



Charles Sturt
University

Be the future of
agriculture, water and
environmental sciences

Create a sustainable future with Charles Sturt University. As a leader in agricultural, water and environmental research, we'll work with you to champion change, make discoveries and create a world worth living in.





Study with us

Join the future of agricultural and environmental sciences

Australia's agricultural sector plays a crucial role in our national economy – employing 1.6 million people across the supply chain. Around 228,000 on-farm domestic workers and a further 1.5 million Australians support and rely on agriculture.¹ Not only does agriculture create jobs, but it nourishes and fuels communities. Australian farmers make more than 90 per cent of the food consumed in Australia – enough food for 80 million people. To feed a growing population, the world's agricultural output must increase by 70 per cent by 2050.² You can do your part to help feed the world through a career in agriculture.

We all have a role to play in protecting our environment. The impacts of resource extraction, production, transport, use and waste generation are central to how

economic activity affects environmental conditions and trends. Understanding the relationships between economic activity, social wellbeing and environmental degradation is critical to creating a sustainable future. You can change the world for the better by helping to preserve our natural world with an environmental sciences career. Protect the environment and encourage others to do the same. Explore wildlife conservation, environmental sustainability or environmental education. The future is in your hands.

¹Department of Agriculture, Water and the Environment, Delivering Ag 2030, 2021

²United Nations Food and Agriculture Organisation

From growing crops of the future to protecting our natural ecosystems, when you study with Charles Sturt University you'll get all the skills you need to make a real difference. It's why we're number one in Australia for agricultural and environmental sciences graduates who get jobs.³

Grow your career in agriculture

Cultivating careers and improving the future of agriculture is what we do best at Charles Sturt. We're experts in agricultural education – our history goes back 120 years. We're Australia's largest provider of agricultural, horticultural and wine science education. No matter where your roots are, you can choose a career path that explores your passion for agriculture. You can make your mark in agribusiness, agricultural sciences, biosecurity, horticulture, viticulture, agronomy or farm management. Become an innovative leader in your field and address local and global agricultural problems. How you'll change the world is up to you.

Industry standard facilities

Learn hands-on in the heart of NSW's food bowl at our Wagga Wagga campus.

- 1,600-hectare commercial mixed farm with cattle and sheep yards
- Commercial winery
- Feedlot and yards
- Global Digital Farm – Australia's first fully automated commercial farm
- Hooligans Creek biodiversity site
- National Life Sciences Hub for food security, human, plant and animal health
- Research/teaching crops and commercial farm cropping area
- Rhizolysimeter, glasshouses and phytotron

Create a sustainable future

As Australia's first certified carbon neutral university,⁴ sustainability is at the centre of everything we do. We care about creating a greener tomorrow. We're committed to the United Nation's Sustainability Development Goals, and we're in the top 10 per cent of universities worldwide for climate action.⁵

We're dedicated to our sustainability initiatives, including tree planting and installing solar panels across our campuses. In fact, our Albury-Wodonga campus was designed with sustainability in mind. Its buildings include environmentally sensitive features to maximise heating and cooling. And you can step into the habitats that you'll protect at our wetlands – they're home to a wide variety of flora and fauna, providing a unique ecosystem to observe and study.

³Good Universities Guide 2021/22

⁴Good Universities Guide, 2021/22

⁵Australian Government's National Evaluation of Research Strengths

Study agricultural and wine sciences

Start or advance your career in agriculture with a Charles Sturt undergraduate or postgraduate degree, online or on campus at Wagga Wagga:

- Agriculture
- Agricultural business management
- Agricultural science
- Farm production
- Horticulture
- Viticulture
- Wine business
- Wine science

Agriculture is more than farming.

Coming in 2023

- Master of Agriculture (with specialisations)
- Master of Agricultural Science

→ csu.edu.au/ag-wine

Study environmental sciences

Preserve and improve natural environments with an industry-aligned Charles Sturt environmental sciences undergraduate or postgraduate degree. Study online or on campus at Albury-Wodonga or Port Macquarie.

- Applied earth science; aquatic ecosystems; climate and sustainability; ecology and conservation of parks; recreation and heritage
- Environmental science and management
- Fish conservation and management
- GIS and remote sensing
- Ornithology

→ csu.edu.au/enviro



Engage with us

Creating a sustainable future together

Real change happens when communities pull together. Our partnerships with the NSW Department of Primary Industries, AgriPark and the Australian Department of Agriculture, Water and the Environment focus on industry and community collaboration. From water management, food security, farming systems and agribusiness, to community building, regional development and environmental protection – we're working with our industry partners to create regional impact, innovative solutions and bring government priorities to life.

Gulbali Institute of Agriculture, Water and Environment

Charles Sturt is committed to research and support of the Australian grape and wine industry with the establishment of the Gulbali Institute of Agriculture, Water and Environment. The Gulbali Institute will drive research outcomes that optimise viticulture and farming systems and enhance the health of freshwater ecosystems. It will enhance collaboration across industry sectors and build on the university's research strengths in viticulture and wine science, agriculture, water and the environment.



AgriPark

AgriPark is where research, collaboration and sustainability meet. The innovation precinct is in the heart of the Riverina and is dedicated to research, curated collaboration and sustainable production. It's where international agricultural companies, knowledge-rich agribusinesses, food producers, innovative small to medium enterprises and Charles Sturt work side by side to tackle complex global issues.

Cool Soil Initiative

Improving soil health is one of the top three production issues that farmers in the regions say will affect their farms over the coming years. The Cool Soil Initiative supports farmers to investigate innovative cropping practices to improve soil health and reduce on-farm greenhouse gas emissions. We've partnered with regional farming systems groups, including Riverine Plains Inc, FarmLink Research, Central West Farming Systems, AgriPark and the Irrigation Research and Extension Committee (IREC).

Digital Earth Australia

We're helping to grow Australia's agricultural industries through the partnership between AgriPark and Geoscience Australia. The Digital Earth Australia program enables satellite images to be shared for research and education. It will provide easier access to high-quality data prepared for Australian conditions.

Drought Hub

Together with our partners, we're leading the way in drought resilience and recovery through the \$8 million Drought Resilience Adoption and Innovation Hub. Researchers will collaboratively address local drought resilience priorities at our Wagga Wagga campus through user-centred agricultural innovation.

Global Digital Farm

We're bringing Australia's first fully automated commercial farm to life through our partnership with the Food Agility Cooperative Research Centre. The digital farm will use our world-class research and development capability in agriculture. This unique project will arm Australia's primary industries workforce with knowledge and technology in fields like data analytics, geospatial mapping, remote sensing, machine learning and cybersecurity.

Next Gen Water Hub

Charles Sturt researchers are leading the Next Generational Water Engineering and River Management Hub. Through collaboration with our partners, the hub is developing solutions to current and future problems threatening Australia's waterways, including poor water quality and diminishing fish stocks.



Research with us

Connecting research to real-world issues

Charles Sturt researchers are improving the future of agricultural, water and environmental sciences – making groundbreaking discoveries through innovative research projects. Collaborate with our partners in research, including the Gulbali Institute. You could explore research into the impacts of drought, fires and floods on our rivers. Optimise farm systems for performance and sustainability. Enhance the health and resilience of freshwater ecosystems. Or help to restore wetlands, protect a threatened species or work towards water sustainability. Make a difference when you connect with our industry partners, including CSIRO Land and Water Flagship, Fisheries Research and Development Corporation, Commonwealth Environmental Water Office and Murray Darling Basin Authority.

Our people

Associate Professor Dale Nimmo



Dale is an animal ecologist with broad interests in how 'big' disturbances – things like fire, drought, and land clearing – influence biodiversity. Dale's research interests include managing landscapes to minimise the effects on biodiversity, fire ecology and ecological resilience, and the impact mammalian predators have on habitats.

Associate Professor Jason Condon



Jason was employed as a teaching fellow at Charles Sturt and undertook a PhD investigating the effect of nitrogen transformations on the formation of acidic subsurface layers in grazed pastures. Jason is now a lecturer of soil science. He has worked in Vietnam on projects dealing with nutrient cycling and compost use in agricultural systems.

Jon Medway



As senior research fellow spatial agriculture, Jon is building research capacity with the Gulbali Institute of Agriculture, Water and Environment on projects including the Global Digital Farm and Cool Soil Initiative. He has worked on more than 2,500 projects across Australia and internationally, providing services to farms, industry, research organisations and government agencies.

Professor Geoff Gurr



Geoff is known internationally for his research on applied insect ecology and developing ecologically based strategies to combat pests. His research spans biological control of insect pests, plant defence, insect-vectored plant pathogens, chemical and molecular ecology. Geoff's chief contribution has been developing strategies for promoting activity of natural enemies of pests and delivering other ecosystem services.

Dr Jane Kelly



Jane is a lecturer in livestock production management at Charles Sturt. She has worked with industry on all aspects of livestock management, conducting on-farm consultancy and undertaking grazing systems research. Jane coordinates core livestock subjects within the agricultural science and agribusiness management degrees. Her research interests centre on the interactions between livestock and weeds in high altitude environments and in grazing systems.

Associate Professor Skye Wassens



Skye is an internationally recognised ecologist specialising in the ecology and conservation of wetland dependant fauna and ecological responses to environmental flows. Her research on the responses of amphibians to environmental flooding and amphibian water requirements has led the way for the inclusion of amphibians into environmental flooding programs throughout the Murray-Darling Basin.

Dr Jeff McCormick



Agronomy senior lecturer Jeff completed his PhD on dual-purpose canola with a focus on field crop agronomy research, plant physiology and agricultural production systems simulator modelling. He has worked with NSW DPI's EverCrop program and with Future Farm Industries. Jeff has taught plant science, crop science and crop and pasture agronomy.

Professor Chris Blanchard



Chris worked as a molecular biologist at the Ludwig Institute for Cancer Research in Switzerland and as a protein biochemist at the CSIRO Grain Quality Research Laboratory prior to joining Charles Sturt. His research interests are related to grain quality and investigating ways to improve the value of grain.



Professor Lee Baumgartner



Lee designs, supervises and undertakes research into biology and ecology of freshwater fish and systems. His interests are fish passage and fish migration, the impact of human disturbance on aquatic ecosystems, developing solutions to global challenges in water resource management and the connections between people and inland fish.

Associate Professor Sandra Savocchia



Sandra is passionate about her research and is involved in a number of plant pathology-related projects, including a national project studying the management of grapevine wood diseases. She started at Charles Sturt as a viticulture and wine science lecturer and is currently Associate Dean, Graduate Studies for the Faculty of Science and Health.

Associate Professor Marta Hernandez-Jover



Marta teaches epidemiology, public health and food safety to veterinary students through Charles Sturt's School of Animal and Veterinary Sciences. She has led and contributed to research on biosecurity and disease surveillance among livestock producers in Australia, investigating implementation of and drivers for engagement with biosecurity and animal health management practices.

Professor Leigh Schmidtke



Leigh's work in the Australian wine industry commenced with the role of microbiologist/chemist for Southcorp Wines. He began with Charles Sturt in late 2001, teaching wine production and microbiology subjects. His PhD focused on the chemical impact of low-rate micro-oxygenation on oak flavour compounds in Shiraz wine.

Students

Dr Anika Molesworth



Master of Sustainable Agriculture graduate Anika is passionate about resilient rural communities and healthy ecosystems. She is committed to helping create a sustainable food system and raising awareness of climate change impact on farms, and the action that can be taken to reduce emissions and adapt to change.

Thomas Keogh



PhD student Thomas is investigating why post-weaning lamb growth rates are currently not at the expected rates. In environments where appropriate nutrients are provided with no constraints on intake there appears to be disappointing growth rates. His research investigates factors that are constraining growth and aims to provide producers with data that enables accurate feed budgeting and predictable growth rates.

Emma Lynch



PhD student Emma is evaluating canola meal as a supplement in beef cattle in southern NSW. Producers are faced with challenges of addressing the summer-autumn pasture fed gap in Southern NSW where the supply of pasture alone can sometimes be insufficient to meet the demands of livestock. Her study aims to investigate the potential of replacing a grain-based supplement with canola meal at weaning and finishing cattle, subsequent carcass quality and the economic productivity within a grass-fed production system.

Dr Brooke Kaveney



Australian soils are highly weathered and often have acidic topsoils. Post-doctoral fellow Brooke is examining the effect of the nitrification inhibitor 3, 4-dimethylpyrazole phosphate (DMPP) on soil mineral nitrogen processes. Her research focuses on the effect of DMPP on soil mineral nitrogen processes in Australian soils.



Change the world with research

Want to change the world in agriculture, water and the environment? Find new ways to create meaningful impact on local, national and global levels with Charles Sturt.

→ research.csu.edu.au

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“My time with Charles Sturt equipped me with critical and creative perspectives. It fostered systems thinking and encouraged me never to stop exploring and questioning. I was given some fantastic abilities and a knowledge bank I’ve been able to take out into the world.”

Anika Molesworth

Agriculture graduate and founder of Farmers for Climate Action

“Knowing that the Master of Environmental Management was developed with industry consultation and delivered by lecturers connected to industry was reassuring. There was also the opportunity to network with other students both in and outside of the industry, broadening my perspectives on important factors influencing policy, practices and governance.”

David McMahon

Master of Environmental Management



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