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# Combatting Wildlife and Environmental Crime

Environment Institute



make  
history.



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.

Transnational environmental crime channels billions of dollars to organised crime, leading to economic and social insecurity around the globe. Wildlife and environmental crimes (WEC) include the illegal trade in plants and animals; illegal harvesting of fish, timber, and other natural goods; illegal harvesting of water outside of licensing arrangements; illegal dumping and industrial pollution; and the illegal clearing of vegetation or interference in regeneration programs. These crimes vary from individual actions of illegal harvesting and eco-violence through to major organised and corporate crimes, including wildlife trafficking and large-scale environmental pollution. All of these crimes have a substantive financial, social, and environmental cost to all Australians.

**Globally, the value of illegal wildlife crime is estimated at \$30-100b per annum.**

Although there continue to be invaluable efforts by government agencies, law-enforcement, and policymakers to address WEC, worldwide environmental crimes are growing at more than twice the rate of the global economy. Resources to address the problem are scarce resulting in a critical lack of on-ground surveillance and compliance. This is further hindered by:

- a shortfall in basic research and innovation to meet the needs of the enforcement sector;
- roadblocks to the on-ground adoption of fit-for-purpose emerging technologies; and
- barriers to the timely incorporation of up-to-date practice and knowledge into policy and legislation.

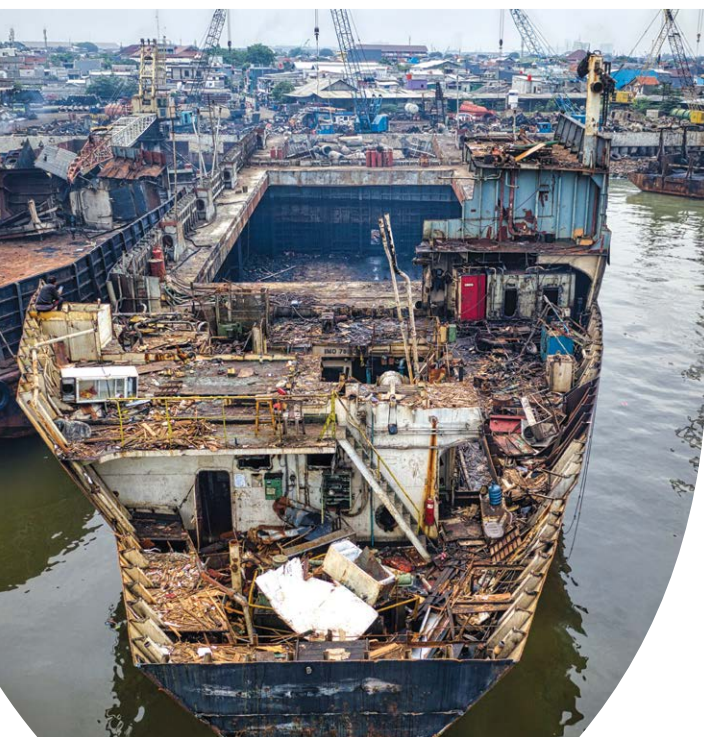
To address these challenges, we have built a partnership between relevant Commonwealth and State/Territory government agencies, civil society, and academic research institutions. This research-led partnership maximises our shared expertise and resources and takes advantage of synergies for tackling the growing problem of WEC.

## We are meeting the threat

The University of Adelaide's Environment Institute has developed a national research program for 'Combating Wildlife and Environmental Crime'. We aim to deliver critical research support and infrastructure for enabling policing and enforcement activities, as well as enhancing education and awareness efforts, through four inter-related themes:

- a deeper and clearer **understanding** of WEC via readily available situational mapping and predictive analyses of the crime types, costs, and criminal motivations across Australia and the Australasian region;
- an **innovation** suite of fit-for-purpose, cheaper, and more effective tools for identifying, prosecuting, and preventing WEC;
- the evaluation of national policy and **enforcement** strategies for combatting WEC; including 'situational crime' prevention, and social 'prevention of engagement'; and
- greater public reporting, as well as raising social and political awareness, for the **protection** and future safeguarding of Australia's unique wildlife and environmental assets, including reviews of legislation and penalties.

These four research themes are highly inter-connected. By developing a deeper and clearer understanding of the diversity of complex issues of WEC we can directly influence both the development and adoption of accessible, innovative, and fit-for-purpose technologies for improving enforcement, and assure we can provide the evidence needed for consistent and effective policy. This critically important work is supporting the immediate protection of Australia's unique environments and safeguard our future biodiversity assets.



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## Our expertise

Researchers at the University of Adelaide's Environment Institute are ideally positioned to lead this collaborative interdisciplinary program with internationally recognised expertise in:

- environmental biosecurity and wildlife trade
- forestry and fisheries crime and illegal product laundering
- remote sensing and land-use evaluation
- wildlife forensics and real-time trace-DNA detection
- cyber-crime and digital security
- natural resources law, regulatory environments, and criminology
- massive data infrastructure and machine learning

These highly specialised research areas all include well-established portfolios of existing national and international partnerships with academic, industry, government, and civil society collaborators.

## Tools for success

Technology has a crucial part to play in assisting enforcement agencies to increase their capability for effectively identifying WEC, and prosecuting perpetrators. Cyber technology can survey and combat illicit e-commerce and trade in wildlife, and disrupt other forms of cyber-enabled environmental crime. Remote sensing, satellite imagery, and GPS tracking can rapidly identify illegal land clearance, illegal floodplain harvesting, environmental pollution, and the illegal resource use and harvesting of fisheries and forests. Molecular and biogeochemical forensics, including real-time trace-DNA analysis, can be used to accurately classify illegal products of wildlife trafficking, and assist in crime scene evidence and prosecution chains. Machine-learning and 'big-data' science provide the analytical and computational means to solve the highly complex problems these technologies address.



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## Join us

The University of Adelaide's Environment Institute invites you to join what we envisage will be the largest and most effective coalition of government departments and academic institutions ever brought to bear on the problems of WEC in Australia. We are working with university researchers, natural resource industries, civil society, government agencies, regulatory bodies, and law enforcement authorities, to establish a new synergistic model to combat WEC in Australia and abroad. By building sustained, deep collaborations, and mutual trust and understanding between partners, we can directly address the criminological problems facing our environments and biodiversity; as well as preparing for new and emerging threats.

Wildlife crime is inherently difficult to detect and prevent owing to the expansive and often remote landscapes over which it may occur. Recent advances in publicly available technology, such as improved accessibility of anonymised e-commerce and social media communication, have also bolstered WEC perpetrator's reach. Through best-practice research, training, and real-world application we will empower State/Territory and Commonwealth governments with the tools and knowledge to appropriately match these emerging challenges.

We are developing the next generation of high-tech tools, informing regulatory and legal frameworks, and translating knowledge and educational tools, to enhance Australia's biosecurity reputation and generate a highly exportable wildlife-crime-tech research industry.

We invite you to join us and become part of Australia's premier research team in the fight against wildlife and environmental crime.

## Program Lead

**Dr Phill Cassey**, is an inaugural ARC Industry Laureate Fellow, working exclusively to 'Combat Wildlife Crime and Prevent Environmental Harm'. He has worked in international Environmental Biosecurity and Wildlife Conservation for >20 years and is globally recognised as an expert in researching the illegal wildlife trade. In 2019 he was named an Australian Research Leader in 'Life & Environmental Sciences'. He has published over 300 international scientific research papers and, since arriving in Australia in 2010, he has managed 10s of millions of dollars of research funds. Phill is an Academic member of the AELERT and INTERPOL Wildlife Crime Working Groups and in 2019 he was nominated by the Australian Government (Department of Agriculture, Water and Environment) to represent Australia as a lead author on the UN Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) 'Global Biodiversity Assessment Report'.

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Sept 2022. Job no. UA30556 JG  
CRICOS 00123M

### **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.