

Geological and geophysical technologist

Geological and geophysical technologists specialize in measuring and interpreting data to support the exploration, production, and management of natural resources. They work with a variety of professionals, including geologists, geophysicists, and engineers, and in a number of industries, for example oil and gas, mining, and construction. Geological and geophysical technologists are also involved in site reclamation and environmental hazard cleanup.

Avg. Salary: \$46,900 to \$112,800 (per annum)

High School Recommendations:	Post-secondary Recommendations:
<ul style="list-style-type: none">• Chemistry• Physics• Math• Geography	<ul style="list-style-type: none">• Geology• Environmental Earth Science• Hydrogeology• Geography• Geographic Information Systems (GIS)

Geomatics technicians/technologists

Geomatics is the science of measuring, interpreting, visualizing, and analyzing spatial information, often through three-dimensional models and maps. Geomatics technicians/technologists determine the exact locations and positions of natural and man-made features by collecting data from maps, surveys, remote sensing, and GIS databases. They work with sophisticated software to model and analyze visible surface features, as well as what is hidden underground and underwater.

Avg. Salary: \$46,900 to \$112,800 (per annum)

High School Recommendations:	Post-secondary Recommendations:
<ul style="list-style-type: none">• Mathematics• Geography• Computer Science• Calculus• Physics	<ul style="list-style-type: none">• Geomatics• Geography• Geographic Information Systems• Computer Science• Land Information Management• Natural Resource Management

Glaciologist

Glaciology is the study of snow and ice and their physical properties. More specifically, glaciologists analyze the formation, movement, and effects of the different kinds of glaciers, for example alpine and arctic glaciers, ice caps, ice sheets, and ice shelves. A large part of the research conducted by glaciologists analyzes how glaciers and ice caps move and change in response to climate change and how these changes in turn influence climate and the surrounding environment.

Avg. Salary: \$41,800 to \$197,600 (per annum)

High School Recommendations:	Post-secondary Recommendations:
<ul style="list-style-type: none">• Mathematics• Chemistry• Physics• Calculus• Computer Science	<ul style="list-style-type: none">• Environmental Earth Sciences• Climatology• Physics• Geomatics• Geography

Certification is not mandatory for glaciologists, but many practitioners choose to belong to professional associations. Most glaciologists have additional training and certification in mountaineering, climbing, and wilderness travel.

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Careers in Environment and Geography

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The Department of
Environment
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Where
Will
The
Road
Take
You?

Current Industry Demands for Careers in Environment and Geography

Avalanche forecasters

Avalanche forecasters play a critical role in protecting the public and raising avalanche awareness. They combine skills in mountaineering with knowledge of mountain conditions, weather, and snow science to evaluate the risk of avalanches in a given area. Avalanche forecasters are generally busy through the fall, winter, and spring months monitoring snow packs and collecting data in order to predict avalanche occurrences and keep visitors safe.

Avg. Salary: \$52,382 to \$77,111 (per annum)

High School Recommendations:	Post-secondary Recommendations:
<ul style="list-style-type: none">• Physics• Mathematics• Computer Science• Geography	<ul style="list-style-type: none">• Geological Engineering• Geography• Meteorology• Physics• Forestry

Most avalanche forecasters have strong mountaineering skills and experience travelling and guiding in backcountry areas.

Biochemist

Biochemistry is a combination of biology and chemistry. More specifically, biochemists study biological processes in micro-organisms, plants, and animals. They look at how living organisms function at the sub cellular and molecular levels and apply their research to a number of industries, including agriculture, medicine, energy, and manufacturing.

Avg. Salary: \$40,200 to \$126,300 (per annum)

High School Recommendations:	Post-secondary Recommendations:
<ul style="list-style-type: none">• Biology• Chemistry• Physics• Mathematics	<ul style="list-style-type: none">• Biochemistry• Biology• Chemistry• Environmental Science

Biological technicians/technologists

Biological technicians/technologists work in concert with biologists and are often responsible for carrying out detailed experiments to support research. They set up, operate, and maintain laboratory equipment, monitor experiments, and record observations and results. In addition, biological technicians/technologists develop and adapt laboratory procedures and devise solutions under the direction of biologists.

Avg. Salary: \$48,100 to \$104,100 (per annum)

High School Recommendations:	Post-secondary Recommendations:
<ul style="list-style-type: none">• Biology• Chemistry• English• Mathematics• Computer Science	<ul style="list-style-type: none">• Biology• Environmental Technology• Biochemistry• Environmental Science• Environmental Studies

Cartographer

Cartographers are mapmakers. They gather, evaluate, and visualize geographic information and analyze geographical data to create charts and reports. Cartographers combine creativity with technical aptitude to produce, for example, topological maps, aeronautical charts, natural resource maps, or nautical charts and other hydrographic maps. In addition, many cartographers work on demographic maps such as population characteristics, economic maps such as land use, or social maps such as crime rates and poverty.

Avg. Salary: \$31,600 to \$60,700 (per annum)

High School Recommendations:	Post-secondary Recommendations:
<ul style="list-style-type: none">• Geography• Mathematics• Calculus• Art	<ul style="list-style-type: none">• Geography• Geology• Geographic Information Systems• Geomatics• Geological Engineering

Climatologist

Climatology is the study of weather patterns and the processes that cause them. Climatologists use long-term meteorological data such as temperature, wind speed, and precipitation to study trends, understand causes, and make predictions. Often confused with meteorologists, who study short-term weather patterns, climatologists forecast weather changes over the span of years rather than days. Considering that long-term climate change affects every aspect of our lives and our environment, the work of climatologists is crucial to sustaining and preserving the world? ecosystems.

Avg. Salary: \$41,300 to \$83,200 (per annum)

High School Recommendations:	Post-secondary Recommendations:
<ul style="list-style-type: none">• Physics• Mathematics• Chemistry• Geography• Computer Science	<ul style="list-style-type: none">• Meteorology• Climatology• Physics• Mathematics• Environmental Science• Environmental Earth Science• Geography

Ecologist

Ecologists study the relationships between living things and their environment. They study and monitor all kinds of aspects of natural and managed ecosystems, for example temperature and rainfall, competition for food and habitat, predation, disease, and human activities such as farming, hunting, and industry. Their work is used to answer questions of conservation, such as how many fish or deer can be harvested, questions of environmental protection, such as whether a species is in danger and what can be done about it, and questions of management and environmental stewardship, such as where parks and protected areas should be located.

Avg. Salary: \$48,100 to \$104,100 (per annum)

High School Recommendations:	Post-secondary Recommendations:
<ul style="list-style-type: none">• Biology• Mathematics• Calculus• Chemistry• English	<ul style="list-style-type: none">• Ecology• Biology• Biogeography• Conservation Biology• Environmental Science• Mathematics

Environmental assessment analyst

Environmental assessment analysts research and analyze environmental data and information for the preparation of environmental assessment reports in accordance with federal (i.e., Canadian Environmental Assessment Act) and provincial environmental assessment legislation. Environmental assessment analysts evaluate proposed projects and provide factual information for effective planning and decision making that promotes public awareness, environmental protection and management, and sustainable development.

Avg. Salary: \$55,163 to \$64,033 (per annum)

High School Recommendations:	Post-secondary Recommendations:
<ul style="list-style-type: none">• Biology• Chemistry• Mathematics• Social Studies• Geography	<ul style="list-style-type: none">• Environmental Assessment• Biology• Zoology• Botany• Environmental Management• Ecosystem Management• Natural Resource Management• Ecology

Environmental assessment analysts have a variety of backgrounds in addition to those noted above. Consider taking other courses for hands-on knowledge in areas such as GIS operation and field sampling.

Geographer

Geographers study the physical world and examine the connections between people, places, and the earth. They examine social aspects, such as human demography, and physical aspects, such as geomorphology, drawing on a number of other disciplines, for example biology, oceanography, and sociology. Geographers contribute to the understanding of social and environmental issues regarding land use and resource management by examining how different spatial elements are related to one another.

Avg. Salary: \$47,800 to \$113,600 (per annum)

High School Recommendations:	Post-secondary Recommendations:
<ul style="list-style-type: none">• Geography• Social Studies• Biology• Mathematics	<ul style="list-style-type: none">• Geography• Environmental Science• Environmental Earth Science• Geomatics• Geographic Information Systems• Urban and Regional Planning• Environmental Planning

Additional Career Options:

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| <ul style="list-style-type: none">• Aerial Photo Interpreter• GIS programmer• Air/water quality control manager• GIS Database Management• Hazardous waste planner• Cartography Compiler | <ul style="list-style-type: none">• Health Services planner• Remote Sensing Analyst• Climatologist• Hydrologist• Coastal Zone Manager• Site Researcher | <ul style="list-style-type: none">• College/University Professor• Industrial planner/developer• Soil conservationist• Community developer• Surveyor location expert• Earth Scientist | <ul style="list-style-type: none">• Land Economist• Transportation analyst• Environmental Impact Analyst• Land-Use Analyst• Environmental Quality Specialist• Map curator/librarian | <ul style="list-style-type: none">• Urban Regional planner• Park Ranger• Weather forecaster• Conservation Analyst• Oceanographer | <ul style="list-style-type: none">• Environmental Lobbyist• Environmental Consultant• Meteorologist• Conservationist• Zoologist |
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