

# Environmental Science

Postgraduate Handbook 2018



THE UNIVERSITY OF  
**AUCKLAND**  
Te Whare Wānanga o Tāmaki Makaurau  
NEW ZEALAND

**SCIENCE**  
SCHOOL OF ENVIRONMENT

# Welcome to the School of Environment

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Environmental Science is the interdisciplinary, applied scientific study of natural and managed environments.

Environmental Science is a well-established postgraduate programme offered by the School of Environment. We offer a diverse range of courses for postgraduate study. The school houses a vibrant community of more than 50 instructors and researchers. The mix of different interests creates a rich training and research environment.

New Zealand and the South Pacific region offer an exciting environmental laboratory to examine a range of globally relevant research questions. Our location in Auckland provides a perfect gateway to access this unique natural laboratory.

We have an impressive array of field equipment and analytical facilities to support our research activities, alongside a talented group of postgraduate students from around the world who help to provide a stimulating and supportive environment for your studies.

Postgraduate study in Environmental Science is an excellent step towards a number of careers and is a strong foundation for postgraduate research.

I am confident that you will find studying Environmental Science at the University of Auckland a satisfying and rewarding experience, and we look forward to working with you to meet your academic goals.

PROFESSOR PAUL KENCH  
Head of School

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**Our subject  
is ranked in  
the top 100  
worldwide**

**QS World University  
Rankings by subject 2017**



# Postgraduate studies in Environmental Science

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The application of existing science skills and a scientific approach to environmental problem solving is core to this programme. The central philosophy is that Environmental Science provides the knowledge to enable society to sustainably manage the environment, through education and research.

The programme includes aspects of environmental effects assessment and monitoring, modelling of environmental systems, water quality, air quality, freshwater and terrestrial ecology, environment restoration, and biodiversity management. The inclusion of topics in physical geography and environmental management enables students to interact with and explore a greater diversity of environmental expertise, such as environmental planning, policy, law, economics, resource management and different approaches to community conservation.

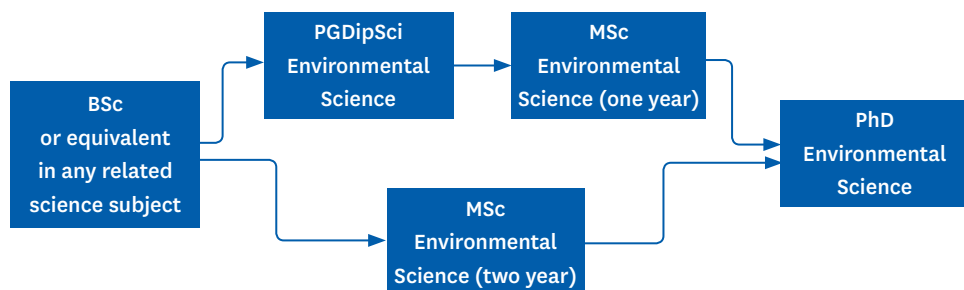
Some courses in the Environmental Science programme are delivered as intensive, four day modules followed by a self-directed assessment. These modules may be more accessible to people in full-time jobs and those from out of Auckland. The postgraduate programme in Environmental Science is well established, and well recognised by employers.

## Environmental Science qualifications pathway

There are two pathways for study toward a postgraduate qualification in Environmental Science:

- **The Postgraduate Diploma in Science (Environmental Science)** is a one-year taught programme. Students can also choose to continue on to a one-year research masters upon completion of the diploma.
- **The Master of Science (Environmental Science)** is a two-year programme comprised of one-year of taught courses (as for the PGDipSci) and a research thesis in the second year.

The entry requirement for postgraduate study in Environmental Science is a Bachelor of Science in any related discipline. For example, this could be Earth Sciences, Environmental Chemistry, Biological Sciences or Geology. You do not need to have completed the undergraduate Environmental Science major, or any Environmental Science courses. However, to be considered eligible for entry to the PGDipSci (Environmental Science) or the two year MSc programme, students must have at least a C+ average in their best five courses at Stage III.





## The Postgraduate Diploma in Science (Environmental Science)

The PGDipSci (Environmental Science) emphasises the use of interdisciplinary science and relevant technical skills in the prevention and resolution of environmental problems that face industry and communities in the Asia-Pacific region and beyond. Although it may lead directly onto a MSc, the PGDipSci is also a well-recognised qualification in its own right. It is often completed as a 'stand-alone' by students who may already have postgraduate qualifications in a related field but wish to attain an environmental qualification. The schedule of studies can be designed to suit a student's personal situation and requirements. You may select a full-time or part-time (up to four years) programme of study.

## The Master of Science (Environmental Science)

Admission to the one-year Master of Science (MSc) in Environmental Science or continuation into the second year of the two-year MSc, requires an average grade equivalent to at least B- in the taught year. In both cases students must have an approved research proposal and the support of a supervisor in order to commence the thesis year.

Both the PGDipSci and MSc programmes may be taken part-time as well as full-time.

## The degree of Doctor of Philosophy (PhD)

The degree of Doctor of Philosophy (PhD) is for those interested in advanced research in Environmental Science.



# The PGDipSci and first year of two-year MSc (Environmental Science) programmes

Course code	Title	Semester
<b>Two core courses (30 points)</b>		
ENVSCI 701	Research Practice in Environmental Science	1
ENVSCI 711	Assessing Environmental Effects	2
<b>At least four courses from the following (60 points)</b>		
EARTHSCI 705	Geohazards	2
EARTHSCI 720	Geochemistry of our World	1
ENVSCI 702	Applied Estuarine Ecology	2
ENVSCI 704	Modelling of Environmental Systems	2
ENVSCI 705	Environmental Data Analysis	1
ENVSCI 713	Air Quality and Atmospheric Processes	2
ENVSCI 714	Water Quality Science	1
ENVSCI 716	Aquatic Ecological Assessment	2
ENVSCI 733	Biodiversity Management and Conservation	1
ENVSCI 734	Restoration and Landscape Ecology	2
ENVSCI 737	Applied Terrestrial Ecology	1
ENVSCI 738	Water and Society	1
ENVMGT 742	Social Dimensions of Global Environmental Change	2
ENVMGT 744	Resource Management	2
GEOG 730	Climate Change: Past, Present and Future	2
GEOG 745	Applied Fluvial Morphology	1
GEOG 746	Applied Coastal Morphology	1
GEOG 748	Current Issues in Coastal Management	2
GEOG 749	Climate and Society	1
GEOG 770	GIS Analysis and Spatial Data Handling	2
GEOG 771	Spatial Analysis and Geocomputation	2
MARINE 703	Marine Protected Areas	2
<b>Up to two courses from 700-level courses as approved by the programme Adviser (30 points)</b>		

# Postgraduate research in Environmental Science

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Postgraduate research is highly valued and forms an important part of the PGDipSci, MSc and PhD programmes in Environmental Science. The following research themes identify the expertise of environmental scientists at the University of Auckland.

## Coasts and Rivers

The Coasts and Rivers group investigate the natural processes operating on the landscape, across a range of temporal and spatial scales, from catchment to cobble, from Holocene to a few days.

## Environmental Change

Researchers in this theme are involved in reconstructing and investigating long-term environmental change, using a range of proxies from tropical corals to Antarctic sediments.

## Hazards and Disasters

Researchers in this theme cover the breadth of hazards and disasters, from the underlying physical processes and methods of assessment, through to people's vulnerabilities and capacities, and risk assessment and management.

## Our Changing Forests

Researchers in this theme are concerned with the dynamics of forest environments past, present and future encompassing the long-term dynamics of social, ecological and climatic interactions with forests.

## Pacific Futures

The Pacific Futures group are engaged in exploring the multiple dimensions of the environmental, social, cultural and political challenges confronting Pacific nations.

## Urban Environments and Ecology

Our research addresses how bio-physical systems operate in urban areas, the role of humans in driving terrestrial, aquatic and atmospheric processes, and the implications for governance, design and restoration.





# Careers in Environmental Science

The skills you will develop in our undergraduate and postgraduate programmes will equip you for many jobs in government, consultancy, environmental and community organisations, industry and education.

You will find our graduates in diverse jobs, ranging from local government field officers, through to teachers, lecturers, iwi liaison, environmental officers, laboratory technicians and environmental consultants. Generally, to have a challenging career in environmental science, you need a postgraduate qualification as well as your BSc. Employers in the sectors relevant to Environmental Science look for PGDipSci or MSc degrees. They find our graduates well prepared for the diverse challenges outside the University. In recent years our graduates have been employed by the following New Zealand organisations:

Air New Zealand

City, district and regional councils

Cawthron Institute

Carter Holt Harvey

Beca Carter

Department of Conservation

ERMA

Fernz Corporation

Glenbrook Steel Mill

Institute of Environmental Science and Research (ESR)

Institute of Geological and Nuclear Sciences (GNS)

Golder Assoc (environmental consultants)

Landcare Research

Meritec (consultants)

Ministry for the Environment

Mobil, New Zealand

National Institute of Water and Atmosphere (NIWA)

Pacific Steel

Pattle Delamore (consultants)

Sanford Fisheries

Scion

SERCO (consultancy)

UNESCO

AECOM (environmental consultants)

Watercare Services Ltd

World Wide Fund for Nature (WWF)

*"I found the Environmental Science specialisation very valuable as it taught me to apply a multidisciplinary approach."*

*"Environmental Science was a new offering at the University and I decided to take it in my first year. As environmental issues cross many disciplines, it's an important skill to have."*

*"I really enjoyed my time at University and still keep in touch with peers and lecturers from some of my classes. It's interesting to see where everyone has ended up post-University, as the Geography and Environmental Science degree gives you so many options for a future career."*

*"I am currently a Climate Scientist at NIWA and am also involved with weather forecasting. Weather affects pretty much everything so I am always working across different science areas."*

**Nava Fedaeff** completed a Bachelor of Science (Honours) with a major in Geography and a specialisation in Environmental Science (2011).



# Helpful information

## Academic dates

[www.auckland.ac.nz/dates](http://www.auckland.ac.nz/dates)

## Accommodation

[www.accommodation.auckland.ac.nz](http://www.accommodation.auckland.ac.nz)

## Apply for postgraduate study

[www.auckland.ac.nz/applynow](http://www.auckland.ac.nz/applynow)

## Career Development and Employment Services

[www.cdes.auckland.ac.nz](http://www.cdes.auckland.ac.nz)

## Childcare

[www.auckland.ac.nz/childcare](http://www.auckland.ac.nz/childcare)

## Course advice and degree planning in Science

[www.science.auckland.ac.nz/student-centre](http://www.science.auckland.ac.nz/student-centre)

## Disability Services

[www.disability.auckland.ac.nz](http://www.disability.auckland.ac.nz)

## How to enrol

[www.auckland.ac.nz/enrolment](http://www.auckland.ac.nz/enrolment)

## Information for postgraduate students

[www.postgraduate.ac.nz](http://www.postgraduate.ac.nz)

## International students

[www.international.auckland.ac.nz](http://www.international.auckland.ac.nz)

## Libraries and Learning Services

[www.library.auckland.ac.nz](http://www.library.auckland.ac.nz)

## Māori and Pacific students

[www.science.auckland.ac.nz/tuakana](http://www.science.auckland.ac.nz/tuakana)

## Need help?

[www.askauckland.ac.nz](http://www.askauckland.ac.nz)

## Postgraduate Students' Association

[www.pgsa.org.nz](http://www.pgsa.org.nz)

## Rainbow Science Network for LGBTI students

[www.science.auckland.ac.nz/rainbowsience](http://www.science.auckland.ac.nz/rainbowsience)

## Scholarships and awards

[www.scholarships.auckland.ac.nz](http://www.scholarships.auckland.ac.nz)

[www.auckland.ac.nz/fees](http://www.auckland.ac.nz/fees)

[www.auckland.ac.nz/studentloansandallowances](http://www.auckland.ac.nz/studentloansandallowances)

## Support for students

[www.science.auckland.ac.nz/support](http://www.science.auckland.ac.nz/support)

## Environmental Science Adviser

### Associate Professor Kevin Simon

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### Questions about Environmental Science?

[environment@auckland.ac.nz](mailto:environment@auckland.ac.nz)

### Disclaimer

*Although every reasonable effort is made to ensure accuracy, the information in this document is provided as a general guide only for students and is subject to alteration. All students enrolling at the University of Auckland must consult its official document, the University of Auckland Calendar, to ensure that they are aware of and comply with all regulations, requirements and policies.*



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