



NEFA BACKGROUND PAPER, Prepared by: Dailan Pugh, 2014

Logging Dieback is the dominant form of Bell Miner Associated Dieback affecting forests in north-east NSW.

Back in 2005, after over 70 years of inaction, a conference of foresters, national parks' rangers, experts and conservationists acknowledged the significance of Bell miner Associated Dieback (BMAD) and the urgency to take action (BMAD Working Group 2005). The outcome was that, after a few failed logging trials undertaken on the pretence of adaptive management, within a few years the Forestry Corporation was intensively logging stands affected by BMAD and intentionally leaving destroyed ecosystems behind, while the EPA turned a blind eye.

In 2005 the conference had unanimously resolved:

We are a national group of scientists, land managers, landholders, environmental consultants and community representatives drawn together to address the Australia-wide issue of Bell miner Associated Dieback (BMAD) in eucalypt forests.

We state without reservation that BMAD is a problem of national significance on an immense scale. It has vital consequences for timber production, forests resources and national parks, private lands, water catchments and water supply, biodiversity conservation and local and regional employment and community health.

...

We ask, indeed implore, Federal and State governments to support scientists, research institutions, land management agencies and forest owners, including those of public forests, with funding, personnel and policy and legislative support to enable the complex factors causing and sustaining dieback to be discovered and for control and prevention options to be explored and applied.

We, the undersigned, respectfully request your immediate attention to the enormous threat of Bell miner Associated Dieback in Australia's eucalypt forests.

The Battle to Redress Logging Dieback

It was not that BMAD was a novel problem. The Forestry Corporation has recognised dieback associated with psyllids as a significant problem in north-east NSW since at least the 1940s. The North East Forest Alliance has been pursuing the issue of Bell Miner Associated Dieback for over twenty years. We tried to get it addressed in the Environmental Impact Statements prepared in the early 1990s. We unsuccessfully attempted to have this issue dealt with in the Comprehensive Regional Assessment process in 1995-8, particularly as a component of Ecologically Sustainable Forest Management. This was a major issue we pursued when we were on the North East State Forests Harvesting Advisory Board in 1996-8. NEFA have been trying to have it redressed through our involvement with the BMAD Working Group since 2000.

While we recognise that we have made some progress over that time in assessing and documenting the problem, the condition of the forests has continued to decline, and despite our best endeavours the Forestry Corporation are continuing to ignore and compound the problem in their logging operations.

The Forestry Corporation recognised dieback associated with Bell Miners and psyllids as a significant problem in the Wyong area of the central coast in the 1940s (Campbell and Moore 1943). Stands of Sydney Blue Gum were reported as dying during the period 1949 to 1958, *“the increasing numbers of deaths reaching economic significance toward the end of that period”* (Moore 1959). The two areas assessed by Moore showed 55% and 59% of trees as dead or expected to die. Moore (1959) hypothesised that *“the abnormal rainfall adversely affected the physiology of Eucalyptus and other species generally, making them susceptible to heavy attack by psyllids.”* Bird *et. al.* (1975) report Moore (1962) as finding that *“there were more than 150 separate occurrences of variable extent up to 1,500 ha.”*

In the early 1990's NEFA made numerous submissions to the NSW Government, particularly regarding the Forestry Corporation's Environmental Impact Statements, where we highlighted the problem of BMAD. For example NEFA submitted to the Grafton EIS (Pugh 1992):

A further problem exists where regrowth, particularly Sydney Blue Gum, is killed by heavy infestations of psyllids, facilitated by the aggressive Bell Miners excluding other birds (which would otherwise control the psyllids) from such heavily disturbed areas (e.g Loyn 1985). Significant areas are now comprised of a sea of lantana overtopped by dead trunks. As forests infested with lantana are picked over for remaining big trees the weed spreads.

The first meeting (8 July 1993) of the Community Consultative Committee for the Urbenville Forest Management Area EIS identified a variety of key issues for consideration regarding management of the Urbenville forests, including *“the dieback/bellbird association with logging”*. This major issue was of course ignored in the EIS.

In 1995 the Forestry Corporation (Stone *et. al.* 1995) identified significant areas of dieback in the Morisset, Bulahdelah, Gloucester, Taree, Wauchope, Kempsey, Walcha and Urbenville Districts. Stone *et. al.* (1995) found that the affected areas range in size from 1 ha to nearly 100 hectares, with the Sydney Blue Gum league of forest types (FT no's 46, 49, 53 and 54) most affected and the grey ironbark/grey gum league (FT 60) second most affected.

Stone *et. al.* (1995) notes *“More recently, District staff have reported that affected areas are increasing in size and that previously unaffected areas are developing symptoms.”* Stone *et. al.* (1995) concluded that:

“A possible long-term explanation of why the dieback problem may be increasing, is that the proportion of moist sclerophyll forest being exposed to selective logging is increasing throughout the State.

In 1996 the Urbenville District Forester, Paul Sharpe (pers comm., 1996) estimated that there was in the order of 5,000 hectares affected by “Bellbird Dieback” in the then Urbenville Management Area.

NEFA represented conservation interests on the North East State Forests Harvesting Advisory Board (NESFHAB) from 1996-8, covering the then Murwillumbah, Casino and Urbenville Management Areas. NEFA proposed that key performance measures for the NESFHAB should include *“Effective management practices to reduce bellbird dieback”* and *“Extent of bell bird dieback and lantana”*, as well as requesting the mapping of Bellbird dieback in harvesting plans.

While on the NESFHAB, NEFA supported (including by contributing volunteer labour) a BMAD mapping trial in Mount Lindesay State Forest on the understanding that the intent was to use the trial as the basis for mapping BMAD across NSW. The project aimed to use Digital Multi-Spectral Video (DMSV) to quantify the extent and degree of canopy dieback in a 10,000 ha study area centred on Mount Lindesay, with the aim to be able to later use map comparisons *“to determine the stability of bellminer colonies, rate of spread of the dieback, make predictions on future spatial patterns and directions of the dieback across the landscape and confirm the stand risk criteria”*. Despite costing around \$100,000 it seems the outputs of this project relating to BMAD were simply discarded and not followed up. They were not referred to by St. Clair (2009) despite covering the same area.

NEFA also obtained the support of the NESFHAB for the preparation of a draft Operational Management Plan and Rehabilitation Strategy for BMAD affected areas. The proposal put forward by the Forestry Corporation (Sharpe 1997), after discussion in the NESFHAB, involved undertaking large scale rehabilitation of severely affected areas, and as part of the Harvesting Plan process mapping areas affected (by class), identifying proposed management (including excluding logging from areas *“if it is decided that harvesting will further exacerbate the problem and that rehabilitation works are either impractical or unlikely to succeed”*) and details of specific remedial works. The Forestry Corporation continually delayed NESFHAB agreements to map BMAD affected forests as part of harvesting plans on the grounds that they did not have sufficient resources to do the work.

The Forestry Corporation’s plan for large scale rehabilitation was to effectively convert BMAD affected areas to plantations of non endemic species, for site preparation proposing (Sharpe 1997):

Undertake “salvage” harvesting of any merchantable timber.

Undertake the felling of dead and dying mature and overmature trees. This would amount to clear cull falling ...

Undertake rough heaping of debris and subsequently burning it.

Undertake wheel tractor or dozer mounted boom spraying of lantana understorey using roundup.

Regarding concerns that this was basically converting native forests to plantations, Sharpe (1997) stated:

Random planting limits, if not precludes, the ability to economically and practically control the understorey amid the seedlings. Planting in rows facilitates economic weed management and ... has a higher chance of success.

...

The prospect of planting non endemic, non susceptible, species has come under attack from various quarters as being "unnatural" or "an attempt to create a plantation by stealth" ...

...

Because of the high cost, there may be an expectation of future harvest guarantee and there would be under the TP(HG) Act. Any of the strategies mooted thus far would satisfy accreditation of the area as plantation under the TP(HG) Act.

The "plantation" option in its various forms meets the first part of our objective and, experience has shown, the greatest chance of success. ...

The draft Operational Management Plan and Rehabilitation Strategy for BMAD affected areas progressed no further. NEFA particularly objected to proposed logging of severely affected BMAD stands in Mount Lindesay SF and proposals to plant them with Blackbutt which did not naturally occur in the area. The NESFHAB was disbanded in 1998 without any further progress and the Forestry Corporation abandoned any intent to redress the BMAD problem in their planning processes. The only concession was that their harvesting plans sometimes acknowledge the presence of BMAD (with no details of extent or severity).

NEFA attempted to have BMAD addressed through our representation on the Ecologically Sustainable Forest Management Working Group as part of the Comprehensive Regional Assessment from 1996-8. BMAD was identified as one of the processes or agents under "Indicator 3.1.a" that may change ecosystem health and vitality that need to be identified and reported on a regional basis (ESFM Technical Committee 1999): The target was "*Minimisation of the area and percent of forest affected by processes or agents that reduce ecosystem health and vitality*".

The Integrated Forestry Operations Approvals are the mechanism for regulating forestry operations on public lands since it was adopted in 1999. The Upper North East IFOA (2.7.1) requires that in carrying out forestry operations "*SFNSW must give effect to the principles of ecologically sustainable forest management as set out in Chapter 3 of the document entitled, "ESFM Group Technical Framework"*. These include a variety of criteria relating to forest health, such as "*ensure the effects of activities/disturbances within forests, their scale and intensity, including their cumulative effects are controlled and are benign*" and "*restore and maintain the suite of attributes (ecological condition, species composition and structure of native forests) where forest health and vitality have been degraded*".

The IFOA (4.26) also requires:

SFNSW must ensure that the scale and intensity at which it carries out, or authorises the carrying out of, forest products operations in any part of the Upper North East Region, does not hinder the sustained ecological viability of the relevant species of tree, shrub or other vegetation within the part.

The Battle to Redress Logging Dieback

It was apparent that the Forestry Corporation should have begun dealing with Bell Miner Associated Dieback in a responsible manner if they were going to live up to the promises of ESFM.

Undaunted the Forestry Corporation continued with their plans to log the same compartments in Mt Lindesay SF that NEFA had objected to when on the NESF Harvesting Advisory Board because of BMAD. This was the same area that had been mapped at great expense. The 2001 Harvesting Plan for Compartments 276, 279 & Pt 280 acknowledges the presence of BMAD, though didn't map its extent or severity. Only one small part of the BMAD was identified as a rehabilitation area. NEFA and other groups inspected the site and again strongly objected.

The Bell Miner Associated Dieback Working Group was formed with Government and community members in 2000. One of the Working Groups early agreements was that the Forestry Corporation record simple data about the presence of Bell Miners and or associated dieback on its harvest plans as they are prepared. The Forestry Corporation again refused to do so.

Surveys by the Forestry Corporation in the early 2000s identified that Bell Miner Associated Dieback was widespread. Jurskis and Turner (2002) note::

In Bega Valley Shire, on the south coast of New South Wales, every near-coastal drainage system contains bellbird dieback (Appendix 1). Personal observations over several years indicate that dieback areas are expanding.... Incidental observations suggest that the problem extends along the entire New South Wales coast.

Jurskis and Walmsley (2012) elaborate on the parlous state of forests on the south coast around that time:

Six hours of helicopter survey in 2002 identified 10,000 hectares of declining forest in three coastal regions. In the Eden Region, Jagers (2004) estimated that roughly 20% of about a half a million hectares of forest appeared to be declining and a further 10% consisted of types that are prone to decline, in young stands that were below the age when decline becomes apparent. Limited sampling in the Batemans Bay Region during a drought in 2002 indicated that about 28% of State forests were stressed (Forests NSW unpublished data).

Jurskis and Walmsley (2012) also identify that a brief helicopter survey in 2002 identified more than 2,500 ha of declining forest in the Wyong-Morisset area.

In 2003 the NSW Nature Conservation Council Annual Conference unanimously passed the resolution:

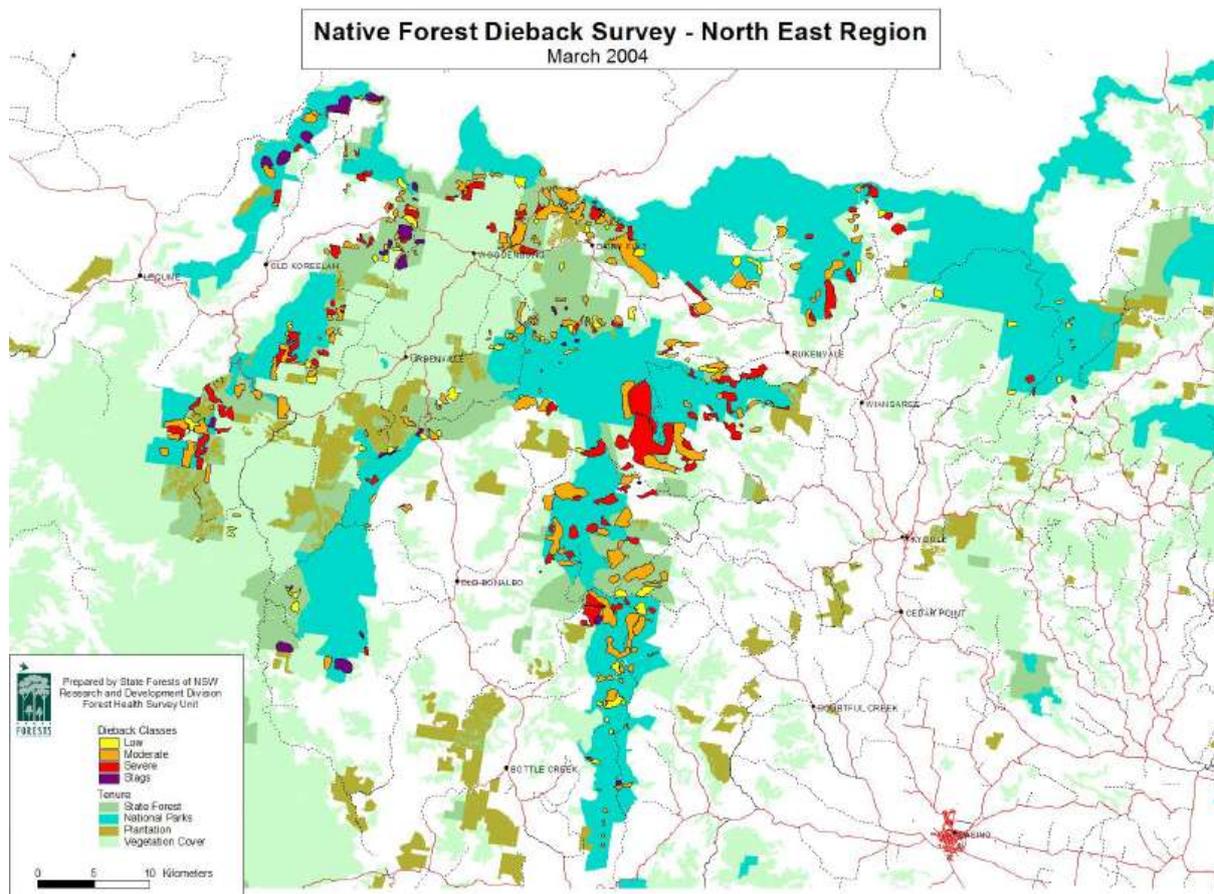
'that there should be no further logging in BMAD affected forests or those at high risk of developing BMAD until the causes of the problem are better understood and an acceptable, sustainable management plan is developed to restore the health of these forests'.

In 2004 the Forestry Corporation identified almost 20,000 hectares of the approximately 100,000 hectares of apparently susceptible forest types in the Border Ranges Region

(Urbenville Management Area) as being affected by dieback attributed to BMAD. The mapping involved visual classification of BMAD from an aircraft in four main severity classes:

- Low -consisted of discoloured foliage, partial thinning of canopy and distinct epicormic buds on branches.
- Moderate -consisted of discoloured foliage, severe thinning of tree canopy and a few dead trees including distinct epicormic growth.
- Severe -consisted of many dead trees, severe thinning of crowns, low stocking rate of susceptible species and greatly increased mesophyllic ground story vegetation including weeds such as lantana.
- Stags -large trees that have been dead for a long time present in mesophyllic forest; unable to determine cause of death but potentially related to past occurrence of dieback.

The Forestry Corporation mapped the following areas of severity classes: Low 2,205ha Moderate 9,776ha, Severe 6,511ha, and Stags 1,382ha. The 2004 assessment was conservative, with many known areas of BMAD missed (ie Jurskis and Walmsley 2012, Pugh 2014b).



Theoretically BMAD began to be identified as a major problem in the State and Commonwealth reviews of the Regional Forest Agreement (RFA) from 2004, with the 2003/4 FA implementation report (NSW Government 2007) identifying BMAD as “a serious threat to sclerophyll forest communities, particularly wet sclerophyll forests”. The seriousness of BMAD is detailed in the NSW & CoA (2009) 5 year review of the RFA:

The resultant cycle of tree stress commonly causes the eventual death of forest stands, and serious ecosystem decline. In NSW the potential impact of BMAD-

induced native vegetation dieback represents a serious threat to sclerophyll forest communities, particularly wet sclerophyll forests, from Queensland to the Victorian border. ... Current estimates place the potential at-risk areas at a minimum of approximately two and a half million hectares across both public and private land tenures in NSW.

BMAD is emerging as a pressing forest management issue in both the UNE and LNE regions. The potential impacts include:

- degradation of sclerophyll forest ecosystems across the UNE and LNE*
- reduction in diversity and abundance of threatened flora and fauna species including Dunn's white gum and rufous bettong*
- increased weed invasion and associated displacement of native forest species.*

Dieback-affected areas are located in the catchments of the major rivers of the North Coast of NSW including the Tweed, Richmond, Clarence, Macleay and Hastings. Maintenance of water quality in these river systems is critically dependent on maintenance of healthy forest cover over the catchment uplands. Bell miner associated dieback has the potential to degrade these forests, and consequently impact negatively on rivers and catchment communities through increased sediment and nutrient loads, and increased frequency and intensity of flooding.

DECCW (2010) echo these concerns. The NSW&CoA (2009) 5 year RFA review identifies that BMAD “*is of prime concern in the northern forest regions of the state*”.

The Bell Miner Associated Dieback Working Group (BMADWG 2004) identifies Forests NSW's claimed approach:

Consistent with the EFSM requirements FNSW are preparing Regional Forest Health Management Plans as part of the Native Forest Health Management Strategy. The current management intent is to integrate native forest harvesting with trials to reduce the spread of dieback into open forests by use of frequent low intensity fire and to trial rehabilitation methods for dieback affected areas.

Forestry Corporation's (2005) ESFM Plan identifies as policy:

Forests NSW will maintain or enhance the health and productivity of forests to support nature conservation, timber production and other ecologically sustainable uses in Upper North East (UNE) Region.

The ESFM Plan (2005) identifies BMAD as a significant problem, claiming:

In UNE Region; Forests NSW is collaborating with other agencies, universities, landholders and conservation groups through the Bell Miner Associated Dieback Working Group in the coordination of efforts to better manage chronic decline. The group has identified key actions that need to be undertaken to develop effective management measures including surveying and assessing the extent of decline, supporting independent literature review, lantana removal trials, guidelines for restoration of affected areas and promotion of the issue.

In 2005 the Primary Industries Minister, Ian Macdonald MLC, rejected calls by the North East Forest Alliance and North Coast Environment Council representatives on the BMADWG

working group for a logging moratorium on eucalypt forests suffering and at risk of Bell Miner Associated Dieback.

An expert review conducted for the Bell Miner Associated Dieback Working Group found (Wardell-Johnson et. al. 2006):

Bell Miner Associated Dieback (BMAD) is a significant threat to the sustainability of the moist eucalypt forests of north-eastern NSW and south-eastern Qld, and to biodiversity conservation at a national scale.

...

BMAD is a nationally significant conservation problem that has the potential to reduce the chances of achieving sustainable forest management in north-eastern NSW. There is a strong likelihood for significant biodiversity loss in the medium future in the general region, including south-eastern Qld, as well as reduced available timber volumes. Blaming Bell miners for the problem will not lead to its resolution.

...

The severity of the BMAD problem is such that tens of thousands of hectares in north-eastern NSW is currently affected with over 2.5 million hectares considered potentially vulnerable (Ron Billyard pers comm., Nov. 2004). A substantial (although uncertain) area of south-eastern Queensland is similarly affected, although less attention has been directed there. BMAD occurs on both public and private land and the area affected is expanding rapidly. The severe impact of this form of forest canopy dieback has profound implications for the conservation of the internationally significant biodiversity of the region.

The BMADWG working group organised a national forum at Southern Cross University in 2005. The Bell Miner Associated Dieback National Forum focussed on the need for undertaking trials of various management options and the implementation of adaptive management. Eight themes were developed in the initial sessions of the Forum. Five of these themes focussed on ground trials, and management of forest understories was a major component of all.

There have been a number of trials that have established that direct control of Bell Miners can in turn control psyllids and improve forest health (Loyn et. al. 1983, Clarke and Schedvin 1999). Changing the habitat to be less favourable to Bell Miners was identified as a potential solution by various researchers (i.e. Stone 2005, Wardell-Johnson et. al. 2006). The relationship between Bell Miner dominance and the dominance of forest understories by lantana has also been known for a long time. It is therefore self-evident that by controlling lantana it may be possible to control Bell Miners and thus psyllids.

In 2005 the BMAD Working Group determined to undertake trials of lantana control on private property at 'Creeks Bend' on Ironpot Creek, Donaldson State Forest and at Sheepstation Creek in Border Ranges National Park, to test the hypothesis that:

The removal of the dense understorey in areas affected by BMAD will make the habitat less suitable for Bell Miners. This will break the birds' dominance of the site, allowing other bird species that prey on psyllids to invade the area and consume the invertebrates. This will put an end to the dieback, resulting in healthy forest canopy species.

The Battle to Redress Logging Dieback

The Forestry Corporation obtained support and \$10,000 funding through the BMAD Working Group to undertake and monitor a 2005 BMAD management trial in Donaldson SF. The aim was to trial different methods of understorey control and assess their effectiveness in BMAD control. The Forestry Corporation only monitored the outcome for the first year before abandoning the trial and logging both trial and exclusion areas in 2009/11. Shipman (2006) reports that *"the prolific weed growth became a problem after fire"*, and that *"There was patchy and generally poor regeneration of native forest eucalypts over the three treatments"*. Pugh (2014) revisited the trial sites and found they had dense lantana understories, numerous Bell Miners and were suffering from severe dieback. The trial was an abject failure.

From his work on BMAD in Donaldson and elsewhere in the region, Mews (2008) observed *"It is apparent that there is reluctance by NSW government to deal with this phenomenon and to recognise the linkages between BMAD and poor management practices"*. He concluded:

There is evidence that bottom up factors such as soil nutrients, physical and structural properties play an important role in allowing or encouraging BMAD to occur and these processes. However it will most likely be easier to influence populations of M. melanophrys in most cases by physical manipulation of their habitat rather than the soil directly".





DONALSDON TRIAL BMAD AREA 2014

Having failed twice before to log the Mt. Lindesay forests, the Forestry Corporation now proposed undertaking a *“Mt. Lindesay logging, burning, and weed control trial”* (St.Clair et. al. 2006), with the objective to *“maintain the health of ‘at risk’ stands, increase tree health of deteriorating stands and to rehabilitate severely BMAD impacted stands”*. Lantana cover was to be reduced to less than 15% and Bell Miners restricted to their natural habitat. The trial was to last 15 years and be regularly monitored. The predicted outcome *“will be a long term viable and healthy forest”*. It was proposed that \$50,000 would be obtained from NHT funding to be spent on *“assessment, monitoring, reporting, additional supervision and rehabilitation”*.

The Forestry Corporation conducted their 2007 BMAD logging trials in Mount Lindesay SF, yet it appears they only monitored the outcomes for the first two of the 15 year trial. Their results proved the trials to be a failure and any improvements to be temporary. St.Clair (2009) found that within 2 years Bell Miner numbers had recovered to pre-treatment levels relative to controls; lantana was showing significant recovery in the second year, regeneration of eucalypts was inadequate at most sites, and the treatments did not improve the health of the retained trees relative to controls. Pugh (2014) revisited the trial sites and found they had extensive areas of dense lantana understories, numerous Bell Miners and that most of the trial area was suffering from severe dieback. By any measure the trials had been an abject failure. Pugh (2014) expected the full extent of the failure to become more apparent in 15-25 years as the patchy regrowth becomes affected by BMAD and the wattles senesce.



MT LINDESAY BMAD TRIAL AREA 2014.

St.Clair (2009) does note “*Whilst the cost of the project was significant, the opportunity cost of doing nothing is greater. The cost of rehabilitation was less than the likely loss of*

production if the forest continued to decline and die". St.Clair's (2009) estimated rehabilitation costs per hectare over 40 years ranged from \$200-2,500, though given the poor prognosis for much of his sites this may just reflect initial costs.

It had taken them 10 years, but the Forestry Corporation had got to log Mt. Lindesay under the pretence of adaptive management, with additional funding from the BMAD Working Group. The outcome was what NEFA had objected to in 1997 and 2001.

Private landowners also undertook lantana control on their property Creeks Bend in the Iron Pot Creek Valley as part of the BMAD Working Group trials. The aim was to remove 50% of 60 hectares of medium to dense Lantana using the splatter gun method. Somerville et. al. (2011) consider their trials a success, noting:

In 2005 before Lantana treatment commenced, Bell Miners were found throughout the forested areas, with only three small areas that were Bell Miner-free. Over time, we could see and hear that Bell Miners had moved from many areas of previously degraded forest after the Lantana was removed and forest structure and plant diversity improved. Areas of the forest that had been filled with constant Bell Miner calls had become quiet.

Somerville et. al. (2011) estimated the cost of their works as \$250 per hectare, noting "As techniques are refined, the cost per hectare is decreasing".

In 2008 the NSW Scientific Committee (2008) made their final determination for listing 'Forest eucalypt dieback associated with over-abundant psyllids and Bell Miners' as a Key Threatening Process, noting:

Broad-scale canopy dieback associated with psyllids and Bell Miners usually occurs in disturbed landscapes, and involves interactions between habitat fragmentation, logging, nutrient enrichment, altered fire regimes and weed-invasion. ...

...

... Broad-scale research and adaptive management are required to understand how to best manage this threatening process, to prevent its expansion throughout forests of eastern New South Wales.

In recent years NEFA have included lengthy sections on BMAD in its submissions to the 2011 Federal "Inquiry into the Australian forestry industry", the 2012 Federal Inquiry into "The effectiveness of threatened species and ecological communities' protection in Australia" and the 2012 NSW Upper House "Inquiry into the Management of Public Land in New South Wales", regrettably this issue has been ignored in all the discussions and recommendations from these committees. Politicians of all persuasions seem intent on ignoring the issue of BMAD.

NEFA have been trying for years to get the Environmental Protection Authority to take action on this issue and to stop the Forestry Corporation from targeting BMAD affected and susceptible stands for logging, and to rehabilitate areas after logging. BMAD has been specifically identified in NEFA reports and audits of logging in Yabbra (2009), Royal Camp (2012), Koreelah (2013), Richmond Range (2014) and Donaldson (2014) State Forests. The EPA has repeatedly refused to do anything about it. The chair of the BMAD working group and NEFA took the EPA's CEO Barry Buffier on a tour of BMAD rehabilitation sites in 2013.

The Battle to Redress Logging Dieback

After it became obvious the trials were a failure, the Forestry Corporation stopped the monitoring and have been targeting BMAD areas for intensified logging to remove any merchantable trees, abandoning any pretence of rehabilitation in the process. In 2009 the Forestry Corporation abandoned their Donaldson trial, returning to Donaldson 45 and 46 to log "Harvesting Exclusion" areas and the BMAD trial area. In 2009 they logged the historically recognised BMAD area in Yabbra State Forest 163. In 2010 they logged mapped severe and moderate dieback areas in Richmond Range State Forest 329. In 2013 they logged mapped moderate and "stag" dieback areas in Koreelah State Forest 27, 28 and 31. In these areas they abandoned any pretence of "scientific logging" and instead targeted BMAD affected stands for removal of "*unhealthy merchantable trees*" with no rehabilitation proposed.

The Harvesting Plan for compartment 329 of Richmond Range SF allocates logging intensity according to the degree of BMAD, with the worst affected areas targeted for the heaviest logging "*Heavy STS, 50% BA removal*", noting "*Heavy STS will result in higher BA removal in the area indicatively marked on the operational map. Machine disturbance will be more intense. The aim of this treatment is to create suitable conditions for seed regeneration and reduce Bell Miner (sic) habitat*".

In Yabba State Forest NEFA (Pugh 2009) found that the Forestry Corporation made no attempt to delineate the area affected by dieback, logged most of the healthiest trees remaining, and had no intention to rehabilitate the severely degraded "forest" left behind. The forestry operations greatly compounded the existing BMAD problems and left the dieback areas in a parlous state. The outcomes from this logging and burning of the dieback areas were significant reductions in canopy cover, further degradation of the understorey, and prolific weed growth, particularly of lantana.

For Yabbra SF compartments 164&165 the EPA (Smith 19/5/10) refused to do anything on the grounds that "*there is inadequate information available to determine if Bell Miner populations and Bell Miner associated Dieback has been favoured by these logging and burning operations*".

Most of the retained trees quickly succumbed to dieback, leaving swathes of dying forest. NEFA accompanied the Forestry Corporation's CEO Nick Roberts on an inspection of Yabbra State Forest in 2010.

Following NEFA's further complaint about the dying forest, Nick Roberts again inspected the forest on 13 December 2012 in company with NEFA. On that inspection the Forestry Corporation agreed there was poor regeneration, and undertook to implement rehabilitation works to control weeds and plant trees in areas of poor regeneration. Though they still refused to acknowledge the presence of severe BMAD, nor the measures needed to successfully redress it, in their rehabilitation plan. The promised works were not undertaken in 2013 or 2014. The EPA refused NEFAs frequent requests to follow up on the outcomes from BMAD at Yabbra.

The Battle to Redress Logging Dieback



LOGGED BMAD YABBRA SF 2009.

Our pleas to the Forestry Corporation's CEO Nick Roberts to map and exclude from logging BMAD affected forests in Koreelah State Forest (Pugh 2013) were again to no avail.

The EPA identified forest health as a key environmental compliance priority in the EPA's Crown Forestry Strategy for 2013/14. Despite this they still refused to take any meaningful action. For Koreelah State Forest where the Forestry Corporation were logging in and adjacent to BMAD areas they had mapped in 2004 (and adjacent to the Dunn's White Gum EEC), the EPA (Garry Whytecross 18 November 2013) responded:

EPA officers have collected data from Koreelah State Forest and this information has been provided to the BMAD working group. The data will assist in continued research on BMAD. Such research will inform the development of strategic cross tenure BMAD landscape management actions in the future.

...

The EPA has raised with FCNSW the risk that weeds pose to the area's regeneration and future health.

In May 2014 NEFA inspected proposed logging in Donaldson SF and found Bell Miner Associated Dieback already rampant at lower elevations in compartments 43, 44, 45, 46, 47, and 49. Compartment 46 had been the focus of the failed 2005 trials. Within compartments 36 and 42, which were being roaded, there were scattered occurrences of BMAD and extensive areas which were healthy and structurally sound. The Harvesting Plan identified the presence of BMAD though failed to map its extent or severity. NEFA (Pugh 2014a) recommended:

Given the rampant Bell Miner Associated Dieback at lower elevations in compartments 43, 44, 45, 46, 47, 48 and 49, the abject failure of rehabilitation trials in compartments 44-49, the yet limited occurrences in compartments 36 and 42, and the high susceptibility of these forests to lantana invasion and BMAD that no logging should take place until:

- a. The extent and severity of BMAD in compartments 36 and 42 is fully and accurately mapped;*
- b. The area of susceptible forest types is clearly delineated;*
- c. An explicit management and rehabilitation strategy is identified for affected and susceptible areas; and*
- d. Sufficient resources are available to immediately undertake and monitor required rehabilitation works.*

NEFA then inspected the logging trials in Donaldson SF and Mt. Lindesay SF and found them abject failures in that they had not reduced lantana, Bell Miners or dieback, and appeared to have aggravated all three. They had been abject failures and yet the Forestry Corporation had continued using the same logging practices knowing what the outcomes would be. NEFA documented this in a review (Pugh 2014b) of BMAD in the Border Ranges Region.

As at the end of 2014 logging of Donaldson SF has not yet resumed. NEFA met with the Forestry Corporation in June 2014 to obtain results from the logging trials and seek to resolve BMAD issues. Though despite promising to get back to us within a week, by the end of 2014 they had still not progressed the issue.

For years the Forestry Corporation have been effective in intentionally creating doubt about the causative factors of BMAD to enable them to go on logging affected and susceptible stands. Within the Forestry Corporation there has been strong disagreement between Christine Stone's recognition that logging is a cause of BMAD and Vic Jurskis' pretence that

logging has nothing to do with it and that it is all to do with reduced fire frequencies (see **The Causes of Logging Dieback**). The failed Donaldson and Mt. Lindesay trials were undertaken by the Vic Jurskis faction. The Corporation itself has found denial that logging has anything to do with BMAD a convenient lie. This has been effective in stopping the urgent action required.

This uncertainty fostered by the Forestry Corporation has allowed them to continue to log and degrade affected stands rather than rehabilitating them. It is astounding that Government agencies can go on for decades undertaking activities known to contribute to BMAD on the grounds of lack of scientific certainty. This is a perversion of the precautionary principle.

It has been shown that forests affected by Bell Miner Associated Dieback can be successfully rehabilitated simply by removing the weed lantana. Though because of the Forestry Corporation's intent to log affected and susceptible forests they continue with their failed management in order to liquidate the timber resources, in full knowledge that they are destroying native ecosystems and killing vast swathes of NSW's forests. Their apparent intent is to degrade the native ecosystems sufficiently to be able to justify converting them into plantations. They are knowingly killing native forests and are thus the worst kind of environmental vandals. They get away with this because the supposed regulators and politicians simply don't care.

The Causes of Logging Dieback

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