

Geographers

Summary



Geographers often present their research to colleagues or other stakeholders.

Quick Facts: Geographers	
2012 Median Pay	\$74,760 per year \$35.94 per hour
Entry-Level Education	Bachelor's degree
Work Experience in a Related Occupation	None
On-the-job Training	None
Number of Jobs, 2012	1,700
Job Outlook, 2012-22	29% (Much faster than average)
Employment Change, 2012-22	500

[What Geographers Do](#)

Geographers study the earth and its land, features, and inhabitants. They also examine phenomena such as political or cultural structures as they relate to geography. They study the physical and human geographic characteristics of a region, ranging in scale from local to global.

[Work Environment](#)

About half of all geographers are employed by the federal government. Most work full time during regular business hours. Many geographers do fieldwork, which may include travel to foreign countries or remote locations.

[How to Become a Geographer](#)

Geographers need at least a master's degree for most positions outside of the federal government. Those with a bachelor's degree may qualify for some entry-level jobs in the federal government, but many of these jobs often require geography experience or training in geographic information systems (GIS).

[Pay](#)

The median annual wage for geographers was \$74,760 in May 2012.

[Job Outlook](#)

Employment of geographers is projected to grow 29 percent from 2012 to 2022, much faster than the average for all occupations. Increasing use of geographic technologies and data will drive employment growth, but a limited number of positions in the field will lead to strong competition for jobs.

[Similar Occupations](#)

Compare the job duties, education, job growth, and pay of geographers with similar occupations.

[More Information, Including Links to O*NET](#)

Learn more about geographers by visiting additional resources, including O*NET, a source on key characteristics of workers and occupations.

What Geographers Do



Some people with a geography degree become teachers or professors.

Geographers study the earth and its land, features, and inhabitants. They also examine phenomena such as political or cultural structures as they relate to geography. They study the physical and human geographic characteristics of a region, ranging in scale from local to global.

Duties

Geographers typically do the following:

- Gather geographic data through field observations, maps, photographs, satellite imagery, and censuses
- Use quantitative methods, such as statistical analysis, in their research
- Use qualitative methods, such as surveys, interviews, and focus groups, in their research
- Create and modify maps, graphs, diagrams, or other visual representations of geographic data
- Analyze the geographic distribution of physical and cultural characteristics and occurrences
- Use geographic information systems (GIS) to collect, analyze, and display geographic data
- Write reports and present research findings
- Assist, advise, or lead others in using GIS and geographic data
- Combine geographic data with data about a particular specialty, such as economics, the environment, health, or politics

Geographers use several technologies in their work, such as GIS, remote sensing, and global positioning systems (GPS). Geographers use GIS to find relationships and trends in geographic data. GIS allow geographers to present data visually as maps, reports, and charts. For example, geographers can overlay aerial or satellite images with GIS data, such as population density in a given region, and create computerized maps. They then use the results to advise governments, businesses, and

the general public on a variety of issues, such as marketing strategies; planning homes, roads, and landfills; or disaster responses.

Many people who study geography and who use GIS in their work are employed as [surveyors](#), [cartographers and photogrammetrists](#), [surveying and mapping technicians](#), [urban and regional planners](#), and [geoscientists](#).

The following are examples of types of geographers:

Physical geographers examine the physical aspects of a region and how those aspects relate to humans. They study features of the natural environment, such as land forms, climates, soils, natural hazards, water, and plants. For example, physical geographers may map where a natural resource occurs in a country and study the implications of that natural resource on the surrounding environment.

Human geographers analyze the organization of human activity and its relationships with the physical environment. Human geographers often combine issues from other disciplines into their research, which may include economic, social, or political topics. In their research, some human geographers rely primarily on statistical techniques, and others rely on non-statistical sources, such as field observations and interviews.

Human geographers are often further classified by their area of specialty:

- **Cultural geographers** examine the relationship between geography and culture, studying how features such as religion, language, or ethnicity relate to location.
- **Economic geographers** study economic activities and the distribution of resources. They may research subjects such as regional employment or the location of industries.
- **Environmental geographers** research the impact humans have on the environment and how human activities affect natural processes. They combine aspects of both physical and human geography and commonly study issues such as climate change, desertification, and deforestation.
- **Medical geographers** investigate the distribution of health issues, health care, and disease. For example, a medical geographer may examine the incidence of disease in a certain region.
- **Political geographers** study the relationship between geography and political structures and processes.
- **Regional geographers** focus on the geographic factors in a particular region, ranging in size from a neighborhood to an entire continent.
- **Urban geographers** study cities and metropolitan areas. For example, they may examine how certain geographic factors, such as climate, affect population density in cities.

Geographers often work on projects with people in related fields. For example, economic geographers may work with urban planners, civil engineers, legislators, and real estate professionals to determine the best location for new public transportation infrastructure.

Some people with a geography background become [postsecondary teachers](#).

Work Environment



Some geographers travel to do fieldwork.

Geographers held about 1,700 jobs in 2012, of which 49 percent were in the federal government. Most others worked in architectural, engineering, and related services; colleges, universities, and professional schools; or were self-employed.

Many geographers do fieldwork to gather information and data. For example, geographers often make site visits to observe geographic features, such as the landscape and environment. Some geographers travel to the region they are studying, and sometimes that means working in foreign countries and remote locations.

Work Schedules

Most geographers work full time during regular business hours.

How to Become a Geographer



Geographers use maps and global positioning systems in their work.

Candidates with a bachelor's degree may qualify for some entry-level jobs, but these jobs often require previous geography experience or training in geographic information systems (GIS). Geographers need at least a master's degree for most positions outside of the federal government.

Education

Geographers outside of the federal government typically need a master's degree in geography. However, those with a bachelor's degree may qualify for some entry-level jobs in government or nonprofits. Some positions allow candidates to substitute work experience or GIS proficiency for an advanced degree. Top research positions usually require a Ph.D. or a master's degree and several years of relevant work experience.

Most geography programs include courses in both physical and human geography, statistics or mathematics, remote sensing, and GIS. In addition, courses in a specialized area of expertise are increasingly important because the geography field is broad and interdisciplinary. For example, business, economics, or real estate courses are increasingly important for geographers working in private industry.

Positions for geography professors require a Ph.D. For more information, see the profile on [postsecondary teachers](#).

Other Experience

Students and new graduates often gain experience through internships or part-time jobs. These positions allow workers to develop new skills, explore their interests, and become familiar with the industry. Internships and part-time jobs can be useful for job seekers, because some employers prefer workers who have practical experience.

Licenses, Certifications, and Registrations

Most positions require geographers to be proficient in GIS. Geographers can become certified as a GIS professional (GISP) through the [GIS Certification Institute](#). Although certification is not mandatory, it can demonstrate a level of professional expertise. Candidates may qualify for certification through a combination of education, professional experience, and contributions to the profession, such as publications or conference participation. GISP certification can often help those without a master's degree or Ph.D. qualify for jobs.

Important Qualities

Analytical skills. Geographers commonly analyze information and spatial data from a variety of sources, such as maps, photographs, and censuses. They must then be able to draw conclusions from analysis of different sets of data.

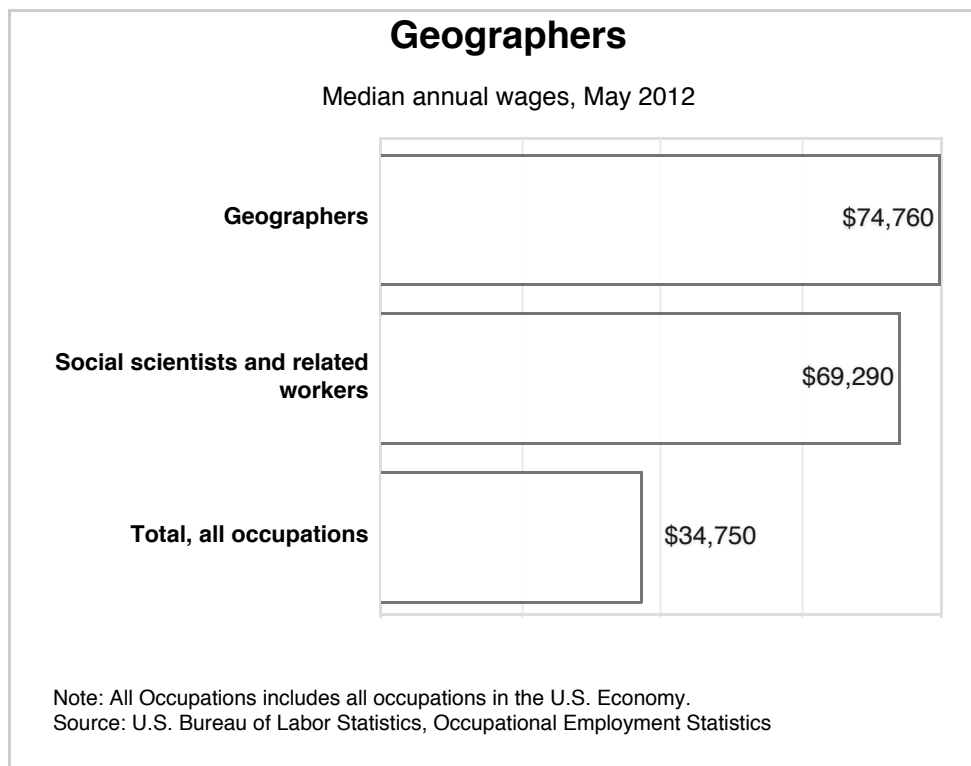
Communication skills. Geographers often work closely with workers in related fields. They must be able to communicate with coworkers; present, explain, and defend their research; and work well on teams.

Computer skills. Geographers who use GIS technology need strong computer skills. They must be proficient in GIS programming and database management and should be comfortable creating and manipulating digital images in the software.

Critical-thinking skills. Geographers need critical-thinking skills when doing research because they must choose the appropriate data, methods, and scale of analysis for projects. For example, after reviewing a set of population data, they may determine the implications of a particular development plan.

Writing skills. Writing skills are important for geographers because they often write reports or articles detailing their research findings. Some geographers also must write proposals so that they can receive funding for their research or projects.

Pay



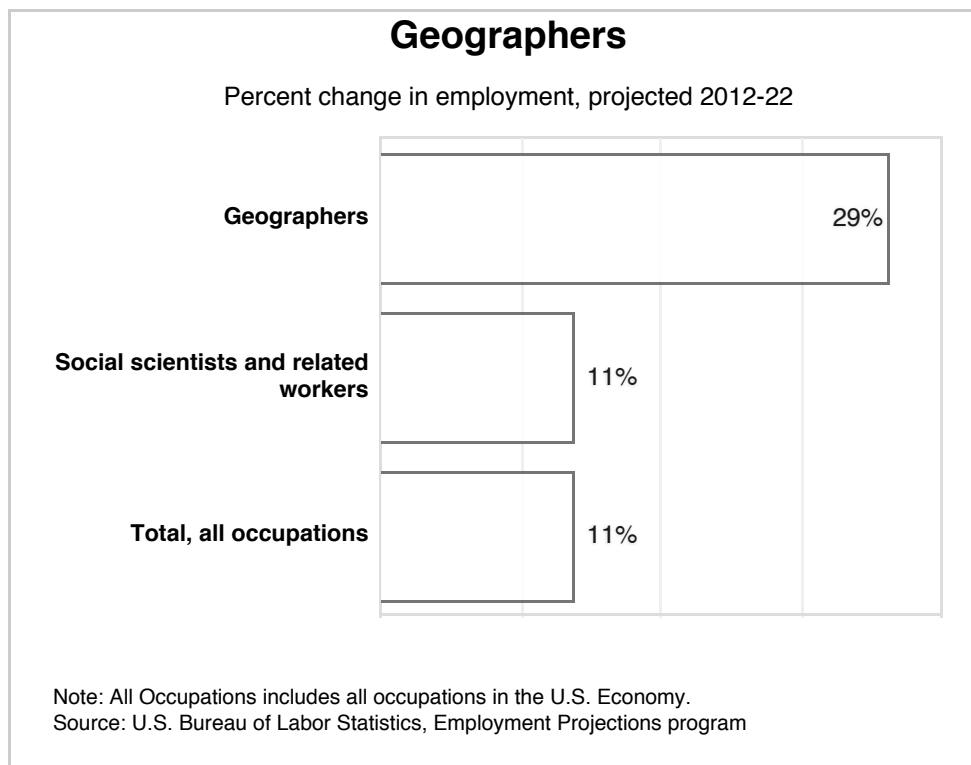
The median annual wage for geographers was \$74,760 in May 2012. The median wage is the wage at which half the workers in an occupation earned more than that amount and half earned less. The lowest 10 percent earned less than \$41,910, and the top 10 percent earned more than \$103,870.

In May 2012, the median annual wages for geographers in the top three industries employing geographers were as follows:

Federal government	\$78,720
Professional, scientific, and technical services	65,150
Educational services; state, local, and private	53,150

Many geographers work full time during regular business hours. Some do fieldwork that may include travel to foreign countries or remote locations.

Job Outlook



Employment of geographers is projected to grow 29 percent from 2012 to 2022, much faster than the average for all occupations. However, because it is a small occupation, the fast growth will result in only about 500 new jobs over the 10-year period.

More widespread use of geographic technologies, including geographic information systems (GIS), should drive job growth. These technologies allow government agencies, businesses, and nonprofits to use geographic data to make better business and planning decisions. Specifically, governments, businesses, and developers will need geographers to analyze information and offer advice on topics such as land use, building or infrastructure location, or environmental impact.

Due to greater focus on environmental and sustainable practices, geographers are increasingly needed to understand environmental changes and human impacts on the environment. Therefore, geographic analyses will be used to inform developers and policymakers of sustainable business practices and ensure adherence to increased regulations.

Governments and businesses also rely on geographers to research topics such as resource use, natural hazards, and climate change.

Job Prospects

Despite faster-than-average employment growth, the small size of the occupation will result in a limited number of positions—a scenario in which applicants can expect strong competition for jobs. Those with advanced degrees, specialized subject matter expertise, and experience working with geographic technologies, such as GIS, should have the best job prospects. Workers who have used geographic technologies to complete projects and solve problems within their specialized subfield should have better job opportunities.

Many workers with a background in geography find geography-related jobs, but most of these positions do not have the title of geographer. Some of these occupations include [surveyors](#), [cartographers and photogrammetrists](#), [surveying and mapping technicians](#), [urban and regional planners](#), and [geoscientists](#).





Employment projections data for Geographers, 2012-22

Occupational Title	SOC Code	Employment, 2012	Projected Employment, 2022	Change, 2012-22		Employment by Industry
				Percent	Numeric	
Geographers	19-3092	1,700	2,200	29	500	[XLS]

SOURCE: U.S. Bureau of Labor Statistics, Employment Projections program

Similar Occupations

This table shows a list of occupations with job duties that are similar to those of geographers.

	OCCUPATION	JOB DUTIES	ENTRY-LEVEL EDUCATION	2012 MEDIAN PAY
	Anthropologists and Archeologists	Anthropologists and archeologists study the origin, development, and behavior of humans. They examine the cultures, languages, archeological remains, and physical characteristics of people in various parts of the world.	Master's degree	\$57,420
	Cartographers and Photogrammetrists	Cartographers and photogrammetrists collect, measure, and interpret geographic information to create maps and charts for political, educational, and other purposes.	Bachelor's degree	\$57,440
	Economists	Economists study the production and distribution of resources, goods, and services by collecting and analyzing data, researching trends, and evaluating economic issues.	Master's degree	\$91,860
	Geoscientists	Geoscientists study the physical aspects of the Earth, such as its composition, structure, and processes, to learn about its past, present, and future.	Bachelor's degree	\$90,890
	Market Research	Market research analysts study market conditions to examine potential sales of a product or service.	Bachelor's degree	\$60,300



Analysts

They help companies understand what products people want, who will buy them, and at what price.



Political Scientists

Political scientists study the origin, development, and operation of political systems. They research political ideas and analyze governments, policies, political trends, and related issues.

Master's degree

\$102,000



Postsecondary Teachers

Postsecondary teachers instruct students in a wide variety of academic and vocational subjects beyond the high school level. They also conduct research and publish scholarly papers and books.

[See How to Become One](#)

\$68,970



Sociologists

Sociologists study society and social behavior by examining the groups, cultures, organizations, social institutions, and processes that people develop.

Master's degree

\$74,960



Surveying and Mapping Technicians

Surveying and mapping technicians assist surveyors, cartographers, and photogrammetrists. Together, they collect data and make maps of the earth's surface. Surveying technicians visit sites to take measurements of the land. Mapping technicians use geographic data to create maps.

High school diploma or equivalent

\$39,670




Surveyors

Surveyors make precise measurements to determine property boundaries. They provide data relevant to the shape and contour of the Earth's surface for engineering, mapmaking, and construction projects.

Bachelor's degree

\$56,230

Urban and regional planners develop plans and programs for the use of land. Their plans help

	<u>Urban and Regional Planners</u>	create communities, accommodate population growth, and revitalize physical facilities in towns, cities, counties, and metropolitan areas.	Master's degree	\$65,230
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Contacts for More Information

For more information about geographers, visit

[Association of American Geographers](#)

For more information about geographic information systems (GIS) certification, visit

[GIS Certification Institute](#)

For information on federal government education requirements for geographer positions, visit

[U.S. Office of Personnel Management](#)

To find job openings for geographers in the federal government, visit

[USAJOBS](#)

O*NET

[Geographers](#)

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