

2019 Australian Election Message

Since its inception in 1959, the Ecological Society of Australia (ESA) has dedicated itself to promoting ecology, supporting the application of ecological principles to protect and conserve ecosystems, and promoting the exchange of ecological knowledge for education and cultural development. We remain strongly committed to fulfilling this mission, and stand ready to work alongside our nation's institutions and leaders to address the challenges before us.

We call on our nation's leaders and those seeking election to commit to five urgent actions:

1. Strengthen the *Environment Protection and Biodiversity Act (1999)* (EPBC Act) to provide a robust framework for upholding environmental protection and accountability;
2. Implement evidence-based development of policy and decisions, informed by best available ecological science;
3. Increase Commonwealth investment in environmental spending to a minimum of 2% of GDP;
4. Develop mechanisms for increased representation of Indigenous communities in ecosystem policy and management decisions; and
5. Make Australia a top 10 global investor in research and development by increasing Commonwealth investment in the Science and Innovation portfolio to at least 3% of GDP, with clear mechanisms for funding long-term research.

Australia is home to a wealth of unique environments that are a cornerstone of our national character, and vital to the ongoing wellbeing and prosperity of our country.

The continuation of this wealth is under severe threat: Australia is a world leader in extinction of species, while rates of land clearing and degradation are alarmingly high and other major threats like invasive species place Australia's natural wealth in a precarious position. Reversing our environmental crisis and ensuring people and nature thrive together on Earth is the grandest challenge for all societies.

The need for effective, evidence-based environmental leadership and action is greater than ever. Australia is well-equipped to deliver this if it chooses.

The Australian community is committed to environmental protection and believes it is needed for prosperity. Australia's ecological research is world-leading, and can deliver substantial benefits.

**63% of
Australians**
say they are
**environmentalists
at heart.**

**68% of
Australians**
believe that a
**healthy environment
& prosperous
economy**
go hand in hand.

**75% of
SMEs**
are concerned about
sustainability
and the
environment.

**25/25
Australian
Universities**
ranked
top in the world
in Ecology.

\$2.2 return
estimated for every
**\$1.00 of public
investment in
science**
(based on US figures.)

See 'Notes' at end for sources.

Robust legal framework

1. Strengthen the EPBC Act to provide a robust framework for upholding environmental protection and accountability

RECOMMENDATIONS

- **Revise the EPBC Act** so that:
 - Recovery Plans are required to be implemented for all threatened species;
 - Threat Abatement Plans are required for all threatening processes; and
 - accountability for endangerment and extinction is established, with a requirement for a formal public inquiry when species are listed as critically endangered or extinct.

Stronger environmental laws and resources for their enforcement are needed for Australia to deliver effective environmental leadership. We recommend that the Commonwealth Government commit to revising environmental legislation in accordance with the recommendations for a comprehensive review made by the Australian Panel of Experts in Environmental Law¹.

The upcoming statutory review of the EPBC Act is a timely opportunity to implement reforms, including:

a. Requiring development and implementation of Recovery Plans for all threatened species

Recovery Plans help drive efforts and investment for threatened species², and lack of Recovery Plans can contribute to extinction of threatened species³. After 2006 amendments to the EPBC Act, Recovery Plans were no longer required for threatened species but rather became a discretionary matter for the Minister. The Act should be amended to restore the requirement for Recovery Plans for all listed threatened species.

b. Requiring Threat Abatement Plans for all threatening processes and drivers of biodiversity loss

The Act allows the Minister to make Threat Abatement Plans (TAPs) after listing key threatening processes. TAPs can be a cost-effective mechanism to efficiently address threats to Australia's biodiversity, and the Act should

be amended to require Threat Abatement Plans for all Key Threatening Processes and for additional processes identified as drivers of biodiversity loss.

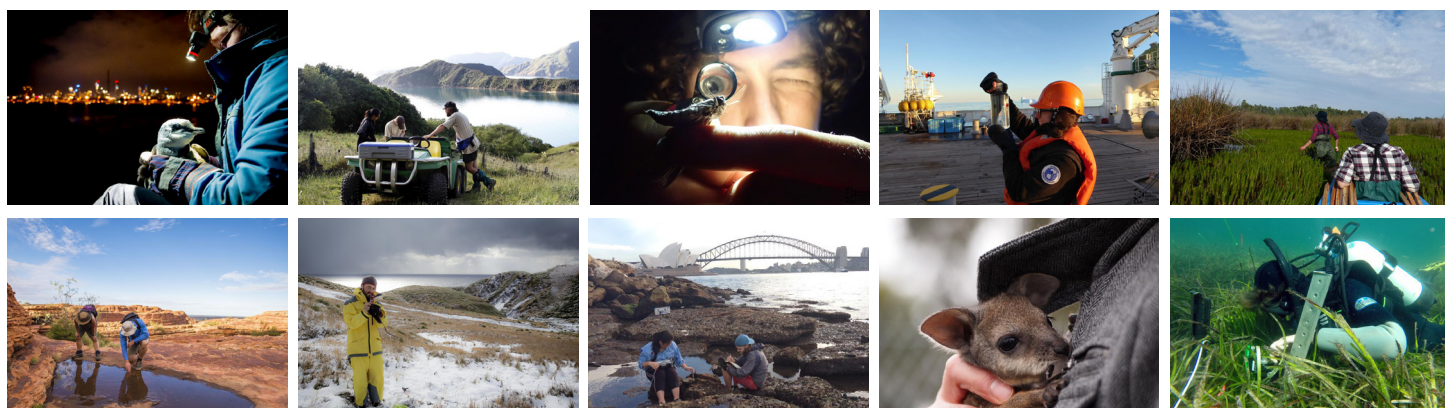
c. Establishing accountability for endangerment and extinction events

There is currently no provision in Australian legislation that makes it an offence to cause, contribute significantly to, or fail to take reasonable actions to prevent an extinction. There is no formal public inquiry process into endangerment or extinction events, so there is no opportunity to learn from past attempts at threatened species protection.

To address these shortcomings, the EPBC Act should be amended so that:

- it is an offence to cause or contribute to an extinction, to contribute to threatening processes that cause extinction, or to fail to take reasonable actions to prevent an extinction;
- it is possible to assign responsibility for extinctions; and
- formal public inquiries are required into each listing of species as critically endangered or extinct, to enable us to identify the causes of critical endangerment and extinctions to improve future policy and management decisions.

The ESA's members come from all Australian states and territories and work in universities and other research institutions, government departments, NGOs, private industry and consultancies.



Photos courtesy of the ESA photo competition 2014-2018

Solve it with ecological science

2. Implement evidence-based development of policy and decisions, informed by best available ecological science

RECOMMENDATIONS

- Implement mechanisms to routinely use Australia's world-leading ecological science to develop evidence-based policies and decisions about Australia's environment; and
- Apply rigorous scientific assessment - solely on the basis of threat to the species or ecological community - in the process of referral, assessment and listing under the EPBC Act.

The 2018 State of Australian University Research ERA rankings⁴ highlighted that 25/25 assessed Australian Universities are now ranked above or well above the world standard in ecology. The rigour and research outputs of our field contribute to the strength of ecology, and are disproportionately high relative to research funding allocated. The research outcomes of projects such as pollination ecology of agricultural crops, health risks associated with wildlife pathogens, CO₂ capture and processes within wetlands and other ecosystems, plant pathogen devastations on forests, invasive species ecology - and much more - offer incredible knowledge on how our world works and have great social and economic benefit.

There are increasing attempts to quantify the economic value of ecosystems, including the value of the Great Barrier Reef⁵, wetlands⁶, and impact of insects⁷. These studies show that without protecting these resources, there would be immense economic loss, not just to the environment, but to social prosperity including tourism

and agriculture. Australia should use our ecological science to provide the knowledge base to manage these natural assets.

The Murray-Darling Basin provides a clear example of why it is critical to use ecological science to manage ecosystems. The volume of environmental water recommended by ecologists was not delivered to the system. The resulting insufficient environmental flows combined with drought conditions led to unprecedented fish kills⁸. Ecosystems must be managed using ecosystem science.

The value in using ecological science is already apparent through the process of threatened species and ecosystem listings under the EPBC Act. This process of referral, assessment and listing must remain focused on rigorous scientific assessment, solely on the basis of threat to the species or community. Decisions about action, economic impact and resourcing need to be transparently segregated from the listing process.

Invest wisely

3. Increase Commonwealth investment in environmental spending to a minimum of 2% of GDP

RECOMMENDATIONS

- **Increase the Commonwealth investment in environmental spending to at least 2% GDP.** Investment should go to long-term monitoring, on-ground action, and adequate resourcing of the Department of Environment and other public agencies to effectively do their jobs in areas such as assessing threatened species nominations, developing and implementing Recovery and Threat Abatement Plans, assessing environmental impacts of activities, implementing on-ground action, and monitoring effectiveness of such actions.

Analysis of budget data shows that the Federal Environment Budget has experienced a substantial cut in recent years - from \$1.4 billion in 2013/14 to \$945 million in 2017/18 - with further cuts projected to 2020/21 in the forward estimates. These estimates could translate to a reduction of up to 65% in federal spending on environment and biodiversity⁹. Such severe cuts make it difficult for Australia to provide any meaningful environmental leadership or action.

Australia has been ranked one of the worst in the world for funding biodiversity conservation, grouped among many developing countries¹⁰. Declines in the Australian Government's investment in the environment have been

associated with widespread losses and declines of species and ecosystems¹¹.

Australia should be aiming for investment in environment and biodiversity conservation to be at the upper end of the OECD and G20 proportions of Gross Domestic Product (GDP). At present we are allocating less than 1%, whereas the budget should be 2% to commence recovery of threatened species and ecosystems and to address other environmental failures¹².

Australia should commit to investing a minimum 2% of GDP in the environment and biodiversity conservation, and allow for greater investment if it is required to ensure our natural environments thrive.

Include traditional knowledge

4. Develop mechanisms for increased Indigenous representation in decisions about ecosystem policy and management

RECOMMENDATIONS

- Include Indigenous people and knowledge in species and ecosystem management planning and decision-making;
- Expand Indigenous Protected Areas, ranger programs and opportunities for Indigenous-led ecosystem research projects; and
- Create opportunities for the transfer of Indigenous Knowledge between knowledge holders and younger generations e.g. through Junior Ranger and Learning on Country programs.

About a third of Australia is currently regarded as Indigenous lands and a third of Australia's National Reserve System is managed by Indigenous land managers through the Indigenous Protected Area system. Recent research found that three-quarters of Australia's terrestrial or fresh-water vertebrate species cited as threatened have ranges that overlap with Indigenous lands¹³. They also found that this overlap represents 45% of the range of each threatened species on average. Especially in remote and regional parts of Australia, traditional knowledge has been shown to fill significant gaps in knowledge about species distribution, habitat preference, diet and reproduction¹⁴.

The contribution of Indigenous communities is critical to ensure Australia's natural environments thrive, and there is potential for greater use of traditional knowledge and management. Indigenous people should be included

in initial discussions about species and ecosystems management through to decisions about management. They should be provided with opportunities to apply their unique knowledge, to have access to formal training and to collaborate with ecologists and other land managers (e.g. National Parks).

The Commonwealth should enable dedicated programs to expand Indigenous Protected Areas, ranger programs and Indigenous-led research projects, including in collaboration with universities. Furthermore, the intergenerational transfer of Indigenous knowledge, culture and language is vital to support the maintenance of linked bio-cultural knowledge and empower future generations of Indigenous people to use and maintain their unique knowledge.

Support long-term research for a prosperous future

5. Make Australia a top 10 global investor in research and development by increasing Commonwealth investment in the Science and Innovation portfolio to at least 3% of GDP, with clear mechanisms for funding long-term research.

RECOMMENDATIONS

- Increase national public investment in science and innovation to at least 3% GDP; and
- Establish new, additional, funding programs to support long-term research.

In recent years, Australia has seen a steady decline of investment in research and development with public investment in science at a 40-year low¹⁵. Projections also show insufficient growth in STEM qualified graduates to meet the future needs of the economy¹⁶. To ensure a successful and prosperous future for Australia, the Commonwealth should take a well-planned, long-term, and strategic approach to Australian science, with national public investment of at least 3% GDP.

When it comes to environmental research, Australia has a natural competitive advantage over the rest of the world¹⁷, with a wide diversity of unique ecosystems at our doorstep, and a long history of management and intervention in these ecosystems. This advantage coupled

with our strong performance against world standards in the field should be leveraged to further advance Australia's excellence and leadership in ecology.

Long-term research – on the scale of 8-12 years - can also have particularly important societal and economic benefit by improving our understanding of patterns and processes in the natural world so we can better manage these and mitigate risks. This is particularly true for fundamental research that addresses national priorities around environmental sustainability to underpin economic and social prosperity. Thus, a dedicated funding scheme that specifically funds long-term research – research on a scale of 8-12 years - should be added to the research investment portfolio.

About the ESA

The Ecological Society of Australia Ltd (ESA) is the peak scientific organisation for ecologists in Australia, with over 1200 members from all states and territories. Our members work in universities and other research institutions, government departments, NGOs, private industry and consultancies. We are a national not-for-profit organisation formed in 1959.

In addition to documents listed below, content in this message draws upon ESA submissions to Commonwealth inquiries including the Inquiry into Funding Australia's Research (2018) and the Inquiry into Australia's Faunal Extinction Crisis (2018-19). These submissions are publicly available, and ESA can provide further detail on content listed above by request.

Notes

1 Australian Panel of Experts on Environmental Law (2017):

Blueprint for the Next Generation of Australian Environmental Law. p30.;

57 Recommendations for the Next Generation of Australia's Environmental Laws. p12;

The Foundations of Environmental Law. Goals, Objects, Principles and Norms (Technical Paper 1, 2017). p52; Environmental Governance (Technical Paper 2, 2017). p80;

Democracy and the Environment (Technical Paper 8, 2017). p38;

The Private Sector, Business Law and Environmental Performance (Technical Paper 7, 2017). p52;

Terrestrial Biodiversity Conservation and Natural Resources Management (Technical Paper 3, 2017). p52. <http://apeel.org.au/papers/>

2 Legge, S. M., Lindenmayer, D.B., Robinson, N.M., Scheele, B.C., Southwell, D.M. & Wintle, B.A. (2018) *Monitoring Threatened Species and Ecological Communities*. CSIRO Publishing, Melbourne

3 Woinarski, J.C.Z., Garnett, S.T., Legge, S.M. & Lindenmayer, D.B. (2017) The contribution of policy, law, management, research, and advocacy failings to the recent extinctions of three Australian vertebrate species. *Conservation Biology*, **31**(1), 13-23.

4 Australian Research Council (2019) ERA National Report: State of Australian University Research 2018-2019 <https://dataportal.arc.gov.au/ERA/NationalReport/2018/>

5 Stoeckl, N. et al. (2011) The economic value of ecosystem services in the Great Barrier Reef: our state of knowledge in "Ecological Economics Reviews." Robert Costanza, Karin Limburg & Ida Kubiszewski, Eds. *Ann. N.Y. Acad. Sci.* 1219: 113–133. <https://doi.org/10.1111/j.1749-6632.2010.05892.x>

6 Whiteoak, K. and Binney, J. (2012) Literature Review of the Economic Value of Ecosystem Services that Wetlands Provide. <http://www.environment.gov.au/system/files/resources/fb918be6-fd56-43a5-9e61-f4e63d455e0c/files/review-ecosystem-services-report.pdf>

7 Losey, J. and Vaughan, M. (2006) The Economic Value of Ecological Services Provided by Insects. *Bioscience* **56**(4): 311-323. [https://doi.org/10.1641/0006-3568\(2006\)56\[311:TEVOES\]2.0.CO;2](https://doi.org/10.1641/0006-3568(2006)56[311:TEVOES]2.0.CO;2)

8 Australian Academy of Science (2019). *Investigation of the causes of mass fish kills in the Menindee Region NSW over the summer of 2018–2019*

9 Joint ACF and WWF (2017). 2018-19 Pre-budget submission to the Department of Treasury. https://d3n8a8pro7vhmx.cloudfront.net/auscon/pages/5148/attachments/original/1513033223/ACF-WWF_Pre-Budget_Submission_2018-19.pdf?1513033223

10 Waldron, A., Mooers, A.O., Miller, D.C., Nibbelink, N., Redding, D., Kuhn, T.S., Roberts, J.T. & Gittleman, J.L. (2013). Targeting global conservation funding to limit immediate biodiversity declines. *Proceedings of the National Academy of Sciences* (110), 12144-12148. 11 See 2.

12 Martin, P. and Werren, K. (2009) The use of taxation incentives to create new eco-service markets. In Heng L., et al. Editors, *Critical issues in environmental taxation: International and Comparative Perspectives*. Oxford University Press, Vol VII, 511.

13 Renwick, A. R., Robinson, C.J., Garnett, S.T., Leiper, I., Possingham, H.P. & Carwardine, J. (2017) Mapping Indigenous land management for threatened species conservation: An Australian case-study. *PloS one* 12:e0173876.

14 Baker, L. M. and Mutitjulu Community. (1992). Comparing two views of the landscape: Aboriginal traditional ecological knowledge and modern scientific knowledge. *The Rangeland Journal*, 14,174-189.

Ens, E., M. L. Scott, Y. M. Rangers, C. Moritz, & R. Pirzl. (2016). Putting indigenous conservation policy into practice delivers biodiversity and cultural benefits. *Biodiversity and Conservation*, 25, 2889-2906.

Ziembicki, M., Woinarski, J. & Mackey, B. (2013). Evaluating the status of species using Indigenous knowledge: Novel evidence for major native mammal declines in northern Australia. *Biological Conservation*, 157, 78-92

15 Universities Australia (2018) Funding cuts risk life-changing research: as R&D spend plunges. Media Release, 14 Dec 2018. <https://www.universitiesaustralia.edu.au/Media-and-Events/media-releases/Funding-cuts-risk-life-changing-research--as-R-D-spend-plunges#.XDv5Blwzbd5>

16 Australian Bureau of Statistics (2014) Perspectives on Education and Training: Australians with qualifications in science, technology, engineering and mathematics (STEM), 2010-11 <http://www.abs.gov.au/ausstats%5Cabs@.nsf/0/54B42BD3902E-B8A2CA257C86000EA59A?OpenDocument>

17 Dovers, S. et al. (2018) Is Australia strong in environmental research? *Aust. J of Env Management* **25**(2): 147-152. <https://doi.org/10.1080/14486563.2018.1469219>

Box 1 sources: Examining the most important issues in Australia: similarities and differences across two generations (2018), Chesters J et al. Youth Research Centre, Melbourne Graduate School of Education, University of Melbourne, Victoria; Australian Attitudes to Nature 2017 (2018), Roy Morgan Research; HP Australia Environmental Sustainability Study 2018; Australian Research Council (2019) ERA National Report; Sources summarised in: Science and Technology Australia 2019-20 Pre-Budget Submission (2019)