



Australian Academy of Science Submission to the consultation on the *Draft Revision of Australia's Biodiversity Conservation Strategy 2018 – 2030*

The Australian Academy of Science welcomes the opportunity to make a submission on the *Draft Revision of Australia's Biodiversity Conservation Strategy 2018 – 2030* (the Revision). The Revision updates the existing *Australia's Biodiversity Conservation Strategy: 2010 – 2030* (the Strategy), based on findings of a review of the first five years of its implementation.

The stated goal of the Revision is to increase cross-sector and public engagement, and so improve the ability of the Strategy to drive change in biodiversity management priorities, and to improve its alignment with Australia's international biodiversity commitments.

The Academy has closely reviewed the Revision and the original Strategy. The Academy recognises and supports the need for an informed, considered revision and supports the general goals as stated. The Academy supports the strong focus on the contributions of Indigenous communities and Traditional Ecological Knowledge, noting that this must be balanced with due recognition of the need to sustain a strong science base – supporting both strategic and tactical research.

General comments

The Revision has adopted a level of conciseness and brevity. Moving from a 95-page to a 17-page strategy has advantages in broadening engagement. However, the contraction is extreme, and many important elements of the original Strategy are missing from the Revision. For example, the Strategy included a clear statement of the problem and its urgency, clear targets and actions, and mechanisms for measuring the strategy's success. These elements were well articulated, structured and focussed. These elements are lacking in the Revision.

The language in the Revision is very non-specific. For example, by replacing the word "biodiversity" with "nature", there is a danger of moving away from recognising what is unique about Australia's biodiversity towards a more abstract and open-ended definition of "nature". Along the same lines, the Revision focusses too heavily on urban engagement at the cost of focus on broadscale ecosystems and the National Reserve System. Connecting to nature by promoting urban greenspaces will not necessarily protect Australia's biodiversity without active consideration of the needs of the local species.

Recommendations

The original Strategy established the context and need for strategic biodiversity conservation in Australia, noting the decline in Australia's biodiversity, increasing human impacts, and the deleterious nature of these impacts on biodiversity (*Call to action*, p. 17). The Revision establishes no such context. It outlines why nature is important, but not why nature *conservation* is both urgent and critically important. There is a clear vacuum which leaves the draft without any sense of urgency or strategic importance.

The Revision also avoids details around issues that are inherently complex. For example, Objective 7 covers climate change adaptation and ecosystem restoration. However, there is no sense that the challenges and complexities of restoring ecosystems under a rapidly changing climate are acknowledged in the Revision. Similarly, Objective 6 emphasizes captive breeding programs to help secure species in nature, but it is not clear if such programs are designed to release species back into "nature" – noting that such programs are rarely successful – or how species counts deal with invasive species (exotic or indigenous).

Academy recommendation 1: A statement of context, need and urgency is an important component that should be added. This should clearly acknowledge the inherent global value of Australia's biodiversity and the key threatening processes that are diminishing it.

The original Strategy included ten 5-year targets to be achieved by 2015 (p. 14). Our expectation is that many of these targets have not been met.

The lack of targets in the Revision means that it will be impossible to assess the effectiveness of many of its goals and objectives in future. Most goals are formulated as immeasurable statements of intent, using words such as “encourage”, “empower”, “increase”, “maximise” and “enrich”. While these goals and objectives are worthy and the Academy could support them if they were adequately defined, we consider that the lack of metrics by which they can be assessed is a serious omission.

The section *From policy to action* establishes the sole defined activity of the Revision, which is to develop an action inventory (a “central, transparent and searchable database of nature conservation and management activity”). Such an inventory would have clear benefits, but the inventory would be markedly improved by including mechanisms for tracking actions under each of the objectives, to allow future assessments of the effectiveness of the Strategy and its corollary activities. The Academy notes the existence of many targets across jurisdictions, and such targets can and do change according to social attitudes and political cycles. In this context, we acknowledge the difficulty in precise forecasting and in identifying achievable targets. To address this, the Academy recommends the development of ongoing, rolling 1-2 year implementation plans as an adjunct to the new strategy. These implementation plans should complement the action inventory, providing context for the actions in terms of current targets across Commonwealth and State jurisdictions and intended responses from different layers of government and NGOs.

The actions identified in the action inventory must move beyond counting species to encompass all aspects of biodiversity (including the genetic and community/ecosystem levels). Further, if this inventory merely lists past and current activities, it risks losing sight of the innovative planning and coordination efforts that will be necessary for biodiversity conservation. These efforts should be captured in the ongoing implementation plans.

In this same section, we note (final para, p. 17) “[The action inventory] will allow everyone to celebrate wins and will showcase how individual and collaborative efforts contribute to national and international goals for conservation management.” While we agree wholeheartedly that celebrating wins is important, the history of biodiversity loss in Australia means that government, industry and the community also need to own, recognise and learn from losses.

Finally, the Academy notes the Revision is also silent on how the new strategy will enable Australia to meet the commitments for biodiversity conservation under international conventions.

Academy recommendation 2: The Revision should be enhanced with a focus and discussion of measurable outcomes for biodiversity conservation including a plan for measuring progress. The action inventory should be supplemented with a rolling series of 1-2 year implementation plans.

The Academy strongly supports the third goal in the Revision, *Build and share knowledge*, which is clearly strategically important. However, we note that the only examples given of knowledge that should be built and shared are “human behavioural sciences, nature management methods and approaches, values and traditional ecological knowledge” (para 1, p. 14), elsewhere described as “environmental disciplines and social sciences” (Objective 10, p. 15).

The Academy believes that scientific contributions are essential for all three goals expressed in the Revision. There is a strong role for several areas of ecosystem and biodiversity science in supporting the new strategy that should be acknowledged in the Revision. There are existing facilities established under the National Collaborative Research Infrastructure Strategy (NCRIS) that should be used to inform actions under the Revision. These include informatics capabilities such as the Atlas of Living Australia, ecosystem monitoring and modelling capabilities such as the Terrestrial Ecosystem Research Network and the Integrated Marine Observation System, and biomolecular analysis capabilities such as Bioplatforms Australia. These facilities provide a great deal of expertise and evidence useful to actions which support biodiversity and conservation.

The Revision correctly states that Australia is biologically mega-diverse. The Academy notes that only an estimated 23% of Australian species have been documented, described and named to date¹. While some of this unknown biodiversity may be effectively conserved under the goals and outcomes of this strategy, this substantial lack of knowledge of Australian species presents a severe risk. Undocumented biodiversity is at the greatest risk of extinction. This means that taxonomy is an important area of knowledge that needs to be developed to provide a sufficient knowledge base. To this end, we draw attention to the *Decadal Plan for taxonomy and biosystematics in Australia and New Zealand 2018–2027* currently in production by the Academy. A draft of this plan can be provided on request.

More broadly, there is a need to support ecological and evolutionary sciences which underpin conservation efforts, and to recognise the contribution that these sciences make to biodiversity conservation. The draft articulates the need for traditional knowledge and collaboration, but scientific contributions are also relevant for all three goals. For example:

- Goal 1, page 11: Objectives 2 and 4 could be strengthened by including respect for scientific knowledge, which provides the data and knowledge base for detecting change and advising on environmental management.
- Goal 2, page 13: For objective 6, the assessment of species for listing requires data from scientific studies.
- Goal 3: Scientific knowledge from ecology, particularly conservation and restoration ecology, are needed. Objectives 10, 11 and 12 (page 15) do not mention science, nor the involvement of academic institutions or research facilities. University research, as well as research carried out through PFRAs and NCRIS, facilities is essential for providing knowledge.

Academy recommendation 3: Taxonomic, ecological and evolutionary knowledge should be specifically included in the draft’s description of Goal 3.

Academy recommendation 4: The relevance of scientific knowledge should be included for all three Goals.

Key terminology has been changed between the Revision and the original Strategy. The term ‘biodiversity’ is often replaced by ‘nature’, which is used inconsistently throughout the Revision. ‘Nature’ is at times defined using the definition of ecosystem, in other places ‘nature’ is used for landscape. The Academy recommends using clear definitions of the terms, consistent with the terminology used in international biodiversity agreements, such as the Convention on Biological Diversity to which Australia is a signatory.

Further, the Revision uses ‘nature’ (at pages 3 and 4) to encompass agricultural, urban and industrial landscapes. However, land clearance and urban sprawl are a main cause for loss of native ecosystems identified in the original Strategy as one of the threats to biodiversity. This usage blurs the intent of the document as a strategy for conservation of biodiversity, and risks occluding the intended actions. This is particularly relevant for Goal 2 – “Care for nature in all its diversity” – where the inclusion of agricultural and urban environments reduces the focus on non-built environments, where the threat of biodiversity loss is greater. If ‘nature’ is to encompass an ordinary urban streetscape, a broadacre farm, or a park full of European trees, then Australian biodiversity is not the subject of the revised Strategy.

Academy recommendation 5: The Revision should reinstate the terminology as per original Strategy, and exclude heavily modified agricultural, urban and industrial areas from a definition of ‘nature’.

Academy recommendation 6: Goal 2 should focus more on the non-built nature and less on agricultural and urban landscapes.

¹ Chapman (2009) Numbers of Living Species in Australia and the World, 2nd edition, Report for the Australian Biological Resources Study

Minor comments

Page 3: The definition of “biodiversity” given in the footnote to page 3 includes only the organismal component (plants, animals etc.). Biodiversity is usually understood, including by the *Convention on Biodiversity*, to include diversity at higher (ecological) and lower (genetic) levels as well – see [the Convention on Biological Diversity, Article 2](#).

Page 6: A national approach is welcome for biodiversity conservation, but coordination across levels of government can be time and cost consuming. The realisation of this aspect should be elaborated further. The Revision should also articulate how a nationally coordinated approach can avoid the risk of addressing only conservation actions identified by the lowest common consensus.

Page 8: Figure 1 illustrates various policies, treaties and implementation levels, with the Strategy placed into the central box of the figure. This does not clarify how this Strategy will coordinate Australia’s national and international actions and the legend to this figure should be revised.

Page 10: Objective 1 encourages Australians to get out into nature, which should emphasise native ecosystems, even if embedded in agricultural or urban settings. While we strongly support this goal, it should be acknowledged that it comes with risks to nature if not properly managed (for example, if too many Australians get out into nature at the same place).

Page 12, 2nd paragraph: There is a growing understanding that disturbance history can affect resilience and that ecosystem responses to disturbances can be delayed. Therefore, resilience does not necessarily mean that nature can ‘resist ongoing threat’.

Page 12, 3rd paragraph: A sentence reads “Australia’s landscapes and species have developed a range of strategies...” A landscape cannot develop a strategy.

Page 12, 4th paragraph: The first sentence implies that nature management equals natural resource use, and that use equals protection. This sentence should be better worded.

Page 13, Goal 5 of Objective 2: Australia has been committed to the “CAR” system, however, only representativeness is mentioned here. Comprehensiveness and adequacy are the two further cornerstones of the CAR principle, and should be included here for conservation management through protected areas.

Page 14: Objective 3 seeks to increase Australian’s understanding of the value of nature by e.g. “increasing children’s learning about nature”. Increasing adults’ learning should be included here as well.

If you would like to discuss this submission further, please contact Professor Craig Moritz (gekkojessie@gmail.com) or Stuart Barrow (stuart.barrow@science.org.au).