

**PROCEEDINGS OF THE AUSTRALIAN RANGELAND SOCIETY BIENNIAL CONFERENCE**  
**Official publication of The Australian Rangeland Society**

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For example:

Anderson, L., van Klinken, R. D., and Shepherd, D. (2008). Aerially surveying Mesquite (*Prosopis* spp.) in the Pilbara. *In*: 'A Climate of Change in the Rangelands. Proceedings of the 15<sup>th</sup> Australian Rangeland Society Biennial Conference'. (Ed. D. Orr) 4 pages. (Australian Rangeland Society: Australia).

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# A RANGELAND RENAISSANCE IN (WESTERN) AUSTRALIA OR DENIAL OF DISSONANCE AND MAINTAINING MYTHOLOGY?

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## **ABSTRACT**

The poor state of formal environmental auditing of Western Australian rangelands does not appear to have limited adequately the expansive environmental reporting on their health in terms of resource (range) and biodiversity condition. This “pragmatism” is self-defeating on two fronts. First, invalid inference is usually revealed and reflects poorly –sometimes unfairly so - on the projects supplying the results. Second, reporting on what politicians require without adequate data is likely to send the message that significantly more resources are not needed to do the job and therefore sampling will not improve. The important gaps in capacity to report validly on key issues should be highlighted.

Unlike Government organisations, NGOs are expected to convince financial backers that they are returning biodiversity outcomes on investments. Independent scientists review our reports. Bush Heritage Australia is well advanced in building and implementing an Ecological Outcomes Monitoring (EOM) Programme to evaluate whether its Adaptive Ecological Management System is functioning well and returning biodiversity outcomes that have been identified as most important, on owned and partnership rangelands. Perhaps there are lessons to be learnt from this relatively new player in the rangelands?

## **THE RENAISSANCE MAY BE A MYTH?**

The discrepancy between the Ecosystem Management Understanding (EMU) and the Western Australian Rangeland Monitoring System (WARMS) assessment of trend in the rangeland health of the Gascoyne-Murchison Strategy region was reconciled on the basis of hierarchical patch dynamics theory (catchment to patch ecology in this instance) (Pringle *et al.* 2006). The “reconciliation” was not reflected adequately in subsequent use of WARMS data; a WARMS publication of the generally “good news” (Watson *et al.* 2007), using much of the same data suggested:

*“However this result should be tempered by the understanding that acute degradation processes may still be occurring, especially within and surrounding drainage lines, which are away from where the WARMS sites are typically located”.*

and;

*“In simple terms, Pringle and Tinley report on ongoing degradation of the drainage lines while the WARMS results are based on assessments of parts of the landscape away from the drainage line, which are still largely intact (Pringle *et al.* 2006).”*

Perhaps a more adequate caveat would have read;

*“It should be recognised that at a land system level, WARMS generally samples most stable and generally not most productive and ecologically important components of the landscape (see Figure 2 compared to Figure 3 in Pringle et al. 2006).”*

However, if that inadequate qualification of WARMS results in a catchment-ecosystem context was not enough, WARMS results (and other similarly limited data) were then used to represent a relatively rosy picture of rangeland biodiversity in the WA State of Environment Report (Environmental Protection Authority 2007). It is very difficult to grasp the link between the WARMS sampling design and key biodiversity values (e.g. declining fauna, breached wetlands, disintegrating catchment connectivity and rare flora predated by feral goats on breakaways). Is there one? Yet, this is what is now on the record.

The EMU assessments do not prove that WARMS primary and secondary interpretations are wrong. But they lay down the challenge to WARMS and other site-based rangeland monitoring systems to match the scope of inference to limits of sampling design in the light of contemporary ecological theory (e.g. Wu and David 2002). This challenge has been somewhat circumvented and the idea of an ecological renaissance in the rangelands may gather momentum if these issues are not addressed. The fundamental flaws in the inferential frameworks that suggest such “generally good news” remain (Pringle and Tinley 2003; Pringle *et al.* 2006) and appear to be misunderstood (Watson *et al.* 2007).

Whatever the reality, we cannot look to WARMS and similar site-based systems across Australian rangelands for a comprehensive audit of rangeland health in contemporary terms (Pringle 1998). They were not set up to audit many key contemporary values and are made vulnerable when attempts are made to do so. They provide some valuable intelligence about some of the issues, but become part of the problem when their results are used out of context (Pringle *et al.* 2006).

### **BUSH HERITAGE AUSTRALIA – an approach providing accountability to donors**

Bush Heritage Australia (BHA) has until recently focused on purchasing land and leases to protect important biodiversity values using money donated or granted to it. Major donors such as The Nature Conservancy (TNC) and The Thomas Foundation quite rightly insist that we show biodiversity return on investment to secure ongoing support. Thus our ecosystem monitoring is obligatory, rather than discretionary and needs to report on the fare of key ecological attributes that reflect our organisational conservation goals. We thus have a logical sequence of goals, criteria and indicators for our properties, which are translated into detailed variables and sampling protocols at the local level and in respective management plans and reviews.

We have three main streams of ecological outcomes monitoring:

1. Representative Ecological Condition: a system of ground-based sites, linkable to satellite data, that reflect the general ecological health of our properties in terms of specific property goals, but also informing us of system dynamics and health across “ecological types”, “management legacies” and contemporary threats (a systematic, multiple stratification).
2. Specific monitoring of key values: from satellite-based vegetation condition to breeding success at individual mallee fowl mounds.

3. Intermediate timeframe monitoring: while temporal trends in ecological condition are often swamped by seasonal variation, external disturbances and so forth, for key management issues within Reserve Management Plans, we set up “finger on the pulse” monitoring sites to assess whether we appear to be on the right track (e.g. restoring ground cover and repairing browse lines in destocked areas). These sites build on the EMU Landscape Monitoring Level 1 approach.

While the system was only initiated in 2005 and is still being developed and rationalised, the information is already feeding back into management adaptively, particularly with respect to landscapes that exhibit different degrees of resistance to failed winter seasons and the emergence of grazing sensitive species. Integral to our systematic management planning in terms of key values, threats, resources, activities, outputs and then ecological outcomes, our ecological monitoring is both a score card to our supporters and an information system for our professional, mostly resident managers.

### **ARE THERE LESSONS TO BE LEARNT FROM THE BHA APPROACH?**

The answer is quite clearly, “No”, if whatever established rangeland monitoring systems' data used to publish accounts of trend from range to biodiversity condition are acceptable. Surely this is parsimony at its best? But for BHA, we are under legitimate scrutiny from scientists in The Nature Conservancy who consider the basis of our inferences. Rejection of our audits would jeopardise a vital funding stream. We have to achieve ecological outcomes on the ground and then demonstrate robustly that we did so. We don't have a choice and that is entirely appropriate.

Should the work of John Childs and colleagues be viewed as nobly naive (Childs *et al.* 2001) and we should just accept whatever existing rangeland monitoring systems come up with in the name of pragmatism, even if the data collected are quite inadequate to answer relevant contemporary questions? This approach runs the risk of “pseudo parsimony”; using data well beyond their relevance to answer many questions. Is a more strategic approach warranted (Childs *et al.* 2001; Pringle and Hopkins 2006)?

Could the Australian Rangeland Society make a stand in collaboration with partners (e.g. the Ecological Society of Australia) and propose a “you get what you pay for” policy in terms of environmental auditing? This policy should not threaten existing monitoring efforts; the emphasis should be on filling the gaps. Perhaps the imminent Australian Collaborative Rangeland Information System (ACRIS) report will do so?

### **A WAY FORWARD**

The value of longitudinal data is in their longevity, we must not throw out the baby with the bathwater in reinvigorating rangeland monitoring. But, as BHA does for its properties and connection projects with partners, regional authorities and community groups (more importantly) should frame questions based on goals, criteria, indicators etc to track their progress in terms of what matters, not what is already measured by Government agencies. Organisations like BHA should reciprocate Government grants by making available all of the systems it develops for wider use and collaborative improvement.

## **ACKNOWLEDGEMENTS**

The Macquarie Foundation funded the development of BHA's Ecological Outcomes Monitoring programme. The contributions from Bush Heritage staff about rangeland monitoring are appreciated, particularly Sandy Gilmore and Reserve Managers. Ian Watson (CSIRO, but in his old DAFWA capacity) and Jim Radford (BHA) provided constructive critical reviews. Ian Watson's continued support for these issues to be addressed openly is appreciated.

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