

Eucalypt decline and dead trees: if it's not sexy few seem to care

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WHETHER its Bell Miner Associated Dieback (BMAD), Eucalypt Decline or as the wording of the Key Threatening Process nomination states "Forest eucalypt dieback associated with over-abundant Bell Miners *Manorina melanophrys*, and psyllids, the phenomena of eucalypt decline on the east coast of Australia is serious. Approximately 781,000 hectares of east coast forests are currently predisposed to decline (Vic Jurskis unpub. data 2008). Among all the forms of dieback affecting east coast forest types, BMAD is one of the most serious and over \$700,000 has been spent in the last few years trying to work out the what, why and where of managing this threat to forest ecosystems. Despite a 'task force' (the BMAD Working Group) having been set up to report on Bell Miner Associated Dieback, to the majority of Australian's, it either doesn't exist, they cannot agree on an acceptable term to describe it or it is not on their "peril radar". Substantial effort has been invested trying to unravel the mystery of BMAD and mitigating its impacts. Yet, to some decision makers, BMAD is not important and they see little association between this phenomena and drought, poor land management, weeds, fire and climate change; issues which do seem to capture their attention.

In northern New South Wales alone, it was estimated in 2004 using aerial surveys that 200,000 hectares of forest in the Kyogle area were affected by this form of dieback (FNSW unpub. data. 2004). Over the whole State there are 2.5 million hectares of forest that are suitable forest types where eucalypt decline could occur (after Keith 2004). While factors such as exclusion of fire (Jurskis and Turner 2002; Jurskis 2005), poor forest restoration following timber harvesting (Florence 2005), forest

structure and canopy degradation (Stone 1998; Stone *et al.* 2008), drought, weed invasion and a multitude of other factors are listed as potential culprits (Wardell-Johnson 2006), we may never be able to tease out a cause. What is certain is that large areas of forests are dying and *Lantana camara* is often abundant, fire frequency has decreased, Bell Miners are often in large numbers, as are psyllid insects, forest structure has been simplified and tree canopy cover has been reduced. The consequences of this is an increasing area of forests with dead trees, poor forest recruitment, serious decline of habitat health and an economic loss to the forest based industries that rely on flowers, seeds and wood.

The role of the native bird, the Bell Miner, in some tree decline is stark. I have no doubt that the birds and their sap sucking psyllid insect mates (*Glycaspis* spp. and *Cardiaspina* spp.), are involved in the cycle of BMAD. Though I dare not ridicule this clever bird merely capitalizing on an opportunity to do what they were designed to do . . . eat insects and procreate. Bell Miners are adored by the general public as those lovely green birds that "remind me of my childhood". Although to those who live with them each day and see their trees dying and the diversity of other resident native birds dwindle, they are a menace. Henry Kendall was more insightful than he realized in his poem "Bellbirds" when he wrote;

*The beauty and strength of the deep
mountain valleys:
Charming to slumber the pain of my
losses
With glimpses of creeks and a vision
of mosses*

Little did he realize that the "losses" attributed to Bell Miners and associ-

ated factors would potentially be tens of thousands of hectares of trees in those deep mountain valleys and the *glimpses* of creeks are just that, glimpses, because *Lantana* now has exclusive rights to the views. No longer do the Bell Miners *direct him* (the wayfarer) *to spring and to river. . . when fiery December sets foot in the forest*, now they fill our hearts with dread and direct us to graveyards of trees. Now we know what the consequences of that bell-like call means — more forest devastation.

On a weekly basis calls are received through the BMAD website (www.bmad.com.au) from people pleading for help to save their trees from the BMAD that has been cast upon them, soon after Bell Miners have taken over the surrounding tree canopy. Our efforts to raise awareness of BMAD and to invite participation in our trials and research are taking effect, as more and more records of outbreaks are reported. However, there are still those who are in denial that BMAD exists. I have heard of land managers rejecting BMAD as a phenomena and not supporting opportunities to carry out surveys to assess reports of dieback. There are certainly a range of factors involved in the initiation of what we call BMAD and the birds have their role in tree decline. I would have thought that the more investigations we carry out the more knowledge we collect. In some forums statements have been made that linking BMAD to global warming and carbon sequestration is "drawing a long bow", when to me the link seems rock-solid. Calculations by the BMAD Working Group estimate that 15 million tonnes of CO₂ storage from native coastal forests could be lost per annum due to dieback in NSW. This figure is based on annual new growth and does not include the stored CO₂ in standing biomass, so the correla-

tion between 2.5 million hectares of healthy forests and their role in sequestration of carbon is significant.

The problem we face is that dying trees don't bleed and don't have eyes and a brain, and most voting city dwellers never see the devastation of a dying forest. In the absence of a champion to capture the economic intrigue of politicians and coerce the community, there is little likelihood of having the issue recognized for its potential. The BMAD Working Group have made numerous inquiries to enlist a champion, someone who is viewed by the public as an important personality, but sadly our topic does not stimulate the anthropomorphic nerve like whale hunting or eating our national emblem. If it is not seen as sexy and tangible, it not important and recognition is not forthcoming.

The BMAD Working Group, a committee of 12 stakeholders has worked tirelessly since 2001 to be at the forefront of this ecological catastrophe, and with a short term budget. Their united efforts to lead research and adaptive management trials to mitigate dieback have largely gone unrecognized and in some forums they have been criticized. The failure to think in dollars and votes like politicians and bureaucrats, and more like concerned citizens, alarmed land managers and conservationists has been a weakness of the campaign. In response, the group has now began to compile an economic impact assessment that should hit the political and economic alarm buttons — hopefully it is not all too late.

While it is challenging to quantify the area of impact of BMAD, the costs to industry, and the effects on tourism of dying forests, the implications of not managing the spread of BMAD is staggering. Based on rough estimates, our initial calculations report significant losses to the \$21 million New South Wales honey industry, with one apiarist reporting losses of \$40,000 from one forest apiary site each year (Geoff Manning pers. comm.). Costs to the timber industry are almost impossible to quantify, but restoration of dying forests decimated by eucalypt decline range from \$800–3000 per hectare (Peter StClair pers. comm.) depending on the level of impact. The double edge sword in the forest is the potential loss of CO₂ storage from dying and dead trees. With large areas of forest affected each year by dieback and a loss of around 15 million tonnes/year of CO₂ stored, it is likely that achieving climate change targets will be significantly crippled by dieback. The link between BMAD and climate change seems quite obvious to us and we don't understand why it's not on the political agenda.

It was not until Warragamba Dam water levels dropped to dangerous levels and Sydney-siders felt the pinch because they could no longer wash their cars and water their gardens, that the populous realized we were in severe drought. When fuel costs continued to increase over the \$1.00/litre most Australian's started to listen and they realized that fossil fuels are not renewable and that alternative energies need investigation. I just hope that we don't have to wait until the costs of eucalypt hardwood and a

jar of honey increase by 500%, or until a famous tourism site like the Three Sisters in the World Heritage Blue Mountains has a back drop that resembles a tree cemetery, or Australian native mammals are better represented in zoos than in the wild before BMAD and eucalypt tree decline becomes sexy.

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