



## INTERNATIONAL EDUCATED SCIENTIST INTERESTED IN PURSUING A CAREER IN MARINE BIOLOGY

### OVERVIEW

Marine biologists focus on the different aspects of marine life including the process of marine development, how organisms interact with each other and the ecosystem, and how pollution affects marine environments. They measure the physical and chemical properties of water, study the structure of marine communities and assist in the rehabilitation of damaged ecosystems. They conduct laboratory tests, build mathematical models to estimate distribution and abundance of marine life in specific locations, undertake environmental impact assessments on projects that may impact marine life and humans.

Reports and recommendations to governmental bodies and agencies are an outcome of their studies; findings are applied to developing and implementing long-term programs for monitoring environmental compliance. A marine biologist may write grant proposals to fund research. They are involved in educating the public of marine issues.

### CAREER OPPORTUNITIES

In the Lower Mainland, the Vancouver Aquarium is the major employer of marine biologists. Positions include the Aquarium Director, Director of Operations, Director of Research and Conservation, Aquarists, Marine Mammal Specialists, Naturalists and Managers, Co-ordinators, and programmers in the Education division.

Oceanographers work in diverse areas, including biological oceanography; the physics of waves, tides, and currents; the creation, evolution, and structure of sea floors; and chemical oceanography. They work to understand how the ocean works and tackle challenges related to global climate change and its impacts on ocean communities, safe shipping, and sustainable food supplies.

Other potential career environments include the Canadian Federal Government Department of Fisheries and Oceans; government research labs; marine science organization; environmental protection agencies; commerce.

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## VOLUNTEER OPPORTUNITIES

Volunteering at a Provincial Fish and Wildlife branch, with the Federal Department of Fisheries and Oceans or with a veterinarian, retail fish store, aquarium or zoo, wildlife rescue center or natural history group is recommended. Consider programs that involve beach and/or nature walks and these, combined with field guides, help one learn more about creatures found in these environments. Volunteering is an excellent way to network with other professionals.

## EDUCATION, TRAINING AND QUALIFICATIONS

In addition to basic biology, botany, and chemistry courses, those interested in marine biology should take university-level foundational courses in ecology, fish biology, marine mammalogy and conservation. Obtaining experience working both in the lab and in the field is essential.

A master's or doctoral degree in biology or related discipline is required for employment as a research scientist. Post doctoral research experience is usually required for employment in academic departments or research institutions.

It is advisable to have a valid driver's licence, scuba certification and Pleasure Craft Operator Card (PCOC) through [Transport Canada](#).

## COURSES AND PROGRAMS IN BC

In BC, Simon Fraser University (SFU), University of British Columbia (UBC) and University of Victoria (UVIC) all have well-established marine/oceanography biology programs. UBC (Okanagan) offers a BSc degree in zoology. Some local colleges offer aquaculture and environmental sciences courses.

UBC offers [Oceanography](#) programs at the undergraduate level through the Honours in Fisheries Oceanography program, which is intended for students wishing to pursue graduate studies in the field or work as consultants in fisheries/environmental management.

UBC is home to the [Institute for the Oceans and Fisheries](#), as well as the [Marine Mammal Research Unit](#) (MMRU) and [Project Seahorse](#). The [Department of Earth,](#)



[Ocean and Atmospheric Sciences](#) (EOAS) conducts oceanographic research. Current topics include the nearby ocean, arctic hydrography, and lakes of British Columbia.

The [Bamfield Marine Science Center](#), located on the West Coast of Vancouver Island, offers summer, and fall courses in marine biology to upper-level undergraduate students. The center also has public education programs for adult groups interested in marine biology.

The British Columbia Institute of Technology (BCIT) offers the [Fish, Wildlife and Recreation Management Diploma](#) program that since 2019 is accredited by the College of Applied Biology (CAP-BC).

At UVIC, Directed Studies courses and the Honour's thesis programs offer opportunities for students to obtain research experience in [marine sciences](#) or [ocean sciences](#) under the supervision of UVic faculty. Adjunct faculty are located at the Department of Fisheries and Oceans, Institute of Ocean Sciences is located at Patricia Bay, 30 minutes from campus. The Pacific Biological Station is located 90 minutes north in Nanaimo and provides collaborative research opportunities for undergraduates.

## THE COLLEGE OF APPLIED BIOLOGY (CAP-BC)

The College of Applied Biology regulates members of the College in the public interest. The *College of Applied Biology Act (2002)*, gave the right to self-governance to applied biology professionals. The college sets standards for entrance into the profession and for the conduct of members and their practice. Membership confers title and the status that the title affords. It is also an assurance of accountability to peers and the public for their actions. In addition to all other credentialing requirements for membership, applicants are required to complete the College's online course in ethics and stewardship. Registered Professional Biologist (RPBIO) is the highest membership qualification level and [Internationally Educated biologists](#) are eligible to become members.

CAP-BC also provides a [job board of employment opportunities](#) for registered members, publications, and advises on practice to assist members in meeting their obligations of membership.



## RESOURCES

Association of Professional Biology (APB) - <https://professionalbiology.com/>

Bedford Institute of Oceanography (Government of Canada) - <http://www.bio.gc.ca/index-en.php>

Canadian Environmental Certification Approvals Board (CECAB) - <https://www.cecab.org/public/default.aspx>

Canadian Meteorological and Oceanographic Society (CMOS) - <https://www.cmos.ca/index.html>

Canadian Society of Zoologists (CSZ) - <https://www.csz-scz.ca/>

ECO Canada (career profiles) - <https://www.eco.ca/career-profiles/zoologist/> and <https://eco.ca/career-profiles/marine-biologist/>

Ocean Networks Canada - <http://www.oceannetworks.ca/about-us>

Transport Canada - [https://www.tc.gc.ca/eng/marinesafety/debs-obs-paperwork-paperwork\\_operator-360.htm](https://www.tc.gc.ca/eng/marinesafety/debs-obs-paperwork-paperwork_operator-360.htm)

UBC Department of Earth, Ocean and Atmospheric Science (EOAS) - <https://www.eoas.ubc.ca/>

UVIC Biology Newsletter (free subscription) - <https://www.uvic.ca/science/biology/graduate/news/index.php>

## JOB BOARDS

Civic Jobs - <http://www.civicjobs.ca/>

Department of Employment and Social Development Canada - <https://www.jobbank.gc.ca/home>

Indeed - <https://ca.indeed.com/jobs?q=Marine%20Biologist&l=Vancouver%2C%20BC&vjk=c5da251254717caf>

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