

Biologists

A guide for newcomers to British Columbia



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Contents

1. Working as a Biologist [NOC 2121] Job Description	2
2. Skills, Education and Experience.....	7
3. Finding Jobs	9
4. Applying for a Job	13
5. Getting Help from Industry Sources	14

1. Working as a Biologist [NOC 2121] Job Description

Biologists carry out research to gain knowledge of living organisms, to manage natural resources, and to develop new practices and products related to medicine and agriculture.

Biologists and related scientists may specialize at the *macroscopic level*, in fields such as:

- zoology, ecology and marine biology

or at the *cellular and molecular level*, in fields such as:

- genetics, pharmacology, toxicology.

As a **Biologist**, you perform the following duties:

- plan and carry out studies of the environment
- plan and carry out studies of the population, distribution, structure, functional characteristics and behaviour of plants and animals
- carry out environmental impact studies and prepare reports
- study, identify and classify plant and animal specimens
- carry out experiments in plant or animal growth, heredity and breeding
- prepare reports and plans for management of renewable resources

As a **Microbiologist and cell and molecular biologists** you perform the following duties:

- carry out research into the structure, function, ecology, biotechnology and genetics of micro-organisms, including bacteria, fungi, protozoans and algae
- research the structure and workings of human, animal and plant tissues and cells

Biologists

A guide for newcomers to British Columbia

- carry out studies into the identification, effects and control of human, plant and animal microorganisms and poisons
- run clinical or laboratory studies to test, check and screen drugs
- carry out molecular or biochemical studies and experiments into genetics, gene manipulation and recombinant DNA technology
- carry out research in biotechnology to find, develop, refine and evaluate new products

Source:

- **WorkBC Career Profile for Biologists**
<http://www.workbc.ca/Job-Seekers/Career-Profiles/6332>

Job Outlook in BC

Biologists & Related Scientists

According to JobBank Canada approximately 2,900 people work in this occupation in BC with 2300 of these registered with the College of Applied Biology including Professional Biologists (RPBio), Registered Biology Technologists (RBTech), and Biologists in Training (BIT).

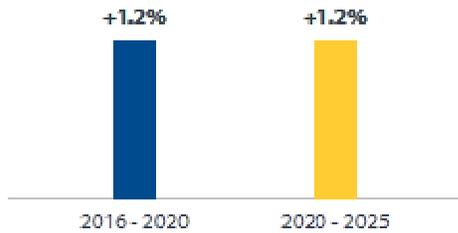
JobBank Canada forecasts that the employment outlook will be fair for Biologists and related scientists (NOC 2121) in British Columbia for the 2017-2019 period. Employment growth will lead to a moderate number of new positions.

Source: <https://www.jobbank.gc.ca/home>

WorkBC provides this Employment Outlook for Biologists:

Employment Outlook - Biologists NOC 6332

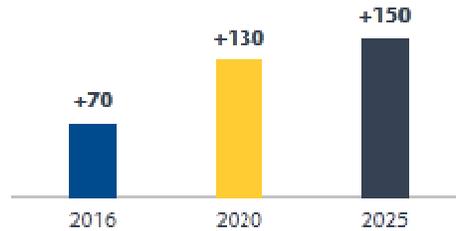
Forecasted average annual employment growth rate



Source: B.C. Labour Market Outlook

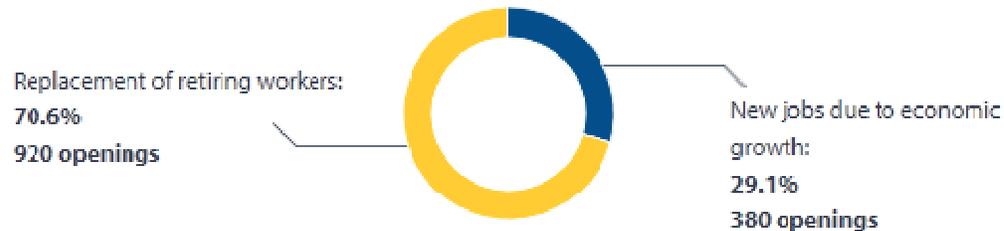
Job openings

10 year expected job openings: 1,300



Source: B.C. Labour Market Outlook

Composition of job openings



Source: B.C. Labour Market Outlook

Chart from WorkBC

WorkBC provides job openings in BC regions:

Regional Outlook for Biologists

Cariboo

Employment in 2016: **140**
Average annual employment growth: **1.6%**
Expected number of job openings: **70**

Kootenay

Employment in 2016: **260**
Average annual employment growth: **0.0%**
Expected number of job openings: **60**

Mainland / Southwest

Employment in 2016: **1,690**
Average annual employment growth: **1.4%**
Expected number of job openings: **700**

North Coast & Nechako

Employment in 2016: **160**
Average annual employment growth: **0.0%**
Expected number of job openings: **50**

Northeast

Employment in 2016: **50**
Average annual employment growth: **N/A**
Expected number of job openings: **N/A**

Thompson-Okanagan

Employment in 2016: **380**
Average annual employment growth: **0.6%**
Expected number of job openings: **120**

Vancouver Island / Coast

Employment in 2016: **770**
Average annual employment growth: **0.9%**
Expected number of job openings: **290**

Chart from WorkBC

You can learn more about working as a Biologist in BC from:

- **WorkBC Career Profile for Biologists**
<http://www.workbc.ca/Job-Seekers/Career-Profiles/6332>
- **Career Cruising** (profile for Biologist)
<http://www.vpl.ca/digital-library/career-cruising>

Available from the VPL Digital Library | Explore our Digital Library page

Types of Employers

Biologists work in both laboratory and field settings for governments; environmental consulting companies; resource and utilities companies; chemical, pharmaceutical and biotechnical companies; and health and educational institutions.

Microbiologists work for governments, colleges and universities, research labs, and companies in the drug, mining, and agriculture industries.

Salary

The **median** annual salary for biologists and related scientists working full-time in BC is \$72,996. Wages vary depending on the type of biologist, the areas of specialization, level of education and employer. Full time permanent employees generally receive employee benefits in addition to their salary.

Contract, part-time and self-employment are increasingly common in this occupation.

Job Bank Canada Wage Report provides hourly wages for biologists in BC regions:

Hourly Wages for Biologists, NOC 2121

Location	Wage (\$/hr)		
	Low	Median	High
British Columbia	22.00	35.71	50.00
Cariboo Region	22.00	35.71	50.00
Kootenay Region	22.00	35.71	50.00
Lower Mainland - Southwest Region	28.85	36.06	47.69
Nechako Region	N/A	N/A	N/A
North Coast Region	N/A	N/A	N/A
Northeast Region	N/A	N/A	N/A
Thompson--Okanagan Region	22.00	35.71	50.00
Vancouver Island and Coast Region	22.00	35.71	50.00

Chart Source: https://www.jobbank.gc.ca/wage-outlook_search-eng.do?reportOption=wage

Source

- **WorkBC Career Profile for Biologists**

<http://www.workbc.ca/Job-Seekers/Career-Profiles/6332>

Working Hours

Many biologists are required to work **more** than a regular work week schedules of 8 hours a day, 5 days a week.

In the early years of your career, you may do a lot of lab or field work for more senior researchers and may work long hours. You also spend time at lectures and conferences that fall outside regular work hours.

If you are involved in large research projects, you may also work irregular hours, perhaps more than 50 hours a week when a deadline is approaching. Travel may also be required when doing fieldwork or attending conferences.

Source:

- **Career Cruising** (profile for Biologist)
<http://www.vpl.ca/digital-library/career-cruising>
Available from the VPL Digital Library | Explore our Digital Library page

2. Skills, Education and Experience

Skills

Biologists must be:

- patient
- curious
- logical
- organized
- detail oriented

Biologists must have:

- good communication skills
- good manual dexterity
- an aptitude for science
- strong research skills
- an interest in the living world

Sources: WorkBC & *Career Cruising*

Education and Experience

In order to work as a biologist in Canada, the following requirements must be achieved:

- Bachelor's degree in biology or in a related discipline is required for biologists
- Master's or doctoral degree in biology or a related discipline is required for employment as a research scientist in biology
- Post-doctoral research experience is usually required before employment in academic departments or research institutions.

Source:

WorkBC Career Profile for Biologists

<http://www.workbc.ca/Job-Seekers/Career-Profiles/6332>

Qualifications

The ***College of Applied Biology of British Columbia (CAB)*** (<https://www.cab-bc.org/>) offers registration for biologists and allows you to use the title *Registered Professional Biologist*.

While registration with the CAB is *not mandatory to work as a biologist in BC*, it is valuable to become certified as it provides formal recognition of your skills and experience to employers. For more information about registration and membership see:

College of Applied Biology

<https://www.cab-bc.org/membership-categories>

Biologists in the environmental industry are also encouraged to seek certification by the ***Canadian Environmental Certification Approvals Board***. Certification is available for: Canadian Certified Environmental Practitioner (CCEP), Canadian Environmental Practitioner-In-Training (CEPIT), and Auditing Certification.

More information:

- **Canadian Environmental Certification Approvals Board (CECAB)**
<http://www.cecab.org/>

Microbiologists are encouraged to seek certification by the Canadian College of Microbiologists. The College offers certification as a Registered Microbiologist (RMCCM), Specialist (SCCM), and Fellow in Clinical Microbiology (FCCM).

More information:

- **Canadian College of Microbiologists (CCM)**
<http://www.ccm.ca/>

Internationally Trained Biologists

If you are an internationally trained biologist you must complete a multi-step process to be registered as a Professional Biologist in BC. This includes an assessment of your education and professional credentials.

For more information:

- **College of Applied Biology. Internationally Educated Applicants**
<https://www.cab-bc.org/internationally-educated-applicants>
- **Canadian Information Center for International Credentials**
http://www.cicic.ca/684/Biologists_and_Related_Scientists.canada?prof=2121

3. Finding Jobs

You'll find job advertisements in local newspapers, electronic sources, and through professional associations.

Local Newspapers

You can look at the *Vancouver Sun* & *The Province* at Vancouver Public Library for free. Check the job postings daily and the careers section in the *Vancouver Sun* on Wednesdays and Saturdays and, in *The Province* on Sundays.

Job White Pages

Available in print at the Central Library or online at
<http://www.vpl.ca/digital-library/jobfreewaycom>

Available from the VPL Digital Library | Explore our Digital Library page
Access at VPL locations only

Online Job Postings

- **BioTalent Canada – The PetriDish**
<http://www.biotalent.ca/petridish-0> and <https://www.biotalent.ca/en/areyouready>
- **Careers in the BC Ministry of Environment**
<http://www2.gov.bc.ca/myhr/index.page>
<https://search.employment.gov.bc.ca/>
- **Careers in the Federal Public Service**
<https://www.canada.ca/en/services/jobs/opportunities/government.html>
- **ECO Canada**
<http://www.eco.ca/viewjobs/default.aspx>
Membership required to access site (free to register)
- **Indeed.com**
http://ca.indeed.com/advanced_search
- **University Affairs Careers**
<http://www.universityaffairs.ca/search-job/>
Job listings in the higher education sector. Can browse for jobs under “Discipline – Biological and Biomedical Sciences”.
- **Neuvoo.ca**
<http://neuvoo.ca/en>
- **WorkBC**
<https://www.workbc.ca/JobSeekers/SearchResults.aspx>
- **BC Jobs.ca**
<https://www.bcjobs.ca/>
- **BC JobConnect**
<https://www.bcjobconnect.ca> **must have permanent resident number**
newcomers can post their skills, education and work experience to BC employers looking for workers
- **Job Bank**
http://www.jobbank.gc.ca/job_search.do

Professional Associations' Career Resources

- **Association of Professional Biologists of British Columbia (APBBC)**
<https://www.cab-bc.org/job-postings>
- **Canadian College of Microbiologists**
<http://www.ccm.ca/careers/available-positions/>
- **Canadian Society for Molecular Biosciences**
<http://www.csmb-scbm.ca/jobs.aspx>

Identifying the Right Position

When you browse job advertisements, you'll find a wide range of different job titles that are relevant.

For biologists and related scientists, look at these related job titles:

- Biologist
- Botanist
- Cell biologist
- Ecologist
- Marine biologist
- Microbiologist
- Pharmacologist
- Physiologist
- Zoologist

For a complete list see:

National Occupational Classification <http://noc.esdc.gc.ca/English/noc/welcome.aspx?ver=16>

Creating a List of Potential Employers

You can use directories to produce lists of laboratories, environmental consulting companies, biotechnology companies, educational institutions and other employers in the Lower Mainland or BC. Contact them directly to find out if they're hiring.

- **Universities Canada Members**

<http://www.univcan.ca/universities/member-universities/>

- **Post-secondary Institutions in B.C.**

<https://www2.gov.bc.ca/gov/content/education-training/post-secondary-education/find-a-program-or-institution/find-an-institution>

- **Canadian Biotechnology**

Available at the Central Library, 660.605 C21

- **Canadian Company Capabilities. Industry Canada**

<http://www.ic.gc.ca/eic/site/ccr-rec.nsf/eng/home?Open&src=mm2>

Search within specialized company directories listed under "Life Sciences" or "Environment".

- **Canadian Environmental Resource Guide**

Available at the Central Library, Level 4, 363.70025 C21

- **Life Sciences Canada Directory**

<https://www.contactcanada.com/database/ipaccess.php?portal=0a1>

- **Reference Canada**

<http://www.vpl.ca/digital-library/reference-canada>

Click on "Start Search" beside Canadian Businesses, then select the "Advanced Search" button. Select both "Keyword/SIC/NAICS" under Business Type and "City" under Geography. In the top search box enter "biologists" OR "biological" and click LOOKUP. Select the appropriate headings. Lower down, select the Province, choose the cities, and click the "View Results" button.

Available from the VPL Digital Library | Explore our Digital Library page

NOTE: You can access this database from a Library computer. If you are using a computer from outside the Library, you will need a Vancouver Public Library card to login to this database. After clicking on the database name, you will be asked to enter your library card number and PIN (usually last four digits of your telephone number).

4. Applying for a Job

In Canada, employers usually expect to receive a resume or curriculum vitae and a cover letter that identifies the position you are applying for and summarizes your relevant experience.

Use the library catalogue, <http://vpl.bibliocommons.com/> to find books on writing resumes and cover letters specific to your industry.

To learn about applying for jobs in Canada, use the following pathfinders which are available in print at the Central Library or online at <http://skilledimmigrants.vpl.ca/>.

- **Writing Resumes and Cover Letters**

Go to <http://skilledimmigrants.vpl.ca>

[Search Writing Resumes and Cover Letters]

- **Getting Canadian Work Experience**

Go to <http://skilledimmigrants.vpl.ca>

[Search Getting Canadian Work Experience]

- **Networking for Employment**

Go to <http://skilledimmigrants.vpl.ca>

[Search Networking for Employment]

- **Learn More About Working in BC and Canada**

Go to <http://skilledimmigrants.vpl.ca>

[Search Learn More About Working in BC and Canada]

5. Getting Help from Industry Sources

Industry Associations

Associations for biologists in BC and Canada can provide information and assistance. Registration and fees are required for membership.

- **Association of Professional Biologists of BC**
<https://professionalbiology.com/>
- **Canadian College of Microbiologists**
<http://www.ccm.ca/>
- **Canadian Environmental Certifications Approval Board**
<http://www.cecab.org/>
- **Canadian Society for Molecular Biosciences**
<http://www.csbmcb.ca>
- **College of Applied Biology of British Columbia**
<http://www.cab-bc.org/>

Industry Journals

Search the Vancouver Public Library catalogue for journals related to your profession. Examples at the Central Library:

- **BioNews** / Association of Professional Biologists of British Columbia
Available at the Central Library, 639.905 B6151 and online at
<https://professionalbiology.com/publications/bionews>

Questions? Please ask the Information Staff in the Central Library, Vancouver Public Library or telephone 604-331-3603.

Please note that the information in this guide is also available online through the Skilled Immigrant InfoCentre website at <http://skilledimmigrants.vpl.ca/>