



International Fund for Animal Welfare

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## IFAW submission – Biodiversity Legislation Review

Submitted electronically to [biodiversity.legislationreview@environment.nsw.gov.au](mailto:biodiversity.legislationreview@environment.nsw.gov.au) 5 September 2014

### Introduction

The International Fund for Animal Welfare (IFAW) is one of the leading international animal welfare and conservation organisations working to save animals in crisis around the world. We rescue and care for individual animals and deliver effective solutions for the long-term protection of animal populations and habitats. Our work connects animal welfare and conservation, demonstrating that healthy populations, naturally sustaining habitats and the welfare of individual animals are inextricably intertwined.

In Australia, our focus includes marine conservation and whale protection, native wildlife protection and preventing illegal trade in wildlife.

Australia is considered one of the world's top 17 mega diverse nations (one of only two developed countries on the list - the other being the USA), with ten percent of the world's known species and ten percent of the world's threatened species<sup>1</sup>.

Eighty percent of Australia's mammal species are endemic<sup>ii</sup> and represent some of the world's most iconic animals, including the kangaroo, Tasmanian devil, quoll, wombat and the koala. With this endemism comes a huge responsibility to protect and conserve these species and the ecosystem services they provide for future generations.

Unfortunately Australia is showing little sign of being able to shake the shame of having one of the worst records for the rate of mammal extinctions of any country or continent in the world.

IFAW welcomes this much-needed review of biodiversity legislation as immediate and urgent action is required to address Australia's biodiversity crisis. However, if the Government is serious about protecting high value conservation land, native vegetation and biodiversity, then it must maintain and strengthen our existing laws, rather than dilute them.

This submission does not attempt to address all of the ToR and Issues Paper but rather focus on those aspects in which we have some experience and interest:

### **Theme 1 – Objects and principles for biodiversity conservation action.**

#### **Question 1 (Should there be an aspirational goal for biodiversity conservation?)**

As a signatory to the Convention for the Conservation of Biological Diversity (CBD), Australia has committed to playing its part in achieving the goals and targets for the conservation of the world's biodiversity as agreed by the international community. In order for Australia to meet these commitments, it is vital that legislation and policy is taking place at a national, state and local level, and is focused ultimately on achieving the same end goal. IFAW supports there being an aspirational goal for biodiversity conservation for NSW and would suggest the Commonwealth Government's definition of Ecologically Sustainable Development in Australia as a starting point:

*'using, conserving and enhancing the community's resources so that ecological processes, on which life depends, are maintained, and the total quality of life, now and in the future, can be increased'<sup>iii</sup>.*

**Question 2 (Given available evidence about the value and state of the environment, are the existing legislative objects still valid? Do the current objects align with international and national frameworks, agreements, laws, obligations? If not, what objects are required? )**

In addition to current legislative objectives, IFAW believes the lack of compassion for individual animals when decisions of conservation practice and policy are taken to be a major shortfall of threatened species recovery efforts in Australia. In most cases where there is a conservation objective, the focus of species wellbeing is often purely placed on preventing the extinction of the species as a whole, while the welfare of, and harm caused to, individuals and their social groupings is often given minimal consideration or forgotten altogether.

IFAW would encourage greater consideration being given to the wellbeing of individual animals in the practical application of legislative and policy development and protection measures. One solution is to incorporate a growing international concept termed 'compassionate conservation', which seeks to protect captive and wild animals as individuals in recognition of the value and contribution of individuals to the conservation and wellbeing of a species as a whole.

Further detail on the compassionate conservation concept is provided under Theme 5 of this submission.

**Question 3 (To what extent are the current objects being met?)**

The natural environment of NSW has been severely altered over the past two centuries as a direct result of land clearing, development and the exploitation of natural resources, the introduction and spread of invasive species and the increased frequency and extent of fire events. Based on the latest NSW State of the Environment Report (2012)<sup>iv</sup>:

- *The overall diversity and richness of native species in NSW remain under threat with another 35 species listed as threatened under NSW legislation since 2009, while the number of listed populations and ecological communities under threat has also increased.*
- *Habitat destruction, including clearing, and invasive species are the greatest threats to biodiversity in NSW.*
- *Many invasive pest and weed species are now widespread across NSW and have a major impact on native species, while fungal diseases are a growing threat.*
- *Over half the listed key threatening processes in NSW relate to invasive species, while pests and weeds have been identified as a threat to more than 70% of the state's threatened species.*
- *The clearing of native vegetation has stabilised in NSW over the past six years but the condition of most vegetation has deteriorated.*
- *The terrestrial reserve system now covers 8.8% of NSW and a higher percentage of bioregions and vegetation classes are represented in reserves than ever before. This system is increasingly being supplemented by off-reserve conservation across other land tenures.*
- *The incidence and extent of fires vary from year to year and are strongly related to adverse weather conditions. The levels of hazard reduction burning and remote area fire suppression across NSW have risen sharply over the past three years as new fire management techniques are implemented.*

The Native Vegetation Act 2003 has played a vital role in reducing the loss of native vegetation across NSW, while the Threatened Species Conservation Act 1995 has been crucial in identifying species at risk of extinction and the key threats to the recovery of threatened species and ecological communities. However, the subsequent recovery of threatened species and the conservation of critical habitat continues to fall well behind what is required to ensure the conservation of biodiversity and achievement of ecologically sustainable development.

## **Funding**

The current level of funding available for species protection is woefully inadequate and well below appropriate international comparisons. There is a need for increased and sustained long-term funding towards threatened species conservation to enable the development, implementation and effective delivery of research and monitoring programs, and recovery plan actions, along with incentive programs for private landowners.

A recent study<sup>v</sup> into global biodiversity conservation spending from 2001-2008 found Australia to be one of the most highly underfunded countries for biodiversity conservation, ranking 38<sup>th</sup> in the list of 40 countries (between Sri Lanka and China), which contain 32 percent of the world's threatened mammalian diversity, and being one of only a handful of developed nations included on the list. The funding shortfall is estimated as \$275 million.

IFAW acknowledges that this figure is derived from a model which estimates how much an “average country” of Australia's size, biodiversity and level of development would spend on biodiversity conservation and therefore a reflection of the unique challenges Australia is faced with including the continent's size, high costs and extremely high degree of species endemism<sup>vi</sup>. It is nevertheless disappointing to see Australia included on this list. The 2013 Senate Committee Review also highlighted a number of issues relating to a lack of funding as an impediment to achieving required research and monitoring of threatened species and effectively implementing recovery plans and successful conservation actions<sup>vii</sup>.

There is a real need for significantly increased and sustained Government funding for threatened species recovery and conservation efforts. This is critical to Australia meeting its CBD commitments, achieving the goals of the National Strategy for Biodiversity Conservation 2010-2030, and ensuring the protection of Australia's native wildlife long into the future. With competition for vital resources high it is crucial that Government, Non-Government Organisations and private funding is strategically aligned to ensure the greatest value for the conservation dollar, and the greatest chance of recovering species from potential extinction.

The cost of not acting to reverse the current threats facing Australia's native mammals and other wildlife will leave untold damage with species extinctions and loss of critical ecosystem functions. It will also have an impact on Australia's valuable nature-based tourism revenue<sup>viii</sup>, valued at \$14.2 Billion for international tourists alone, and ultimately leave a black mark on Australia's international reputation.

There is a need for a national discussion to take place to reassess exactly what levels of funding are required to ensure we are adequately safeguarding our biodiversity for the future. IFAW would like to see a significantly increased investment in conserving our species, across all levels of government, not just the identified priority species but our bio-diversity as a whole. This rich bio-diversity is part of the fabric of this country and we all have a duty to preserve it for future generations. In a nation as affluent as ours this should not be unrealistic.

## **Theme 3: Conservation in land use planning**

### **Question 1 (How effective are current arrangements at ensuring biodiversity values are identified early and properly considered in strategic planning systems? How can they be improved? )**

IFAW is of the view that the current barriers to effective wildlife and nature protection in Australia are systemic and entrenched due to a number of factors including our current pattern of land development and our federal political system. The prospects for effective conservation and protection of many species are not good. This applies to those currently listed as requiring protection but also to many others which would either merit listing if population data were available or for whom listing is simply a question of time.

A change in thinking is required and a shift to landscape level planning would be a critical element in stronger more complementary measures. This would need to include consideration of connectivity between sites and of land tenure.

IFAW believes that current arrangements are not as effective as they should be. A recent case study is the approval a few months ago by the NSW Government of Stage 10 of the Pacific Highway upgrade. The approval

was given despite evidence that it will bisect a nationally-significant koala colony. IFAW intervened on this issue this year to support the years of work undertaken by local groups and scientists including Friends of the Koala and koala ecologist Dr Stephen Phillips. Robust population modelling data was presented that demonstrated that, if Stage 10 went ahead, it would bring about a local extinction of the koala population by 2035.

NSW koalas are listed as a vulnerable species under the EPBC Act but this listing appeared to hold little weight in the strategic planning of this route. Nor did public opinion. Over 50,000 people registered their opposition to the proposed route with NSW Government and Minister Hunt. There was very little public consultation and any opposition was pretty much ignored, including a strenuous opposition by the local indigenous people who lodged Aboriginal Cultural Heritage objection with NSW Government relating to the impact of the proposed route on the Ngunya Jargoon IPA. To date the Numbahging Elders and Native Title Claimants have had no reply to their correspondence.

Alternative, cost-effective routes were available that would not have such a devastating impact on koalas. IFAW views this strategic approach as flawed and failing to take into account the actual and intangible 'cost' to tourism, biodiversity and future generations of the loss of this keystone koala population compared to the relatively small amount of compensation that will be due to property holders associated with the alternative routes. You cannot compensate for loss of biodiversity for future generations – we should therefore prioritise its protection.

## **Theme 5 – Wildlife Management**

### **Question 1 (Have the threats to biodiversity posed by: (a) people taking animals and plants from the wild, (b) feral animals and weeds, and (c) illegally imported species, been effectively managed? )**

The devastating impact feral cats and other invasive species have on native wildlife needs addressing urgently. It is a complex situation and we accept there is no silver bullet and no easy win. In light of this we would encourage a long-term holistic approach that considers other methods of control than simple culling which, in our experience, rarely works as a conservation measure. Numbers will repeatedly recover from this type of intervention and culling will only result in mass slaughter again and again.

IFAW has serious concerns over current methods of controlling invasive species. It is an expensive process with limited success (an estimated \$10-20 million is spent annually). Many approaches also have serious welfare concerns. 'Pest' species are routinely shot, trapped, poisoned, sterilised, their burrows destroyed with heavy machinery, fumigation and explosives, all in the name of conservation. Most of these methods have questionable effectiveness and all have serious animal welfare implications. Baits like 1080 is proven to have a negative impact on native wildlife and often make matters worse with evidence of native species, including dingoes, which otherwise control introduced predators, also eating the bait. By wiping out these predators, foxes and cat numbers inevitably increase.

We admit we don't have a simple solution to this critical problem that we as humans have created. However, IFAW feels strongly that we have a duty to ensure a compassionate and humane treatment of all animals including 'pest' species. What we would like to see is a holistic dialogue with all stakeholders which considers and weighs up all aspects of this issue in an attempt to come to the most humane, innovative and effective solutions. We would like to see the protection and re-introduction of an apex predator like the dingo considered as a possible natural, effective and ethical alternative in some areas. Dingoes could potentially offer an efficient and more compassionate method of population control.

We need to accept that we will never completely 'solve' the problem of invasive species albeit on some islands. We need to learn to live with them and manage them in the most cost-effective sustainable and ethical way possible. IFAW would welcome the chance to be part of this dialogue.

**Question 2 (Has the NPW Act and the supporting policy framework led to a positive change in the welfare of native animals (captive and free-living)? What role if any should the government have in ensuring the welfare of individual native animals – particularly where there are already stand-alone welfare laws such as the Prevention of Cruelty to Animals Act 1979? )**

IFAW believes the NPW Act doesn't deal effectively enough with protecting native animals. NSW is lucky to have a wide network of licensed wildlife rescuers and groups who take on the huge issue of rescuing, rehabilitating and releasing injured and diseased native animals. IFAW has a long history of supporting these groups and the NSW Wildlife Council (NWC) and cannot overestimate the critically important role they play caring for our wildlife. These voluntary rescue groups are often completely self-funded and in effect provide a fourth emergency community service. It is hard to put a value on this service, although research is currently being undertaken by Sydney University to demonstrate the value of voluntary rescue and veterinary care for native wildlife. IFAW encourages increased recognition and engagement with wildlife rescue groups and the NSW as they represent a valuable and broad source of expertise and knowledge.

***Compassionate Conservation***

As an international animal welfare and conservation organisation IFAW views the conservation of species and the welfare of individual species as intertwined – with healthy populations, naturally sustaining habitats and the welfare of individual animals being interdependent.

IFAW would like to see the development of conservation legislation and policy that incorporates the objective of preventing the extinction of a species, whilst also considering the wellbeing of individual animals in the practical application of protection measures. One solution is represented by what has been termed 'compassionate conservation', a rapidly growing international concept that seeks to protect captive and wild animals as individuals, recognising the value and contribution of individuals to the species as a whole. With a guiding principle of "first do no harm", compassionate conservation offers an opportunity to start the discussion and address issues that often arise as a result of humans and animals sharing the same, and at times limited, space.

On an international level, Australia has led the way in championing the welfare of individual animals as part of the anti-whaling cause. What started as a conservation issue focusing on the protection of the world's threatened whale species, now incorporates welfare aspects to further the evidence to end scientific whaling. This is just one example where knowing the welfare impacts on individual animals has helped to strengthen the larger conservation objective.

IFAW believes the lack of compassion for individual animals when decisions of conservation practice and policy are taken to be a major shortfall of threatened species recovery efforts in Australia. In most cases where there is a conservation objective, the focus of species wellbeing is often purely placed on preventing the extinction of the species as a whole, while the welfare of, and harm caused to, individuals and their social groupings is often given minimal consideration or forgotten altogether.

Harm to animals is more than just the extinction of a species and the subsequent decline of biodiversity. Harm can encompass the suffering experienced by individuals and the associated costs experienced by the populations to which they contribute. While many of the harms are the result of global conservation problems such as climate change, habitat loss and pollution, there are also many that occur as the result of proactive species conservation measures, for example, captive breeding programs (where ex-situ release is the ultimate aim), feral animal control, culling programs and translocations.

IFAW believes that a preventative approach to conserving Australia's wildlife and biodiversity, one that includes the integration of the concept of compassionate conservation, is needed to avoid the high cost – financial and ecological – of not acting sooner.

### **Question 3 (Are the provisions for marine mammals effective?)**

The legislation and regulations for marine mammals are comprehensive and up to date. IFAW recommends that any review of the legislation should take particular care to maintain the level of protection for marine mammals that is currently provided for in the Act and Regulations.

However, legislation, no matter how comprehensive and detailed, is only effective when it is enforced. IFAW is concerned that this legislation has not been enforced in a rigorous and systematic way.

There have been numerous reports, in media, from the public and from commercial whale watchers regarding inappropriate behaviour around marine mammals by recreational boats and individuals swimming in the water. Many of these reports reflect behaviour that is in fact illegal under the legislation and regulations (e.g. approaching animals closer than regulated approach distances, disturbing, touching and harassing animals etc.).

The legislation needs to be enforced in a consistent and systematic manner to protect both the marine mammals as well as public safety. Enforcement initiatives should be preceded/accompanied by a suitably targeted information exercise to raise public awareness of the regulations and how to avoid committing offences. However, as has been seen by other jurisdictions that have taken enforcement actions, the resulting fines or court cases are often the most effective means of public awareness so this is a further reason to enforce the legislation properly. Enforcement of course requires necessary resources for parks and wildlife staff to undertake this work.

### **Question 4 (Is the current framework for wildlife licensing, offences and defences, including those applying to threatened species, easily understood? Is the current licensing system too complex? How can it be improved and simplified to focus on conservation outcomes? )**

IFAW believes NPWS should be sufficiently resourced to properly educate the public about wildlife protections and licensing arrangements, to monitor compliance and to prosecute breaches more effectively. In our experience, members of the general public do not usually understand that wildlife groups operate under a licence and are accountable to OEH. Nor does the public always understand that the service is entirely voluntary and receives no government funding.

We would also like to highlight that the data collected by the licensed wildlife rehabilitation network has significant potential for contributing to conservation and welfare outcomes and should be utilised to inform future policy and action.

## **Theme 6 – Information and Data**

### **Question 1 (What information should be generated about the different kinds of value (for example, monetary and intrinsic value) of biodiversity and other natural assets in NSW?)**

Any information that can be generated to highlight the intrinsic value of biodiversity and natural assets would be beneficial. In Australia we are incredibly fortunate to live in such a biodiverse country with many endemic species and access to unspoilt nature. However, often as a consequence of the size of our country, many Australians take it for granted that these natural assets will always be readily available to us, even in more populated states like NSW. But once it's gone, it's gone and we can't compensate for loss of biodiversity. Therefore we need increased public education about the high intrinsic value of biodiversity in Australia and just how lucky we are to be one of the most biodiverse nations in the world. While there is value in sometimes illustrating the economic value of these natural assets, for example the benefits of wildlife watching tourism, and national park visits, IFAW would caution against an approach that seeks to only put monetary value on biodiversity and wildlife – this risks reducing these unique and irreplaceable assets to just commodities that can be bought or sold or 'balanced' against other economic goods and services.

**Question 2 (What type, quality and frequency of data should be collected about biodiversity? Who should be responsible for such a system? ) and Question 3 (Is current data about biodiversity highly credible and readily accessible? If not, how can quality and access be improved? )**

There is a dire lack of available data and population monitoring available for many species – both terrestrial and marine.

The authors of the recent CSIRO Action Plan for Australian Mammals highlight the lack of available data to be a major hindrance to species conservation “with only threadbare information available for some species, particularly the less charismatic terrestrial species occurring in more remote areas, and very many marine species, particularly smaller cetaceans occurring in oceanic waters. Such ignorance severely compromises the ability to deliver effective conservation management. Although there is some monitoring undertaken for many threatened mammal species, there are few robust monitoring programs that sample broadly across a species’ range and can measure responses to management inputs: and little of the available monitoring information is readily accessible. Without a more strategic, systematic comprehensive and long-lasting series of monitoring programs, it will remain difficult to chart progress in response to conservation efforts.”<sup>ix</sup>

There is also an urgent need to address the data deficient status of the many species which makes them ineligible for listing under state and/or federal legislation.

It is important to note however that even the most sophisticated of species monitoring programs providing population data and trends will do little to improve a threatened species conservation status in isolation. An article for the Journal *Frontiers in Ecology and the Environment* recently noted the issues of population monitoring programs, highlighting the problem with programs tracking trends in a species population without any clear plan of action for what needs to be done if changes are observed, or collecting information about the species that is not useful as a means of driving effective change in the species conservation status. It stressed that while effective species conservation relies heavily on the effective implementation of monitoring programs, there are cases where threatened species are being ‘*monitored until they go extinct*’ concluding that: ‘*Conservation monitoring programs and management plans should identify trigger points for pre-specified management intervention*’<sup>x</sup>.

**Question 4 (How effective is the threatened species listing process (including the listing of key threatening processes) in guiding subsequent conservation action?)**

IFAW recognises the importance of addressing urgently the plight of critically threatened species and understands that, with limited resources, there has to be some level of prioritisation amongst the 1700 species listed nationally as requiring some level of protection. However, we believe that population numbers should not be the only criteria for determining these priorities. We would like to see a broader, more holistic approach taken to priority setting that takes into account among other things: the cost benefit analysis of actions that can have benefits for more than one species; a threat-based rather than species-based prioritisation; targeting of key cornerstone species, those experiencing the sharpest declines and targeting of efforts explicitly to maximise potential for timely replicability of success across species and regions.

In addition to identifying priority threatened species for which conservation actions are likely to be successful, IFAW would like to see a focus on prevention as well as cure. The focus should not only be on those species already considered threatened but also look at identifying and implementing robust preventative measures to protect those species that are not currently threatened and apparently abundant in order to ensure their long-term protection. It is more economically viable and effective to implement these measures now rather than waiting until the situation is critical. To some extent this could be achieved by greater emphasis on addressing threats that affect multiple species through greater use of threat abatement plans. Despite the fact that there are a great many key threatening processes currently listed under NSW legislation, there are very few threat abatement plans to address these.

**Question 5 (Should threatened species listing decisions be decoupled from decisions on conservation actions (including recovery planning) and regulatory processes?)**

IFAW would like to see a complete reform of the statutory recovery plan process on a state and national basis, especially given the backlog of recovery plans already in the system still waiting to be drafted or finalised, and those requiring review.

While more than 1700 flora and fauna species are currently recognized by Australia's National list of threatened species as requiring some level of protection, management and recovery assistance<sup>xi</sup>, a 2013 Senate Committee report into the '*Effectiveness of threatened species and ecological communities protection in Australia*' found that recovery planning on the whole is largely failing due to slow development of recovery plans; a lack of funding available for the development and effective implementation of recovery plans; and inadequate monitoring and evaluation of recovery planning<sup>xii</sup>. This latter point is further evidenced by the fact that the saltwater crocodile is the only vertebrate species to have improved its' conservation status to the point where it has been removed from the threatened species list<sup>xiii</sup>.

IFAW believes this reform should include the establishment and management of a harmonised national list of threatened species and ecological communities, with the States and Territories working in collaboration with the Commonwealth Government. This list needs to be regularly updated to help minimise barriers to conservation and achieve strategic outcomes for species conservation. IFAW would also like to see a review of the listing criteria.

There also needs to be a fast-track mechanism available for cases where, through recovery efforts, it is identified that a listed species is in further decline and immediate emergency action can be taken. As well as making reforms to the recovery plan process IFAW would like to see significantly-increased funding injected effectively into the reformed process.

IFAW recognises the importance of addressing urgently the plight of critically threatened species and understands that, with limited resources, there has to be some level of prioritisation amongst the 1700 species listed nationally as requiring some level of protection. However, we believe that population numbers should not be the only criteria for determining these priorities. We would like to see a broader, more holistic approach taken to priority setting that takes into account among other things: the cost benefit analysis of actions that can have benefits for more than one species; a threat-based rather than species-based prioritisation; targeting of key cornerstone species, those experiencing the sharpest declines and targeting of efforts explicitly to maximise potential for timely replicability of success across species and regions.

In addressing threatened species, IFAW would like to see a focus on prevention as well as cure. The focus should not only be on those species already considered threatened but also look at identifying and implementing robust preventative measures to protect those species that are not currently threatened and apparently abundant in order to ensure their long-term protection. It is more economically viable and effective to implement these measures now rather than waiting until the situation is critical.

**Question 6 (To what extent, if any, does having national and state lists of threatened species cause confusion, regulatory burden or duplication of conservation effort? How could national and state lists be rationalised? )**

IFAW supports calls for the Federal, State and Territory Governments to create and manage a single National list of Threatened Species and Ecological Communities, to help minimise barriers to conservation, reduce time consuming and unnecessary duplication of effort and limited resources, and achieve strategic outcomes for species conservation.

Many of Australia's threatened species are found in more than one jurisdiction and, as a result, are listed on numerous statutory and other priority lists with varying degrees of action being taken to effect species recovery and conservation. In order to secure the protection of Australia's threatened species, a strong coordinated effort is vital. The creation and long term management of a National list of Threatened Species and Ecological Communities will assist policy makers and those involved in the development and practical application of threatened species conservation programs to do so in a coordinated and strategic manner, taking into account



the overall picture of a species, and minimising duplication of effort and wasting of valuable and finite resources.

**Question 7 (To what extent is the identification of critical habitat an effective tool for biodiversity conservation? Should we list critical habitat for more species where relevant and useful? )**

Identification of critical habitat can be an effective tool. However, it is very reliant on good data being available, which in many cases is not, and even when it is identified, is reliant on management actions that ensure these habitats are appropriately protected. IFAW would support further listing of critical habitat where this is possible.

**Question 8. (Should private conservation data be collected and if so how?)**

Yes - there is such a dire lack of data that every effort should be made to collect any relevant data from a wide range of available sources including private ones. IFAW would like to see incentive programs to encourage local community and private landowner action to recover and conserve threatened species and high value habitats.

IFAW also encourages the increased use of 'citizen science' as a low-cost, engaging and valuable means of gathering data whilst also educating and empowering the wider community.

Yours sincerely



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<sup>i</sup> <http://www.environment.gov.au/system/files/resources/615a2125-8c1f-4eac-966e-dc2dfa59d2eb/files/fourth-report.pdf> Australia's Fourth National Report to the United Nations Convention on Biological Diversity March 2009

<sup>ii</sup> Vié, J.-C., Hilton-Taylor, C. and Stuart, S.N. (eds.) (2009). *Wildlife in a Changing World – An Analysis of the 2008 IUCN Red List of Threatened Species*. Gland, Switzerland: IUCN. 180 pp.

<sup>iii</sup> **Ecologically Sustainable Steering Committee (1992) National Strategy for Ecologically Sustainable Development** Endorsed by Council of Australian Governments. ISBN 0 644 27253 8 Available online <http://www.environment.gov.au/about-us/esd/publications/national-esd-strategy>

<sup>iv</sup> **NSW Environment Protection Authority (2012) NSW State of the Environment 2012**. Available online [www.epa.nsw.gov.au/soe](http://www.epa.nsw.gov.au/soe)

<sup>v</sup> Anthony Waldron *et al.* (July 2013) 'Targeting global conservation funding to limit immediate biodiversity declines' PNAS Vol. 110 No. 29 pp 12144 – 12148 Available online at [www.pnas.org/lookup/suppl/doi:10.1073/pnas.1221370110](http://www.pnas.org/lookup/suppl/doi:10.1073/pnas.1221370110)

<sup>vi</sup> Economists at Large, 2014, *Biodiversity Funding: Review of Targeting global conservation funding to limit immediate biodiversity declines* (Waldron *et al.*, 2013), a report for International Fund for Animal Welfare Australia, prepared by Economists at Large, Melbourne, Australia.

<sup>vii</sup> Commonwealth of Australia (2013). The Senate, Environment and Communications Reference Committee, 'Effectiveness of threatened species and ecological communities' protection in Australia'. Parliament House Canberra. Chapter 3 Recovery Planning pg 71.

<sup>viii</sup> Nature-based tourism includes activities such as visits to national and marine parks, wildlife parks, zoos and aquariums, bushwalking and rainforest walks, snorkelling and dolphin and whale watching activities. The value of international revenue alone (for the year ending June 2013) resulting from nature-based tourism was valued at AUD\$14.2 billion, with domestic contributions for the same period taking the total to \$30.4 billion. Australian Government Department of Environment (2014), *Australia's Fifth National Report to the Convention on Biological Diversity: Draft Report*, Department of the Environment, 2014. Viewed online 01/04/14

<sup>ix</sup> CSIRO Action Plan p vii

<sup>x</sup> D. Lindenmayer *et al.* (2013) 'Counting the books while the library burns: why conservation monitoring programs need a plan for action'. *Frontiers in Ecology and the Environment*. Vol. 11. No.10. The Ecological Society of America. Pp 549-555.

<sup>xi</sup> <http://www.environment.gov.au/cgi-bin/sprat/public/publicthreatenedlist.pl?wanted=fauna> EPBC Act list of Threatened Species viewed 18/02/14, comprising 1,295 threatened flora species and 451 threatened fauna species.

<sup>xii</sup> Commonwealth of Australia (2013). The Senate, Environment and Communications Reference Committee, 'Effectiveness of threatened species and ecological communities' protection in Australia'. Parliament House Canberra. Chapter 3 Recovery Planning pg 71. Available online at [http://www.aph.gov.au/Parliamentary\\_Business/Committees/Senate/Environment\\_and\\_Communications/Completed\\_inquiries/2010-13/threatenedspecies/report/index](http://www.aph.gov.au/Parliamentary_Business/Committees/Senate/Environment_and_Communications/Completed_inquiries/2010-13/threatenedspecies/report/index)

<sup>xiii</sup> T. Flannery. (2012) "After the Future: Australia's New Extinction Crisis." Quarterly Essay 48, pp 1 -80. Published by Black Inc.