

# CAREERS WITH STEM™ JOB KIT



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# CONSERVATION BIOLOGIST

Tips and advice to land your  
dream job helping protect our planet

SUPPORTED BY



MACQUARIE  
University

# (YOU)<sup>US</sup>

## CAN HELP FUTURE-PROOF THE PLANET

Conservation biologists play an essential role in ensuring the ongoing survival of all species, including our own.

Learn from groundbreaking researchers and apply your knowledge to combat the fragmentation and degradation of critical habitats and ecosystems. Develop strategies to reverse the decline of animal populations, including bilbies, quolls and koalas. Pioneer sustainable solutions for the use of earth's finite resources on land and underwater, ensuring a long-term future for all life on our shared planet.

Macquarie is the only university in New South Wales offering a Bachelor of Biodiversity and Conservation. In addition to this one-of-a-kind degree, we offer a range of other science, conservation and environment degrees. Study with leading academics on our beautiful bushland campus and apply your skills through hands-on experience in Macquarie's ecology reserve. And protect our tomorrow.



**MACQUARIE**  
University  
SYDNEY · AUSTRALIA



**FIND OUT MORE  
AND APPLY TODAY.**





**I KNEW I WANTED TO WORK TO PRESERVE DIFFERENT SPECIES FOR THE FUTURE."**



**LESLEY HUGHES**  
EMERITA PROFESSOR OF BIOLOGY,  
MACQUARIE UNIVERSITY



# HELP PROTECT OUR FUTURE

Conservation is now on the radar of businesses, opening up new opportunities for a career following your passion for the environment



**G**rowing up on the edge of bushland in Sydney, I spent much of my childhood roaming the bush, watching birds, catching tadpoles and lizards, and generally immersing myself in nature. Eventually this childhood passion led me to study zoology and ecology within a Bachelor of Science.

While studying animals, plants and their environment initially seemed like a self-indulgent interest, as I got older it became increasingly clear our biological life support system was in great peril.

Habitat loss, over-harvesting, and pollution have taken an enormous toll. And it's now clear climate change is the greatest threat of all, an existential threat to all life on Earth, including us.

There has never been a more critical time to understand and advocate for our natural environment. We are now in the United Nations Decade of Ecosystem Restoration, and the "critical decade" for climate change action.

Governments, business, and the community are all recognising that conserving and enhancing our natural capital is crucial. Graduates with expertise in conservation biology and a passion for the natural world are now in great demand, in the public sector and in business.

A conservation biology degree, combined with skills in areas like data science, environmental economics, and spatial analysis, is a ticket to many diverse, exciting, and meaningful careers.

Parents often ask me what their children should study to get a job. I tell them they should do the subjects they love as they'll do well in these. Follow your passion, and the good news is, if your passion is the environment, career opportunities are exploding!

**Lesley Hughes, Emerita Professor of Biology and Pro-Chancellor, Macquarie University**

BACHELOR OF SCIENCE (FIRST CLASS HONOURS), UNIVERSITY OF SYDNEY

PH.D. ECOLOGY, MACQUARIE UNIVERSITY

HEAD OF THE DEPARTMENT OF BIOLOGICAL SCIENCES, MACQUARIE UNIVERSITY

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CLIMATE COUNCILLOR, CLIMATE COUNCIL

MEMBER, CLIMATE SCIENCE AND KNOWLEDGE MANAGEMENT EXPERTS PANEL, DEPARTMENT OF FOREIGN AFFAIRS AND TRADE

EMERITA PROFESSOR OF BIOLOGY AND PRO-CHANCELLOR, MACQUARIE UNIVERSITY

Check out [CareerswithSTEM.com](https://careerswithstem.com) for more insights, information, inspiration and advice about conservation biology careers!

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# NATURAL FIT

Are you an eco warrior with a passion for all things science?  
A career in conservation biology could be your calling

**J**obs in conservation are as diverse as the career pathways to get skilled up! By studying biodiversity and conservation biology at uni you could end up tracking toads, protecting national parks or curating museum exhibits – all in an average day.

And with the world's cutest colleagues (real-life wildlife!), it's literally the dream gig for anyone equal parts into science, the environment and making a major difference to the planet.

Talented conservation biologists are everywhere, working behind the scenes to solve some of the world's biggest problems. There are biologists working in environmental protection agencies, championing eco agricultural practices and studying native flora and fauna in government research labs.

And, as if the gig couldn't get any better, the opportunities for career progression are epic! Employers are diverse, future-focused and dedicated to sustainability, and depending on what you specialise in there are multiple career pathways to choose from.

At Macquarie University you can do a Bachelor of Biodiversity and Conservation, and with units covering a broad range of industry-specific skills – like plant and animal sciences, ecology and remote sensing tech – you can DIY yourself your dream conservation career.

## JOB SEARCH

**NOT SURE WHAT YOU SHOULD BE APPLYING FOR? POP THESE JOB TITLES ON YOUR RADAR – AND IN YOUR BROWSERS.**

- ✓ Biodiversity informatics adviser
- ✓ Bioprospector
- ✓ Conservation policy-maker
- ✓ Ecosystems scientist
- ✓ Environmental and social impact assessor
- ✓ Environmental consultant
- ✓ Land manager
- ✓ Natural resource manager
- ✓ Research scientist
- ✓ Wildlife manager
- ✓ Zoo captive breeding programs manager



## Sustainable salaries

**Conservation biology is specialised,** and the demand in Australia for fresh grads is epic. As employers are diverse, salaries can range depending on which pathway you head down.

On average, you can expect a salary from between **AU\$70K (environmental consultant)** to **AU\$145K (senior policy advisor)**.

## Eco employers

Looking for (future) work? Here are some of the employers hiring:

- **Agricultural agencies**
- **National parks**
- **Not-for-profits**
- **Government agencies**
- **Museums**
- **Research institutes**
- **Environmental conservation groups**
- **Zoos**
- **Fisheries and forestry agencies**
- **Landcare organisations**

## WILD MYTHS

**WE BUST THE MYTHS, AND SPOTLIGHT THE TRUTHS, ABOUT CAREERS IN CONSERVATION.**

### ✓ **True that! You have to have a genuine love of nature and animals**

Yes, yes and yes! Helping animals and the natural world are a major part of the gig. At the heart of a conservation biologist's pathway is passion — for the natural world and protecting it.

### ✗ **Major myth! You work outside all day**

Well, not exactly. Although there is loads of practical field-based work, some days you might find yourself lab-bound testing samples or on devices entering data.

### ✗ **Major myth! You have to know which field you want to get into before starting uni**

Nope. Macquarie Uni's Bachelor of Biodiversity and Conservation allows you to get skilled up in loads of different areas before settling on a specialisation.

### ✗ **Major myth! It's all about science, not tech**

Um, nope. These days conservation biologists need to be fluent in the latest tech. From nailing advanced remote sensing software to excelling in analytics.

### ✗ **Major myth! If you didn't study it at uni, you've missed out**

Didn't study conservation for your undergrad? No worries! Universities like Macquarie offer graduate diplomas in conservation biology which are a great option for those with an unrelated degree seeking to upskill for employment in places like government, museums, not-for-profits, resource management companies and more!



# MEANINGFUL WORK

CLIMATE CHANGE CAN BE OVERWHELMING. BUT **DYLAN CRONJE** SAYS WITH STEM SKILLS AND PASSION THERE'S A LOT WE CAN DO

INAUGURAL GRADUATE:  
AGRIPROVE



GLOBAL LEADERSHIP PROGRAM  
(COMPLETION WITH MERIT), MACQUARIE UNIVERSITY



BACHELOR OF BIODIVERSITY AND  
CONSERVATION, MACQUARIE UNIVERSITY



BUSINESS DEVELOPMENT MANAGER,  
CYNOSURE AUSTRALIA

SUPPLIED / SHUTTERSTOCK

**DYLAN CRONJE**  
SOIL MANAGEMENT  
GRADUATE

After leaving high school not yet sure of a career direction,

Dylan's light-bulb moment came when he was with his uncle, marvelling over a spider's web in his backyard.

"I was like, look at the intricacies of this, this is so complex, how can such a little creature do something this incredible," Dylan recalls.

"And my uncle was like: 'You've always been interested in this stuff. Why don't you actually just study it?' And then it clicked for me. This is what I want to learn."

After channelling his fascination for how things work into a Bachelor of Biodiversity and Conservation at Macquarie University, Dylan landed a gig that also suited his desire to do something to tackle climate change.

Working in the graduate program at carbon soiltech developer AgriProve, every day is different for Dylan. The company works with farmers to help them improve the carbon in the soil on their farms, with the ultimate aim of helping reduce the amount of greenhouse gases in the atmosphere.

"I love being a part of an innovative soil-tech company working to progress our understanding of soil science, food security, and build climate resilience for Australian farmers," Dylan says.

His role includes undertaking scientific trials and working with farmers on the best way to improve soil for storing carbon.

"When you spend time in nature you really start to value nature and natural systems and how much we rely on them for pretty much everything. I think often it's quite forgotten that we are biological systems living in a biological ecosystem," Dylan says.

"I would like to play an active role in protecting it, in ensuring that it will be there in the future for generations to come."

And his advice for students worried about climate change and unsure what they can do?

**DO SOMETHING THAT'S GOING TO HAVE A LASTING IMPACT."**

"If you want to do something meaningful, if you want to do something that's going to have a lasting impact, STEM is the roadmap to really understanding the problem. And your personal passions and personal ways of thinking will be how the problem will be addressed."

Dylan says he never thought he could work on climate change because he didn't have a science background and isn't a climate modeller, but his job, and the team he now works with have proved otherwise.

"I work with the most professionally diverse team; people with geology backgrounds, people with maths and analytics backgrounds, people with software backgrounds," he says.

"And that's actually how this problem is going to be solved with people just attacking it. With pure drive and passion and out-of-the-box thinking and collaborative work.

"So I hope kids don't ever feel that there's some sort of a barrier to them working on a problem that's this big, because it's going to take everyone to change the current system that we work in."

# A day in the life of a... **PARK RANGER**

Ever dreamed of being a park ranger? **Elise McCarthy**'s career path shows how you can make it real!

**A**fter seeing her love for the environment first hand, a friend encouraged Elise McCarthy to enrol in a Bachelor of Biodiversity and Conservation at Macquarie University, where she met a bunch of like-minded nature-lovers. Elise went on to land her dream career as a park ranger at the NSW Office of Environment and Heritage. Gotta love friends who know you!

Before that though, Elise had to do some serious work, volunteering with the Australian Wildlife Conservancy, and completing a Master of Conservation Biology, also at Macquarie. Her Master's degree helped her rack up more hands-on experience, doing everything from field work at North Head Sanctuary to bird trapping in the Kimberleys, WA.

**ULTIMATELY I LOVE THE DIVERSITY OF IT."**

"With the help of course convenors I was encouraged to find what interested me most and go for it," says Elise. "It was these practical projects that proved the most helpful in getting my networking skills up too!"

As a park ranger, Elise has been able to grow her skills in floral and faunal identification, bush regeneration, field surveying and report writing, and she says it's good to remember the life of a park ranger isn't free of office work.

"Ultimately I love the diversity of it," says Elise. "And being able to make informed decisions in the interests of cultural and environmental protection and biodiversity conservation."

## Here's a typical day:

### 7am

Scan emails, then head out to my fire trails, doing a patrol check on hazardous trees or infrastructure that may need fixing. Say hi to some visitors along the way.

### 10.30am

Meet with neighbours who live adjacent to the national park and respond to enquiries about wildlife (i.e. brush turkeys in their garden).

### 1pm

Check on camera traps set up to monitor pest species and download images.

### 2pm

Come across someone walking their dog in the park — dogs are prohibited, so I discuss why with the owner and ask them to move on.

### 4.30pm

Meet online with parks programs teams to discuss planning for fire management, threatened species and pest management. Head home.

RANGER, NATIONAL PARKS AND WILDLIFE SERVICE

MASTER OF CONSERVATION BIOLOGY, MACQUARIE UNIVERSITY

VOLUNTEER, AUSTRALIAN WILDLIFE CONSERVANCY

BACHELOR OF BIODIVERSITY AND CONSERVATION, MACQUARIE UNIVERSITY

# Get the job!

Thinking about pathways in conservation biology? If you're wild about the natural environment, these resources should help

## DOWNLOAD

... citizen science apps! Kickstart your conservation journey by helping scientists keep track of the biodiversity thriving in your area.

### FrogID

Upload audio on any frog species you come across and get it ID-ed by the experts.

### iNaturalist

Map and share your flora and fauna sightings with fellow users around the globe.

### Climate Watch

Help conservationists understand how changes in temperature and rainfall are affecting local wildlife by uploading your own daily observations.

### Aussie Bird Count

Spend just 20 minutes in your fave outdoor space and record the bird-life you spot.



adventures\_by\_matt  
Opalton, Queensland, Australia



## FOLLOW

These local biologists post fill their feeds with career candy!

@drvanessapirotta  
**Dr Vanessa Pirotta**  
Wildlife scientist

@adventures\_by\_matt  
**Matt Cornish**  
Conservationist

@shane\_otter\_oates  
**Shan Oates**  
Ecologist

shane\_otter\_oates  
ICBP International Centre for Birds of Prey



## Electives checklist

- ✓ Biology ✓ Maths
- ✓ Chemistry
- ✓ Geography
- ✓ Environmental studies



## CELEBRATE

Pop the following special days in your diary, and share awareness with friends, fam and teachers.

- Feb 2 World Wetlands Day
- March 3 World Wildlife Day
- May 22 International Day for Biological Diversity
- June 5 World Environment Day
- June 8 World Oceans Day
- September 7 Threatened Species Day
- November 18 National Agriculture Day

## WORLD OCEAN'S DAY

08<sup>th</sup> JUNE



## LISTEN

Contribute to your conservation career while on the go, with these totally wild podcasts.

### LOOK AT ME

Tune in for weird, wonderful – and true! – tales of lesser-known Aussie wildlife. Think: super-powered sea slugs and rare marsupials.

### AUSSIE WILDLIFE SHOW

Join two local wildlife experts as they talk about all things biodiversity while sharing the ins and outs of their exciting jobs!

### BIG SKY COUNTRY

Championed by Bush Heritage Australia, hear from experts in culture, conservation and country as they explore the science needed to protect the land.