	86
Public administration	4,629	1,067	706	188	24	1,101	--	1,253	176	23	42	24	25
BLACK													
Agriculture	136	2	1	2	--	5	--	--	1	--	5	--	118
Mining	30	2	1	1	--	2	--	--	10	--	4	3	--
Construction	482	36	4	2	--	19	--	8	261	5	43	101	1
Manufacturing	2,032	92	60	49	33	169	--	43	332	954	117	173	10
Durable goods	1,003	49	29	27	10	75	--	26	202	448	63	65	9
Nondurable goods	1,029	43	30	22	23	94	--	17	130	506	53	108	--
Transportation and public utilities	1,193	80	39	25	29	385	--	46	147	21	318	102	1
Wholesale and retail trade	2,174	128	22	7	802	159	--	531	76	40	131	272	7
Wholesale trade	305	12	8	1	61	46	--	7	14	18	67	62	6
Retail trade	1,869	116	13	5	741	113	--	523	62	21	64	210	--
Finance, insurance, real estate	737	157	22	10	88	365	--	55	20	1	--	2	10
Services	5,095	415	1,051	255	101	814	136	1,786	165	135	108	93	35
Private households	171	--	2	--	--	1	136	25	1	--	--	--	--
Other service industries	4,924	415	1,049	254	101	813	--	1,761	163	135	108	92	34
Professional services	3,498	294	956	225	23	622	--	1,179	52	46	68	19	15
Public administration	956	191	102	25	--	284	--	283	27	8	18	12	2

[a] Includes protective service, not shown separately.

-- Data not available.

Note: Data for 1994 are not directly comparable with data for 1993 and earlier years. For additional information, see "Revisions in the Current Population Survey Effective January 1994" in the February 1994 issue of *Employment and Earnings.*

Source: U.S. Department of Labor, 1995.

Table 7-7. Employed Persons by Detailed Industry, Sex, Race, and Hispanic Origin: 1994
[In thousands]

Industry	Total employed	Percent of total		
		Women	Black	Hispanic origin
TOTAL, 16 years and older	123,060	46.0	10.4	8.8
Agriculture	3,409	25.1	4.0	16.4
Agricultural production, crops	1,011	23.4	4.2	25.4
Agricultural production, livestock	1,319	27.3	1.5	5.5
Veterinary services	164	69.6	3.4	0.9
Landscape and horticultural services	750	8.9	8.4	25.2
Agricultural services, n.e.c.[a]	165	47.7	3.1	24.0
Mining	669	15.7	4.5	5.5
Metal mining	61	10.0	0.9	10.8
Coal mining	116	5.6	6.8	0.1
Oil and gas extraction	387	21.3	3.7	6.6
Nonmetallic mining and quarrying, except fuel	106	9.7	6.1	4.3
Construction	7,493	9.6	6.4	10.5
Manufacturing	20,157	32.1	10.1	9.9
Durable goods	11,792	26.3	8.5	8.4
Lumber, wood products, except furniture	732	15.0	12.9	7.0
Logging	145	7.4	17.0	0.9
Sawmills, planing mills, millwork	386	16.2	12.7	7.7
Wood buildings and mobile homes	60	6.1	3.2	7.8
Miscellaneous wood products	141	21.3	11.4	10.5
Furniture and fixtures	662	30.2	9.1	12.0
Stone, clay, glass, concrete products	557	22.9	8.9	10.5
Glass and glass products	189	29.0	7.9	8.3
Cement, concrete, gypsum, plaster products	185	10.4	8.8	10.7
Structural clay, pottery, related products	83	30.4	7.8	19.3
Miscellaneous nonmetallic mineral and stone products	100	27.9	11.9	7.3
Metal industries	2,039	18.8	8.3	10.2
Primary metal industries	760	14.4	11.4	7.3
Blast furnaces, steel works, rolling, finishing mills	354	10.9	16.5	6.8
Iron and steel foundries	111	11.2	8.0	3.5
Primary aluminum industries	143	16.6	6.6	7.9
Other primary metal industries	152	23.0	6.3	9.0
Fabricated metal industries	1,279	21.4	6.4	12.0
Cutlery, hand tools, general hardware	110	30.4	5.6	9.4
Fabricated structural metal products	494	17.2	6.4	12.3
Screw machine products	55	19.5	8.0	8.3
Metal forging and stamping	146	27.1	4.0	8.1
Ordnance	59	33.1	5.3	1.2
Miscellaneous fabricated metal products (not specified)	416	20.5	7.3	14.9
Machinery and computing equipment	2,385	22.9	5.4	5.3
Engines and turbines	66	22.9	11.2	2.7
Farm machinery and equipment	114	21.8	7.7	1.9
Construction and material handling machines	235	13.5	2.2	2.2
Metal working machinery	295	17.5	3.5	3.6
Computers and related equipment	535	35.6	6.1	7.3
Electrical machinery, equipment, supplies	1,815	40.0	8.3	9.7
Household appliances	125	40.0	13.3	7.1
Radio, TV, communication equipment	412	37.8	7.5	7.3
Electrical machinery, equipment, supplies, n.e.c.[a] (not specified)	1,278	40.7	8.1	10.7
Transportation equipment	2,256	21.2	11.9	5.8
Motor vehicles and motor vehicle equipment	1,212	22.4	14.1	5.0
Aircraft and parts	437	19.6	8.9	6.2
Ship and boat building and repairing	197	16.3	17.0	2.5

Table 7-7. Employed Persons by Detailed Industry, Sex, Race, and Hispanic Origin: 1994 (continued) [In thousands]

Industry	Total employed	Percent of total		
		Women	Black	Hispanic origin
TOTAL, 16 years and older	123,060	46.0	10.4	8.8
Guided missiles, space vehicles, and parts	321	24.2	5.9	10.1
Cycles and miscellaneous transportation equipment	57	17.7	2.3	11.6
Professional and photographic equipment, watches	690	37.8	6.3	9.6
Scientific and controlling instruments	213	30.3	4.9	6.8
Medical, dental, optical instruments and supplies	357	44.0	6.4	12.7
Photographic equipment and supplies	111	29.9	8.2	4.9
Toys, amusements, sporting goods	169	46.1	4.8	16.9
Miscellaneous manufacturing industries (not specified)	489	39.8	6.4	14.0
Nondurable goods	8,365	4.02	12.3	12.1
Food and kindred products	1,749	33.7	14.1	18.3
Meat products	475	35.8	20.8	25.0
Dairy products	161	25.3	5.1	11.9
Canned, frozen, preserved fruits and vegetables	220	43.0	9.7	24.9
Grain mill products	141	21.5	5.4	7.7
Bakery products	240	31.8	16.4	13.0
Sugar and confectionery products	104	44.7	16.6	16.1
Beverage industries	203	24.6	10.7	9.7
Miscellaneous food and kindred products (not specified)	204	39.9	16.4	24.1
Tobacco manufacture	50	30.2	23.1	4.2
Textile mill products	643	47.1	25.1	6.6
Knitting mills	108	64.3	15.6	11.1
Carpets and rugs	67	37.2	35.4	6.3
Yarn, thread, fabric mills	403	46.0	27.4	4.7
Apparel and other finished textile products	1,009	71.4	15.2	21.4
Apparel and accessories, except knits	834	73.6	14.3	23.1
Miscellaneous fabricated textile products	175	60.8	19.3	13.3
Paper and allied products	703	25.0	10.6	8.3
Pulp, paper, paperboard mills	293	17.2	9.2	3.9
Miscellaneous paper and pulp products	194	35.8	9.2	7.4
Paperboard containers and boxes	217	26.1	13.6	15.0
Printing, publishing, and allied products	1,848	42.1	6.8	7.6
Newspaper publishing and printing	504	43.3	5.9	5.8
Printing, publishing, allied industries, except newspapers	1,344	41.6	7.1	8.3
Chemicals and allied products	1,259	33.3	11.7	8.0
Plastics, synthetics, resins	154	26.3	8.7	15.5
Drugs	297	46.3	11.9	5.5
Soaps and cosmetics	190	47.6	20.0	12.0
Paints, varnishes, related products	70	22.4	11.9	14.2
Industrial and miscellaneous chemicals	499	24.5	8.9	5.1
Petroleum and coal products	175	23.5	9.7	10.1
Petroleum refining	151	24.0	9.0	10.8
Rubber and miscellaneous plastics products	795	32.2	10.4	11.0
Tires and inner tubes	79	12.6	5.2	0.6
Other rubber products, plastics footwear, belting	158	31.3	10.9	8.8
Miscellaneous plastics products	558	35.1	10.6	13.2
Leather and leather products	135	51.2	6.3	16.8
Footwear, except rubber and plastic	71	50.8	1.9	16.0
Transportation, communications, and other public utilities	8,692	28.4	13.7	7.8
Transportation	5,587	26.0	14.1	8.7
Railroads	288	9.3	11.3	5.9
Bus service and urban transit	560	30.0	25.7	8.8
Taxicab service	132	8.4	26.8	12.4
Trucking service	2,184	15.2	10.8	8.2

Table 7-7. Employed Persons by Detailed Industry, Sex, Race, and Hispanic Origin: 1994 (continued) [In thousands]

Industry	Total employed	Percent of total		
		Women	Black	Hispanic origin
TOTAL, 16 years and older	123,060	46.0	10.4	8.8
Warehousing and storage	150	25.3	11.7	16.8
U.S. Postal Service	883	38.2	21.0	8.0
Water transportation	187	15.5	13.8	5.9
Air transportation	801	35.7	11.3	8.4
Services incidental to transportation	386	57.7	5.7	12.7
Communications	1,560	45.3	13.5	6.1
Radio and TV broadcasting and cable	397	42.0	9.7	6.5
Telephone communications	1,134	46.6	14.9	6.0
Utilities and sanitary services	1,545	20.0	12.5	6.2
Electric light and power	635	21.7	8.4	4.1
Gas and steam supply systems	183	22.2	13.2	9.3
Electric and gas, and other combinations	155	25.1	17.4	4.3
Water supply and irrigation	233	16.8	12.1	7.8
Sanitary services	329	15.3	16.9	8.2
Wholesale and retail trade	25,699	47.2	8.5	9.7
Wholesale trade	4,713	28.9	6.5	9.2
Durable goods	2,499	27.2	5.0	7.7
Motor vehicles and equipment	226	26.0	3.3	9.9
Furniture and home furnishings	106	25.4	11.3	15.6
Lumber and construction materials	176	20.2	4.5	5.5
Professional and commercial equipment and supplies	396	35.1	6.0	6.2
Metals and minerals, except petroleum	74	25.8	5.3	7.9
Electrical goods	305	33.0	5.0	5.1
Hardware, plumbing, heating supplies	268	26.7	4.0	5.9
Machinery, equipment, and supplies	614	24.9	2.2	5.5
Scrap and waste materials	206	16.5	11.4	15.3
Miscellaneous wholesale trade, durable goods	129	33.2	5.6	9.7
Nondurable goods	2,214	30.8	8.1	10.9
Paper and paper products	122	40.1	4.9	8.1
Drugs, chemicals, and allied products	194	37.1	7.6	7.1
Apparel, fabrics, notions	124	45.0	8.9	17.0
Groceries and related products	867	25.7	10.6	13.5
Farm products-raw materials	89	24.6	1.0	5.6
Petroleum products	134	29.3	6.3	7.1
Alcoholic beverages	126	14.2	10.4	7.8
Farm supplies	151	29.5	5.9	5.8
Miscellaneous wholesale trade nondurable goods (not specified)	407	39.2	5.8	11.3
Retail trade	20,986	51.3	8.9	9.9
Lumber and building material retailing	551	26.4	6.5	5.7
Hardware stores	219	37.0	4.7	3.9
Retail nurseries and garden stores	110	34.3	2.5	8.3
Department stores	2,202	69.4	11.6	10.2
Variety stores	134	66.8	13.8	9.6
Miscellaneous general merchandise stores	138	59.9	11.7	12.2
Grocery stores	3,071	50.5	9.2	9.3
Retail bakeries	183	59.5	8.4	11.9
Food stores, n.e.c.[a]	206	47.8	7.3	13.1
Motor vehicle dealers	1,121	19.3	5.4	8.6
Auto and home supply stores	424	17.1	7.0	8.7
Gasoline service stations	374	32.1	6.8	9.3
Miscellaneous vehicle dealers	102	23.5	0.3	2.1
Apparel and accessory stores, except shoe	831	73.1	11.1	12.6

Table 7-7. Employed Persons by Detailed Industry, Sex, Race, and Hispanic Origin: 1994 (continued) [In thousands]

Industry	Total employed	Percent of total		
		Women	Black	Hispanic origin
TOTAL, 16 years and older	123,060	46.0	10.4	8.8
Shoe stores	154	61.5	20.4	11.4
Furniture and home furnishings stores	613	37.2	7.2	6.6
Household appliance stores	116	26.9	6.6	8.1
Radio, TV, and computer stores	388	30.4	7.2	7.6
Music stores	141	39.1	5.5	8.6
Eating and drinking places	6,333	53.2	11.0	12.8
Drug stores	559	64.1	6.9	5.5
Liquor stores	131	36.6	12.2	6.7
Sporting goods, bicycles, hobby stores	402	50.9	3.3	6.8
Book and stationery stores	233	52.8	8.1	6.0
Jewelry stores	169	59.0	3.5	9.4
Gift, novelty, souvenir shops	193	82.2	3.2	4.2
Sewing, needlework, piece goods stores	60	82.0	7.2	7.6
Catalog and mail order houses	168	69.1	8.0	5.0
Vending machine operators	85	30.9	5.0	8.5
Direct selling establishments	349	75.4	4.4	9.7
Fuel dealers	130	27.5	1.6	2.9
Retail florists	186	72.7	3.5	6.3
Finance, insurance, real estate	8,141	58.9	9.1	6.7
Banking	1,959	70.3	11.8	7.6
Savings institutions, including credit unions	320	78.1	5.8	8.2
Credit agencies, n.e.c.[a]	545	64.3	10.7	7.2
Security, commodity brokerage, investment companies	737	38.7	6.7	3.7
Insurance	2,472	61.2	8.9	4.6
Real estate, including real estate insurance offices	2,108	48.6	7.6	8.9
Services	42,986	61.8	11.9	7.8
Private households	976	89.3	17.5	25.4
Other service industries	42,009	61.2	11.7	7.3
Business, automobile, repair services	7,304	36.3	11.2	10.0
Advertising	272	52.6	5.6	4.2
Services to dwellings and other buildings	849	49.2	16.4	20.3
Personnel supply services	804	61.3	20.5	6.7
Computer and data processing	1,017	34.5	7.1	3.8
Detective and protective services	477	17.6	24.0	10.6
Business services, n.e.c.[a]	1,645	51.5	8.2	7.6
Automotive rental and leasing, without drivers	165	28.8	10.5	7.6
Automobile parking and carwashes	196	16.1	22.1	22.5
Automotive repair and related services	1,185	10.9	6.5	12.2
Electrical repair shops	126	13.3	5.6	12.5
Miscellaneous repair services	569	15.7	5.5	10.6
Personnel services, except private household	3,363	63.2	12.5	12.3
Hotels and motels	1,328	54.7	16.1	17.8
Lodging places, except hotels and motels [200]	136	56.2	5.1	0.7
Laundry, cleaning, and garment services	480	55.7	13.6	15.7
Beauty shops	863	89.4	9.8	7.4
Barber shops	96	22.4	23.7	10.0
Funeral service and crematories	97	31.7	5.3	5.4
Entertainment and recreation services	2,134	42.6	8.4	7.9
Theaters and motion pictures	539	39.6	8.7	8.0
Videotape rental	141	58.0	4.7	8.2
Bowling centers	53	43.4	1.7	7.6
Miscellaneous entertainment and recreation services	1,402	42.2	8.9	7.9
Professional and related services	29,030	68.8	12.0	6.0

Table 7-7. Employed Persons by Detailed Industry, Sex, Race, and Hispanic Origin: 1994 (continued) [In thousands]

Industry	Total employed	Percent of total		
		Women	Black	Hispanic origin
TOTAL, 16 years and older	123,060	46.0	10.4	8.8
Hospitals	5,009	76.5	16.4	5.5
Health services, except hospitals	5,579	78.9	13.3	6.8
Offices and clinics of physicians	1,404	74.9	5.3	7.8
Offices and clinics of dentists	596	77.4	2.2	7.2
Offices and clinics of chiropractors	105	59.8	0.2	4.5
Offices and clinics of optometrists	71	65.0	0.6	7.4
Offices and clinics of health practitioners, n.e.c.[a]	117	69.6	6.5	2.8
Nursing and personal care facilities	1,692	84.7	23.2	5.9
Health services, n.e.c.[a]	1,593	79.5	15.9	7.3
Educational services	9,703	68.2	11.1	6.3
Elementary and secondary schools	6,447	74.6	11.8	7.1
Colleges and universities	2,743	52.3	9.7	4.7
Vocational schools	102	53.6	13.7	5.7
Libraries	196	84.2	12.1	3.6
Educational services, n.e.c.[a]	216	71.6	7.0	3.6
Social services	3,046	81.3	17.5	7.8
Job training and vocational rehabilitation services	241	51.9	15.2	4.2
Child day care services	902	95.8	16.8	6.1
Family child care homes	433	98.6	10.8	8.9
Residential care facilities, without nursing	442	73.0	18.4	9.7
Social services, n.e.c.[a]	1,027	71.7	21.2	9.0
Other professional services	5,694	46.3	5.6	4.4
Legal services	1,286	55.0	5.2	5.3
Museums, art galleries, zoos	99	60.1	9.0	3.3
Labor unions	69	44.1	6.5	3.8
Religious organizations	873	45.1	8.3	5.4
Membership organizations, n.e.c.[a]	363	63.3	11.3	4.1
Engineering, architectural, surveying services	795	21.7	3.0	4.6
Accounting, auditing, bookkeeping services	640	54.1	4.0	3.2
Research, development, testing services	639	41.3	5.5	3.1
Management and public relations services	659	43.4	5.2	4.2
Miscellaneous professional and related services	271	53.6	1.4	2.6
Forestry and fisheries	177	23.5	4.9	10.8
Forestry	112	30.1	6.2	12.8
Fishing, hunting, trapping	65	12.2	2.4	5.8
Public administration	5,814	43.0	16.4	5.8
Executive and legislative offices	150	61.4	9.6	3.1
General government, n.e.c.[a]	574	51.0	19.7	5.9
Justice, public order, safety	2,264	30.9	14.7	5.9
Public finance, taxation, monetary policy	420	60.7	14.5	5.3
Administration of human resources programs	761	67.5	23.2	6.8
Administration of environmental quality and housing programs	281	36.0	11.4	4.4
Administration of economic programs	613	44.3	14.9	6.0
National security and international affairs	751	36.3	18.0	6.0

[a] N.e.c. is an abbreviation for "not elsewhere classified" and designates broad categories of occupations that cannot be more specifically identified. Generally, data for occupations with fewer than 50,000 employed are not published separately but are included in the totals for the appropriate categories shown.

Note: Data for 1994 are not directly comparable with data for 1993 and earlier years. For additional information, see "Revisions in the Current Population Survey Effective January 1994" in the February 1994 issue of *Employment and Earnings.*

Source: U.S. Department of Labor, 1995.

Table 7-8. Inventory of Commercial Office Space for the Largest Metropolitan Areas: 1994
[As of December 31, except population as of July 1. Data based on responses from individuals knowledgeable in the local markets. Represents primarily the metropolitan areas as indicated, but in many cases may exclude outlying counties beyond the central portion.]

Metropolitan areas	Resident population, 1992 (1,000)	Inventory (1,000 sq. ft.)	Metropolitan areas	Resident population, 1992 (1,000)	Inventory (1,000 sq. ft.)
Albany-Schenectady-Troy, NY MSA	872	13,043	Milwaukee-Waukesha, WI PMSA	1,450	24,724
Atlanta, GA MSA	3,143	98,145	Minneapolis-St. Paul, MN-WI MSA	2,618	46,308
Austin-San Marcos, TX MSA	901	19,999	Nashville, TN MSA	1,023	12,454
Baltimore, MD PMSA	2,433	23,701	New Jersey-Central/Northern[b]	3,897	151,094
Birmingham, AL MSA	859	15,360	New Orleans, LA MSA	1,303	21,737
Boston, MA-NH PMSA	3,211	87,822	New York City, NY PSMA[c]	9,705	450,422
Buffalo-Niagra Falls, NY MSA	1,194	7,491	Nassau-Suffolk, NY PMSA	2,640	35,872
Charlotte, NC MSA	1,212	19,593	Norfolk-Virginia Beach-Newport News, VA MSA	1,497	16,434
Chicago, IL PMSA	7,561	147,637	Oakland, CA PMSA	2,148	42,337
Cincinnati, OH PMSA	1,560	21,887	Oklahoma City, OK MSA	984	15,460
Cleveland-Lorain-Elyria, OH PMSA	2,221	35,646	Orange County, CA PMSA	2,485	54,436
Columbus, OH MSA	1,394	25,155	Orlando, FL MSA	1,305	20,932
Dallas, TX PMSA	4,215	116,348	Philadelphia, PA PMSA[d]	4,944	82,888
Dayton, OH MSA	962	6,717	Phoenix, AZ MSA	2,330	22,907
Denver, CO PMSA	1,715	55,207	Pittsburgh, PA MSA	2,406	28,463
Detroit, MI PMSA[a]	4,308	55,651	Portland-Vancouver, OR PMSA	1,897	16,430
Fort Lauderdale, FL PMSA	1,301	16,035	Providence, RI MSA	1,131	6,102
Fort Worth, TX PMSA	1,419	18,038	Raleigh-Durham-Chapel Hill, NC MSA	909	16,919
Fresno, CA MSA	805	11,875	Richmond-Petersburg, VA MSA	896	19,377
Grand Rapids-Muskegon-Holland, MI MSA	964	7,963	Sacramento-Yolo, CA MSA	1,563	25,993
Greensboro-Winston Salem-High Point, NC MSA	1,078	21,707	St. Louis, MO MSA	2,519	38,842
Greenville-Spartanburg-Anderson, SC MSA	853	4,064	Salt Lake City-Ogden, UT MSA	1,128	10,647
Hartford, CT MSA	1,156	20,877	San Antonio, TX MSA	1,379	15,804
Honolulu, HI MSA	863	14,582	San Diego, CA MSA[e]	2,601	42,506
Houston, TX PSMA	3,530	111,802	San Francisco, CA PMSA	2,523	90,055
Indianapolis, IN MSA	1,424	18,425	San Jose, CA PMSA	1,528	34,500
Jacksonville, FL MSA	953	19,272	Seattle, WA PMSA[f]	2,124	29,562
Kansas City, MO-KS MSA	1,617	34,226	Syracuse, NY MSA	752	8,195
Las Vegas, NV MSA	971	6,346	Tampa-St. Petersburg-Clearwater, FL MSA[g]	2,107	19,714
Los Angeles, CA PMSA	9,054	143,379	Tulsa, OK MSA	732	12,074
Louisville, KY MSA	968	13,730	Washington, DC-MD-VA-WV PMSA[h]	4,630	168,215
Memphis, TN MSA	1,034	18,408	West Palm Beach-Boca Raton, FL MSA	901	6,707
Miami, FL PMSA	2,008	21,941	Wichita, KS MSA	501	5,800

MSA = metropolitan statistical area.
PMSA = primary metropolitan statistical area.
[a] Represents only the suburban portion of the metropolitan area.
[b] Data are for area identified by source as New Jersey-Central/Northern with a market area of Bergen, Essex, Hudson, Morris, Passaic, Hunterdon, Mercer, Middelsex, Monmouth, Somerset, and Union Counties.
[c] Represents primarily Brooklyn, Manhattan, Queens, Rockland, and Westchester Counties.
[d] Represents only the Pennsylvania portion of the metropolitan area.
[e] Represents only Bexar County.
[f] Represents only the central business district portion of Seattle.
[g] Represents only Pinneallas and Hillsborough Counties.
[h] Excludes the Maryland portion of the metropolitan area and some outlying counties in Virginia.

Source: U.S. Bureau of the Census, 1995.

Table 7-9. Commercial Office Buildings—Selected Characteristics: 1992

[Excludes buildings 1,000 square feet or smaller. Building type based on predominant activity in which the occupants were engaged. Based on a sample survey of building representatives conducted between August and December 1992; therefore, subject to sampling variability.]

Characteristic	Number of buildings (1,000)	Characteristic	Number of buildings (1,000)
All buildings	4,806	Region	
		Northeast	771
		Midwest	1,202
Year constructed		South	1,963
1899 or before	169	West	870
1900 to 1919	255		
1920 to 1945	724	Fuels used alone or in combination	
1946 to 1959	880	Electricity	4,616
1960 to 1969	783	Natural gas	2,665
1970 to 1979	982	Fuel oil	559
1980 to 1989	884	Propane	337
1990 to 1992	128	District heat	95
		District chilled water	28
Principal activity within building		Any other	163
Public assembly[a]	644		
Education	301	Workers	
Food sales	130	Fewer than 5	2,718
Food service	260	5 to 9	895
Health care	63	10 to 19	561
Lodging	154	20 to 49	405
Mercantile/services	1,272	50 to 99	130
Office	749	100 to 249	64
Parking garage	24	250 or more	31
Public order and safety	60		
Warehouse	761	Weekly operating hours	
Other	69	39 or less	1,039
Vacant	319	40 to 48	1,278
		49 to 60	1,004
Government owned	599	61 to 84	645
Nongovernment owned	4,206	85 to 167	478
		168 (open continuously)	362

[a] Includes religious worship.

Note: Composition of regions is presented in section 2.4.

Source: U.S. Bureau of the Census, 1995.

APPENDIX 7A

EMPLOYMENT AND EARNINGS
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Employment and Earnings

Editors: Gloria Peterson Green, Eugene H. Becker

Editors' Note

With this issue, seasonally adjusted unemployment and other labor force series derived from the Current Population Survey (household survey) have been revised to reflect updated seasonal adjustment factors. Because of the survey changes introduced in January 1994, only seasonally adjusted data for 1994 have been revised. Revised current data appear in summary table A, tables A-1 through A-12, and D-1 through D-10.

The article appearing on page 10 discusses the effect of the revisions, describes the seasonal adjustment method, and includes the seasonal adjustment factors to be used to calculate the major labor force series for January-June 1995.

Annual averages for 1994 may differ slightly from the results that would be obtained by averaging the 12 published monthly estimates, because they reflect the use of a revised set of survey data for January that incorporates corrections to some minor editing problems in the original survey data for that month.

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APPENDIX 7B

EMPLOYED PERSONS BY DETAILED OCCUPATION, SEX, RACE, AND HISPANIC ORIGIN

11. Employed persons by detailed occupation, sex, race, and Hispanic origin

(Numbers in thousands)

Occupation	1994			
	Total employed	Percent of total:		
		Women	Black	Hispanic origin
Total, 16 years and over	123,060	46.0	10.4	8.8
Managerial and professional specialty	33,847	48.1	7.1	4.5
Executive, administrative, and managerial	16,312	43.0	6.8	4.9
Officials and administrators, public administration	598	46.1	12.7	4.2
Administrators, protective services	51	27.8	4.6	5.9
Financial managers	608	49.1	7.0	5.7
Personnel and labor relations managers	111	61.6	8.9	6.1
Purchasing managers	130	37.0	1.7	4.3
Managers, marketing, advertising, and public relations	564	34.3	2.6	4.3
Administrators, education and related fields	701	62.0	12.2	4.7
Managers, medicine and health	614	79.7	5.4	4.0
Postmasters and mail superintendents	52	63.6	8.5	2.0
Managers, food serving and lodging establishments	1,255	45.4	8.0	7.9
Managers, properties and real estate	479	50.6	6.3	8.7
Funeral directors	51	16.1	3.7	1.7
Management-related occupations	4,269	53.7	8.8	5.0
Accountants and auditors	1,483	51.8	9.0	4.4
Underwriters	88	67.4	3.3	5.1
Other financial officers	715	48.4	7.4	4.5
Management analysts	283	34.1	5.5	6.2
Personnel, training, and labor relations specialists	396	64.9	12.3	6.1
Buyers, wholesale and retail trade, except farm products	233	55.1	3.4	4.6
Construction inspectors	64	7.3	6.1	.9
Inspectors and compliance officers, except construction	226	27.4	15.4	8.4
Professional specialty	17,536	52.8	7.4	4.0
Engineers, architects, and surveyors	2,030	8.9	3.7	3.3
Architects	141	16.8	1.4	3.7
Engineers	1,866	8.3	3.7	3.3
Aerospace engineers	75	14.5	.9	4.5
Chemical engineers	56	7.3	1.8	1.3
Civil engineers	240	8.2	2.8	2.9
Electrical and electronic engineers	556	6.7	4.2	2.2
Industrial engineers	245	14.7	5.9	3.9
Mechanical engineers	341	5.1	3.1	4.9
Mathematical and computer scientists	1,186	33.6	6.5	3.7
Computer systems analysts and scientists	916	31.4	7.2	3.5
Operations and systems researchers and analysts	222	41.4	3.9	4.9
Natural scientists	535	31.0	3.8	1.6
Chemists, except biochemists	144	36.8	4.5	1.4
Geologists and geodesists	57	13.2	.9	.2
Biological and life scientists	120	36.5	4.5	.6
Medical scientists	62	47.4	1.1	.9
Health diagnosing occupations	932	21.5	3.7	4.4
Physicians	628	22.3	4.2	5.2
Dentists	148	13.3	3.7	4.5
Veterinarians	61	34.7	.9	-
Health assessment and treating occupations	2,708	86.2	8.8	3.4
Registered nurses	1,956	93.8	9.3	2.9
Pharmacists	182	38.3	2.6	4.1
Dietitians	86	92.0	14.3	2.1
Therapists	430	74.3	8.3	4.5
Respiratory therapists	98	57.8	11.1	8.2
Occupational therapists	50	87.2	9.1	.5
Physical therapists	106	66.2	3.7	3.7
Speech therapists	92	94.6	3.3	1.6
Physicians' assistants	53	54.3	5.5	7.8
Teachers, college and university	838	42.5	5.0	2.9
Teachers, except college and university	4,330	74.9	8.9	4.3
Prekindergarten and kindergarten	496	98.1	11.0	5.4
Elementary school	1,634	85.6	10.2	4.2
Secondary school	1,197	55.6	7.6	4.0
Special education	308	83.7	6.9	3.8
Counselors, educational and vocational	237	68.1	13.7	8.1
Librarians, archivists, and curators	219	81.6	9.5	3.7
Librarians	196	84.1	10.5	3.7
Social scientists and urban planners	440	53.6	7.0	4.1
Economists	106	47.4	3.8	3.3
Psychologists	280	58.6	8.3	4.9

See footnotes at end of table.

11. Employed persons by detailed occupation, sex, race, and Hispanic origin—Continued

(Numbers in thousands)

Occupation	1994			
	Total employed	Percent of total:		
		Women	Black	Hispanic origin
Social, recreation, and religious workers	1,209	51.4	17.3	5.7
Social workers	667	69.3	24.0	7.0
Recreation workers	105	70.5	14.4	3.8
Clergy	371	11.1	8.7	3.2
Lawyers and judges	861	24.8	3.3	3.0
Lawyers	821	24.6	3.3	3.1
Writers, artists, entertainers, and athletes	2,011	47.8	5.3	5.3
Authors	112	53.3	2.8	2.9
Technical writers	72	57.8	4.0	.2
Designers	548	55.3	3.4	5.8
Musicians and composers	164	31.8	10.2	6.1
Actors and directors	86	41.2	3.8	3.2
Painters, sculptors, craft artists, and artist printmakers	225	50.5	4.6	5.2
Photographers	148	28.4	4.6	5.1
Editors and reporters	267	48.8	5.4	3.6
Public relations specialists	142	63.1	5.0	3.9
Athletes	81	21.8	10.5	2.8
Technical, sales, and administrative support	37,306	64.3	9.7	7.1
Technicians and related support	3,869	52.0	9.7	5.3
Health technologists and technicians	1,590	81.6	13.9	5.3
Clinical laboratory technologists and technicians	341	77.2	13.9	4.4
Dental hygienists	97	100.0	.2	2.9
Radiologic technicians	154	74.1	8.1	7.6
Licensed practical nurses	397	95.1	18.7	4.3
Engineering and related technologists and technicians	916	19.5	7.4	6.2
Electrical and electronic technicians	316	15.1	9.9	5.9
Drafting occupations	239	19.8	4.1	4.5
Surveying and mapping technicians	68	7.8	1.5	3.8
Science technicians	266	36.7	9.5	4.3
Biological technicians	89	52.9	10.4	1.2
Chemical technicians	77	25.5	8.8	6.6
Technicians, except health, engineering, and science	1,098	40.0	5.7	4.8
Airplane pilots and navigators	104	2.6	1.5	.4
Computer programmers	549	29.3	6.0	3.5
Legal assistants	262	79.9	5.4	9.4
Sales occupations	14,817	49.1	7.1	6.8
Supervisors and proprietors	4,443	37.5	5.3	5.8
Sales representatives, finance and business services	2,361	40.0	4.8	4.1
Insurance sales	601	35.1	5.9	4.1
Real estate sales	708	48.4	2.6	3.9
Securities and financial services sales	391	29.9	4.2	2.9
Advertising and related sales	147	51.6	4.5	2.6
Sales occupations, other business services	515	38.4	7.0	5.8
Sales representatives, commodities, except retail	1,476	23.3	2.8	4.2
Sales representatives, mining, manufacturing, and wholesale	1,445	23.5	2.9	4.2
Sales workers, retail and personal services	6,440	66.1	10.3	9.1
Sales workers, motor vehicles and boats	284	6.4	6.3	7.9
Sales workers, apparel	442	80.8	10.0	11.1
Sales workers, shoes	110	67.9	21.3	10.2
Sales workers, furniture and home furnishings	159	49.6	4.7	5.7
Sales workers, radio, television, hi-fi, and appliances	228	25.0	7.5	8.1
Sales workers, hardware and building supplies	253	19.8	4.8	5.4
Sales workers, parts	167	8.9	4.0	10.9
Sales workers, other commodities	1,379	70.8	7.2	7.8
Sales counter clerks	209	65.4	8.6	6.2
Cashiers	2,745	79.8	14.2	10.1
Street and door-to-door sales workers	335	74.4	6.1	10.1
News vendors	130	38.8	3.1	6.7
Sales-related occupations	96	67.3	3.6	6.4
Demonstrators, promoters, and models	63	82.1	5.5	9.3
Administrative support occupations, including clerical	18,620	78.9	11.8	7.6
Supervisors, administrative support	753	59.7	13.6	6.9
Supervisors, general office	465	66.4	13.3	6.8
Supervisors, financial records processing	97	80.4	8.7	.9
Supervisors, distribution, scheduling, and adjusting clerks	167	32.1	16.2	10.8
Computer equipment operators	550	60.7	14.1	6.9
Computer operators	546	60.6	14.2	6.9
Secretaries, stenographers, and typists	4,163	98.0	9.2	6.7

See footnotes at end of table.

11. Employed persons by detailed occupation, sex, race, and Hispanic origin—Continued

(Numbers in thousands)

Occupation	1994			
	Total employed	Percent of total:		
		Women	Black	Hispanic origin
Secretaries	3,397	98.9	8.4	6.2
Stenographers	105	95.7	1.0	4.4
Typists	661	94.1	14.6	9.6
Information clerks	1,755	88.4	10.6	9.2
Interviewers	158	81.7	13.1	11.9
Hotel clerks	107	68.6	14.7	6.0
Transportation ticket and reservation agents	260	72.8	6.9	6.9
Receptionists	931	96.4	10.1	10.2
Records processing, except financial	890	78.5	15.6	9.2
Order clerks	202	75.1	18.5	8.5
Personnel clerks, except payroll and timekeeping	66	86.6	17.3	11.9
Library clerks	147	77.7	10.8	5.0
File clerks	280	78.9	16.8	12.7
Records clerks	181	78.0	13.4	6.4
Financial records processing	2,278	91.4	6.0	5.5
Bookkeepers, accounting, and auditing clerks	1,829	91.9	4.9	5.0
Payroll and timekeeping clerks	155	91.7	9.5	4.7
Billing clerks	177	90.0	11.9	8.3
Billing, posting, and calculating machine operators	70	90.7	8.4	8.8
Duplicating, mail and other office machine operators	58	41.5	17.2	9.5
Communications equipment operators	179	86.6	20.8	8.2
Telephone operators	165	88.8	21.7	8.3
Mail and message distributing	982	38.9	18.5	7.9
Postal clerks, except mail carriers	311	44.4	28.2	7.8
Mail carriers, postal service	354	34.0	11.6	8.5
Mail clerks, except postal service	170	50.5	24.2	5.9
Messengers	147	25.7	8.1	8.9
Material recording, scheduling, and distributing clerks	1,798	43.6	12.6	9.8
Dispatchers	226	51.4	7.6	6.6
Production coordinators	200	56.0	8.0	8.2
Traffic, shipping, and receiving clerks	571	28.7	14.7	12.9
Stock and inventory clerks	459	44.1	13.5	9.9
Meter readers	54	12.0	19.3	3.9
Weighers, measurers, and checkers and samplers	71	50.9	15.8	5.2
Expediters	196	65.9	11.4	7.5
Adjusters and investigators	1,414	74.5	13.9	6.8
Insurance adjusters, examiners, and investigators	364	74.6	13.3	4.1
Investigators and adjusters, except insurance	788	74.5	12.3	6.0
Eligibility clerks, social welfare	109	80.6	18.7	16.8
Bill and account collectors	153	69.7	20.6	9.9
Miscellaneous administrative support	3,799	81.6	13.9	8.4
General office clerks	696	80.2	13.0	8.1
Bank tellers	441	90.4	10.4	9.2
Data-entry keyers	627	83.8	18.3	7.2
Statistical clerks	75	81.6	23.4	7.9
Teachers' aides	582	90.3	14.3	14.6
Service occupations	16,912	59.6	17.1	12.6
Private household	817	96.3	16.7	27.2
Child care workers	286	97.3	8.4	20.5
Cleaners and servants	500	95.8	20.0	31.0
Protective service	2,249	16.7	18.1	7.4
Supervisors	219	12.0	12.4	4.5
Supervisors, firefighting and fire prevention	50	2.5	3.2	.8
Police and detectives	109	12.2	12.3	4.7
Guards	60	18.8	19.7	3.4
Firefighting and fire prevention occupations	210	2.1	9.7	5.5
Firefighting occupations	195	2.1	9.1	5.4
Police and detectives	968	15.6	17.8	5.6
Police and detectives, public service	532	13.2	13.8	6.2
Sheriffs, bailiffs, and other law enforcement officers	130	16.4	12.2	5.6
Correctional institution officers	305	19.3	27.1	4.5
Guards	851	22.9	22.0	10.8
Guards and police, except public services	717	15.8	24.1	11.4
Service occupations, except private household and protective service	13,847	64.3	16.9	12.6
Food preparation and service occupations	5,960	57.9	12.4	13.4
Supervisors, food preparation and service	393	66.7	10.7	10.0
Bartenders	322	55.1	2.9	4.4
Waiters and waitresses	1,446	78.6	5.5	7.6
Cooks	2,071	43.3	17.9	16.8

See footnotes at end of table.

11. Employed persons by detailed occupation, sex, race, and Hispanic origin—Continued

(Numbers in thousands)

Occupation	1994			
	Total employed	Percent of total:		
		Women	Black	Hispanic origin
Food counter, fountain and related occupations	351	70.2	11.2	8.9
Kitchen workers, food preparation	265	73.7	9.7	9.8
Waiters' and waitresses' assistants	433	47.6	12.8	21.8
Miscellaneous food preparation	679	48.6	16.9	19.7
Health service occupations	2,157	87.9	26.4	8.9
Dental assistants	188	96.6	2.7	10.2
Health aides, except nursing	333	78.1	25.6	7.8
Nursing aides, orderlies, and attendants	1,636	88.8	29.3	8.9
Cleaning and building service occupations	2,948	45.2	22.4	17.7
Supervisors	160	40.8	23.8	16.8
Maids and housemen	680	83.3	27.9	20.2
Janitors and cleaners	2,048	34.0	20.8	17.1
Pest control occupations	50	5.7	10.2	5.2
Personal service occupations	2,782	80.1	13.6	8.3
Supervisors	127	69.5	7.0	2.2
Barbers	98	21.8	27.6	10.3
Hairdressers and cosmetologists	753	90.6	10.3	8.0
Attendants, amusement and recreation facilities	201	39.0	10.2	6.7
Public transportation attendants	104	81.1	13.9	5.7
Welfare service aides	81	84.8	29.6	15.2
Family child care providers	428	98.7	10.8	9.0
Early childhood teachers' assistants	416	96.4	14.4	7.5
Precision production, craft, and repair	13,489	9.3	7.7	10.4
Mechanics and repairers	4,419	4.5	7.9	8.2
Supervisors	236	9.9	5.3	6.5
Mechanics and repairers, except supervisors	4,183	4.2	8.1	8.3
Vehicle and mobile equipment mechanics and repairers	1,734	1.2	6.6	9.7
Automobile mechanics	864	1.0	6.8	11.4
Bus, truck, and stationary engine mechanics	306	.4	9.1	6.6
Aircraft engine mechanics	129	4.6	6.3	7.0
Small engine repairers	52	-	2.9	6.8
Automobile body and related repairers	186	.4	1.6	12.5
Heavy equipment mechanics	151	1.1	5.1	7.6
Industrial machinery repairers	561	3.2	9.6	7.0
Electrical and electronic equipment repairers	666	12.4	9.8	7.0
Electronic repairers, communications and industrial equipment	160	7.4	11.1	10.3
Data processing equipment repairers	163	18.0	7.6	3.6
Telephone installers and repairers	191	16.8	9.9	7.5
Heating, air conditioning, and refrigeration mechanics	277	.5	5.7	7.3
Miscellaneous mechanics and repairers	923	5.8	9.0	7.7
Office machine repairers	61	2.1	2.4	2.0
Millwrights	80	4.2	2.8	-
Construction trades	5,008	2.2	6.5	11.4
Supervisors	704	1.4	4.6	4.6
Construction trades, except supervisors	4,304	2.3	6.9	12.5
Brickmasons and stonemasons	190	.6	15.0	16.7
Tile setters, hard and soft	56	3.0	3.6	11.1
Carpet installers	114	2.4	4.2	15.1
Carpenters	1,265	1.0	4.6	9.9
Drywall installers	154	1.7	4.6	24.6
Electricians	659	2.1	6.1	6.3
Electrical power installers and repairers	116	1.8	13.1	6.9
Painters, construction and maintenance	543	6.3	7.5	17.7
Plumbers, pipefitters, and steamfitters	508	.7	7.2	12.4
Concrete and terrazzo finishers	75	.3	19.3	19.3
Insulation workers	64	2.5	13.0	15.7
Roofers	180	-	6.3	20.7
Extractive occupations	142	1.0	5.9	8.5
Precision production occupations	3,921	23.9	9.0	11.8
Supervisors	1,254	18.8	8.8	9.8
Precision metalworking	903	6.5	6.0	6.2
Tool and die makers	141	1.5	3.3	.8
Machinists	492	4.4	7.6	6.4
Precious stones and metals workers (jewelers)	56	23.6	.8	22.2
Sheet-metal workers	127	8.3	6.2	4.0
Precision woodworking occupations	132	10.8	7.1	6.6
Cabinet makers and bench carpenters	87	4.4	6.7	5.2
Precision textile, apparel, and furnishings machine workers	214	54.5	8.9	20.4
Dressmakers	82	95.8	6.5	12.4
Upholsterers	61	24.3	7.6	24.6

See footnotes at end of table.

11. Employed persons by detailed occupation, sex, race, and Hispanic origin—Continued

(Numbers in thousands)

Occupation	1994			
	Total employed	Percent of total:		
		Women	Black	Hispanic origin
Precision workers, assorted materials	550	55.6	12.7	16.6
Optical goods workers	72	52.3	7.6	9.6
Dental laboratory and medical appliance technicians	61	36.9	4.5	14.9
Electrical and electronic equipment assemblers	339	65.3	15.5	18.9
Precision food production occupations	457	33.9	10.5	24.1
Butchers and meat cutters	266	22.9	12.2	25.2
Bakers	141	43.1	8.2	20.9
Food batchmakers	50	66.3	7.5	27.2
Precision inspectors, testers, and related workers	137	27.3	11.4	8.4
Inspectors, testers, and graders	129	26.6	10.1	8.7
Plant and system operators	273	5.0	10.1	6.8
Water and sewage treatment plant operators	68	3.2	16.6	4.6
Stationary engineers	124	3.5	9.5	6.5
Operators, fabricators, and laborers	17,876	24.3	15.0	13.8
Machine operators, assemblers, and inspectors	7,754	38.1	15.1	14.8
Machine operators and tenders, except precision	5,011	38.5	16.0	15.8
Metalworking and plastic working machine operators	430	15.3	8.8	10.8
Punching and stamping press machine operators	126	25.4	8.3	10.8
Grinding, abrading, buffing, and polishing machine operators	136	14.0	9.2	16.8
Metal and plastic processing machine operators	157	21.8	11.9	12.8
Molding and casting machine operators	91	30.3	9.8	10.4
Woodworking machine operators	134	13.7	7.9	10.5
Sawing machine operators	89	11.7	10.1	11.4
Printing machine operators	436	24.9	10.1	12.0
Printing press operators	311	15.9	11.3	13.6
Textile, apparel, and furnishings machine operators	1,139	74.4	21.8	20.0
Winding and twisting machine operators	58	73.1	40.4	-
Textile sewing machine operators	619	86.0	19.4	24.1
Pressing machine operators	127	62.8	18.7	21.6
Laundering and dry cleaning machine operators	207	59.3	24.6	19.1
Machine operators, assorted materials	2,693	31.5	16.3	16.0
Packaging and filling machine operators	390	58.7	17.4	22.5
Mixing and blending machine operators	122	10.2	19.5	17.8
Separating, filtering, and clarifying machine operators	64	10.0	10.1	10.5
Painting and paint spraying machine operators	197	16.6	14.1	16.1
Furnace, kiln, and oven operators, except food	67	3.3	21.0	2.9
Slicing and cutting machine operators	196	27.4	11.5	25.0
Photographic process machine operators	86	57.1	11.6	13.8
Fabricators, assemblers, and hand working occupations	1,994	31.5	12.4	13.0
Welders and cutters	577	4.4	8.6	11.7
Assemblers	1,202	41.0	15.1	12.9
Production inspectors, testers, samplers, and weighers	749	52.9	16.0	13.1
Production inspectors, checkers, and examiners	520	53.6	15.0	11.1
Production testers	58	35.4	10.6	5.2
Graders and sorters, except agricultural	162	56.8	21.6	21.4
Transportation and material moving occupations	5,136	9.4	14.6	10.0
Motor vehicle operators	3,882	11.0	14.7	10.4
Supervisors	94	14.9	9.5	11.6
Truck drivers	2,815	4.5	12.4	10.7
Drivers--sales workers	164	10.5	7.6	5.7
Bus drivers	511	47.0	25.6	8.8
Taxicab drivers and chauffeurs	241	10.3	22.6	11.7
Transportation occupations, except motor vehicles	176	2.1	12.0	2.3
Rail transportation	108	1.5	12.7	3.1
Water transportation	68	1.7	7.0	-
Material moving equipment operators	1,078	4.7	14.6	9.5
Operating engineers	237	1.7	5.1	5.6
Crane and tower operators	66	1.7	6.8	2.5
Excavating and loading machine operators	95	-	7.0	5.2
Grader, dozer, and scraper operators	88	2.0	4.9	9.2
Industrial truck and tractor equipment operators	483	6.9	23.3	12.2
Handlers, equipment cleaners, helpers, and laborers	4,986	18.1	15.3	16.3
Helpers, construction and extractive occupations	113	3.6	14.2	25.2
Helpers, construction trades	106	3.1	14.7	24.9
Construction laborers	740	3.6	12.4	22.2
Production helpers	67	21.3	11.4	23.6
Freight, stock, and material handlers	2,024	20.1	16.4	12.9
Garbage collectors	50	1.3	28.1	14.6

See footnotes at end of table.

11. Employed persons by detailed occupation, sex, race, and Hispanic origin—Continued

(Numbers in thousands)

Occupation	1994			
	Total employed	Percent of total:		
		Women	Black	Hispanic origin
Stock handlers and baggers	1,135	25.9	13.4	13.1
Machine feeders and offbearers	83	35.7	17.4	11.1
Garage and service station related occupations	184	5.2	12.2	9.3
Vehicle washers and equipment cleaners	276	11.8	19.0	20.6
Hand packers and packagers	296	60.9	15.1	23.6
Laborers, except construction	1,240	18.2	15.1	15.4
Farming, forestry, and fishing	3,629	19.3	5.1	17.1
Farm operators and managers	1,453	25.4	.2	2.0
Farmers, except horticultural	1,271	26.7	.2	.8
Horticultural specialty farmers	60	9.2	1.0	8.9
Managers, farms, except horticultural	110	18.8	-	10.1
Other agricultural and related occupations	2,176	15.3	8.3	27.1
Farm occupations, except managerial	821	17.2	6.7	37.5
Farm workers	748	16.6	6.7	37.9
Related agricultural occupations	1,172	15.2	9.5	22.4
Supervisors	125	4.1	4.5	18.0
Groundskeepers and gardeners, except farm	864	5.9	10.6	23.0
Animal caretakers, except farm	118	60.4	5.9	3.6
Graders and sorters, agricultural products	61	73.9	9.6	58.5
Forestry and logging occupations	132	7.0	9.9	11.9
Timber cutting and logging occupations	86	1.0	13.3	4.4
Fishers, hunters, and trappers	52	6.2	1.9	7.4

NOTE: Generally, data for occupations with fewer than 50,000 employed are not published separately but are included in the totals for the appropriate categories shown. Data for 1994 are not directly comparable with data for 1993 and earlier years. For additional information, see "Revisions in the Current Population Survey Effective January 1994" in the February 1994 issue of *Employment and Earnings*.

APPENDIX 7C

ESTABLISHMENT DATA: ANNUAL AVERAGES BY MAJOR INDUSTRY AND MANUFACTURING GROUP (NONFARM)

48. Employees on nonfarm payrolls by major industry and manufacturing group

(In thousands)

Industry	1991	1992	1993	1994[p]
Total	108,256	108,604	110,525	113,423
Total private	89,854	89,959	91,708	94,382
Goods-producing	23,745	23,231	23,256	23,584
Mining	689	635	611	604
Metal mining	55.9	53.2	50.4	50.7
Coal mining	135.5	126.8	109.1	113.8
Oil and gas extraction	392.9	352.6	350.8	338.8
Nonmetallic minerals, except fuels	104.5	101.8	100.8	101.0
Construction	4,650	4,492	4,642	4,916
General building contractors	1,140.4	1,076.8	1,110.8	1,166.9
Heavy construction, except building	726.6	711.2	707.5	720.8
Special trade contractors	2,783.3	2,704.1	2,823.3	3,028.2
Manufacturing	18,406	18,104	18,003	18,064
Durable goods	10,569	10,277	10,172	10,267
Lumber and wood products	675.2	679.9	703.1	731.2
Furniture and fixtures	474.7	477.7	485.2	495.8
Stone, clay, and glass products	521.5	513.3	515.8	529.3
Primary metal industries	722.6	694.5	679.3	686.5
Blast furnaces and basic steel products	262.7	250.3	238.8	233.9
Fabricated metal products	1,355.1	1,329.1	1,332.5	1,366.4
Industrial machinery and equipment	1,999.6	1,928.6	1,918.4	1,944.7
Electronic and other electrical equipment	1,591.1	1,528.1	1,520.2	1,551.8
Transportation equipment	1,890.0	1,829.6	1,750.2	1,728.4
Motor vehicles and equipment	788.8	812.5	832.6	885.5
Aircraft and parts	669.2	611.7	541.8	479.0
Instruments and related products	974.0	928.5	892.6	854.8
Miscellaneous manufacturing	365.5	367.6	374.6	378.1
Nondurable goods	7,837	7,827	7,831	7,797
Food and kindred products	1,666.9	1,662.5	1,675.6	1,667.2
Tobacco products	49.0	47.5	42.8	39.3
Textile mill products	670.0	674.1	674.8	672.1
Apparel and other textile products	1,006.0	1,007.2	984.6	954.4
Paper and allied products	687.9	690.3	689.4	684.0
Printing and publishing	1,535.6	1,506.5	1,513.1	1,528.7
Chemicals and allied products	1,075.9	1,084.1	1,078.4	1,053.7
Petroleum and coal products	160.0	157.6	151.3	148.2
Rubber and misc. plastics products	861.9	877.6	903.8	934.6
Leather and leather products	123.7	119.9	117.5	114.5
Service-producing	84,511	85,373	87,269	89,839
Transportation and public utilities	5,762	5,721	5,787	5,842
Transportation	3,502	3,498	3,587	3,666
Railroad transportation	262.0	254.3	249.9	244.9
Local and interurban passenger transit	354.1	361.4	374.1	387.4
Trucking and warehousing	1,606.0	1,611.2	1,684.8	1,748.7
Water transportation	183.6	173.3	166.6	166.3
Transportation by air	732.7	730.1	736.5	733.5
Pipelines, except natural gas	19.0	19.2	18.4	17.7
Transportation services	344.0	348.4	356.4	367.3
Communications and public utilities	2,260	2,223	2,201	2,176
Communications	1,298.8	1,268.9	1,257.3	1,255.2
Electric, gas, and sanitary services	961.2	954.0	943.0	920.5

See footnotes at end of table.

48. Employees on nonfarm payrolls by major industry and manufacturing group—Continued

(In thousands)

Industry	1991	1992	1993	1994[p]
Wholesale trade	6,081	5,997	5,958	6,059
Durable goods	3,531	3,446	3,410	3,460
Nondurable goods	2,550	2,552	2,549	2,598
Retail trade	19,284	19,356	19,717	20,303
Building materials and garden supplies	746.5	757.7	780.8	837.7
General merchandise stores	2,452.8	2,451.0	2,460.6	2,468.1
Food stores	3,203.7	3,179.8	3,208.4	3,243.2
Automotive dealers and service stations	1,983.8	1,966.3	2,020.7	2,147.4
Apparel and accessory stores	1,150.6	1,130.9	1,147.4	1,149.8
Furniture and home furnishings stores	801.4	799.8	828.2	895.6
Eating and drinking places	6,476.3	6,609.3	6,810.6	7,055.0
Miscellaneous retail establishments	2,468.4	2,461.4	2,460.0	2,506.5
Finance, insurance, and real estate	6,646	6,602	6,712	6,789
Finance	3,187	3,160	3,217	3,254
Depository institutions	2,164.2	2,095.7	2,078.6	2,041.5
Nondepository institutions	379.4	405.5	447.7	476.6
Security and commodity brokers	419.6	440.1	467.6	503.0
Holding and other investment offices	223.6	219.0	223.0	233.3
Insurance	2,161	2,152	2,181	2,182
Insurance carriers	1,494.6	1,495.6	1,518.4	1,517.0
Insurance agents, brokers, and service	666.3	656.6	662.1	664.5
Real estate	1,299	1,290	1,314	1,353
Services[1]	28,336	29,052	30,278	31,805
Agricultural services	486.5	489.6	514.9	552.4
Hotels and other lodging places	1,589.4	1,576.4	1,590.6	1,606.9
Personal services	1,111.5	1,116.2	1,135.9	1,137.2
Business services	5,086.2	5,315.3	5,784.9	6,447.8
Personnel supply services	1,484.5	1,629.3	1,924.3	2,340.5
Auto repair, services, and parking	881.8	881.3	943.9	1,043.4
Miscellaneous repair services	341.0	347.0	362.2	380.4
Motion pictures	410.9	400.9	415.4	482.8
Amusement and recreation services	1,122.2	1,188.1	1,245.6	1,268.4
Health services	8,182.9	8,490.0	8,766.6	9,031.1
Hospitals	3,655.1	3,749.9	3,786.8	3,789.5
Legal services	911.9	913.5	928.2	942.5
Educational services	1,709.7	1,677.6	1,686.1	1,745.5
Social services	1,844.8	1,958.6	2,086.2	2,249.3
Museums and botanical and zoological gardens	69.1	72.7	75.5	79.1
Membership organizations	1,981.9	1,973.0	2,031.5	2,053.7
Engineering and management services	2,433.4	2,470.8	2,535.5	2,609.9
Services, nec	39.9	41.3	40.8	40.5
Government	18,402	18,645	18,817	19,041
Federal	2,966	2,969	2,915	2,870
State	4,355	4,408	4,484	4,553
Education	1,767.6	1,798.6	1,829.3	1,862.2
Other State government	2,587.2	2,609.6	2,654.8	2,691.0
Local	11,081	11,267	11,417	11,618
Education	6,135.7	6,219.5	6,347.7	6,474.2
Other local government	4,945.1	5,048.0	5,069.5	5,143.5

[1] Includes other industries, not shown separately.
[p] = preliminary.
NOTE: Establishment survey estimates are currently projected from March 1993 benchmark levels. When more recent benchmark data are introduced, all unadjusted data from April 1993 forward are subject to revision.

8. BEHAVIORAL AND/OR CULTURAL PRACTICES

The effects of lifestyle, personal behavioral, and/or cultural practices could be a source of contaminant exposure or could increase one's exposure to toxic environmental contaminants. Exposure to these contaminants due to either behavioral (e.g., smoking, alcohol consumption, drug use) or cultural practices may result in adverse health effects. The sections below summarize studies that provide population estimates of persons engaging in certain behavioral and/or cultural practices that are known to increase the risk of exposure to environmental contaminants.

8.1. ACTIVITY PATTERNS

This section presents population estimates on time activity patterns based on type of activity and presence in specific locations and microenvironments.

8.1.1. National Human Activity Pattern Survey (NHAPS) (Tsang and Klepeis, 1996)

The National Human Activity Pattern Survey (NHAPS) conducted by EPA, is the largest and most current human activity pattern survey available (Tsang and Klepeis, 1996). Data for 9,386 respondents in the 48 contiguous States were collected via minute-by-minute, 24-hour diaries between October 1992 and September 1994. The survey collected information on duration and frequency of selected activities. Demographic information was collected for each respondent to allow for statistical summaries to be generated according to specific subgroups of the U.S. population (e.g., by gender, age, race, employment status, census region, season). The participants' responses were weighted according to geographic, socioeconomic, time/season, and other demographic factors to ensure that results were representative of the U.S. population. The weighted sample matches the 1990 census population for each gender, age group, and census region. In addition, the day-of-week and seasonal responses are distributed equally.

NHAPS data on the time spent in selected activities and the corresponding population participating in these activities are presented in the *Exposure Factors Handbook*, Section 14, Tables 14-19 through 14-92. For example, data are included on the number of persons who spend time either running, walking, standing, or in a vehicle; time spent in indoor and outdoor

parking lots and garages; and number of persons working in circumstances where one may come in contact with soil, such as gardening. The reader is referred to the *Handbook* for further information obtained from NHAPS. Advantages of the NHAPS data set are that it is representative of the U.S. population for all ages, genders, and races, and it has been adjusted to be balanced geographically, seasonally, and for day/time.

8.1.2. Time Spent in Activities, Locations, and Microenvironments: A California- National Comparison (Robinson and Thomas, 1991)

Robinson and Thomas (1991) reviewed data from the 1987-88 California Air Resources Board (CARB) time activity study and compared that data set with data collected by a similar 1985 national study, "Americans' Use of Time." The CARB study sampled residents of the State of California. One adult 18 years old or older was randomly sampled in each household. In the 1985 national study, single-day diaries were collected from more than 5,000 respondents across the United States, who were 12 years old and older. To facilitate comparisons, Robinson and Thomas (1991) recorded data from the national study to be as comparable as possible to the CARB study, and they restricted comparative analyses to the 18- to 64-year-old age group in the two studies. The authors compared 10 major activity categories and three major locations from both the CARB and the 1985 national study and defined a set of 16 microenvironments based on the activity and location codes employed in both studies.

Table 8-1 shows the percentage of "doers" (i.e., those engaged in the specific activity the day the diary was compiled) who participated in 10 various activities, were present at 10 various locations, and were present in 16 various microenvironments.

8.2. PICA STUDIES

Pica is the ingestion of nonfood items (most commonly dirt) and can increase an individual's exposure to contaminants, especially if the material ingested is contaminated or has elevated levels of some elements (metals). Numerous articles have reported on the incidence of pica among various populations. However, most of these articles describe pica as the ingestion of substances other than soil, including sand, clay, paint, plaster, hair, string, cloth, glass, matches,

paper, feces, and various other items. These articles indicate that pica occurs in approximately one-half of all children between the ages of 1 and 3 years (Sayetta, 1986). The incidence of pica in children has been shown to differ for different populations, and the rate appears to be higher for black children than for white children. Danford (1982) reports that approximately 30% of black children aged 1 to 6 years are reported to have deliberate ingestion behavior, compared with 10 to 18% of white children in the same age group. Sex differences do not appear to influence the incidence rates (Kaplan and Sadock, 1985). Lourie et al. (1963) found a 50 to 60% pica rate among children in lower socioeconomic groups and a 30% pica rate among children from higher income families. Deliberate soil ingestion behavior appears to be more common in rural areas (Vermeer and Frate, 1979). A higher rate of pica also has been reported for pregnant women and individuals with poor nutritional status (Danford, 1982). In general, deliberate ingestion behavior is more frequent and more severe in mentally retarded children than in children in the general population (Behrman and Vaughan, 1983; Danford, 1982; Forfar and Arneil, 1984; Illingworth, 1983; Sayetta, 1986). Studies examining pica among populations are presented in this section.

8.2.1. Reported Incidence of Pica Among Migrant Families (Bruhn and Pangborn, 1971)

A review of literature indicates that pica has been observed among men, women, and children of all ages and races; however, reports show pica occurs most frequently among African Americans (Bruhn and Pangborn, 1971). Bruhn and Pangborn (1971) reported that pica was explained as a cultural trait of African Americans, and they cited other studies that found higher incidences of pica in pregnant African American women, compared with pregnant Caucasian women. The authors found that "pregnant women say they eat these substances [clay] because they simply crave them or because they will make the baby stronger, with a more suitable color, and without birthmarks" (Bruhn and Pangborn, 1971). To investigate the occurrence of pica in low-income families, the authors conducted food habit interviews in English and Spanish among 91 families in California from May through August 1969. The families were selected from three migrant labor camps operated by the Office of Economic Opportunity in Northern California, and they included (1) 65 migrant agricultural families of Mexican descent, born in Texas or Mexico, and (2) 26 families of "Anglo" heritage, born in Texas, Arkansas, or Oklahoma. The interviews

used questionnaires to ask the family spokesperson (usually the wife) to estimate the incidence of pica in these families. Table 8-2 presents results of the interviews. In the families of "Anglo" descent, 14 families (54%) observed pica in children, with 11 cases observed in their own or a relative's child. Table 8-2 also shows that 19 and 7% of the respondents reported pica in pregnant and nonpregnant women, respectively. The families of Mexican descent reported 32, 38, and 15% of pica incidences in children, pregnant women, and nonpregnant women, respectively. Pica in men was not reported by either group. The potential causes of pica were attributed to cultural, behavioral, and socioeconomic factors in the groups studied. The authors stated that apparently the urge for some women to eat clay and cornstarch represents a cultural practice passed down from generations and is an accepted behavior in their community (Bruhn and Pangborn, 1971).

8.2.2. Geophagia in Rural Mississippi: Environmental and Cultural Contexts and Nutritional Implications (Vermeer and Frate, 1979)

Vermeer and Frate (1979) investigated the environmental and cultural factors surrounding geophagia (deliberate consumption of earth/soil) in the black population in a rural county of Mississippi. Geophagia, the practice of eating earth, also referred to as pica, is known to have occurred since prehistoric times in all ethnic, social, and economic groups and was reported to occur most frequently in the rural South in both black and white populations. Early historical records indicate that geophagia was transferred primarily from Africa via slave trade into the New World (Vermeer and Frate, 1979). The authors reported that the custom continued when blacks migrated to the urban North, where laundry starch became a substitute for the clays commonly consumed.

The study was conducted in Holmes County, Mississippi, which at the time had a predominantly (71%) black population composed of rural small communities (200-500 people) where the social life centered on the church. Of the households sampled, females headed 41%. The survey questionnaires on geophagia were in three parts: the nutrition study, the perinatal study, and the health utilization study. In the nutrition study, 500 black households were surveyed randomly, but geophagia questionnaires were administered to only 50 households (10%) of the sampled population. Of these 50 households, 229 individuals (56 women, 33 men, 115

children, and 25 adolescents) were surveyed. In the perinatal study, geophagia information was obtained from 142 pregnant women. The health utilization survey sampled 200 households, of which 20 were given the geophagia questionnaires. In all three studies, geophagia was defined as the consumption of clay on a regular basis over a period of weeks (Vermeer and Frate, 1979).

The nutrition study results presented in Table 8-3 show neither male adults nor adolescents practiced geophagia, but 57% of the women and 16% of the children (under 13 years) practiced geophagia (Vermeer and Frate, 1979). The perinatal study revealed that 28% of pregnant and postpartum women practiced geophagia. An additional 19% of respondents in this population group consumed other materials, mainly commercial products (e.g., laundry starch, dry powdered milk, and baking soda) (Vermeer and Frate, 1979).

8.3. SMOKING, DRUG USE, AND ALCOHOL CONSUMPTION

This section presents summaries of studies on behavioral and social practices, such as smoking, drug use, and alcohol consumption, which could potentially increase an individual's exposure to environmental contaminants.

8.3.1. Results From the National School-Based 1991 Youth Risk Behavior Survey and Progress Toward Achieving Related Health Objectives for the Nation (Kann et al., 1993)

The Centers for Disease Control and Prevention (CDC) developed the Youth Risk Behavior Surveillance System (YRBSS) as an ongoing project to evaluate priority high health risk behaviors among adolescents nationwide. Kann et al. (1993) presented partial results from that 1991 survey, which employed a three-stage cluster sample design that consisted of students in public, parochial, and other private schools in grades 9 through 12, in all 50 States and the District of Columbia. The questionnaires administered to the students collected information on priority health risk behaviors related to unintentional and intentional injury, tobacco use, alcohol and other drug use, sexual behavior (i.e., unintended pregnancies and sexually transmitted diseases, including HIV infection), dietary behavior, and physical activity.

The survey sampled 13,568 students, of which data from 12,272 (90%) of the students were usable. Of the survey respondents, 14% were blacks, 9% were Hispanic, 70% were white, and 7% were from other ethnic groups. The data obtained from the survey were based on either a 30-day or 12-month recall. The percentages of white, black, and Hispanic youths who reported engaging in the specific high-risk behaviors during the survey period are presented in Table 8-4. A higher percentage of whites (15%) frequently smoked cigarettes, compared with Hispanics (7%) and blacks (3%). Table 8-4 also indicates that 54% of Hispanic, 53% of white, and 42% of black students consumed at least one drink of alcohol during the 30 days before the survey. Three percent of Hispanics, 2% of whites, and 1% of blacks used cocaine during the 30 days preceding the survey. Table 8-5 presents results in percentages of the dietary behavior and physical activity among the students grouped by gender, grade level, and race. A higher proportion of male students (15%) consumed five or more servings of fruits and vegetables than female students (10%).

8.3.2. Cigarette Smoking and Cessation Behaviors Among Urban Blacks and Whites (Hahn et al., 1990)

Hahn et al. (1990) studied smoking behavior among blacks and whites in a population-based sample of 2,626 residents aged 35 to 74 years in the Minneapolis-St. Paul area. Surveys of the general population conducted in this area were of two parts: the first series was conducted from 1980 to 1982, and the second series was initiated in December 1985. The second series of surveys conducted used a two-stage sample design and updated census information. Individuals in a cluster sample of households in the seven-county area were randomly selected. Home interviews were conducted in which information on health behaviors, attitudes, and knowledge were collected. Following the home interviews, survey clinics were conducted in neighborhood churches in which questionnaires were completed. These questionnaires provided physiological measurements related to risk factors.

Results from the survey are presented in Tables 8-6 through 8-8 (Hahn et al., 1990). Ratios in these tables are the presented value out of 100 percent. Table 8-6 shows that more blacks (aged 35 to 74 years) were current smokers than whites in the same age group. Table 8-6

also shows that the ratio of former smokers to those who had ever smoked was greater for white men than for black men and greater for white women than for black women. Table 8-7 indicates that persons with educations beyond high school smoked less, regardless of their race or sex. Table 8-8 presents data on current smokers' smoking cessation behavior. Whites were more likely than blacks to attempt to quit smoking. Among men, whites were more likely than blacks to successfully quit smoking. More black men than white men planned to reduce the number of cigarettes smoked per day, and more white women than black women tried brands with low nicotine and tar. Hahn et al. (1990) concluded that important factors preventing smokers from quitting included the number of cigarettes smoked daily, lack of desire to cease smoking, and the physiological difficulty of quitting.

8.3.3. Sociodemographic Characteristics of Cigarette Smoking Initiation in the United States (Escobedo et al., 1990)

Escobedo et al. (1990) estimated the age-specific incidence of cigarette smoking initiation by race/ethnicity, sex, and educational attainment by analyzing the smoking history data of young adults, aged 18 to 35 years, in the 1987 National Health Interview Survey (NHIS) and the 1982-1984 Hispanic Health and Nutrition Examination Survey (HHANES). Both NHIS and HHANES were based on personal interviews of households in the United States. Escobedo et al. (1990) noted that HHANES was not representative of the Hispanic population in the United States; however, the geographic areas surveyed included a substantial proportion of Hispanics. Data from 14,764 out of 44,123 individuals surveyed in NHIS and 3,123 out of 9,643 individuals surveyed in HHANES were employed in the analysis conducted by Escobedo et al. (1990).

The incidence of smoking initiation at a specific age was determined as being the number of individuals who had started smoking cigarettes at that age divided by the number of individuals who had not started smoking regularly before that age (Escobedo et al., 1990). The authors reported that from both surveys "ever smokers" were considered to be those respondents who answered yes to the question, "Have you smoked at least 100 cigarettes in your entire life?" Among all race/ethnic groups, smoking initiation occurred at ages as young as 9 years of age,

increased rapidly after 11 years of age, peaked at 17 to 19 years of age, and declined substantially after 19 years of age (Escobedo et al., 1990).

Escobedo et al. (1990) calculated age-specific smoking initiation rates by gender and educational attainment. Table 8-9 presents the smoking initiation rates (percent) by gender, age, and race/ethnicity. Of all men who started smoking at 18 years old or younger, Hispanic men had the highest smoking initiation rate, and black men had the lowest rate. Table 8-9 also shows that smoking initiation rates were similar among men who started smoking between the ages of 19 and 35 years, with black men showing the highest rate (22%). Among the females who started smoking at 18 years or younger, white and Puerto Rican American women had the highest initiation rate. Compared with men of both age groups, women had lower smoking initiation rates in all race/ethnic groups. Table 8-10 summarizes the smoking initiation rates by age, race/ethnicity, and educational attainment. A comparison of respondents with more than a high school education to those who had less than high school education showed that respondents with less than high school education had higher smoking initiation rates for all age groups and all races and ethnic groups. Table 8-10 also shows that among all race/ethnic groups, initiation rates were highest during adolescence (12 to 18 years old) and lowest during childhood (11 years old and younger).

8.3.4. Statistical Abstract of the United States (U.S. Bureau of the Census, 1995)

The U.S. Bureau of the Census provides summary statistics on social, political, and economic characteristics of the U.S. population. Table 8-11 presents data on persons who used certain drugs in 1993 grouped by age of user, gender, race/ethnicity, and region. Table 8-11 also shows the users in 1993 of cigarettes, alcohol, marijuana, cocaine, smokeless tobacco, crack cocaine, inhalants, hallucinogens, stimulants, sedatives, tranquilizers, and analgesics.

8.3.5. Trends in Indian Health (U.S. Department of Health and Human Services, 1993)

The U.S. Public Health Service, through the Indian Health Service (IHS), provides health care to Native Americans and produces annual information on the health status of the people it serves. IHS population statistics are based on U.S. Bureau of the Census data and include American Indians, Eskimos, and Alaska Natives residing in or near reservations (U.S. DHHS, 1993). Mortality rates, by age and gender, resulting from alcoholism and drug-related incidents were collected for the IHS population and are presented in Tables 8-12 and 8-13. It should be noted that mortality rates cited in this section are indirect estimates of exposure. Mortality (as compared to incidence or prevalence) is influenced by other factors, such as general health and nutrition and access to medical care.

Table 8-12 indicates that mortality rates from alcohol consumption are much higher for Native Americans and Alaska Natives than for all other races in the United States for all age groups and both genders. Table 8-13 presents data on drug-related deaths and indicates that the rates are higher for Native Americans than for other races at ages 15 to 24 years. At ages 25 to 34 years, the rate of drug-related deaths for Native Americans is higher than the rate for whites. At ages 45 to 54 and 55 to 64 years, drug-related death rates are higher for Native Americans than for all other races in both genders, and at ages 65 to 74 and 75 to 84 years, the rate is lower for Native Americans than for all other races in both genders.

8.4. CULTURAL USE OF MERCURY

Another example of behavioral or cultural practices that could increase a population's exposure to toxic environmental contaminants is the cultural use of mercury for religious, medical, or cosmetic purposes (TDH, 1993). The Center for Disease Control and Prevention's Agency for Toxic Substance and Disease Registry (ATSDR) published a National Alert warning of the "continued pattern of metallic mercury exposure in persons using certain folk medicines or participating in certain ethnic or religious practices" (ATSDR, 1997). Mercury exposures may be potentially greater for populations of Caribbean and Hispanic/Latino descent, who use mercury for religious and/or medicinal purposes as well as in cosmetics (CDC, 1996). Sales persons working in botanicas stores that specialize primarily in selling religious items and herbs used for preparing folk medicines and also for promoting good health estimated that Puerto Ricans,

Dominicans, and ‘other Hispanics’ make up about 90% of mercury buyers and that more than two-thirds of buyers are women (Zayas and Ozuah, 1996).

These practices may present opportunities for increased exposures to a percentage of the adult Caribbean and Hispanic populations (Hispanic Health Council, 1993). Children may be subject to greater exposures from the practice of sprinkling mercury on the floor near children’s beds to bring good luck, which could result in increased exposures to children who crawl and play on the floor (U.S. EPA, 1993).

Zayas and Ozuah (1996) identified 41 botanicas in Hispanic neighborhoods in Bronx, New York, and in 1995, researchers surveyed botanica workers on the cost, sale, uses, and purchasers of mercury.

From the Zayas and Ozuah (1996) report, Wendroff (1996) estimates that the 35 New York botanicas sell a total of 157 mercury capsules per day. Wendroff (1996) estimated that "annual sales totaling 47,000 [capsules] could result in 13,800 individual dwellings each having a dose of some 9 grams of mercury (the mean weight of a mercury capsule) sprinkled on their respective floors in the course of one year.”

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Table 8-1. Percentage of Respondents Participating in Various Activities and Spending Time in Various Locations and Microenvironments During the 24-hour Day Included in the Diary

Code	Description	Percentage of Survey Respondents Participating in Activities or Time in Various Places the Day the Diary Was Compiled		
		California[a] n = 1,762 (%)	National[b] n = 5,358 (%)	Relevance to Exposure[c]
Activity				
0	Travel	91	91	potential exposure to carbon monoxide and benzene
1	Sleep	100	100	potential exposure to carbon monoxide and benzene
2	Household work - family and personal care	95	100	potential exposure to carbon monoxide and benzene
3	Cook	49	61	potential exposure to smoke and gas from cooking
4	Eat	95	98	potential exposure to smoke and gas from cooking
5	Shopping/errands	49	49	potential exposure to smoke and gas from cooking
6	Work/study residences	49	52	potential exposure to smoke and gas from cooking
7	Leisure/communication - indoors (TV-resting-reading)	92	94	potential exposure to smoke and gas from cooking
8	Physical activities	24	23	highly elevated breathing rate
9	Cultural/social	54	71	highly elevated breathing rate
Locations				
0	Autoplaces (garage, auto repair…)	19	5	potential exposure to carbon monoxide and volatile organic compounds
1	Indoor residence/kitchen	77	87	potential exposure to smoke and gas
2	Indoor residence/other rooms	99	99	potential exposure to smoke and gas
3	Indoor offices and factories	40	47	potential exposure to various pollutants based on job
4	Indoor restaurant/bar	35	28	potential exposure to various pollutants based on job
5	Indoor other locations (not residence)	72	78	potential exposure to ambient pollutants
6	Outdoor/yard, outside of residence	30	41	potential exposure to ambient pollutants
7	Outdoor/other, parks	47	19	potential exposure to ambient pollutants
8	In locations with internal combustion	86	90	potential exposure to carbon monoxide and benzene
9	Other vehicles	4	1	potential exposure to carbon monoxide and benzene
Microenvironments[a]				
1	Auto places	19	5	
2	Restaurant/bar	35	28	
3	In vehicles with internal combustion	86	90	
4	In other vehicles	4	1	
5	Physical activity/outdoor	16	13	
6	Physical activity/indoor	10	11	
7	Work/study-residence	10	11	
8	Work/study-other places	41	46	
9	Cooking	49	61	
10	Other activities/kitchen	67	83	

Table 8-1. Percentage of Respondents Participating in Various Activities and Spending Time in Various Locations and Microenvironments During the 24-hour Day Included in the Diary (continued)

Code Description	Percentage of Survey Respondents Participating in Activities or Time in Various Places the Day the Diary Was Compiled		
	California[a] n = 1,762 (%)	National[b] n = 5,358 (%)	Relevance to Exposure[c]
11 Chores/child care	92	99	
12 Shopping/errands	45	46	
13 Other/outdoor	59	47	
14 Social/cultural	47	62	
15 Leisure-eat/indoor	95	97	
16 Sleep/indoor	99	100	

[a] California Air Resources Board, 1987-88 study.
[b] Americans' Use of Time, 1985 national study.
[c] For exposure relevance, see activity and locations section.

Source: Robinson and Thomas, 1991.

Table 8-2. Incidence of Pica Reported by Wives of Migrant Workers of Mexican and “Anglo” Heritage

Group Exhibiting Pica	Observation of Pica		Number Observing Pica in Own or in Relative's Families
	Mexican Families		
Children	21	32	12
Pregnant Women	25	38	13
Nonpregnant Women	10	15	1
	"Anglo" Families		
Children	14	54	11
Pregnant Women	5	19	3
Nonpregnant Women	2	7	1

Source: Bruhn and Pangborn, 1971.

Table 8-3. Incidence of Geophagia Practice by Surveyed Population in Holmes Co., Mississippi[a]

Population	Total Number of Survey Population	Number of Geophagia Practitioners	Geophagia Practitioners Percentage
Women	56	32	57
Men	33	0	0
Children	115	18	16
Adolescents	25	0	0
Pregnant and Postpartum Women	142	40	28

[a] Data source: Nutrition and Perinatal Survey, Health Research Project.

Source: Vermeer and Frate, 1979.

Table 8-4. Percentage of 1991 Youth Risk Behavior Survey Respondents Reporting High Health Risk Behavior by Ethnic Group[a]

Behavior[b]	Ethnic Group			
	White	Black	Hispanic	Total
Physical fighting[c]	41.0 ± 2.6	50.6 ± 4.5	41.3 ± 4.8	42.5 ± 2.3
Weapon carrying[d]	25.1 ± 2.6	32.7 ± 3.1	25.8 ± 4.6	26.1 ± 2.1
Thought seriously about suicide	29.9 ± 1.9	22.2 ± 2.0	26.8 ± 3.7	29.0 ± 1.6
Made suicide plans	19.0 ± 1.8	14.8 ± 2.4	15.9 ± 2.5	18.6 ± 1.6
Attempted suicide	6.7 ± 1.2	6.6 ± 2.0	7.9 ± 1.8	7.3 ± 0.3
Suicide attempt required medical attention	1.6 ± 0.5	1.8 ± 0.8	1.7 ± 0.5	1.7 ± 0.3
Frequent cigarette use[e]	15.4 ± 2.5	3.1 ± 1.1	6.8 ± 1.6	12.7 ± 2.2
Smokeless tobacco use[f]	13.0 ± 2.1	2.1 ± 0.5	5.5 ± 2.8	10.5 ± 1.7
Current alcohol use[g]	52.9 ± 3.5	42.0 ± 4.8	54.3 ± 5.4	50.8 ± 3.4
Episodic heavy alcohol use[h]	34.9 ± 3.2	16.8 ± 3.8	32.2 ± 5.8	31.3 ± 3.3
Current marijuana use[i]	15.2 ± 2.8	13.5 ± 3.3	14.4 ± 4.8	14.7 ± 2.2
Current cocaine use[i]	1.7 ± 0.6	0.6 ± 0.3	3.1 ± 1.7	1.7 ± 0.5
Have had four or more sex partners	14.7 ± 1.7	43.1 ± 3.5	16.8 ± 3.3	18.7 ± 1.9
Currently sexually active[j]	67.9 ± 2.3	72.9 ±3.1	69.6 ± 3.8	69.3 ± 2.1

[a] All percentages are reported with the 95% confidence interval.
[b] High health risk behavior exhibited within the 12 months preceding the survey.
[c] Participated in at least one fight.
[d] Carried gun, knife, or club at least 1 day during the 30 days preceding the survey.
[e] Frequent user, smoking cigarettes on 20 or more of the 30 days preceding the survey.
[f] Used chewing tobacco or snuff on 1 or more of the 30 days preceding the survey.
[g] Consumed at least one drink of alcohol during the 30 days preceding the survey.
[h] Consumed five or more drinks of alcohol during the 30 days preceding the survey.
[i] Used during the 30 days preceding the survey.
[j] Has had intercourse during the 3 months preceding the survey.

Source: Kann et al., 1993.

Table 8-5. Percentage of 1991 Youth Risk Behavior Survey Respondents Reporting High Health Risk Dietary Behavior and Physical Activity by Sex, Grade, and Ethnic Group[a]

Category		Dietary Behavior and Physical Activity		
		Ate 5 or more servings of fruits and vegetables[b]	Ate no more than 2 servings of foods typically high in fat content[b]	Engaged in moderate physical activity[c]
Sex	Female	10.5 ± 1.4[c]	72.9 ± 1.6	41.2 ± 4.2
	Male	15.2 ± 1.6	57.2 ± 3.3	40.7 ± 3.3
Grade	9	14.7 ± 3.3	63.5 ± 2.4	49.3 ± 3.2
	10	14.0 ± 1.8	62.1 ± 4.3	42.9 ± 4.8
	11	12.2 ± 1.4	66.0 ± 2.5	39.4 ± 3.3
	12	10.3 ± 1.6	68.1 ± 2.7	32.4 ± 3.8
Race or Ethnicity	White	13.9 ± 1.4	64.4 ± 2.7	37.6 ± 4.2
	Black	6.8 ± 1.4	61.3 ± 3.5	49.4 ± 5.7
	Hispanic	9.7 ± 2.0	72.0 ± 2.4	49.6 ± 8.1
Total		12.9 ± 1.2	64.9 ± 2.2	40.9 ± 3.5

[a] All percentages are reported with 95% confidence intervals.
[b] Consumed during the day preceding the survey.
[c] Included walking or bicycling for at least 30 minutes during the day preceding the survey.

Source: Kann et al., 1993.

Table 8-6. Age-Adjusted Prevalence of Cigarette Smoking Among Black and White Men and Women Aged 35 to 74 Years by Percents (Minnesota Heart Survey)

Smoker Characteristic	Never Smoked	Former Smoker	Current Smoker	Ratio[a]
Men[b]				
Black	26	30	43	41
White	30	44	25	64
Black-White difference	-4	-14	18	-23
95% CL	-9, 1	-20, -8	13, 23	-30, -16
Women[d]				
Black	49	18	33	35
White	46	29	24	54
Black-White difference	3	-11	9	-19
95% CL	-2, 8	-16, -6	4, 14	-26, -12

[a] Ratio of former smokers to those who ever smoked (value out of 100%)
[b] N - 459 Black; N = 76 White
[c] CL = confidence limits
[d] N = 593 Black; N = 811 White

NOTE: All values out of 100 percent.

Source: Hahn et al., 1990.

Table 8-7. Age- and Education-Specific Prevalence of Current Cigarette Smoking Among Black and White Men and Women (Minnesota Heart Survey)

Characteristic	Population							
	High School or Less				More Than High School			
	Men		Women		Men		Women	
	35-54 years	55-74 years	35-54 years	55-74 years	35-54 years	55-74 years	35-54 years	55-74 years
Black								
Percent	51	43	41	29	41	32	32	24
Number	138	105	184	154	147	69	176	68
White								
Percent	35	26	27	33	23	23	23	12
Number	138	119	205	166	371	135	332	108
Black-White Difference								
Percent	16	17	14	-4	18	9	9	12
95 Percent CL	4, 28	5, 29	5, 23	-14, 6	9, 27	-4, 22	1, 17	1, 23

Note: CL = confidence limits.

Source: Hahn et al., 1990.

Table 8-8. Current Smokers' Smoking Cessation Behaviors in Percents (Minnesota Heart Survey)

	Behavior									
	Changes Attempted in Last Year					Changes Anticipated in Next Year				
	Tried to reduce no. of cigarettes	Tried brand with lower tar or nicotine	Tried to quit	Tried to quit and able to stay off cigarettes a week or more	Quit completely	Try to quit	Reduce no. of cigarettes per day	Switch to brand with lower tar or nicotine	No change anticipated	Other
Men[a]										
Black	70	29	52	25	36	14	17	2	32	0
White	76	33	63	30	47	21	8	0	24	0
Women[b]										
Black	73	37	56	27	35	29	17	2	26	1
White	80	37	58	22	38	17	18	0	27	1

[a] N = 197 Black, N = 195 White
[b] N - 195 Black, N - 199 White

Note: Percents may not add to 100 because of rounding.

Source: Hahn et al., 1990.

Table 8-9. Rates of Smoking Initiation by Sex, Age at Smoking Onset, and Race/Ethnicity

Race/Ethnicity	Initiation Rate (%)[a]				
	Males		Females		Total
	≤18 Years	19-35 Years	≤18 Years	19-35 Years	
White	39	15	38	14	47
Black	30[b]	22[b]	24[c]	15	40[d]
Mexican American	47[b]	19	21[c]	14	45
Cuban American	43	17	28[c]	15	45
Puerto Rican American	48[b]	12	38[c]	17	51

[a] Initiation rate is defined as the percentage of persons who started to smoke in an age interval among persons who never smoked in that age interval.
[b] Initiation rate is significantly different from that among whites of the same sex and age interval.
[c] Initiation rate among women is significantly less than that among men of the same race/ethnicity and age interval.
[d] Initiation rate is significantly less than that among whites.

Source: Escobedo et al., 1990.

Table 8-10. Rates of Smoking Initiation by Age at Smoking Onset, Race/Ethnicity,and Educational Attainment

Race/Ethnicity and Age at Smoking Onset	Initiation Rate, %[a]		
	≥High School Education	< High School Education	Rate Ratio (95%) Confidence Interval[b]
White			
≤11 years	1.4	6.6	4.9 (3.5, 6.8)
12-18 years	33.4	64.6	1.9 (1.8, 2.0)
19-35 years	14.4	15.9	1.1 (0.9, 1.4)
Black			
≤11 years	0.7	2.5	3.5 (1.5, 8.3)
12-18 years	22.3	41.1	1.8 (1.6, 2.2)
19-35 years	18.6	15.2	0.8 (0.6, 1.2)
Hispanic			
≤11 years	2.0	2.5	1.3 (0.7, 2.2)
12-18 years	28.3	40.6	1.4 (1.2, 1.7)
19-35 years	14.0	19.3	1.4 (1.1, 1.7)

[a] Initiation rate is defined as the percentage of persons who started to smoke in an age interval among persons who never smoked in that age interval.

[b] Rate ratio is the initiation rate among persons with less than a high school education divided by the initiation rate among persons with a high school education or more.

Source: Escobedo et al., 1990.

Table 8-11. Use of Selected Drugs by Age of User: 1993

[Percent of Total Population]

Substance and Age Group	Total[a]	Sex		Race/Ethnicity			Region			
		Male	Female	White[b]	Black[b]	Hispanic	Northeast	Midwest	South	West
CURRENT USERS										
Cigarettes: Total	24.2	26.2	22.3	24.7	23.4	21.2	25.4	24.3	24.3	22.7
12-17 years	9.6	9.3	10.0	11.0	4.0	8.4	10.5	11.1	8.4	9.0
18-25 years	29.0	30.9	27.2	32.7	16.3	25.5	32.9	26.9	29.7	26.7
26-34 years	30.1	31.4	28.8	31.1	30.5	24.8	30.6	30.7	31.8	26.2
35 years and older	23.8	26.7	21.3	23.4	28.0	21.5	24.5	24.5	23.3	22.9
Alcohol: Total	49.6	57.4	42.5	52.7	37.6	45.6	54.1	48.6	44.9	54.2
12-17 years	18.0	18.3	17.7	19.2	13.1	17.5	20.4	19.5	15.4	18.1
18-25 years	59.3	64.5	54.3	65.3	45.0	49.9	61.0	61.2	55.6	62.4
26-34 years	62.8	70.1	55.7	66.3	54.5	56.0	65.0	64.7	58.9	64.6
35 years and older	48.8	59.1	39.9	51.5	35.5	47.1	54.7	47.0	42.8	55.1
Marijuana: Total	4.3	6.0	2.8	4.2	5.6	4.7	4.2	3.5	4.3	5.5
12-17 years	4.9	5.5	4.3	4.5	5.8	6.7	5.0	5.0	3.7	6.7
18-25 years	11.1	16.5	5.7	12.5	9.2	7.8	10.2	10.2	11.2	10.9
26-34 years	6.7	9.0	4.5	6.8	9.9	4.1	5.2	5.2	6.1	8.7
35 years and older	1.9	2.5	1.4	1.7	2.7	2.9	1.5	1.5	2.1	2.7
Cocaine: Total	0.6	0.9	0.4	0.5	1.3	1.1	0.7	0.5	0.6	0.8
12-17 years	0.4	0.4	0.4	0.3	0.3	1.0	0.2	0.3	0.4	0.6
18-25 years	1.5	1.7	1.4	1.6	1.3	2.1	1.9	0.5	1.5	2.3
26-34 years	1.0	1.6	0.4	0.9	1.8	1.1	1.3	0.8	0.9	1.0
35 years and older	0.4	0.6	0.2	0.2	1.4	0.7	0.3	0.5	0.3	0.4
Smokeless tobacco: Total	2.9	5.9	0.2	3.5	1.5	1.1	2.2	3.0	3.9	2.0
12-17 years	2.0	3.9	-.-[c]	2.7	0.2	0.9	0.9	2.2	2.9	1.1
18-25 years	6.4	12.7	0.2	8.5	1.1	1.9	4.2	6.9	7.7	5.5
26-34 years	4.4	8.9	0.1	5.9	0.2	1.0	1.6	4.2	6.6	3.8
35 years and older	1.9	3.7	0.3	1.9	2.5	0.8	2.3	2.0	2.2	0.6
EVER USED										
Crack: Total	1.8	2.6	1.1	1.6	3.4	2.0	1.7	1.2	1.7	3.0
12-17 years	0.4	0.2	0.5	0.2	0.3	1.2	0.2	0.1	0.4	0.7
18-25 years	3.5	4.6	2.5	4.0	2.1	3.5	3.3	2.4	3.5	4.9
26-34 years	4.2	5.9	2.5	3.8	7.2	3.2	3.5	3.0	4.4	5.7
35 years and older	0.9	1.5	0.4	0.7	3.3	1.1	1.1	0.6	0.5	1.9
Inhalants: Total	5.3	7.4	3.3	5.8	2.9	4.9	4.3	5.1	4.7	7.3
12-17 years	5.9	5.5	6.3	6.5	1.7	7.7	5.7	4.7	4.6	9.7
18-25 years	9.9	12.4	7.4	12.4	2.0	7.2	10.4	11.5	8.3	10.4
26-34 years	9.4	12.9	6.1	11.5	4.0	5.0	7.7	8.9	10.1	10.5
35 years and older	2.8	4.7	1.1	2.8	3.1	3.0	1.9	2.9	2.1	4.8
Hallucinogens: Total	8.7	11.8	5.9	10.1	3.0	5.9	7.6	7.5	7.6	13.2
12-17 years	2.9	3.4	2.4	3.1	0.2	4.1	2.0	2.0	2.6	5.5
18-25 years	12.5	15.2	9.9	15.8	1.9	7.8	10.6	12.5	11.2	16.4
26-34 years	15.9	19.7	12.2	19.6	5.3	6.7	13.7	14.1	15.1	10.8
35 years and older	6.6	10.0	3.7	7.3	3.1	5.1	6.1	5.8	5.1	11.01
Stimulants: Total[d]	6.0	7.4	4.8	6.9	3.0	3.9	6.2	4.4	5.2	9.3
12-17 years	2.1	2.0	2.2	2.5	0.2	2.2	0.9	2.1	2.0	3.1
18-25 years	6.4	7.2	5.7	8.0	1.3	4.4	4.9	5.3	4.6	11.8
26-34 years	10.5	12.1	8.9	12.7	3.2	5.8	7.8	9.7	9.0	16.1
35 years and older	5.3	7.0	3.8	5.7	4.2	3.3	6.8	3.1	4.8	7.4
Sedatives: Total[d]	3.4	4.1	2.8	3.6	2.2	2.2	2.8	2.0	3.3	6.1
12-17 years	1.4	1.2	1.6	1.4	0.9	2.2	1.2	0.6	1.5	2.4
18-25 years	2.7	3.4	2.0	3.1	1.5	2.4	2.2	1.4	2.8	4.3
26-34 years	4.8	5.5	4.0	5.9	1.8	2.2	3.7	4.2	5.0	5.9
35 years and older	3.6	4.4	4.4	3.5	2.9	2.1	3.0	1.8	3.1	7.2

(continued)

Table 8-11. Use of Selected Drugs, by Age of User: 1993 (continued)
[Percent of Total Population]

Substance and Age Group	Total[a]	Sex		Race/Ethnicity			Region			
		Male	Female	White[b]	Black[b]	Hispanic	Northeast	Midwest	South	West
Tranquilizers: Total[d]	4.6	5.0	4.1	5.2	2.3	2.8	3.7	4.3	4.2	6.3
12-17 years	1.2	1.0	1.4	1.4	0.4	1.1	1.0	0.4	1.6	1.9
18-25 years	5.4	45.8	4.9	7.0	1.2	2.4	4.0	4.3	6.2	6.2
26-34 years	7.1	8.0	6.2	8.4	3.0	3.6	5.3	6.9	7.1	8.9
35 years and older	4.2	4.6	3.8	4.5	2.9	3.0	3.6	4.4	3.2	6.3
Analgesics: Total[d]	5.8	6.7	4.9	6.3	3.5	3.9	5.3	4.3	5.3	8.8
12-17 years	3.7	2.8	4.5	4.1	2.7	3.2	3.7	3.0	3.3	5.1
18-25 years	8.7	9.3	8.1	10.6	4.6	4.4	7.6	7.8	7.4	12.5
26-34 years	9.0	11.1	7.0	10.3	3.4	5.9	7.0	7.4	8.0	14.0
35 years and older	4.4	5.4	3.6	4.6	3.5	2.8	4.5	3.0	4.2	6.7

[a] Includes other races, not shown separately.
[b] Non-Hispanic.
[c] Low precision; no estimate reported.
[d] Nonmedical use; does not include over-the-counter drugs.

Source: Bureau of the Census, 1995.

Table 8-12. Alcoholism Mortality Rates for American Indians and Alaska Natives by Age and Sex[a]

Age Group	Both Sexes	Male	Female
Under 5 years	--	--	--
5-14 years	--	--	--
15-24 years	4.8	6.5	3.1
25-34 years	27.6	34.3	21.2
35-44 years	6.15	84.9	39.7
45-54 years	95.6	125.7	68.0
55-64 years	97.3	126.9	71.7
65-74 years	76.4	123.9	38.8
75-84 years	34.4	64.0	14.4
85 years+	24.5	33.4	19.4
	U.S. ALL RACES		
Under 5 years	0.0	0.0	0.0
5-14 years	0.0	0.0	--
15-24 years	0.3	0.5	0.1
25-34 years	2.7	3.9	1.6
35-44 years	10.1	15.6	4.7
45-54 years	18.3	28.4	8.7
55-64 years	23.7	37.9	11.2
65-74 years	19.3	33.4	8.4
75-84 years	10.8	21.5	4.4
85 years+	3.8	10.2	1.3
	U.S. WHITE		
Under 5 years	0.0	--	0.0
5-14 years	0.0	0.0	--
15-24 years	0.3	0.5	0.1
25-34 years	2.0	3.0	1.1
35-44 years	7.5	11.8	3.3
45-54 years	14.7	22.9	6.8
55-64 years	21.4	34.1	10.0
65-74 years	18.2	31.7	7.9
75-84 years	10.1	20.3	4.2
85 years+	3.6	9.8	1.1

[a] American Indians and Alaska natives, IHS service area, 1987-1989, and U.S. all races and white populations, 1988 (rate per 100,000 population).

Note: "--" Represents zero. 0.0 rounds to zero.

Source: U.S. DHHS, 1993.

Table 8-13. Drug-Related Mortality Rates for American Indians and Alaska Natives by Age and Sex[a]

Age Group	Both Sexes	Male	Female
Under 5 years	2.2	2.2	2.2
5-14 years	0.1	-	0.3
15-24 years	4.8	4.9	4.7
25-34 years	7.2	8.6	5.8
35-44 years	6.1	5.8	6.3
45-54 years	4.9	3.9	5.7
55-64 years	5.4	3.5	7.1
65-74 years	2.5	1.9	3.0
75-84 years	1.7	-	2.9
85 years+	-	-	-
	U.S. ALL RACES		
Under 5 years	0.2	0.2	0.1
5-14 years	0.1	0.1	0.1
15-24 years	2.4	2.7	2.1
25-34 years	7.7	11.0	4.4
35-44 years	8.0	11.3	4.8
45-54 years	8.0	4.9	3.9
55-64 years	3.3	3.3	3.3
65-74 years	2.8	2.6	2.9
75-84 years	4.1	4.3	3.9
85 years+	6.0	6.6	5.8
	U.S. WHITE		
Under 5 years	0.1	0.1	0.1
5-14 years	0.1	0.1	0.1
15-24 years	2.3	2.8	1.8
25-34 years	6.9	9.9	3.9
35-44 years	6.5	8.9	4.1
45-54 years	4.0	4.0	4.1
55-64 years	3.2	2.9	3.4
65-74 years	2.8	2.5	3.0
75-84 years	4.2	4.4	4.1
85 years+	6.0	6.8	5.7

[a] American Indians and Alaska natives, IHS service area, 1987-1989, and U.S. all races and white populations, 1988 (rate per 100,000 population).

Note: "-" Represents zero. 0.0 rounds to zero.

Source: U.S. DHHS, 1993.

9. DRINKING WATER AND FOOD

The ingestion of contaminated food and water is a potential source of human exposure to toxic compounds. This section focuses on the available data for populations consuming water from specific sources, populations who breastfeed, and populations who consume certain foods.

9.1. POPULATION CONSUMING DRINKING WATER BY SOURCE OF WATER SUPPLY

The consumption of contaminated drinking water is a potential source of exposure to toxic compounds. Contaminants may be present in drinking water before, during, and after treatment. The majority of public water systems treat their water as necessary to ensure that the water is safe to drink. Contaminants may differ depending on the source of water supply (i.e., surface water or groundwater).

EPA established a National Public Water Systems Supervision Program in 1974 under the authority of the Safe Drinking Water Act. Table 9-1 presents data for populations served from public water systems for 1994 (U.S. EPA, 1995). The table presents these data for the number of systems and the population served by community water systems, nontransient noncommunity water systems, and transient noncommunity water systems. The data also are presented by the source of water (i.e., ground or surface). Table 9-2 presents the same type of data for 1993 (U.S. EPA, 1994).

In 1994, a total of 186,822 water systems in 50 States, on Native American lands, and in U.S. territories were classified as public water systems. The largest percentage of the population is served by community water systems (Table 9-1).

9.2. POPULATION USING BOTTLED WATER

Through the National Human Activity Pattern Survey (NHAPS) (Tsang and Klepeis, 1996), information was collected for the general population on the duration and frequency of selected activities and the time spent in selected microenvironments via 24-hour diaries. More than 9,000 individuals from 48 contiguous States participated in NHAPS. The survey was

conducted between October 1992 and September 1994. Participants were selected using a Random Digit Dial (RDD) method and Computer Assisted Telephone Interviewing (CATI). Individuals were interviewed to categorize their 24-hour routines (diaries) and/or answer follow-up exposure questions related to exposure events. The response rate was 63 percent, overall. Data were collected for a maximum of 91 different activities based on selected socioeconomic (gender, age, race, education, etc.) and geographic (census region, State, etc.) factors and time/season (day of week, month) and weighted to ensure that results were representative of the U.S. population. The weighted sample matches the 1990 U.S. census population for each gender, age group, census region, and the day-of-week and seasonal responses are equally distributed (Tsang and Klepeis, 1996). As part of the survey, data also were collected for the source of water used in the household and for the population in the survey who used bottled water for drinking water. These data are presented in Tables 9-3 and 9-4.

9.3. POPULATION BREASTFEEDING

Breast milk is a potential source of exposure to toxic chemicals among nursing infants. Some chemical compounds accumulate in fatty tissues and may be transferred to breastfed infants in the lipid portion of breast milk. In many cases, nursing infants obtain most of their dietary caloric and fluid intakes from breast milk, thus they have high risk of exposure to contaminants in breast milk. Information on the volume of breast milk consumed over a period of time is required to estimate the potential breast milk contaminant dose in infants. (See *Exposure Factors Handbook* (U.S. EPA, 1997), Section 14.) In addition, identification of the population who breastfeeds is needed. The available data for the percentage of the population who breastfeeds are presented below.

The National Academy of Sciences (NAS) Institute of Medicine reviewed the published literature to determine the incidence of breastfeeding in the United States by different demographic characteristics. Statistics on breastfeeding in the United States were obtained from a 1989 survey entitled, “Nutrition During Lactation” (NAS, 1991).

Results from the survey (NAS, 1991) indicated that 52.2% of women who delivered babies in 1989 breastfed their newborn infants. The NAS report also revealed that 19.6% of these infants were still breastfed at the age of 5 to 6 months. The data presented in Table 9-5 show the percentage of mothers who breastfeed among whites, blacks, and Hispanics grouped by marital status, education, maternal age, employment, family income, and U.S. regions. The data show that of the three racial/ethnic groups, more white mothers breastfed infants (58.5%), while the lowest percentage were black mothers (23%), followed by Hispanic mothers at 48.4%. According to the data in Table 9-5, breastfeeding of newborns and at 5 to 6 months is directly related to family income (i.e., the higher the income, the higher the rate of breastfeeding in all three ethnic groups). The highest percentage of mothers who breastfeed were found in the Mountain and Pacific regions for all racial/ethnic groups. A conservative estimate for the breastfed population could be developed by applying these percentages to the number of live births in a year, assuming all of the live births will have a lifespan of at least 1 year. This estimate would capture breast-fed infants up to 12 months. The Bureau of Census provide vital statistics data by year, race, and location (State, Region) in the yearly statistical abstracts publications. Breast milk ingestion rates are presented in *Exposure Factors Handbook*, Section 13.

9.4. POPULATION CONSUMING SELECTED FOODS/FOOD GROUPS

Ingestion of contaminated foods is a pathway of human exposure to toxic chemicals. Fruits and vegetables and grain products may become contaminated, for example, from deposition of ambient pollutants in the air, irrigation waters, soil additives, pesticides, and fertilizers. Fish and shellfish may become contaminated from pollutants in the surface waters and sediments. Meat, poultry, and dairy products can become contaminated if the animals are exposed to contaminated media such as soil, water, or feed crops.

EPA analyzed 3 years (1989, 1990, and 1991) of data from the U.S. Department of Agriculture's Continuing Survey of Food Intakes by Individuals to generate distributions of intake rates for various (1) fruit and vegetable items/groups; (2) grain products; (3) meat, poultry, and dairy products; and (4) fish and shellfish. As part of this analysis, the percentages of populations consuming the various foods were estimated. These populations are presented with the

corresponding intake tables in the *Exposure Factors Handbook* (U.S. EPA, 1997). A discussion of how the analyses were performed and the caveats also are presented in the handbook in their respective sections. Information on various food groups can be found in the *Exposure Factors Handbook* (U.S. EPA, 1997) as follows:

- Fruits and vegetables: Section 9, Tables 9-3 to 9-11;
- Fish and shellfish: Section 10, Tables 10-7 to 10-44;
- Meat, poultry, and dairy products: Section 11, Tables 11-1 to 11-4;
- Grain products, Chapter 12, Tables 12-1 to 12-10; and
- Homeproduced food items: Section 13, Tables 13-8 to 13-70.

9.5. REFERENCES

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Table 9-1. Population Served by Public Water Systems (PWS) in the United States: 1994

Systems	Source						
	Surface Water		Ground Water		Total		Percent of Total PWS
CWS [a]							
No. of Systems	10,625	(19%)	46,122	(3%)	56,747	(100%)	30%
Population Served	152,491,000	(63%)	90,558,000	(37%)	243,049,000	(100%)	NA
NTNCWS [b]							
No. of Systems	766	(3%)	22,873	(97%)	23,639	(100%)	13%
Population Served	596,000	(10%)	5,645,000	(90%)	6,241,000	(100%)	NA
TNCWS [c]							
No. of Systems	2,099	(2%)	104,337	(98%)	106,436	(100%)	57%
Population Served	900,000	(7%)	12,709,000	(93%)	13,609,000	(100%)	NA
ALL PWS [d,e]							
No. of Systems	13,490	(7%)	173,332	(93%)	186,822	(100%)	100%

a CWS--Community water systems - Provides drinking water primarily to residential areas; provides water to the same population year round.
b NTNCWS--Nontransient noncommunity water systems. A PWS that regularly serves at least 25 of the same people at least 6 months of the year; includes places such as schools, factories, and hospitals that have their own water supplies.
c TNCWS--Transient noncommunity water systems. For transitory customers in nonresidential areas such as campgrounds, motels, and gas stations.
d Includes systems that obtain their drinking water from other PWS.
e Because an individual can be served by more than one category of PWS, the total population served by all PWS is not cumulative and therefore cannot be determined.

Note: NA = Not applicable.
(%) = Percent of total systems in that specific system category or percent of total population in a system category (i.e., 10,625 CWS is 19% of 56,747 total systems and 152,491,000 is 63% of total population served (243,049,000 people) by CWS.

Source: U.S. EPA, 1995.

Table 9-2. Population Served by Public Water Systems (PWS) in the United States: 1993

Systems	Source						
	Surface Water		Ground Water		Total		Percent of Total PWS
CWS [a]							
No. of Systems	10,681	(19%)	46,880	(81%)	56,561	(100%)	30%
Population Served	148,686,000	(61%)	93,995,000	(39%)	242,679,000	(100%)	NA
NTNCWS [b]							
No. of Systems	771	(3%)	23,221	(97%)	23,992	(100%)	13%
Population Served	625,000	(10%)	5,690,000	(90%)	6,315,000	(100%)	NA
TNCWS [c]							
No. of Systems	2,228	(29%)	104,488	(98%)	109,714	(100%)	57%
Population Served	1,157,000	(7%)	14,271,000	(93%)	15,428,000	(100%)	NA
ALL PWS [d,e]							
No. of Systems	13,678	(7%)	173,589	(93%)	191,267	(100%)	100%

a CWS--Community water systems. Provides drinking water primarily to residential areas; provides water to the same population year round.
b NTNCWS--Nontransient noncommunity water systems. A PWS that regularly serves at least 25 of the same people at least 6 months of the year; includes places such as schools, factories, and hospitals that have their own water supplies.
c TNCWS-Transient noncommunity water systems. For transitory customers in nonresidential areas such as campgrounds, motels and gas stations.
d Includes systems that obtain their drinking water from other PWS.
e Because an individual can be served by more than one category of PWS, the total population served by all PWS is not cumulative and therefore cannot be determined.

Note: NA = Not applicable.
(%) = Percent of total systems in that specific system category or percent of total population in a system category (i.e., 10,681 CWS is 19% of 56,561 total systems, and 148,686,000 is 61% of total population served (242,679,000 people) by CWS.

Source: U.S. EPA, 1994.

Table 9-3. Number of Respondents Who Obtained Water From Public and Private Water Sources for General Household Use

	Total N	Public Water	Private Well	Other Source	DK
Overall	4663	3777	719	121	46
Gender					
Male	2163	1747	338	62	16
Female	2498	2029	380	59	30
Refused	2	1	1	--	--
Age (years)					
--	84	73	7	4	--
1-4	263	211	38	12	2
5-11	348	285	52	6	5
12-17	326	251	68	5	2
18-64	2972	2411	461	71	29
> 64		670	546	93	23
Race / Ethnicity					
White	3774	2990	659	96	29
Black	463	410	29	14	10
Asian	77	72	2	2	1
Some other	96	85	7	2	2
Hispanic	193	172	13	5	3
Refused	60	48	9	2	1
Hispanic					
No	4244	3417	676	110	41
Yes	347	304	31	9	3
DK	26	18	6	1	1
Refused	46	38	6	1	1
Employment					
--	926	738	157	22	9
Full time	2017	1641	304	56	16
Part time	379	315	53	7	4
Not Employed	1309	1057	200	35	17
Refused	32	26	5	1	--
Education					
--	1021	812	174	26	9
High school	399	292	86	13	8
High school graduate	1253	981	228	21	12
< College	895	733	131	23	8
College graduate	650	571	60	14	5
Postgraduate	445	388	40	13	4
Census Region[a]					
Northwest	1048	822	187	31	8
Midwest	1036	822	179	20	15
South	1601	1273	276	38	14
West	978	860	77	32	9
Day of Week					
Weekday	3156	2552	489	77	38
Weekend	1507	1225	230	44	8

(continued)

Table 9-3. Number of Respondents Who Obtained Water From Public and Private Water Sources for General Household Use (continued)

	Total N	Public Water	Private Well	Other Source	DK
Season					
Winter	1264	983	224	42	15
Spring	1181	973	171	26	11
Summer	1275	1057	174	31	13
Falle	943	764	150	22	7
Asthma					
No	4287	3477	652	117	41
Yes	341	274	59	3	5
DK	35	26	8	1	--
Angina					
No	4500	3646	695	115	44
Yes	125	100	18	5	2
DK	38	31	6	1	--
Bronchitis / Emphysema					
No	4424	3582	683	115	44
Yes	203	167	30	4	2
DK	36	28	6	2	--

[a] Composition of Census Regions is provided in Sec. 2.4.

Note: N = Number of respondents; DK = don't know; Refused = respondent refused to answer; -- = missing data.

Source: Tsang and Klepeis, 1996.

Table 9-4. Number of Respondents Who Use Bottled Water for Drinking Water in the Home

	Total N	Respondents					
		N	%	N	%	N	%
Overall	4663	2650	56.8	2006	43.0	7	0.2
Gender							
*	2	2	100.0	*	*	*	*
Male	2163	1241	57.4	918	42.4	4	*
Female	2498	1407	56.3	1088	43.6	3	*
Age (years)							
*	84	46	54.8	38	45.2	*	*
1-4	263	126	47.9	137	52.1	*	*
5-11	348	193	55.5	155	44.5	*	*
12-17	326	185	56.7	141	43.3	*	*
18-64	2972	1588	53.4	1380	46.4	4	0.1
> 64	670	512	76.4`	155	23.1	3	0.4
Race / Ethnicity							
*	60	29	48.3	31	51.7	*	*
White	3774	2259	59.9	1508	40.0	7	0.2
Black	463	186	40.2	277	59.8	*	*
Asian	77	39	50.6	38	49.4	*	*
Some other	96	45	46.9	51	53.1	*	*
Hispanic	193	92	47.7	101	52.3	*	*
Hispanic							
*	46	22	47.8	24	52.2	*	*
No	4244	2438	57.5	1798	42.4	7	0.2
Yes	348	171	49.1	177	50.9	*	*
DK	26	19	73.1	7	26.9	*	*
Employment							
*	958	512	53.4	446	46.6	*	*
Full Time	2017	1062	52.7	952	47.2	3	0.1
Part Time	379	211	55.7	168	44.3	*	*
Not Employed	1309	865	66.1	440	33.6	4	0.3
Education							
High School	1021	552	54.1	469	45.9	*	*
High School	399	272	68.2	127	31.8	*	*
Graduate	1253	741	59.1	507	40.5	5	0.4
< College	895	485	54.2	409	45.7	1	0.1
College Graduate	650	354	54.5	296	45.5	*	*
Postgraduate	445	246	55.3	198	44.5	1	0.2
Census Region							
Northeast	1048	563	53.7	483	46.1	2	0.2
Midwest	1036	654	63.1	381	36.8	1	0.1
South	1601	916	57.2	682	42.6	3	0.2
West	978	517	52.9	460	47.0	1	0.1
Day of Week							
Weekday	3156	1775	56.2	1375	43.6	6	0.2
Weekend	1507	875	58.1	631	41.9	1	0.1

Table 9-4. Number of Respondents Who Use Bottled Water for Drinking Water in the Home (continued)

	Total N	Respondents					
		N	%	N	%	N	%
Overall	4663	2650	56.8	2006	43.0	7	0.2
						(continued)	
Season							
Winter	1264	715	56.6	547	43.3	2	0.2
Spring	1181	671	56.8	508	43.0	2	0.2
Summer	1275	692	54.3	582	45.6	1	0.1
Fall	943	572	60.7	369	39.1	2	0.2
Asthma							
No	4287	2454	57.2	1826	42.6	7	0.2
Yes	341	180	52.8	161	47.2	*	*
DK	35	16	45.7	19	54.3	*	*
Angina							
No	4500	2542	56.5	1952	43.4	6	0.1
Yes	125	87	69.6	37	29.6	1	0.8
DK	38	21	55.3	17	44.7	*	*
Bronchitis / Emphysema							
No	4424	2518	56.9	1899	42.9	7	0.2
Yes	203	113	55.7	90	44.3	*	*
DK	36	19	52.8	17	47.2	*	*

Note: N = Number of respondents; * = missing data; DK = don't know.

Source: Tsang and Klepeis, 1996.

Table 9-5. Percentage of Mothers Breast Feeding Newborn Infants in the Hospital and Infants at 5 or 6 Months of Age in the U.S. in 1989 [a] by Ethnic Background and Selected Demographic Variables [b]

Category	Total		White		Black		Hispanic[c]	
	Newborns	5-6 Mo Infants	Newborns	5-6 Mo Infants	Newborns	5-6 Mo Infants	Newborns	5-6 Mo Infants
All mothers	52.2	19.6	58.5	22.7	23.0	7.0	48.4	15.0
Parity								
Primiparous	52.6	16.6	58.3	18.9	23.1	5.9	49.9	13.2
Multiparous	51.7	22.7	58.7	26.8	23.0	7.9	47.2	16.5
Marital status								
Married	59.8	24.0	61.9	25.3	35.8	12.3	55.3	18.8
Unmarried	30.8	7.7	40.3	9.8	17.2	4.6	37.5	8.6
Maternal age								
< 20 yr	30.2	6.2	36.8	7.2	13.5	3.6	35.3	6.9
20-24 yr	45.2	12.7	50.8	14.5	19.4	4.7	46.9	12.6
25-29 yr	58.8	22.9	63.1	25.0	29.9	9.4	56.2	19.5
30-34 yr	65.5	31.4	70.1	34.8	35.4	13.6	57.6	23.4
≥35 yr	66.5	36.2	71.9	40.5	35.6	14.3	53.9	24.4
Maternal education								
No college	42.1	13.4	48.3	15.6	17.6	5.5	42.6	12.2
College[d]	70.7	31.1	74.7	34.1	41.1	12.2	66.5	23.4
Family income								
< $7,000	28.8	7.9	36.7	9.4	14.5	4.3	35.3	10.3
$7,000-$14,999	44.0	13.5	49.0	15.2	23.5	7.3	47.2	13.0
$15,000-$24,999	54.7	20.4	57.7	22.3	31.7	8.7	52.6	16.5
≥$25,000	66.3	27.6	67.8	28.7	42.8	14.5	65.4	23.0
Maternal employment								
Full time	50.8	10.2	54.8	10.8	30.6	6.9	50.4	9.5
Part time	59.4	23.0	63.8	25.5	26.0	6.6	59.4	17.7
Not employed	51.0	23.1	58.7	27.5	19.3	7.2	46.0	16.7
U.S. Census Region[e]								
New England	52.2	20.3	53.2	21.4	35.6	5.0	47.6	14.9
Middle Atlantic	47.4	18.4	52.4	21.8	30.6	9.7	41.4	10.8
East North Central	47.6	18.1	53.2	20.7	21.0	7.2	46.2	12.6
West North Central	55.9	19.9	58.2	20.7	27.7	7.9	50.8	22.8
South Atlantic	43.8	14.8	53.8	18.7	19.6	5.7	48.0	13.8
East South Central	37.9	12.4	45.1	15.0	14.2	3.7	23.5	5.0
West South Central	46.0	14.7	56.2	18.4	14.5	3.8	39.2	11.4
Mountain	70.2	30.4	74.9	33.0	31.5	11.0	53.9	18.2
Pacific	70.3	28.7	76.7	33.4	43.9	15.0	58.5	19.7

[a] Mothers were surveyed when their infants were 6 months of age. Mothers were asked to recall the method of feeding the infant when in the hospital, at age 1 week, at months 1 through 5, and on the day preceding completion of the survey. Numbers in the columns labeled "5-6 Mo Infants" are an average of the 5-month and previous-day responses.

[b] Based on data from Ross Laboratories.

[c] Hispanic is not exclusive of white or black.

[d] College includes all women who reported completing at least 1 year of college.

[e] States within each census region are listed in text sec. 2.4.

Source: NAS, 1991.

10. SOCIOECONOMICS

A variety of socioeconomic and demographic factors (such as income and poverty level) may be associated with increased exposure to environmental contaminants. A growing concern exists among physicians, researchers, and social scientists that people with low incomes and who reside in minority neighborhoods are more likely than other Americans to suffer adverse health effects from pollution and other environmental contaminants (Hearn, 1993). Other areas of concern for increased risk are hazardous occupations, unsatisfactory diets, and inadequate education.

10.1. POVERTY THRESHOLD ESTIMATES

The U.S. Bureau of the Census (1996) has estimated the poverty thresholds for 1995 in its publication, *Preliminary Estimates of Poverty Thresholds in 1995*. These data, presented in Table 10-1, are based on size of family unit and income. The Census Bureau data are accessible on the World Wide Web via the Internet. The U.S. Census Bureau's home page (Internet address: *www.census.gov*) contains information on the kinds of data available and instructions on how to conduct data searches, extract data, and download data files. Section 11 contains information on how to access U.S. Government data on the Internet.

10.2. INCOME LEVEL

Low income negatively affects many aspects of an individual's life, including housing, unemployment, diet, and access to education and medical care. The combined effects of living on a low income contribute to an increased risk of exposure to environmental pollutants. For a variety of reasons, often a greater percentage of minorities in the United States are living in poverty than are whites--the majority population.

U.S. Bureau of the Census data indicate that in 1990 the percentage of persons in the United States living below the poverty level (defined by the Census Bureau as $13,359 per year in 1992 for a nonfarm family of four) was 13.5% for all races, 10.7% for whites, 31.9% for blacks, and 28.1% for Hispanics (U.S. Bureau of the Census, 1992).

10.2.1. Digest of Education Statistics (U.S. Department of Education, 1995)

The U.S. Department of Education (1995) presented information on poverty rates and income by State for 1990 and 1993. These data are based on the U.S. Bureau of the Census Current Population Reports. Data for household income and poverty rates by State are presented

in Table 10-2. Poverty status of persons, families, and children under 18, by race/ethnicity are presented in Table 10-3.

10.2.2. March Current Population Survey (U.S. Bureau of the Census, 1995b)

The U.S. Bureau of the Census (1995) characterized the poverty status of persons in the United States by gender. Data are presented for the years 1966 to 1994 in Table 10-4.

10.2.3. Trends in Indian Health (U.S. Department of Health and Human Services, 1993)

A more complete economic profile of ethnic groups in the United States, including level of education attained, rate of unemployment, household income, and percentage of age groups living below the poverty level, is presented in Table 10-5. This study was conducted to specifically evaluate the Native American and Alaska Native populations. However, data for other population subgroups were evaluated for comparison purposes. The data in Table 10-5 indicate that blacks, Hispanics, and Native Americans have a greater percentage of their populations living below the poverty level than do whites. Most significantly, for blacks, Hispanics, and Native Americans, approximately one-third to almost one-half of the total population under the age of 18 are living in poverty (U.S. DHHS, 1993). Table 10-5 also indicates that the percent of unemployed blacks, Hispanics, Native Americans, and Alaska Natives are significantly higher than the unemployment levels for whites and higher than for all races (U.S. DHHS, 1993).

10.2.4. Inner-City Asthma--*The Epidemiology of an Emerging U.S. Public Health Concern* (Weiss et al, 1992)

Weiss et al. (1992) addressed the problems lower income groups often experience in obtaining consistent medical care. The authors suggest that this factor contributes to the increased severity of childhood asthma in inner-city children. Lower income inner-city residents often lack transportation needed to get to medical facilities, and once there, they may experience communication problems with the medical providers (Weiss et al., 1992). In addition, language barriers and lack of education can result in an inability to follow instructions necessary to ensure recovery from an illness or chronic medical condition (Weiss et al., 1992).

10.2.5. Nutrition Intakes of Individuals from Food-Insufficient Households in the United States (Rose and Oliveira, 1997)

Low income can affect the diet by limiting the selection of foods purchased. Recent efforts by the U.S. Department of Agriculture (USDA) and U.S. Department of Health and Human Services have focused on measuring the prevalence of hunger and food insecurity in the United States (Rose and Oliveira, 1997). The USDA analyzed the diets of preschoolers, adult women, and the elderly with 24-hour recall data from the 1989-1991 Continuing Survey of Food Intake by Individuals (CSFII). The study estimated the extent to which individuals in food-insufficient households were likely to have low intakes of nutrients (Rose and Oliveira, 1997). Dietary intake is affected by factors that are social, cultural, and economic. The study considered variables such as race and ethnicity, household size, and the economic status of the household. Table 10-6 presents descriptive statistics on selected socioeconomic characteristics. It shows that household income and education level of the household head were lower for individuals from the food-insufficient households. Table 10-7 presents weighted means nutrient intakes for both household types expressed as a percentage of the recommended dietary allowance (RDA).

10.3. HOMELESS POPULATION

According to the National Coalition for the Homeless (NCH) (1997), poverty and homelessness are inextricably linked. "Poor people are frequently unable to pay for housing, food, childcare, health care, and eduction. Often it is housing, which absorbs a high proportion of income, that must be dropped" (NCH, 1997).

To measure homelessness with 100% accuracy is impossible (NCH, 1997). NCH (1997) reported the following estimates:

Year	Number of People	How Estimated
1988	500,000 - 600,000	People found in shelters, soup kitchens, and congregating in the street for 1 week
1996	760,000/night 1.2 - 2 million/1-year	Based on a projeted annual increase of 5% using the 1988 estimate
1985-1990	4.95 - 9.32 million	1990 national telephone survey with former homeless people

It appears, according to NCH (1997) “that 12 million of adult residents in the U.S. have been literally homeless at some point in their lives.” Survey response rates and estimate errors were not provided in the fact sheet.

The U.S. Conference of Mayors (U.S. COM) (1997) surveyed 29 cities in the U.S. to assess the status of hunger and homelessness. The data were collected from November 1996 through October 1997. Percentages reported for survey questions do not include non-responses (U.S. COM, 1997). Results of the survey showed that substance abuse and lack of needed services led the list for cause of homelessness in the survey cities. Other causes (in order of frequency) were lack of affordable housing, mental illness and lack of needed services, low paying jobs, domestic violence, and changes and cuts in public assistance (U.S. COM, 1997). In the survey cities, people remain homeless an average of 5 months (U.S. COM, 1997). The composition of the homeless population in the survey cities is presented in Table 10-8, and the population, poverty, and unemployment data are presented in Table 10-9. A survey response rate was not provided.

10.4. REFERENCES

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Table 10-1. Preliminary Estimate of Poverty Threshold
(Yearly Income of Household in Dollars): 1995

Size of Family Unit	Estimated Threshold (in dollars)
1 person	7,761.00
Householder under 65 years	7,929.00
Householder 65 years and older	7,309.00
2 persons	9,935.00
Householder under 65 years	10,259.00
Householder 65 years and older	9,221.00
3 persons	12,156.00
4 persons	15,570.00
5 persons	18,407.00
6 persons	20,808.00
7 persons	23,573.00
8 persons	26,148.00
9 or more persons	31,159.00

Source: U.S. Bureau of the Census, 1996.

Table 10-2. Household Income and Poverty Rates by State: 1990 and 1993

State	Median household income[1]		Percent of persons below the poverty level										Poverty status of 5- to 17-year-olds, 1993			
			1990[2]								1993		Number in poverty		Percent in poverty	
	1990[2]	1993	Total	Under 5 years	5 years	6 to 11 years	12 to 17 years	18 to 64 years	65 to 74 years	75 years and over	Total	Standard error	Number (in thousands)	Standard error	Percent	Standard error
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
United States	**$35,025**	**$31,241**	**13.1**	**20.1**	**19.7**	**18.3**	**16.3**	**11.0**	**10.4**	**16.5**	**15.1**	**0.22**	**10,150**	**253**	**20.8**	**0.20**
Alabama	27,498	25,082	18.3	26.1	25.8	24.3	22.3	14.6	19.2	31.1	17.4	1.94	156	34	20.5	1.72
Alaska	48,254	42,931	9.0	13.6	10.6	10.9	9.8	7.9	6.4	10.6	9.1	1.34	11	3	9.5	1.14
Arizona	32,093	30,510	15.7	24.9	24.2	21.8	19.1	14.0	9.3	13.2	15.4	1.81	163	33	23.1	1.76
Arkansas	24,643	23,039	19.1	28.5	26.6	25.2	22.7	15.3	18.0	29.9	20.0	2.04	117	22	25.4	1.84
California	41,716	34,073	12.5	19.0	19.3	18.3	17.1	10.9	6.5	9.5	18.2	0.74	1,623	112	25.7	0.70
Colorado	35,123	34,488	11.7	17.9	16.5	15.3	12.5	10.3	8.5	15.1	9.9	1.59	70	22	11.3	1.40
Connecticut	48,618	39,516	6.8	11.7	11.9	11.2	8.9	5.3	5.6	9.7	8.5	1.65	82	25	14.9	1.75
Delaware	40,641	36,064	8.7	13.3	12.7	11.8	10.8	7.2	8.2	13.5	10.2	1.68	17	5	13.7	1.58
District of Columbia	35,807	27,304	16.9	27.0	25.5	25.0	24.4	14.3	15.5	19.7	26.4	2.67	44	8	49.3	2.52
Florida	32,027	28,550	12.7	20.3	20.1	18.8	16.8	11.0	9.0	13.5	17.8	0.94	666	61	26.9	0.91
Georgia	33,819	31,663	14.7	22.1	21.3	20.1	18.1	11.4	16.5	26.7	13.5	1.70	207	48	17.5	1.57
Hawaii	45,248	42,662	8.3	12.6	12.6	11.2	10.8	6.9	6.7	10.4	8.0	1.47	26	8	13.4	1.54
Idaho	29,433	31,010	13.3	19.6	18.9	15.9	13.3	12.0	8.7	15.6	13.1	1.57	38	8	14.2	1.35
Illinois	37,854	32,857	11.9	18.9	18.7	17.0	15.0	10.0	8.9	13.4	13.6	0.94	406	49	18.2	0.88
Indiana	33,558	29,475	10.7	16.8	15.8	14.1	11.8	9.1	8.7	14.0	12.2	1.74	123	37	10.8	1.37
Iowa	30,565	28,663	11.5	17.5	15.4	14.1	11.7	10.3	8.1	15.3	10.3	1.54	61	17	11.1	1.32
Kansas	31,803	29,770	11.5	16.8	16.5	14.1	11.6	10.1	8.5	16.8	13.1	1.69	79	18	16.0	1.53
Kentucky	26,259	24,376	19.0	27.9	26.5	24.6	22.4	16.2	17.5	25.3	20.4	2.09	177	34	25.7	1.89
Louisiana	25,578	26,312	23.6	33.4	33.0	31.1	29.7	19.6	20.5	30.1	26.4	2.37	376	54	39.4	2.18
Maine	32,459	27,438	10.8	15.7	15.9	14.0	11.5	8.9	11.0	18.3	15.4	1.89	47	10	17.7	1.66
Maryland	45,897	39,939	8.3	11.9	11.9	11.5	10.2	6.8	8.8	13.6	9.7	1.61	100	31	13.4	1.53
Massachusetts	43,061	37,064	8.9	14.5	14.8	13.8	11.0	7.3	7.3	12.6	10.7	0.86	159	22	16.4	0.86
Michigan	36,148	32,662	13.1	22.1	20.4	18.1	15.7	11.2	8.7	14.3	15.4	0.97	446	45	24.3	0.96
Minnesota	36,019	33,682	10.2	14.8	14.6	12.5	10.6	8.8	8.4	17.2	11.6	1.71	95	28	12.3	1.46
Mississippi	23,465	22,191	25.2	35.8	35.1	33.5	31.9	20.0	24.0	37.1	24.7	2.12	178	27	31.1	1.90
Missouri	30,720	28,682	13.3	20.4	19.2	17.8	15.1	11.1	11.3	19.7	16.1	1.97	205	45	20.4	1.80
Montana	26,788	26,470	16.1	24.3	23.0	20.3	17.1	14.7	9.9	16.6	14.9	1.77	25	6	14.5	1.45
Nebraska	30,317	31,008	11.1	17.3	15.4	13.4	10.8	9.7	8.6	16.8	10.3	1.48	47	11	13.5	1.38
Nevada	36,138	35,814	10.2	15.1	14.4	12.6	11.9	9.1	8.4	12.3	9.8	1.44	35	9	13.9	1.40
New Hampshire	42,335	37,964	6.4	8.5	8.7	7.3	6.2	5.4	7.7	13.9	9.9	1.76	28	9	13.8	1.69
New Jersey	47,693	40,500	7.6	11.7	12.6	11.7	10.4	6.0	6.8	11.3	10.9	0.84	227	30	16.4	0.83
New Mexico	28,069	26,758	20.6	30.3	30.6	27.6	25.2	17.8	13.7	21.2	17.4	1.86	68	13	18.8	1.59
New York	38,415	31,697	13.0	20.6	21.2	19.6	17.0	11.0	10.0	14.7	16.4	0.76	773	62	24.6	0.73
North Carolina	31,052	28,820	13.0	19.2	18.5	17.2	15.3	10.1	15.7	25.9	14.4	0.92	196	25	17.8	0.84
North Dakota	27,051	28,118	14.4	19.6	18.4	17.2	14.7	13.0	10.8	19.5	11.2	1.55	12	4	9.9	1.22
Ohio	33,452	31,285	12.5	21.1	19.9	17.8	14.6	10.7	8.7	13.8	13.0	0.89	420	47	18.8	0.66
Oklahoma	27,475	26,260	16.7	25.3	23.4	21.7	18.5	14.2	13.5	24.1	19.9	2.00	168	30	23.5	1.77
Oregon	31,755	33,138	12.4	19.7	16.1	14.8	13.3	11.5	8.1	13.1	11.8	1.75	84	23	14.9	1.60
Pennsylvania	33,875	30,995	11.1	17.5	17.0	15.7	13.8	9.5	8.7	13.5	13.2	0.90	390	47	17.8	0.85
Rhode Island	37,501	33,509	9.6	16.3	16.1	13.8	11.0	7.6	8.9	15.6	11.2	1.84	33	9	20.3	1.96
South Carolina	30,597	26,053	15.4	22.8	21.8	21.2	19.1	12.0	17.3	26.5	18.7	1.79	177	30	26.7	1.70
South Dakota	26,223	27,737	15.9	23.6	22.2	20.2	17.3	13.6	11.1	21.3	14.2	1.61	27	5	16.6	1.42
Tennessee	28,908	25,102	15.7	23.9	22.5	20.8	18.5	12.5	17.2	26.7	19.6	1.94	299	49	30.5	1.87
Texas	31,482	28,727	18.1	25.6	25.5	24.2	23.0	15.2	14.9	23.8	17.4	0.97	851	82	22.9	0.90
Utah	34,342	35,786	11.4	15.8	14.4	12.0	10.0	11.0	6.4	12.5	10.7	1.48	75	15	15.1	1.43
Vermont	34,717	31,065	9.9	13.5	13.7	12.5	9.8	8.5	9.7	16.3	10.0	1.70	15	4	14.2	1.65
Virginia	38,838	36,433	10.2	14.5	14.5	13.5	11.9	8.4	11.6	18.5	9.7	1.34	137	35	11.6	1.20
Washington	36,338	35,655	10.9	17.0	16.4	14.3	12.2	9.8	7.0	12.4	12.1	1.63	121	33	12.3	1.36
West Virginia	24,233	22,421	19.7	31.7	30.3	25.9	22.4	17.7	14.1	20.8	22.2	2.17	104	18	31.4	2.02
Wisconsin	34,309	31,766	10.7	17.7	16.4	15.0	11.9	9.2	6.6	12.6	12.6	1.60	155	35	15.0	1.47
Wyoming	31,576	29,442	11.9	18.3	16.2	14.1	11.2	10.8	8.4	14.3	13.3	2.02	12	4	11.4	1.58

[1] In 1993 dollars adjusted by the Consumer Price Index for all urban consumers.
[2] Based on 1989 incomes collected in the 1990 Census. May differ from data derived from the Current Population Survey.

Source: U.S. Department of Education, 1995.

Table 10-3. Poverty Status of Persons, Families, and Children Under 18, by Race/Ethnicity: 1959 to 1993

Year and race/ethnicity	Number below the poverty level, in thousands						Percent below the poverty level					
	All persons	In all families			In families with female householder, no husband present		All persons	In all families			In families with female householder, no husband present	
		Total	Householder	Related children under 18	Total	Related children under 18		Total	Householder	Related children under 18	Total	Related children under 18
1	2	3	4	5	6	7	8	9	10	11	12	13
All races												
1959	39,490	34,562	8,320	17,208	7,014	4,145	22.4	20.8	18.5	26.9	49.4	72.2
1960	39,851	34,925	8,243	17,288	7,247	4,095	22.2	20.7	18.1	26.5	48.9	68.4
1965	33,185	28,358	6,721	14,388	7,524	4,562	17.3	15.8	13.9	20.7	46.0	64.2
1970	25,420	20,330	5,260	10,235	7,503	4,689	12.6	10.9	10.1	14.9	38.1	53.0
1971	25,559	20,405	5,303	10,344	7,797	4,850	12.5	10.8	10.0	15.1	33.7	53.1
1972	24,460	19,577	5,075	10,082	8,114	5,094	11.9	10.3	9.3	14.9	38.2	53.1
1973	22,973	18,299	4,828	9,453	8,178	5,171	11.1	9.7	8.8	14.2	37.5	52.1
1974	23,370	18,817	4,922	9,967	8,462	5,361	11.2	9.9	8.8	15.1	36.5	51.5
1975	25,877	20,789	5,450	10,882	8,846	5,597	12.3	10.9	9.7	16.8	37.5	52.7
1976	24,975	19,632	5,311	10,081	9,029	5,583	11.8	10.3	9.4	15.8	37.3	52.0
1977	24,720	19,505	5,311	10,028	9,205	5,658	11.6	10.2	9.3	16.0	36.2	50.3
1978	24,497	19,062	5,280	9,722	9,269	5,687	11.4	10.0	9.1	15.7	35.6	50.6
1979	26,072	19,964	5,461	9,993	9,400	5,635	11.7	10.2	9.2	16.0	34.9	48.6
1980	29,272	22,601	6,217	11,114	10,120	5,866	13.0	11.5	10.3	17.9	36.7	50.8
1981	31,822	24,850	6,851	12,068	11,051	6,305	14.0	12.5	11.2	19.5	38.7	52.3
1982	34,398	27,349	7,512	13,139	11,701	6,696	15.0	13.6	12.2	21.3	40.6	56.0
1983	35,303	27,933	7,647	13,427	12,072	6,747	15.2	13.9	12.3	21.8	40.2	55.4
1984	33,700	26,458	7,277	12,929	11,831	6,772	14.4	13.1	11.6	21.0	38.4	54.0
1985	33,064	25,729	7,223	12,483	11,600	6,716	14.0	12.6	11.4	20.1	37.6	53.6
1986	32,370	24,754	7,023	12,257	11,944	6,943	13.6	12.0	10.9	19.8	38.3	54.4
1987	32,221	24,725	7,005	12,275	12,148	7,074	13.4	12.0	10.7	19.7	38.1	54.7
1988	31,745	24,048	6,876	11,935	11,972	6,742	13.0	11.6	10.4	19.0	37.2	50.6
1989	31,528	24,066	6,784	12,001	11,668	6,808	12.8	11.5	10.3	19.0	35.9	51.1
1990	33,585	25,232	7,098	12,715	12,578	7,363	13.5	12.0	10.7	19.9	37.2	53.4
1991	35,708	27,143	7,712	13,658	13,824	8,065	14.2	12.8	11.5	21.1	39.7	55.5
1992	36,880	27,947	7,960	13,876	13,716	8,032	14.8	13.3	11.7	21.1	39.0	54.3
1993	39,265	29,927	8,393	14,961	14,636	8,503	15.1	13.6	12.3	22.0	38.7	53.7
White[1]												
1960	28,309	24,262	6,115	11,229	4,296	2,357	17.8	16.2	14.9	20.0	39.0	59.9
1965	22,496	18,508	4,824	8,595	4,092	2,321	13.3	11.7	11.1	14.4	35.4	52.9
1970	17,484	13,323	3,708	6,138	3,761	2,247	9.9	8.1	8.0	10.5	28.4	43.1
1975	17,770	13,799	3,838	6,748	4,577	2,813	9.7	8.3	7.7	12.5	29.4	44.2
1980	19,699	14,587	4,195	6,817	4,940	2,813	10.2	8.6	8.0	13.4	28.0	41.6
1985	22,860	17,125	4,983	7,838	5,990	3,372	11.4	9.9	9.1	15.6	29.8	45.2
1987	21,195	15,593	4,567	7,398	5,989	3,474	10.4	8.9	8.1	14.7	29.6	45.8
1988	20,715	15,001	4,471	7,095	5,950	3,385	10.1	8.6	7.9	14.0	29.2	43.0
1989	20,785	15,179	4,409	7,164	5,723	3,320	10.0	8.6	7.8	14.1	28.1	42.8
1990	22,326	15,916	4,622	7,696	6,210	3,597	10.7	9.0	8.1	15.1	29.8	45.9
1991	23,747	17,268	5,022	8,316	6,806	3,941	11.3	9.7	8.8	16.1	31.5	47.1
1992	25,259	18,294	5,160	8,333	6,907	3,783	11.9	10.1	8.9	16.0	30.8	45.3
1993	26,226	18,968	5,452	9,123	7,199	4,102	12.2	10.5	9.4	17.0	31.0	45.6
Black[1]												
1959	9,927	9,112	1,860	5,022	2,416	1,475	55.1	54.9	48.1	65.5	70.6	81.6
1966	8,867	8,090	1,620	4,774	3,160	2,107	41.8	40.9	35.5	50.6	65.3	76.6
1970	7,548	6,683	1,481	3,922	3,656	2,383	33.5	32.2	29.5	41.5	58.7	67.7
1975	7,545	6,533	1,513	3,884	4,168	2,724	31.3	30.1	27.1	41.4	54.3	66.0
1980	8,579	7,190	1,826	3,906	4,984	2,944	32.5	31.1	28.9	42.1	53.4	64.8
1985	8,926	7,504	1,983	4,057	5,342	3,181	31.3	30.5	28.7	43.1	53.2	66.9
1987	9,520	7,848	2,117	4,234	5,789	3,394	32.4	31.2	29.4	44.4	54.1	68.3
1988	9,356	7,650	2,090	4,148	5,601	3,130	31.3	30.0	28.2	42.8	51.9	61.8
1989	9,302	7,704	2,077	4,257	5,530	3,256	30.7	29.7	27.8	43.2	49.4	62.9
1990	9,837	8,160	2,193	4,412	6,005	3,543	31.9	31.0	29.3	44.2	50.6	64.7
1991	10,242	8,504	2,343	4,637	6,557	3,853	32.7	32.0	30.4	45.6	54.8	68.2
1992	10,827	9,134	2,435	4,850	6,799	3,967	33.4	32.9	30.9	46.3	54.0	67.1
1993	10,877	9,242	2,499	5,030	6,955	4,104	33.1	32.9	31.3	45.9	53.0	65.9
Hispanic origin[2]												
1975	2,991	2,755	627	1,619	1,053	694	26.9	26.3	25.1	33.1	57.2	68.4
1980	3,491	3,143	751	1,718	1,319	809	25.7	25.1	23.2	33.0	54.5	65.0
1985	5,236	4,605	1,074	2,512	1,983	1,247	29.0	28.3	25.5	39.6	55.7	72.4
1987	5,422	4,761	1,168	2,606	2,045	1,241	28.0	27.5	25.5	38.9	55.6	70.1
1988	5,357	4,700	1,141	2,576	2,052	1,208	26.7	26.0	23.7	37.3	55.0	65.5
1989	5,430	4,659	1,133	2,496	1,902	1,163	26.2	25.2	23.4	35.5	50.6	65.0
1990	6,006	5,091	1,244	2,750	2,115	1,314	28.1	26.9	25.0	37.7	53.0	68.4
1991	6,339	5,541	1,372	2,977	2,282	1,398	28.7	28.2	26.5	39.8	52.7	68.6
1992	7,592	6,455	1,395	2,946	2,474	1,289	29.6	28.4	26.2	38.8	51.5	65.7
1993	8,126	6,876	1,625	3,666	2,837	1,673	30.6	29.3	27.3	39.9	53.2	66.1

[1] Includes persons of Hispanic origin.
[2] Persons of Hispanic origin may be of any race.

Source: U.S. Department of Education, 1995.

Table 10-4. Persons Living in Poverty by Sex: 1966 to 1994[a]
[In thousands]

Year	All Persons	Below Poverty					
		Total	Male		Female		
			Number	Percent[b]	Total	Number	Percent
1994	261,616	127,838	16,316	12.8	133,778	21,744	16.3
1993	259,278	126,668	16,900	13.3	132,610	22,365	16.9
1992[c]	256,549	125,288	16,222	12.9	131,261	21,792	16.6
1992	253,969	123,873	15,700	12.7	130,096	21,180	16.3
1991	251,179	122,418	15,082	12.3	128,761	20,626	16.0
1990	248,644	121,073	14,211	11.7	127,571	19,373	15.2
1989	245,992	119,704	13,366	11.2	126,188	18,162	14.4
1988	243,530	118,399	13,599	11.5	125,131	18,146	14.5
1987	240,890	117,123	14,029	12.0	123,767	18,518	15.0
1986	238,554	115,915	13,721	11.8	122,640	18,649	15.2
1985	236,594	114,970	14,140	12.3	121,624	18,923	15.6
1984	233,816	113,391	14,537	12.8	120,425	19,163	15.9
1983	231,612	112,280	15,182	13.5	119,332	20,084	16.8
1982	229,412	111,175	14,842	13.4	118,237	19,556	16.5
1981	227,157	110,010	13,360	12.1	117,147	18,462	15.8
1980	225,027	108,990	12,207	11.2	116,037	17,065	14.7
1979	217,848	105,542	10,535	10.0	112,306	14,810	13.2
1978	215,656	104,480	10,017	9.6	111,175	14,480	13.0
1977	213,867	103,629	10,340	10.0	110,238	14,381	13.0
1976	212,303	102,955	10,373	10.1	109,348	14,603	13.4
1975	210,864	102,211	10,908	10.7	108,652	14,970	13.8
1974	209,343	101,523	10,313	10.2	107,743	13,881	12.9
1973	207,621	100,694	9,642	9.6	106,898	13,316	12.5
1972	206,004	99,804	10,190	10.2	106,168	14,258	13.4
1971	204,554	99,232	10,708	10.8	105,298	14,841	14.1
1970	202,489	98,228	10,879	11.1	104,248	14,632	14.0
1969	199,848	96,802	10,292	10.6	103,037	13,978	13.6
1968	197,618	95,681	10,793	11.3	101,919	14,578	14.3
1967	195,677	94,796	11,813	12.5	100,861	15,951	15.8
1966	193,389	93,718	12,225	13.0	99,637	16,265	16.3

[a] Unpublished historical tables from the March Population Survey.
[b] Percent of 100.
[c] Revised to reflect changes in weighting and imputation procedures.
Note: Percentages presented in this table are the value out of 100.

Source: U.S. Bureau of the Census, 1995b.

Table 10-5. Selected Economic Profiles for the United States, 1990 Census

Characteristic	All Races	American Indian and Alaska Native	White	Black	Hispanic	Asian and Pacific Islander
Educational Attainment (Persons 25 Years and Older):						
Percent less than 9th grade	10.4	14.2	8.9	13.8	30.7	12.9
Percent 9th to 12th grade, no diploma	14.4	20.6	13.1	23.2	19.5	9.5
Percent high school graduate or higher	75.2	65.3	77.9	63.1	49.8	77.5
Percent bachelor's degree or higher	20.3	8.9	21.5	11.4	9.2	36.6
Employment Status by Sex (Persons 16 Years and Older):						
Percent unemployed, males	6.4	16.2	5.3	13.7	9.8	5.1
Percent unemployed, females	6.2	13.5	5.0	12.2	11.2	5.5
Median Household Income (1989)	$30,056	$19,865	$31,435	$19,758	$24,156	$36,784
Percent Below the Poverty Level by Age:						
All ages	13.1	31.7	9.8	29.5	25.3	14.1
Under 5 years	20.1	43.3	13.8	44.0	33.4	17.5
5 years	19.7	41.7	13.5	42.8	33.9	18.0
6 to 11 years	18.3	37.7	12.5	39.8	32.6	17.3
12 to 17 years	16.3	33.1	11.0	35.5	30.3	16.3
18 to 64 years	11.0	27.8	8.5	23.4	21.3	13.0
65 to 74 years	10.4	26.9	8.4	28.6	21.9	11.3
75 years and older	16.5	33.2	14.6	37.3	27.8	13.5

Note: Data for Native Americans are for residents of the 33 reservation States.

Source: U.S. DHHS, 1993.

Table 10-6. Characteristics of Individuals from Food-Sufficient and Food-Insufficient Households: Continuing Survey of Food Intake by Individuals (CSFII), 1989 Through 1991

	Preschoolers (1-5 Years)		Women (19-50 Years)		Elderly (65 + Years)	
	Food Sufficient (n-1257)	Food Insufficient (n-123)	Food Sufficient (n-3578)	Food Insufficient (n = 227)	Food Sufficient (n-2179)	Food Insufficient (n-61)
Mean age, y	3.0	2.7	33.9	31.3	73.5	69.9
Mean household per capita income, $1000	8.9	2.3	14.0	4.2	13.6	4.8
Mean household size, no. persons	4.4	5.1	3.4	4.2	2.0	2.0
Mean education, y[a]	12.9	10.4	13.2	10.7	11.5	6.3
Single head of household, %	16.8	45.3	25.5	46.9	40.1	54.4
Owns home,[a] %	59.1	24.3	60.7	25.4	84.0	40.5
Participates in food assistance program, %	25.4	83.6	14.3	69.3	4.5	44.3
Race/ethnicity,[a] %						
Non-Hispanic White	72.3	39.4	76.8	49.1	85.8	31.5
Non-Hispanic Black	14.1	36.6	11.7	29.0	9.4	50.1
Hispanic	9.4	13.8	8.5	16.8	3.4	9.9
Other	4.3	10.3	3.0	5.1	1.4	8.5
Urbanization, %						
Central city	30.2	40.3	30.5	48.4	33.1	33.1
Suburb	48.0	37.4	49.7	35.0	40.2	28.5
Nonmetropolitan	21.7	22.3	19.8	16.6	26.7	38.4
Region, %						
Northeast	19.5	17.6	21.0	29.4	20.6	20.8
South	34.3	27.7	33.7	25.5	39.1	59.5
West	21.5	26.1	19.3	19.9	21.2	11.5
Midwest	24.7	28.7	26.1	25.2	19.1	8.3

Note: Food insufficiency was indicated by the household respondent's report that there was sometimes or often not enough to eat. Estimates were calculated with CSFII-1989-1991 weights for the sample of individuals reporting 1 day of dietary intake.

[a] Refers to head of household.

Source: Rose and Oliveira, 1997.

Table 10-7. Mean Nutrient Intakes Expressed as a Percentage of the Recommended Dietary Allowances of Individuals from Food-Sufficient and Food-Insufficient Households: Continuing Survey of Food Intake by Individuals (CSFII), 1989 Through 1991

Public Health Priority[a]	Nutrient	Preschoolers (1-5 Years), Mean (SE)		Women (19-50 Years), Mean (SE)		Elderly (65 + Years), Mean (SE)	
		Food Sufficient (n-1257)	Food Insufficient (n-123)	Food Sufficient (n-3578)	Food Insufficient (n = 227)	Food Sufficient (n-2179)	Food Insufficient (n-61)
Current	Food energy	92.1 (1.7)	80.8 (5.2)*	73.1 (0.9)	61.3 (3.7)*	77.0 (1.2)	58.3 (8.2)*
	Calcium	102.1 (2.5)	91.5 (7.9)	75.0 (1.3)	56.1 (3.5)*	82.9 (1.8)	56.8 (10.2)*
	Iron	104.3 (3.0)	86.6 (7.4)*	78.5 (1.4)	66.6 (6.3)	138.7 (3.9)	102.8 (17.7)
Potential	Protein	276.7 (5.4)	256.1 (19.6)	131.0 (1.7)	113.1 (6.8)*	118.4 (1.8)	99.2 (19.0)
	Vitamin A	171.9 (6.7)	142.0 (16.5)	104.1 (3.5)	82.2 (7.6)*	141.4 (6.3)	78.4 (17.4)*
	Vitamin E	72.2 (1.9)	70.8 (11.2)	85.4 (2.3)	62.5 (5.4)*	89.5 (4.1)	43.1 (7.6)*
	Vitamin C	202.2 (8.7)	166.2 (20.6)	137.6 (3.5)	95.4 (10.7)*	178.6 (6.6)	144.4 (40.0)
	Vitamin B_6	120.3 (2.8)	98.3 (9.1)*	85.8 (1.2)	73.3 (5.5)*	94.9 (2.0)	62.6 (11.3)*
	Folate	338.3 (8.7)	322.0 (32.6)	115.5 (2.3)	102.2 (9.0)	143.6 (4.0)	93.5 (18.1)*
	Phosphorus	123.3 (2.4)	110.1 (8.1)	119.1 (1.7)	97.2 (5.6)*	132.2 (2.2)	101.6 (20.2)
	Magnesium	199.4 (4.0)	172.1 (10.9)*	78.3 (1.1)	64.2 (3.6)*	81.9 (1.6)	61.7 (10.8)
	Zinc	71.4 (1.8)	63.0 (4.1)	74.7 (1.1)	66.2 (5.1)	78.4 (4.6)	53.9 (8.9)*
Not current	Thiamin	150.4 (2.6)	135.5 (9.9)	114.9 (1.8)	100.0 (8.7)	132.7 (3.0)	100.7 (19.0)
	Riboflavin	185.4 (3.7)	169.9 (13.6)	116.6 (1.9)	96.0 (6.7)*	134.2 (2.9)	89.8 (14.8)*
	Niacin	136.9 (2.4)	118.1 (10.8)	121.1 (1.6)	103.3 (7.4)*	139.9 (2.7)	99.6 (15.6)*

Note: Food insufficiency was indicated by the household respondent's report that there was sometimes or often not enough to eat. Estimates were calculated with CSFII-1989-1991 weights for the sample of individuals reporting 1 day of dietary intake.

A Based on monitoring priority status for nutrients in the *Third Report on Nutrition Monitoring in the United States*.

* P < .05 (for difference in intake between food-sufficient and food-insufficient individuals).

Source: Rose and Oliveira, 1997.

Table 10-8. Composition of the Homeless Population (percentages)

City	Families	Men	Women	Youth	African-American	White	Hispanic	Asian	Native American	Mentally Ill	Substance Abusers	Employed	Veterans	Single Parent Families	Family Members (Children)
Alexandria	43	45	12	0	79	17	3	0	0	27	77	24	15	86	59
Boston	31.1	56.76	11.25	.9	42	38	13	2	2	--[a]	--[b]	--[c]	31	97	65
Charleston	33	67	--[d]		57	37	7	NA	NA	35	58	17	40	95	75
Chicago	39.3	42.6	17.9	NA	81.1	10	8.1	.5	.3	10.2	22.7	8.3	.8	96.2	68.3
Cleveland	22	52	23	2	78	19	2	.5	.2	25	50	15	10	95	70
Denver	34	48	18	2	24	49	16	0	5	18	32	15	25	80	40
Detroit	26	53	17	4	85	10	3	1	1	33	75	19	29	91	19
Kansas City	72	13	15	> 1	58	35	4	2	1	NA	NA	NA	NA	42	47
Los Angeles	20	50	25	5	50	NA	33	NA	NA	50	40	NA	25	80	71
Louisville	27	48	15	10	45	49	3	3	NA	NA	NA	NA	NA	81	63
Miami	28.2	56.1	15.7	NA	60.8	38.5	NA	.1	.6	18.77	36.2	2.3	9.2	79.9	64.5
Minneapolis	NA	NA	NA	NA	70	15	3	2	10	10	35	15	25	75	55
Nashville	5	82	12	1	43	51	5	> 1	1	25	44	30	23	67	55
New Orleans	26	47	14	13	66	31	1	1	1	22	42	15	26	85	73
Norfolk	> 24	64	12	0	94	5	> 1	NA	NA	NA	NA	NA	NA	95	73
Philadelphia	66.4	23.6	10	NA	88.4	7.4	4	02	--	9	34.3	7.6	6.6	9.1	71.2
Phoenix	30	60	5	5	15	61	26	1	8	20-50	21-34	23	28	80	60
Portland	58	29	12	1	26	54	10	1	3	2	NA	NA	1	73	58
Salt Lake City	28	60	10	2	8	70	13	1	8	57	32	37	35	67	70
San Antonio	58.8	23.9	13.2	4.1	20.7	23.2	55.4	.5	.2	35	28	36	27	83	73
San Diego	26	61	8	5	40	38	18	1	3	33	40	40	35	80	60
San Francisco	25	55	15	5	47	31	13	5	4	43	52	8	40	73	87
Santa Monica	18	42	30	10	43	35	17	2	3	30	64	NA	30	78	15
St. Louis	52	30	18	NA	83	16	.46	.46	.08	24	25	12	4	70	68
St. Paul	33	50	8	9	49.1	33.8	12.4	.6	3.5	3.3	3.3	5.6	NA	46	46
Seattle	25	43	11	4	29	30	13	2	5	35	36	9	12	59	18
Trenton	77	11.5	11.5	NA	NA	NA	NA	NA	NA	30	85	> 10	17	88	67

a 40% of individuals, 10% of families
b 60% of individuals, 20% of families
c 23% of individuals, 20% of families
d included in families %

Source: U.S. COM, 1997.

Table 10-9. Population, Poverty, and Unemployment Data for Survey Cities

City	1990 Population	1990 Poverty Rate Estimate (%)	October 1996 Unemployment Rate (%)	October 1997 Unemployment Rate (%)
Alexandria	111,183	7.1	3.8	2.9
Boston	574,283	18.7	4	3.7
Charleston	80,414	21.6	5.2	4.6
Charlotte	395,934	10.8	3.2	2.6
Chicago	2,783,726	21.6	6.6	5.7
Cleveland	505,616	28.7	9.7	8.5
Denver	467,610	17.1	4.4	3
Detroit	1,027,974	32.4	8.3	6.6
Kansas City	435,146	15.3	8.6	6.9
Los Angeles	3,485,398	18.9	8.7	7
Louisville	269,063	22.6	5.4	4.4
Miami	358,548	31.2	10.5	9.8
Minneapolis	368,383	18.5	4.2	3.4
Nashville	488,374	13.4	3.3	3.4
New Orleans	496,938	31.6	7.7	6.5
Norfolk	261,229	19.3	6.6	5.9
Philadelphia	1,585,577	20.3	7.1	6.6
Phoenix	983,403	10.5	4.4	3
Portland	437,319	14.5	2.7	2.9
Providence	160,728	23.0	6.3	6.6
St. Louis	396,685	24.6	7.2	6.7
St. Paul	272,235	16.7	4.3	3.3
Salt Lake City	159,936	16.4	3.3	3
San Antonio	935,933	22.6	4.3	4.3
San Diego	1,110,549	13.4	5.1	4.4
San Francisco	723,959	12.7	4.2	4.3
Santa Monica	86,905	9.4	5	4
Seattle	516,259	12.4	5.7	3.6
Trenton	88,675	18.1	12	9.3

Source: U.S. COM, 1997.

11. ELECTRONIC AND OTHER DATA SOURCES

This section presents Internet data sources useful for identifying and enumerating populations who potentially may be at risk of exposure to chemicals/contaminants at a greater rate than the general population. The sources in this section are Federal Government departments and agencies; however, many other types of Internet sources are available to the assessor. Examples include State, local, and regional governments and organizations; trade associations; and advocacy groups. Readers of this document are encouraged to explore the Internet using any of the available search engines (e.g., Alta Vista, Yahoo, etc.) to locate additional Internet data sources.

It is assumed that the reader will have some familiarity with the use of the Internet. The information in this section is provided to assist the reader in easily and quickly locating data on the Internet and is not intended to be a comprehensive guide to using the Internet. For this reason, detailed directions are not provided. Many standard references exist to guide the reader in use of the Internet.

It should be noted that, like all Internet resources, this information is time sensitive. Internet information (home pages, etc.) is continually updated by the responsible organization. The content of information the reader is able to access may differ from the information contained in this section.

11.1. U.S. ENVIRONMENTAL PROTECTION AGENCY

The U.S. EPA's home page (*http://www.epa.gov*) provides access to many of the Agency's environmental databases. Examples of databases available include (but are not limited to) the Aerometric Information Retrieval System (AIRS), containing national air pollution data; and the Better Assessment Science Integrating Point and Nonpoint Sources (BASINS), integrating national watershed data and geographic information system (GIS) mapping capabilities. ENVIROFACTS (*http://www.epa.gov/enviro*) is an especially useful tool available on EPA's home page. ENVIROFACTS allows the user to integrate data from seven of EPA's major environmental databases with Census data using GIS capabilities to produce site-specific maps. The user can submit specific queries and reports can be generated. For example, maps can be produced with population density, percent minority, percent below poverty, and per capita income. LandView™ III is a CD-ROM publication that provides database abstracts from EPA, the U.S. Bureau of the Census, the U.S. Geological Survey, the Nuclear Regulatory Commission, the U.S. Department of Transportation, and the Federal Emergency Management Agency

(FEMA). These databases are presented in a geographic context on maps that contain jurisdictional boundaries (e.g., census tracts, block group, Indian lands); detailed networks of roads, rivers, and railroads; census block group and tract polygons; schools; hospitals; churches; cemeteries; airports; dams; environmental sites; and other landmark features. LandView software performs display, query, and analysis of maps and data. LandView III is available on CD-ROM from the Bureau of the Census (301-457-4107) or the Census Webpage: *http://www.census.gov/geo/waw/tiger*. The Chemical Information System is one of the world's largest sources of online chemical information. With more than 30 linked databases, CIS contains information on specific chemical substances, including toxicological and/or carcinogenic research data, hazardous materials handling information, regulatory information, spectroscopic data, pharmaceutical data, and environmental issues. CIS includes popular databases such as AQUIRE, the TSCA Inventory, CERCLIS, and RCRIS. Accessible worldwide via internationl communications networks, CIS has subscribers on five continents. For product information, see *http://www.oxmol.com/prods/cis/* or E-mail cissupport@oxmol.com.

11.2. U.S. DEPARTMENT OF COMMERCE

The home page of the Commerce Department (*http://www.doc.gov*) offers STAT-USA, which is a source of economic data. While data available through STAT-USA (*http://www.stat-usa.gov*) pertain to economic and financial factors, these kinds of data can be useful for identifying and enumerating populations in certain economic and financial categories.

11.2.1. U.S. Bureau of the Census

The U.S. Bureau of the Census is a subagency of the Department of Commerce. Many of the data presented in this document were collected by the Bureau of the Census. Its home page (*http://www.census.gov*) provides access to a wide range of demographic data. Data files may be downloaded directly from the Internet or through the interactive tools provided on the Census Bureau's Web site, and can be used to generate mapped data for a specific area or region. The Census Bureau's home page provides a connection to FEDSTATS (*http://www.fedstats.gov*), which offers access to more than 70 Federal statistical agencies. Examples of various data that are contained in FEDSTATS from different Federal agencies are shown below:

Topic	Data Source	Agency
Agriculture	Crops county data	National Agricultural Statistics Service
Demographic/ Economic	County profiles	Central Intelligence Agency
	Demographic/economic state/county profiles	Bureau of the Census
	State data centers	Bureau of the Census
Crime	Crime and justice	Bureau of Justice Statistics
Education	Public school student, staff, and graduate counts by State	National Center for Education Statistics
Energy/Environment	State energy data	Energy Information Administration
Health	Atlas of the United States Mortality	National Center for Education Statistics
Labor	Regional information	Bureau of Labor Statistics
National Accounts	Personal income by State	Bureau of Economic Analysis

11.3. U.S. DEPARTMENT OF LABOR

The Department of Labor's (DOL) home page is located at *http://www.dol.gov*. Its home page offers connections to DOL subagencies that offer data and statistics, including the Bureau of Labor Statistics (BLS) and the Occupational Safety and Health Administration (OSHA).

11.3.1. Bureau of Labor Statistics

The Bureau of Labor Statistics' home page (*http://stats.bls.gov*) offers data on persons in the labor force, persons who are on nonfarm payrolls, and local area unemployment statistics. In addition, safety and health statistics are available organized by Standard Industrial Classification (SIC) codes.

11.3.2. Occupational Safety and Health Administration

The Occupational Safety and Health Administration (OSHA) is another DOL subagency. OSHA's home page (*http://www.osha.gov*) offers statistics and data searchable by type of working establishment, SIC code of establishment, workplace inspection, and workplace injury/illness.

11.4. U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES

The home page of the Department of Health and Human Services (DHHS) (*http://www.dhhs.gov*) offers connections to its subagencies, which collect health-related data.

These include the Centers for Disease Control and Prevention (CDC), Agency for Toxic Substances and Disease Registry (ATSDR), National Center for Health Statistics (NCHS), Indian Health Services (IHS), National Institutes of Health (NIH), National Institute of Mental Health (NIMH), and Substance Abuse and Mental Health Service Administration (SAMHSA).

11.4.1. Centers for Disease Control and Prevention

The home page of the Centers for Disease Control and Prevention (CDC) (*http://www.cdc.gov*) has connections to CDC data and statistics. CDC's home page has a connection to the *Morbidity and Mortality Weekly Report*, which has health-related data.

11.4.2. Agency for Toxic Substances and Disease Registry (ATSDR)

The ATSDR's home page (*http://atsdr1.atsdr.cdc.gov:8080/atsdrhome.html)* presents the following ATSDR data sets and resources: ATSDR Science Corner, Toxicology and ToxFAQs, Health Assessments and Consultations, Health Education and Consultations, Urban Environmental Issues, and Special Initiatives and Projects (Child Health, Great Lakes, Mississippi Delta, and Minority Health).

11.4.3. National Center for Health Statistics (NCHS)

Another subagency of DHHS is the National Center for Health Statistics. The home page of the NCHS (*http://www.cdc.gov/nchswww/index.htm*) offers connections to statistics and data available through its Data Warehouse and FASTATS.

11.4.4. National Institutes of Health (NIH)

The NIH home page (*http://www.nih.gov*) offers health information such as CancerNet, AIDS information, and the Women's Health Initiative. Scientific resources also are available in the form of research training information and on-line library journals. NIH's home page offers connections to the home page of the National Institute of Mental Health (*http://www.nimh.nih.gov*), which presents information on mental disorders and treatment. Substance abuse statistics are available on the home page of the Substance Abuse and Mental Health Services Administration (SAMHSA) (*http://www.samhsa.gov*).

11.4.5. Substance Abuse and Mental Health Services Administration (SAMHSA)

Another subagency of DHHS is the Substance Abuse and Mental Health Services Administration. The National Clearinghouse for Alcohol and Drug Information (NCADI), a service of SAMHSA, hosts Prevention Online or PREVLINE *(http://www.health.org)*. This site contains up-to-date and comprehensive information, facts, and statistics on substance abuse.

11.5. ENVIRONMENTAL DEFENSE FUND (EDF)

The EDF, an environmental special interest group, has an Internet service that allows anyone to enter a ZIP Code and see a map highlighting local sources of pollution, as well as Federal filings and contact information *(http://www.scorecard.org)*.

11.6. STATE ENVIRONMENTAL PROTECTION AGENCIES

The State Environmental Protection Agencies may be a source of information when site-limited data are not readily available. The addresses and telephone numbers for these agencies are presented in Table 11-1.

11.7. ENCYCLOPEDIA OF ASSOCIATIONS

The Encyclopedia of Associations is a guide to over 30,000 national and international organizations, including trade, business, and commercial; agricultural and commodity; legal, governmental, public administration, and military; scientific, engineering, and technical; educational; cultural; social welfare; health and medical; pubilc affairs; fraternal, foreign interest, nationality, and ethnic; religious; veterans', hereditary, and patriotic; hobby and avocational; athletic and sports; labor unions, associations, and federations; Chambers of Commerce and trade and tourism; Greek letter and related organizations; and fan clubs.

A supplemental guide is also available for more than 47,000 regional, State, and local nonprofit organizations in 50 States, the District of Columbia, and the U.S. territories of Guam, Puerto Rico, and the Virgin Islands.

This document can be found in the reference section of most libraries. It is published by Gale Research, New York.

Table 11-1. State Environmental Protection Agencies

Alabama

Conservation and Natural Resources
Department
P.O. Box 301450
Montgomery, AL 36130-1450
Phone: (800) 262-3151
Fax: (334) 242-1880

Environmental Management Department
1751 Cong. W.L. Dickinson Drive
P.O. Box 301463
Montgomery, AL 36130-1463
Phone: (334) 271-7700
Fax: (334) 271-7950

Alaska

Environmental Conservation Department
410 Willoughby Avenue, Suite 105
Juneau, AK 99801-1795
Phone: (907) 465-5010
Fax: (907) 465-5097
TTY: (907) 465-5010

Natural Resources Department
3601 C Street, Suite 858
Anchorage, AK 99503
Phone: (907) 269-8400
Fax: (907) 269-8901
TTY: (907) 269-8411
Agriculture Revolving
Loan Fund: (907) 745-7200

Arizona

Environmental Quality Department
3033 N. Central Avenue
Phoenix, AZ 85012
Phone: (602) 207-2300
Fax: (602) 207-2218
TTY: (602) 207-4829

Arkansas

Pollution Control and Ecology Department
8001 National Drive
P.O. Box 8913
Little Rock, AR 72219-8913
Phone: (501) 682-0744
Fax: (501) 682-0798

California

Environmental Protection Agency
555 Capitol Mall, Suite 525
Sacramento, CA 95814
Phone: (916) 445-3846
Fax: (916) 445-6401

Resources Agency
Resources Building, Suite 1311
1416 Ninth Street
Sacramento, CA 95814
Phone: (916) 653-5656
Fax: (916) 653-8102

Colorado

Natural Resources Department
1313 Sherman Street, Room 718
Denver, CO 80203
Phone: (303) 866-3311
Fax: (303) 866-2115

Public Health and Environment Department
4300 Cherry Creek Drive, South
Denver, CO 80222
Phone: (303) 692-2000
Fax: (303) 782-0095
TTY: (303) 691-7700

Table 11-1. State Environmental Protection Agencies (continued)

Connecticut

Environmental Protection Department
79 Elm Street
Hartford, CT 06106
Phone: (860) 424-3000
Fax: (860) 424-4053

Delaware

Natural Resources and Environmental
Control Department
89 Kings Highway
P.O. Box 1401
Dover, DE 19903-1401
Phone: (302) 739-4506
Fax: (302) 739-6242

District of Columbia

Environmental Regulation Administration
2100 Martin L. King Avenue SE
Washington, DC 20020
Phone: (202) 645-6617
Fax: (202) 645-6622

Florida

Environmental Protection Department
3900 Commonwealth Boulevard
Tallahassee, FL 32399-3000
Phone: (904) 488-1073
Fax: (904) 921-6227

Georgia

Natural Resources Department
205 Butler Street SE, Suite 1252
Atlanta, GA 30334
Phone: (404) 656-3500
Fax: (404) 656-0770

Hawaii

Land and Natural Resources Department
Kalanimoku Building
1151 Punchbowl Street
Honolulu, HI 96813
Phone: (808) 587-0406
Fax: (808) 587-0360

Idaho

Environmental Quality Division
450 W. State Street
P.O. Box 83720
Boise, ID 83720
Phone: (208) 373-0502
Fax: (208) 373-0417

Illinois

Environmental Protection Agency
P.O. Box 19276
Springfield, IL 62794
Phone: (217) 782-2829
Fax: (217) 782-9039
TTY: (217) 782-9143

Natural Resources Department
Lincoln Tower Plaza
524 S. Second Street
Springfield, IL 62701-1787
Phone: (217) 782-6302
Fax: (217) 785-3150
TTY: (217) 782-9175

Indiana

Environmental Management Department
105 S. Meridian Street
P.O. Box 6015
Indianapolis, IN 46206-6015
Phone: (317) 233-6894
Fax: (317) 232-5539
TTY: (317) 233-6087

Table 11-1. State Environmental Protection Agencies (continued)

Natural Resources Department
402 W. Washington Street
Indianapolis, IN 46204
Phone: (317) 232-4200
Fax: (317) 233-6811

Iowa

Natural Resources Department
Wallace Building
Des Moines, IA 50319-0034
Phone: (515) 281-5145
Fax: (515) 281-6794
TTY: (515) 242-5967

Kansas

Health and Environment Department
Landon State Office Building
900 S.W. Jackson Street
Topeka, KS 66612-1290
Phone: (913) 296-1500
Fax: (913) 296-6247

Kentucky

Natural Resources and Environmental Protection Cabinet
Capital Plaza Tower, 5th Floor
500 Mero Street
Frankfort, KY 40601
Phone: (502) 564-5525
Fax: (502) 564-3354

Louisiana

Environmental Quality Department
P.O. Box 82231
Baton Rouge, LA 70884-2231
Phone: (504) 765-0741
Fax: (504) 765-0045

Natural Resources Department
P.O. Box 94396
Baton Rouge, LA 70804-9396
Phone: (504) 342-4500
Fax: (504) 342-2707

Maine

Conservation Department
22 State House Station
Augusta, ME 04333-0022
Phone: (207) 287-2211
Fax: (207) 287-2400
TTY: (207) 287-2213

Environmental Protection Department
17 State House Station
Augusta, ME 04333-0017
Phone: (207) 287-7688
Fax: (207) 287-2814

Maryland

Natural Resources Department
Tawes State Office Building
Annapolis, MD 21401
Phone: (410) 974-3195
Fax: (410) 974-5206
TTY: (410) 974-3683

Environment Department
2500 Broening Highway
Baltimore, MD 21224
Phone: (410) 631-3000
Fax: (410) 631-3888
TTY: (410) 631-3009

Massachusetts

Environmental Affairs Executive Office
100 Cambridge Street, Room 2000
Boston, MA 02202
Phone: (617) 727-9800
Fax: (617) 727-2754

Table 11-1. State Environmental Protection Agencies (continued)

Michigan

Environmental Quality Department
P.O. Box 30473
Lansing, MI 48909-7973
Phone: (800) 662-9278
Fax: (517) 241-7401
Pollution Emergency Alerting System:
(800) 292-4706

Natural Resources Department
P.O. Box 30028
Lansing, MI 48909
Phone: (517) 373-1214
Fax: (517) 335-4242
TTY: (517) 335-4623

Minnesota

Natural Resources Department
500 Lafayette Road
St. Paul, MN 55155-4001
Phone: (612) 296-6157
Fax: (612) 296-3500
TTY: (612) 296-5484

Environmental Assistance Office
520 Lafayette Road, 2nd Floor
St. Paul, MN 55155-4100
Phone: (612) 296-3417
Fax: (612) 297-8709

Mississippi

Environmental Quality Department
P.O. Box 20305
Jackson, MS 39289-1305
Phone: (601) 961-5650
Fax: (601) 354-6965

Missouri

Natural Resources Department
P.O. Box 176
Jefferson City, MO 65102
Phone: (573) 751-3443
Fax: (573) 751-7627

Montana

Environmental Quality Department
P.O. Box 200901
Helena, MT 59620-0901
Phone: (406) 444-2442
Fax: (406) 444-1804

Natural Resources and Conservation Department
1625 Eleventh Avenue
P.O. Box 201601
Helena, MT 59620-1601
Phone: (406) 444-2074
Fax: (406) 444-2684
TTY: (406) 444-2074

Nebraska

Environmental Quality Department
1200 N Street, Suite 400
P.O. Box 98922
Lincoln, NE 68509-8922
Phone: (402) 471-2186
Fax: (402) 471-2909

Nevada

Conservation and Natural Resources Department
123 W. Nye Lane
Carson City, NV 89710
Phone: (702) 687-4360
Fax: (702) 687-6122

Table 11-1. State Environmental Protection Agencies (continued)

New Hampshire

Environmental Services Department
6 Hazen Drive
Concord, NH 03301
Phone: (603) 271-3503
Fax: (603) 271-2867
TTY: (800) 735-2964

New Jersey

Environmental Protection Department
401 E. State Street, CN 402
Trenton, NJ 08625-0402
Phone: (609) 777-3373
Fax: (609) 292-7695

New Mexico

Environment Department
1190 St. Francis Drive
P.O. Box 261 1 0
Santa Fe, NM 87502
Phone: (505) 827-2855
Fax: (505) 827-2836

New York

Environmental Conservation Department
50 Wolf Road
Albany, NY 12233
Phone: (518) 457-5400
Fax: (518) 457-7744

North Carolina

Environment, Health and
Natural Resources Department
P.O. Box 27687
Raleigh, NC 27611
Phone: (919) 733-4984
Fax: (919) 715-3060

North Dakota

Environmental Health Section
1200 Missouri Avenue
P.O. Box 5520
Bismarck, ND 58506-5520
Phone: (701) 328-5150
Fax: (701) 328-5200

Ohio

Natural Resources Department
Fountain Square
Columbus, OH 43224-1387
Phone: (614) 265-6565
Fax: (614) 261-9601

Environmental Protection Agency
1800 WaterMark Drive
P.O. Box 1049
Columbus, OH 43216-0149
Phone: (614) 644-3020
Fax: (614) 644-2329
TTY: (614) 644-2110

Oklahoma

Environmental Quality Department
1000 NE Tenth Street
Oklahoma City, OK 73117-1212
Phone: (405) 271-8056
Fax: (405) 271-8425
Complaints Hotline: (800) 522-0206

Oregon

Environmental Quality Department
811 S.W. Sixth Avenue
Portland, OR 97204-1390
Phone: (503) 229-5696
Fax: (503) 229-6124
TTY: (503) 229-6993

Table 11-1. State Environmental Protection Agencies (continued)

Pennsylvania

Environmental Protection Department
P.O. Box 2063
Harrisburg, PA 17105-2063
Phone: (717) 783-2300
Fax: (717) 783-8926
TTY: (800) 654-5984

Rhode Island

Environmental Management Department
235 Promenade Street, Suite 425
Providence, RI 02908
Phone: (401) 277-6800
Fax: (401) 277-6802
TTY: (401) 831-5508
24-Hour Hotline: (401) 277-3070

South Carolina

Health and Environmental Control Department
2600 Bull Street
Columbia, SC 29201
Phone: (803) 734-5000
Fax: (803) 734-4777

Natural Resources Department
Rembert C. Dennis Building
P.O. Box 176
Columbia, SC 29202
Phone: (803) 734-3888
Fax: (803) 734-6310

South Dakota

Environment and Natural Resources Department
Joe Foss Building
523 E. Capitol Avenue
Pierre, SD 57501-3181
Phone: (605) 773-3151
Fax: (605) 773-6035

Tennessee

Environmental and Conservation Department
Life & Casualty Tower
401 Church Street, 21st Floor
Nashville, TN 37243-0435
Phone: (615) 532-0109
Fax: (615) 532-0120

Texas

Natural Resource Conservation Commission
12100 Park 35 Circle
P.O. Box 13087
Austin, TX 78711-3087
Phone: (512) 239-1000
Fax: (512) 239-5533

Utah

Environmental Quality Department
168 N. 1950 West
Salt Lake City, UT 84116
Phone: (801) 536-4400
Fax: (801) 536-4480
TTY: (801) 536-4414

Natural Resources Department
1594 W North Temple, Suite 3710
Box 145610
Salt Lake City, UT 84116-5610
Phone: (801) 538-7200
Fax: (801) 538-7315
TTY: (801) 538-7458

Vermont

Natural Resources Agency
State Complex
103 S. Main Street
Waterbury, VT 05671
Phone: (802) 241-3600
TTY: (800) 253-0191

Table 11-1. State Environmental Protection Agencies (continued)

Virginia

Natural Resources Secretariat
733 Ninth Street Office Building
Richmond, VA 23219
Phone: (804) 786-0044
Fax: (804) 371-8333
TTY: (804)-786-7765

Washington

Ecology Department
P.O. Box 47600
Olympia, WA 98504-7600
Phone: (360) 407-6000
Fax: (360) 407-6989
TTY: (360) 407-7155

Natural Resources Department
1111 Washington Street SE
P.O. Box 47000
Olympia, WA 98504-7001
Phone: (360) 902-1000
Fax: (360) 902-1775
TTY: (360) 902-1125

West Virginia

Environment Bureau
10 McJunkin Road
Nitro, WV 25143-2506
Phone: (304) 759-0515
Fax: (304) 759-0526
TTY: (800) 637-5893

Wisconsin

Natural Resources Department
P.O. Box 7921
Madison, WI 53704
Phone: (608) 266-2621
Fax: (608) 267-3579
TTY: (608) 267-6897

Wyoming

Environmental Quality Department
Herschler Building, 4th Floor
122 W. Twenty-Fifth Street
Cheyenne, WY 82002
Phone: (307) 777-7937
Fax: (307) 777-7682

Puerto Rico

Natural and Environmental Resources Department
P.O. Box 9066600
San Juan, PR 00906-6600
Phone: (787) 723-3090
Fax: (787) 723-4255

Environmental Quality Board
P.O. Box 11488
San Juan, PR 00940-1119
Phone: (787) 723-6200
Fax: (787) 724-3270

APPENDIX I

U.S. Census Bureau

Internet Information

NOTICE

The following describes examples of the various types of information available on the Census Bureau's website. It should be noted that, like all Internet resources, this information is time sensitive. Internet information (home pages, etc.) are continually updated by the responsible organization, in this case, the federal government's Department of Commerce. The information in this appendix is provided to assist the reader in easily and quickly obtaining data collected by the federal government and made available on the Internet. It is not intended to be a comprehensive guide to using the Internet. Many standard references exist to guide the reader in use of the Internet.

U.S. Census Bureau Home Page Description

http://www.census.gov

The Census Bureau Website provides tables, maps, raw data and publications pertaining to U.S. populations, businesses and geography. Information for various segments of the U.S. population include, but are limited, the following categories age, household and family types, income and poverty, travel to work, occupation, and school enrollment. Census statistics for unemployment, government, and manufacturing are included under the homepage's general heading of 'business'. Within the site's geographic section, users can access tools to create and view maps (i.e. Tiger, Gazetteer and LandView). This section also provides links for geographical information systems (GIS) resources. Also of interest on the Census homepage are links to minority data, and publication search tools such as FedStats *http://www.fedstats.gov/* which locates Census publications as well as documents published by other federal agencies.

U.S. Census Bureau **Home Page** *http://www.census.gov*

insert printed home page graphic

Select hot button marked **User Manual** *http://www.census.gov/main/www/man_main.html*

The User Manual presents a brief introduction to help users understand and use the Census Bureau's web site. It also lists the functioning "hot buttons" that may be selected to go to additional resources on their web site.

Select hot button marked **Census Home** *http://www.census.gov*

Return to the Census Bureau's home page to select another function.

Select hot button marked **Search** *http://www.census.gov/main/www/srchtool.html*

The reader may search the Census Bureau information by word, place, geographically, or search for Census Bureau staff members phone numbers and Email addresses.

Select hot button marked **Census Home** *http://www.census.gov*

Return to the Census Bureau's home page to select another function.

Select hot button marked **Access Tools** *http://www.census.gov/mani/www/access.html*

The Census Bureau's web site offers the reader the use of Data Access Tools that can be used to access Census information. These include: Map Stats; Census Lookup; Tiger Map Server; US Gazetteer (to search by place name or Zip code); CD-ROM version of Census data; Ferret Data Extraction and Review Tool; and browsing all public directories and files.

Select hot button marked **Census Home** *http://www.census.gov*

Return to the Census Bureau's home page to select another function.

Select hot button marked **Subjects A-Z** *http://www.census.gov/main/www/subjects.html*

Search Census Bureau data by a wide range of subject topics, including: agriculture, births, children, county profiles, economics, families, etc.

Select hot button marked **Census Home** *http://www.census.gov*

Return to the Census Bureau's home page to exit their web site.

APPENDIX II

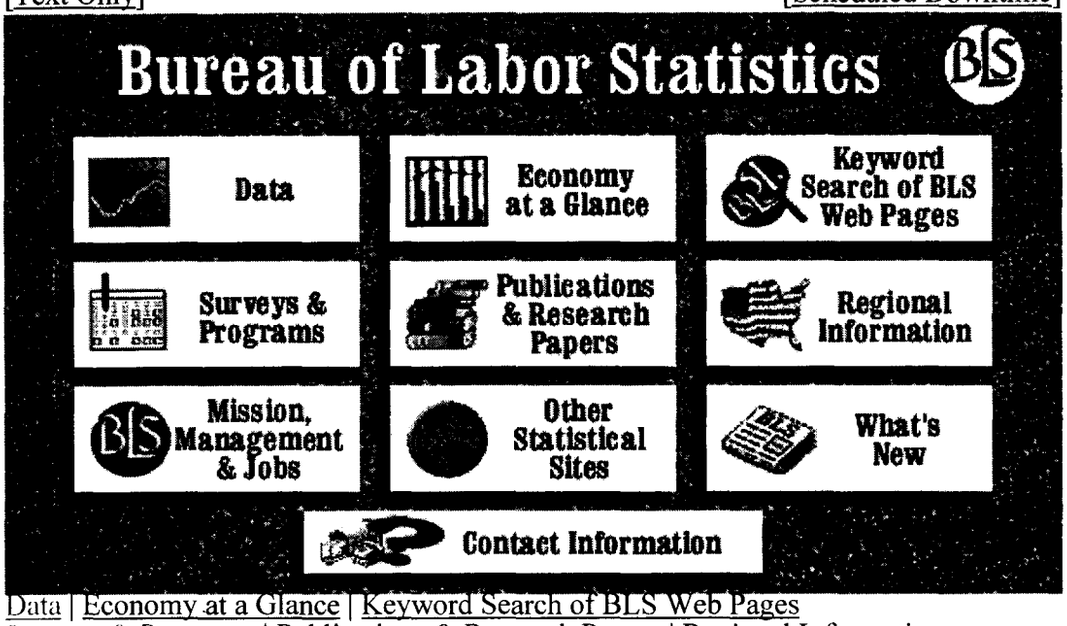
U.S. Department of Labor
Internet Information

NOTICE

The following information has been printed directly from the Internet. The Home Page of the organization is presented on the first page, followed by the "hot keys" to be selected in the order in while they were selected to produce this Appendix. Internet addresses are provided (in italics) so that the reader may access the same information. The sequence in which information was accessed for this appendix is offered as a suggestion, and the reader is encouraged to sequence the information in the way most useful to them.

It should be noted that, like all Internet resources, this information is time sensitive. Internet information (home pages, etc.) are continually updated by the responsible organization, in this case, the federal government's Department of Labor. The exact information, content, and appearance of information the reader is able to access may differ from the pages contained in this appendix. The information in this appendix is provided to assist the reader in easily and quickly obtaining data collected by the federal government and made available on the Internet. It is not intended to be a comprehensive guide to using the Internet. Many standard references exist to guide the reader in use of the Internet.

[Text Only] [Scheduled Downtime]



Data | Economy at a Glance | Keyword Search of BLS Web Pages
Surveys & Programs | Publications & Research Papers | Regional Information
Mission, Management & Jobs | Other Statistical Sites | What's New | Contact Information

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The Bureau of Labor Statistics is an agency within the U.S. Department of Labor.

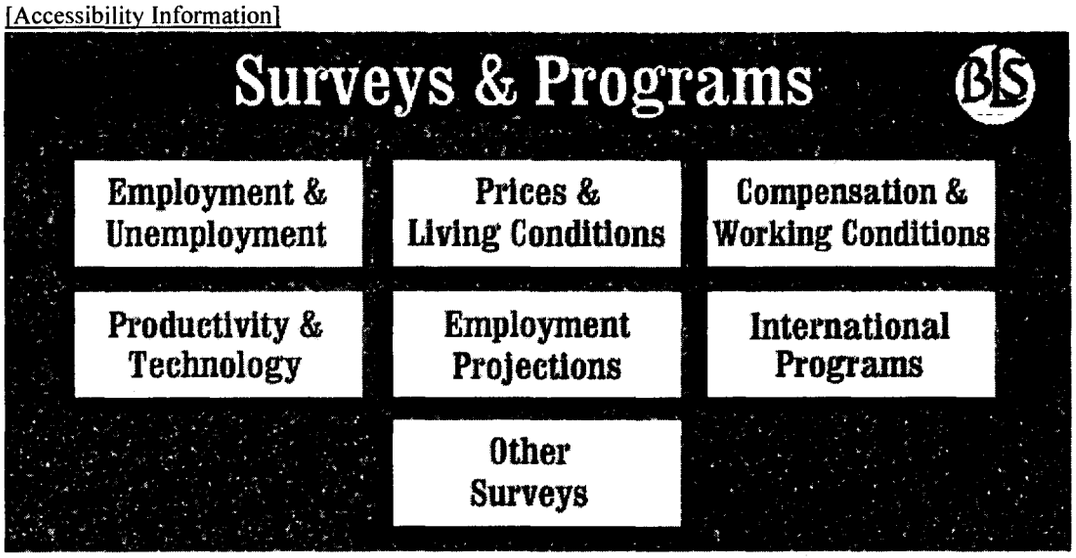
Freedom of Information Act (FOIA) Requests

BLS Privacy and Security Statement

K-12 Educational Resources.

Jo-Ann L. Yu
Bureau of Labor Statistics
labstat.helpdesk@bls.gov
Last modified: August 25, 1999
URL: http://stats.bls.gov/blshome.htm

[Accessibility Information]



Employment & Unemployment | Prices & Living Conditions | Compensation & Working Conditions
Productivity & Technology | Employment Projections | International Programs | Other Surveys

Surveys & Programs

Employment & Unemployment

- Labor Force Statistics from the Current Population Survey
- Nonfarm Payroll Statistics from the Current Employment Statistics (National)
- Nonfarm Payroll Statistics from the Current Employment Statistics (State&Area)
- Covered Employment and Wages
- Occupational Employment Statistics
- Local Area Unemployment Statistics
- National Longitudinal Surveys

Prices & Living Conditions

- Consumer Price Indexes
- Producer Price Indexes
- International Price Indexes
- Consumer Expenditure Survey

Compensation & Working Conditions

- Collective Bargaining Agreements
- Employee Benefits Survey
- Employment Cost Trends
- Occupational Compensation Survey
- Safety and Health Statistics
- National Compensation Survey (formerly COMP2000)

Productivity & Technology

- Quarterly Labor Productivity
- Multifactor Productivity
- Industry Productivity

- Foreign Labor Statistics

Employment Projections

- Employment Projections

Other Surveys

- Employer Provided Training

International Programs

- Foreign Labor Statistics
- International Price Indexes
- International Training

BLS Home Page

Jo-Ann L. Yu
Bureau of Labor Statistics
labstat.helpdesk@bls.gov
Last modified: October 26, 1998
URL: http://stats.bls.gov/proghome.htm

From the Department of Labor's Home Page *http://www.bls.gov*

Select hot button marked **Surveys & Programs** *http://www.bls.gov/proghome.htm*

Select hot button marked **Labor Force Statistics from the Current Population Survey**
http://www.bls.gov/cpshome.htm

Select hot button marked **BLS Home Page** *http://www.bls.gov*

Return to the Department of Labor's home page to exit their web site.

APPENDIX III

U.S. Department of Health and Human Services ATSDR Internet Information

NOTICE

The following information has been printed directly from the Internet. The Home Page of the organization is presented on the first page, followed by the "hot keys" to be selected in the order in while they were selected to produce this Appendix. Internet addresses are provided (in italics) so that the reader may access the same information. The sequence in which information was accessed for this appendix is offered as a suggestion, and the reader is encouraged to sequence the information in the way most useful to them.

It should be noted that, like all Internet resources, this information is time sensitive. Internet information (home pages, etc.) are continually updated by the responsible organization, in this case, the federal government's Department of Health and Human Services. The exact information, content, and appearance of information the reader is able to access will differ from the pages contained in this appendix. The information in this appendix is provided to assist the reader in easily and quickly obtaining data collected by the federal government and made available on the Internet. It is not intended to be a comprehensive guide to using the Internet. Many standard references exist to guide the reader in use of the Internet.

[Text version]

Privacy Notice ~ ~ Y2K Information

Last revised Wednesday, September 01, 1999
Comments/Suggestions to Webmaster

DEPARTMENT OF HEALTH & HUMAN SERVICES

HHS AGENCIES

Office of the Secretary (OS)

Administration for Children and Families (ACF)

Administration on Aging (AOA)

Agency for Health Care Policy and Research (AHCPR)

Agency for Toxic Substances and Disease Registry (ATSDR)

Centers for Disease Control and Prevention (CDC)

Food and Drug Administration (FDA)

Health Care Financing Administration (HCFA)
(MEDICARE and MEDICAID)

Health Resources and Services Administration (HRSA)

Indian Health Service (IHS)

National Institutes of Health (NIH)

Program Support Center (PSC)

Substance Abuse and Mental Health Services Administration (SAMHSA)

The Social Security Administration (SSA) became an independent agency on March 31, 1995.

[About HHS] [healthfinder & Human Services Information]
[News & Public Affairs] [Research, Policy & Administration]
[What's New] [Employee Information]
[Search] [Gateways]
[HHS Agencies on the Internet]

Back to the HHS Home Page

Last revised Tuesday, February 23, 1999
Comments/Suggestions to Webmaster

National Alerts
Health Advisories
Announcements
Jobs

Search Site
Browse Site
About ATSDR

Communities
Kids, Parents, Teachers
ATSDR Newsletter
ATSDR Ombudsman

ToxFAQs
HazDat Database
Science Corner
Top 20 Hazardous Substances
Public Health Assessments
Minimal Risk Levels (MRLs)
ATSDR Glossary

Site Usage Statistics

ATSDR

Agency for Toxic Substances and Disease Registry

What's New

The ATSDR Communities Web pages are now available. These new pages were designed to answer common questions and help you find the information you are looking for.

The paper Public Health Implications of Exposure to PCBs is now available on the ATSDR Web site.

The ATSDR Web site is now hosting the Environmental Health in the U.S. Public Health Service web pages which are sponsored by the Sanitarian Professional Advisory Committee (SPAC).

ATSDR's Minimal Risk Levels (MRLs) of hazardous substances has been updated.

The recently released ToxFAQ Sheet for Dioxins has been added to ATSDR's Web server.

Media Advisory: April 19, 1999 - ATSDR Updates its Toxicological Profile for Mercury.

The Draft Agenda for Public Health Activities for FY 1999 and FY 2000 at U.S. Department of Energy Sites has been released for public review and comment.

Industrial Chemicals and Terrorism is a paper that presents a 10-step procedure to analyze, mitigate, and prevent public health hazards resulting from terrorism involving industrial chemicals.

Chemical Hazards During the Recent War in Croatia summarizes the many uses of chemicals as weapons in the recent conflict between Croatia and Yugoslavia.

ATSDR's Toxicological Profile Information Sheet is now available with current information on all of ATSDR's Toxicological Profile publications.

Public Health Concerns At Department of Energy Sites: Progress Report highlights the activities and accomplishments of ATSDR in addressing public health issues in the communities near Department of Energy hazardous waste sites. The document is also available as an Adobe Acrobat PDF File (929K).

You can sign up to receive a copy of ATSDR's Public Health Assessment for the Hanford nuclear site when it is released for public comment by filling out the online form.

Dioxin and Dioxin-Like Compounds in Soil, Part 1: ATSDR Interim Policy Guideline has been adopted by ATSDR to assess the public health implications of dioxin and dioxin-like compounds in residential soils near or on hazardous waste sites.

The Proceedings of the PCB Expert Panel Workshop evaluates all pertinent information related to the public health implications of human exposure to PCBs.

The Toxicologic Hazard of Superfund Hazardous Waste Sites is a

The Toxicologic Hazard of Superfund Hazardous Waste Sites is a scientific analysis of the threat posed to public health by uncontrolled hazardous waste sites.

Contents

About ATSDR

The mission of the Agency for Toxic Substances and Disease Registry (ATSDR), as an agency of the U.S. Department of Health and Human Services, is to prevent exposure and adverse human health effects and diminished quality of life associated with exposure to hazardous substances from waste sites, unplanned releases, and other sources of pollution present in the environment.

ATSDR is directed by congressional mandate to perform specific functions concerning the effect on public health of hazardous substances in the environment. These functions include public health assessments of waste sites, health consultations concerning specific hazardous substances, health surveillance and registries, response to emergency releases of hazardous substances, applied research in support of public health assessments, information development and dissemination, and education and training concerning hazardous substances.

ATSDR's mission and the goals of ATSDR are reflected within its organizational structure and its statement of values.

Definitions of words and phrases used by ATSDR can be found in the ATSDR Glossary of Terms.

ATSDR Addresses and Phone Numbers

Send mail to:

ATSDR
"Group Name"
1600 Clifton Rd., ("Mail Stop")
Atlanta, GA 30333

Group Name	Mail Stop	Telephone	Fax
Office of the Assistant Administrator	E28	(404)639-0700	(404)639-0744
Washington, D.C. Office	P13	(202)690-7536	(202)690-6985
Board of Scientific Counselors	E28	(404)639-0708	(404)639-0586
Office of Federal Programs	E28	(404)639-0730	(404)639-0759
Office of Policy and External Affairs	E60	(404)639-0500	(404)639-0522
Office of Program Operations and Management	E60	(404)639-0550	(404)639-0568
Office of Regional Operations	E42	(404)639-6090	(404)639-0740
Office of the Associate Administrator for Science	E28	(404)639-0708	(404)639-0586
Division of Health Assessment and Consultation	E32	(404)639-0610	(404)639-0654
Division of Health Education and Promotion	E33	(404)639-6204	(404)639-6207
Division of Health Studies	E31	(404)639-6200	(404)639-6220
Division of Toxicology	E29	(404)639-6300	(404)639-6315

ATSDR Contacts

- General Information
  - The ATSDR Information Center / ATSDRIC@cdc.gov / 1-888-42-ATSDR or 1-888-422-8737
- Senior Management
  - Amler, Robert W., M.D., Chief Medical Officer
  - Bashor, Mark M., Ph.D., Associate Administrator for Federal Programs, Office of Federal Programs
  - DeRosa, Christopher T., Ph.D., Director, Division of Toxicology
  - Falk, Henry, M.D., M.P.H., Assistant Administrator
  - Jones, Georgi A., Director, Office of Policy and External Affairs
  - Harris, Barbara W., Director, Office of Program Operations and Management
  - Lichtveld, Maureen, M.D., M.P.H., Director, Division of Health Education and Promotion

- Lybarger, Jeffrey A., M.D., M.S., Director, Division of Health Studies
- McCumiskey, Peter J., Deputy Assistant Administrator
- Reyes, Juan J., M.P.A. Director, Office of Regional Operations
- Spengler, Robert, Sc.D., Associate Administrator for Science
- Touch, Ralph J., Jr., Capt., Chief Environmental Health Officer
- Wargo, Andrea, Ph.D., Associate Administrator, Washington, D.C. Office
- Warren, Rueben C., D.D.S., Dr.P.H., Associate Administrator, Office of Urban Affairs
- Williams, Robert C., P.E., D.E.E., Director, Division of Health Assessment and Consultation

- ATSDR Employees
  - Search the Department of Health and Human Services Employee Directory

---

ATSDR Web Site Usage Statistics

Department of Health and Human Services Home Page

For information, contact:
the ATSDR Information Center / ATSDRIC@cdc.gov / Phone toll-free at 1-888-42-ATSDR or 1-888-422-8737

Webmaster: Mike Perry / lmp1@cdc.gov

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From the U.S. Department of Health and Human Services' Home Page *http://www.hhs.gov*

Select hot button marked **HHS Agencies** *http://www.hhs.gov/progorg/*

Information is available on HHS Agencies, including: Administration on Aging; Agency for Toxic Substances and Disease Registry; Centers for Disease Control and Prevention; Food and Drug Administration; Indian Health Service; National Institutes of Health; and Substance Abuse and Mental Health Services Administration.

Select hot button marked **Agency for Toxic Substances and Disease Registry (ATSDR)** *http://atsdr1.atsdr.cdc.gov/atsdrhome.html*

ATSDR data available include: the HazDat Database; Toxicology; Health Assessments and Consultations; Health Studies; Special Initiatives and Projects; CLUSTER 3.1 (disease cluster software); and related Internet resources.

Select button marked Health & Human Services' **Home Page** *http://www.hhs.gov/*

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