

Washington: The State and Its People

Summary

Washington State's geography, climate and healthcare infrastructure affect the health and well-being of its residents. The state has a diverse climate with generally wetter, more temperate conditions west of the Cascade Range and drier conditions with a greater range of temperatures east of the Cascades. Among other impacts, anticipated climate changes will likely stress Washington's water resources and result in increased wildfires.

Population growth and changes in age, racial and ethnic composition also affect the state's health. U.S. Census data show that Washington's population increased by 14%—from 5.9 to 6.7 million—residents between 2000 and 2010. This growth rate was faster than the national growth rate of 10%. Washington's population is also aging. While 11% of Washington residents were 65 years old or older in 2010, this will increase to 21% by 2040, based on estimates by the Washington State Office of Financial Management.

Washington is gradually becoming more racially and ethnically diverse. In the 2010 U.S. Census, about 73% of Washington residents reported non-Hispanic and white as their only race, a decrease from 79% in 2000. Over this decade, the percent of residents classifying themselves as Hispanic grew from 8% to 11%, and the percent classifying themselves as Asian grew from 5% to 7%. Percentages reporting themselves as non-Hispanic black, American Indian or Alaska Native, and Native Hawaiian or other Pacific Islander stayed the same, at about 3%, 1% and less than 1%, respectively.

About 4% of Washington population reported more than one race in 2010.

Geography

Washington State occupies 66,582 square miles in the northwest corner of the "lower 48" United States. The Pacific Ocean is the state's western boundary. The many inlets of Puget Sound create a large inland saltwater shoreline. The Columbia River and its major tributaries drain the eastern half of the state and provide water that makes agriculture possible in this largely arid region.

The state is geologically active. The 6.8-magnitude Nisqually earthquake in 2001 caused one death (from a heart attack) and injured 407 people.¹ For months afterward, the state capitol buildings were closed for repairs, and some major roads were impassible. Twenty-five percent of central Puget Sound businesses closed for at least a day,² and one fourth of homes in the region had some damage.³ The 1980 explosion of Mount St. Helens was the most destructive volcanic event in U.S. history. Fifty-seven people died. The blast destroyed more than 200 houses and three billion board feet of saleable timber. (Another billion board feet were salvaged.) Almost 200 miles of interstate highway and 15 miles of railway were unusable for weeks.⁴

Climate

The Cascade Range separates Washington State into a predominantly wet western region and a mostly dry eastern region. Each of these regions has its unique landforms, climate and ecology. Most of eastern Washington gets fewer than 20 inches of rainfall a year with exceptions in the higher elevations in northeastern and southeastern Washington. In western Washington, some places get more than 200 inches of rainfall a year, while

others in the “rain shadow” of the Olympic Mountains get as little rain as eastern Washington.⁵

Because of the moderating impact of the Pacific Ocean, western Washington’s temperatures seldom fall below 20 degrees Fahrenheit in the winter or exceed 90 degrees in the summer. In contrast, eastern Washington’s temperatures can range from below zero in the winter to above 100 degrees in the summer.

Catastrophic hurricanes and tornados, common in the eastern and midwestern states, are rare in Washington. Instead, weather-related health threats in Washington come from wildfires, episodes of stagnant air, windstorms and floods. Smoke from forest and other wildfires aggravates chronic lung conditions, asthma and heart disease. Similarly, concentrations of small particulates in association with wood smoke can reach unhealthful levels in populated areas during periods of calm, clear weather in winter. Windstorms can cause extended power outages that jeopardize supplies of food and drinking water and place people at risk of carbon monoxide poisoning from using generators, barbeques and other cooking and heating appliances incorrectly. Floods can contaminate drinking water supplies and shellfish beds. Floods can also create conditions for mold contamination in homes, schools and businesses.

A large number of scientific societies, research organizations and governmental science academies—including the U.S. National Academy of Science—have concluded that the world’s climate is warming.⁶ Scientists project that Washington’s average annual temperature in the 2020s will be almost two degrees higher than the 1970–1999 average.⁷ Even now, glaciers have shrunk, peak stream flows often occur earlier in the spring and the impact of wildfires has increased.^{8,9} In addition to threats to water supplies from increased flooding, the earlier spring snow melt means that rivers and reservoirs might not fill sufficiently or at the right time to meet urban and agricultural needs or the habitat requirements of fish.¹⁰ Summer and fall droughts predicted by climate change models are likely to compound these problems.^{7,10}

The combination of warming, flooding and drought will continue to alter the ecology throughout Washington State. For example, warmer winters have already contributed to the spread of the pine bark beetle, which is

responsible for killing large areas of pine forest in the northwest and Canada.¹⁰ These dead and dying forests contribute to increased wildfires and the transition of land from forest to grass.¹¹ Warmer winters and extreme weather, such as flooding, may increase habitat for mosquitoes and ticks that carry human diseases such as West Nile virus and Lyme disease.¹⁰

Climate change is predicted to increase the frequency, severity and duration of extreme heat events and cause a deterioration of air quality due to ozone in Washington. Such events are predicted to increase mortality due to heat stress, heat stroke, heart attacks and respiratory illnesses.¹² While some effects of climate change have been well-documented in Washington, information on potential health impacts of more global issues, such as threats to food security and large-scale migration due to climate change, is not available for Washington State.

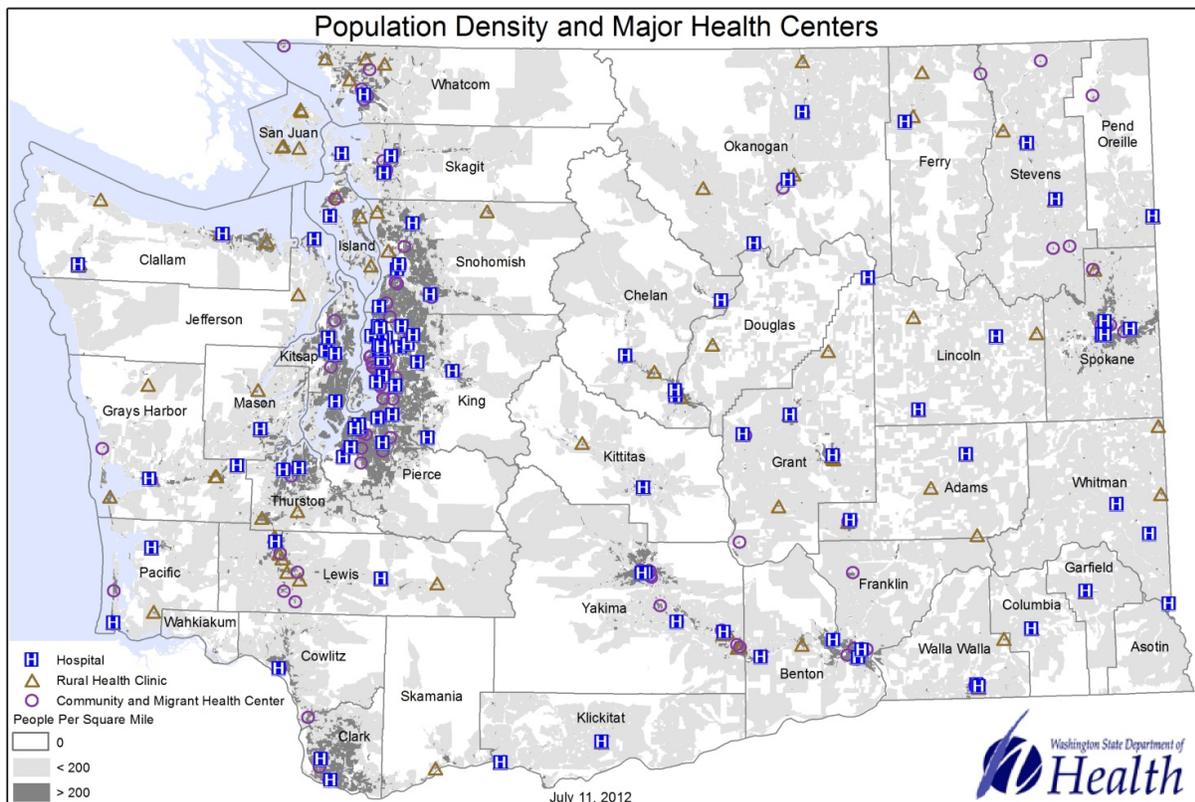
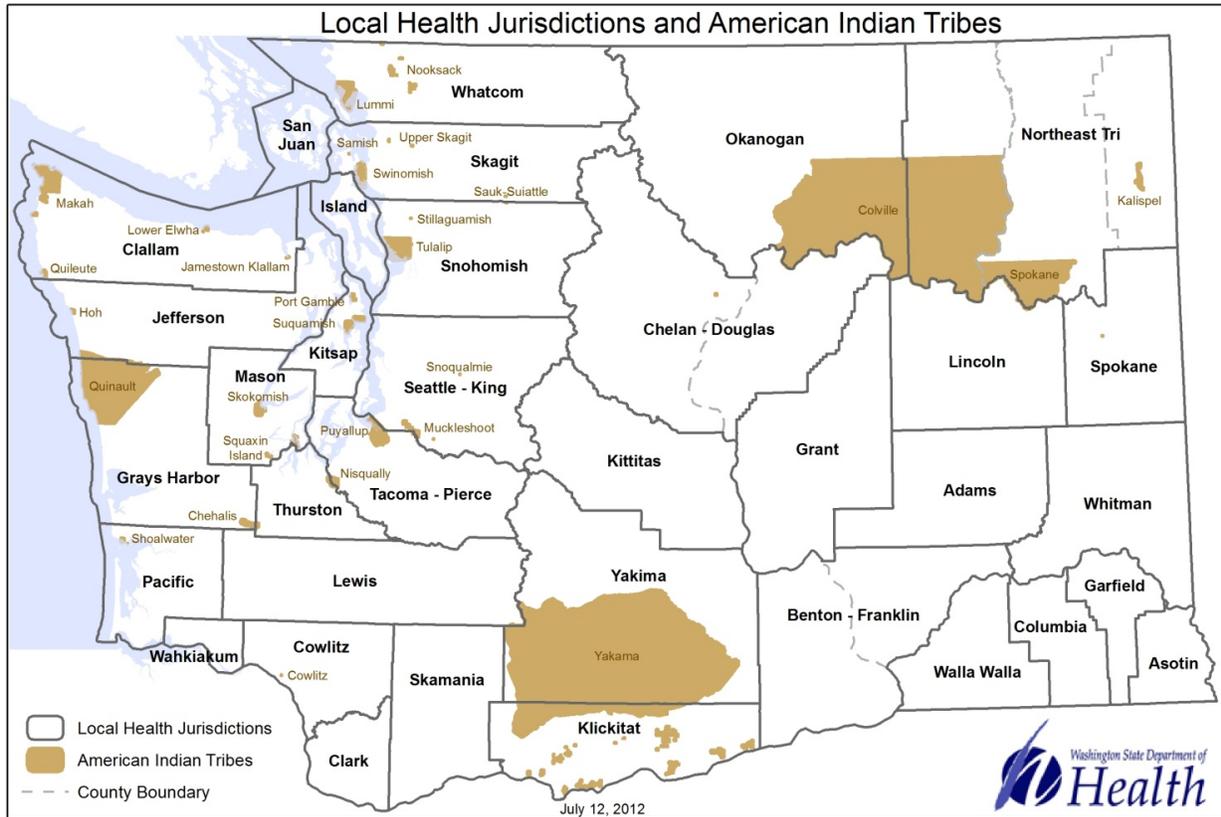
Public Health and Healthcare Systems

Washington has a network of local health jurisdictions, hospitals, rural healthcare clinics, and tribal, community and migrant health centers.

In Washington State, the governmental public health system is a decentralized model characterized by local (county) control and state-local partnership. It consists of 35 local public health agencies or local health jurisdictions (LHJs) that work with the state Department of Health.

State law gives primary responsibility for the health and safety of Washington residents to county governments. It charges the counties’ legislative authorities with establishing either a county department or a health district to assure the public’s health (*RCW 70.05, 70.08, 70.46*) and a local board of health, which “shall have supervision over all matters pertaining to the preservation of the life and health of the people within its jurisdiction.” (*RCW 70.05.060*) Local boards of health approve the budgets, programs and policies of local public health agencies and may also appoint the agency administrator. Board members include county commissioners or members of the county council and may include elected or non-elected officials. Elected officials must always make up the majority.

The fundamental goals of the governmental public health system are to: 1) protect people from communicable diseases and other health threats through prevention, early detection and swift responses; 2) build communities that prevent illness,



promote wellness and better provide all of us the opportunity for long, healthy lives; and 3) improve access to quality, affordable healthcare that incorporates routine clinical preventive services and is available in rural and urban communities alike.

Washington is home to 29 federally recognized Indian tribes. Most tribes provide public health and healthcare services to their members. Washington has 56 public hospital districts, publicly owned entities that run hospitals, clinics and home health services. Public hospital districts operate almost half of the more than 90 community general hospitals in Washington. A few of these districts also organize emergency medical services; often, they provide the only access to such services in isolated areas. Elected district board members represent the service area, providing opportunities to make major decisions based on local priorities.

The city of Vancouver is close to Portland, Oregon, and many of its residents go to Oregon for healthcare services. Elsewhere in the state, hospitals, rural healthcare clinics, and community and migrant healthcare centers are located in local population centers.

Population and Population Growth

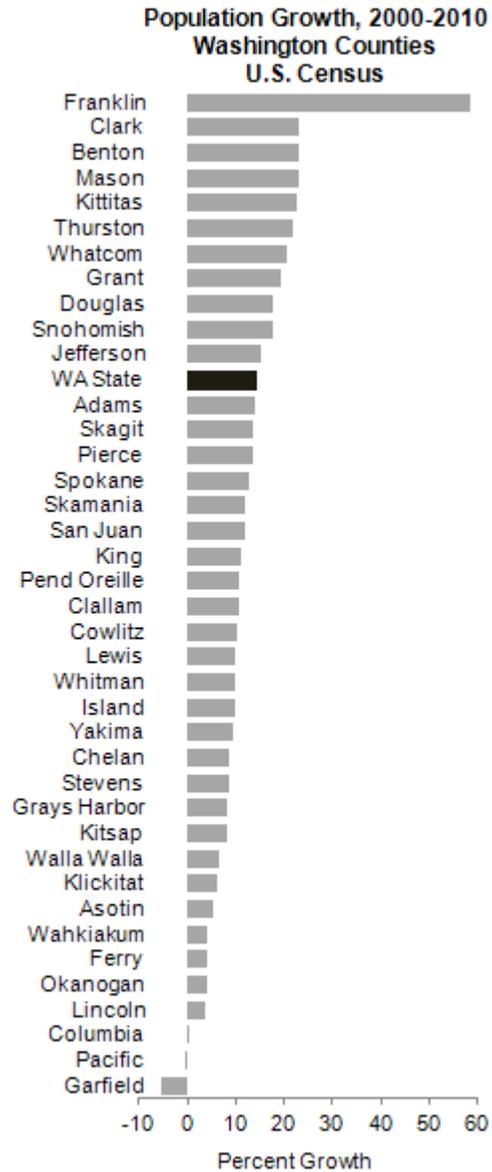
The U.S. Census counted 6,724,540 Washington State residents in 2010. About three-fourths lived west of the Cascade Range. The five counties with the most people were King (1,931,249), Pierce (795,225), Snohomish (713,335), Spokane (471,221) and Clark (425,363). The five with the fewest people were Lincoln (10,570), Ferry (7,755), Columbia (4,078), Wahkiakum (3,978) and Garfield (2,266).

The 2010 U.S. Census counted 608,660 people in Seattle, making it Washington’s city with the largest population. Five other cities had populations greater than 100,000—Spokane (208,916), Tacoma (198,397), Vancouver (161,791), Bellevue (122,363) and Everett (103,019).

Population Growth

Between 2000 and 2010, Washington’s population increased by 14%. This represents faster growth than the 10% in the nation as a whole. During the same time period, Garfield County lost population and the populations of Pacific and Columbia counties stayed about the same. King County added the largest number of people (about 194,000) followed by Pierce (about 149,000) and Clark (about 132,000). Franklin County had the

largest percent growth (58%), growing from about 49,000 in 2000 to 78,000 in 2010.



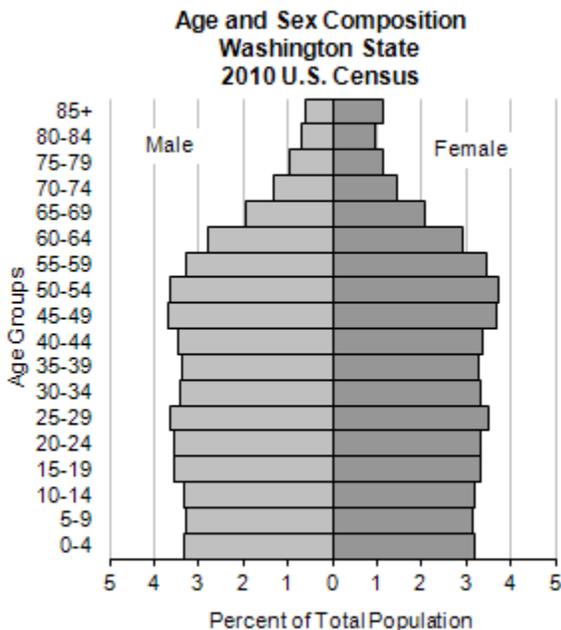
Populations change because of natural increase or decrease (the difference between births and deaths) and migration (people moving into or out of an area). Historically, most of Washington’s growth has been due to people moving into the state. The Office of Financial Management predicts that Washington’s population will grow to almost 8.8 million by 2040 with migration accounting for 58% of this growth.¹³

Population growth can benefit health if it is combined with sustainable development and increased opportunities for jobs that pay at least a

living wage. If population growth outpaces infrastructure development, it can put stress on healthcare systems and natural resources by increasing the need for medical services, clean water and electricity. Air quality will deteriorate if population growth is not accompanied by low- or non-polluting transportation alternatives.

Age and Gender

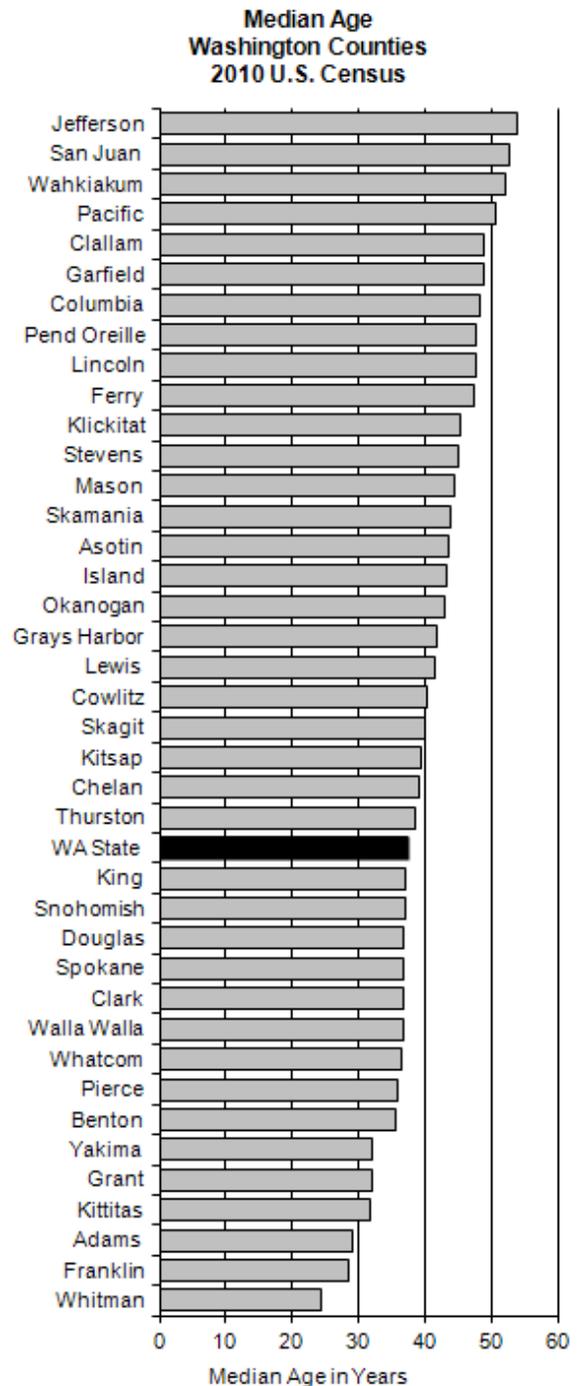
On average, about 105 boys are born for every 100 girls. In 2010, males outnumbered females in every age group until 45–49, when the numbers were roughly the same. After that, the number of women relative to men increased so that by age 85 and older, there were about two women for every man.



This shifting gender structure occurs because men are far more likely to die at younger ages than women. This pattern is also seen nationally. It begins in the teenage years and continues until the oldest ages. At younger ages, injuries and violence account for much of this difference. Among older people, men die of chronic diseases at younger ages than women. Where appropriate, each chapter in *Health of Washington State* includes both age and gender-specific analyses.

Washington State’s age composition is slowly getting older. In the 1990 U.S. Census, the median age in Washington was 33, meaning half the residents were older than 33 and half were younger. The U.S. Census reported the median age in Washington as 35 in 2000 and 37 in 2010,

the same as the median age of the total U.S. population.¹⁴



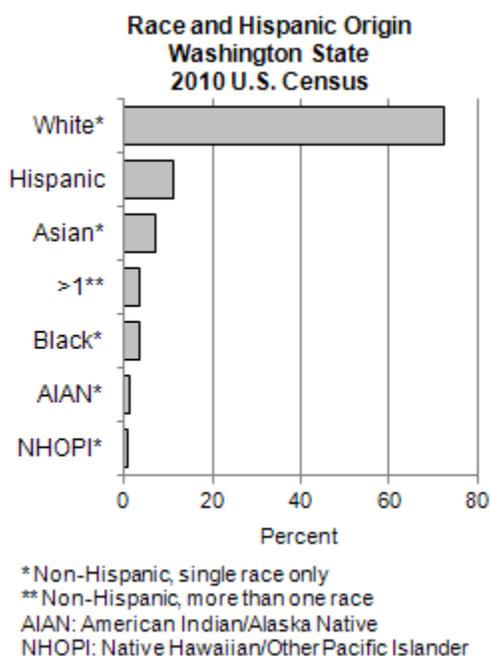
In 2010, the median ages of Washington residents ranged from 24 years in Whitman County, home to Washington State University, to 54 years in Jefferson County, home to many retirees.

This aging of the population has significant implications for healthcare costs. People ages 65

and older, especially those 85 and older, account for a disproportionate share of healthcare costs.¹⁵ In 2010, 11% of Washington's population was 65 years old or older: 9% were ages 65–84, and 2% were 85 years or older. The Washington State Office of Financial Management projects that by 2040, 21% of Washingtonians will be 65 years old or older: 17% will be 65–84 years old, and 4% will be 85 or older.¹³

Race and Hispanic Origin

In the United States, geographic differences in health often are reflections of population diversity.¹⁶ As many chapters in *Health of Washington State* show, white, non-Hispanic Americans and people of Asian heritage enjoy better health than people in other racial and ethnic groups. Most often, racial and ethnic differences in health are due to social, cultural, economic and political factors, not genetic factors.



Washington's population is becoming more diverse based on increased proportions of residents who reported being of Hispanic or Asian origin on the 2010 U.S. Census. From 2000 to 2010, the percent of people who reported Hispanic origin grew from about 8% to 11%. During the same time period, the percent of non-Hispanic residents reporting Asian as their only race grew from about 5% to 7%, while the percent of non-Hispanics in several other racial categories remained constant at 3% for black, 1% for American Indian or Alaska Native, and less than

1% for the Native Hawaiian or other Pacific Islander category. The percent of non-Hispanic residents reporting white as their only race decreased from about 79% in 2000 to 73% in 2010.

Based on the 2010 U.S. Census, Washington has a lower percent of Hispanic residents than the nation (11% compared to 16%). Among non-Hispanics reporting only one race, a smaller percent reported African American in Washington (3%) compared to the United States (12%); larger proportions reported American Indian or Alaska Native (1.3% compared to 0.7%), Asian (7% compared to 5%), Native Hawaiian or other Pacific Islander (0.6% compared to 0.2%) and white (73% compared to 64%). Additionally, more non-Hispanic Washington residents reported two or more races (4%) compared to the nation (2%).¹⁷

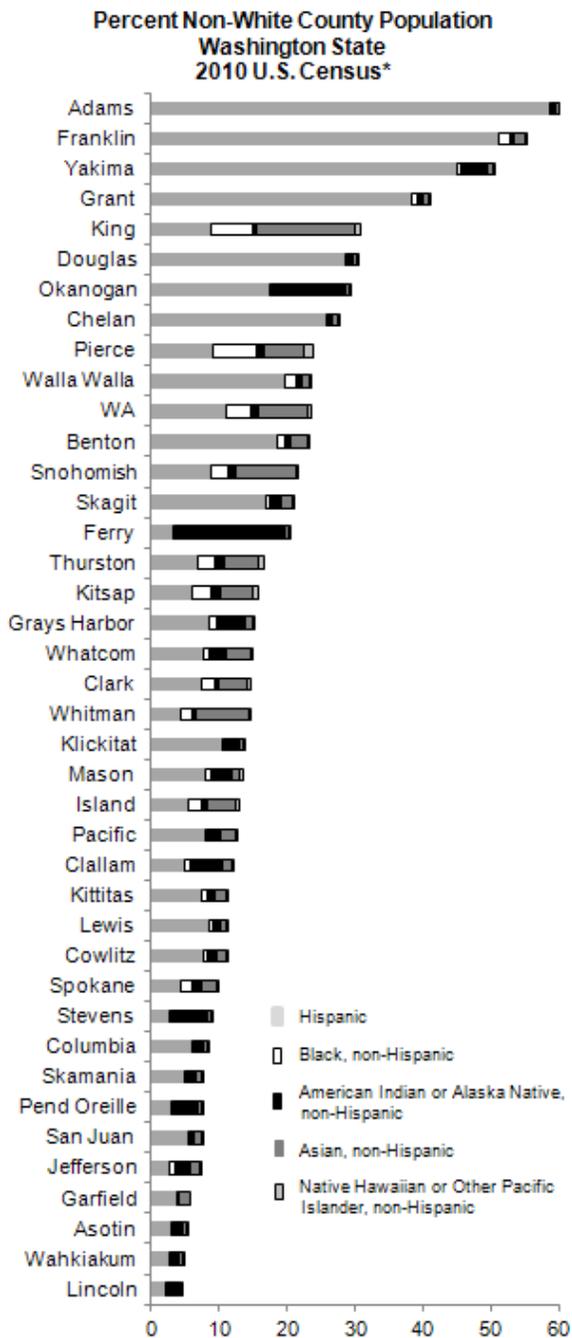
Washington counties vary in their ethnic and racial diversity. In 2010, about 60% of residents in Adams County were of Hispanic origin, as were about half the population in Yakima and Franklin counties, 40% in Grant, 30% in Douglas, and 20% to 25% in Chelan, Walla Walla, Benton, Okanogan and Skagit counties. In Ferry County, 16% of the population was American Indian or Alaska Native, and in Okanogan County, American Indians or Alaska Natives made up 11% of the population. King and Pierce counties had the largest numbers of black, American Indian or Alaska Native, and Native Hawaiian or other Pacific Islander residents. In King County, 14% of residents were Asian, as were 9% of residents in Snohomish County.

The racial and ethnic composition of counties can influence their health rates on specific indicators. For this reason, where possible, each chapter of *Health of Washington State* presents information by race and Hispanic origin.

Data Sources

U.S. Census Bureau, 2010 Census, 2010 Census Summary File 1, prepared by Washington State Office of Financial Management, wa_2010_sf1_asr_county available at <http://www.ofm.wa.gov/pop/census2010/data.asp>, state and county links, accessed August 11 2011.

U.S. Census Bureau 2000: Census 2000 Summary Files, Matrices PL1 and PL2 (state and county growth)



For More Information

Washington State Facts:
<http://access.wa.gov/statefacts/index.aspx>
 Washington State Department of Natural Resources,
<http://www.dnr.wa.gov/Pages/default.aspx>
 U.S. Department of the Interior, U.S. Geological Survey,
<http://pubs.usgs.gov/fs/FS-047-96/>
 Washington State tribes, <http://www.goia.wa.gov>

Local hospital districts,
http://www.awphd.org/about_whatare.asp

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Endnotes

- ¹ *Nisqually Earthquake 6.8*; 2005. Camp Murray, WA: Washington Military Department, Emergency Management Division. <http://emd.wa.gov/1-dir/pubed/nisqually-brochure/01-Nisqually-eq-idx.htm>. Accessed February 27, 2007.
- ² Beyers W, Chang S, Hyde S. *Estimating the Economic Impact of the Nisqually Earthquake on Businesses in the Central Puget Sound Region*; 2003. <http://uwnews.washington.edu/ni/article.asp?articleID=2207>. Accessed February 27, 2007.
- ³ Beyers W, Chang S. *Household Economic Impacts of the Nisqually Earthquake*; 2002. <http://uwnews.washington.edu/ni/article.asp?articleID=2517>. Accessed February 27, 2007.
- ⁴ Tilling RI, Topinka L, Swanson DA. *Eruptions of Mount St. Helens: Past, Present, and Future*. Washington, DC: U.S. Geological Survey Special Interest Publication; 1990. http://vulcan.wr.usgs.gov/Volcanoes/MSH/Publications/MSHPPF/MSH_past_present_future.html. Accessed September 21, 2006.
- ⁵ *Average Annual Precipitation 1971-2000, Washington*; 2006. Corvallis, OR: PRISM Climate Group and Oregon Climate Service, Oregon State University. http://prism.oregonstate.edu/state_products/index.phtml?id=WA. Accessed September 18, 2012.
- ⁶ Union of Concerned Scientists *Sound Science Initiative, Scientific Consensus on Global Warming*. <http://www.ucsusa.org/ssi/climate-change/scientific-consensus-on.html>. Accessed July 10, 2012.
- ⁷ McGuire Elsner M, Littell J, Whitely Binder L, eds. *The Washington Climate Change Impacts Assessment: Evaluating Washington's Future in a Changing Climate*; 2009. Seattle, WA: The Climate Impacts Group, Center for Science in the Earth System, Joint Institute for the Study of the Atmosphere and Oceans, University of

Washington.

<http://www.cses.washington.edu/db/pdf/wacciareport681.pdf>.
Accessed December 2011.

⁸ *Facts about Washington's retreating glaciers and declining snow pack*; 2007. Olympia, WA: Washington State Department of Ecology. <https://fortress.wa.gov/ecy/publications/publications/0711016.pdf>. Accessed September 21, 2012.

⁹ *Washington State's Integrated Climate Response Strategy*; 2012. Olympia, WA: Washington State Department of Ecology. http://www.ecy.wa.gov/climatechange/ipa_responsestrategy.htm. Accessed September 21, 2012.

¹⁰ *Warmer Temperatures*. Olympia, WA: Washington State Department of Ecology. http://www.ecy.wa.gov/climatechange/warming_more.htm#PEST. Accessed July 13, 2012.

¹¹ Westerling AL, Hidalgo HG, Cayan DR, Swetnam TW. Warming and Earlier Spring Increases Western U.S. Forest Wildfire Activity. *Scienceexpress*. 2006. Published online July 6, 2006.

¹² Jackson JE, Yost MG, Karr C, et al. Public health impacts of climate change in Washington State: projected mortality risks due to heat events and air pollution. *Clim Change*. 2010;102:159-186.

¹³ *Forecast of the State Population, November 2011 Forecast*; 2011. Olympia, WA: State of Washington Office of Financial Management. http://www.ofm.wa.gov/pop/stfc/stfc2011/stfc_2011.pdf. Accessed July 10, 2012.

¹⁴ *Age and Sex Composition: 2010*, 2010 Census Briefs, May 2011. <http://www.census.gov/prod/cen2010/briefs/c2010br-03.pdf>. Accessed July 10, 2012; *Age: 2000*, Census 2000 Brief, October 2001. <http://www.census.gov/prod/2001pubs/c2kbr01-12.pdf>. Accessed July 10, 2012.

¹⁵ Stanton MS, Rutherford MK. The high concentration of U.S. health care expenditures. *Research in Action, Issue 19*. Washington, DC: U.S. Agency for Healthcare Research and Quality; 2005. <http://www.ahrq.gov/research/ria19/expendria.pdf>. Accessed May 8, 2007.

¹⁶ Murray CJL, Sandeep CK, Michaud C, et al. Eight Americas: investigating mortality disparities across races, counties, and race-counties in the United States. *PLoS Med*. 2006;3:e260. <http://medicine.plosjournals.org/perlserv?request=get-document&doi=10.1371/journal.pmed.0030260>. Accessed September 18, 2006.

¹⁷ *National data from: Overview of Race and Hispanic Origin: 2010*, 2010 Census Briefs, March 2011. <http://www.census.gov/prod/cen2010/briefs/c2010br-02.pdf>. Accessed July 6, 2012.