

EMERITUS

The Australian National University Emeritus Faculty e-magazine

Challenges remain for Australia's environment

Australia's environment improved slightly in 2024, marking the fourth consecutive year of above-average conditions, but major challenges remain following a year of record-breaking heat, mass coral bleaching and declining biodiversity, according to the latest Australia's Environment Report, led by The Australian National University (ANU).

Land and ocean temperatures reached new extremes in 2024. The annual average temperature across Australia in 2024 was the second highest on record after 2019, while the mean sea surface temperature around Australia was the highest on record.

This led to the fifth coral bleaching event in less than 10 years in the Great Barrier Reef, as well as a severe bleaching event in Western Australia's Ningaloo Reef.

The report also found that habitat destruction, invasive species and ongoing climate change continue to threaten our native ecosystems. 41 species were added to Australia's threatened species list in 2024. While a significant drop from the record 130 additions in 2023, it remains well above the long-term average of 25 species per year.

In 2024, Australia's environment scored 7.7 out of 10 at the national scale. The three years prior saw the country score between 6.5 and 8.5 out of 10, after extremely low scores between 0.4 and 2.0 out of 10 in the disaster years of 2019 and 2020.

But lead author of the report, ANU Professor Albert Van Dijk warns the favourable environmental improvements of the last four years do not negate long-term concerns.

"Environmental conditions improved from 2023 to 2024 for most states and territories, except South Australia, Victoria and Tasmania. Parts of South Australia experienced their driest year since at least 2000, leading to a state-wide score of 3.8 out of 10 in 2024 – the lowest in the country," Professor Van Dijk said.

“On the other end of the spectrum, parts of inland Northern Territory experienced their wettest year in more than two decades. The territory recorded the best score in the country with 8.6 out of 10.

“New South Wales saw the biggest improvement from 2023, from 5.8 to 7.0 out of 10 in 2024. Nationally, in 2024, rainfall was well above average in January and March and again in November and December.

“Temperatures over Australia were the second highest on record with increased hot days, while snow cover fell to its lowest level since 2018. National rainfall was 18 per cent above the average, and despite high temperatures, fire activity remained below average for the sixth consecutive year.

“Although environmental conditions were encouraging, this is largely the result of favourable short-term climate conditions rather than sustained long-term gains. In most regions, the past year saw relatively good rainfall that allowed vegetation to thrive and soil health to improve. Meanwhile, the global climate emergency continues to escalate, and Australia remains highly vulnerable.”

Each year, the report’s authors examine the Threatened Species Index, which looks at the trajectory of Australia’s threatened wildlife.

“Since 2000, the abundance of threatened birds, mammals, plants and frogs has declined by an average of 58 per cent,” report co-author Tayla Lawrie, from the Terrestrial Ecosystem Research Network (TERN), said.

However, Lawrie said the latest update offers a glimmer of hope. A two per cent increase for the most recent year of the Index (2021) suggests that declines may be stabilising for some groups, with signs of recovery for others.

Lawrie said that while encouraging, ongoing long-term monitoring is essential to confirm which species are improving and which continue to suffer.

Report co-author Shoshana Rapley from ANU points out that the devastating and long-lasting effects of the 2019/20 Black Summer bushfires on our nation’s biodiversity continue to reverberate.

“Five years on, the legacy of the Black Summer bushfires is still evident, with more than 50 per cent of species newly listed or uplisted on the threatened species list directly affected by the fires,” Rapley said.

“Meanwhile, 14 species were uplisted to a higher category of extinction risk. Only one species was removed from the list – the southern bluefin tuna. It joins the short list of only 11 species that have successfully made it off the threatened species list due to population recovery.”

2024 was Earth’s hottest year on record, for the fourth year in a row, while Australia’s per capita greenhouse gas emissions remain among the highest in the world. Professor Van Dijk said now is not the time for complacency.

“Policymakers, businesses and individuals should act decisively to secure the future of Australia’s environment. Strategies such as investment in renewable energy, stronger land

management policies, and increased biodiversity conservation efforts are essential to stop the underlying degrading trend,” he said.

March 20, 2025: anu.edu.au/news/all-news/australias-environment-shows-signs-of-improvement-but-our-ecosystems-remain-under-threat.

Diary dates

Meet the Author events

All events are free and from 6 to 7pm unless noted otherwise. Registrations at anu.edu.au/events.

April 7: Joan Beaumont will be in conversation on her new book *Gull Force. Australian POWs on Ambon and Hainan 1941 to 1945* with Christina Twome. Vote of thanks by Peter Stanley. Cinema Kambri ANU.

April 10: Brooke Boney will be in conversation with Virginia Haussegger on her new book *All of It*. Vote of thanks by Harriet Elvin. Cinema Kambri ANU.

April 15: Kate Grenville will be in conversation with Ann McGrath on her new book *Unsettled. A journey through time and place*. Vote of thanks by Michelle Ryan. Cinema Kambri ANU

April 30: Dervla McTiernan will be in conversation with Chris Hammer on her new crime novel *The Unquiet Grave*. Vote of thanks by Anna Creer. Kambri cinema ANU.

May 8: Steve Vizard will be in conversation with Frank Bongiorno on his new book *Nation, Memory, Myth Gallipoli and the Australian Imaginary*. Vote of thanks by Christina Twomey Kambri cinema ANU.

May 14: Judith Brett will be in conversation with Virginia Haussegger on her new book *Fearless Beatrice Faust: sex, feminism and body politics*. Vote of thanks by Frank Bongiorno. T2 Kambri ANU.

May 19: Geoff Raby will be in conversation with Hugh White on the updated edition of his book *China's grand strategy and Australia's future in the new global order* and *Great Game On. The contest for Central Asia and global supremacy*. Vote of thanks by Allan Behm. Kambri cinema ANU.

May 21: TBC. Manning Clark Hall ANU.

May 27: Marcel Dirsus will be in conversation with Mark Kenny on his new book *How tyrants fall and how nations survive*. Vote of thanks by Allan Behm. Kambri cinema ANU.

June 4: Raina MacIntyre will be in conversation on her new book. *Vaccine nation. Science reason and the threat to 200 years of progress*. Kambri cinema ANU.

June 11: Toby Walsh will be in conversation with Andrew Leigh on his new book *A short history of AI*. Vote of thanks by James Smithies. Kambri cinema ANU.

June 17: Hugh White will be in conversation with Mark Kenny on his new quarterly essay *On Australia and the new world order*. Vote of thanks by Allan Behm. Kambri cinema ANU.

July 2: Michael Robotham will be in conversation with Chris Hammer on his new novel *The White Crow*. Vote of thanks by Jeff Popple. Kambri cinema ANU.

July 8: Graeme Turner will be in conversation with Frank Bongiorno on Graeme's new book *Broken.: Universities, politics and the public good*. Vote of thanks by Allan Behm. Kambri cinema ANU.

August 14: Elizabeth Finkel will be in conversation on her new book *Proof*. Kambri cinema ANU.

September 2: Michael Brissenden will be in conversation with Chris Hammer on his new crime novel *Dust*. Kambri cinema ANU.

September 23: Sulari Gentill will be in conversation with Chris Hammer on her new novel *Five Found Dead..* Vote of thanks by Anna Creer Kambri cinema ANU.

September 30: Virginia Haussegger will be in conversation with Frank Bongiorno on her new book *Genderquake: is our feminist future written in the past?* Vote of thanks by Michelle Ryan. Kambri cinema ANU.

October 2: Omar Musa will be in conversation with Beejay Silcox on his new novel *Fierceland*. Vote of thanks by Karen Viggers. Kambri cinema ANU.

October 8: Bri Lee will be in conversation on her new novel. Kambri cinema ANU.

October 13: Kate Reid will be in conversation on her memoir. Kambri cinema ANU.

ANU/Canberra Times Meet the Author events are held in association with Harry Hartog Bookshop. Books are available for purchase before and after each event. Pre-event book signings will be available from 5.30pm and again after the event. Registration is required and can be made at Registrations at anu.edu.au/events. In line with ANU's COVID policy, masks are no longer required. Enquiries to the convenor, Colin Steele, at colin.steele@anu.edu.au.

The Symposium by University House wine bar (Shop 13, 152 University Avenue, Acton, next to the Kambri cultural centre) will be open for dining after Meet the Author events. No bookings necessary. Food and wine details at <https://unihouse.anu.edu.au/eat/symposium/>.

ANU Emeritus Faculty Wednesday Lunchtime Talks

April 2: Howard and Frances Morphy, "3000 years of Yolngu history."

May 7: Anas Iqtait, "Overview of the ongoing conflict in Israel/Palestine and the wider Middle East."

May 21: John Carver, "Protein aggregation: the common factor in Alzheimer's, Parkinson's and cataract diseases."

June 4: Lucy Aplin, TBA.

July 2: Mitchell Whitelaw "Visualising environmental and biodiversity data".

July 16: Projects Symposium.

The talks take place on the first Wednesday of the month. The venue is the Molony Room, 24 Balmain Crescent, Acton. Talks are open to Emeritus Faculty members and their guests, as well as the speaker's guests. Attendance is free. The Molony Room is open from noon on the day of each talk, and talks begin at 12.30pm, usually finishing (including discussion) by 1.50 pm.

Items of note

ANU School of Art & Design Gallery exhibitions

Higher Degree by Research Candidates: The School of Art & Design supports Higher Degrees by Research (MPhil and PhD) across Visual Arts, Design, and Art History and Curatorial Studies. The School's HDR offerings are part of programs offered by the Research School of Humanities and the Arts within the College of Arts and Social Sciences. With supervisory support, students are able to work within and beyond traditional methods researching visual art, design innovation, and art historical and curatorial scholarship. The exhibitions are on from April 8 to May 10. Reception: Wednesday April 16 at 5.30pm.

Soil Breathes: Sophie Cole

These artworks were made in collaboration with the soils Cole stewards at Wamboin, a short drive from Canberra. Cole and her workshop participants have used scientific tools as tools of soil communion and intimacy. They have used microscopes and microphones to connect with these soils on their own levels: seeing and hearing the world at soil's scale. *Soil Breathes* is on from April 8 to May 2, 2025. Reception: Wednesday April 16 at 5.30pm.

Bookshelf

Defying Beijing

Societal Resistance to the Belt and Road in Myanmar

By Debby S.W. Chan

ANU Press, June 2024. DOI <https://doi.org/10.22459/DB.2024>

China's Belt and Road Initiative (BRI) aims to construct a Sino-centric transcontinental infrastructure network in Asia, Europe, Africa and beyond. Within this initiative, the China–Myanmar Economic Corridor (CMEC) is a vital strategic component. *Defying Beijing* shows how Myanmar was able to capitalise on BRI ambitions to achieve its preferred outcomes during the country's political liberalisation in the 2010s, despite the asymmetrical relationship between these two nations. *Defying Beijing* argues that Myanmar was pressured to renegotiate terms with Beijing in the wake of social outcry in the country. The book shows how citizens can change the course of BRI cooperation despite oppressive political environments and an imbalanced bargaining structure. In post-coup Myanmar, Naypyidaw's policy options were not conditioned by public opinion or protests; nonetheless, armed resistance has posed new domestic constraints in the CMEC's implementation.

Phenomenography in the 21st Century: A Methodology for Investigating Human Experience of the World, UK: Open Book Publishers.

By G.S.Åkerlind. Free at: doi.org/10.11647/OBP.0431.

Phenomenography offers a distinctive approach to studying human experience of the world, by highlighting different ways in which the same phenomena (concepts, objects, events) are experienced within any group of people. Phenomenography focuses on the relationship between meaning - people's holistic understanding of phenomena - and structure, that is the part-whole structure of people's awareness of phenomena in the world. This structure of awareness then forms the basis for identifying differences in the experienced meaning of phenomena, and how awareness needs to change to allow new meanings to emerge. The book details advances in the methods and theoretical assumptions underlying phenomenographic research. Although phenomenography is traditionally associated with research in education, it is a developing, not static, approach and has the potential to contribute to other social science research.

Articles of note

Sand-sized fossils hold secrets to the history of climate change

By Yuhao Dai, Research Fellow in Earth Sciences, Australian National University

Between 11,000 and 18,000 years ago, the amount of carbon dioxide in the atmosphere suddenly shot up. This caused rapid global warming, the mass melting of glaciers, and the end of the last ice age.

Much of this sudden influx of atmospheric CO₂ came from the Southern Ocean around Antarctica, highlighting the key role this body of water plays in regulating the global climate.

However, we have a poor understanding of how and why CO₂ release from this region changed during periods such as the end of the last ice age. But our new study, published in Nature Communications, reveals how much CO₂ was released to the atmosphere from the polar Southern Ocean during this period – and what factors were responsible.

We reached these conclusions by examining the chemistry of sand-sized fossils, called foraminifera, from the seafloor south of Tasmania.

From The Conversation. Read the full article at theconversation.com/sand-sized-fossils-hold-secrets-to-the-history-of-climate-change-250928.

Antarctic bases are hotbeds of stress and violence. Space stations could face the same challenges

By Rebecca Kaiser, PhD Candidate, School of Social Sciences, University of Tasmania and Hanne E F Nielsen, Senior lecturer, Institute for Marine and Antarctic Studies, University of Tasmania

[Reports have emerged] that a scientist at South Africa's SANAE IV Antarctic research base has accused a colleague of physical assault.

From The Conversation. Read the full article at theconversation.com/antarctic-bases-are-hotbeds-of-stress-and-violence-space-stations-could-face-the-same-challenges-252720.

Administration

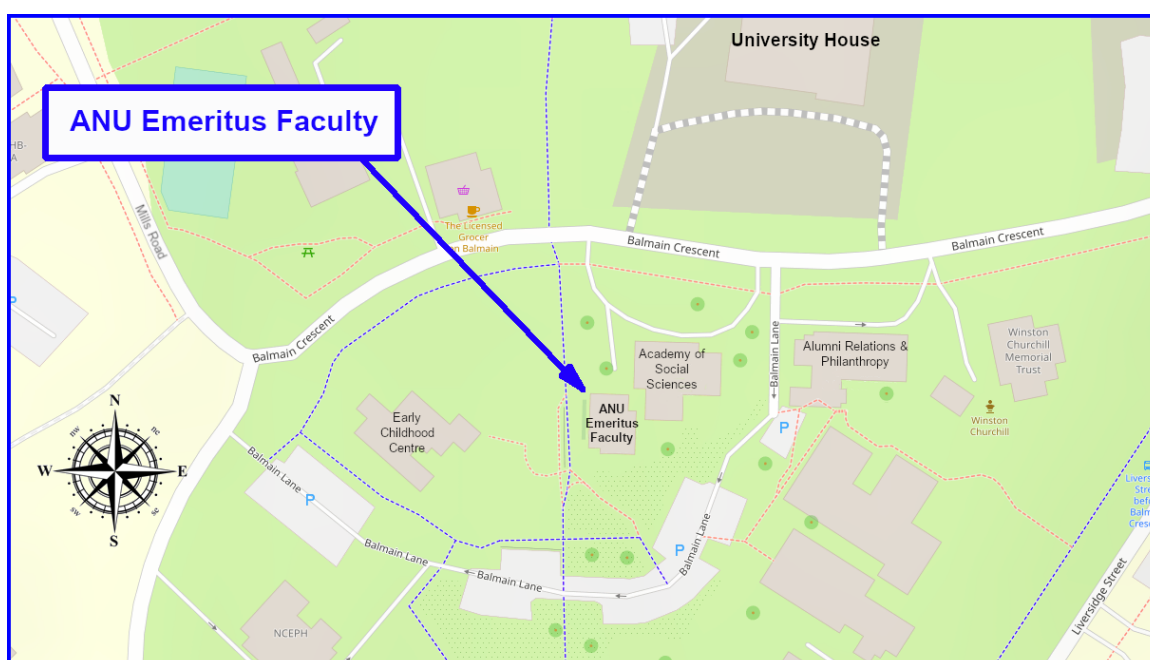
Arrangements for ANUEF room bookings

Requests to book the Molony Room should be addressed to the Secretary of the ANU Emeritus Faculty, Jan O'Connor, at jantancress@gmail.com or 6247 3341.

Finding the Molony Room

The Molony Room is at 24 Balmain Crescent, on the south side of Balmain Crescent almost opposite University House.

It is Building 1c on <https://tinyurl.com/ycuknbj>, set back between 22 Balmain Crescent (the Acton Early Childhood Centre) and 26 Balmain Crescent (the Academy of the Social Sciences). Four free car parking spaces reserved for ANUEF members visiting the Molony Room in the Balmain Lane Car Park immediately south of the Molony Room. The room is marked on: <https://tinyurl.com/y7gsyqgh>



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The next issue of the Emeritus Faculty newsletter will be published in April.