



THE UNIVERSITY
of ADELAIDE

Research Capability

Environment Institute



**make
history.**



We acknowledge and pay our respects to the Kaurna people, the original custodians of the Adelaide Plains and the land on which the University of Adelaide's campuses at North Terrace, Waite and Roseworthy are built. We acknowledge the deep feelings of attachment and relationship of the Kaurna people to country, and we respect and value their past, present and ongoing connection to the land and cultural beliefs. The University continues to develop respectful and reciprocal relationships with all Indigenous peoples in Australia, and with other Indigenous peoples throughout the world.

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Director's message

It is my pleasure to share the Environment Institute's capability report, celebrating some of the exceptional research achievements made by our diverse and world-leading membership academy between 2022 and 2025.

I first joined the Environment Institute in 2009, during the year of its inauguration. Launched on the eve of World Environment Day, EI's purpose from the outset has been to undertake interdisciplinary research that tackles some of the most pressing environmental and societal challenges of our time. Over the past 15 years, it has been thrilling to witness our members' unwavering commitment to realising this mission, harnessing the knowledge needed to halt and reverse environmental decline and deliver long-term benefits for our economy and society.

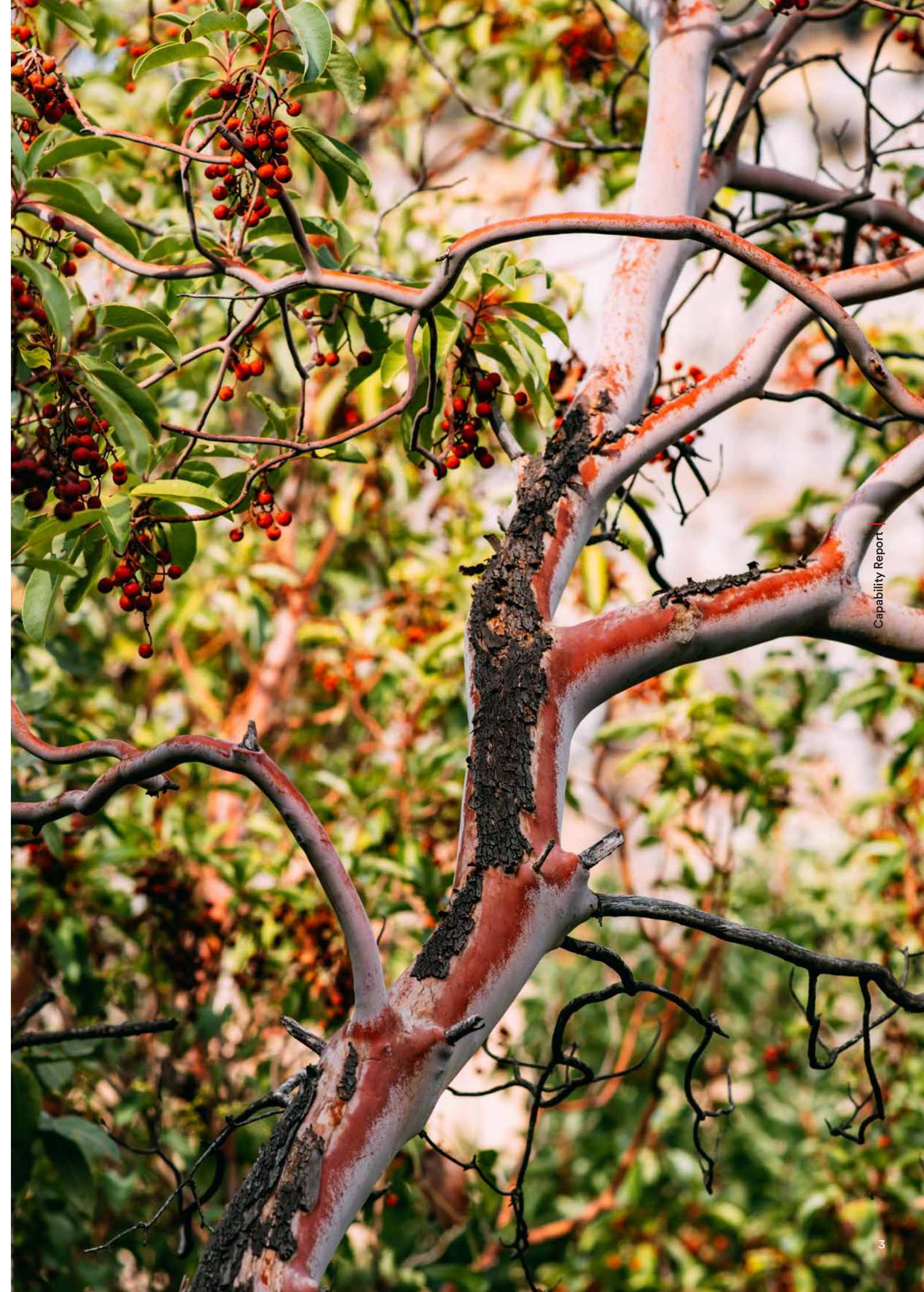
With expertise in both environmental and social sustainability and a research translation pathway that sees the integration and flow of the sciences and public health to social sciences, education and law, our projects have created change and transformation across communities, governments and industries. This report highlights just a few examples, from developing innovative techniques to conserve Australia's unique biodiversity and ecosystems, to shaping legal and policy frameworks that mitigate bushfire risk and promote urban greening and delivering critical infrastructure to combat wildlife crime.

Outcomes such as these are in no small part due to the enduring support of our extended community of partners, donors, volunteers, board members and professional staff, whose contributions

and collaborative spirit have helped the Environment Institute to drive forward transformational research and achieve real and lasting impact.

As we look to a future that continues to be challenged by climate change, pollution, deforestation and other threats to biodiversity, ecosystems and society, I remain heartened by the progress we have made and excited for the opportunities that lie ahead. Together, we will continue to lead environmental change and ensure a future that is healthy, diverse and equitable for all.

Professor Andrew Lowe
Director, Environment Institute



Impact at a glance

Membership

119

The total number of members

+50

additional higher degree research student members

15 + 3

Our membership expertise is incredibly diverse, spanning across 15 schools and all 3 University faculties

Research outputs

66

Research Academy members* delivered high-impact research resulting in:

1,123

publications

38,612

publication views

80%

higher than the field average

21,353

citations

106%

higher than the field average

Research support

26

Australian Research Council funding grants were awarded to members

4

mid-career researchers were supported through the University's Future Making Fellowship scheme

Community engagement

47,500

website visits

7,227

social media followers

1,110

social media posts

2,000+

newsletter subscribers and increasing weekly

365,675

post impressions

4,394

EcoFuturist podcast views

Prizes and awards

State

- **Young Tall Poppy Science Award SA**, the Australian Institute of Policy and Science - Dr Nina Wootton, 2025; Dr Georgina Falster, 2025; Associate Professor Xiaoguang Duan, 2024; Dr Erinn Fagan-Jeffries, 2022.
- **Young Tall Poppy of the Year SA**, the Australian Institute of Policy and Science - Dr Nina Wootton, 2025
- **SA Environment Awards**, Conservation Council SA
 - **Conservation Science Prize** - Dr Alice Jones, 2025
 - **Conservation Science Prize** - Professor Sean Connell & Dr Dominic McAfee, 2024
 - **Commendation for Conservation Science**, Green Adelaide Pelzer Prize - Professor Peng Bi, 2024
 - **Certificate of Merit for Plant Insect Interactions**, Green Adelaide Pelzer Prize - Dr Katja Hogendoorn, 2024
 - **Conservation Science Prize** finalist - Professor Peng Bi, 2024
 - **Leif Justham Young Achiever Award** and Conservation Science Prize finalist - Isabelle Onley, 2024
 - **Jill Hudson Award for Environmental Protection** - Professor Sarah Wheeler, 2023
 - **Commendation for Research**, Green Adelaide Pelzer Prize - Professor Philip Weinstein, 2023
- **People's Choice Award and Students' Choice Award** winner, Three Minute Thesis, University of Adelaide - Isobel Hume, 2022
- **SA Climate Leaders Award** for Research and Education, Premier's Climate Change Council - Waite Arboretum team, including Drs Kate Delaporte and Stefan Caddy-Retalic, 2024
- **SA's 40 Movers and Shakers Under 40** listing, The Advertiser - Dr Erinn Fagan-Jeffries, 2022
- **Circular Economy Student Award**, Green Industries SA - Liancheng Li, 2022
- **University of Adelaide STEM Award**, SA 7NEWS Young Achiever Awards, Awards Australia - Nicole Foster, 2022

National

- **Australian Geographic Awards for Nature**, Australian Geographic Society – Dr Dominic McAfee, 2025
- **Max Day Environmental Science Fellowship Award**, Australian Academy of Science - Dr Nina Wootton, 2025
- **L'Oréal-UNESCO For Women in Science Fellowship**, L'Oréal Australia & New Zealand - Dr Georgina Falster, 2025
- **Superstar of STEM**, Science Technology Australia – Dr Alice Jones, 2023; Dr Liz Reed, 2025; Dr Georgina Falster, 2025.
- **People's Choice Award Falling Walls Lab Australia**, Australian Academy of Sciences – Mabel Day, 2025
- **Jill Landsberg Trust Fund scholarship**, The Ecological Society of Australia - Frances Perry, 2025
- **Eureka Prize**, Australian Museum
 - **Innovation in Citizen Science** winner - Dr Erinn Fagan-Jeffries, 2024
 - **Innovation in Citizen Science** finalist - Dr Jasmin Packer, 2022
 - **Excellence in Interdisciplinary Scientific Research** finalist - Professor Peng Bi, Professor Dino Pisaniello and the Extreme Heat and Health Adaptation Team, 2022
- **Academy Fellow**, Academy of the Social Sciences in Australia - Professor Peng Bi, 2023
- **Australian Navy Commendation** for ancient DNA work, Navy Australia - Associate Professor Jeremy Austin and the Australian Centre for Ancient DNA Team, 2022

International

- **Inaugural Raymond Murray Medal**, the International Union of Geological Sciences (IUGS) - Professor Rob Fitzpatrick, 2025
- **Highly Cited Researcher** listing, Clarivate - Professor Seth Westra, 2024
- **XPRIZE Carbon Removal Award** finalist, XPRIZE - Professor Andrew Lowe and University of Adelaide team, with Seawater Greenhouse and University of Birmingham, 2022
- **Journal of Applied Ecology Southwood Prize**, British Ecological Society (BES) - Dr Dominic McAfee, 2024
- **Fellow of the American Fisheries Society**, American Fisheries Society - Professor Bronwyn Gillanders, 2024

* The Institute Research Academy membership (page 33) base comprises a group of EI members whose work closely aligns with our research initiatives.

About the Environment Institute

The Environment Institute (EI) brings together more than 100 researchers from all faculties across the University of Adelaide, focused on the conservation, management and restoration of natural resources and ecosystem assets which underpin environmental and social sustainability.

For over 15 years, we have been driving transformational change by connecting multidisciplinary research excellence with the world's most critical and complex environmental challenges. Through strong partnerships with industry, government and the community, we deliver actionable solutions that protect the environment and generate lasting economic, societal and cultural benefits.

Our vision is to safeguard the environment now for future generations.

Our mission is to deliver the knowledge needed to halt and reverse environmental decline and ensure a future that is healthy, diverse and equitable.

What we do

EI works to address complex environmental and societal sustainability challenges and create meaningful impact on a local and global scale. We do this by:

Funding research activities that generate scholarly, sectoral and societal impact

We offer a competitive annual seed-funding scheme to support EI members in the development of research activities that align with EI's vision and research foci.

Building the capacity and capability of our members to reach their full potential

We invest in the growth of our members through a targeted leadership development program, appointing research initiative leads, and offering training and mentoring opportunities for early- and mid-career researchers.

Fostering high-impact collaborations within the University and with external partners

We facilitate multidisciplinary partnerships to tackle environmental issues across sectors and communities.

Engaging with the community on critical environmental issues

We showcase the breadth of experience and expertise across EI and encourage a deeper connection and appreciation for our natural environment.

Delivering real world outcomes in environmental and social sustainability

EI's multidisciplinary approach focuses on safeguarding the planet's land, water and air resources, delivering outcomes with industry, government and community.



Research capability and achievements

With expertise spread across all faculties of the University of Adelaide, EI’s multidisciplinary approach focuses on safeguarding the planet’s land, water and air resources, delivering outcomes with industry, government and community.

Our work across nine key areas of research is helping to progress the United Nations’ Sustainable Development Goals, which aim to tackle the world’s most pressing challenges by 2030.

Biodiversity, Environmental Change and Restoration

Providing expert research and tools to identify the causes of biodiversity change, and develop praxis and policy guidance to avert extinctions and protect and restore ecosystems



Climate and Environmental Risk

Leading new thinking and action on climate and environmental risk in an increasingly uncertain world



Combating Wildlife and Environmental Crime

Developing tools and frameworks to protect Australia’s landscapes and biodiversity, bolster our biosecurity and establish a highly exportable wildlife, fisheries and timber crime-tech research industry



Diversifying Citizen Science and Public Engagement

Investigating our natural and social worlds with diverse communities to empower research that fosters shared responsibility for the environment and collective action for a sustainable future



Green Urban Futures and Planetary Health

Building resilience to climate and societal changes to enhance community wellbeing and create vibrant, sustainable urban environments



People, Nature, Climate

Driving sustainability, enhancing environmental and social wellbeing, and supporting community-led responses to environmental decision making and development



Pollution and Emerging Contaminants

Identifying contaminant pathways and impacts, and developing strategies to monitor, prevent, and counteract pollution and its effects



Sustainable Marine Futures

Championing the restoration of marine habitats to ensure community health and wellbeing and coastal ecosystem resilience



Water for Environment and Society

Supporting the sustainable management of our water resources through multidisciplinary research, expertise and policy development



Biodiversity, Environmental Change and Restoration

By the numbers



370
publications

6,149
citations,

9,295
publication
views,

51%
higher than the
field average

42%
higher than the
field average

Research outputs*

*These figures reflect the research outputs of EI Research Academy members. They are based on 2020-2025 data and are accurate as of June 2025.

Overview

Initiative Lead: Associate Professor Damien Fordham

Deputy Lead: Dr Jamie Wood

Earth is on a path to devastating climate and environmental change. Our researchers have the expertise needed to identify the trajectory and causes of biodiversity responses to these changes, and to formulate evidence-based solutions to protect natural and human systems. We provide the context, tools and policy guidance needed to help mitigate future biodiversity losses and maintain resilient ecosystems in the face of shifting climates and other anthropogenic impacts. This includes, but is not limited to, expertise in ecological modelling, conservation science, environmental systems and management, palaeo and applied ecology, climatic change, and economics and decision making.

Key projects

Biodiversity, Conservation and Restoration

Researchers: Associate Professor Damien Fordham, Dr Jess Marsh, Dr Phillipa McCormack, Dr Yassine Souilmi, Dr Joe Atkinson, Professor Michelle Waycott

Climate and Environmental Change

Researchers: Dr Jenna Crowe-Riddell, Dr Georgina Falster, Associate Professor Diego Garcia-Bellido, Dr Liz Reed, Associate Professor Kate Sanders, Associate Professor Emma Sherratt, Associate Professor Jonathan Tyler

Environmental Genomics

Researchers: Associate Professor Jeremy Austin, Professor Frank Grutzner, Dr Michelle Guzik, Associate Professor Bastien Lamas, Associate Professor Kate Sanders, Dr Jamie Wood

Major funders and partners (2022-24)

- Australian Government Department of Health, Disability and Ageing
- Australian Research Council
- BHP Group Limited
- National Aeronautics and Space Administration
- National Health and Medical Research Council
- New Zealand Ministry for Business, Innovation and Employment
- Parks Australia
- Royal Society of New Zealand
- U.S. National Science Foundation
- Villum Foundation

Key publications*

Bardan, F., Higgins, D., & **Austin, J. J.** (2023). A custom hybridisation enrichment forensic intelligence panel to infer biogeographic ancestry, hair and eye colour, and Y chromosome lineage. *Forensic Science International: Genetics*, 63, 102822.

Folwell, M. J., Sanders, K. L., Brennan, P. L. R., & **Crowe-Riddell, J. M.** (2022). First evidence of hemoclitores in snakes. *Proceedings of the Royal Society B: Biological Sciences*, 289(1989), 20221702.

Pilowsky, J. A., Colwell, R. K., Rahbek, C., & **Fordham, D. A.** (2022). Process-explicit models reveal the structure and dynamics of biodiversity patterns. *Science Advances*, 8(31), Article eabj2271.

Sherratt, E., Nash-Hahn, T., Nankivell, J. H., Rasmussen, A. R., Hampton, P. M., & **Sanders, K. L.** (2022). Macroevolution in axial morphospace: Innovations accompanying the transition to marine environments in elapid snakes. *Royal Society Open Science*, 9(12), 221087.

van der Heyde, M., White, N. E., Nevill, P., **Austin, A. D.**, Stevens, N., Jones, M., & **Guzik, M. T.** (2023). Taking eDNA underground: Factors affecting eDNA detection of subterranean fauna in groundwater. *Molecular Ecology Resources*, 23(1), 1–18.

Williams, J. W., Spanbauer, T. L., Heintzman, P. D., Blois, J., Capo, E., Goring, S. J., Monchamp, M.-E., Parducci, L., Von Eggers, J. M., Alsos, I. G., Bowler, C., Coolen, M. J. L., Cullen, N., Crump, S., Epp, L. S., Fernandez-Guerra, A., Grimm, E., Herzsuh, U., Mereghetti, A., Meyer, R. S., Nota, K., Pedersen, M. W., Pérez, V., Shapiro, B., Stoof-Leichsenring, K. R., & **Wood, J.** (2023). Strengthening global-change science by integrating eDNA with paleoecoinformatics. *Trends in Ecology & Evolution*, 38(10), 869–881.

Wood, J. R. (2023). Post-settlement extinction rates for the New Zealand avifauna. *New Zealand Journal of Ecology*, 47(1), Article 3506.

*This list has been compiled using SciVal data from the period 2022-2024, with EI members shown in bold type

Research Spotlight

Using ancient DNA to prevent mammal extinctions

Associate Professor Damien Fordham and his team use innovative models and advances in sedimentary ancient DNA and bulk-bone metabarcoding to reconstruct spatial patterns of native mammals and plants across Australian landscapes since 1788.

By identifying where species used to thrive and working with partners, this research helps direct the protection and recovery of some of Australia's most threatened species by identifying the best places for reintroduction and habitat restoration, now and under future climate conditions.



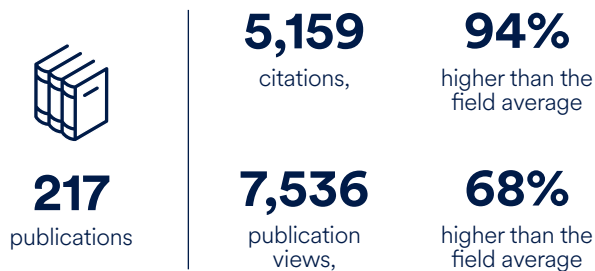
Australia's unique mammals have suffered the highest rate of recent extinctions of any continent. Reversing further declines, and averting new extinctions, requires a detailed understanding of past distributions and preferred habitats."

**Associate Professor
Damien Fordham**

Climate and Environmental Risk

By the numbers

Research outputs*



*These figures reflect the research outputs of EI Research Academy members. They are based on 2020-2025 data and are accurate as of June 2025.

Overview

Initiative Leads: Professor Seth Westra, Professor Mark Lawrence

Deputy Lead: Dr Phillipa McCormack

As climate and environmental risks escalate, so too does the demand for sharper, more strategic responses. This initiative focuses on the systemic nature of climate risk — recognising how physical, ecological and societal systems interact under stress. We develop and apply forward-looking risk frameworks that move beyond prediction, enabling decision-makers to act under uncertainty, manage compounding threats, and protect what matters most. Drawing on world-class research and interdisciplinary expertise, we work closely with partners across government, industry and communities to deliver practical, risk-informed solutions. Grounded in evidence and shaped by real-world needs, we contribute to more informed, resilient responses to the climate and environmental challenges ahead.

Key projects

Hazard Risk (Fire and Flood)

Researchers: Associate Professor Douglas Bardsley, Dr Georgina Falster, Professor Ariella Helfgott, Dr Ania Kotarba, Professor Mark Lawrence, Professor Holger Maier, Dr Phillipa McCormack, Associate Professor Jonathan Tyler, Professor Seth Westra

Major funders and partners (2022-24)

- Australian Government National Emergency Management Agency
- Australian Research Council
- Bushfire and Natural Hazards Cooperative Research Centre
- City of Mitcham
- City of Norwood Payneham and St Peters
- Commonwealth Scientific and Industrial Research Organisation
- One Basin Cooperative Research Centre
- SA Department for Environment and Water
- SmartSat Cooperative Research Centre
- South Australian Fire and Emergency Services Commission
- Spencer Foundation
- Victorian Country Fire Authority
- WA Department of Planning, Lands and Heritage

Key publications*

Ghaffarian, S., Taghikhah, F. R., & **Maier, H. R.** (2023). Explainable artificial intelligence in disaster risk management: Achievements and prospective futures, *International Journal of Disaster Risk Reduction*, 98, 104123.

Maier, H. R., Galelli, S., Razavi, S., Castelletti, A., Rizzoli, A., Athanasiadis, I. N., Sánchez-Marré, M., Acutis, M., Wu, W., & Humphrey, G. B. (2023). Exploding the myths: An introduction to artificial neural networks for prediction and forecasting. *Environmental Modelling & Software*, 167, 105776.

McCormack, P. C., Miller, R. K., & McDonald, J. (2024). Prescribed burning on private land: reflections on recent law reform in Australia and California. *International Journal of Wildland Fire*, 33, WF22213.

McDonald, J., & **McCormack, P. C.** (2022). Responsibility and Risk-Sharing in Climate Adaptation: a Case Study of Bushfire Risk in Australia. *Climate Law*, 12(2), 128-161.

Pearson, R., & **Bardsley, D. K.** (2022). Applying complex adaptive systems and risk society theory to understand energy transitions, *Environmental Innovation and Societal Transitions*, 42, 74-87.

Sauter, C., White, C. J., Fowler, H., & **Westra, S.** (2023). Temporally compounding heatwave-heavy rainfall events in Australia, *International Journal of Climatology*, 43(2), 1050-1061.

Westra, S., & Zscheischler, J. (2023). Accounting for systemic complexity in the assessment of climate risk, *One Earth*, 6(6), 645-655.

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Research Spotlight

Law reform for a fire-ready future

EI Future Making Fellow Dr Phillipa McCormack is assessing current fire laws in South Australia, New South Wales and Tasmania, drawing on international case studies from Canada, Spain and the United States and uncovering new international networks for exchanging knowledge.

Insights from this research are vital to informing practical pathways for law reform, assisting policy makers to enact improved fire prevention and supporting communities, agencies and ecosystems to thrive in a fire-shaped future.



Australia doesn't currently have the necessary legal frameworks needed to proactively mitigate bushfire risks. Understanding what our laws need to be will help us not just cope and survive as fire events become more frequent and extreme, but build environments, cities and communities that can flourish even as that change occurs."

Dr Phillipa McCormack

Combating Wildlife and Environmental Crime

By the numbers

Research outputs*



*These figures reflect the research outputs of EI Research Academy members. They are based on 2020-2025 data and are accurate as of June 2025.

Overview

Initiative Lead: Professor Phill Cassey

Deputy Lead: Professor Andrew Lowe

The pervasive impact of wildlife and environmental crime seriously endangers Australia’s unique landscapes, seascapes and biodiversity, exposing us to potentially disastrous biosecurity risks, and threatening our livelihoods and wellbeing. We are developing the next generation of high-tech resources, informing regulatory and legal frameworks, and translating knowledge and educational tools to enhance Australia’s biosecurity reputation and generate a highly exportable wildlife, fisheries and timber crime-tech research industry.

Key projects

Wildlife Crime Researchers: Professor Phill Cassey

Illegal Logging Researchers: Professor Andrew Lowe, Dr Arif Malik, Professor Michelle Waycott

Fishery Provenance and Health Researchers: Professor Bronwyn Gillanders, Dr Camille Mellin, Dr Patrick Reis Santos

International Trade and Law Researchers: Dr Phillipa McCormack, Dr Kellie Toole, Associate Professor Diego Garcia-Bellido

Major funders and partners (2022-24)

- Australian Department of Agriculture, Fisheries and Forestry
- Australian Department of Industry, Science and Resources
- Australian Research Council
- Centre for Invasive Species Solutions
- International Tropical Timber Organization
- World Forest ID

Key publications*

Birand, A., **Cassey, P.**, Ross, J. V., Russell, J. C., Thomas, P., & Prowse, T. A. A. (2022). Gene drives for vertebrate pest control: Realistic spatial modelling of eradication probabilities and times for island mouse populations. *Molecular Ecology*, 31(6), 1907-1923.

Bunney, E., McInerney, F. A., Dormontt, E., **Malik, A.**, Welti, N., Wilkins, D., Plant, M., Hettiarachchi, D. S., Thomas, D., Dowell, A., Hamalton, T., & **Lowe, A. J.** (2023). Safeguarding sandalwood: A review of current and emerging tools to support sustainable and legal forestry. *Plants, People, Planet*, 5(2), 161–303.

Deliveyne, N., **Austin, J. J.**, & **Cassey, P.** (2024). Developing Loop Mediated Isothermal Amplification (LAMP) assays for rapid, presumptive DNA detection of an invasive reptile (Boa constrictor). *Wildlife Research*, 51, WR23053.

Deliveyne, N., Young, J. M., **Austin, J. J.**, & **Cassey, P.** (2023). Shining a LAMP on the applications of isothermal amplification for monitoring environmental biosecurity. *NeoBiota*, 82, 119-144.

Low, M. C., Schmitz, N., Boeschoten, L. E., Cabezas, J. A., Cramm, M., Haag, V., Koch, G., Meyer-Sand, B. R. V., Paredes-Villanueva, K., Price, E., Thornhill, A. H., Van Brusselen, J., Zuidema, P. A., Deklerck, V., Dormontt, E. E., Shapcott, A., & **Lowe, A. J.** (2022). Tracing the world’s timber: the status of scientific verification technologies for species and origin identification. *IAWA Journal*, 44, 63-84.

Reis-Santos, P., **Gillanders, B. M.**, Sturrock, A. M., Izzo, C., Oxman, D. S., Lueders-Dumont, J. A., Hüsey, K., Tanner, S. E., Rogers, T., Doubleday, Z. A., Andrews, A. H., Trueman, C., Brophy, D., Thiem, J. D., Baumgartner, L. J., Willmes, M., Chung, M.-T., Charapata, P., Johnson, R. C., Trumble, S., Heimbrand, Y., Limburg, K. E., & Walther, B. D. (2023). Reading the biomineralized book of life: Expanding otolith biogeochemical research and applications for fisheries and ecosystem-based management. *Reviews in Fish Biology and Fisheries*, 33(2), 411–449.

Sharrad, A. E., **Reis Santos, P.**, **Austin, J.**, & **Gillanders, B.** (2023). Umbrella terms conceal the sale of threatened shark species: A DNA barcoding approach. *Food Control*, 148, 109606.

Toomes, A., García-Díaz, P., Stringham, O. C., Ross, J. V., Mitchell, L., & **Cassey, P.** (2022). Drivers of the Australian native pet trade: The role of species traits, socioeconomic attributes and regulatory systems. *Journal of Applied Ecology*, 59(5), 1268-1278.

Watters, F., Stringham, O., Shepherd, C., & **Cassey, P.** (2022). The U.S. market for imported wildlife not listed in the CITES multilateral treaty. *Conservation Biology*, 36(6), e13978.

*This list has been compiled using SciVal data from the period 2022-2024, with EI members shown in bold type

Research Spotlight

Developing tools to fight wildlife crime

In 2023, Associate Professor Phill Cassey received a prestigious Australian Research Council Industry Laureate Fellowship to deliver critical research and infrastructure to combat wildlife crime.

This multidisciplinary and highly collaborative project is enabling policing and enforcement activities, enhancing education and awareness efforts, improving environmental biosecurity and helping to safeguard Australia’s unique biodiversity and natural environments.



“The pervasive impact of wildlife and environmental crime seriously endangers Australia’s unique landscapes and biodiversity, exposing us to potentially disastrous biosecurity risks and threatening our livelihoods and wellbeing. Finding an effective method to combat these serious challenges is crucial.”

Professor Phill Cassey

Diversifying Citizen Science and Public Engagement

By the numbers

Research outputs*



*These figures reflect the research outputs of EI Research Academy members. They are based on 2020-2025 data and are accurate as of June 2025.

Overview

Initiative Lead: Professor Frank Grutzner

Deputy Lead: Dr Erinn Fagan-Jeffries

Through participatory research, otherwise known as citizen science, communities work with EI members to advance research in diverse fields such as physics, medicine, biology, ecology and social sciences. In addition to advancing research through the collection and analysis of data and samples, the active involvement of diverse communities in research is a powerful way to engage and educate, fostering a sense of shared responsibility for the preservation of our natural world and inspiring collective action towards a more sustainable future.

Key projects

Citizen Science

Researchers: Dr Erinn Fagan-Jeffries, Professor Frank Grutzner, Dr Jasmin Packer, Professor Veronica Soebarto, Dr Mark Kohler, Dr Dominic McAfee, Professor Melissa Nursey-Bray, Dr Nina Wootton

Future Leaders

Researchers: Dr Mark Kohler, Professor Melissa Nursey-Bray, EI Future Leaders Committee (p 34)

Major funders and partners (2022-24)

- Australian Department of Climate Change, Energy, the Environment & Water
- Australian Government Department of Employment and Workplace Relations
- Australian Government Department of Industry, Science, Energy and Resources
- Australian Research Council
- Country Needs People
- SA Government Department for Environment and Water

Key publications*

Jaume-Schinkel, S., Mengual, X., Howe, A. G., & **Fagan-Jeffries, E. P.** (2023). The hitchhiker's guide to Australia: the 18,000-km-long journey of *Alepia viatrix* Jaume-Schinkel, Kvifte, Weele & Mengual, 2022 (Diptera, Psychodidae) discovered through citizen science. *Check List*, 19(4), 589-597.

Nursey-Bray, M., Masud-All-Kamal, Md., Di Giacomo, M., & Millcock, S. (2022). Building community resilience through youth volunteering: towards a new model. *Regional Studies, Regional Science*, 9(1), 242-263.

Perry, T., Stenhouse, A., Wilson, I., & **Grutzner, F.** (2022). EchidnaCSI: Engaging the public in research and conservation of the short-beaked echidna. *Proceedings of the National Academy of Sciences of the United States of America*, 119(5), e2108826119.

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Research Spotlight

Nation-wide initiative to conserve wild echidnas

Through EchidnaCSI, EI's world-leading citizen science researchers are engaging the Australian community in echidna conservation, recruiting members of the public to submit echidna sightings and scats (excrement) to track echidna population changes.

Since the program began in 2017, more than 11,000 members of the public have downloaded the EchidnaCSI app and submitted 12,000 echidna sightings from across the country. This collection of unprecedented data helps to answer fundamental questions about echidna distribution, diet and gut health, helping to ensure the long-term survival of this iconic Australian animal.



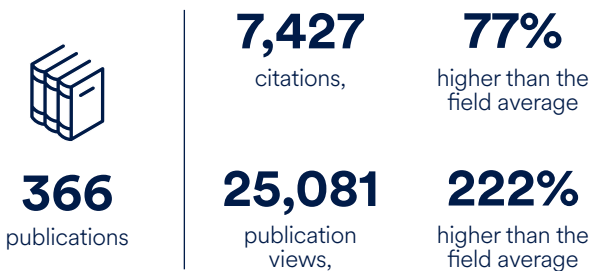
We will continue to develop EchidnaCSI as a platform to study how echidnas are affected by environmental change and natural disasters like floods, drought and fires, and how they contribute to the recovery of natural habitat. This information will be important for the conservation of natural habitats and echidnas into the future."

Professor Frank Grutzner

Green Urban Futures and Planetary Health

By the numbers

Research outputs*



*These figures reflect the research outputs of EI Research Academy members. They are based on 2020-2025 data and are accurate as of June 2025.

Overview

Initiative Lead: Professor Veronica Soebarto

Deputy Lead: Associate Professor Douglas Bardsley

Many cities are facing hotter, drier climates, with rising temperatures and declining rainfall threatening human health and wellbeing, ecosystems and biodiversity. To address these challenges, we conduct interdisciplinary and multidisciplinary research across the fields of built environment, biological and social sciences, economics, health and engineering, in collaboration with governments, industries, non-governmental organisations and communities. Our aim is to build resilience to climate and societal changes – particularly for vulnerable groups such as older adults, low-income communities, outdoor workers and children – to foster healthier, more vibrant urban environments.

Key projects

Green Urban Futures

Researchers: Associate Professor Douglas Bardsley, Dr Stefan Caddy-Retalic, Dr Kate Delaporte, Associate Professor Scott Hawken, Professor Robert Hill, Dr John Kandulu, Dr Mark Kohler, Dr Ehsan Sharifi, Professor Veronica Soebarto, Dr Yonatal Tefera, Associate Professor Carmel Williams, Professor Veronica Soebarto

Planetary Health

Researchers: Professor Peng Bi, Dr Jess Stanhope, Professor Philip Weinstein

Major funders and partners (2022-24)

- Australian Department of Agriculture, Water and Environment
- Australian Department of Foreign Affairs and Trade
- Australian Research Council
- Commonwealth Scientific and Industrial Research Organisation
- Cooperative Research Centre for Honeybee Products
- Green Adelaide
- National Health and Medical Research Council
- Natural Hazards Research Australia

Key publications*

Fatima, S., Rothmore, P., Giles, L., & **Bi, P.** (2023). Impacts of hot climatic conditions on work, health, and safety in Australia: A case study of policies in practice in the construction industry. *Safety Science*, 165, 106197.

Matthews, K., Cavagnaro, T., **Weinstein, P.**, & **Stanhope, J.** (2024). Health by design; optimising our urban environmental microbiomes for human health. *Environmental Research*, 257, 119226.

Stanhope, J., Daniels, C. B., & **Weinstein, P.** (2024). Land Use, Biodiversity Loss and Health (pp.76-84). CABl.

Tefera, Y., Soebarto, V., Bishop, C., **Kandulu, J.**, & **Williams, C.** (2024). A Scoping Review of Urban Planning Decision Support Tools and Processes That Account for the Health, Environment, and Economic Benefits of Trees and Greenspace. *International Journal of Environmental Research and Public Health*, 21(1), 48.

Tong, M., Wondmagegn, B., Xiang, J., Hansen, A., Dear, K., **Pisaniello, D.**, Varghese, B., Xiao, J., Jian, L., Scalley, B., Nitschke, M., Nairn, J., Bambrick, H., Karnon, J., & **Bi, P.** (2022). Hospitalization Costs of Respiratory Diseases Attributable to Temperature in Australia and Projections for Future Costs in the 2030s and 2050s under Climate Change. *International Journal of Environmental Research and Public Health*, 19(15), 9706.

Williams, S., Nitschke, M., Wondmagegn, B., Tong, M., Xiang, J., Hansen, A., Nairn, J., Karnon, J., & **Bi, P.** (2022). Evaluating benefits from a heat health warning system in Adelaide, South Australia. *Australian and New Zealand Journal of Public Health*, 46(2), 149.

Woodward, A., Hinwood, A., Bennett, D., Grear, B., Vardoulakis, S., Lalchandani, N., Lyne, K., & **Williams, C.** (2023). Trees, Climate Change, and Health: An Urban Planning, Greening and Implementation Perspective. *International Journal of Environmental Research and Public Health*, 20(18), 6798.

*This list has been compiled using SciVal data from the period 2022-2024, with EI members shown in bold type

Research Spotlight

Roadmap towards a greener future

A benchmarking study of Adelaide’s urban forest, led by Dr Stefan Caddy-Retalic and Dr Kate Delaporte, heavily influenced the new Urban Greening Strategy for Metropolitan Adelaide 2025-2030.

Released in March 2025, the Strategy sets out a metropolitan-wide plan to grow tree canopy, cool urban areas and boost biodiversity. It also establishes a framework to measure urban heat and plant diversity, setting the foundation for future targets.



The popularity of trees like jacarandas and plane trees means that much of Adelaide’s urban forest is not very diverse. This means that our trees are vulnerable to lots of external threats, particularly some of the pests and diseases that we’ve seen arrive in other parts of Australia.

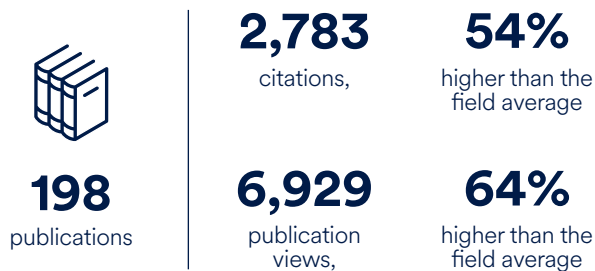
We’re delighted that our work has prompted the state government to recognise that boosting our tree diversity is critical to ensuring that our urban forest continues to perform well under increasingly challenging conditions.”

Dr Kate Delaporte and
Dr Stefan Caddy-Retalic

People, Nature, Climate

By the numbers

Research outputs*



*These figures reflect the research outputs of EI Research Academy members. They are based on 2020-2025 data and are accurate as of June 2025.

Overview

Initiative Lead: Professor Melissa Nursey-Bray

Deputy Lead: Dr Ania Kotarba

EI is dedicated to advancing research that protects the environment while promoting environmental and social wellbeing. We explore the critical interconnections between society and nature to develop sustainable solutions. Our work addresses the impacts of human activity through innovative approaches to pollution prevention, environmental management and policy development. Additionally, our research examines how socio-economic and cultural drivers impact resolution of environmental challenges and promotes community partnerships and engagement in decision making: from Indigenous groups to local governments and fishing communities, particularly in response to climate change and biodiversity loss.

Key projects

Social Justice and Equity

Community, Wellbeing and Behavioural Change

Climate and People

Socio-ecological Systems Thinking

Valuing Nature: Carbon and Nature Industry

Creating, Informing and Influencing Policy Changes

Researchers: Associate Professor Douglas Bardsley, Associate Professor Georgina Drew, Dr Alice Jones, Dr Ania Kotarba, Professor Andrew Lowe, Dr Dominic McAfee, Professor Melissa Nursey-Bray, Professor Patrick O'Connor

Major funders and partners (2022-24)

- Australian Government Department of Agriculture, Fisheries and Forestry
- Australian Government Department of Climate Change, Energy, Environment and Water
- Australian Research Council
- Country Needs People
- Polish National Centre for Science

Key publications*

Addai, G., Suh, J., & **Bardsley, D.** (2023). Contributions of urban periodic markets to sustainable rural development in Ghana: A rural web analysis. *Social Sciences & Humanities Open*, 7(1), 100480.

Kenny, I., **Connell, S. D., Drew, G.,** Wright, A., Carruthers, S., & **McAfee, D.** (2023). Aligning social and ecological goals for successful marine restoration. *Biological Conservation*, 288, 110357.

McAfee, D., Drew, G., & Connell, S. D. (2022). Recentering the role of marine restoration science to bolster community stewardship. *Earth System Governance*, 13, 100149.

McAfee, D., Reis-Santos, P., Jones, A. R., Gillanders, B. M., Mellin, C., Nagelkerken, I., **Nursey-Bray, M. J.,** Baring, R., da Silva, G. M., Tanner, J. E., & **Connell, S. D.** (2022). Multi-habitat seascape restoration: Optimising marine restoration for coastal repair and social benefit. *Frontiers in Marine Science*, 9, 910467.

Nursey-Bray, M. (2023). Communicating climate change impacts to Australian coastal and marine communities. *Ocean & Coastal Management*, 242, 106667.

Nursey-Bray, M., Parsons, M., & Gienger, A. (2022). Urban nullius? Urban Indigenous People and Climate Change. *Sustainability*, 14(17), 10830.

Nursey-Bray, M., Wootton, N., Holland, S., Page, K., & **Gillanders, B.M.** (2024). Site unseen: Engaging communities on marine protected areas. *Biological Conservation*, 292, 110515.

Song, B., Robinson, G. M., & **Bardsley, D. K.** (2022). Multifunctionality and path dependence: Farmer decision-making in the peri-urban fringe. *Journal of Rural Studies*, 96, 64-77.

Sultana, R., & **Hawken, S.** (2023). Reconciling Nature-Technology-Child Connections: Smart Cities and the Necessity of a New Paradigm of Nature-Sensitive Technologies for Today's Children. *Sustainability*, 15(8), 6453.

*This list has been compiled using SciVal data from the period 2022-2024, with EI members shown in bold type

Research Spotlight

Harnessing Indigenous knowledge for a sustainable future

Professor Melissa Nursey-Bray is investigating the ways in which Indigenous knowledge can complement and inform Western scientific approaches to address climate change and biodiversity challenges.

This research will create transformative benefits for biodiversity and climate change adaptation by informing stronger environmental policies and create spaces for Indigenous voices to be represented within them. It will also support socially just conservation outcomes for people living within regions of outstanding cultural and ecological value.



“Understanding how to build effective policy in socially just ways necessitates the inclusion of all types and forms of knowledge. The case study of the Lake Eyre Basin shows that its ongoing management will be transformed by inclusion of Indigenous viewpoints and provide insights into how other systems can be truly collaborative in both policy and management.”

Professor Melissa Nursey-Bray

Pollution and Emerging Contaminants

By the numbers

Research outputs*



*These figures reflect the research outputs of EI Research Academy members. They are based on 2020-2025 data and are accurate as of June 2025.

Overview

Initiative Lead: Professor Volker Hessel

Deputy Leads: Professor Bronwyn Gillanders and Dr Cameron Shearer

Pollution and emerging contaminants are increasingly urgent research areas, with toxic substances like pesticides, microplastics, e-waste and perfluoroalkyl and polyfluoroalkyl chemicals (PFAS) spreading globally and infiltrating our daily lives. EI researchers are studying contaminant pathways, assessing their environmental, health and community impacts, and developing strategies to monitor, mitigate and prevent pollution and its detrimental effects through supply chain redesign, changing consumption patterns and advanced technologies.

Key projects

Pollution and Emerging Contaminants

Researchers: Associate Professor Stephen Bell, Dr Mohammad Boshir Ahmed, Associate Professor Xiaoguang Duan, Professor Bronwyn Gillanders, Professor Volker Hessel, Dr Shervin Kabiri, Professor Melissa Nursey-Bray, Professor Dino Pisaniello, Dr Patrick Reis Santos, Dr Cameron Shearer, Professor Nigel Spooner, Dr Leonid Turczynowitz, Dr Nina Wootton

Major funders and partners (2022-24)

- Australian Government Department of Agriculture, Fisheries and Forestry
- Australian Government Department of Education
- Australian Government Department of Industry, Science and Resources
- Australian Research Council
- Australia's Nuclear Science and Technology Organisation
- Commonwealth Scientifics and Industrial Research Organisation
- Energy Sovereignty for Indigenous Peoples Global Center
- Enviropacific Services
- Fisheries and Research and Development Corporation
- National Science Foundation
- SA Government

Key publications*

Cattonar, L., Suh, J., & **Nursey-Bray, M.** (2024). Coal dust pollution in regional Australian coal mining towns: Social License to Operate and community resistance, *Geoforum*, 151,104008.

Hessel, V., Tran, N. N., Asrami, M. R., Tran, Q. D., Van Duc Long, N., Escribà-Gelonch, M., Osorio-Tejada, J. L., Linke, S., & Sundmacher, K. (2022). Sustainability of green solvents – review and perspective. *Green Chemistry*, 24(2), 410–437.

Ogunola, S. O., **Reis-Santos, P.**, **Wootton, N.**, & **Gillanders, B. M.** (2022). Microplastics in decapod crustaceans sourced from Australian seafood markets. *Marine Pollution Bulletin*, 179, 113706.

Osorio-Tejada, J. L., Rebrov, E. V., & **Hessel, V.** (2023). Internalisation of environmental costs of decentralised nitrogen fertiliser production in Australia. *The International Journal of Life Cycle Assessment*, 28(5), 1045–1065.

Tefera, Y. M., Gaskin, S., Mitchell, K., Springer, D., Mills, S., & **Pisaniello, D.** (2022). Food grown on fire stations as a potential pathway for firefighters' exposure to per- and polyfluoroalkyl substances (PFAS). *Environment International*, 168, 107455.

Wootton, N., **Nursey-Bray, M.**, **Reis-Santos, P.**, & **Gillanders, B. M.** (2022). Perceptions of plastic pollution in a prominent fishery: Building strategies to inform management. *Marine Policy*, 135, 104846

Wootton, N., Sarakinis, K., Varea, R., **Reis-Santos, P.**, & **Gillanders, B. M.** (2022). Microplastic in oysters: A review of global trends and comparison to southern Australia. *Chemosphere*, 307,136065.

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Research Spotlight

The future of disease-and pollution-free farming

Professor Volker Hessel is leading a project to develop a digital twin platform for agriculture, supported by organisation partner Serafino Wines and a generous grant from the Australian Government.

Leveraging artificial intelligence and machine learning, the platform will use real-time sensor data from vineyards and canola fields to provide farmers with vital insights on pest management, crop health and sustainability, and help reduce pollution from agricultural sources (eg. fertiliser and pesticides).



This project is groundbreaking in its use of digital twin technology in agricultural settings. It will play a critical role in reducing CO2 emissions and nutrient and pesticide pollution, enhancing productivity and promoting environmental sustainability.”

Professor Volker Hessel

Sustainable Marine Futures

By the numbers

Research outputs*



*These figures reflect the research outputs of EI Research Academy members. They are based on 2020-2025 data and are accurate as of June 2025.

Overview

Initiative Lead: Professor Sean Connell

Deputy Lead: Dr Alice Jones

The successful restoration of lost seagrass communities, kelp forests, shellfish reefs, mangroves and saltmarshes is vital to Australia’s socioeconomic wellbeing and coastal ecosystem resilience. Restoration success in a fast-changing world requires the best scientific knowledge and fit-for-purpose approaches. Our researchers are national leaders and champions of change in understanding the drivers of loss and restoration. Their multidisciplinary approach brings together marine biology, social sciences, psychology, education, economics, legal studies and community wellbeing to drive policy development, legislative change, and social and ecological progress.

Key projects

Coastal and Reef Restoration Researchers: Professor Sean Connell, Associate Professor Georgina Drew, Dr Dominic McAfee, Dr Alexandra Wawryk, Dr Alice Jones, Professor Ivan Nagelkerken, Professor Michelle Waycott

Blue and Teal Carbon Researchers: Dr Alice Jones, Dr Phillipa McCormack, Associate Professor Luke Mosley, Dr Alexandra Wawryk, Professor Michelle Waycott, Dr Jamie Wood

Marine Ecosystems and Environmental Change Researchers: Professor Bronwyn Gillanders, Dr Ania Kotarba, Dr Camille Mellin, Professor Ivan Nagelkerken, Professor Melissa Nursey-Bray, Dr Patrick Reis-Santos, Professor Michelle Waycott, Dr Nina Wootton

Major funders and partners (2022-24)

- Australian Government Department of Agriculture, Fisheries and Forestry
- Australian Government Department of Climate Change, Energy, the Environment and Water
- Australian Research Council
- Commonwealth Scientific and Industrial Research Organisation
- Green Adelaide
- SA Government Department for Environment and Water

Key publications*

Carruthers, T. J. B., Jones, S. B., Terrell, M. K., Scheibly, J. F., Player, B. J., Black, V. A., Ehrenwerth, J. R., Biber, P. D., Connolly, R. M., Crooks, S., Curole, J. P., Darnell, K. M., Dausman, A. M., DeJong, A. L., Doyle, S. M., Esposito, C. R., Friess, D. A., Fourqurean, J. W., Georgiou, I. Y., Grimsditch, G. D., He, S., Hillmann, E. R., Holm, G. O., Howard, J., Jung, H., Jupiter, S. D., Kiskaddon, E., Krauss, K. W., Lavery, P. S., Liu, B., Lovelock, C. E., Mack, S. K., Macreadie, P. I., McGlathery, K. J., Megonigal, J. P., Roberts, B. J., Settelmyer, S., Staver, L. W., Stevens, H. J., Sutton-Grier, A. E., Villa, J. A., White, J. R., & **Waycott, M.** (2024). Identifying and filling critical knowledge gaps can optimize financial viability of blue carbon projects in tidal wetlands. *Frontiers in Environmental Science*, 12, 1421850.

Jones, A. R., Alleway, H. K., **McAfee, D.**, **Reis-Santos, P.**, Theuerkauf, S. J., & Jones, R. C. (2022). Climate-Friendly Seafood: The Potential for Emissions Reduction and Carbon Capture in Marine Aquaculture. *BioScience*, 72(2), 123–143.

Leung, J. Y. S., Zhang, S., & **Connell, S. D.** (2022). Is Ocean Acidification Really a Threat to Marine Calcifiers? A Systematic Review and Meta-Analysis of 980+ Studies Spanning Two Decades. *Small*, 18(35), e2107407.

McAfee, D., McLeod, I. M., Alleway, H. K., Bishop, M. J., Branigan, S., **Connell, S. D.**, Copeland, C., Crawford, C. M., Diggles, B. K., Fitzsimons, J. A., Gilby, B. L., Hamer, P., Hancock, B., Pearce, R., Russell, K., & Gillies, C. L. (2022). Turning a lost reef ecosystem into a national restoration program. *Conservation Biology*, 36(6), e13958.

McAfee, D., McLeod, L. D., Carruthers, S., **Connell, S. D.** (2024). Reversing functional extinction: successful restoration of eradicated oyster reefs. *Restoration Ecology*, 32(5).

Nagelkerken, I., & **Connell, S. D.** Ocean acidification drives global reshuffling of ecological communities. (2022). *Global Change Biology*, 28(23), 7038-7048.

Russell, S. K., **Gillanders, B. M.**, Detmar, S., Fotheringham, D., & **Jones, A. R.** (2024). Determining environmental drivers of fine-scale variability in blue carbon soil stocks. *Estuaries and Coasts*, 47, 48–59.

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Research Spotlight

Bringing oyster reefs back from extinction

An eight-year collaborative effort with the South Australian Government and local communities has restored 20 hectares of lost oyster reef on the Yorke Peninsula—the largest oyster reef restoration project in the Southern Hemisphere. This pioneering work included using underwater speakers and crushed oyster shells to replicate the audio and chemical cues baby oysters need to find a healthy habitat—dramatically improving settlement rates and reef regeneration.

Today, the habitat is a thriving marine metropolis, providing hope for the future of marine ecosystems around the world.



Globally, 85% of oyster reefs have been lost, and on many coastlines these ecosystems were near obliterated. The rate of recovery of this restoration shows that even heavily degraded marine systems can retain a latent resilience that enables us to achieve rapid environmental recoveries through effective restoration efforts.”

Professor Sean Connell

Water for Environment and Society

By the numbers

Research outputs*



*These figures reflect the research outputs of EI Research Academy members. They are based on 2020-2025 data and are accurate as of June 2025.

Overview

Initiative Lead: Associate Professor John Tibby

Water resources are fundamental to the wellbeing of all nations, and to global biodiversity. We bring together world-class expertise to support the sustainable management of water resources. Our team of researchers includes hydrologists, ecologists, biogeochemists, engineers, architects, modellers, economists and social scientists, working in collaboration with the water sector and water users. We integrate water research across key priority areas, including urban water planning and management, groundwater research and training, climate change impacts on water systems, river and wetland ecology, remote community water access and management, and marine and freshwater plastic pollution research.

Key projects

Goyder Institute for Water Research Researchers: Professor Justin Brookes, Associate Professor Georgina Drew, Dr Ania Kotarba, Professor Holger Maier, Professor Melissa Nursey-Bray, Dr Mark Thyer, Associate Professor John Tibby, Professor Michelle Waycott, Associate Professor Luke Mosley, Associate Professor Douglas Bardsley

One Basin CRC Researchers: Professor Ariella Helfgott, Professor Seth Westra

Major funders and partners (2022-24)

- American Water Works Association
Water Research Foundation
- Australian Government Department of Climate Change, Energy, the Environment and Water
- Australian Government Department of Industry, Science and Resources
- Australian Research Council
- City of Mitcham
- City of Norwood Payneham and St. Peters
- Goyder Institute for Water Research
- SA Government Department for Environment and Water
- Stormwater Management Authority

Key publications*

Beresford, M., Wutich, A., Garrick, D., & **Drew, G.** (2023). Moral economies for water: A framework for analyzing norms of justice, economic behavior, and social enforcement in the contexts of water inequality. *Wiley Interdisciplinary Reviews: Water*, 10(2), e1627.

Brookes, J., Busch, B., **Cassey, P.**, Chilton, D., Dittmann, S., Dornan, T., Giatas, G., **Gillanders, B. M.**, Hipsey, M., Huang, P., Keneally, C., Jackson, M. V., **Mosley, L.**, Mott, R., Paton, D., Prowse, T., **Waycott, M.**, Ye, Q., Zhai, S., & Gibbs, M. (2023). How well is the Basin Plan meeting its objectives? From the perspective of the Coorong, a sentinel of change in the Murray-Darling Basin. *Australian Journal of Water Resources*, 27(2), 223–240.

Brookes, J., Huang, P., Zhai, S., Gibbs, M., Ye, Q., Aldridge, K., Busch, B., & Hipsey, M. (2022). Environmental Flows to Estuaries and Coastal Lagoons Shape the Salinity Gradient and Generate Suitable Fish Habitat: Predictions From the Coorong, Australia. *Frontiers in Environmental Science*, 10, 796623.

Gibbs, M. S., Wallace, T. A., & **Mosley, L.** (2022). Constraining Organic Matter Composition and Dynamics as a Dominant Driver of Hypoxic Blackwater Risk during River Murray Floodplain Inundation. *Hydrological Processes*, 36(3), e14529.

Mosley, L. M., Priestley, S., **Brookes, J.**, Dittmann, S., Farkaš, J., Farrell, M., Ferguson, A. J., Gibbs, M., Hipsey, M., Huang, J., Lam-Gordillo, O., Simpson, S. L., **Tyler, J. J.**, **Waycott, M.**, & Welsh, D. T. (2023). Extreme eutrophication and salinisation in the Coorong estuarine-lagoon ecosystem of Australia's largest river basin (Murray-Darling). *Marine Pollution Bulletin*, 188, e1639.

Priestley, S. C., **Tyler, J.**, Liebelt, S. R., **Mosley, L. M.**, Wong, W. W., Shao, Y., Woolston, Z., Farrell, M., Welsh, D. T., **Brookes, J. D.**, Collins, A. S., Keneally, C., & **Farkaš, J.** (2022). N and C Isotope Variations Along an Extreme Eutrophication and Salinity Gradient in the Coorong Lagoon, South Australia. *Frontiers in Earth Science*, 9, 727971.

Skinner, W., **Bardsley, D. K.**, & **Drew, G.** (2024). Post-crisis risk management: Water, community, and adaptation in a South Australian irrigation district. *Ecology and Society*, 29(1), Article 10.

Skinner, W., **Drew, G.**, & **Bardsley, D.K.** (2023). "Half a flood's no good": flooding, viticulture, and hydrosocial terroir in a South Australian wine region. *Agric Hum Values*, 40, 549–564.

Research Spotlight

Urban rainwater harvesting in 'smart' south Asian cities

A research project led by Associate Professor Georgina Drew investigated the challenges and opportunities of scaling up urban rainwater harvesting in South Asian cities.

While rainwater harvesting is often promoted as a sustainable solution to water scarcity, its implementation is hindered by socio-cultural, gendered, and political-economic complexities.

Georgina's research has identified the beneficiaries of urban rainwater harvesting, analysed its potential for more equitable use in urban South Asia, and established policy guidelines tailored to local contexts.



“Efforts to focus on rainwater harvesting in areas with an inequitable water balance should be the focus of urban planning moving forward because water stress will be exacerbated by the repeated droughts and floods associated with climate change.”

Associate Professor
Georgina Drew

Tibby, J., Haynes, D., Gibbs, M., **Mosley, L.**, Bourman, R. P., & Fluin, J. (2022). The terminal lakes of the Murray River, Australia, were predominantly fresh before large-scale upstream water abstraction: Evidence from sedimentary diatoms and hydrodynamical modelling. *Science of the Total Environment*, 835, 155225.

van Vliet, M. T. H., Thorslund, J., Stokral, M., Hofstra, N., Flörke, M., Macedo, H. E., Nkwasa, A., Tang, T., Kaushal, S. S., Kumar, R., van Griensven, A., Bouwman, L., & **Mosley, L.** (2023). Global river water quality under climate change and hydroclimatic extremes. *Nature Reviews Earth & Environment*, 4, 687–702.

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Research investment and support

Driving research excellence and a catalyst to critical funding

Some recent examples that EI has enabled include:

Building resilience to the impacts of heatwaves

Research Lead: Professor Peng Bi
Commencing 2025: Natural Hazards Research Australia, \$1.18M

Professor Peng Bi is leading a comprehensive program of work to better understand the impacts of heatwaves – particularly on vulnerable populations – and drive community resilience.

Tracking flooding and aridification in Australia’s deserts

Research Lead: Dr Alexander Francke
Commencing 2025: Australian Research Council (ARC) Discovery Grant, \$545,825

Dr Alexander Francke is tracking 600,000 years of tropical rainfall and runoff in Australia’s deserts to understand how wet pulses and floods occur, past climate links to human migration and megafauna extinction, and flood impacts on agriculture, infrastructure and ecosystems.

Unravelling Kangaroo Island’s fire regimes

Research Lead: Associate Professor Jonathan Tyler
Commencing 2025: ARC Discovery Grant, \$751,276

Associate Professor Jonathan Tyler is exploring the effects of climate, vegetation and people on fire regimes on Kangaroo Island to inform sustainable fire management and biodiversity conservation in south-eastern Australia.

Transforming decision making for vineyards and canola farms

Research Lead: Professor Volker Hessel
Commencing 2025: Australia’s Economic Accelerator Ignite Grant, \$491,672

Professor Volker Hessel is spearheading the development of Digital Twins in agriculture, leveraging artificial intelligence, smart devices and sensor technology to enhance crop health, productivity and sustainability.

Driving engagement, outcomes and impact

Mapping Greenly Beach restoration efforts

Research Lead: Professor Sean Connell

EI funded the acquisition of a waterproof aerial drone with advanced mapping and imaging capabilities to monitor and document revegetation efforts across Greenly Beach in Coffin Bay, the only known remnant oyster reef in Australia and an area of immense ecological significance.

The drone’s detailed imagery and mapping capabilities have provided invaluable data, arming local authorities and environmental organisations with the **knowledge** needed to assess the health of the reef and determine the necessary steps to **preserve** it.

This research approach has strengthened **community partnerships** by showcasing the ecological **impact** of the revegetation project. It has also **inspired** a new generation of students and environmental advocates, many of whom have gone on to pursue studies and careers in conservation and related fields.

Designing living parklands for future cities

Research Lead: Associate Professor Scott Hawken

Associate Professor Scott Hawken was awarded EI seed funding to coordinate and lead a ‘Next Generation Park Systems’ symposium at the National Wine Centre of Australia that fostered **knowledge exchange** on the design of innovative park systems for future cities.

The event **connected** over 100 experts in sustainable urban planning, **sharing** insights on living landscapes and emerging trends in park design, while fostering **collaboration** across sectors. It also resulted in a grant submission to the Australian Research Council on ‘Park Systems as Green Infrastructure for Civic Health’.

Modelling trends of invasive flora under climate change

Research Lead: Dr Irene Martin Fores

EI funding enabled Dr Irene Martin Fores to develop a global survey to address biases in invasion science terminology and work toward a shared understanding that captures diverse perspectives from researchers, policymakers and practitioners worldwide.

This work has since spurred further **collaborations**, including a partnership with the University of Queensland to facilitate the translation of the survey into multiple languages, broadening its **accessibility and impact**. Importantly, it also lays the **framework** for modelling invasive species under climate change and will inform **future global policy, data sharing and management strategies**.

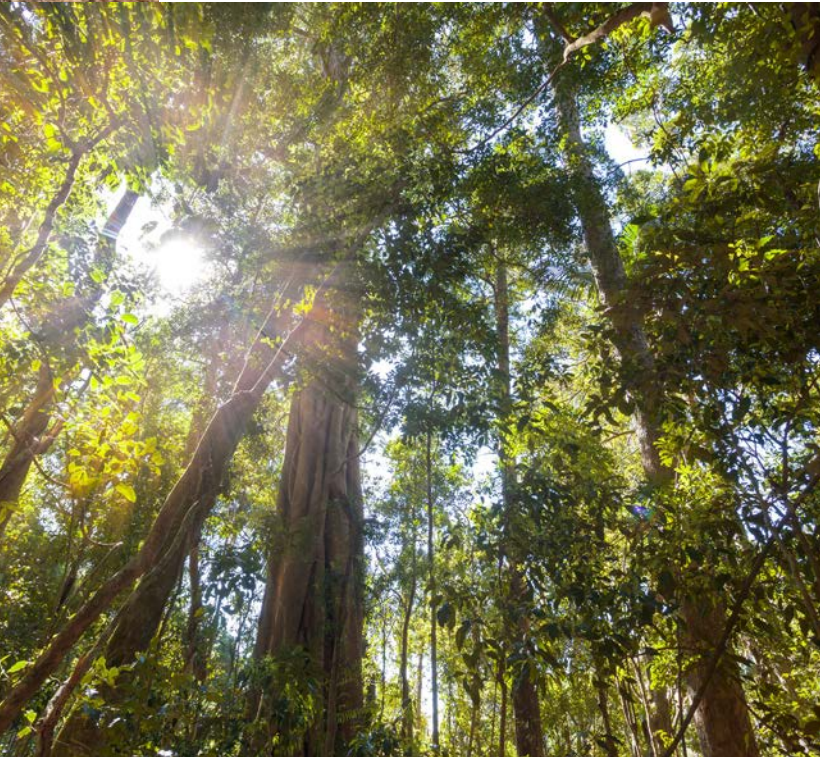


Building capacity and capability

Future Making Fellows

The Future Making Fellowship program at the University of Adelaide has played an important role in nurturing the next generation of researchers of outstanding calibre and potential, empowering them to deliver groundbreaking research with a global impact.

Since 2023, EI has welcomed four talented mid-career researchers into the program, whose research foci align with our critical research areas. Each Fellow is receiving a full salary plus on-costs to support their research, an establishment grant of \$50,000, research communication and promotion support, and opportunities for leadership development, networking and transdisciplinary collaboration.



Timeline of Future Making Fellows

- 2023-2024: Dr Thu Thuy Pham**
Research focus: The political economy of climate change policies
Initiatives supported: Climate & Environmental Risk; People, Nature, Climate

“My Fellowship aims to provide information, tools and analysis for global and national policy makers and practitioners to ensure effective, efficient and equitable outcomes of climate change and forest-friendly policies.”
- 2023-2026: Dr Phillipa McCormack**
Research focus: climate change adaptation in Australia, including the effects of climate change on biodiversity and on intensifying bushfire regimes
Initiatives supported: Biodiversity, Environmental Change & Restoration; Climate & Environmental Risk

“The Future Making Fellowship has enabled me to drive fire law reform and better legal frameworks, while also supporting me to build up a network of policymakers, law makers and others to share expertise and speak to this catastrophic and deeply complex challenge with balance, excellence and integrity.”
- 2024-2027: Dr Dominic McAfee**
Research focus: marine ecology and the restoration of degraded marine ecosystems
Initiatives supported: People, Nature, Climate; Sustainable Marine Futures

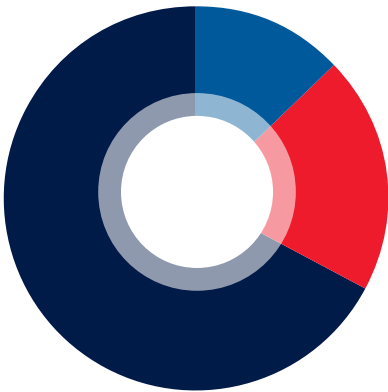
“The Fellowship provides a rare opportunity for me to broaden my horizons and work on new projects. I’m excited to focus on the human side of restoration, exploring the benefits to mental wellbeing, youth education, career pathways and agency building for communities to lead long-term environmental stewardship.”
- 2025-2028: Dr Ania Kotarba**
Research focus: the protection and documentation of cultural heritage sites impacted or threatened by climate change and extreme weather events
Initiatives supported: People, Nature, Climate; Climate & Environmental Risk

“The biggest benefit of working with EI is the transdisciplinary approach it enables. I’m collaborating with colleagues from a broad range of disciplines, from environmental law to public health, Indigenous studies and marine ecology. It’s exciting to explore what we can achieve together.”

Our research community

Membership breakdown

119 EI members span across **15** schools and **3** University faculties



- Members by Faculty**
- 13% Health and Medical Sciences
 - 20% Arts, Business, Law and Economics
 - 67% Sciences, Engineering and Technology

Members by Research Area



- Sciences - biological, physical, chemical and geological **53%**
- Architecture & Engineering **9%**
- Humanities & Social Sciences **9%**
- Public Health & Allied Health Science **9%**
- Law **6%**
- Psychology **5%**
- Business, Economics & Public Policy **5%**
- Agriculture, Food & Wine **4%**

Research leadership

EI’s research initiatives are led by distinguished, highly experienced scholars at the forefront of their fields. They are supported by our Research Academy: a dynamic, collaborative network of researchers spanning all three faculties of the University, with the professional expertise needed to drive impactful, multidisciplinary research that benefits academia, industry and society.

Research Academy

Associate Professor Jeremy Austin, Associate Professor Douglas Bardsley, Associate Professor Stephen Bell, Professor Peng Bi, Dr Mohammad Boshir Ahmed, Professor Justin Brookes, Dr Stefan Caddy-Retalic, Professor Phill Cassey, Professor Sean Connell, Dr Jenna Crowe-Riddell, Dr Kate Delaporte, Associate Professor Georgina Drew, Associate Professor Xiaoguang Duan, Dr Erinn Fagan-Jeffries, Dr Georgina Falster, Associate Professor Damien Fordham, Associate Professor Diego Garcia-Bellido, Professor Bronwyn Gillanders, Professor Frank Grutzner, Dr Michelle Guzik, Associate Professor Scott Hawken, Professor Ariella Helfgott, Professor Volker Hessel, Professor Robert Hill, Dr Alice Jones, Dr Shervin Kabiri, Dr John Kandulu, Dr Mark Kohler, Dr Ania Kotarba, Associate Professor Bastien Lamas, Professor Mark Lawrence, Professor Andrew Lowe, Professor Holger Maier, Dr Arif Malik, Dr Jess Marsh, Dr Dominic McAfee, Dr Phillipa McCormack, Dr Camille Mellin, Associate Professor Luke Mosley, Professor Melissa Nursey-Bray, Professor Patrick O’Connor, Dr Jasmin Packer, Professor Dino Pisaniello, Dr Liz Reed, Dr Patrick Reis Santos, Associate Professor Kate Sanders, Dr Ehsan Sharifi, Dr Cameron Shearer, Associate Professor Emma Sherratt, Professor Veronica Soebarto, Dr Yassine Souilmi, Professor Nigel

Spooner, Dr Jess Stanhope, Dr Yonatal Tefera, Dr Mark Thyer, Professor John Tibby, Dr Kellie Toole, Dr Leonid Turczynowitz, Associate Professor Jonathan Tyler, Dr Alexandra Wawryk, Professor Michelle Waycott, Professor Philip Weinstein, Professor Seth Westra, Associate Professor Carmel Williams, Dr Jamie Wood, Dr Nina Wootton





Future Leaders Committee, 2025

The Environment Institute Future Leaders Committee drives **NEST** – the **N**etwork for **E**merging **S**ustainability **T**hinkers.

NEST empowers and connects higher-degree and early-career researchers within EI. Through specialised training, interactive seminars, and hands-on events, NEST fosters research capacity and cross-disciplinary thinking, enabling emerging researchers to meet interconnected challenges at a local and global scale.

Shannon Evenden

Higher Degree Research Candidate,
School of Biological Sciences

Brittany Hogben

Higher Degree by Research Candidate,
School of Biological Sciences

Jasmine Towle

Higher Degree by Research Candidate,
School of Biological Sciences

Governance

The Environment Institute engages a diverse range of leaders, helping us gain an understanding of our past and plan for our future.

The Advisory Board works with the Director on the governance and strategy of the Institute and to advocate for the Environment Institute inside and external to the University of Adelaide.

The Executive consists of five leaders from within the Institute, helping the Institute to understand its past and plan for its future.

The Environment Institute's research excellence is supported by a management team led by Director, Professor Andrew Lowe and Institute Manager, Dr Marina Delpin.

Research Initiative Leads represent the nine broad research foci of the Institute.

The Research Academy is comprised of research leaders who are actively engaged in projects that underpin the Research Initiatives.

Executive

Professor Andrew Lowe

Director, Environment Institute

Associate Professor Damien Fordham

Deputy Director, Environment Institute;
School of Biological Sciences

Professor Melissa Nursey-Bray

Deputy Director, Environment Institute;
School of Social Sciences

Dr Marina Delpin

Institute Manager

Associate Professor Georgina Drew

School of Social Sciences

Professor Bronwyn Gillanders

School of Biological Sciences

Dr Dominic McAfee

Future Making Fellow,
Environment Institute

Professor Seth Westra

School of Architecture and
Civil Engineering

Advisory Board

Professor Hugh Possingham

NAS FAA (Chair)

Head, The Possingham Lab,
University of Queensland

Sandy Carruthers

Executive Director Strategy, Science
& Corporate Services, Department
for Environment and Water

Professor Chris Daniels

Chair, Green Adelaide, Department
for Environment and Water

Tim Jarvis AM

Biodiversity Champion

Dr Sarah Keenihan

Science Writer and Editor

Professor Laura Parry

Pro Vice-Chancellor (Research
Excellence), University of Adelaide

Chris Wilson

Sustainability Strategist, Regenerative
Systems Innovator, Board Advisor

Key partners

Alongside our internal research community, we partner with hundreds of local, national and international organisations to amplify our impact. Our research partners and their focus include:

Government departments:

- Federal government departments across health, environment, energy, water and innovation
- State government departments across health, environment, energy, water and human services
- Local government departments in South Australia and other jurisdictions

Industry sectors:

- Technology and innovation
- Environmental services, carbon and biodiversity markets
- Agriculture, water and natural resources
- Urban and landscape design
- Sustainable investors

Non-government organisations:

- Indigenous communities
- Wildlife and conservation
- Restoration, land and sea management
- Alliances, associations and peak bodies
- Philanthropic foundations

Other universities:

- Group of Eight and other leading organisations and research organisations in Australia
- Globally leading international universities

Driving excellence into the future

El’s research achievements are thanks to the support and dedication of our entire internal and external research community. Together, we will continue to drive transformational research and discoveries that safeguard our environment and ensure a future that is healthy, diverse and equitable for all.

Partner with us:

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free-call 1800 407 527

Support our research:

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Shy Heathwren 02 Foraging in burn - Tom Hunt

Appendix

Research funding highlights (2022–2025)

Biodiversity, Environmental Change and Restoration

HERDC Category 1
Past trends and future risk of climate extremes in southern Australia.
Australian Research Council (Future Fellowship, 2023)
Investigator: **Associate Professor Jonathan Tyler**
Funding amount: **\$971,296**

Evaluating the biological impact of the Austronesian expansion
Australian Research Council (Discovery Project, 2026)
Investigators: **Associate Professor Bastien Llamas**, Herawati Sudoyo, Maximilian Larena, Guy Jacobs, Hasanuddin Hasanuddin, Pradiptajati Kusuma.
Funding amount: **\$864,362**

Climate, fire and Kangaroo Island: resolving the past to manage the future.
Australian Research Council (Discovery Project, 2025)
Investigators: **Associate Professor Jonathan Tyler**; Dr Haidee Cadd; Dr Linda Armbrecht; **Dr Alexander Francke**; **Professor Michelle Waycott**; Associate Professor Michela Mariani
Funding amount: **\$751,276**

Tracking 600,000 years of flooding and aridification in Australia’s deserts.
Australian Research Council (Discovery Project, 2025)
Investigators: **Dr Alexander Francke**; Associate Professor Timothy Cohen; **Associate Professor Lee Arnold**; Associate Professor Kathryn Amos
Funding amount: **\$545,825**

Structural and molecular studies of endocrine disruption in Australia fauna.
Australian Research Council (Discovery Project, 2023)
Investigators: **Dr John Bruning**; **Professor**

Frank Grutzner; Professor Patrick Griffin
Funding amount: **\$563,171**

Preventing extinctions of threatened mammals with DNA in sediment archives.
Australian Research Council (Linkage Project, 2023)
Investigators: **Associate Professor Damien Fordham**; **Dr Jamie Wood**; **Associate Professor Jeremy Austin**; **Dr Elizabeth Reed**; Professor Kristofer Helgen
Funding amount: **\$540,500**

Detecting and deciphering extinction dynamics under environmental change
Australian Research Council (Discovery Project, 2024)
Investigators: **Associate Professor Damien Fordham** (Chief Investigator (CI)), Professor Barry Brook (CI), Dr Natalie Briscoe (CI), Professor Carsen Rahbek, Professor Kristofer Helgen, Professor Robert O’Hara
Funding amount: **\$523,813**

Evolutionary dynamics in deep time: faunal turnover during the Ediacaran
Australian Research Council (Discovery Project, 2022)
Investigators: **Associate Professor Diego Garcia-Bellido** (CI), Honorary Professor James Gehling, Professor Mary Droser, Professor Robert Gaines
Funding amount: **\$522,937**

Serpent sensory innovation in the evolutionary transition from land to sea
Australian Research Council (Discovery Early Career Researcher Award, 2024)
Investigator: **Dr Jenna Crowe-Riddell**
Funding amount: **\$462,797**

Conserving caves: Developing tools to safeguard subterranean biodiversity.
Australian Research Council (Discovery Early Career Industry Fellowship, 2024)
Investigator: **Dr Jessica Marsh**
Funding amount: **\$467,691**

Evolution of sensory systems in the dark biosphere
Australian Research Council (Discovery Project, 2023)
Investigators: **Professor Steven Cooper**; **Emeritus Professor Andrew Austin**; **Dr Terry Bertozzi**; **Dr Tessa Bradford**; Dr Rosa Fernandez; Professor Markus Friedrich
Funding amount: **\$426,591**

HERDC Categories 2-4
Protecting the biological and cultural value of sea snakes under climate change in Dampier Marine Park, and the role of Australian Marine Parks in connecting and conserving sea snake populations across northern Australia
Parks Australia (2022)
Investigator: **Kate Sanders**, Co-CO: **Jenna Crowe-Riddell**, **Vinay Udyawer**
Funding amount: **\$731,926**

Developing Great Artesian Basin springs research program
BHP Group Limited (2023)
Investigator: **Dr Michelle Guzik**
Funding amount: **\$165,000**

Supporting (where another institution is leading)
Human responses to post-glacial sea level rise at Red Lily, Arnhem Land
Australian Research Council (Linkage Project, 2026)
Investigators: Christopher Clarkson, Kasih Norman, Stephanie Florin, **Associate Professor Bastien Llamas**, Lee Arnold, Damien Finch, Jarrad Kowlessar, Patrick Moss, Janelle Stevenson, Tiina Manne, Nicole Boivin, Mike Morley, Jacob Bongers, Tristen Jones, Quan Hua, Carney Matheson, Vladimir Levchenko, Helen Green, Daryl Wesley
Funding amount: **\$1,058,657**

Deeptime History of Climate & Humans in the Most Diverse Ecosystem on Earth
Australian Research Council (Discovery Project, 2026)
Investigators: Simon Haberle; Janelle

Stevenson; Michael Bird; **Dr Jamie Wood**; James Russell; Nathalie Dubois; Janet Gagul; Patrick Roberts
Funding amount: **\$787,069**

Respecting the Gift - Empowering Indigenous Communities in Genomic Medicine
National Health and Medical Research Council (2022)
Investigators: Alex Brown, Azure Hermes, Gregory Pratt, Kalinda Griffiths, Graham Mann, Simon Easteal, **Associate Professor Bastien Llamas**, Gareth Baynam, Sharon Huebner, Daniel MacArthur
Funding amount: **\$5,000,000**

Pathways to benefit for Indigenous Australians in genomic medicine
Australian Government Department of Health, Disability and Ageing (2022)
Investigators: Alex Brown, Johanna Barclay, Gareth Baynam, Shayne Bellingham, James Breen, Ngiare Brown, Vanessa Bryant, Rebecca D’Souza, Marcel Dinger, Clara Gaff, Kalinda Griffiths, David Hansen, Karen Hawke, Azure Hermes, Sharon Huebner, Elina Hypponen, Jodie Ingles, David James, Misty Jenkins, Jason Kovacic, Timo Lassmann, **Associate Professor Bastien Llamas**, Raymond Lovett, David Lynn, Louise Lyons, Daniel MacArthur, Graham Mann, Julie McGaughran, Rebekah McWhirter, Sarah Medland, Kim Morey, Shivashankar Hiriyur Nagaraj, Kristen Nowak, Nathan O’Callaghan, Hardip Patel, Glenn Pearson, Odette Pearson, Gregory Pratt, Boe Rambaldini, Simone Reynolds, Stephen Simpson, Charlotte Slade, **Dr Yassine Souilmi**, David Thomas, Maree Toombs, Mark Wenitong, Jean Yang
Funding amount: **\$4,986,948**

Indigenous telomere-2-telomere human reference genomes to enable discovery, translation and innovations
National Health and Medical Research Council (2023)
Investigators: Associate Professor Hardip Patel, Associate Professor Azure Hermes, Associate Professor Karen Miga, Dr Andre Luiz Martins Reis, Yu Lin, Associate Professor Paul Waters, **Associate Professor Bastien Llamas**
Funding amount: **\$2,549,487**

Before and after the Last Ice Age: GunaiKurnai archaeology along the Snowy
Australian Research Council (Linkage Project, 2024)
Investigators: Professor Bruno David, Dr Helen Green, Associate Professor Tiina

Manne, **Associate Professor Lee Arnold**, Dr Vilma Perez, **Associate Professor Bastien Llamas**, Dr Nathan Wright, Mr Russell Mullett, Professor Jean-Jacques Delannoy, Associate Professor Fiona Petchey
Funding amount: **\$1,035,873**

Developing a long-read nanopore sequencing platform for Indigenous genomics
Australian Government Department of Health, Disability and Ageing (2022)
Investigators: Ira Deveson, Gareth Baynam, Hasindu Gamaarachchi, **Associate Professor Bastien Llamas**, Daniel MacArthur, Amali Mallawaarachchi, Graham Mann, Andre Luiz Martins Reis, Hardip Patel, Dr Yassine Souilmi
Funding amount: **\$986,060**

Collaborative Research: Advancing human epigenetic age estimation methods for archaeological and forensic research
U.S. National Science Foundation (2024)
Investigators: Professor George Perry, **Associate Professor Bastien Llamas**, Dr Kirk French
Funding amount: **\$579,800**

Plastic brains: Neural adaptations to changing environments in reptiles
Australian Research Council (Discovery Project, 2023)
Investigators: **Dr Jenna Crowe-Riddell**, Dr Alice Clement, **Associate Professor Kate Sanders**, Professor Michael Lee, Professor Shaun Collin, Assistant Professor Alison Rabosky
Funding amount: **\$430,000**

Using conservation covenants for ecosystem restoration and climate adaptation
Australian Research Council (Discovery Project, 2024)
Investigators: Professor Benjamin Richardson, Professor Akhtar-Khavari, **Dr Phillipa McCormack**, Dr James Fitzsimons
Funding amount: **\$302,846**

Climate and Environmental Risk

HERDC Category 1
Preparing Australia for a fiery future: Five strategies to guide law reform
Australian Research Council (Discovery Early Career Researcher Award, 2024)
Investigator: **Dr Phillipa McCormack**
Funding amount: **\$482,990**

Quantifying Australia’s long-term risk of rainfall extremes
Australian Research Council (Discovery Early Career Industry Fellowship, 2025)
Investigators: **Dr Georgina Falster**
Funding amount: **\$438,335**

HERDC Categories 2-4
Smart stormwater infrastructure for natural hazard risk reduction
Australian Government National Emergency Management Agency (2024)
Investigator: **Professor Holger Maier**
Funding amount: **\$2,109,000**

Adaptive Analytical Bushfire Likelihood (AABL) Tool for Better Understanding and Reducing Future Bushfire Risk
SmartSat Cooperative Research Centre (2022)
Investigator: **Professor Holger Maier**
Funding amount: **\$672,250**

Opportunities and risks associated with identifying, sourcing and treating brackish groundwater
One Basin Cooperative Research Centre (2024)
Investigator: **Professor Holger Maier**
Funding amount: **\$299,220**

Sea Flood Mapping and Impact Assessment for Port Adelaide and Surrounds
South Australian Fire and Emergency Services Commission (2023)
Investigator: **Professor Holger Maier**
Funding amount: **\$255,000**

Combatting Wildlife and Environmental Crime

HERDC Category 1
Combatting wildlife crime and preventing environmental harm
Australian Research Council (Industry Laureate Fellowship, 2023)
Investigators: **Professor Phill Cassey**
Funding amount: **\$3,763,434**

HERDC Categories 2-4
Training and reference data generation activities
World Forest ID (2024)
Investigators: **Professor Andrew Lowe, Dr Arif Malik**
Funding amount: **USD\$360,000**

Establishing a Scientific Reference Database for Geographic Origin

Determination of Timber
Australian Government – Global Innovation Linkage (2022)
Investigators: **Professor Andrew Lowe, Dr Arif Malik**
Funding amount: **\$500,000**

Eliminating illegitimate timber and plant derived products from global supply-chains – A case study introducing genetic and elemental data to the block-chain
Australian Government Department of Agriculture, Fisheries and Forestry (2023)
Investigators: **Professor Andrew Lowe, Dr Arif Malik**
Funding amount: **\$500,000**

Establishing a Scientific Reference Database for Geographic Origin
Determination of Ipê and Cumaru
International Tropical Timber Organization (2023)
Investigator: **Dr Arif Malik**
Funding amount: **\$308,822**

Optimising DNA verification tests in supply chains of Prunus africana and Pericopsis elata in Cameroon
International Tropical Timber Organization (2022)
Investigators: **Professor Andrew Lowe, Dr Arif Malik**
Funding amount: **\$252,913**

Diversifying Citizen Science and Public Engagement

HERDC Categories 2-4
SciStarter Australia Platform
Citizen Science Fund, South Australian Government (2023)
Investigators: **Frank Grutzner**, Rachel Ankeny
Funding amount: **\$160,000**

Toys for Turtles: Reducing marine debris through education and outreach
Australian Government Department of Climate Change, Energy, the Environment and Water (2023)
Investigators: **Dr Nina Wootton, Professor Melissa Nursey-Bray, Professor Bronwyn Gillanders**
Funding amount: **\$480,000**

Finding the Fab Five! Enhancing community values and marine protected areas
Australian Government Department of

Employment and Workplace Relations (2023)
Investigators: **Professor Melissa Nursey-Bray, Professor Bronwyn Gillanders, Dr Nina Wootton**, Shane Holland
Funding amount: **\$278,000**

Fungi for function: bushland health indicators
SA Government Department for Environment and Water (2024)
Investigators: **Dr Jasmin Packer**
Funding amount: **\$214,888**

Green Urban Futures and Planetary Health

HERDC Category 1
Building resilience to the impacts of heatwaves
Natural Hazards Research Australia (2024)
Investigators: **Professor Peng Bi**, Guo Y, Jay O, Bambrick H, Chu C, Capon T, Parton K, Dupre K, Zuo J, Zander K, Bone A, Lambert G, Hanson-Easey S, Nairn J, Mooney C, **Dr Olga Anikeeva**, Ward T, Varghese B, Prescott V, **Professor Dino Pisaniello**, Thomas T, Humphrey K, Beaty M, Brearley M, Tong M, Borg M, **Dr Stefan Caddy-Retalic**, Broome R, Muscatello D
Funding amount: **\$1.18 million**

Mapping climate change vulnerability of older Australians to extreme heat
Australian Research Council (Discovery Project, 2023)
Investigators: **Professor Peng Bi**, Dear K, **Dr Bertram Ostendorf**, Stocks N, Liew D, Nairn J
Funding amount: **\$488,456**

Developing Resilient Housing for Low Socio-Economic Older People
Australian Research Council (Discovery Project, 2022)
Investigators: **Professor Veronica Soebarto**, Terence Williamson, Renuka Visvanathan, **Professor Dino Pisaniello**
Funding amount: **\$375,000**

Determining the social value of extreme, mixed-use urban developments
Australian Research Council (Linkage Project, 2022)
Investigators: **Professor Veronica Soebarto**, Helen Barrie, Debby Faulkner, Ning Gu, David Kroll
Funding amount: **\$288,000**

HERDC Categories 2-4
Climate change and the health of the ageing population: Developing a heatwave early warning system in China using the Australian-developed Excess Heat Factor
Australian Government Department of Foreign Affairs and Trade (2024)
Investigators: **Professor Peng Bi, Professor Philip Weinstein, Dr Olga Anikeeva**, Shi M, Yao X, Li Y, Lu B, Dear K, Zhang Y, Tong M, Li T, Wang J, Xu Z, Hanson-Easey S, Nairn J, Varghese B, Yang L, Liu J
Funding amount: **\$260,000**

Developing resources with CALD communities to enhance connection to green space
Green Adelaide (2022)
Investigators: **Professor Peng Bi, Professor Philip Weinstein**, Mahmood M, Hanson-Easey S, **Dr Olga Anikeeva, Dr Jessica Stanhope**
Funding amount: **\$128,605**

Supporting (where another institution is leading)
Advancing the Integration of Greenery and Solar Energy for Buildings
Australian Research Council (Discovery Project, 2026)
Investigators: Ruidong Chang, **Professor Veronica Soebarto; Professor Robert Hill**; Jian Zuo; **Dr Ehsan Sharifi**; Yupeng Wu
Funding amount: **\$620,713**

Phoenix Project: A Community-based Preventative Mental Wellbeing Program for Fire, Drought and Extreme Weather Events
Medical Research Future Fund (2024)
Investigators: Cosh S, Turnbull D, Lawrence D, Gunn K, Thomas M, von Hooff M, Tully P, Rikkers W, Bennett B, Parson M, **Professor Peng Bi**, Lykins A, Welton-Mitchell C, Taylor A, Bartik W
Funding amount: **\$5 million**

Next-Gen Architectural Manufacturing
Australian Research Council (Industrial Transformation Training Centre, 2022)
Investigators: Haeusler M, **Associate Professor Scott Hawken**, Burry J, Zuo J, Chang R, Rodrigo M, Kroll D
Funding amount: **\$4.9 million**

People, Nature, Climate

HERDC Category 1
Project-level blue carbon ecosystem restoration benefits measurement, verification and accounts

Australian Government Department of Climate Change, Energy, the Environment and Water (2024)

Investigators: **Dr Alice Jones**, Tanner, J, Professor Sarah Wheeler, **Professor Melissa Nursey-Bray**, Carnell, P
Funding amount: **\$1.15 million**

HERDC Categories 2-4

Innovative soil technologies to foster resilience and climate smart crop production in Australia

Australian Government Department of Agriculture, Fisheries and Forestry (2025)

Investigator: **Associate Professor Luke Mosley**
Funding amount: **\$4.9 million**

Blue Carbon Framework Accounting
Australian Government Department of Climate Change, Energy, Environment and Water (2024)

Investigators: **Professor Melissa Nursey-Bray**, Mandingalbay Yidinji Corporation
Funding amount: **\$275,000**

Caring for Country: Sea Country Planning
Country Needs People
Investigator: **Professor Melissa Nursey-Bray**
Funding amount: **\$150,000**

Supporting (where another institution is leading)

Identifying and overcoming barriers to coastal and marine habitat restoration and Nature based solutions in Australia

Australian Government Department of Agriculture, Fisheries and Forestry (NESP; 2022)

Investigators: Waltham NJ, Saunders MI, Morris R, Bell-James J, Bishop MJ, Bugnot AB, **Professor Sean Connell**, **A/Professor Georgina Drew**, Fischer M, Glamore W, **Dr Alice Jones**, **Dr Dominic McAfee**, **Dr Phillipa McCormack**, Mayer-Pinto M, Prahalad V, Shumway N, Swearer S, **Dr Alex Wawryk**
Funding amount: **\$1.15 M**

Diving into the Desert: Indigenous and Future Floodplain Management
Australian Research Council (Linkage Project, 2023)
Investigators: D Keenan-Jones, M Westaway, **Dr Ania Kotarba** et al
Funding amount: **\$699,112**

Pollution and Emerging Contaminants

HERDC Category 1

Engineered redox polymers for catalytic water purification

Australian Research Council (Future Fellowship, 2024)

Investigator: **Associate Professor Xiaoguang Duan**
Funding amount: **\$989,541**

Advanced catalytic reduction to breakdown fluorinated pollutants.

Australian Research Council (Discovery Project, 2025)

Investigators: **Dr Cameron Shearer**; T Kee, R Robker, Y Kobayashi
Funding amount: **\$693,889**

Integrated nonmetal-metal single-atom catalysis for selective synthesis

Australian Research Council (Discovery Project, 2023)

Investigators: **Associate Professor Xiaoguang Duan**, W Tian
Funding amount: **\$530,000**

Functional carbon hybrids for green catalysis and clean water

Australian Research Council (Discovery Early Career Researcher Award, 2022)

Investigator: **Associate Professor Xiaoguang Duan**
Funding amount: **\$450,948**

Closing the data gap: Systematic monitoring of PFAS remediation in soil

Australian Research Council (Discovery Early Career Researcher Award, 2024)

Investigator: **Dr Shervin Kabiri**
Funding amount: **\$398,945**

HERDC Categories 2-4

Hand-Portable Real-Time Non-Contact Fluorescence-based Asbestos Sensor

Australian Government Department of Industry, Science and Resources (2023)

Investigators: **Professor Nigel Spooner**, M Lumasag, C Singla, E Schartner
Funding amount: **\$969,690**

Development of the GenX Betavoltaic Battery Pilot Manufacturing Process

Australian Government Department of Industry, Science and Resources (2022)

Investigators: **Professor Nigel Spooner**, C Kalnins, A Chapsky
Funding amount: **\$949,492**

Sustainable recycling of critical metals from discarded mobile devices

Australian Government Department of Industry, Science, Energy and

Resources (2024)

Investigators: **Associate Professor Philip Kwong**, **Professor Volker Hessel**
Funding amount: **\$732,959**

Investigating the PFAS burden in livestock raised on biosolid-amended pastures

Australian Government Department of Agriculture, Food and Fisheries (2024)

Investigator: **Dr Shervin Kabiri**
Funding amount: **\$487,093**

Microplastics in South Eastern Australian coastal waters: synthesising current knowledge and identifying key knowledge gaps for management of plastic pollution

Australian Government Department of Agriculture, Fisheries and Forestry (2022)

Investigators: **Dr Patrick Reis-Santos**, **Professor Bronwyn Gillanders**, **Dr Nina Wootton**
Funding amount: **\$340,000**

Novel fluorescence sensing of materials for Moon to Mars in-situ resource utilisation

Australian Government Department of Industry, Science and Resources (2022)

Investigators: **Professor Nigel Spooner**, A Birbeck
Funding amount: **\$248,404**

Development of Per- and Polyfluorinated Substances (PFAS) treatment chain

Enviropacific Services (2022)

Investigator: **Dr Cameron Shearer**
Funding amount: **\$240,000**

Sustainable metal extraction and recovery from metal-containing waste for renewable energy transition and circular economy

Australian Government Department of Education, AEA Innovate (2023)

Investigators: **Associate Professor Philip Kwong**, **Professor Volker Hessel**
Funding amount: **\$199,783**

Production of nitrogen enriched biofertilizer for enhancing soil nutrients and crop production

IDTC Biomanufacturing SA Government (2023)

Investigators: **Professor Volker Hessel**, **Associate Professor Philip Kwong**
Funding amount: **\$150,000**

Development of biochar-based nutrient recycling technology for enhancing nutrient retention and grapevine productivity in vineyard soils

SA Government (2023)

Investigators: **Associate Professor Philip**

Kwong, **Professor Volker Hessel**
Funding amount: **\$140,000**

Longevity of stabilised soils for PFAS: Evaluation of shallow emplacement

Commonwealth Scientific and Industrial Research Organisation

Investigator: **Dr Shervin Kabiri** (2023)
Funding amount: **\$139,071**

Advancing national standards and best practices to monitor key marine values and pressures

Australian Government Department of Agriculture, Fisheries and Forestry (NESP; 2023)

Investigators: Przeslawski, R, **Professor Bronwyn Gillanders**, **Dr Patrick Reis-Santos**, **Dr Nina Wootton**
Funding amount: **\$110,273**

Development of a new sorbent for removal of emerging contaminants from the environment

Australian Government Department of Industry, Science and Resources (2023)

Investigator: **Dr Shervin Kabiri**
Funding amount: **\$100,000**

Plasma processing for improving DES extraction of lignin from cocoa bean shells

Energy Sovereignty for Indigenous Peoples Global Center, National Science Foundation (2023)

Investigator: **Professor Volker Hessel**
Funding amount: **\$250,000**

Solar-driven, catalytic torrefaction of biomass

Energy Sovereignty for Indigenous Peoples Global Center, National Science Foundation (2023)

Investigator: **Associate Professor Philip Kwong**
Funding amount: **\$250,000**

Supporting (where another institution is leading)

Materials for Sustainability Analysis Facility

Australian Research Council (Linkage Infrastructure, Equipment and Facilities, 2022)

Investigators: Zhongfan Jia, **Associate Professor Xiaoguang Duan**, Michelle Coote, Justin Chalker, Melanie MacGregor, **Dr Cameron Shearer**, Christopher Gibson
Funding amount: **\$620,000**

Rapid development of new medical treatment compounds from radioactive mine waste

Australian Government Department of Education AEA Grant (2023)

Investigators: D Questiaux, M Thewlis, **Professor Nigel Spooner**, T Payten, J Builth-William, H Wescombe-Down
Funding amount: **\$196,248**

Sustainable Marine Futures

HERDC Category 1

How climate-resilient are our temperate fisheries species?

Australian Research Council (Discovery Project, 2023)

Investigators: **Professor Ivan Nagelkerken**; Professor Timothy Ravasi; **Professor Sean Connell**; Professor David Booth
Funding amount: **\$510,893**

Addressing Social and Ecological Constraints to Expand Marine Restoration

Australian Research Council (Linkage Project, 2022)

Investigators: **Professor Sean Connell**, **Associate Professor Georgina Drew**, **Dr Dominic McAfee**, Sandy Carruthers
Funding amount: **\$375,342**

HERDC Categories 2-4

Gulf St Vincent Seagrass Restoration Project

Australian Government Department of Climate Change, Energy, the Environment and Water (2022)

Investigators: Tanner, J, **Dr Alice Jones**
Funding amount: **\$2.1 million**

Blue carbon ecosystem restoration benefits measurement, verification and accounts for the Gulf St Vincent Seagrass Restoration Project

Australian Government Department of Climate Change, Energy, the Environment and Water (2022)

Investigators: **Dr Alice Jones**, Tanner, J., **Professor Sarah Wheeler**
Funding amount: **\$1.97 million**

Legal and Policy Frameworks for Blue Carbon in Australia

Australian Government Department of Climate Change, Energy, the Environment and Water (2022)

Investigator: **Dr Phillipa McCormack**
Funding amount: **\$304,902**

Recovering and Restoring Blue Carbon Ecosystems in Port River
Green Adelaide (2024)

Investigators: **Dr Alice Jones**, Hennekamm M
Funding amount: **\$132,600**

Navigating the legal regime for blue carbon projects in South Australia

Green Adelaide (2022)

Investigators: **Dr Kerryyn Brent**, K, **Dr Alice Jones**, **Dr Alexandra Wawryk**, **Dr Phillipa McCormack**

Water for Environment and Society

HERDC Category 1

Quantifying the economic and social impacts of drought in rural Australia.

Australian Research Council (Future Fellowship, 2022)

Investigator: **Associate Professor Alec Zuo**
Funding amount: **\$1.035 M**

Hydrosocial Adaptations to Water Risk in Australian Agriculture

Australian Research Council (Discovery Project, 2022)

Investigators: **Associate Professor Georgina Drew**, **Associate Professor Douglas Bardsley**
Funding amount: **\$230,359**

Enhancing the predictive modelling platform and assessing the climate impacts on ecosystem services of the CLLMM to guide adaptation strategies

Australian Government Department of Climate Change, Energy, Environment and Water (2024)

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Kaurna acknowledgement

We acknowledge and pay our respects to the Kaurna people, the original custodians of the Adelaide Plains and the land on which the University of Adelaide's campuses at North Terrace, Waite, and Roseworthy are built. We acknowledge the deep feelings of attachment and relationship of the Kaurna people to country and we respect and value their past, present and ongoing connection to the land and cultural beliefs. The University continues to develop respectful and reciprocal relationships with all Indigenous peoples in Australia, and with other Indigenous peoples throughout the world.