Submission 042
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18 July 2011

Ms Julia Morris
Secretary
Standing Committee on Climate Change, Environment and the Arts
PO Box 6021
Parliament House
Canberra ACT 2600

Dear Ms Morris

RE: Submission by Western Catchment Management Authority for the Inquiry into Australia's Biodiversity in a Changing Climate

Thank you for the opportunity to contribute the Western Catchment Management Authority's view to the Standing Committee on Climate Change, Environment and the Arts inquiry into Australia's biodiversity in a changing climate. This submission presents views held by the Western Catchment Management Authority in the context of managing biodiversity in semi-arid western New South Wales (NSW).

Catchment Management Authorities are the key bodies implementing natural resource management in NSW, ensuring that decision-making and investment are made at the regional level. The Western Catchment Management Authority has responsibility for achieving natural resource management outcomes including the conservation of biodiversity on the predominantly leasehold lands within the Western Catchment of NSW.

The Western Catchment occupies an area of approximately 230,000 square kilometres, most of which consists of semi-arid rangelands having relatively intact native vegetation but in various condition states. The spatial scale of the region is vast, individual landholdings are large (up to 100,000 hectares) but the human capital is limited. This dictates that natural resource management must be strategically focused at the landscape-scale and based on ecological principles through implementing a limited suite of tools, especially grazing management.

While the catchment has iconic biodiversity assets such as the Paroo Wetlands and Narran Lake, we consider that the broader landscape provides a significant reservoir of native fauna and flora within an extensive matrix of well-connected habitats. These habitats include mulga and associated woodlands or shrublands, Mitchell grasslands, riparian corridors and chenopod shrublands. They are poorly-recognised as biodiversity assets due both to limited assessment and current condition status.

Our submission is framed in the context of the inquiry's terms of reference as follows:

1. **Terrestrial, Marine and Freshwater Biodiversity in Australia and its Territories**

The objective of your inquiry is to report on biodiversity in a changing climate in relation to nationally important ecosystems. We consider Australia's semi-arid rangelands including the Western Catchment as nationally-important ecosystems but have concern that these landscapes are often overlooked by policymakers and academics. Geographic isolation, vastness and the national obsession with the coast have contributed to a poor knowledge-base

Cobar Office: 62 Marshall Street COBAR NSW 2835 – PO Box 307 COBAR NSW 2830
Telephone (02) 6836 1575 Facsimile (02) 6836 2988 Website western.cma.nsw.gov.au

for rangelands in the context of understanding biodiversity attributes and likely response to climate change.

Rangeland ecosystems such as the Western Catchment occupy approximately 40% of NSW and 70% of the Australian continent. The Western Catchment has a commonality of issues with the broader southern rangelands having semi-arid Mediterranean-type climates extending from Cobar (NSW) to Shark Bay (WA). We identify several issues as most impacting on biodiversity throughout these southern rangelands:

- Groundcover is the key element of landscape resilience in semi-arid rangelands. Long-term depletion of groundcover has implications for habitat structure, species composition, fire frequency and extent of erosion. Lack of groundcover largely due to the impact of nomadic grazing animals, primarily goats but also predator-free kangaroo populations, adds to the effect of domestic livestock. This issue is termed total grazing pressure. We consider the impact of nomadic grazers to be greatly underestimated. Uncontrolled total grazing pressure undermines the capacity of land managers (private or public) to effectively manage groundcover regardless of the adoption of improved natural resource management practices.
    - Recent analyses of aerial survey data indicates that feral goat populations are continuing to increase despite drought and the activities of a feral harvest industry.
    - Innovative landholders who have controlled total grazing pressure have achieved outstanding improvements in groundcover and plant species composition. This was demonstrated at a National Total Grazing Pressure Workshop held in Adelaide in February 2011.
    - Despite competition and habitat destruction by the feral goat being listed as a key threatening process under both Commonwealth and New South Wales legislation, the resources allocated to this issue are inconsistent with the scale of the problem.
- Loss of small or mid-sized mammals and other fauna through the impact of introduced predators, especially feral cats and foxes, but also feral pigs and wild dogs. Regardless of habitat condition, connectivity or impending climate change, the likelihood of persistence of many species is minimal unless introduced predators can be managed at a landscape scale.
    - Despite the widely documented magnitude of the impact of feral predators on native wildlife, resources allocated to this issue are inconsequential.

Consistent with the findings of Steffen et al (2009)[1], our advice to the Standing Committee is that action to increase the resilience of biodiversity to climate change in the Western Catchment should focus on greater effort to address the existing stressors listed above. The ongoing impact of feral goats and introduced predators eclipses the anticipated likely impact arising directly from climate change (Coutts-Smith et al 2007)[2].

Vegetation recovery after decadal drought in seasons such as 2010 to some degree demonstrates the resilience of species in the semi-arid rangelands to a highly variable climate regime.

1. Will Steffen, Andrew; Burbidge, Lesley H; David Lindenmayer; Warren Musgrave; Mark Stafford Smith and Pat Werner (2009) A strategic assessment of the vulnerability of Australia's biodiversity to climate change; Report repared for the Australian Government by the Biodiversity and Climate Change Expert Advisory Group

2. Coutts-Smith, A.J., Mahon, P.S., Letnic, M. and Downey, P.O. (2007). The threat posed by pest animals to biodiversity in New South Wales. Invasive Animals Cooperative Research Centre, Canberra

2. Connectivity Between Ecosystems and Across Landscapes that may Contribute to Biodiversity Conservation

Clearing is a very minor land use impact in Australia's rangelands and the concept of connectivity loses its power in this situation in terms of native vegetation cover. In the Western Catchment, clearing affects less than 5% of the land area and the remainder retains native vegetation in varying condition states. The continuity of "natural" vegetation for the passage of species relates more to the abundance and composition of groundcover (grasses and forbs) than the presence of tree or shrub strata. As indicated above, the key factor influencing groundcover and lower stratum species composition is the degree of impact of nomadic feral and native herbivores in addition to the effect of domestic livestock management.

- Better management of existing stressors, especially the control of feral goats, to maximise groundcover in the Western Catchment, is likely to provide better resilience to climate change than novel schemes to improve landscape connectivity.

Many landscapes within the Western Catchment have experienced episodic woody thickening over the past 150 years of European occupation, which is the converse of the fragmentation of shrub and tree cover that has occurred on arable landscapes. There is wide literature on this issue and the broad consensus is that the thickening results through reduced fire frequencies which in pre-European times would have thinned tree and shrub seedling recruitment during unusually wet years. The impact of this thickening on biodiversity is a "homogenisation" of landscapes that were previously more open and patchy, which impacts some guilds of species, especially those dependent on grassy open woodlands.

4. Strategies To Enhance Climate Change Adaptation, Including Promoting Resilience In Ecosystems And Human Communities

As indicated above, we consider the best strategy to promote resilience in Western Catchment rangelands is to better address current stressors, primarily grazing impacts exacerbated by unmanaged feral and native herbivores as well as the suppression of introduced predators.

Only in recent years have innovative landholders recognised the benefits of managing total grazing pressure using contemporary fencing materials. Presently we operate incentive funding programs to promote the management of feral goats through the erection of appropriate mesh fencing and the establishment of trap facilities. However the widespread management of feral goats requires a comprehensive strategy:

- The feral harvest industry is the driver of community attitudes to unmanaged goats and to some landholders is a disincentive to improvement of grazing and groundcover management.

- Strategically, the development of the goat processing industry to market a higher value product could readily drive greater management of the feral resource and improve groundcover management.

5. Mechanisms To Promote The Sustainable Use Of Natural Resources And Ecosystem Services In A Changing Climate

To address equity in relation to the private costs and public benefits of conserving biodiversity and natural icons held on privately-managed rangelands, it is necessary to implement a mechanism that recognises an economic value of the environmental services provided by the landscape. The wider community must have an opportunity to contribute to biodiversity conservation.

As a general comment, stewardship programs to date have been unattractive to rangeland landholders. These holdings generally operate at an extensive scale based on grazing of the

most productive areas of native vegetation. Unlike arable landscapes, there are no discrete "remnant" areas of native vegetation suited to boutique programs. The return from stewardship payments is generally inadequate to offset routine management costs and any foregone returns from grazing.

As a solution, the concept of Enterprise-based Conservation (EBC) was developed and adopted by the WEST2000 Plus initiative as a pilot program. Due to the successful outcome from the pilot, the program was then extended and implemented by the CMAs in the Western Division of NSW (in particular the Western, Lachlan and Lower Murray Darling CMAs). Approximately 50,000 hectares of rangeland are currently under contract for conservation management under the CMA program for a period of fifteen years. Landholders are contracted to actively manage the land and abate threats to biodiversity, with provisions guaranteed through the establishment of an appropriate covenant over the land

Enterprise-based Conservation established conservation management as a viable alternative enterprise to grazing. The approach differs from stewardship schemes in that it makes conservation an enterprise alongside other agri-businesses as part of overall property management. Secondary outcomes include the engagement of the private landholder community in conservation management, the development of a diversified income stream that increases community resilience under changing circumstances such as the effects of climate change, together with an improvement in natural resource condition.

The Enterprise-based Conservation program has engendered strong community acceptance evidenced by ongoing inquiries for further participation. However we have identified that expansion of this program requires ongoing funding derived from a self-sustaining trust rather than program funding. A business model for this approach has been developed but presently remains unfunded.

Regards,

Rory Treweeke
Chairman
Western Catchment Management Authority