



**Submission on
Draft - Australia's strategy
for nature 2018-2030:
Australia's biodiversity
conservation strategy and
action inventory**

**Centre for Ecosystem Science,
UNSW, Sydney**

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1. Executive Summary

The current strategy has major omissions and inconsistencies which do not adequately reflect the current evidence base. It lacks any substantial content on how Australia proposes to meet its international obligations to the Convention on Biological Diversity. It fails to mention the relevant Aichi Targets to which Australia, along with 190 other nations is committed to. The vision poorly deals with the challenges and conflicts inherent in improving human quality of life while at the same time halting the rate of biodiversity loss and impacts on ecosystem services. The strategy needs to adequately recognise the richness of Australia's biodiversity, its value to the Australian community and the challenges and threats. In providing leadership and a way forward, the strategy also needs to provide measurable targets and actions to conserve Australian species and ecosystems. The Centre for Ecosystem Science cannot support the draft strategy in its current form and provides constructive comment to improve its form and focus. In so doing, this submission begins by providing input on major overarching issues with the strategy, the necessary context supporting the need for this strategy and the importance of explicitly providing this context. This is fundamental for communicating a vision, goals and objectives on which this submission provides further comment. We also raise the issues of resourcing and the plan of action. Finally, we comment on each section separately.

2. Centre for Ecosystem Science, UNSW Sydney

The Centre for Ecosystem Science (CES), UNSW Sydney, supports instruments of government, including strategies that improve effectiveness of biodiversity conservation, founded on a strong evidence base. Current rates of biodiversity loss around the world and in Australia are unprecedented. Researchers in CES have established track records in the research and management of Australia's biodiversity, both within and outside protected areas. In particular, researchers focus on the three main realms of biodiversity (freshwater, terrestrial, marine) in the natural world (<https://www.ecosystem.unsw.edu.au/>) and welcomes the opportunity to provide a submission to draft – Australia's strategy for nature: 2018-2030.

3. Australia's strategy for nature 2018–2030 Australia's Biodiversity Conservation Strategy and Action Inventory (Draft)

This strategy inadequately deals with the major challenges for nature and its biodiversity. It does not provide sufficient context, direction or clear measurable targets. It inadequately incorporates Australia's state, national and international obligations. Comparatively it also fails to recognise Australia and its people as leaders in this area. For example, it compares poorly to other biodiversity strategies, which clearly articulate the challenge and set about providing clear measurable actions to overcome these challenges. For example, the

biodiversity and action plans for two countries, Myanmar (<https://www.cbd.int/doc/world/mm/mm-nbsap-01-en.pdf>) and Rwanda (<https://www.cbd.int/doc/world/rw/rw-nbsap-v2-en.pdf>) offer a stark contrast in clarity and purpose in relation to the challenge. Both countries are developing countries with considerable challenges, compared to Australia, and yet show considerable leadership in this area. The current draft strategy is currently inadequate and poorly reflects on Australia's knowledge, resources and leadership in the area of biodiversity and nature conservation. A clear criticism of this strategy is the absence of any clear plan of action to address the many issues affecting the environment, beyond an action inventory.

Recommendation

The Centre for Ecosystem Science recommends a clearer articulation of the challenge, with clear plan of action which shows how objectives or targets will be met.

4. Context

The context for this strategy is critical. It needs to clearly articulate the need for the strategy and the evidence for the strategy. The world has entered the Anthropocene epoch, characterised by widespread loss of global biodiversity (nature) at unprecedented rates and scales, including species' extinctions, ecosystem collapses (Wilson, 2016), resulting in loss of ecosystem services (Newbold *et al.*, 2016) and straining planetary boundaries for human existence (Steffen *et al.*, 2015).

Further, this context is critical in referencing previous information on 'nature' or the environment including national biodiversity strategies, state of environment reporting, international obligations and the scientific evidence.

a. 2010 National Biodiversity Strategy

Strategies are designed to build on past progress. It is important that there is a brief and adequate review of the progress made for Australia's previous biodiversity strategy (Natural Resource Management Ministerial Council, 2010). Currently the revised strategy meets none of the four recommendations of the "Review of the first five years of Australia's Biodiversity Conservation Strategy 2010-2030". It does not identify or communicate with key audiences critical to success (Recommendation 1). It also does not adequately acknowledge that most biodiversity resides in natural landscapes, not urban or highly developed agricultural landscapes (important but overemphasized). Further, the current draft strategy fails to incorporate the aspects of the previous strategy which had value. An adequate review could have set the context for progress including successful and unsuccessful actions, critical for the action inventory.

b. Australia - State of Environment Reporting

Regular national and state environmental reporting occurs in Australia, providing an objective assessment of the evidence for the status of the environment (Australian State of Environment Committee, 1996; Australian State of Environment Committee, 2001; Australian State of the Environment, 2006; Committee, 2011; Jackson *et al.*, 2017). It is essential that the context briefly and succinctly provide an update on the status of the environment so that the need for this strategy is well established, based on a sound evidence base.

c. International obligations

A key feature of a national strategy for nature is provide the background and commitments of the Australian government to international obligations under a range of different strategies identified broadly in Figure 1 of the draft Australia's strategy for nature 2018-2030. In particular, these should include the five Aichi strategic goals and 20 targets under the Convention on Biological Diversity (<https://www.cbd.int/sp/targets/>). They provide a sound basis for national commitments to nature or biodiversity. Further, On the 17th September 2015, 193 United Nations Countries, including Australia, signed up to the 17 Sustainable Development Goals <http://www.un.org/sustainabledevelopment/sustainable-development-goals/>). Three goals (Goals 13, 14 and 15) are highly relevant to this strategy.

d. Scientific evidence

A succinct review of the current state of biodiversity, globally and within Australia, is important. It would provide the necessary objective background for this strategy. In particular, there is widespread loss of ecosystems and species around the world (Butchart *et al.*, 2010). In Australia, there is widespread loss of biodiversity (Kingsford *et al.*, 2009) which is also identified in state of the environment reporting.

Recommendation

The Centre for Ecosystem Science recommends that a section on context or background be provided in the final document, alluding to the four sections (past National Biodiversity Strategies, State of Environment Reporting, International obligations, Scientific evidence), succinctly and briefly setting the scene for the need for this strategy.

5. Resourcing

The draft strategy has three goals and 12 objectives but no resourcing for actions. It is unlikely that the objectives, including their accompanying 'inventory of actions' will be achieved without a clear investment in funding. This is particularly important, given the

range of different responsibilities at national and state level in meeting environmental obligations.

Recommendation

The Centre for Ecosystem Science recommends a clear commitment to funding implementation of the strategy to meet clear actions.

6. Vision

a. Definition – ‘nature’

This strategy departs from previous strategies and the state of environment reporting by using ‘nature’ in the context of the strategy. This has some appeal in relation to wider understanding of why the environment is important to the Australian people. But the particular definition adopted for this strategy departs from the more common definition of ‘nature’. In this strategy, ‘nature’ “...encompasses ancient landscapes millions of years old, lands managed under fire regimes for thousands of years, agricultural lands hundreds of years old, and more recent urban and suburban development” (Department of Environment and Energy, 2017). The Strategy’s vision needs to reflect the need for action and the public’s support for halting loss of biodiversity, recognizing our dependence on nature and the cultural, health and socioeconomic benefits we receive.

Usually, ‘nature’ does not include people, allowing for a clear focus. The Oxford dictionary defined ‘nature’ as: “The phenomena of the physical world collectively, including plants, animals, the landscape, and other features and products of the earth, as opposed to humans or human creations”

<https://en.oxforddictionaries.com/definition/nature> . The Collins dictionary defines ‘nature’ as: “...all the animals, plants, and other things in the world that are not made by people, and all the events and processes that are not caused by people”

<https://www.collinsdictionary.com/dictionary/english/nature> . Finally, Wikipedia has a more comprehensive definition: “Nature, in the broadest sense, is the natural, physical, or material world or universe. "Nature" can refer to the phenomena of the physical world, and also to life in general. The study of nature is a large, if not the only, part of science. Although humans are part of nature, human activity is often understood as a separate category from other natural phenomena.

<https://en.wikipedia.org/wiki/Nature> .

This distinction is critically important because there is now widespread scientific agreement that we have entered the new epoch of the Anthropocene, where humans dominate life’s biotic and abiotic processes (Crutzen, 2002; Steffen *et al.*, 2007; Vorosmarty *et al.*, 2013; Dirzo *et al.*, 2014). Including humans and environment in the vision conflates the driving factor of human impact on nature (environment) and

biodiversity more particularly. In its current state, the vision reads as focusing on an anthropocentric ‘quality of life’, rather than ‘nature’ more broadly. This effectively avoids tackling the now well-known and understood drivers of major impacts on the environment, affecting not only other species and ecosystems but also the necessary ecosystem services on which humanity depends. The duality of the vision for nature is somewhat contradicted within the strategy in the section on ‘Australia’s nature is unique and diverse’ which makes no mention of the human dimension of nature included in the vision.

Further, it is important to use a well-established and agreed definition of ‘biodiversity’. The Convention on Biological Diversity gives a formal definition of biodiversity in its article 2: "*biological diversity means the variability among living organisms from all sources including, inter alia, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part; this includes diversity within species, between species and of ecosystems*" http://www.biodiv.be/biodiversity/about_biodiv/biodiv-what . Importantly, this definition provides clarity on what nature constitutes – more than species, including ecosystem processes and ecosystems. This is a problem affecting parts of the current draft strategy which needs rectifying.

Recommendation

The Centre for Ecosystem Science recommends that the vision needs to be changed so that it focuses more definitively on the more widely accepted definition of ‘nature’, linking to the more specific definition of biodiversity in the Convention on Biological Diversity to which the Australian Government is a signatory. The vision needs to address action and public support for halting the loss of biodiversity, recognising its dependence on nature and the benefits cultural, health and socio-economic benefits this brings to Australian people and their communities.

7. Importance of nature

This section of the strategy is welcomed, providing good evidence of the value of nature in its own right as well as for biodiversity more broadly. There is also considerable value in nature and human involvement. A recent study in the United States found that outdoor recreation generated \$USD 373.7 billion in 2016, growing more than the overall economy (<https://www.commerce.gov/news/blog/2018/02/bureau-economic-analysis-releases-first-time-prototype-statistics-measuring>). There are some minor additions to this section which would improve this rationale. In particular, it would be useful to provide some information on the costs of damaging the environment, as a result of environmental externalities (Rockstrom *et al.*, 2009).

Recommendation

The Centre for Ecosystem Science recommends that the section on the importance of nature needs to include some text about environmental externalities and the impacts on the economy and people's lives.

8. The need to work together to care for nature

It is not clear whether the need to care for nature refers to 'attitudinal care' (i.e. public concern, values and beliefs) or 'care through action' (i.e. action to conserve biodiversity) or potentially both. The first of these overlaps with Goal 1 (Connecting people...). Ideally the strategy should articulate how it will increase public concern for nature and translate that into tangible action for its conservation. If this message is intended, the current text does not communicate it clearly enough.

Much of the environmental work is also done by individuals, local organisations and state governments and so it is important to capture these more wide ranging obligations, rather than just national and international obligations, given this is a national strategy.

Recommendation

This section should also have a clearer message such as "People take action to care for nature". The first subsection should be expanded to include individual, local and state obligations. It also needs more detail on how to increase collaboration and integration.

9. Goals and objectives

a. Goal 1 – Connect all Australians with nature

This is a welcome goal and a critical one. An important aspect of understanding is the appreciation of the threats and risks to nature broadly, including species, ecological processes and ecosystems. It is important that understanding of these drivers be captured in this section. It is also important to explain the potential conflict between increased connectedness to nature and impacts on biodiversity. For example, overuse by tourists can be a significant problem that needs to be managed.

i. Objective 1 – Encourage Australians to get out into nature

This could perhaps be captured better by replacing "to get out into" with "experience", better reflecting an appreciation, enjoyment and benefit from nature. This would more accurately address the key values provided and better reflect Goal 1. Further objective 1 needs to be tightly linked to the other two objectives to ensure that values of nature are maintained. The 'connection with nature' needs to clearly outline the potential negative and positive impacts.

ii. Objective 2 – Empower Australians to be active stewards of nature

The draft Strategy provides little text, recognizing the importance and the role of government as a leading steward of nature (programs, funding, policy and legislation). Governments run protected areas (national parks), fund biodiversity programs (e.g. threatened species) and create and manage legislation, critical for active stewardship of nature. In the accompanying text to this objective, it would be useful to insert more focus on the programs. Replace “Looking after nature...” with a fuller explanation of the challenge “Looking after nature through protection, mitigation of threats and restoration...”. This provides more clarity on what needs to be done. There also needs to be greater emphasis in recognizing the role of governments in the area of active stewardship of nature.

iii. Objective 3 – Increase Australians’ understanding of the value of nature

This is a highly worthwhile objective and an additional phrase. It could be improved by making it: “Increase Australians’ understanding of the value of nature and its threats and risks”. This would provide more context to the current challenges. Further in the subsequent text, there should be a commitment to increasing this understanding through survey, monitoring and research. There are currently no agreed environmental measures or environmental accounts and so this remains an area which could have increased development. Generally in management of the environment, the word ‘indicators’ is used instead of ‘measures’.

iv. Objective 4 – Respect and maintain traditional ecological knowledge and stewardship of nature

This is a laudable objective, given increasing understanding of the importance of traditional knowledge. However it does not adequately emphasise the importance of scientific understanding in focusing stewardship of nature. “Traditional stewardship of land and sea country” should also include rivers and wetlands, given these are often left out.

b. Goal 2 – Care for nature in all its diversity

This goal would be improved with more detail provided for the objectives. A key issue of importance which is captured in the preamble to the goals is the importance of ‘threats’. Specifically in paragraph 2 (p. 12): “The objectives under this goal work together to enhance resilience, an important quality of nature. Resilience refers to the ability of nature to recover from disturbance and resist ongoing threats”. This clearly identifies the critical importance of threats and yet none of the goals or objectives adequately incorporate these into the strategy.

In the fourth paragraph of preamble for this goal (p. 12), the following sentence requires some further qualification – “Australian farmers and pastoralists manage nearly 50 per cent of our land¹ and make a large contribution to conserving and enhancing nature. Farmers improving their natural resource management practices results in increased productivity, improved farm sustainability and enhanced environmental protection”. It is important to explain that broad scale farming, as opposed to pastoralism, can have significantly more impact on the environment than protection (i.e. land clearing, water resource development). It is important to clearly explain that there is an opportunity to convert a threat into a mechanism for conservation, mitigation and restoration.

There are some minor amendments to the preamble for this goal (p. 12).

- On paragraph 3, line 2, replace ‘continent’ with ‘Australian environment’. Same line, insert ‘water’ after ‘land’.
- Last sentence of paragraph 3, replace ‘...encouraging high biodiversity...’ with ‘...maintaining biodiversity...’. Biodiversity is not necessarily ‘high’ everywhere but still critically important.
- Paragraph 4 – ‘Continuous improvement in nature management...’ is a difficult concept to explain and should be replaced by ‘We need to continually improve our management of nature to ensure that resource use is sustainable, while maintaining the diversity of life and ecosystem functions that people depend on’.
- Last paragraph (line 1) – insert ‘human’ after ‘urban’ to ensure that there is no ambiguity that the sentence might refer to populations of other organisms.

v. *Objective 5 – Improve conservation management of Australia’s landscapes and aquatic environments*

There is considerable overlap between this objective and the other four objectives but it could be improved if there was a better explanation of what is meant by ‘conservation management’. Further, ‘...enhancing the representativeness and condition...’ related primarily to a planning issue (i.e. where are protected areas) rather than management. It is also not clear what is meant by ‘enhancing condition’. Specifically, there should be an improved definition of ‘conservation management’ in the following text along these lines: ‘Conservation management refers to the protection and restoration of, mitigation of threats to and management of risks to

¹ Australian Bureau of Statistics Land Management and Farming in Australia, 2015-16
<http://www.abs.gov.au/ausstats/abs@.nsf/mf/4627.0>

environments and their species’.

Under the Australian Constitution, the States are primarily responsible for the management of land and water, except for Commonwealth Territories and Waters. The States will primarily have strategies which may be different. There needs to be an acknowledgement of this restriction and the ability for the Australian Government to influence through provision of funding primarily.

vi. Objective 6 – Maximising the number of species secured in nature

A focus alone on species will fail: it is critically important to also include ecosystems. This objective should be changed to ‘Maximising the diversity of species and ecosystems in nature’. The omission of reference to ecosystems (as well as, not instead of species) is at odds with one of the principles: “Using an ecosystems-based approach...”

The subsequent text needs to be correspondingly changed. The revised first sentence should read: ‘Maximising the diversity of species and ecosystems secured in nature needs action both through the protection and restoration of native habitats, mitigation of threats and management of risks to environments and management of environments and their species (e.g. captive breeding)’.

This text needs to explicitly acknowledge that there is a substantial protected area system in Australia. It currently primarily focuses on private conservation partnerships which are important but national protected area system needs to also be mentioned.

Further about a quarter of the text in this section is devoted to the listing of risks to species which is important but there should also be a focus on management of ecosystems, providing considerably more benefit for conservation of nature, than a just a focus on species’ conservation. Threatened is a general term which includes vulnerable, endangered and critically endangered species. This needs to be explained in the text. Focusing simply on threatened species will not adequately conserve biodiversity, given that knowledge of most species is poorly known and they may not be threatened currently.

vii. Objective 7 – Reduce threats to nature and build resilience

This is a critically important objective which is not well articulated or captured earlier in the strategy (see comments above). The objective could be improved by adding the word ‘risks’. ‘Risks’ are different to ‘threats’ in that they necessitate looking into the future. So this Objective 7 could be changed to read: “Reduce threats and risks to nature and build resilience’.

The last sentence should specifically identify all of the major threats including ‘habitat loss and degradation, invasive species, overharvesting, pollution, climate change and

disease' (Kingsford et al., 2009). It should also mention key threats such as land clearing, water resource developments and overharvesting of marine resources more explicitly.

There are some minor amendments required to the text (p. 13).

- Line 1. Replace 'ensuring' with 'managing'
- Line 2, change to 'networks to consider'.
- Line 6, replace ' gas emissions management' with 'gas emissions reduction'

viii. Objective 8 – Use and develop natural resources in an ecologically sustainable way

Ecologically sustainable development is well established in legislation, policy and practice. Given the importance of ecosystem services, it is important that protection of ecosystems be primarily recognized first. After protection, it is particularly important that this objective reflect current rigorous understanding on sustainable use, first by avoiding impacts, then minimizing unavoidable impacts and offsetting residual impacts through conservation initiatives elsewhere – explicitly the mitigation hierarchy (Maron et al., 2015; Maron et al., 2016). This international principle warrants inclusion. This would be an opportunity to link explicitly to the Sustainable Development Goals

In addition, this section needs to reference appropriate and rigorous assessment and regulation of sustainable use (e.g. environmental impact assessment, natural resource management).

There are some minor amendments required to the text for this objective.

- Page 9 – 'Use' is currently in a different font
- Page 13, line 1 of the text under the objective. Insert 'Ecologically' before 'Sustainable'.

ix. Objective 9 – Enrich cities and towns with nature

The text under this objective needs to include more of a focus on increasing the diversity of ecosystems and protection of remnant ecosystems remaining in urban spaces.

In addition, this section needs to reference appropriate and rigorous assessment and regulation of sustainable use (e.g. environmental impact assessment, natural resource management).

c. Goal 3 – Build and share knowledge

This goal is particularly important but it currently doesn't include 'nature' (the only goal that does not). It should be changed to 'Build and share knowledge about nature' so it is more explicit. There is however a need to more explicitly emphasise the importance of STEM disciplines in delivering this knowledge. Explicitly improving understanding and building the knowledge capital to share requires investment in science and monitoring. This needs a paragraph in the preamble for this goal. This section should also explicitly address the emerging area of citizen science which can be an important contributor to two of the goals – a community which learns more about nature is usually inspired to care for nature.

The section on environmental performance (last paragraph) should be considerably improved to include indicators, monitoring and reporting processes which are currently in place (e.g. State of Environment Reporting).

x. Objective 10 – Increase knowledge about nature to make better decisions

This needs a stronger message that Australia will support research to improve knowledge on nature that is essential for its conservation and management. There should be an explicit sentence in this section on STEM disciplines given their value for increasing knowledge.

Further in relation to decision-making, it is important to mention the inevitability of uncertainty and accommodate for future outcomes. Knowledge will never be perfect but decisions still need to be made.

There a minor amendment required to the text for this objective.

- Line 1 – Insert '...initiate, support and target research...'

xi. Objective 11 – Share and use information effectively

This objective is important and should be supported with requisite resources. It is important to maximize the use of currently available technology and develop database which are spatially explicit.

xii. Objective 12 – Effective measurement to demonstrate our collective efforts

This objective is also particularly important but requires investment in monitoring of outcomes. This has seldom adequately occurred in large government investments on the environment. It is important to adequately focus on the key measurements for the environment and which indicators, maximizing current efforts and maintaining investments currently underway where they are providing necessary information.

d. How will we get there?

xiii. Supporting principles

The principles could be prioritized so that the order provides some clear direction. For example the principle on accounting and measuring could be the first principle. Other principles based on the criticisms in this submission could be included (i.e. commitment to rigorous evidence base for decision making).

Principle 1 seems out of place as this is a fact. Principle 6 (Sustainable use...) requires further refinement. It is not clear how 'needs' are defined and how the inevitable conflict of meeting human needs affects the resilience of nature more broadly. There are inevitable conflicts that need to be dealt with.

There are some minor amendments required to the text for this objective.

- Principle 9 ('Accounting...'). Change 'enhances' to 'enhance'
- Principle 10 ('Nature does not... '). Delete up to 'Management...' as the first part of this principle does not add value.

xiv. From policy to action

The action inventory seems to lack clarity. It does not clearly identify how this will be managed, particularly given the many individuals, organisations operating in the environment at local, state, national and international scales. Integration will be a significant issue. It is not clear that the action inventory will provide anything more than a list of potential actions rather than real actions. Actions are required, not simply a web-based call for participation. The link to the goals of the strategy are also unlikely to be clear. Inevitably resources will be tied up in administering an output, taking away from the importance of achieving outcomes which deal with the challenges affecting nature.

e. Conclusions

The strategy requires some fundamental changes to ensure that it adequately meets the challenges of protecting nature, the environment and biodiversity so that they exist in their own right but also provide humanity with essential benefits or ecosystem services. The changes required relate to providing more context and relevance to current knowledge and obligations, explicit incorporation of threats and risks and expanding definitions to include ecosystems. In addition there should be more explicit and measurable targets or actions, not simply an inventory..

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