

# Geology as an Occupation

## What is Geology

Geology provides the key to finding and utilizing earth's resources and understanding Earth processes that affect our lives. Geologists solve problems and establish policy for:

- resource management,
- environmental protection, and
- public health, safety and welfare.

By applying knowledge of forces that shape the Earth, geologists reconstruct the past and anticipate the future

## Qualities and Skills of a Geologist

A bachelor's degree in geology is required along with knowledge of mathematics, chemistry, and physics.

- Ability to work with a team
- Communication and quantitative skills
- Critical thinking & problem solving
- Detail-oriented
- Inquisitive
- Interpersonal skills
- Integration and application of knowledge
- Observational and investigative skills
- Physical stamina for fieldwork
- Professional values & ethics
- Understanding of relationships, interactions and patterns

## Geologist Tasks

- Communicate with diverse groups like marketers, regulatory personnel, etc.
- Generate data and visualizations such as mineral charts, soil analyses, groundwater modeling, maps, etc.
- Review, integrate, quality control and collect data for geologic, hydrologic and other databases.
- Investigate sites, take samples, and oversee delineation of land and active worksites.

## Workforce Gap

In 2014, there were 324,000 geoscientists employed in the United States. Between 2014 and 2024, about 155,000 geologists are expected to retire. Also, there is an expected close to 20% increase in new jobs. The U.S., however, is producing only about 7,000 geology graduates per year. That means about 90,000 more geoscience jobs than graduating geoscience majors can fill.

## Job and Salary Outlook

The employment outlook in geology - as in any profession - varies with the economic climate of the country. The long-range outlook is good at this time. Dwindling energy, mineral and water resources, increasing environmental concerns, global issues such as rising sea levels, and hazard assessment present new challenges to geoscientists. Career opportunities are increasing in environmental science and hydrogeology with the growing need.

Geologists in the United States can expect starting wages of about \$40,000 annually, with a median income of \$90,000 (<https://www.bls.gov/ooh/life-physical-and-social-science/geoscientists.htm>) for all geoscientists. Geographic location is the biggest factor affecting pay, followed by career length and the particular employer. The majority of Geologists claim high levels of job satisfaction.

There are, and will be, jobs for BS in Geology graduates in Metropolitan New York with environmental consulting companies, civil engineering and construction companies, government agencies, and in the energy, mineral and water resource sectors

## References

Explanation of the Predicted Geoscience Workforce Shortage

<https://www.americangeosciences.org/workforce/currents/explanation-predicted-geoscience-workforce-shortage>

Geoscience and New York

<https://www.americangeosciences.org/policy/factsheet/states/new-york>

Geoscience Careers Brochure

<https://www.americangeosciences.org/workforce/geoscience-careers-brochure>

Status of the Geoscience Workforce 2016

<https://www.americangeosciences.org/workforce/reports/status-report>

Who will build the 21st century? Addressing critical demographic gaps in the geosciences

<http://www.geosociety.org/gsatoday/archive/25/12/article/i1052-5173-25-12-36.htm>