

SUBMISSION TO INQUIRY INTO AUSTRALIA'S FAUNAL EXTINCTION CRISIS

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From my research and experience as a Field Biologist across Australia and as a Wildlife Scientist at CSIRO, I have seen the significant decline and local extinctions of fauna species that once were common. I believe all of our ecosystems are vulnerable and all the species within are at risk of extinction, regardless of whether these ecosystems are large in area or small. I view all native ecosystems are valuable and priceless whether they contain endangered, vulnerable, threatened, abundant or common species. My vision for redressing Australia's faunal extinction is by increasing the total area of indigenous ecosystems. My publications include peer-reviewed scientific papers and authored book chapters such as in *The Mammals of Australia* (see www.myfanwywebb.com for more).

Our understanding of what causes decline in all biodiversity is currently insufficient to adequately focus on isolated measures such as better fire management and be confident that those measures will be enough now or into the future. The main threatening process overarching all biodiversity and the one that we do have a good understanding of is, land clearing. To combat land clearing, I believe the fauna and flora will greatly benefit from broadening the range of ecosystems and strengthening the intrinsic processes that occur within the ecosystems that they inhabit and grow in.

Increasing the overall ecosystem size across Australia by planting and growing the main structural components of original indigenous site-specific vegetation communities can increase the volume and diversity of native flora and fauna. Resurrecting ecosystems manually should encourage all of the intricate connections within ecosystems and bolster their resilience to threats. I see **re-growing bush is like providing necessary new 'housing developments' for our populations of animals and plants.** Repopulating Australia with native biodiversity will benefit our human populated Australia.

I propose a strategy aimed at increasing and strengthening our biodiversity through resurrecting ecosystems with the aim to increase at a large scale, the natural ecosystems land area across Australia by more than 25% of what is currently left.

Australia covers 7688503 square km. Livestock grazing on native vegetation occurs on 55% of the continent, conservation reserves make up only 7%. Land protected by indigenous uses totaling 13% leaving 25% for the rest. See Figure 1.

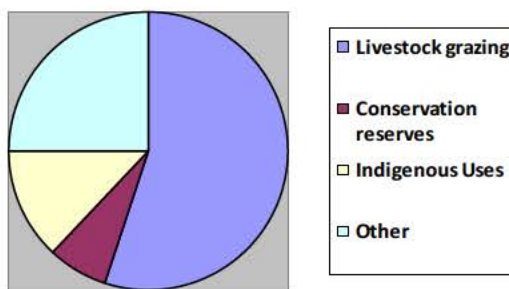


Figure 1 Broad land use types on the continent of Australia.

So the 'other' land use makes up 19221257 square kilometers. If you add the livestock grazing land (42286766 square km) to the rest of the unprotected land, this makes 61508023 square km. If 25% of this is resurrected with intact ecosystems, Australia would enjoy 15377005 square km of replenished land supporting an increase in native plants and animals. To give you a visual idea of this vastness, Sydney city is 12368 square kilometers and would fit 1243 times into that 25%. Imagine the Sydney area as completely intact native bush land spreading out 1242 times in area out. See Figure 2.



Figure 2. Map of Sydney area within the purple coloured borders.

Australia has one of the highest land clearing rates in the world. Most of the clearing of native vegetation has happened in recent decades, more than at any other time of the island's history (Bradshaw 2012). I see a goal of increasing the proportion of intact ecosystems on all land use types by 25% is today both modest and ambitious. (See more at www.react.care). Australia has lost nearly 40% of its forests with rest mostly fragmented (Bradshaw 2012).

Australia's Biodiversity Conservation Strategy 2010-2030 states the "Important direct drivers of biodiversity decline are habitat loss, fragmentation and degradation..."

Bradshaw writes, "...management must emphasize the maintenance of existing primary forest patches, as well as focus on the regeneration of matrix areas between fragments to **increase habitat area, connectivity and ecosystem functions.**"

Australia's Biodiversity Conservation Strategy 2010-2030 includes;

1. "...an increase in private expenditure on biodiversity conservation" Instead of confining recommendations to private expenditure Australia's biodiversity will benefit from an increase in PUBLIC expenditure on biodiversity conservation.
2. "maintaining the extent of habitat" Australia's biodiversity will benefit from an additive approach of not just maintaining habitat but and also INCREASING THE EXTENT of habitat".

The recommendation of "A net national increase in the extent and condition of native habitat across tenures" is exactly what this proposal is aiming to action. Relying on current targets will not achieve this. For instance; the target of Australia's Biodiversity Conservation Strategy 2010-2030 is;

"Target 4: By 2015, achieve a national increase of 600,000 km² of native habitat managed primarily for biodiversity conservation across terrestrial, aquatic and marine environments."

This submission proposes the following;

1. National Strategy to re-grow native vegetation to increase biodiversity.
2. Implement National strategy via a dedicated government group. This group could utilize local councils to coordinate the strategy and employ various professional specialist types to consult.
3. Engage all Australians in participating in guardianship of all land to resurrect our ecosystems and increase our biodiversity.

2- Implementation of Strategy would involve;

- a) Identifying cleared areas to be re-grown.
 - 1 Map the **entire** area of Australia for vegetation type, land uses and geographical features.
 - 2 Prioritize zones on **all land** regardless of ownership, use, or control.
Prioritize zones to resurrect ecosystems based on locations of existing natural vegetation, land use and geographical topography.
 - 3 Prioritize zones not focusing primarily on ecosystem type or biodiversity type such as high profile species, rather aim for increasing all ecosystem types as all are under threat.
 - 4 Identify original vegetation types in areas of priority using experts (ecologists, botanists) and historical records.
- b) Collect measurable baseline biodiversity and ecosystem health data. Survey baseline biodiversity.
- c) Nursery production of locally evolved provenance plants.
- c) Re-seed with provenance plants, implement associated interventions (fencing) and maintain.
- e) Monitor and survey biodiversity volume, diversity and health of ecosystems over time after interventions.

3- Involve all Australians in the care and strengthening of our biodiversity

- a) Create new avenues to invite all Australians to participate in the goal to increase Australia's total natural ecosystem land area by re-growing ecosystems. One way to involve our diversity of Australians is to provide ways for citizens access, care for and re-grow ecosystems on multiple landholder status types such as industrial, agricultural, council, crown, private etc
- b) Provide all landowners (from suburban to company owned corporate land owners) with for example, perhaps assessment sheets for them to input baseline data, give them tools to assess their land, plant plants and then monitor biodiversity.
- c) Shift the cultural ideology by
 - 1) Aiming to educate Australians and the world that Australia's uniqueness is of rich biodiversity of ecosystems is priceless. *"We've lost much of the nature that makes this country distinctive and special," "But the extent of loss has been even more severe than is generally acknowledged"* said John Woinarski, (Professor of Conservation Biology) whose book, The Action Plan for Australian Mammals 2012, prompted many of the new mammal extinction threat assessments.
 - 2) Remove the way land value 'improvements' are defined and estimated as stated by the Valuer General NSW. It is stated that 'Land value does include *improvements* to the land like draining, excavating, filling and clearing.'" These types of structural changes to the land have effects on natural ecosystems and I think it is misleading to refer to them as 'improvements' when they are rather 'modifications' that should not necessarily be encouraged and rewarded in higher land values.

I believe an integrated national approach of growing more ecological habitats everywhere, on all lands, to house all native fauna, will significantly increase our precious native fauna population sizes. These

growing ecosystems will become more internally complex over time by natural processes. This complexity and the increasing external connectivity (across land and air) between other existing native ecosystems will provide a strong physical base for faunal resilience against the other present and future threats to their extinction.

References:

Australian Bureau of Rural Sciences *Australia's Forests at a glance* 2010, Australian Government
Department of Agriculture, 2010 Canberra, Australian Fisheries and Forestry

Australia's Biodiversity Conservation Strategy 2010-2030

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