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**Australian Academy of Science submission on the
*Inquiry into Australia's Extinction Crisis***

The Australian Academy of Science welcomes the opportunity to comment on the Senate Environment and Communications References Committee's inquiry into Australia's extinction crisis. This submission should be read as an update to the Academy's submission to the Inquiry during the 45th Parliament (submission number 156, September 2018). This submission specifically addresses Terms of References a, d, f, g, i, j, k, l and m.

The characteristics of successful actions highlighted in our original submission are unchanged, but it is crucial for such actions to be implemented and properly resourced.

The Academy:

- Submits that Australia's system for managing and abating threatened species and preventing species extinction has failed
- Supports the recommendations of the Samuel Review. In particular, the Academy supports the recommendations for the implementation of binding national environmental standards and the appointment of an Environment Assurance Commissioner
- Calls for a nationwide, systematic approach to species discovery, biodiversity monitoring, and bioinformatics as necessary support for environment protection actions.

Australia has one of the world's worst records for species extinction. This record is especially concerning given Australia's unique and rich biota. The uniqueness means that we need local researchers and local research solutions.

The short-term and contested nature of research funding for environmental science mitigates against sustained investment in environmental, and in particular, threatened species research. The National Environmental Science Program needs to support stable, long-term research efforts.

[Threat abatement under the EPBC Act has failed](#)

Australia's system of threat abatement is not fit-for-purpose in this time of rapid environmental change. A new approach is required that treats biodiversity threats as seriously as biosecurity threats. Statutory conservation planning instruments under the EPBC Act are not fit-for-purpose. Further, making a recovery plan does not guarantee its implementation.

National standards, as proposed by Professor Samuel, offer the opportunity for fit-for-purpose and legally enforceable rules that can provide investment, scientific and environmental benefits by replacing a process focussed regime, with one which places outcomes at its centre.

The Australian Government should also negotiate a national high-level agreement between the Commonwealth, States and Territories, with mirror laws in each jurisdiction as exists for biosecurity.

[Cumulative threats to threatened species are not effectively dealt with by our regulatory regime](#)

The major Key Threatening Processes in Australia today are climate change, habitat clearing, invasive species, and inappropriate fire regimes. The present EPBC Act is demonstrably ineffective against such threats, failing to consider the complexity of the issues, the cumulative nature of their impacts, their broad scale, or the amplifying effect of multiple inter-connected stressors. These threats will require significant investment to address, and full cooperation with State and Territory governments.

The difficulty is that the predominant regulatory approach is one that considers each development application and threat to species separately. There is an urgent need to move to regional planning approaches, as recommended by the Samuel review.

The Academy supports the Samuel Review recommendations

Current compliance mechanisms are not sufficient, as concluded by both the Samuel Review and the Australian National Audit Office (ANAO 2020). A focus on binding, outcomes-based standards will improve outcomes, provided they are adequately resourced and enforced. This approach should be supported by the statutory appointment of an Environment Assurance Commissioner as recommended by the Samuel Review with the responsibility to oversee the auditing of decision-making by the Commonwealth under the EPBC Act.

The threatened species strategy is welcome but needs to go further

The breadth of coverage of the current Threatened Species Strategy Action Plan is an order of magnitude smaller than it needs to be. The Academy understands a revised plan is currently under development which includes broader coverage of imperilled species.

Priority actions for the management of faunal groups beyond birds and mammals must be developed and funded, particularly for frogs, reptiles, invertebrates, and marine communities.

The National Reserve Scheme plays a key role in protecting threatened species. However, the populations of threatened species continue to decline as habitat is cleared. Retention of wildlife corridors is important but insufficient on its own; the retention of habitat extent is more important than focusing on habitat connectivity. We stress that the Reserve Scheme can only work if rangers have a solid knowledge of Key Threatening Processes. This approach can include the integration of Traditional Ecological Knowledge and scientific knowledge, as highlighted in the 2021 State of the Environment Report.

Inadequate taxonomic knowledge creates serious data deficiencies

A large proportion of the Australian biota is undocumented. For multicellular organisms, this is particularly the case for fungi and invertebrates (on land), and deep-sea and faunal taxa in marine environments.

Many taxa with low public profiles are not valued and receive little attention. For example, while there are well-known indirect and direct threats from fishing on endangered marine species such as cetaceans and turtles, little attention has been given to non-charismatic taxa such as sea cucumbers, many of which are endangered and may be particularly vulnerable to fishing.

Even for high-profile taxa, there is often inadequate information for assessing their conservation status. A listing of 'Data Deficient' under IUCN criteria likely masks species which are actively threatened.

Australia needs a nationwide, systematic approach to species discovery, biodiversity monitoring, and bioinformatics

Species that are poorly known (or indeed unknown) are unlikely to be adequately conserved.

Support for the disciplines of taxonomy and biosystematics is necessary for any comprehensive strategy for conservation and sustainable management. However, taxonomic capacity has significantly decreased, and teaching of taxonomy in universities has declined considerably (Hutchings 2013; Hutchings 2020; Taxonomy Decadal Plan Working Group). Additionally, the current system relies too heavily on individual researchers with short-term, contestable grants (Hutchings 2021).

2021 State of the Environment Report is accurate and reliable

It was underpinned by a solid methodology and robust review. The Academy also notes that the Report highlighted the traditional knowledge held by Indigenous Australians and its immediate relevance to the protection of Australia's environment.

The Academy can support the important work required to address Australia's extinction crisis. Our Fellowship includes some of Australia's leading scientists in relevant fields. We also have systems for harnessing

Australia's broader expertise in environmental sciences, such as through the National Committee for Ecology, Evolution and Conservation.

To discuss or clarify any aspect of this submission, please contact Chris Anderson, Director, Science Policy at chris.anderson@science.org.au.

References

Australian National Audit Office (ANAO) (2020), *Referrals, Assessments and Approvals of Controlled Actions under the Environment Protection and Biodiversity Conservation Act 1999*, Performance Audit Report, 2019-20.

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Hutchings P (2020) 'Major issues facing taxonomy- a personal perspective', *Megataxa*, 1: 46–48.

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