

# What can I do with a degree in Environmental Science?

# Environmental Science.



## What is Environmental Science?

Environmental Science is an interdisciplinary approach to the study of the environment, incorporating its structure and functioning, and human interactions with the environment.

As demand for the planet's limited resources grow, so does the need for people who understand the environment and how to protect it. Environmental science helps equip students with the skills needed to be part of the solution.

Environmental Science can be combined with other UC science majors in the Bachelor of Science or you can choose to enrol in a Bachelor of Environmental Science with Honours which enables you to specialise in one of six interdisciplinary majors:

- Ecosystem Health and Biosecurity
- Environmental Change
- Environmental Contamination
- Environmental Hazards and Disasters
- Freshwater
- Sustainable Coasts.

## Learn more

It is important to do some research when planning a future career. Speak with, ask questions of, and follow relevant professional bodies, organisations, companies, thought leaders and industry professionals to learn more about:

- Career opportunities, work environments and salary information
- Education and training requirements.

### Examples of professional bodies

- Environment Institute of Australia and New Zealand [www.eianz.org](http://www.eianz.org)
- Clean Air Society of Australia and New Zealand [www.casanz.org.au](http://www.casanz.org.au)
- Society of Environmental Toxicology and Chemistry [www.setac.org](http://www.setac.org)
- New Zealand Hydrological Society [www.hydrologynz.org.nz](http://www.hydrologynz.org.nz)
- New Zealand Marine Sciences Society <https://nzms.org>
- New Zealand Freshwater Sciences Society <https://freshwater.science.org.nz>

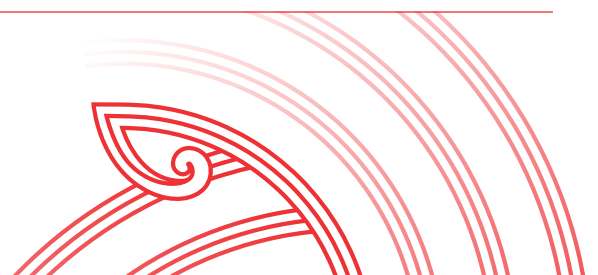
## Career and study information

Some study pathways and degrees have a recommended school background, and some careers may require further study beyond a first degree or additional experience.

### Gather helpful information from:

- Subject-specific content at [www.canterbury.ac.nz/study/academic-study/subjects/environmental-science](http://www.canterbury.ac.nz/study/academic-study/subjects/environmental-science)
- Job profiles on career websites like [www.careers.govt.nz](http://www.careers.govt.nz)
- Job adverts/vacancy descriptions
- Industry professional bodies.

This resource is part of a set of brochures focused on subject majors; many can also be studied as minors.





## What skills can graduates gain?

Environmental Science graduates are given hands-on experience and taught to identify, monitor and solve a variety of problems associated with the environment.

Through studying an Environmental Science degree, graduates gain a valuable set of skills transferable to a range of careers, that can include:

- Knowledge of mātauranga Māori in the scientific world
- Field work and project management
- Self-management, planning and organisation
- Oral and written communication
- Analytical and critical thinking
- Cooperation, teamwork and leadership
- Resilience, adaptability and problem solving
- Creative, logical and quantitative thinking
- Observation, research and development skills.

### Applied learning

Applied learning opportunities are available through labs, field-based courses, trips and internships with potential employers. Such experiences deepen graduates' skillset, awareness of others, working knowledge and employability.

### What do employers look for?

Many employers look for generic skills such as communication, client/customer-focus, bicultural competence, cultural awareness, teamwork and initiative.

With technology, globalisation, and other drivers changing society, skills such as resilience, problem solving, and adaptability are important.

Skills that are likely to grow in importance include analytical and creative thinking, systems thinking and technological literacy.\*

\*World Economic Forum: [www.weforum.org/agenda/2023/05/future-of-jobs-2023-skills](http://www.weforum.org/agenda/2023/05/future-of-jobs-2023-skills)

### How can these skills be developed?

- Some skills are gained through studying
- Extra-curricular activities can help, such as getting involved in clubs, mentoring, cultural groups, part-time work or volunteering
- Be open to professional and personal development opportunities, whether it is undertaking work experience, overseas exchange, skills seminar, or joining an industry group.

## Where have graduates been employed?

Environmental Science graduates work in various industries, including agriculture, forestry and fishing, constructions, education and training, manufacturing, professional science and technology services, and transport and warehousing.

Environmental Science graduates have gained roles in:

- Government bodies e.g. Regional Councils, Department of Conservation, MPI, Environment Canterbury
- Crown research organisations e.g. ESR, Manaaki Whenua, GNS Science
- Environmental science consultancies e.g. New Zealand Environmental Technologies
- Professional engineering consultancies e.g. Aurecon, AECOM, ENGEO, wsp Golder
- Geotechnical engineers e.g. 4D Geotechnics
- Engineering contractors
- Energy companies
- Mining e.g. The Moultrie Group
- Spatial systems e.g. Vicinity GIS
- Universities around the world e.g. in Australia, Brunei and the United States of America.

Graduates have been employed in various countries, including New Zealand, Canada, Ireland, Vietnam, Indonesia, Australia and United States of America.

## What jobs and activities might graduates do?

Environmental science graduates help businesses be more sustainable, work with engineering agencies to reduce the impact of major projects, advise government on environmental risks, and more – see some examples of jobs below.

Note: This list is not exhaustive, and some jobs may require further study, training or experience. It is recommended to start with the section 'How can I gain a sense of career direction?'

### Environmental scientist / consultant

- Apply knowledge of atmospheric, water and soil chemistry to the environment
- Carry out field and lab tests and record data e.g. measure level of pollutants
- Conduct analysis and write technical reports
- Develop and oversee policy and procedures
- Interpret regulations and monitor compliance

### Ecologist

- Conduct surveys to identify, record, and monitor species and their habitats

### Resource management / consents officer

- Ensure adherence to environmental regulations
- Process resource/building consent requests

### Sustainability consultant / advisor

- Influence uptake of sustainability initiatives by individuals, consumers, and diverse businesses
- Manage and measure impact of initiatives like reducing emissions and promoting wellbeing
- Develop relationships, particularly with iwi, local communities, businesses and governments

### Field / laboratory technician

- Carry out research experiments
- Maintain and calibrate equipment
- Collect and collate data, and draft reports

### Planner, environmental planner

- Assess the effect of proposed developments
- Design and administer development plans
- Review/implement submissions and natural resources policy

### Geographical information systems (GIS) analyst

- Capture the location of 'assets' e.g. bridges and street lights
- Convert data to maps and present geographical information
- Analyse datasets and patterns for geographical planning purposes

### Graduate hydrogeologist

- Monitor the flow of water underground
- Interpret technical data and information from maps
- Measure chemical levels or water pollution

### Examples of other job titles and careers include:

- Biosecurity consultant
- Enforcement / contaminated sites officer
- Hazardous substance compliance advisor
- Horticulturist
- Hydrologist
- Science technician
- Lab demonstrator / tutor
- Minerals surveyor
- Nature conservation officer
- Researcher / research assistant
- Waste management and recycling officer
- Water quality scientist.

## Further study options

Environmental Science graduates can progress into a number of programmes from honours to PhD level.

Some prepare for a career through further training e.g. in Engineering Geology, Geospatial Science and Technology, Teaching and Learning, Urban Resilience and Renewal, and Water Resource Management.

It is important to determine which, if any, further study options align with future career aspirations.

For further UC study options visit:

[www.canterbury.ac.nz/study/academic-study](http://www.canterbury.ac.nz/study/academic-study)

## How can I gain a sense of career direction?

Understanding yourself and others is important to gain a sense of direction. This grows with experience; therefore, trying new things and reflecting on an ongoing basis is important.

### Career planning checklist

#### Discover and reflect on:

- Your values, interests, strengths, abilities, and aspirations
- Your connection to whānau, people, and places
- Lifestyle preferences and location
- The skills you want to gain, use, or enhance

#### Engage in a variety of experiences to learn about:

- How you want to contribute to society, the environment, and global challenges
- The tasks, responsibilities and work environments you prefer
- Your work values, priorities and interests

#### Learn more and gather career and study information

(refer to page one of this resource)

- Speak with people working in careers that interest you; check the realities of a job/career
- Gather information from various sources

#### Identify your next steps

- Talking to a career consultant can help you to identify your next steps. Visit: [www.canterbury.ac.nz/life/jobs-and-careers](http://www.canterbury.ac.nz/life/jobs-and-careers)



## What have other students and graduates done?

Explore career stories of students' university experiences and UC alumni who make a difference globally in varied ways.

Visit: [www.canterbury.ac.nz/about-uc/why-uc/our-students/student-stories](http://www.canterbury.ac.nz/about-uc/why-uc/our-students/student-stories)



### Emily

Environmental Consultant, Tonkin & Taylor (T+T)

Master of Science (Major in Environmental Science), Bachelor of Science (Major in Chemistry)

Experience gained while at UC:

- Internship, Izon Science
- Summer research scholarship
- Summer work, The AgriChain Centre

### Why Environmental Science?

I have always loved science, as I am passionate about understanding how things work. Throughout my undergraduate studies I enjoyed the papers I took in analytical chemistry, environmental chemistry, and green chemistry the most – it fascinated me how much damage humans have done to the environment. This motivated me to pursue further study and complete a Master of Science in Environmental Science.

### What do you do?

As an Environmental Consultant, who specialises in air quality, I provide advice to assist clients (mostly industrial) in getting resource consent for their discharges to air. In most cases, this involves preparing a report that details the effects of their air emissions on the receiving environment and making recommendations to help manage or reduce their emissions. I have also assisted other environmental teams focused on contaminated land, landfill, human health risk assessment, and ecology.

### Have you had any career highlights thus far?

The 2022 CASANZ conference was a highlight both socially and technically. I wrote my first ever scientific paper for the conference, and it was great to have the whole T+T Air Quality team together in person, as we are spread out over five offices throughout NZ and Australia.

Other highlights include T+T's intermediate and senior staff mentoring programme. I am paired up to be mentored by the CE (Chief Executive) this year, in 2024. I am incredibly excited for this!

Lastly, as my work sometimes requires site visits, I enjoy gaining insights into what happens in the background to produce products ready to be purchased in shops, e.g., milk, pet food, compost.

### What are your future career aspirations?

I really enjoy sharing knowledge. Therefore, I look forward to the opportunity to mentor younger graduates through T+T's mentoring programmes. I am also looking forward to the day when I have enough experience and technical knowledge to be able provide scientific evidence at a council hearing.

### Do you have any advice for students?

Learning what you don't like is as important as learning what you do. Science is a great degree as it has a great amount of flexibility. Throughout my studies I was able to dabble in a variety of different subject areas (chemistry, physics, maths, programming, health science, psychology, water science, biology, biochemistry, geography). This was incredibly valuable to help me understand what I was most passionate about and more importantly what I was not interested in doing for a career. My internships also aided me in finding my career as I found that some subjects which I really enjoyed in class were not what I enjoyed when applied in a practical sense.

## Career guidance

Career services are available for future and current students, and recent graduates. To learn more, contact:

Te Rōpū Rapuara | Careers

T: +64 3 369 0303

E: [careers@canterbury.ac.nz](mailto:careers@canterbury.ac.nz)

[www.canterbury.ac.nz/life/jobs-and-careers](http://www.canterbury.ac.nz/life/jobs-and-careers)

### Helpful career insights

- Speaking with employers is key to finding opportunities; not all jobs are advertised
- Developing an online presence is useful as employers can search for future employees online
- Learning about recruitment patterns and where to find opportunities is important.

## Study advice

Student Advisors at UC help with questions focused on starting, planning and changing studies. To connect with Student Advisors, visit:

[www.canterbury.ac.nz/study/study-support-info/study-support](http://www.canterbury.ac.nz/study/study-support-info/study-support)

### Future students – contact:

The Future Students team

T: 0800 VARSITY (0800 827 748)

E: [futurestudents@canterbury.ac.nz](mailto:futurestudents@canterbury.ac.nz)

### First year students – contact:

Kaitoko | First Year Student Advisors

T: +64 3 369 0409

E: [firstyearadvice@canterbury.ac.nz](mailto:firstyearadvice@canterbury.ac.nz)

### Continuing students – contact:

Te Kaupeka Pūtaiao | Faculty of Science

T: +64 3 369 4141

E: [science@canterbury.ac.nz](mailto:science@canterbury.ac.nz)

[www.canterbury.ac.nz/study/academic-study/science](http://www.canterbury.ac.nz/study/academic-study/science)

