

Dangerous? Necessary: we must conserve all our native fauna

Daniel Lunney

Office of Environment and Heritage NSW, Hurstville, NSW 2220; School of Life and Environmental Sciences, the Faculty of Science, University of Sydney, NSW 2006; and School of Veterinary and Life Sciences, Murdoch University, Perth, WA 6150.

ABSTRACT

To conserve all of our native fauna is a dangerous idea because it encompasses all the landscape, not just National Parks and Nature Reserves; all species, not just selected species such as charismatic vertebrates; it impacts on all decisions on the use of the land and the water and everything on it or in it. Acknowledging the conservation problem in principle, and doing many valuable things to recover species near extinction, is so attractive that we can be mesmerised into considering that the problem of the extinction process is being dealt with. In essence, the danger lies in the shortfall of the application of the principles of ecologically sustainable development to conserving all the elements of biodiversity. We have done a great deal as a society to conserve nature, but it is not enough. Natural areas and populations of native wildlife are still shrinking in Australia along with the rest of the world. Evidence now shows that ecosystem services generate economic benefits which exceed those from continued habitat loss to the extent of a benefit:cost ratio of at least 100:1. This is breathtaking; it confirms our intuitive appreciation of nature, it confronts the exploitative developers, and reveals the lie that conserving nature is anti-wealth. Old thinking prevails to tragic results. Respect for the natural environment is a fundamental principle of humanity. Seeing things with fresh eyes is a challenge, and for conservation, that means challenging such assumptions as the primacy of the economic growth paradigm. For a zoologist, it means finding out what is missing from those economic and political arguments that diminish or dismiss conservation concerns, such as knowing the status and ecology of all species, and all the threatening processes affecting the survival of our wildlife.

Key words: nature conservation, national parks, nature reserves, ecologically sustainable development, threatened species, extinction, gross national product, ecosystem services, well-being, wildlife conservation, wildlife management.

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I joined the NSW National Parks and Wildlife Service as an education officer in 1970. There was no precedent or textbook. With key mentors to support me – Harry Recher, Allan Fox, Don McMichael – I set out to change the public's mind about the value of National Parks and our wildlife. Why is the land better saved than cleared? Why do we need to understand and manage our fauna? At the end of three years in the job, at the least one person had understood the message – me. Through the next four decades as a research scientist, I have learnt one thing more: that conserving our environment is just as controversial, radical, and dangerous an idea now as it was when I started.

A job half done

Conserving all our native fauna is a dangerous idea because it challenges the economic growth paradigm. Conserving biodiversity is necessary for health, wealth, and happiness. But for some people and institutions, any idea that challenges the dogma of economic growth is dangerous. To conserve all of our native fauna is a dangerous idea because it encompasses all the landscape, not just National Parks and Nature Reserves; all species, not just selected species such as

charismatic vertebrates¹; it impacts on all decisions on the use of the land and the water, and everything on it or in it. It looks at ecological processes, such as the causes and consequences of mismanaging the land, water, and atmosphere, and pushes back at the drive for greater profit through increased exploitation of nature. Most dangerously, the idea holds danger as it argues that conserving all fauna will result in greater benefits than traditional exploitation – it makes the kings of exploitative industry redundant. To rob any king of power is dangerous, and conserving all fauna would do just that.

If we tackle only a small portion of the entire problem of nature conservation, then much of nature will finish as museum pieces – some high quality samples will be well looked after, and well show-cased, but the survival of the great bulk of our natural estate and our faunal populations will just be left to chance. A job half done can blind us to what we don't know, but need to know – how best to conserve our natural areas and all our native wildlife.

¹ There is a case that charismatic vertebrates serve the conservation cause well because they attract widespread public attention (Lunney 2012).

We cannot readily see what it is that we have not conserved, such as populations of cryptic fauna, e.g. most bats (Law *et al.* 2011). When we see concerted action on some species, strong decisions about some topics, and clear messages about stewardship or active management, we tend to relax. That is dangerous for our zoological heritage because most species are out of sight, and the natural resources upon which they depend are under increasing threat from development that uses more and more of the land and water, leaving an ever-diminishing amount for wildlife and natural areas.

We know that some Australian species have become extinct and that others are heading in that direction. That extinction process is a clear warning of what is happening to our native fauna. Acknowledging the conservation problem in principle, and doing many valuable things to recover species near extinction, is so attractive that we can be mesmerised into considering that the problem of the extinction process is being dealt with. In essence, the danger lies in the shortfall of the application of the principles of ecologically sustainable development to conserving all the elements of biodiversity. The consequence will be fewer and fewer locations to conserve natural areas and, when they are identified, they will be hotly contested because of lucrative development options. Consequently, more and more species will continue to slide towards extinction. Since most species are unknown outside zoological circles, and even within the discipline, there are yawning gaps, the losses will continue to mount. But without research, we do not know by how much, and how fast. Effective monitoring programs for a large suite of species are simply not in place. The few that are in place demonstrate their value, as well as the importance of published, long-term datasets. We must draw attention to the dangers of not knowing and of half-knowing. Worst of all is knowing but doing too little to ensure that our natural world is understood so that all our fauna survive long enough for future generations to see it differently, and take action where we have been blind or unwilling to act.

These dangers were partially recognised by both the *Threatened Species Conservation Act 1995* (NSW) and the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999*, both of which have provisions for recognising key threatening processes. Focusing attention on key threatening processes should reduce the extinction of more species than those formally listed as threatened. What this requires is a clear understanding and firm commitment to action, such as the development and of threat abatement plans, and the implementation of those that have been listed, well beyond the measures taken so far. Another process, Priority Action Statements, introduced in 2004 as an amendment to the *Threatened Species Conservation Act 1995*, is of historical interest now, but it did produce important statements for threatened

species that would not have emerged unless Recovery Plans were prepared, which was looking increasingly unlikely. Let us return again to bats because the treatment of bats illustrates how cryptic native fauna is caught up in politics and the law.

Bats are feared, misunderstood and even reviled, and as Lunney and Moon (2011) point out, we are 'blind to bats'. Recovery Plans were not a likely early prospect for NSW bats, and the one that had been produced by Commonwealth was found wanting for NSW (Lunney *et al.* 2003). For threatened bats, we found in the preparation of the Priority Action Statements that they would benefit from a concerted effort to address the 377 priorities for action that were identified in a formal process and published on the Department of Environment and Climate Change website (DECC was a forerunner for the current organisation OEH) for the 21 species of NSW bats listed as threatened (Lunney *et al.* 2011). This publication was not followed by any formal plans of action, with the important exception of the grey-headed flying-fox *Pteropus poliocephalus*. We are fortunate that the Australasian Bat Society keeps the subject of bat biology and conservation alive, as otherwise this information would be lost to researchers, the field of bat conservation would lack cohesion, students would be less likely to study bats, and carefully formed submissions to government enquires would be less likely to be drafted.

Another strand of nature conservation with a long heritage is the dedication of areas as National Parks or Nature Reserves. Although the first National Park in Australia was dedicated in 1879, nature conservation was not a goal. In fact, the rapid increase in the area of parks and reserves in NSW only began in the late 1960s (Lunney 2014). While this is arguably one of the best and most enduring nature conservation initiatives, it would be a narrow view of conservation if the remainder of the landscape was ignored. Another reason why biodiversity conservation is a dangerous idea is that it aims to protect ecological processes at the landscape scale, and that includes forests, farms, rivers, and suburban areas. This is much more ambitious than saving threatened species and dedicating and managing parks and reserves. There is no case for abandoning any current program – the case I am making is not to re-arrange priorities, but for expanding the initiatives.

A drive for profit

British environmentalist Jonathan Porritt (2000, p 8), in his introduction to his book *Playing safe: science and the environment*, said that his starting premise could not be simpler: "After decades of ignoring the implications of what we are doing to the earth, we now know that our current way of life is wholly unsustainable. In evolutionary terms, unsustainability equals extinction. Sustainability is therefore not an option: it is a non-negotiable imperative." This view is widely shared but it is repeatedly trumped

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by decisions to create wealth now, even if such wealth creation is ecologically unsustainable. Ecologically, the point may be clear, but the time scales clash, short term beats long term, and when you add evolutionary time, the gap is too wide for many to give it any weight in the decision-making process (Lunney *et al.* 1997). A pointed example of this complaint is abundantly clear in the book emerging from the 2012 Royal Zoological Society of NSW forum entitled *Grumpy scientists: the ecological conscience of a nation* (Hutchings 2013; Recher 2013; Rose 2013). We concluded with a paper that drew attention to the need for an ecological conscience (Lunney *et al.* 2013b). That need is derived from the imperative to conserve nature, to manage our wildlife so that it does not slide towards extinction, to protect natural areas from the relentless growth of the human population, and to manage our ecosystems sustainably. This idea of conserving nature has strong advocates in many walks of life and it repays society by giving future generations options to see and manage the world and its vital constituent parts ranging from health, food security to an aesthetic view of our environment. In stark contrast to this attractive notion is the drive for profit, for political advantage and personal gain.

Those who are keen to see the land, and all that is on it, used for human advantage, view the idea of nature conservation as soft, unrealistic or more simply as an impediment to wealth creation. Since the idea of nature conservation means land set aside as protected areas, such as National Parks and Nature Reserves, and space and resources left for wildlife on all land tenures, then conserving nature confronts the profit-drive of those in power. Those opposed to the claims for land and resources for nature are manifest in our society: they may oppose new National Parks being declared or laws restricting land clearing or logging; they feel constricted by threatened species legislation; and they are keen to see a more 'productive' use of land than is the intent of those keen to conserve nature.² Nature conservation is a relatively new idea, and biodiversity conservation is even newer. The rapid growth of the NSW National Parks system in the last three decades of the last century is one example of the flourishing of this idea; the passing of legislation in the 1990s to give special provisions to conserve threatened species is another. The demand to live more sustainably leads to tension in one location after another, on one issue after another, and the debates take many different forms. Ultimately the debates reflect the fact that conserving nature is such a radical idea that it is often actively opposed. It helps to see these debates thematically in order to see the underlying reasons for conflict and thereby see what is so dangerous. The following arguments will allay concerns where they do not

2 There is no intention here to single out any industry or corporate entity because I am pursuing a broader goal of seeing the entirety of the issue. However, the media provide sufficient coverage to demonstrate the enormous scale of the contest over the use of the land, the rivers and the sea. As I show in my corresponding paper (Lunney 2017), simply adhering to the letter of the existing law, with its emphasis on threatened species, is not enough.

need to exist and show when to stand one's ground if our natural heritage is being relentlessly diminished by one person's or one industry's short-term profit.

Fresh ideas are a danger to those bent on exploiting our natural assets

We have done a great deal as a society to conserve nature, but it is not enough. Natural areas and populations of native wildlife are still shrinking in Australia along with the rest of the world (Millennium Ecosystem Assessment 2005). The case to extend current nature conservation programs is made and remade regularly, but the clashes with other values, principally the pursuit of a higher GDP (Gross Domestic Product, i.e. wealth in dollars), become so great that the practice of biodiversity conservation becomes increasingly dangerous. Richard Kingsford (2013) phrases this point as a rhetorical question: "Australia's biodiversity conservation crisis – does anyone care?" Many care, but despair over the secondary question – how can we speak louder than money?

Ove Hoegh-Guldberg (2012), in his paper in the RZS forum *Science under siege* with the telling title of, 'Agree and ignore: the looming crisis for coral reef ecosystems', concluded with the appalling thought that, "Despite getting much of the message in terms of science... we remain stuck in the Stockholm Network's 'Agree and Ignore' scenario, when in fact we should be rapidly adopting the 'production cap' approach to energy use as quickly as possible." This is a call for a much more concerted conservation effort, including limiting energy production to reduce climate change and more effective local land and marine management, by those now in authority, as well as to fellow scientists. In *The reef: a passionate history: the Great Barrier Reef from Captain Cook to climate change*, historian Iain McCalman (2013) concluded his prologue (p10) with a strong personal conviction: "It is only by melding our specialized scientific understandings of the Great Barrier Reef with the ideas that it engenders – the sensory, the spiritual, the aesthetic – that we will fully appreciate why it demands we be its global caretakers." Both biologist Ove Hoegh-Guldberg and historian Iain McCalman, in their writings, were pushing dangerous ideas. These ideas, if taken up, will change how we manage the reef and world energy use, and engage our sensory, spiritual and aesthetic senses in making decisions that affect our environment.

The case is repeatedly remade that many of our natural areas that would fit the criteria for National Parks or Nature Reserves, and our wildlife populations on any tenure, are under-valued as we relentlessly, bit by bit, week by week, year by year, lose them to the impact of increased human population growth and an expanding economy. If we are negligent now in protecting these natural values, then they will not be retrievable by future generations.

Nothing spells that out more clearly than an extinct species, but extinct species is the end of the line. We must act long before that has happened. Yet it is a dangerous idea to challenge the growth paradigm, especially when that paradigm gives a low value to our natural assets, or does not even recognise their presence. 'Environment' seems all too often to be in competition with such words as 'progress', 'development' or 'land reclamation'. When used to defeat a concern for the environment, they are being used as 'weasel words', which are, as Watson (2004, p1) explains, words "from which life has gone, facsimiles, frauds, corpses"; words, Watson says dramatically, that have had the meaning sucked from them.

It is our successes in nature conservation programs that show that the idea is widely accepted and valued. But these successes threaten those businesses or models that do not give much weight to, or even include, natural values. A lot has been done to conserve natural areas and our native wildlife, including formally acknowledging conservation through legislation and the creation of relevant government departments, by putting some strong actions in place, such as threatened species legislation, and dedicating many new National Parks and Nature Reserves. From any point of view, the actions taken in the last 50 years have been magnificent compared to previously. But the ignorant past cannot be our guide. Compared to the ever-expanding recognition of the problems, we are falling well short of being sure that all our wildlife will survive indefinitely and our system of parks and reserves will reach their full potential to be comprehensive, adequate and representative. Consider some of the signs of the shortfall.

An ecological conscience is a matter for everyone

One conspicuous sign of the clutter in the environmental arena is seeing central issues, such as climate change, drift into narrow debates that are replete with nonsensical positions and confused media (Lunney 2012). The nature conservation debate surfaces in the media in many different forms. Consider the intense media coverage, just days before the RZS Dangerous Ideas forum, of the bushfires in NSW in late October 2013, especially in the Blue Mountains just west of Sydney. During the fires, an article by reporter Peter Hannam in the *Sydney Morning Herald* of 21st October 2013 was entitled: 'O'Farrell cut climate change watchers'. A photo of a bushfire, with two fire fighters in the foreground, had the caption, 'Extreme weather events: research positions cut'. The article opened with, "Deep cuts to staff and funding by the NSW government have largely dismantled the state's ability to investigate and prepare for the effects of climate change such as more frequent extreme fire weather, a former senior scientist with the government said. ...Peter Smith, who led the state's climate change science group until March, said his team of 10 had been slashed to just

three whose work remained climate-focused. A similar cut had been made to a separate team of 10 working on climate adaptation, he said." The article then cited Smith: "There's been more than a 50 per cent cut in the numbers of staff whose primary focus was climate change' Dr Smith said in his first media comments since leaving the role. 'The [Office of Environment and Heritage] was being downgraded anyway from a super department under the previous government to being an office attached to the premier's [department]'. Towards the end of the article, Hannam cited Smith as saying, "... getting in-house research approved typically took longer than the original study, and even then the O'Farrell government did little to publicise the work."

The objective here is not to go into the merits of the points raised by Peter Smith, but to look at how this matter can play out generically, a point made so sharply by Krebs (2012) in his ironically-titled paper 'What good is a CSIRO division of wildlife research anyway?' The argument is not just to re-instate the climate change teams and encourage, rather than hinder, publication of their findings. There is an underlying message that we, as a nation, are falling short of understanding and managing the climate change issue. There is another message that reducing staff levels means a reduced capacity of governments to see issues, be prepared, and then take action to deal with them. There is also the implication of the context of the article appearing in the first place. A former employee, an expert scientist in this case, felt compelled to speak up, and the *Herald* saw this as a glimpse into the hidden world of a government downgrading its capacity to act on an environmental matter – one where the very topic is of growing national importance, in this case the climate change-bushfire link. The article also implies that, as a society, we have reached the limits of what we expect from government in relation to environmental matters. The need for an ecological conscience is not just a requirement for governments, but for everyone. But how can we align conservation with broader social priorities? One radical way is to tie conservation to economic growth.

Economic growth propelling environmental decline

In 1996, Clive Hamilton and I were part of a team that put together the first Australian conference on ecological economics, which was held in Coffs Harbour, NSW. Our specialist contribution was on koalas, showing that their value to Coffs Harbour far outweighed the cost of preparing and implementing a comprehensive plan of management to conserve the local koala population (Hamilton *et al.* 2000; Lunney *et al.* 1999). Leading international ecological economist Bob Costanza was a speaker, and expanded on the relatively new subject of ecosystem services (Costanza *et al.* 1997). The findings were startling.

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They defined ecosystem services as shorthand for the habitat, biological or system properties or processes of ecosystems. Ecosystem goods such as food, or services such as waste assimilation, are the benefits that humans derive from ecosystem functions. Most of this value is outside the market place, but they estimated it to be at least US\$33 trillion per year. By comparison, global gross national product is around US\$18 trillion per year. The closing thought in their paper is that their study highlights the relative importance of ecosystem services and the potential impact on our welfare of continuing to squander them. This research continues and, as Balmford *et al.* (2002) point out, on the eve of the World Summit on Sustainable Development, and 10 years since its predecessor in Rio de Janeiro, the loss of natural habitats has continued largely unabated. Evidence now shows that such systems generate economic benefits which exceed those from continued habitat loss to the extent of a benefit:cost ratio of at least 100:1. This is breathtaking; it confirms our intuitive appreciation of nature, it confronts the exploitative developers, and reveals the lie that conserving nature is anti-wealth. But it is ignored. Old thinking prevails to tragic results. The loss of ecosystem services and the loss of biodiversity are among the list of what we have forfeited in the pursuit of any gains made from degrading or losing habitats.

The overlap of this line of economic research with biodiversity conservation warrants more attention from both disciplines. However, the language and the reference points look different and so make such interdisciplinary study more difficult. For example, 'ecosystem services' examines the link between economic growth and environmental damage and thus focuses on protecting ecosystems rather than a small suite of species. However, for a biologist to build up a picture of ecosystems and their functions, species matter, and although a specialist in forest mammals works in a different world to one working on marine invertebrates, there is much commonality in their conclusions. Pat Hutchings is a specialist in marine invertebrates, and Hutchings (2003) argues that, apart from listing individual marine 'flagship' species as threatened, the lessons from her research are that we need to move from species conservation to a system of threatened species and ecosystem process management for the marine environment. Similarly, David Lindenmayer continues to study the critically endangered Leadbeater's possum *Gymnobelideus leadbeateri* but, as he explains in his book *Forest pattern and ecological process* (Lindenmayer 2009), the scope of his research has continued to expand to "understanding the patterns which characterise forest landscape and the ecological processes that give rise to those landscapes" (p vii). Hutchings looks at marine invertebrates through a microscope, Lindenmayer looks at Leadbeater's possum through a pair of binoculars.

Both have applied a macroscope³ to where they conduct their research. But species matter, in both learning the detail and seeing the big picture.

In his acerbic book, *Growth Fetish*, Clive Hamilton (2003, p1) writes that nothing more preoccupies the modern political process than economic growth. Growth is the touchstone of policy success and Hamilton is relentless in his condemnation of such a 'growth fetish'. He points to the position of political parties fighting for power but each taking the stance that the objective of government must be the growth of the economy (p2). Hamilton, an 'ethical economist', identifies that economic growth is the product of population growth and the growth in consumption per person. That growth, says Hamilton (p177), is propelling the process of environmental decline.

Shifting from GDP to better, broader measures of sustainable progress

We must shift from economic growth to sustainable methods of progress; it is that non-negotiable imperative spoken of by Porritt. Although I have dipped into this subject before (Lunney 2013), the concept of a well-being index, especially where it includes nature conservation, deserves a wider introduction to biologists, especially those in decision-making roles. A useful point of introduction is the *World Happiness Report 2013*. The authors hope that it offers a contribution to the crucial debate on what should be the world's Sustainable Development Goals for the period 2015-2030 (Helliwell *et al.* 2013, p3). In the section on Virtue Ethics (p93), the report makes the point that we recognise that economic, social, and psychological factors are all at play in determining happiness. The report draws attention to the work of Professor Hans Küng and his colleagues at Tübingen University and the Global Ethic Foundation. It states that Küng and colleagues have convincingly argued that certain basic ethical principles are shared by all major religions and therefore can become the basis for a shared ethical framework in a diverse and pluralistic society. Two notable attempts in this direction are the Declaration Toward a Global Ethic adopted in 1993 by the Parliament of the World's Religions, and in 2009 the Global Economic Ethic that focuses on economic issues.

In the Global Economic Ethic, the overarching ethical framework is 'the principle of humanity', which includes ensuring the basic needs of all people and honouring the Golden Rule of reciprocity: 'What you do not wish done

3 Macroscope: the 2nd meaning in the Macquarie Dictionary (5th edn) is "comprehensive, concerned with large units or issues". I was introduced to this term by Brian Springett (1979) when he said that the only rational way to describe forest ecosystems is to step back from them and use what H.T. Odum calls the "macroscope", a method of making big objects seem smaller. In this way, says Springett, forests can be viewed in their entirety, stripped of the detail that makes them fascinating yet so difficult to understand.

to yourself, do not do to others.' Within the principle of humanity, the Global Economic Ethic identifies four basic values, the foremost of which is non-violence and respect for life, including respect for human life and respect for the natural environment⁴. Respect for the natural environment is a fundamental principle of humanity. The problem is the translation of Subjective Well-Being effects into monetary values and vice versa. This is consistently one of the most difficult problems for policy makers. The Report cites noise and air pollution as an example of how to value so-called intangibles. Clearly, wildlife and National Parks are part of the intangibles. The Report concludes (p107) that the desire to enhance well-being is being used more and more to drive policy decisions. Each new example, the Report notes, helps push forward the boundaries of what is possible, but these are early days and the techniques are being refined all the time. The Report makes the telling point that these analyses may give roughly the right solutions where many other techniques provide answers that, while more precise, are not measuring what really matters. The Report adds (p107-8) that international institutions can help this process by agreeing on ways of measuring well-being and by publicising the results. The Report itself gives some clues as to the significance of why we should shift away from GDP.

In this table (p22, and reproduced in part here as

⁴ The others are (2) Justice and solidarity, including rule of law, fair competition, distributive justice, and solidarity; (3) Honesty and tolerance, including truthfulness, honesty, reliability, toleration of diversity, and rejection of discrimination because of sex, race, nationality, or beliefs, and (4) Mutual esteem and partnership, including fairness and sincerity vis-à-vis stakeholders and the rights to pursue personal and group interests through collective action.

Figure 1) Australia has a score of 7.350, which makes it country #10 in the world for happiness in a list of 104 countries. The contribution of GDP to that score is about 1.3 (estimated from the histogram, ~18%). The standout conclusion is that GDP plays but a modest role in the sense of happiness for Australians. This means we need to re-examine the national emphasis on economic growth where that growth compromises 'intangibles', such as loss of wildlife and natural areas and therefore the irretrievable loss of biodiversity.

With their paper: 'Time to leave GDP behind', Costanza *et al.* (2014) have continued to develop this theme. Their thesis is that GDP is a misleading measure of national success and countries should act now to embrace new metrics. They point out that GDP has been in use since 1944 at the Bretton Woods meeting to plan the post-war economy, when increased economic activity provided employment, income and amenities to reduce social conflict and prevent another world war. But, Costanza *et al.* point out, the world today is very different from the one faced by the global leaders who met in 1944. The emphasis now is that GDP in developed countries fuels social and environmental instability, as well as blinding developing countries to more-sustainable models of development.

There is an obvious alignment of conserving biodiversity with the point that Costanza *et al.* (2014) make that soaring economic activity has depleted natural resources. They conclude their paper with the plea that the "successor to GDP should be a new set of metrics that integrates current knowledge of how ecology, economics, psychology and sociology collectively contribute to establishing and measuring sustainable

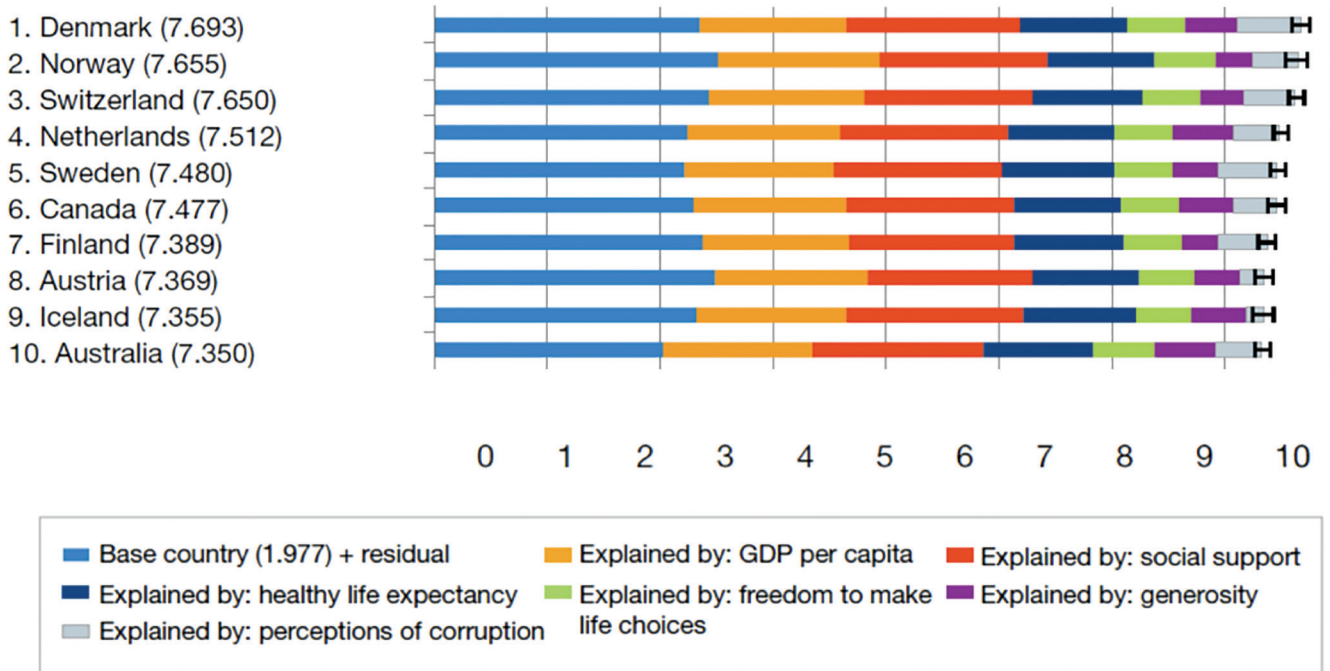


Figure 1. Ranking of Happiness: 2010–12 (p22 in World Happiness Report, Helliwell *et al.* 2013)

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wellbeing." They add that the new metrics must garner broad support from stakeholders in the coming conclaves. We must include all our wildlife in any new metric. The stakeholders are every one of us.

Conclusion

There is a convergence of ideas of conserving biodiversity, protecting ecosystem services, and replacing Gross Domestic Product with a new metric that includes an ecologically comprehensive outlook. I have traced some of the ideas that I have encountered in my working life, mostly as a researcher with a sustained interest in native animals, endangered species, natural areas all within the context of changing legislation, increasing scientific knowledge and a growing public interest in the desire to see our wildlife avoid the grim fate of extinction. In an accompanying paper I argue the case to conserve and manage all species, not just those that have slipped so far as to be listed as threatened (Lunney 2017). So far it has proved to be beyond our collective willingness to consider such action. Why is such a modest proposal so radical? The danger lies in the fact that it places even more blocks on potential developments, or at least restrictions, with governments imposing the rules. One of the means of dealing with this matter is to put the value of ecosystem services into the accounts of local, State and the federal government. Another is to formally recognise that our happiness or wellbeing can be

measured, and that Gross Domestic Product (an economic indicator) plays only a modest part in our wellbeing. But we will never conserve all species until our wildlife is seen in the broader context of how we manage our land and water, and measure our wellbeing. My dangerous idea of studying, managing and conserving all our native vertebrate fauna is a constrained but definite step towards conserving biodiversity and accounting for ecosystem services. This is the new metric to replace material wealth as the primary measure of our wellbeing.

Seeing things with fresh eyes is a challenge, and for conservation, that means challenging such assumptions as the primacy of the economic growth paradigm. For a zoologist, it means finding out what is missing from those economic and political arguments that diminish or dismiss conservation concerns, such as knowing the status and ecology of all species, and all the threatening processes affecting the survival of our wildlife. It is fresh ideas that present the danger for those who would ignore, exploit or overuse our natural assets and our wildlife.

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