

Submission to the Senate Environment and Communications References Committee

Australia's Faunal Extinctions Crisis Inquiry

**By CASSE NSW, the NSW Chapter of the Center for the Advancement of
a Steady State Economy**

Introduction

CASSE NSW is the NSW Chapter of the Center for the Advancement of a Steady State Economy (see www.steadystate.org)

The CASSE NSW website is at <https://steadystatensw.wordpress.com/>

This submission was drafted by the Co-Director of CASSE NSW, environmental scientist (plant ecologist) Dr Haydn Washington, who has extensive experience in regard to biodiversity and its extinction.¹ CASSE NSW would like to thank Jonathan Miller of CASSE ACT for his assistance in this draft.

Summary

Key points raised in this submission

- Earth is experiencing its sixth great extinction event. The underlying cause is overpopulation and overconsumption. Humanity is extracting resources faster than nature can replenish them, and is creating wastes faster than nature can remediate them. We are destroying the ecosystem services fundamental to maintaining both biodiversity and our human economy. Hence why the global ecological footprint is 1.7 Earths, yet we have only one Earth.
- The underlying drivers of Australia's faunal extinction crisis are similar to those for global biodiversity loss
 - the key drivers are population and economic activity
 - these drivers must be addressed if we are to stop native species going to extinction and to avoid significant long-term threats to human welfare
 - we need to start the transition to a steady state economy that is not based on endless growth.
- Mitigating threatening processes across the landscape generally yields greater biodiversity gains than focusing on a multitude of single species recovery actions that seek to address the 'death by a thousand cuts' that is occurring.
- Emphasis should be placed on preventative measures, such as
 - Stopping further land clearing
 - maintaining healthy ecosystems, to prevent species reaching threatened status

¹ See: <http://www.pangea.unsw.edu.au/people/academic-research/haydn-washington>

- funding effective biosecurity measures that prevent establishment of new invasive species.
- The development of recovery plans and the listing of critical habitat, while potentially valuable activities, may divert resources from more effective actions at the broader scale.
- We need to transition to a steady state economy and move to an ecological ethics in how we interact with nature.

1. The status of faunal species and the reasons for decline

1.1 Global context

Australia's faunal extinction rate needs to be put in a global context. Earth has entered its sixth great extinction event². Extinction is a natural phenomenon with a natural 'background' rate of about one to five species per year. Current extinction rates, however, are now 1,000 to 10,000 times the background rate, with dozens of species becoming extinct every day³. The World Wildlife Fund for Nature's 2016 report, the *Living Planet Index*⁴, assessed the health of 14,152 populations of 3,706 vertebrate species. The report found a 58% decrease in the abundance of these species between 1970 and 2012. It has been estimated that 30 to 50 percent of all species could be extinct by mid-century⁵. The Living Planet Index has dropped by 58% since 1970⁶. The 'father' of the term Prof E.O. Wilson believes that unless we change our ways, by the year 2100 half the world's terrestrial biodiversity may be extinct.⁷

1.2 Australia rich and distinctive wildlife

Australia's biodiversity is globally significant; we are considered to have a 'megadiverse' biodiversity. A 2009 report⁸ determined that 147,579 Australian species of all kinds had been described among a total estimated number of 566,398 species. In other words, it is likely that almost 74% of Australia's species are not yet known to science. These figures also demonstrate the significance of Australia's biodiversity globally. The report determined that Australia was home to about 8% of the world's 1.9 million described species, including 12%

² See for example Ceballos G, Ehrlich P and Rodolfo D (2017). Proceedings of the National Academy of Sciences of the United States of America, July 25, 2017. 114 (30) E6089 - E6096

³ Chivian, E. and A. Bernstein (eds.) 2008. *Sustaining life: How human health depends on biodiversity*. Center for Health and the Global Environment. Oxford University Press, New York.

⁴ World Wildlife Fund for Nature (2016). Living Planet Index.

http://www.panda.org/knowledge_hub/all_publications/lpr_2016/

⁵ *Ibid.* and Thomas, C. D., A. Cameron, R. E. Green, M. Bakkenes, L. J. Beaumont, Y. C. Collingham, B. F. N. Erasmus, M. Ferreira de Siqueira, A. Grainger, Lee Hannah, L. Hughes, Brian Huntley, A. S. van Jaarsveld, G. F. Midgley, L. Miles, M. A. Ortega-Huerta, A. Townsend Peterson, O. L. Phillips, and S. E. Williams. 2004. *Extinction risk from climate change*. Nature 427: 145–148.

⁶ WWF (2016) *Living Planet Report 2016: Risk and resilience in a new era*, World Wide Fund for Nature, see: http://awsassets.panda.org/downloads/lpr_living_planet_report_2016.pdf (accessed 17/8/17).

⁷ Wilson, E.O. (2003) *The Future of Life*, New York: Vintage Books.

⁸ Chapman A, 2009. *Number of Living Species in Australia and the World 2nd edition*. Report for the Australian Biological Resources Study.

of vertebrate animals. Australia also has very high levels of endemism – numbers of species found nowhere else. Ninety-three per cent of our reptiles, 87% of our mammals from 83 to 87, 94% of our frogs and 90 percent of our plants unique to Australia. Australia has a significant role and responsibility in maintaining global biodiversity.

1.3 Why should we care about biodiversity extinction anyway?

Groucho Marx is reported to have said "Why should I care about future generations? What have they ever done for me?". One could say the same about biodiversity, so why should we worry about extinction, why should we care? There are several answers to this:

- We should worry because humanity is completely reliant on the ecosystem services that nature provides society⁹. Extinction throws a spanner into the works of ecosystem services. We cannot degrade our supporting ecosystems without impacting on society. It is thus in our own interests to keep nature whole and stop extinction
- We should care because it is a matter of ethics – what is right or wrong. We stand in a global process where half of life may be extinct by the end of the century¹⁰. This is a great moral crime. Yet Australia has an even worse record, an extinction holocaust that is still underway, probably growing in scale.
- We should care because this is Australia's unique and irreplaceable heritage, which no other country in the world has. We should pass this heritage on to future Australians, who have a right to be proud of our unique biological heritage. Without action, they will be like us today with the Thylacine, just able to read about what we had, and through our own actions – lost.

1.4 The parlous state of Australian wildlife

The Commonwealth's 2016 State Environment Report found that

Based on the information available about vegetation extent and condition, and the small number of species for which there is some understanding of trends in distribution and abundance, the status of biodiversity in Australia is generally considered poor and deteriorating¹¹.

Of the 511 faunal species listed on the Commonwealth's List of Threatened Species, as of July 2018, 27 mammals, 22 birds, 4 frogs and one fish are listed as extinct. One fish is listed

⁹ Washington, H. (2013) *Human Dependence on Nature: How to help solve the Environmental Crisis*, London: Earthscan.

¹⁰ Wilson, E.O. (2003) *The Future of Life*, New York: Vintage Books.

¹¹ Jackson WJ, Argent RM, Bax NJ, Bui E, Clark GF, Coleman S, Cresswell ID, Emmerson KM, Evans K, Hibberd MF, Johnston EL, Keywood MD, Klekociuk A, Mackay R, Metcalfe D, Murphy H, Rankin A, Smith DC, Wienecke B (2016). *Overview of state and trends of biodiversity*. In: Australia state of the environment 2016, Australian Government Department of the Environment and Energy, Canberra, <https://soe.environment.gov.au/theme/overview/biodiversity/topic/overview-state-and-trends-biodiversity>, DOI 10.4226/94/58b65510c633b

as extinct in the wild. A total of 511 animal species are listed as threatened, including the extinct species.¹² The equivalent threatened flora list identifies 37 extinct species of flora among a total of 1355 listed species.

The Commonwealth threatened species lists represent the end point of protracted technical assessment and administrative processes. They do not reflect frequently updated point-in-time inventories of the conservation status of Australian species. For this reason, and our incomplete knowledge of Australia's biota, the Commonwealth lists therefore almost certainly underestimate the number of threatened species.

In March 2016, former Australian Government Threatened Species Commissioner, Gregory Andrews, noted that Australia had the highest rate in the world for mammal species extinctions.¹³

“Thirty-five per cent of all global mammal extinction since 1500 have been Australian (30 out of 84 worldwide extinctions)”. Twenty-nine of these have been since European colonisation.

Australia is a global hotspot for biodiversity, and a major contributor to the current global sixth extinction crisis.

1.5 Direct causes of biodiversity loss

The 2016 State of the Environment report identified habitat clearing and fragmentation, invasive species and climate change as among the key pressures on Australian biodiversity. This ties in with overseas experience where the key causes of extinction have been called HIPPO (habitat loss; invasive species; population, pollution and overharvesting).¹⁴

These pressures can be abated to differing degrees. A number of invasive species, such as cats, foxes and rabbits, have become well-established across Australia. Other than in fenced exclusion ‘sanctuaries’ (such as run by the Australian Wildlife Conservancy), actions to reduce the impacts of these widespread species can only have temporary or local effect, as complete eradication is not feasible and the invasive species recover in numbers or reinvade from adjacent areas.

There are, however, key threatening processes which are the outcome of current endlessly growing economic activities and government decisions. Habitat loss, fragmentation and degradation are being caused by a range of economic activities, including native vegetation

¹² <http://www.environment.gov.au/cgi-bin/sprat/public/publicthreatenedlist.pl?wanted=fauna>

¹³ Cited on the Australian Broadcasting Corporation's website on 4 March 2016:

<http://www.abc.net.au/news/2015-08-19/fact-check-does-australia-have-one-of-the-highest-extinction/6691026>

¹⁴ Wilson, E.O. (2010) ‘The loss of biodiversity is a tragedy’, UNESCO, see:

http://www.unesco.org/new/en/media-services/single-view/news/edward_o_wilson_the_loss_of_biodiversity_is_a_tragedy/

clearance for agriculture, expansion of urban settlements, and new and expanded infrastructure.

In the longer-term, human-caused climate change is likely to become the most significant disrupter of Australian biodiversity. Species may not be able to adapt to the rapid projected rates of global warming, being unable to move their ranges sufficiently quickly southward and to lower elevations. It is likely that the Great Barrier Reef's Bramble Cay *Melomys* recently became the first mammal driven to extinction by climate change.

1.6 Drivers of Biodiversity Decline and Species Extinction

To understand the reasons for Australia's biodiversity decline, it is important to go beyond the immediate causes, and consider the underlying drivers.

The 2016 Commonwealth State of the Environment report found that

In Australia, the key drivers of environmental change are population and economic activity.¹⁵

Like most other countries, Australia has adopted continuing economic growth, as measured by GDP, as a paramount national objective.¹⁶

While increased resource use and pollution are not *strictly* functions of economic growth, they are generally strongly correlated. When populations become wealthier, they demand more material goods and services, such as overseas travel. Increases in population bring about increased demands for consumer goods and services, as well as housing and infrastructure.

The impacts of population on the environment do not relate as closely to the rate of growth, as to the population level itself. Population is highlighted as a key cause of our growing environmental problems. The World Scientists Warning to Humanity¹⁷ identifies population as a driver of unsustainability. The higher Australia's population, the more native vegetation that needs to be cleared for settlement and infrastructure, the greater the disruption to our rivers and groundwater, and the greater the pollution generated, including greenhouse gas emissions.

It is often argued that Australia as a large country can carry a much larger population, but comparisons with other land masses need to take into account the aridity, infertility and the

¹⁵ Jackson WJ, Argent RM, Bax NJ, Bui E, Clark GF, Coleman S, Cresswell ID, Emmerson KM, Evans K, Hibberd MF, Johnston EL, Keywood MD, Klekociuk A, Mackay R, Metcalfe D, Murphy H, Rankin A, Smith DC, Wienecke B (2016). Overview: Overview. In: Australia state of the environment 2016, Australian Government Department of the Environment and Energy, Canberra, <https://soe.environment.gov.au/theme/overview>, DOI 10.4226/94/58b65510c633b

¹⁶ This is a relatively new phenomenon, postdating the Second World War. The modern concept of GDP was developed in 1934 by Simon Kuznets, who ironically argued against using the indicator as a measure of national welfare.

¹⁷ http://scientistswarning.forestry.oregonstate.edu/sites/sw/files/Warning_article_with_supp_11-13-17.pdf

unfavourable climate of much of the Australian land mass¹⁸. Increasing our population not only leads to impacts on biodiversity, but also degrades the natural systems we rely upon to support our welfare and prosperity. These factors appear to be ignored by the Australian government, which should be developing a population policy and strategy as overdue priorities. The Australian Academy of Science argued that our population should be limited to 23 million¹⁹. If anything, this estimate is likely too high (as discussed later).

Beyond the impacts of population growth, economic growth drives a number of the key pressures degrading Australian biodiversity, such as habitat destruction and fragmentation, and climate change.

It is healthy for a child to grow, but there comes an age when further physical growth is unhealthy. Similarly, there are limits to the healthy growth of an economy and its material throughput. We live on a finite planet, and globally, we are already exceeding its capacity to support our annual harvesting and extraction of resources, and Earth's capacity to remediate our wastes. Climate change is just one consequence of this 'overshoot'. Using Ecological Footprint analysis, humanity is currently using the equivalent of 1.7 'Earths' to provide the resources we use and to absorb our wastes.²⁰ This means that we are eating into the world's natural capital to meet our annual needs. The Stockholm Resilience Centre identified nine attributes of the world's physical environment as planetary boundaries, and determined that disruptions to the world's phosphorus and nitrogen flows and biodiversity destruction already exceed safe levels, while other attributes, such as global climate, are at considerable risk²¹.

The extent to which humans are 'crowding out' nature and appropriating Earth's resources is well illustrated by a calculation that in the year 2000, the total mass of all humans and livestock species made up 94% of the mass of all mammals globally, with wild mammals contributing just 6% of that biomass²².

Arguably, Australia is also exceeding its long-term sustainable limits to growth. We are consuming and degrading our natural capital, and our high rates of species extinction are an inevitable consequence of this.

Australia's high level of material consumption is strongly dependent on imports of consumer goods and petroleum. Fossil fuels have been critical to the Great Acceleration and our high standards of living, but we must move quickly away from fossil fuels to minimise the future impacts of climate change. It is not clear whether the reduced Energy Return on Energy Invested delivered by renewable energy will support continuation of our current high levels

¹⁸ To reinforce this point, Antarctica is larger than Australia, but its unfavourable environment means that it cannot sustainably support a large population.

¹⁹ Australian Academy of Science, 1995. Population 2040: Australia's Choice. Proceedings of the Symposium of 1994 Annual General Meeting of the Australian Academy of Science, Canberra.

²⁰ Global Footprint Network website. <https://www.footprintnetwork.org/our-work/ecological-footprint/> Sighted 24 July 2018.

²¹ Stockholm Resilience Centre website: <http://www.stockholmresilience.org/research/planetary-boundaries/planetary-boundaries/about-the-research/the-nine-planetary-boundaries.html> Sighted 24 July 2018.

²² Smil V, 2011. Harvesting the Biosphere: The Human Impact. Population and Development Review 37(4): 613-636 (December 2011).

of material consumption into the future. Put another way, Australia's 'human carrying capacity' is almost certainly artificially inflated at present. In the medium to long-term, Australia's population will likely put greater demands on Australia's physical environment. In 1994, Professor (then Dr) Tim Flannery estimated that with currently foreseeable technology and present habits of consumption, Australia might support a long-term population of 8-12 million²³. This is in line with the estimate of Prof. Paul Ehrlich of around 15 million. The Academy of Science estimate²⁴ of 23 million was more generous as to a maximum sustainable population. The key point in common however is that they are ALL below our current population of 25 million people. Claims that Australia could support 60 or 100 million people are thus 'thought bubbles' that do not consider the environmental impact of such numbers in the world's driest inhabited continent, which now seems due to climate change to become even drier.

Economic growth is more than just a government policy goal; it is a paradigm that dominates political thinking and media commentary²⁵. It is seen as an unchallengeable necessity. The primacy of this paradigm is reinforced by the dominance of neoclassical economics, which largely excludes environmental sustainability considerations, sidelining them as 'externalities'²⁶. Environmental conservation is often presented by politicians and in the media as a secondary, aesthetic matter. Within such a framework, the consideration of development under the *Environment Protection and Biodiversity Conservation Act 1999* (the EPBC Act) becomes a process for ensuring the approval of proposals, with each approval facilitating further incremental degradation of Australia's natural environment.

Environmental impacts are often long-term, incremental, cumulative and not readily apparent. Climate change provides an excellent example, where the degradation of a vital natural system function – climatic regulation – is being disrupted by the cumulative effect of daily actions and decisions of individuals and organisations. Notwithstanding the significance of this threat, governments, individuals and corporations continue to make decisions that give primacy to short-term economic benefits. The causes for this disconnect are complex but reflect the cultural frame of our society which is strongly influenced by narrow economic thinking and our limited spatial frame of perception that does not apprehend Earth's finite nature.

The false dichotomy of the human economic realm and the natural physical world in our thinking comes at great cost²⁷. Like all other animals, humans rely on our physical environment for habitat needs – which, put another way, are the critical resources and services our economy and our welfare depend on. These 'ecosystem services' include food production, raw materials, water production, energy, soil formation, pollination, waste

²³ Flannery, T, 1994. *The Future Eaters: An Ecological History of the Australasian Land and People*.

²⁴ Australian Academy of Science, 1995. Population 2040: Australia's Choice. Proceedings of the Symposium of 1994 Annual General Meeting of the Australian Academy of Science, Canberra.

²⁵ Daly, H. (1996) *Beyond Growth: The Economics of Sustainable Development*, Boston: Beacon Press.

²⁶ Daly, H. (1991) *Steady State Economics*, Washington: Island Press.

²⁷ Dietz, R. and O'Neill, D (2013) *Enough is Enough: Building a Sustainable Economy in a World of Finite Resources*, San Francisco: Berrett-Koehler Publishers.

decomposition, water and air purification and recreational opportunities²⁸. Even if we are just to take a narrow utilitarian perspective, the value of these ecosystem services is greater than the global human economy. The value of ecosystem services is in fact infinite as they support society. However in 2007 was estimated to be US\$125 trillion/year, compared to the global GDP of US\$75 trillion/year. The same study estimated the value of the loss of ecosystem services between 1997 and 2011 was in the range US \$4- 20 trillion/year, due to land use change, which represented degradation of the physical environment and consumption of natural capital²⁹.

So, the degradation of our physical environment has very direct consequences on human welfare. Climate change is the most critical current example of humanity living beyond limits to economic growth, in this case polluting beyond the capacity of Earth's natural systems to remediate.

In summary, Australia's faunal extinction crisis is in part the inevitable result of our society's priority on economic growth, population growth and overconsumption. The fate of both humans and non-human species depends on nations, including Australia, managing their populations, their consumption, and their demands on the natural environment, so as to live within nature's means.

2. Steps for better biodiversity conservation

2.1 The need for high-level, long-term planning to ensure Australia is a truly sustainable society

Australians and Australian governments need to recognise that not only is the degradation of our physical environment causing the extinction of our native species, it also imperils the very future of our economy and our quality of life²³.

Securing the future of Australia's wonderful animals demand far more than narrow attention to decisions on development proposals and recovery actions. We need to make long-term plans for our society that reflect the finite nature of our country and our planet. This would include a long-term target for Australia's population and other policies to maintain our natural capital and ecosystem services. We also need to responsibly address the overseas and global impacts of Australian consumption due to our trade.

Serious consideration of such matters makes clear the need to start the transition to a steady state economy (with an ecologically stable population, low resource use, and greater equity) as a matter of urgency.³⁰

²⁸ MEA (2005) *Living Beyond Our Means: Natural Assets and Human Wellbeing, Statement from the Board, Millennium Ecosystem Assessment*. United Nations Environment Programme (available www.millenniumassessment.org).

²⁹ Costanza R, R de Groot, P Sutton, S van der Ploeg, S Anderson, I Kubiszewski, S Farber, R Turner, 2014. Changes in the global value of ecosystem services. *Global Environment Change* 26 (2014), 152 -158.

³⁰ A steady state economy is a dynamic market economy that efficiently allocates goods and services but uses the lowest feasible rates of natural capital depletion to achieve a high quality of life. It features a sustainable

2.2 Give priority to dealing with threats to biodiversity

The EPBC Act has essentially two components to threatened species conservation: decisions on proposals that might impact threatened species and recovery actions.

The 2016 Commonwealth State of the Environment report noted:

Evidence for the effectiveness of recovery planning for threatened species is variable.

Once a species has reached threatened status, it is generally very difficult to recover that species. Species rely on complex natural systems to provide their needs. Research into the causes of individual species decline, the identification of recovery actions, and the implementation of those recovery actions require significant funds. A lot of money has been spent on captive breeding of the Orange Bellied Parrot and the Helmeted Honeyeater, for example, with very limited success. Yet, **we have almost 2,000 nationally listed species**. While the Commonwealth funds provided for threatened species conservation should arguably be increased dramatically, a species-by-species approach to recovery is likely to only ever have limited success.

Until changes to the EPBC Act in 2006, recovery plans were required for all listed species. This created a huge workload that could never have been addressed within available funding, redirecting funds and staff time away from on-the-ground action to plan development. The plans developed a suite of species-specific actions, the vast majority of which could not be funded.

A more viable approach is to *focus on the key threatening processes* impacting on Australia's biodiversity, as they degrade the health of natural systems thereby impacting on a number of species. Invasive species such as cats and foxes have played, and continue to play, a major role in Australian faunal extinction. The eradication of invasive species in the Australian Wildlife Conservancy fenced reserves has been highly effective in securing populations of the threatened species. Outside such reserves, ongoing invasive species management can be very important to biodiversity conservation.

2.3 Prevention is much more effective than 'cure'

The adage that 'prevention is better than cure' is particularly relevant to biodiversity conservation.

A limitation of the EPBC Act is that it focuses on the status of species once they are threatened, rather than stopping species reaching threatened status. Given the difficulties of recovering threatened species, it is highly desirable to avoid actions or pre-empt threats that might impact on the conservation status of species.

population, a fair distribution of wealth and low resource use. (After James Magnus-Johnston in *Positive Steps to a Steady State Economy*. Edited by Haydn Washington for CASSE NSW. 2017).

To prevent degradation of the conservation status of species, whether threatened or not, preventing native vegetation clearing and fragmentation are very important. The level of native vegetation clearing in Australia is unacceptable in a first-world country and stronger measures are needed to stop this. 'Biodiversity offsets' are used to legitimise developments that impact on biodiversity, but their effectiveness is questionable. While the negative impacts of a development are likely to be ongoing, any benefits of offsets generally rely on ongoing maintenance and the security of tenure of the sites, but there is very limited funding to enforce offset requirements under the EPBC Act.

The importance of prevention is highlighted by the benefits of effective biosecurity measures. Whereas established invasive species such as rabbits and foxes cause ongoing biodiversity impacts and financial costs for control measures, it is much more effective and less expensive to stop invasive species becoming established in the first place. The importance of biosecurity to our agricultural industries has long been recognised, but biosecurity threats to our biodiversity have received less attention and funding. The extent of trade into Australia makes it impossible to completely prevent the arrival of new invasive species, but it is highly desirable to increase funding for detection of new arrivals at the border and beyond.

The implementation of the Intergovernmental Agreement on Biosecurity in 2012 was a major step forward in improving the protection of Australia's biodiversity. To be effective, the Australian Government needs to ensure adequate funding for the National Environment Biosecurity Response Agreement, which facilitates the eradication of newly arrived invasive species.

The incursion of Red Imported Fire Ant (RIFA) in south-east Queensland provides a salutary case study. The impacts of the RIFA are listed as a key threatening process under the EPBC Act, identifying numerous species at threat. The huge super colonies formed by fire ants transform landscapes and their biodiversity, as well as inflicting painful and sometimes deadly stings to humans, and impacting agricultural production. In the USA, the ant causes \$7 billion in impacts and control³¹. If not controlled, the ant could spread to most of the Australian continent, causing an estimated additional 140,000 medical consultations and 3000 anaphylactic reactions each year. It is to the credit of Australian governments that they have now funded a comprehensive eradication campaign, but this would have been much less expensive and more certain of success if the funding had been provided in the early 2000's when the incursion was almost eradicated.

Ultimately, climate change might be the greatest threat to Australia's biodiversity. Recent increases in the frequency of bleaching of the Great Barrier Reef gives some indication of the threat posed. Here again the future of human society and on our biodiversity are inextricably dependent on mitigation of this threat.

³¹ Information drawn from Invasive Species Council, 2017. *Fact Sheet: Red Fire Ants*

2.4 Critical habitat identification and registration under the EPBC Act

There has been recent public comment about the lack of identification of critical habitat, as entered in the EPBC Act's Register of Critical Habitat. While the responsible Minister is required to create or maintain the Register, there is no requirement to list critical habitat for any listed species or ecological community.

Ideally, critical habitat would be identified widely for listed species and ecological communities. In practice, identification of such habitat, and particularly its boundaries, is generally not a clear-cut process. Importantly, the Environment Department as a matter of good process and natural justice, needs to consult the landowners of candidate areas for critical habitat listing. This is potentially very time-consuming, whereas the benefits of listing under the Act are limited. Importantly, the EPBC Act only provides protections for listed critical habitat areas on Commonwealth land.

It is therefore important to recognise the trade-offs in resources between the work necessary to lead to a critical habitat listing, and other work undertaken by Environment Department staff working on listed species.

2.5 Other important issues that damage biodiversity protection

There are other processes that exacerbate extinction that need to cease. These can be summarised below:

- 1) To stop commitment to an anthropocentric worldview that espouses neoliberalism and modernism. If we want to stop extinction then we have to argue that nature has **intrinsic value**, a right to exist for itself³². The 'market' after all does not care about species extinction, and neoclassical economics sees ecocide and species extinction as mere unimportant 'externalities' to the endless growth model³³. If we want to end extinction then society must allocate 'moral standing' to nonhuman nature and commit to ecological ethics.
- 2) To stop the weakening of land clearing laws in legislation. Currently Australia has endured two centuries of a land clearing holocaust where over half of NSW native vegetation has been cleared. However we now seems locked into the 'death of a thousand cuts' legislation where more and more natural habitat is cleared (justified as 'necessary development' pushed by political lobbyists) – the direct cause of ecocide and species extinction. Further land clearing has to cease very quickly. If it has not been cleared already, then it was pretty marginal land in terms of agriculture and should not be cleared now when we realise the value of our unique biodiversity.
- 3) To stop the weakening of threatened species and planning legislation that allows the ongoing silent extinction of our unique biological heritage through complex and often toothless legislation. In this regard the prime objective of planning laws cannot be

³² Washington, H. (2018) *A Sense of Wonder Towards Nature*, London: Routledge.

³³ Daly, H. (1991) *Steady State Economics*, Washington: Island Press.

‘development’ as the NSW government tried to make it some years back, only stopped by massive public outcry.

- 4) To stop the fallacious idea of ‘biodiversity offsets’ where at the start of the process there are *two* areas of biodiversity and at the end there is **only one**, the other being developed. To stop extinction we need to **keep all remaining natural habitat**, not just a part of it.
- 5) In fact Australia should adopt the ‘Nature Needs Half’ vision <https://natureneedshalf.org/> and seek to reserve and protect half of all our natural lands. Such an approach would be one of the key strategies to keep our unique biodiversity into the future. A key part of this is the immediate protection of all wilderness areas in Australia (= large natural areas), and the creation of conservation corridors that link these together.
- 6) To stop the commodification of nature by giving it a monetary value, whereby it inevitably comes second compared to development plans. Our remaining wild nature in Australia has far MORE than monetary value, it should be considered sacrosanct, not a commodity to be traded and discarded.
- 7) To stop the unsustainable idea that northern Australia must become the ‘Food Bowl’ of Asia. This will cause massive clearing of the least cleared part of Australia. Yet in an area of seasonal rainfall and massive variability of these, and with nutrient poor shallow soils, the increase in food production is likely to be small. The increase in ecocide and extinction however *will be huge*. If this ideologically-driven madness proceeds, Australia’s extinction will skyrocket. There is a reason such areas were not cleared a hundred years ago – they are poorly suited to agriculture. However they ARE huge reservoirs of unique biodiversity, though now they are threatened by a political pipe dream. Developing northern Australia will be an environmental disaster, yet we can still avoid this.

Conclusion

Australia stands at a critical junction in its history. The natural heritage of Australia’s biodiversity is unique and amazing. Nowhere else in the world do we find such unique plants and animals. Yet we have the worst record of fauna extinctions over the last two hundred years of any nation. Not only have we not looked after our unique biodiversity, we continue to fail to do so today. This is despite the fact that the public most certainly does value our unique animals and plants, and governments assert that they want to conserve them also. There is thus a huge gap between government statements and reality, Australian governments are not walking the talk. Indeed, Australia is in denial of the root causes of our dismal record of extinction. These causes are continuing destruction of habitat through ongoing, almost unchecked clearing of native vegetation, expansion of urban areas, continuing growth in population beyond an ecologically sustainable level, and continued growth in overconsumption. The root cause of this is the idea that on a finite planet you can continue to grow physically forever. Once one has exceeded an ecologically sustainable population (as we have) commitment to an endless growth ideology can only lead to ecocide and ongoing decline in ecosystems and extinction of species.

If Australia is serious about retaining its unique biodiversity, then it has to act urgently to stop further clearing of native vegetation. It needs also to stabilise at an ecologically sustainable population lower than today's population. It needs to kick the endless growth habit. That means moving to a steady state economy, where population is stable and ecologically sustainable, throughput of resources is low, and there is greater equity. It also means accepting that the rest of nature has intrinsic value, a right to exist for itself. That means moving from an anthropocentric worldview to ecocentrism³⁴ and an ecological ethics³⁵. Something that would assist in that transition would be for Australian governments to support 'education for wonder' about the sense of wonder people feel towards nature³⁶. A serious strategy of protecting our unique biodiversity thus requires governments support a transition of both our population policy, our economy, and our ethics. Such a transition is also required if we are to reach a truly sustainable future³⁷.

³⁴ Washington, H., Taylor, B., Koprina, H., Cryer, P. & Piccolo J. (2017) 'Why ecocentrism is the key pathway to sustainability' *Ecological Citizen* **1**: 35-41.

³⁵ Curry, P. (2011) *Ecological Ethics: An Introduction*. Second Edition. Cambridge: Polity Press.

³⁶ Washington, H. (2018) *A Sense of Wonder Towards Nature: Healing the Planet through Belonging*, London: Routledge.

³⁷ Washington, H. (2015) *Demystifying Sustainability: Towards Real Solutions*, London: Routledge.