



JML Environmental Consultants Pty Ltd

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Background:

My name is John Lemon and I have 30 years of experience in environmental and scientific research. I've lived on the Soil Conservation Research Centre at Gunnedah since 1988 and initiated a number of pioneering research projects during that time.

I would like to address concerns about the koala component of the Environmental assessment report and the offset and rehabilitation plantings.

Koalas:

- As I said previously, the koala component is an extremely emotive topic in Gunnedah. The fact that the definitive number of 262 koalas on the Watermark site is tabled is of extreme concern – mainly because I feel that this figure is extremely unrealistic.
- Since I presented to the PAC in June, we've had a prolonged period without significant rain as well as record soil temperatures of 31oC at depths of 10cms and 20cms. We also recorded 42.4oC on Friday the 24th of November.
- On the same day I caught an extremely distressed female koala exhibiting signs of Chlamydia, at the base of a River Red Gum on the Centre. I took her into the vet to be euthanized. The following Monday another koala in an emaciated state and showing signs of Chlamydia was euthanized by the Gunnedah Veterinary Clinic.
- The impact of drought and heatwaves have contributed to a significant decline in koala numbers across the Liverpool Plains since 2009. I estimate that we have possibly lost as much as 70% of the population since 2008.
- Shenhua is aware of this situation and wants to incorporate a science based approach to their Koala Plan of Management. Earlier this year, Dr Mathew Crowther from the University of Sydney, Associate Professor Brian Wilson of the University of New England and Shenhua were successful in being awarded a linkage grant by the Australian Research Council. This research will be undertaken over a three year period and builds on the comprehensive research project undertaken on koalas from 2008 to 2011.

Which leads me to my next point of discussion. How to use local on ground experience, knowledge and research outcomes to achieve the best environmental results in offset and rehabilitation plantings?



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Offset/Rehabilitation plantings

- The Watermark site has similar topography and soil types to the Gunnedah Soil Conservation Research Centre. Basically it was cropping country in the 40's, 50's and 60's before it reverted to grazing when cropping was no longer a profitable option.
- In 1991 I established Habitat Reconstruction sites at the Centre which continued until 2005. In 2000 this methodology was extended to sites across the sheep/wheat belt of NSW.
- I initiated biodiversity audits in 1999 at the GRC sites which continue to this day. Species such as koalas, Glossy Black Cockatoos, Speckled Warblers, Painted Honey-eaters, Narrow-nosed Planigales and Common Dunnarts have re-colonised these sites.
- The tree screen planting on the Watermark site has incorporated aspects of this research. A local company with 20 years of experience, Fields Environmental Solutions, were engaged to establish a biodiverse planting. It incorporates more than 20 native species and this number will be increased with the direct seeding component of the project. Baseline soil sampling will probably be undertaken to monitor future increases in both above and below ground carbon.
- My take home message is this. With considered planning and implementation you can achieve significant biodiversity benefits from what was previously a degraded cropping/grazing landscape. Our research and outcomes over the past 23 years prove that this is not only possible - it can be done. These same principles can be applied to the Watermark site with equally positive results if done as part of an informed, consultative and structured methodology. By embedding a credible research component in its on ground works, Shenhua can set a new benchmark in this field. It just takes time and commitment to make sure it happens.

References:

Daniel Lunney, Mathew S. Crowther, Ian Wallis, William J. Foley, John Lemon, Rob Wheeler, George Madani, Corinna Orscheg, Joanna E. Griffith, Mark Krockenberger, Melissa Retamales and Eleanor Stalenberg: **Koalas and climate change: a case study on the Liverpool Plains, north-west New South Wales.**

D Lunney, J Lemon, MS Crowther, E Stalenberg, K Ross and R Wheeler: **An Ecological Approach to Koala Conservation in a Mined Landscape.**

John Lemon, Warren Martin, Brian Wilson, Chris Nadolny and Daniel Lunney: **Habitat Reconstruction at Gunnedah Research Centre, Gunnedah. New South Wales.**

Poster: **Climate Change and Koala Populations: The likely impact of rising levels of carbon dioxide and heat stress with implications for adaption**