

“Our land abounds in nature's gifts of beauty rich and rare”:

A Submission to the Environment and Communications References Committee for inquiry on “The effectiveness of threatened species and ecological communities' protection in Australia”

Preface

This is an individual submission from Dr John Woinarski. My employment for over 30 years has been as a conservation biologist, with specific interest in threatened species. Until 2011, I was the Executive Director of the Biodiversity Conservation division of the Northern Territory's Department of Natural Resources, Environment, the Arts and Sport. I am currently employed as a professor in conservation biology at Charles Darwin University. I served for about 10 years on the Threatened Species Scientific Committee. I was the Northern Territory representative in the group compiling *Australia's Biodiversity Conservation Strategy 2010-2030*. I was part of the working group engaged by the Australian Minister to consider biodiversity conservation issues on Christmas Island, whose focus included the most recent extinction of a threatened species in Australia, that of the Christmas Island Pipistrelle. With Dr Andrew Burbidge and Professor Peter Harrison, I am currently compiling an Action Plan for Australian Mammals, which will provide a comprehensive overview of the conservation status of all Australian native mammals, that component of Australia's biodiversity that has suffered by far the greatest loss since European settlement. I have worked for decades in remote parts of Australia on conservation issues, in collaboration with Indigenous groups, miners, pastoralists and non-government conservation groups; have been responsible for the management of biodiversity on conservation reserves; and substantially involved in the development of environmental policy and legislation.

Introduction

This is a timely and welcome inquiry. Australia's list of threatened species (and ecological communities) rises inexorably. For most taxa on that list, the population size is decreasing¹ (or their conservation status otherwise deteriorating). Notwithstanding the apparent goodwill or rhetoric, this wound is festering.

Environmental degradation is not simply weakly gradational. There are tangible and irrecoverable losses, most notably through extinctions of species. Given the trends of the

¹ The recent compilation of information about the conservation status of all Australian bird species (Garnett *et al.* 2011) provides relevant current figures. In that document, they consider the population trends for 91 (62%) of Australia's threatened bird taxa to be decreasing, 54 (36%) to be stable and only 3 (2%) to be increasing (although there is some element of circularity in that assessment)

majority of species on the threatened species lists, and trends in the size of that list, if we continue with current policies and resourcing, the number of extinctions of Australian species will magnify greatly. This trend may be concealed but further exacerbated because many Australian species (examples include black cockatoos, western swamp tortoise, platypus) are long-lived, have low reproductive output and work to a “slow” life history, such that the consequences of failed policies and threats operating now may be evident only, but unresolvable, in decades to come.

Such loss of the natural values we were bequeathed represents a trashing of intergenerational equity. My descendants will see an Australia environment that is substantially diminished; my descendants will likely blame our generation for that loss, for our profligacy.

Such loss represents a definitional failure of sustainability. We cannot claim to be developing sustainably if an increasing spate of extinctions is a by-product of our enterprise.

Such loss represents a moral stain. Most wildlife species have been in Australia far longer than humans; in many cases, for millions of years. Our moral system should encompass the recognition that other species have a right to exist, or at least that it is immoral for us to cause their extinction, or to fail to take actions that could avert such extinction.

Such loss represents a tangible and auditable failure of current environmental policy, legislation and resourcing. Whereas, 10-20 years ago, some state and Australian governments were resolute in their targeted attempts to protect threatened species, such efforts have now been much diluted, in an apparently doctrinaire push to avoid focus on the ‘losers’. Like the health system, conservation management requires a multilateral approach that includes acute care for emergency cases, preventative measures, education, monitoring and research.

The maintenance of Australia’s biodiversity is not a lost cause. But the opportunities are slipping through our fingers.

Specific comment on Terms of Reference

(a) Management of key threats to listed species and ecological communities

Current legislation offers far more specific protection for threatened species affected by acute locally-circumscribed threats (notably development actions) than for diffuse and insidious threats (such as predation by feral cats or the spread of the water mould *Phytophthora cinnamomi*). Yet, it is the latter that have been the primary drivers of most historic biodiversity decline, and continue to be the drivers of current decline, in Australia. There is clearly a mismatch between problem and provided solution.

The practice of naming under legislation Key Threatening Processes is of limited effectiveness, and the policy framework within which amelioration of those KTPs is addressed is ill-conceived and largely ineffective². Most landscape-scale threats to Australian biodiversity operate now as significantly as they have for generations. There are two major issues to consider: how can broad landscape-scale threats be managed effectively to a level where they no longer cause significant imposts on Australian biodiversity? And, how do we ensure threatened species are conserved until such effective threat management is achieved?

The response to the first question is partly about resourcing, generational-scale (rather than political cycle) strategic planning, and coordination amongst diverse stakeholder groups. There are some noteworthy examples of success. For Australian mammals, the most notable such cases are Western Shield, Southern Ark, Arid Recovery and comparable large-scale, long-term programs aimed at the reduction of feral predators (cats and foxes), through enclosure fencing and/or intensive baiting. These programs demonstrate that it is possible to restore ecosystems and increase the abundance of animal species otherwise facing extinction.

The second question resonates particularly with me, given my particular current location (Christmas Island). Here, successive governments have contributed substantial resources (many million dollars) over at least a 10-year period in a campaign to reduce the abundance of the invasive Yellow Crazy Ant. That campaign is necessary and has had some success, but over the course of, and notwithstanding, this program, two of the Island's five native reptile species have become extinct in the wild³, and the Island's only insectivorous bat has become extinct. This is notable evidence that attention primarily to threats to biodiversity will not necessarily result in the prevention of extinctions, and that instead a broadly-based approach will be far more effective.

(b) Development and implementation of recovery plans;

Recovery plans form the primary foundation for the management of threatened species: they provide important contextual information; they prioritise management responses; they (generally) provide a clear objective and specification of monitoring actions that can measure progress towards that objective; they partition responsibilities; they operate over a tractable time-frame; they provide a mechanism for collaboration and community involvement; they communicate and educate the community about conservation issues; and – on Commonwealth lands and seas – the *EPBC Act* mandates their implementation.

² One notable (relative success) is the *Threat Abatement Plan for the incidental catch (or by-catch) of seabirds during oceanic longline fishing operations*.

³ Smith, M. J., Cogger, H., Tiernan, B., Maple, D., Boland, C., Napier, F., Detto, T., and Smith, P. (2012). An oceanic island reptile community under threat: the decline of reptiles on Christmas Island, Indian Ocean. *Herpetological Conservation and Biology* **7**, 206-218.

Recovery plans have not averted overall biodiversity decline in Australia, and a recent analysis has suggested that they may have limited success (Bottrill *et al.* 2011⁴). However such interpretation is strongly contextual, and it may have been naïve to expect recovery plans for a minority of Australia's threatened species, accompanied by relatively limited funding, and with limited legislative clout, to redress the extensive scale of Australia's ecological dysfunction.

Recovery plans are an important component of Australia's biodiversity conservation efforts, and are far more useful, informative and strategically directive than the currently available alternatives – the limited “conservation advices” stipulated at the most recent revision of the *EPBC Act*, and/or the hope that threatened species management may be picked up or assuaged through other more general conservation management mechanisms, such as often-vague ‘landscape scale’ programs.

Furthermore, some recovery plans have proven to be remarkably effective catalysts for delivering social outcomes in addition to environmental outcomes. The Recovery Plan for the *warru* (Black-footed Rock-wallaby) (Read and Ward 2011) is inspirational in its recognition that in remote (and in this case, Indigenous) Australia, recovery plans aimed at the maintenance of threatened species provides an opportunity for employment, and restoration and showcasing of cultural strength; and that these social and environmental factors may be indissolubly linked.

Where recovery plans have been appropriately funded and implemented, there are many examples that demonstrate their outstanding conservation success, often notwithstanding the parlous previous situation of the threatened species, and the deeply-rooted environmental problems driving the species' decline. Examples of such success include that of the Northern Hairy-nosed Wombat and Gilbert's Potoroo, where implementation of recovery plans has led to population increase; and Chuditch (Western Quoll), Boodie (Burrowing Bettong), Bridled Nailtail Wallaby, Long-footed Potoroo and Western Swamp Tortoise, where implementation of recovery plans has slowed or halted previous precipitous decline.

Nonetheless, there may be substantial scope for improving on the recovery planning process.

(i) In many cases, their compilation has been protracted - almost interminable - rendering the Plans out-of-date when (if) they are finally completed, and leaving a hiatus in management over the long course of their preparation. This problem is either

⁴ This analysis is constrained because it measures success largely in terms of improvements in conservation status categorisation; hence recovery plans that have managed to stabilise previously deteriorating trends are regarded as failures. It is also constrained because it cannot readily resolve the extent to which actions in recovery plans have been adequately implemented and funded (many recovery plans are not implemented due to constrained resourcing and hence are inevitably unsuccessful). It is also constrained because recovery plans have typically been prepared for threatened species in the most dire conservation status, so it is a biased assessment to compare performance for such species against that of species in less dire straits for which no recovery plan has been made. Furthermore, it may be entirely unrealistic to assume that deeply-entrenched threats to threatened species may be resolved over the relatively short life of individual recovery plans (typically 5 years). Biodiversity conservation in Australia is a long-term proposition.

due simply to sub-optimal project management, or (for more complex plans requiring cross-jurisdictional support) to unreasonably long delays in achieving agency or government sign-off, or simply to the plans themselves being unnecessarily detailed and over-elaborate. In some cases, the resources invested in plan compilation suck out an unreasonably high proportion of funding available for conservation management of the species.

(ii) The Plans may be relatively inflexible, lacking the agility to readily cater for, or respond to, new information or unanticipated issues.

(iii) In many cases, the Plans are not set within an adaptive management framework, so cannot readily measure the effectiveness of particular actions, or respond to actions that are shown to be ineffective.

(iv) For some Plans, objectives are unrealistically optimistic, given the deep-rooted environmental problems that have driven the species to endangerment, the limited life-span of Plans and the typically constrained funding that they are dealt.

(v) In many cases, there is no progressive public reporting of the Plan's performance, particularly through regularly-updated accessible information on population trends.

(vi) In many cases, the Plans aren't specific about accountability, responsibility and duty of care: i.e. the Plans do not answer the question - who is accountable if the threatened species continues to decline or becomes extinct?

(vii) Most Plans pay only superficial attention to the chaotic mosaic of other regional, state/territory and national environmental plans, strategies and policies, such that potential fruitful linkages are lost or insecure; or the threatened species recovery plans are largely invisible to management groups operating at different scales or working to broader or tangential outcomes.

(c) **Management of critical habitat across all land tenures**

The Critical Habitat provisions of the *Environment Protection and Biodiversity Conservation Act 1999* have been little invoked, little used, and (hence) ineffective. The main shortcoming in their application is their legislated limitation to Commonwealth lands (and waters), which self-evidently comprise only a very small proportion of the Australian landmass.

Potentially, critical habitat provisions may be useful for the conservation of threatened species in cases where the distribution of the species is very poorly known (and hence protection can be offered to areas within a modelled distribution, even if there are no current records from some of this modelled distribution) and in cases where habitat is suitable for a threatened

species but is currently uninhabited by that species (which may allow for natural expansion for the threatened species or options for reintroduction).

Given the limited application of Critical Habitat provisions under the *EPBC Act*, the critical issue is not so much in the *management* of those areas, but rather in the limited scope of its allowed use, and the low degree of uptake of the provision, even for Commonwealth lands.

(d) Regulatory and funding arrangements at all levels of government

no comment.

(e) Timeliness and risk management within the listings processes

At national level, the list of threatened species and ecological communities is a critical and potent document: to a large degree it determines allocation of conservation funding; it focuses environmental impact assessment processes on a select group of organisms; and its length and dynamism charts trends in the state of Australian biodiversity. However, the current list is notably incomplete, inaccurate and biased.

The flaws are because there is marked sub-optimality in the process for maintaining currency and reliability in the national lists of threatened species and ecological communities. The genesis of the current *EPBC Act* list is from listings collated haphazardly, and with varying (and now dated) qualification criteria, transferred to the *Act* at its inception. Species added to or taken from the inherited (pre-1999⁵) list comprise a small minority of the current list⁶. Since 1999, there has been no comprehensive systematic overhaul of the national threatened species list. Changes to the list occur mostly through limited state partnerships and *ad hoc* nominations by the public, with the number of such nominations considered per year severely restricted.

Serendipitously, the robustness and currency of the *EPBC Act* list was tested recently for Australian bird species. In a thorough expert-driven review, Garnett *et al.* (2011) assessed the current status of all native Australian bird species and subspecies according to IUCN (Red List) criteria. That assessment identified 54 bird species and subspecies that merited listing as threatened but were not listed as threatened under the *EPBC Act*; 22 bird species and subspecies that were listed under the *EPBC Act* that no longer (if ever) merited listing; and 88 bird species that were listed under *EPBC Act* and were found to still merit listing (although only 45 of these were assigned the same conservation status category). This is a pronounced mis-

⁵ And most of those carried through to the *EPBC Act* originated in the *Endangered Species Act* of 1992

⁶ Of the 406 animal taxa currently EPBCA-listed as threatened (excluding Extinct and Conservation Dependent taxa), 256 (63.1%) were brought over in 2000 from previous processes. Of 1300 listed plants (again excluding Extinct taxa), 1084 (83.3%) were brought over in 2000.

match, and strongly indicates that conservation attention is not being directed towards the species most in need of it.

A current project ('The Action Plan for Australian Mammals 2012', by Woinarski, Burbidge and Harrison) is undertaking for mammals the same process as Garnett *et al.* (2011) provided for Australian birds. Preliminary results suggest that the disparity (i.e. imperfections in the *EPBC Act* listings) is even more marked than for birds.

The process underlying these Action Plans (i.e. regular comprehensive overviews of the conservation status of large components of biodiversity, through expert (non-Government) review) provides a manageable and critical mechanism to ensure that threatened species listings are reliable rather than ossified or grossly incomplete. Changes resulting from such comprehensive and systematic overview also provide a tractable and robust measure of trends in the conservation of biodiversity, notably through application of the Red List Index (e.g. Szabo *et al.* 2012).

The Hawke review of the *EPBC Act* recommended the development of a single national list of threatened species, largely through integration of state and territory lists. Such convergence is welcomed, but is not necessarily a major advance, if the existing state and territory lists are inconsistent in their assessment basis, and if these lists also suffer from lack of regular systematic overhaul. Furthermore, that integration process leaves unresolved the best mechanism to deal with the majority of species that occur in more than one jurisdiction.

The reliability, utility and comprehensiveness of threatened species lists are much influenced by the level of information available for species, and the manner in which constraints on that information level is considered. Regrettably, there is relatively little (relevant) information available for most Australian plant and animal species: we know little of their total population size, or the rate of their decline (or increase); in many cases, species remain undiscovered or unnamed. (Such a problem perpetuates a taxonomic bias in threatened species lists to the better-known groups such as birds, mammals and trees: Cardoso *et al.* 2011.) While the *EPBC Act* asserts a commitment to the precautionary principle, the mechanism to apply this principle for the consideration of the threatened status of poorly-known species remains unresolved. In such cases, the onus of proof may be poorly placed, and species threatened with extinction may be ineligible for listing because of neglect, ignorance or lack of interest. The IUCN deals with this situation through the use of a Data Deficient conservation category, and this may have some applicability under national environmental legislation. However, most Australian species may qualify as Data Deficient, which would be an unhelpful outcome. A preferable alternative is that used for "short-range endemics" under Western Australian environmental policy (EPA (WA) 2009; Harvey *et al.* 2011), which offers protection for species thought to have a very small range, and reverses the current onus of proof – i.e. a poorly-known, restricted-range species is protected until and unless it can be proven to be more common or widespread than indicated by the current knowledge base.

Recommendations:

- 1. The national threatened species list should be overhauled at regular intervals, with such overhaul achieved most effectively by a series of rolling systematic reviews of major components of Australian biodiversity (the model being that of the Bird Action Plan, by Garnett *et al.* 2011).**
- 2. As with the IUCN Red List, such threatened species list reviews should be undertaken or coordinated by relevant experts, rather than through government (or inter-governmental) processes.**
- 3. Government processes should facilitate the rapid adoption of Action Plan conclusions into threatened species lists, allowing for timely overhaul of major segments of national (and state) threatened species lists.**
- 4. Through the precision and robustness achievable under systematic review, the size and composition of the national threatened species list should provide a critical indicator of the state of Australia's biodiversity, and that index should be a cornerstone of national social, economic and environmental reporting.**
- 5. Lack of information should not by default preclude potentially threatened species from being listed. The Western Australian process for listing short-range endemics provides an appropriate model for the conservation protection of many poorly-known species; and this model should be extended to and applied under national environmental legislation.**

(f) The historical record of state and territory governments on these matters

no comment

(g) any other related matter.

1. Monitoring.

Population monitoring is a critical component of threatened species management (and indeed on the assessment of eligibility of species to be listed). Monitoring programs provide measurement of management success (or failure), provide an indication of the urgency of management intervention, and comprise a vital integrative mechanism for the process of

adaptive management. But for many threatened species (and ecological communities), monitoring programs, if present at all, may be ad hoc, lack statistical power (and hence cannot reliably detect trends), have no integration across the range of the species, are not linked iteratively with varying experimental management options, focus on activities (e.g. extent of predator baiting or fire management) rather than outcomes (such as population size), occur infrequently and haphazardly, and their results are not reported or interpreted regularly and publicly. Consequently, it is very difficult to assess whether the status of species is improving or deteriorating, and almost impossible to measure the cost-effectiveness of management interventions. Furthermore, there is little consolidation or coordination across species of existing monitoring programs, rendering it difficult to derive regional or broader-scale assessments of change in biodiversity.

WWF's Living Planet Index⁷ provides a model that should be applicable across Australian threatened species. It integrates monitoring data from a wide range of species across very many countries, and derives interpretable trends in biodiversity status at and across a wide range of geographic scales, and for different taxonomic groups, and reports regularly on these trends.

Recommendation:

6. A nationally integrated monitoring program should be established for the majority of Australia's threatened species, and results from this monitoring should be reported regularly through a nationally coordinated scheme, with such reporting constituting an important component of State of the Environment Reports, and with results interpreted at geographical and taxonomic scales as a basis for allocating conservation investment.

2. Accountability: extinctions and inquests

National and state environmental legislations contain some provisions for prosecuting and, if found guilty, penalising landholders, agencies or other bodies for actions that detrimentally affect listed threatened species (and ecological communities), but these provisions are narrowly-based (mostly to actions relating to the destruction of individuals of threatened species and/or their habitat). But this is but a very small step on the path towards environmental responsibility.

Many Australian species have become extinct since European settlement. However, no individual or agency has been held accountable for any of these extinctions. And there has been no inquest or inquiry into any Australian extinction. There are two problems with this situation. One is that without explicit definition and acceptance of duty of care or fiduciary

⁷ http://wwf.panda.org/about_our_earth/all_publications/living_planet_report/living_planet_index/

responsibility of conservation agencies for threatened species (or Ministers), extinctions will continue to happen without accountability (it will always be somebody else's problem) and without penalty: there will be little disincentive to countenance extinction. The other problem is that there will be no formal opportunity to learn from individual extinction events (and hence to reduce the likelihood of future extinctions).

Recommendations:

7. State, Territory and Commonwealth conservation agencies should accept an explicit duty of care for the maintenance of biodiversity, specifically including to attempt to prevent the extinction of threatened species (and ecological communities). In some cases, at least defined components of that duty of care can and should be delegated to landholders (such as in the case of Indigenous Protected Areas) and non-government conservation agencies (particularly those managing conservation reserves). The duty of care should encompass statutory responsibilities, to the extent that appropriate penalties apply when that duty of care has been breached. Extinction is an obvious example of failure in duty of care.

8. An appropriate parliamentary inquiry or coronial inquest should be established following any and every extinction event, designed to identify the factors that contributed to that loss (particularly the policy and/or management shortcomings), and to identify the agencies responsible for such failings. Such inquest should also recommend refinements to management, policy and legislation that serve to reduce the likelihood of future loss.

3. Commitment to the maintenance of biodiversity

South Australia's biodiversity conservation strategy is titled "No species loss ...", an explicit and tightly-focused recognition of the primacy of retention of native species as an overarching goal of conservation management. At international scale, there is a comparable target under the Convention on Biological Diversity, through the *Strategic Plan for Biodiversity 2011-2020 and the Aichi Targets*: "Target 12: By 2020 the extinction of known threatened species has been prevented and their conservation status, particularly of those most in decline, has been improved and sustained."

In contrast, there is no fundamental commitment to the retention of Australia's biodiversity in the principal national legislation, the *Environment Protection and Biodiversity Conservation Act 1999*; or in the principal national biodiversity policy, *Australia's Biodiversity Conservation Strategy 2010-2030* (with none of the 10 targets there relating directly to the retention of native plant and animal species); or in the Constitution (cf. that of nations such as Ecuador and

Palau). Without such a commitment to attempting to maintain all Australian native plant and animal species, extinctions will become increasingly tolerated rather than be recognised as an abdication of responsibility, as a consequence of management failures or as a demonstration of policy shortcomings. It may be impossible to maintain in the medium- to long-term all of Australia's native plant and animal species, but that does not mean that it is futile or unnecessary to position an objective of retention of all native species as the foundation for environmental policy and management in this country.

As evident in the national anthem's "our land abound in nature's gifts of beauty rich and rare", Australia's biodiversity is a national (and global) asset, and consequently we should recognise a national obligation to maintain that asset and pass it on undiminished to future generations.

Recommendations:

9. The forthcoming re-drafting of the *Environment Protection and Biodiversity Conservation Act* should include within its contextualisation, that its purpose includes the maintenance in perpetuity of all Australian native plant and animal species.

10. The foreshadowed 2015 review of *Australia's Biodiversity Conservation Strategy 2010-2030* should be used to remedy its current deficiency of lacking a fundamental commitment to the prevention of extinction, with such change making Australia's strategy more in harmony with that of the Convention on Biodiversity's *Strategic Plan for Biodiversity 2011-2020 and the Aichi Targets*.

11. It is not entirely unreasonable to include in preamble to Australia's constitution some recognition that our nation has claimed an extraordinary natural legacy, for which we should accept responsibility, and that this responsibility should encompass the protection of this inheritance intact for our benefit and that of our descendants.

3. Sustainability

We have been gifted a rich and remarkable heritage. Australia's biodiversity is a fundamental component of our legacy. Inter-generational equity implies that we should bequeath to our descendants as complete a complement of that biodiversity as is possible; else, we are corroding that legacy. It follows then that the maintenance of all Australian native plants and animals should be a core measure and component of our country's sustainability. But the most recently (October 2012) developed expression of the Australian Government's concept of, and commitment to, sustainability (the National Sustainability Council) includes no consideration of biodiversity in its set of >14 indicators⁸ and its Councillors include no biodiversity expertise. It

⁸ <http://www.environment.gov.au/sustainability/measuring/indicators/index.html>

is beyond pretence to define or presume sustainability for our nation if such conception ignores the ongoing loss of our native wildlife.

Recommendations:

12. Trends in biodiversity (particularly including the loss of species, the number of threatened species and/or population trends in a sample of those threatened species) should be an integral core of the definition and measurement of our nation's sustainability. Specifically, this should include representation as a key indicator under the National Sustainability Council.

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⁹ available at

http://www.epa.wa.gov.au/Policies_guidelines/EAGs/guidance/Pages/2953_SamplingofShortRangeEndemicInvertebrateFauna.aspx