

Australia's Biodiversity Conservation Strategy 2010 – 2020

Submission

Prof Richard Kingsford, University of New South Wales

5 June 2009

I was provided with a draft of a submission prepared by Angela Arthington and Jon Nevill, and I discussed issues relating to the strategy with these scientists. I liked much of their work, but I wish to add my own thoughts and emphasis. While reflecting a good deal of the Arthington/Nevill submission, my submission below provides a somewhat different perspective and emphasis, and makes some additional observations.

In particular, I identify nine key issues, with clear recommendations on each issue.

Preamble:

At the United Nations Conference on Environment and Development, in Rio de Janeiro, 1992, most nations endorsed the new *Convention on Biological Diversity* (CBD). The CBD is one of the most highly supported of international environmental agreements, with over 190 signatory nations. Australia is one of these nations, and in 1996, in accordance with the CBD's requirements, all Australian State and Territory governments, as well as the Commonwealth Government, endorsed *The National Strategy for the Conservation of Australia's Biological Diversity*. While in some ways a far-sighted document that has achieved significant advances in biodiversity conservation in Australia, I note that many of the actions proposed in the 1996 strategy have been poorly implemented or not implemented at all over the last 12 years.

The 1996 national strategy is about to be replaced, and a draft strategy, *Australia's Biodiversity Conservation Strategy 2010 – 2020*, has been widely circulated for public comment. The redraft was initiated under the Howard Government, and continued under the Rudd Government. The comment period was extended until June 5, 2009.

This submission is an expression of concern – even alarm – that this critically important opportunity to strengthen and extend the principles and achievements of the 1996 national strategy (Commonwealth of Australia 1996) has not so far produced what I believe would be a visionary and effective new strategy. The draft strategy has critical failings, and is not an effective way to protect Australia's rich biological diversity.

The Earth has entered the sixth global biodiversity extinction crisis – this time the direct result of the growth of the human population and its demands on the planet's resources (Dudgeon et al. 2006; Georges et al. 2003; Likens et al. 2009; Kingsford et al. (in press)). Critically, Australia's biodiversity has declined precipitously in some areas in the intervening twelve year period, and Australia now requires a strong strategy even to halt this decline let alone reverse it. Australia's new biodiversity conservation strategy and action plans must acknowledge the drivers of biodiversity loss and implement a far stronger raft of principles, policies and commitments from all levels of government.

The 2010 – 2020 draft strategy:

The draft strategy is a retreat from earlier national commitments to protect Australia's biodiversity, and a retreat from some of Australia's most important international obligations.

The draft strategy does not acknowledge implementation failures, particularly over the last decade, or seek to remedy them in an effective way. Although the draft policy makes a token commitment to transparency and accountability, in fact the draft's action statements carefully avoid (for the most part) actions which can be readily measured and reported.

There are nine key issues that I have identified in urgent need of changing in the draft strategy.

1. A comprehensive, representative and adequate system of ecologically viable protected areas

The 1996 national strategy clearly stated one of the most important principles of the CBD, a principle which is fundamental to the biodiversity strategies of all nations. Principle 8 (page 6 in the hardcopy version of the 1996 strategy) states:

Central to the conservation of Australia's biological diversity is the establishment of a comprehensive, representative and adequate system of ecologically viable protected areas integrated with the sympathetic management of all other areas, including agricultural and other resource production systems.

Recommendation:

The new draft strategy has retreated from this fundamental principle, removing it from the new list of principles set out on page 8 of the current draft (PDF version). I believe this principle must remain fundamental to Australia's national strategy, and must be explicitly repeated and elaborated.

2. Increasing use of natural resources

Underlying many of the processes which are eroding biodiversity values around the planet are a number of fundamental issues which are certainly difficult to deal with in a national strategy, but which cannot be ignored without undermining the strategy's intellectual base. The growth of the human population, and the acceleration in the use and over-use of natural resources, globally and within Australia, are two such issues.

The new draft entirely ignores these issues.

Recommendations:

- a. A national strategy must at least acknowledge that the ongoing expansion of the planet's human population, and Australia's human population, together with the continuing increase in per-capita use of natural resources, is underwriting the erosion of natural habitats and threatening the survival of the organisms that depend on them.
- b. We are also contributing to climate change, producing damage and loss to our biodiversity, acknowledged by all governments. The new strategy must acknowledge the very serious risks facing Australian and global biodiversity under climate change – including a discussion of time lags created by inertia in the Earth's climate and carbon systems. At present global greenhouse gas emissions are tracking *above* the IPCC's 2001 'worse case' scenario – a sobering and disturbing reality.
- c. Australia has substantial resources of dispersed solar and geothermal energy (not to mention wind, wave and tidal energy) which can be used at additional cost. These costs are small in comparison with impending damage to the Earth's natural habitats and ecological support systems – especially in the ocean (Veron 2008). Australia needs to move more quickly away from carbon-based energy sources, and the urgency of this issue needs greater prominence within the new strategy.

3. Value of biodiversity

The 1996 strategy contained an articulate statement which gained the acceptance of all Australian governments:

There is in the community a view that the conservation of biological diversity also has an ethical basis. We share the Earth with many other life forms that warrant our respect, whether or not they are of benefit to us. Earth belongs to the future as well as the present; no single species or generation can claim it as its own.

Rather than build on this important statement, the current draft has removed it entirely, replacing it with a bland statement that “biodiversity is of value in its own right” (page 8).

The *World Charter for Nature 1982* (like the CBD carrying wide national endorsement including that of Australia) states:

Every form of life is unique, warranting respect regardless of its worth to man, and, to accord other organisms such recognition, man must be guided by a moral code of action.

Recommendation:

The new Australian national strategy should not retreat from such principles, but reiterate and extend them. The strategy should at the very least canvass, if not endorse, the idea that Australians should be setting aside wilderness reserves partly to provide resilient ecosystems (Likens et al. 2009) to support at least a portion of Australia’s wild animals and plants.

4. Quantifiable targets for conservation

One of the most concerning aspects of the new draft is a retreat from quantifiable targets, clear responsibilities for funding, and specific time frames for action and assessment of achievements. Almost all of the action statements proposed by the new draft strategy are so vague that any audit will be impossible. This is a pervasive aspect of the new draft.

We have a major problem here. Australia has many progressive policies which have either been poorly implemented or not implemented at all. Many examples are documented in papers available (see onlyoneplanet.com.au website).

In spite of long-standing commitments to the development of comprehensive, adequate and representative networks of protected areas, many of Australia’s bioregions remain poorly represented in the National Reserve System (NRS) and the national marine protected area system. Decades after Australia signed onto the Ramsar Convention on Wetlands, the nation has no national inventory of wetland ecosystems, and no representative reserve network focused on inland aquatic ecosystems. Only 2% of our rivers (using a proxy of river reach length) have both protected catchments and are free of major in-stream barriers (Stein 2007). Our marine protected area networks are compromised by low levels of protection (zoning) and sometimes poor surveillance (Nevill & Ward in press).

Work on the development of a comprehensive national inventory of inland aquatic ecosystems should be accelerated through additional funding. Such an inventory should ultimately be expanded to include information on both ecosystem condition and conservation status. Native vegetation is in serious decline around the nation, affected by introduced plants, agricultural clearing, climate change, and the extraction of ground and surface waters. Mangrove and other estuarine ecosystems are also in serious decline, both in Australia and globally.

It is essential that existing Australian commitments, contained in national strategies or international agreements to which Australia is a party, be reaffirmed and implementation programs strengthened. Rather than retreat from quantitative targets, these should be reaffirmed.

Recommendations:

- a. Through its commitment to CBD action programs, Australia has agreed to protect “at least 10% of every ecoregion”. This commitment should be expanded in the Australian context to cover major ecosystems rather than ecoregions, with an accompanying commitment to much greater protection levels (where possible) for vulnerable or threatened ecosystems.

- b. The existing Commonwealth target for the protection of remaining native terrestrial ecosystems (at least 30% of remaining ecosystems protected within reserves) should be reaffirmed (Commonwealth of Australia 2001).
- c. The Collaborative Australian Protected Area Database (CAPAD) should be updated and expanded to provide State by State information on the extent and level of protection afforded to all bioregions and subregions – terrestrial, freshwater and marine (including estuarine and subterranean ecosystems, which are often overlooked).
- d. A specific commitment to the development of a comprehensive, adequate and representative protected area network targeted at freshwater wetland ecosystems (i.e. lakes, mound springs, cave systems, streams, rivers, floodplain wetlands, and groundwater-dependent ecosystems) should be clearly stated within the new strategy, accompanied by a timeframe and a discussion of funding and jurisdictional responsibilities.

5. High-value ecosystems

A major problem exists with respect to the links between lists of high-value ecosystems (such as the Directory of Important Wetlands) and planning processes such as (a) the land use planning procedures of local government, and (b) major project approval processes run by State Governments. The way these processes usually work in Australia is that a decision maker must “take account” of the likely effect of a proposed development on the identified natural values (Nevill 2007). Almost inevitably, the effect of a single project on identified values will not be enough to sway the decision maker against a decision which will slowly compromise important natural values, and so the tragedy of the commons (Hardin 1968) and the tyranny of small decisions (Odum 1982) prevail. Cumulative impacts consequently erode and destroy important natural values (and whole ecosystems) over time (Finlayson et al. 2008). Identification of high value ecosystems should trigger planning/approval legislation specifically designed to protect the integrity of these ecosystems from the cumulative effects of ongoing developments. While certainly not solving the issue of erosion of natural values by the cumulative effects of developments, such a change will at least go some way toward protecting those ecosystems listed as containing special values. Such changes should be proposed within the new national strategy.

Recommendations

- a. The new biodiversity strategy should propose a change in project approvals and planning processes at the State level. Where ecosystems are identified as containing high conservation values, legislation must be amended so that planners must be *legally obliged* when making approval decisions not only to take account of development impacts, but also to *seek to protect* the natural values which have been identified. The planning ‘bar’ should be raised as soon as an impacted ecosystem has been identified as containing particularly important values.
- b. There is also a need for better ways to identify ecosystems of high priority for protection. I note that there is no national approach for the identification of priority rankings for all ecosystem types, and recommend a review or workshop to address this deficiency.

6. Management of environmental flows

Australia has made commitments to the provision of environmental flows for the protection and restoration of aquatic ecosystems, including groundwater dependent ecosystems (ARMCANZ 1996). Progress in providing environmental flows has been slow and typically, unsatisfactory, especially in regard to groundwater dependent ecosystems (Nevill 2008) and estuaries. Commitment to the principles established in 1996 should be reaffirmed and environmental flow implementation programs strengthened especially in drought affected areas of Australia (Arthington et al. 2006; Bond et al. 2008).

The waters of the Murray-Darling Basin have been over-allocated for consumptive use, and the integrated management of ground and surface waters has not yet been widely applied, in spite of government commitments now over a decade old (Nevill 2009). A reporting framework should be established which would highlight successes, failures and innovations. At the wetland level implementation of adaptive environmental management is essential, where information on the effects of increased flows allow for improving environmental management. It is also important to educate the public about the importance of natural flow variability (Bunn and Arthington 2002) and strategies for sustainable water management.

Recommendation:

I support the recent Commonwealth initiative to purchase and allocate water to stressed wetlands throughout the Murray-Darling Basin and recommend implementation of adaptive environmental management for the delivery of environmental flows. The new strategy must re-affirm the commitments made in 1996 for the provision of these flows to all affected ecosystems.

7. Marine Protected areas

In the marine realm, Australia has committed (again through the CBD program) to establish (by 2012) and maintain a network of marine and coastal protected areas that are representative, effectively managed, ecologically based, consistent with international law, based on scientific information, and including a range of levels of protection.

Australia has no existing national target with respect to the extent and level of protection of its marine reserve network, although the 10% figure (above) sets a minimum baseline.

Recommendations:

- a. The Australian Marine Science Association (AMSA 2008) has recommended that Australia should establish a target of at least 10% of all major marine ecosystems under the highest level of protection (no-take), with greater levels of protection for rare or threatened ecosystems. This target should be adopted and promoted by the new Australian biodiversity strategy, and the network of protected areas should be expanded to cover all coastal ecosystems.

8. Overfishing

The Bureau of Rural Sciences (BRS) currently reports annually on the 'fishing status' of Commonwealth fisheries. A major problem exists in that the definition of 'overfished' used by the BRS is based on outdated concepts of single-stock maximum sustainable yield. This definition is in direct conflict with Australia's obligations (under the CBD) to apply the ecosystem approach to natural resource management. A fishery which meets the BRS definition of 'not overfished' may reduce a fish population to around 20% of its unfished level, with serious impacts on natural ecosystem food chains.

Destructive fishing practices, such as bottom trawling over vulnerable habitats, and gill-netting and prawn trawling with very high bycatch levels, persist under the fishery management regimes of Australian jurisdictions. Through the Johannesburg Implementation Statement 2002, Australia has committed to phase out destructive fishing practices by 2012.

Recommendations:

- a. A new definition of overfishing, compatible with Australia's responsibilities to protect natural marine ecosystems, is needed, and the new strategy should commit to its development.
- b. The new biodiversity strategy should reaffirm the commitment not to overfish and propose an implementation program, based on an ecological definition of overfishing.
- c. The new strategy needs to also commit to the application of the precautionary and ecosystem approaches to the management of recreational fisheries.

- d. Australia needs to implement its commitment to phase out destructive fishing practices, and the new strategy needs to foreshadow a planning process focused on the 2012 United Nations deadline.

9. Implementation

Implementation programs need to be strengthened by specific funding commitments. These are not well articulated in the strategy. Where such commitments should appear in the draft strategy (“Getting Results” – section 3.2.4, for example) their place is taken by vague and general ‘motherhood’ statements, such as: “4.1.1 negotiate government agreements to align investment on priority issues” or “4.4.1 cause industry to adopt innovative management and self-regulatory systems that will help conserve biodiversity”.

Recommendation:

There needs to be a clear commitment to funding the initiatives in the strategy. Tri-annual audits of performance need to be undertaken in collaboration with the States. These audits will not be possible unless the strategy incorporates clear targets, responsibilities and timeframes.

Closing comments:

The proposed draft biodiversity strategy, far from representing a step forward, appears to take several steps backwards, at a time when Australia’s biodiversity is under increasing threat. The strategy needs to be revised and strengthened to protect the nation’s biodiversity over the coming decade. It could be far more effective if (a) important key principles from the 1996 strategy are reiterated and strengthened, (b) clear and accountable biodiversity targets and timeframes are established, and (c) existing implementation failures are recognised and deficiencies are addressed.

In particular, I draw attention to the Australia’s failure to establish a representative reserve network focused on inland aquatic ecosystems (Kingsford & Nevill 2006). Australia also lacks comprehensive protection of representative estuarine ecosystems, and subterranean ecosystems have, overall, almost no effective protection. These deficiencies present a major threat to the freshwater and estuarine ecosystems of Australia under the present climatic regime and into the future as our climate changes across much of the nation.

References:

- AMSA Australian Marine Science Association (2008) *Position statement on marine protected areas*, AMSA, viewed 13 January 2009, <<http://www.amsa.asn.au/>>.
- Arthington, A.H. and B.J. Pusey (2003) ‘Flow restoration and protection in Australian rivers’. *River Research and Applications* 19 (5-6): 377-395.
- Arthington, Angela H., Stuart E. Bunn, N. LeRoy Poff, Robert J. Naiman (2006) ‘The challenge of providing environmental flow rules to sustain river ecosystems’. *Ecological Applications* 16 (4): 1311-1318.
- ARMCANZ Agriculture and Resource Management Council of Australia and New Zealand (1996) *National principles for the provision of water for ecosystems*, Standing Committee on Agriculture and Resource Management, Canberra.
- Australian Nature Conservation Agency (1996) *Directory of important wetlands in Australia*; second edition; Australian Nature Conservation Agency; Canberra Australia.
- Bond, N.R., P.S. Lake, A.H. Arthington (2008) ‘The impacts of drought on freshwater ecosystems: an Australian perspective’. *Hydrobiologia* 600 (1): 3-16.
- Bunn, S.E. and A. H. Arthington (2002) ‘Basic principles and consequences of altered hydrological regimes for aquatic biodiversity’. *Environmental Management* 30: 492-507.

- Commonwealth of Australia (1996) *National strategy for the conservation of Australia's biological diversity*, Department of the Environment and Heritage, Canberra.
- Commonwealth of Australia (2001) National objectives and targets for biodiversity conservation 2001-2005. DEH website accessed 22/11/04 www.deh.gov.au.
- Commonwealth of Australia (2009) *Australia's biodiversity conservation strategy 2010-2020: consultation draft*, DEWHA Department of Water, Heritage and the Arts, Australia, Canberra.
- Dudgeon, D., Arthington, A.H., Gessner, M.O., Kawabata, Z., Knowler, D., Lévêque, C., Naiman, R.J., Prieur-Richard, A.-H., Soto, D. & Stiassny, M.L.J. (2006) 'Freshwater biodiversity: importance, threats, status, and conservation challenges'. *Biological Reviews* 81 (2): 163-182.
- Finlayson, B, Nevill, J & Ladson, A (2008) 'Cumulative impacts in water resource development', paper presented to the Water Down Under Conference, Adelaide April 14-18, 2008.
- Georges, A., A.H. Arthington and P, Horwitz (2003) 'Freshwater Biodiversity in Australia', Preface. *Aquatic Ecosystem Health & Management* (Special Issue) 6 (1): 3-4.
- Hardin, G (1968) 'The tragedy of the commons.' *Science*, 162: 1243-8.
- Kingsford, R & Nevill, J (2006) 'Urgent need for a systematic expansion of freshwater protected areas in Australia: a scientists consensus statement', *Pacific Conservation Biology*, vol. 12, no. 1, pp. 7-14.
- Kingsford, R.T., J.E.M. Watson, C.J.Lundquist, O. Venter, L. Hughes, E.L. Johnston, J. Atherton, M. Gawel, D.A. Keith, B.G. Mackey, C. Morley, H.P. Possingham, B. Raynor, H.F. Recher, and K.A. Wilson. (in press). Major conservation policy issues in Oceania. *Conservation Biology*
- Likens, G.E., Walker, K.F., Davies, P.E., Brookes, J., Olley, J., Young, W.J., Thoms, M.C., Lake, P. S., Gawne, B., Davis, J., Arthington, A.H., Thompson, R., Oliver, R.L. (2009) 'Ecosystem science: toward a new paradigm for managing Australia's inland aquatic ecosystems'. *Marine and Freshwater Research* 60 (3): 271-279. Kingsford, R.T., Watson, J.E.M, Lundquist, C. J., Venter, O., Hughes, L., Johnston, E.L., Atherton, J., Gawel, M., Keith, D.A., Mackey, B.G., Morley, C., Possingham, H.P, Raynor, B.,^o, Recher, H. F., Wilson, K.A. (in press). Major conservation policy issues for biodiversity in Oceania. *Conservation Biology*
- Nevill, J & Ward, T (in press) The National Representative System of Marine Protected Areas: comment on recent progress. *Ecological Management and Restoration*.
- Nevill, J (2007) 'Policy failure: Australian freshwater protected area networks', *Australian Journal of Environmental Management*, 14 (1): 35-47.
- Nevill, J (2008) 'Comment on recent progress in water-balance planning and the supply of environmental flows to ground water-dependent ecosystems', *Ecological Management and Restoration*, 9 (2): 145-8.
- Nevill, J (2009) 'Managing cumulative impacts: groundwater reform in the Murray-Darling Basin, Australia', *Water Resources Management*, vol. available online May 2009.
- Odum, W (1982) 'Environmental degradation and the tyranny of small decisions.' *BioScience*, 32 (9): 728-9.
- Stein, J (2007) 'A continental landscape framework for systematic conservation planning for Australian rivers and streams', PhD thesis, Australian National University.
- Veron, JEN (2008) *A reef in time: the Great Barrier Reef from beginning to end*, Belknap Press, New York.