An economic and science-based assessment of

"Australia's Biodiversity Conservation Strategy 2010–2020"

Consultation draft prepared by the National Biodiversity Strategy Review Task Group convened under the Natural Resource Management Ministerial Council March 2009

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In summary – start again. This strategy is a significant backwards step from previous strategies and priority setting endeavours. The vision is vague and where it is clear it is wrong. The document uses terms and ideas loosely. Most importantly, **there is no attempt to set quantifiable targets and timeframes or use any rational and credible approach to priority setting**. This flies in the face of all the hard work that has been done by people in universities, CSIRO, non-government organizations and their own departments. There is no quantified assessment of successes and failures since the last strategy or whether Australia's governments have delivered on promises and met targets. **We learn by our mistakes and failures only we if acknowledge them.** Many of the actions are not actions, and the ones that come close to being actions are so vague they could not be implemented or assessed. The referencing throughout the document is parochial and *ad hoc*. All references should be deleted or referencing should be done properly. The appendices are generally credible and provide useful background information - I will not address them.

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1 The vision:

"Vision: Australia's biodiversity is healthy, resilient to climate change and valued for its essential contribution to our existence"

This vision is very poor for three reasons. First, the two terms healthy and resilient are not defined and cannot be quantified. Second, there is unnecessary emphasis on climate change. It is one of several major threats and it is doubtful if it is the major threat. Ironically, it is the threat we can do least about! Third, Australia's biodiversity is valued. Indeed its value to most people has nothing to do with "its essential contribution to our existence", nor should it. It is a fact that vast amounts of Australian biodiversity have been, and can be, destroyed without posing any threat whatsoever to our existence. This is the wrong value and any emphasis on the value of biodiversity to "our existence" trivializes the role of biodiversity.

A much better vision would include things that could be measured and achieved – such as a reduction in the rate of loss of native species (suggested but squashed in the 2020 summit), an increase in the quantity (and quality) of native vegetation, a reduction in the spatial extent of key threatening processes (inappropriate fire regimes, overgrazing, weeds) etc. The final clause could be that Australian people increase their understanding of, and value they place on, biodiversity (which can be measured in several ways, e.g. through surveys). It is important to note that all of these components of a vision can be both quantified and used for prioritization.

The entire vision must be replaced with something that is meaningful and measurable.

2 The Executive summary (page 5)

Overall the executive summary contains some very important background statements. None are new, but they are worth repeating. For example it is worth reminding people that **"biodiversity in Australia is still in decline"**. Furthermore, the strategy correctly identifies six of the main threats to biodiversity. Finally the strategy commits to implementing more recent, more action-based, national strategies.

However "The strategy is" NOT "a call to action." because it includes no actions with quantified outcomes and timelines. The 2002 PMSEIC report was a call to action because it had actions. The *National Strategy for the Conservation of Australia's Biological Diversity* (DEST 1996) was to a lesser extent a call to action, because it had some targets and some timelines.

Unfortunately the statement "*Australia's Biodiversity Conservation Strategy* is a new approach to addressing biodiversity conservation in a rapidly changing world." is not true. There is nothing new in this document and there does not need to be anything new in this document. If governments actually implemented previous strategies, some of

which included measureable and meaningful outcomes, we would save a lot more biodiversity.

The Executive summary includes one very promising paragraph:

> "Each priority for change is linked to objectives, actions and results which will guide the development of biodiversity conservation approaches for national, state, territory and local governments, and for businesses, non-government organisations and community groups. The listed results are the expected 'onground' consequences of successful implementation of the actions."

Unfortunately the strategy does not deliver on this promise. Most importantly it never states, at any point, how the six priorities for change were chosen. This is a major flaw.

3 The principles (page 8)

Most of the principles are sensible. Some are tautologies. Some are dangerous ill-defined statements like: "An ecosystem approach to biodiversity conservation should be used to maximise conservation outcomes.". The ecosystem approach means many things to many people. There is no scientific evidence that it maximizes conservation outcomes above and beyond any other approach.

4 What has been achieved, section 1.1

I broadly agree with the list of achievements but the opening remarks imply these are the achievements of governments. They are the achievements of all Australians and government has played a role. The opening statement should say (delete first sentence):

"Since the release of the 1996 National Strategy for the Conservation of Australia's Biological Diversity (DEST 1996), **the people of Australia** have achieved: …"

For balance there should be clear statements about what has been promised in previous strategies but not achieved. The achievements need to be quantified by areas, percentages and numbers and compared to promises and/or failures and losses. For example:

1 "increased protection of the biodiversity of the Great Barrier Reef—the zoning network introduced in 2004 includes the world's largest network of no-take areas (more than 117 000 sq km), which protects representative examples of all 70 identified bioregions, plus many other spatial and temporal measures to increase biodiversity protection. "

The key innovation here is that the aim was to cost-effectively achieve representation (absent from most plans) of at least 20% of each bioregion (see Fernandes, L. et al. 2005. Establishing representative no-take areas on the Great Barrier Reef: Large-scale implementation of theory on protected areas. ***Conservation Biology*** 19:1733-1744.)

2 "legislation by all governments to protect native vegetation from broad-scale land clearing "

This is surely the biggest biodiversity gain in the last two decades. Please quantify it and calculate greenhouse gas benefits.

Both of these huge advances were driven more by the non-government conservation sector and scientists that by government. In general governments were reluctant players.

This sections must be balanced by the opportunities that have been missed and where have we gone backwards (e.g. grazing reduction, fire management, land clearing, foxes in Tasmania, unbalanced rezoning of SE Australian marine federal waters – see McDonald-Madden E. et al.. 2009. ENVIRONMENT "True" Conservation Progress. ***Science*** 323:43-44.). Finally what aspects of biodiversity have declined or been lost (in summary form as this is a book in itself).

In short, Australia's governments need to be truthful, comprehensive and clear about what has, and has not, happened with respect to biodiversity conservation. What are the successes and failures? You can only learn from your mistakes if you acknowledge them. This document must include a summary of this information – this is far more important than most of the rest of the document (for example the Appendices).

5 Section 1.2 "Combining short-term and long-term actions"

All strategies are a mix of short-term and long-term actions so this qualification is unnecessary.

There are six priorities all of which are quite vague. More importantly there is no indication of how government chose these six priorities. Good prioritization must include the full list of all the possible projects, and the criteria by which some were accepted and some were rejected. The government has not presented a prioritization process and consequently there is no evidence that these priorities are the best. I suggest the governments start again and follow an approach similar to that of the 2002 PMSEIC report on setting biodiversity priorities. (Possingham, H.P., Ryan, S, Baxter, J. and Morton, S.R. 2002. Setting biodiversity priorities. A paper prepared as part of the activities of the working group producing the report Sustaining our Natural Systems and Biodiversity for the Prime Minister's Science, Engineering and Innovation Council in 2002.)

5 Section 1.3 "Implementation"

This section includes numerous motherhood statements. Implementation is of course impossible without agreement, budgets, specific actions and timelines. To talk about implementation in this document is ironic.

Consider for example the paragraph:

"The kinds of actions required will be determined by place and in the context of other natural resource management issues and needs. However, evidence from past experience tells us that among those actions we will need to:

- *secure and enhance critical intact habitats to increase ecosystem resilience*
- *restore ecological function to critically degraded landscapes through sustainable practices that manage our soil and water resources*

- *increase the cover of native vegetation wherever feasible to enhance ecological connectivity across fragmented landscapes over time*
- *build local knowledge and capacity for the long-term stewardship of our environment*
- *protect our most endangered species and ecological communities. "*

This section shows how little thinking has gone into this strategy. The list above is an incomplete subset of fairly vague actions that essentially says – we don't know what actions should be taken where. The list does not mention trade-offs and contradicts material in Appendix 5. This is the section where governments should outline quite clearly how they will choose between priorities and how they will make trade-offs in a world of limited resources. It is this vagueness in the past that has lead to *ad hoc* approaches, poor prioritization and wasted money. In two audit reports the governments have been harshly criticized for not having clear priority-setting approaches and outcome assessment.

From Decision Point #23 http://www.aeda.edu.au/docs/Newsletters/DPoint_23.pdf

> In 1997 the Australian National Audit Office (ANAO) said "Performance information is not adequate for program managers in DPIE or Environment Australia to determine the quality or the nature of outcomes being achieved" and by 2008 their mood hadn't changed: "Overall, the ANAO considers the information reported in the DAFF and NHT Annual Reports has been insufficient to make an informed judgement as to the progress of the programs towards … outcomes". See also Hajkowicz SA (2008) The Evolution of Australia's Natural Resource Management Programs: Towards improved targeting and evaluation of investments. *Land Use Policy*. doi:10.1016/j.landusepol.2008.06.004.

This section on implementation gives me no confidence that anything has changed.

The section on monitoring (1.3.2.) sits in an intellectual vacuum that is unaware of current approaches by governments and scientists.

6 Chapter 3 "Making enduring changes"

Many of the statements at the beginning of this section are vacuous and repeat early material: "Natural systems must be resilient if they are to adapt to environmental stresses. They need to be able to retain their ecological functions in the face of complex and unpredictable pressures." "We must also be innovative in how we address the causes of biodiversity decline and emerging threats such as climate change." "We must be flexible in how we deliver conservation initiatives." "Greater knowledge will help us make the best choices about where to direct our efforts, and on what geographic scale. Our efforts must also be integrated across tenures and jurisdictions."

A fundamental failure of this document is laid bare in the following quotes: "The 61 actions are indicative: they are intended to guide jurisdictions and other organisations when developing and implementing their own biodiversity conservation approaches. The

actions are not intended to exclude any other actions appropriate to a jurisdiction's own circumstances when implementing the strategy." and "These actions reflect a possible set of options for delivering the outcomes of the strategy. Jurisdictions and other organisations will implement the strategy through their own plans and may develop their own actions appropriate to their circumstances."

To paraphrase in my words: "We have devised some actions that you may wish to consider, through an opaque and unrepeatable process, but you don't have to do any of them, indeed you could make up any new ones you like." As we will see below, most of the so-called actions are not actions.

I will not address each of the six priorities. Instead I will focus on the first, my comments and concerns are fairly generic and are already summarized above.

3.2.1 Priority for change 1: Building ecosystem resilience

The first page tries to define ecosystem resilience, but fails. It then says we should do things in parks and outside parks. There are only two definite statements in this introduction to building ecosystem resilience and they are unsubstantiated: "Therefore, a well-planned and managed terrestrial and marine reserve system is the most effective and immediate strategy to build resilience in a changing climate. Maintaining a comprehensive, adequate and representative reserve system is the best way to secure critical habitats of vulnerable species." In particular the words "best" and "most effective" are ill-defined. This is a perfect example of where the document falls down. When it does appear to have a priority – there is no indication of the evaluation criteria that underpins that priority. For example they could have used the literature or their own cost-effectiveness analysis.

Table 3.1 Priority for change 1: Building ecosystem resilience is the heart of the document. Each row has three sections: **Actions, Results and Responsibilities**. Here I expected costed actions and defined responsibilities that delivered measurable outcomes over precise timeframes. I found nothing of the sort. Further, there is no mention of how these actions were chosen. This is ironic given there is a whole Appendix on prioritization approaches.

1.1.1

1.1.1 Recognise the significance of maintaining and understanding ecological processes, and base the management of Australia's biodiversity on this principle.	Ecological processes are being maintained through biodiversity conservation and management.	All governments, the community and the private sector

Action 1.1.1. is not an action and the emphasis on ecological processes is unsubstantiated. There is no science or economics that says that an ecological process approach to biodiversity conservation is the best approach. I do not know how Result 1.1.1. could be measured. There is no timeframe and no list of processes.

1.1.2

1.1.2 Prepare and implement plans for biodiversity conser vation at all levels (local, regional, state and continental) that maintain ecosystem health and protect threatened and endangered species.	Each level of government is using biodiversity conservation plans and planning processes that: . direct and integrate resource allocation . address the threats to biodiversity . particularly address the potential impacts of climate change, invasive species, habitat loss, fire, population growth, unsustainable natural resource use and marine pollution	All governments

Preparing plans is barely an action. We have hundreds of plans with no costs, no priorities and no timeframes. There has been no evaluation of the effectiveness of previous planning processes – e.g. NRM plans, recovery plans. This action gives no clear guidance for the style of plans we need.

1.1.3

1.1.3 Establish conservation linkages that provide connectivity across bioregions, particularly at a continental scale.	Continental-scale linkages and complementary land uses: . are developed and maintained . support the ability of species and ecosystems to adapt to changing environments . provide a buffer against threatening processes.	Partnerships between all governments, the community and the private sector

There is no evidence yet that conservation linkages deliver the best bang for our buck in terms of biodiversity conservation. The push for linkages needs to be evaluated in the context of trade-offs and decisions about where such linkages would deliver most in the long term. See "Big thinking for a big country Continental-scale connections: Is bigger better? And if so, where do you put them?" http://www.aeda.edu.au/docs/Newsletters/DPoint_26.pdf. Again, a priority that has not been subjected to any rigorous scientific and economic evaluation.

1.1.4

1.1.4 Continue to support, expand and manage the National Reserve System as a foundation for biodiversity conservation.	A comprehensive, adequate, representative and resilient marine and terrestrial protected area system is resourced and managed to optimise biodiversity conservation.	All governments

This is so vague it is useless. It fails to acknowledge the existing lack of funding for parks and in doing so sets no clear path forward. As with all the others – no timeframe, no budget, no result that could be measured. The word "optimise" is used incorrectly.

1.1.5. (off-reserve conservation)

What already exists? When should this be done. How much is allocated to this compared to other priorities?

1.1.6 (ex-situ conservation)
As for 1.1.5. Kew Gardens in the U.K. has a clear time bound target for their ex-situ conservation, why can't we have one?

Objective 1.2 The threats to biodiversity are reduced and managed on a long-term basis		
1.2.1 Set priorities for the management of threats to biodiversity at a range of scales based on an assessment of risk, and develop innovative programs that use emerging technologies and practices.	Investment in national biodiversity priorities is at scales where collective conservation efforts most effectively address risks posed by threats to biodiversity. Governments, industries and communities use innovative solutions and emerging technologies and practices to address and adapt to changes caused by threats to biodiversity.	Partnerships between all governments, the community and the private sector

Is setting priorities an action? This is another motherhood statement. This should be replaced with clear quantitative goals for example (obvious things off the top of my head):

1. No net loss of the extent of native vegetation by region by 2010
2. An increase in the condition of native vegetation by 2015 (from 2010) – this means we would need to asses condition nationally in 2010.
3. Reduction in the extent of key threatening process such as foxes, rabbits, weeds of national significance, …
4. Reduced water extraction from (and/or sediment and nutrient input to) all rivers by 2015. The performance measure could be through direct assessment as defined by the SEQ Healthy Waterways partnership.
5. Quantifiable reduction in threats to Australia's most threatened species. The performance measure would be increased numbers of those species by 2020.

Conclusion

This strategy is as unrecoverable as the *Thylacine*..