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**Submission on  
Referral no. 2007/ 3897  
Department of Sustainability and Environment  
Natural resources management -Yarra Ranges National Park/VIC  
Construct Strategic Firebreaks in Victoria's Central Highlands.**

20 December 2007

## Summary

The proposed firebreaks as outlined in the referral are clearly a 'controlled action' because of the number of affected EPBC listed species and the extent of the impact on them. The impacts are both extensive and complex in nature with many uncertainties. The proposal is in fact part of a staged process of which part has already been constructed (with retrospective assessment still to come), and part is yet to be presented, all of which contribute to the impact which is of national significance. The justification for the proposal is not well supported, especially in the wetter forest types. For these reasons the proposal deserves full environmental assessment including detailed public submissions and an independent panel hearing to consider the entire project.

We request that:

- the current and the yet to be lodged retrospective assessment for breaks built last summer, plus any remaining proposed breaks in Victoria's Central Highlands, be assessed jointly;
- that a fuller and further assessment be undertaken of the justification for the breaks, and their design and routes.
- That there be consideration of appropriate offsets as part of this joint assessment

## Why the proposal is a Controlled Action

The potential impact of the proposal on a series of nationally significant species is clearly laid out in the referral. This states that "*the area proposed for the firebreaks (Public land) is vital for the survival of threatened fauna species, including EPBC-listed Spot-tailed Quoll (Dasyurus maculates), Leadbeater's Possum (Gymnobelideus leadbeateri), Smoky Mouse (Pseudomys fumeus), Baw Baw Frog (Philoria frosti), Giant Burrowing Frog (Heleiporus australiacus), Spotted Tree Frog (Litoria spenceri) and Barred Galaxias (Galaxias olidus var. fuscus)*" (p12 referral)

Removal of between 500 to 1000ha is proposed including habitat for the above species as well as the plant species Purple Eyebright (*Euphrasia collina*) and Shiny Nematolepis (*Nematolepis wilsonii*) also listed under the EPBC Act: All the above listed fauna species are estimated to have a "likelihood of regular occurrence". "*Significant old growth forests occur throughout the study area. These old growth forests contain hollow bearing trees which provide habitat for threatened fauna*" (referral p 13). The vegetation loss includes substantial areas of potential (and in some cases known) habitat for Spot-tailed Quoll (311 ha), Smoky Mouse (190 ha) and Leadbeaters Possum (336 ha) including 112 ha of reserves set aside specifically to protect Leadbeaters Possum. Thus the impact is clearly of national significance.

It is also admitted that fragmentation of habitat for listed fauna and flora will occur (p4 and 19 of referral) along with alteration of habitat due to 'edge effects', possible introduction of weeds or pathogens (e.g. Myrtle Wilt Chalara australis and Cinnamon Fungus Phytophthora cinnamoni), pest animal incursion; soil erosion, sedimentation of streams and degradation of water quality; together with soil compaction; and vegetation and habitat disturbance from prescribed burning (p15, 20 of referral). The use of heavy machinery in itself (p17-18) entails a range of impacts. Another impact not mentioned in the referral is the opening up of areas to illegal motor bike riding (and the resulting soil erosion and noise disturbance to fauna), which has already occurred elsewhere in the state as a result of firebreak clearing.

The overall area impacted will be significantly greater than the area actually cleared due to edge effects and the isolation of significant areas where the breaks follow ridge tops rather than existing roads, as is the case for 20% of the planned breaks (p 87 Appendix 2). These additional impacts on a wider area and the many impacts due to fragmentation are described on p 19-20 of the referral and more extensively in p 87-88 of Appendix 2. In addition, hollow trees are likely to be removed from wide areas adjacent to the breaks (see further comment below) further exacerbating the effect on hollow-dependent threatened species.

The proposal lies in the heart of an area where conservation of these species is a management priority. *"A significant proportion of the total network of firebreaks will be situated within the Yarra Ranges National Park"* (p3 referral) - an area where the public would (and should) expect the above threatened species to be fully protected.

With much of the proposed mitigating measures such as nest boxes, links of retained vegetation, artificial 'fauna bridges' etc. yet to be tested for effectiveness in practice, it cannot be concluded that the impact will be 'moderate'. Indeed Appendix 2 (p 85) notes that the estimates of remaining potential habitat *'assumes that mitigation strategies are successful in restoring habitat connectivity when this is largely unknown'*.

To avoid clearing in crucial areas, the location of Smoky Mouse colonies needs to be ascertained and the pattern of Leadbeater Possum territories across key areas of the firebreak routes must be determined. In addition, monitoring to determine the impact of the firebreaks on species such as Spot-tailed Quoll and Smoky Mouse and their more exact location is proposed after the construction of the firebreaks when the impact (perhaps irreversible) has already occurred. This is unacceptable and the reverse of what the proper procedure should be.

As noted in the referral *"Loss of arboreal connectance will in the short term impact on resident colonies of Leadbeater's possum and in the longer term reduce movement and gene flow"* (p16) and *"at the micro scale, the break has the potential to make territories unviable with losses of all resident animals if the ability to move across the break arboreally is lost, even for a very short time. At landscape level permanent breaks will fragment local populations with subsequent reduction of dispersal and gene flow"* (p24).

Even in areas determined to be of 'high value habitat' for Leadbeaters Possum, construction will only be avoided *'where possible, dependant on fire protection risks'* (p24). Thus removal of important habitat is likely. In practice some of the amelioration measures, such as regeneration of areas of silver wattles and expansion of tree crowns after neighbouring trees have been removed, will take time (possibly decades) to come into effect, and the species may be lost from the area in the meantime.

In addition, the suggestion that the impact of the breaks may be ameliorated in part by the retention of hollow logs and trees in the breaks goes against advice we have been given by firefighting experts that usually these must be removed from the breaks because of the hazard they pose in acting as chimneys and promoting spotting and long-term smoldering. Indeed it is proposed that for this reason “*there will potentially be removal of dead trees, including hollow-bearing trees, from an area outside the Break of at least 1.5 times the tree height, to significantly reduce ember attack and therefore breach of the FireBreaks, plus for fire fighter safety reasons (DSE 2007e)*” (p 84, appendix 2). The referral is therefore quite contradictory about this issue and therefore about the degree of impact that will result.

The current assessment also bases its conclusions on the extent to which the potential habitat for each species is ‘impacted’ or ‘not impacted’ (p15-16 of referral) when the extent and pattern of occupancy of this habitat is not known. As outlined in Appendix 2 (p85) “*the extent of ‘potential habitat’ used in the assessment is likely to be an overestimate, and therefore, the potential impact as determined by the area of EVC impacted an underestimate. The second factor to consider is that a small loss of habitat may render an entire territory unviable, so the extent of loss if a territory is unviable is greater than the area of impact alone*’.

In addition the cumulative impact of the firebreaks recently constructed, plus some still to be assessed, is not taken into account (see further comments below) nor is the impact of on-going nearby logging operations on some of these species.

A significant impact on at least some of the species therefore remains likely and must be tested for by more comprehensive assessment including appropriate field surveys.

## **Why further assessment is required**

### **The final route and impacts on species is yet to be determined**

The exact route of the firebreaks and the potential impact on threatened species is far from finalized as “*alternative locations (up to 10% of the current alignment) of the firebreaks may be used to avoid threatened species and communities. This will be undertaken by micro sighting the alignment around suitable habitat for threatened species where possible and within the constraints of fire risk measures and suitable locations for firebreaks to control wild fire*” (p4 referral).

The assessment relies on past records and a quick assessment of where ‘suitable habitat’ for various species apparently exists (referral p15-16). It does not do any field assessment of the current occupation of these habitats by these species along the firebreak alignments and elsewhere. Thus again any conclusions about a ‘moderate’ impact are incorrect. As noted above, disturbance of connections between forest blocks for species such as Leadbeaters Possum and Smoky Mouse may have serious implications.

### **The impact is compounded by logging operations in the region**

Many of the species are also being impacted by logging operations, which will affect at least the short and medium term suitability of habitat elsewhere. As noted in Appendix 2 “*Incremental or cumulative logging and roading effects are likely to have resulted in forest*

*fragmentation and isolation of fauna populations as the logging mosaic creates substantial areas of unfavourable habitat. This is particularly the case for mammal species with poor dispersal capabilities occurring in the study area, including EPBC- and FFG-listed Leadbeater's Possum and Smoky Mouse*" (p3, 69). Whilst logging operations conducted under a Regional Forest Agreement are legally exempt from the EPBC Act, in practice this is a complicating factor interacting with the firebreaks which must be taken into account. In some cases the firebreaks remove parts of reserves that were part of the RFA agreement, including 112 ha of Leadbeater Possum reserves, thus removing some of the logging mitigation measures. A fuller assessment is necessary to consider these factors and interactions.

## **Other aspects yet to be quantified and evaluated**

### **Removal of hollow trees adjacent to the breaks.**

As noted above "*there will potentially be removal of dead trees, including hollow-bearing trees, from an area outside the Break of at least 1.5 times the tree height, to significantly reduce ember attack and therefore breach of the Firebreaks, plus for fire fighter safety reasons (DSE 2007e)*" (p 84, appendix 2). Considering the great height of the canopy in the damp and wet forests where the impact on species such as Leadbeaters Possum will be greatest, the width to which this hollow removal could be considerable. The real extent of hollow removal and its environmental implications must be fully assessed.

### **Frogs**

It is unclear if and where there are any Spotted Tree Frogs still surviving after the recent fires which in 2003 and 2007/7 covered most of their range in Victoria. In addition, some of the already constructed firebreaks apparently passed close to Spotted Tree Frog sites. It is important to determine if any sites still exist for this species in Victoria and imperative that any remaining sites are widely avoided by any development.

In the case of the Giant Burrowing Frog which exists in the Aberfeldy Catchment, approximately 23ha of potential habitat may be impacted directly by the construction of the proposed firebreaks (referral p17). The total area of suitable habitat for this species in the proposed firebreak catchment is not known. The referral states that *'if wetlands and gullies in the Aberfeldy catchment can be avoided, there would be minimal impact on this species and its suitable habitat'*. However there is no absolute commitment that this will be the case as it is proposed that there be *'pre-construction survey of streams in the Aberfeldy catchment if stream impacts are unable to be avoided'* (p 27 referral).

For the Baw Baw Frog the referral gives apparently contradictory information firstly stating that *'the location of proposed firebreaks borders the north and north-western boundary of the known 'habitat envelope' of the species for approximately 9 km of road length. This potential habitat of the frog will be impacted on if further widening of the existing road is considered'* (p 17 referral). Later on it states *'Field based assessments indicate that 1km of suitable habitat occurs within 300m of the proposed firebreak'* (p27 referral). While the referral gives some assurances about 'no construction zones' or 'no further construction zones' it appears that already constructed firebreaks have impinged upon habitat areas (Fig 5, Appendix 2). This is also another species where timber harvesting is potentially compounding impacts.

Because of the above uncertainties, proper surveys for all threatened frog species and estimates of impacts should be part of a full assessment.

## **Rainforest**

It is stated that there will be no construction of firebreaks in cool temperate rainforest and that 50+m buffers will apply (referral p 24<sup>1</sup>). However the proposed breaks travel through areas with multiple rainforest strips in gullies to which the proposed breaks come very close especially in the west of the area (i.e. all of the break west of Cumberland Junction and the southernmost section around Starvation Creek catchment- see Fig 7 Appendix 2). Mapping of a sufficient standard to see just how close the rainforest is to the proposed break is not provided. We remain concerned that impact will occur and/or construction of the firebreaks are not feasible in many places and should not be considered. More detailed assessment is needed of this.

## **Weeds and pathogens**

It is admitted that the construction firebreaks will result in increased weed invasion and risk of pathogen spread (phytophthora, myrtle wilt). At present the distribution and abundance of weeds in the catchments is low (p20 referral) but this has potential to change. Indeed the VNPA has recently observed new blackberry seedlings in the recently constructed firebreak near Cumberland Junction.

Not clearly acknowledged in the referral is that the proposed regular slashing can also spread weeds and pathogens to a significant extent over time. The referral merely states that slashing is less of a problem than using earth moving machinery (p 18). The likely extent of weed and disease problems and the degree to which these can in practice be stemmed by a 'weed management plan' needs to be assessed.

## **The proposed firebreaks in this referral are just one part of a staged action**

These 232 km of proposed firebreaks are less than half of a total of some 600 km of a firebreak network in this region, including about 250 km of already constructed firebreaks with yet to be seen retrospective assessment. In addition, *'three additional and recently included Planned Firebreaks have been added to the network, but have not been assessed to date'* (p 14, Appendix 2). We have also been told that at least one of the proposed breaks in the Wallaby Creek Catchment has recently been undertaken utilising extensive mulching, without first submitting an assessment to the EPBC unit (a 'supplementary report' is promised on p 14 Appendix 2).

All these breaks together may result in cumulative impacts on some of the species. For instance, some of the constructed breaks have been in areas with Leadbeater Possum records and some of the proposed firebreaks not included in this referral also have Leadbeater Possum records along them (see Fig 6 of Appendix 2). In addition we understand that some of the already constructed firebreaks may have been close to and possibly impacted upon Spotted Tree Frog sites. Thus it is too simplistic to dismiss the impacts on this frog species as in done on p 17 of this referral.

In spite of the statement on page 10 of the referral, this is a staged action.

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<sup>1</sup> But note that in Appendix 2 (p 98) 60m buffer or sub-catchment protection for significant areas is recommended. Areas of significant rainforest are not determined or documented.

### **The firebreaks are only part of the overall impact of changed fire management.**

There needs to be assessment of the interaction of the firebreaks with prescribed burning. This aspect is referred to in Appendix 2, particularly with respect to Smoky Mouse (p92, Appendix 2) as the presence of the firebreaks may lead to increased fuel reduction burning. For instance it has been explained to us by several DSE and Parks Victoria personnel that the firebreaks may be supplemented by adjacent burns to improve their effectiveness.

In the referral, it is stated that *“The project assumes that the level of prescribed burning is consistent with existing Fire Operation Plans for the areas in which the firebreaks will be constructed”* (p4) while Appendix 2 bases its assessment on the basis that *“The project assumes that the level of prescribed burning is consistent with existing Fire Protection Plans for the area of the firebreaks.*

This discrepancy between the referral and Appendix 2 perhaps reflects the fact that the most recent Fire Operations Plans are inconsistent with the Regional Fire Protection plans in several regions of Victoria by proposing burns in “zone 5” (not to be burnt zone) which, in the case of the Central Highlands, potentially includes some damp or wet forest. This change is conflict with the Code of Practice for Fire Management on Public Land which requires the Fire Operations Plans to comply with the Fire Protection Plans. Therefore the assumption that the level of prescribed burning will not change with the increased pressure that is resulting from the perceived increased fire risk with climate change is not correct and the impact of the firebreaks combined with increased prescribed burning may need to be assessed.

### **It is unclear how the loss of vegetation can be compensated for**

The Ecology Australia report (Appendix 2) demonstrates the significant impacts of the proposed breaks. The consultant concludes: *“These are very large losses and will be difficult to offset”* (page 2). The report illustrates that 783 ha or 716 habitat hectares of high conservation value vegetation will be cleared along with 8,592 old trees for 232 km of firebreak. The existing 250 km of breaks are likely to have had an even greater impact, due to width and level of vegetation removal, than the proposed new breaks which should be assessed jointly with the previous breaks when determining significance of impact.

The habitat hectare assessment, treated in isolation, is likely to under-estimate the potential impacts of the breaks. Edge effects such as possible introductions of weeds or pathogens, pest animals, soil erosion, sedimentation, vegetation impacts from prescribed burning and other impacts of habitat fragmentation are likely to include a larger footprint than directly estimated by the habitat hectare assessment.

Any offsets should be consistent with the Native Vegetation Framework and be achieved by the permanent protection (security gain) and or maintenance gain i.e removal of damaging activities to native vegetation of similar type, value and condition. These options should be exhausted before improvement gains are considered, and should be part of the overall assessment as opposed to some separate process completed behind closed doors.

Where offsets are required, including for the already constructed firebreaks, there are significant opportunities to improve protection of significant areas of high conservation vegetation by increased connectivity and improved reserve design for Yarra Ranges and Baw Baw National Parks, including strategic links between the two. Any offsets should be identified and secured prior to commencing work on firebreak construction and should be transparent and generous to compensate for the significant damage caused by the proposed and existing firebreaks.

## **The Acts in operation in Victoria have not allowed proper assessment of public input**

None of the many Victorian Acts listed on pages 6-10 of the referral includes opportunities for submissions by the general public or a public inquiry even where a 'permit' is required. Even in the case of the Planning and Environment Act, which normally provides for public input, the usual processes are not invoked. This is because actions by the Minister responsible for conservation, and hence the Department of Sustainability and Environment, is exempt from planning controls under the Planning and Environment Act due to a 10 February 1988 Government Gazettal (see also p21 of Appendix 2). Therefore all assessment under these many Acts will essentially be in-house and non-transparent.

The only other Act which could potentially provide for general public submissions and a hearing is the Environment Effects Act. Yet this Act (which is entirely at the discretion of the Minister for Planning to implement<sup>2</sup>) has not been included in the list of Acts in this referral or in Appendix 2.

This lack of opportunity for informed public comment including from independent scientists makes it essential that this proposal receive a full assessment under the EPBC Act.

## **Are the firebreaks justified?**

The stated purpose of the strategic firebreaks around and within Melbourne's water catchments (p3 referral) is to provide:

- *An effective break in the forest fuel to provided the opportunity for success in conducting a back burn safely under difficult conditions to contain a major fire;*
- *Control lines to reduce the risk of escape in the conduct of prescribed burning and;*
- *Control lines to stop the spread of wildfire under mild fire conditions and/or with the assistance of fire fighters.*

However even the DSE website (under Fire and other Emergencies – Strategic Firebreaks) admits that *'the success of firebreaks is stopping a fire in most conditions is very low'*. Therefore the breaks will be of limited use for the last purpose and of no use at all in high fire danger conditions.

It is also acknowledged that *'Wet Forest, Montane Wet Forest, Damp Forest and Montane Damp Forest EVCs, do not carry fire, are therefore ecologically inappropriate for burning (e.g. prescribed burning) and should be designated for backburning purposes only'* (p92, Appendix 2). Thus the firebreaks are only useful for the second purpose of prescribed burning in the drier forests.

This leaves back burning as the main justification for the proposed breaks in the wetter forests. However we seriously question the practicality of back burning in these forests, even assuming that the breaks will happen to be in the right place for particular fires. The nature of the ground cover and understorey in these forests including many ferns and deep damp leaf litter makes backburning difficult or impossible - until very dry conditions are reached making it instead a very dangerous proposition with a high likelihood of escape. As noted in letter from DSE to VNPA (20 November 2007) *"tall wet forests under drought*

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<sup>2</sup> This Act underwent a review in 2002 but the Government ignored the advisory panel's recommendations that this Ministerial discretion be removed.

*conditions experience fire behavior and intensities such that fire containment is very difficult*". The usefulness of firebreaks in these forests, which are also the forests where the highest environmental impacts will occur is highly questionable. We strongly dispute the value of clearing breaks in the damp and wet forests as shown in Fig 4, Appendix 2 including west of Cumberland Junction and most of the breaks to the south and east.

Emergency firebreaks are still likely to be constructed to some extent at the time of fires as the location of fire fronts cannot be reliably predicted. The possible damage from these will not necessarily exceed the certain damage that will result from many of these firebreaks

Lastly we would like to comment that we are disappointed that the width of the firebreaks in this referral is up to 40 m and retention of canopy only 'up to 30%'. We have been told by Parks Victoria and DSE recently at two separate meetings that the breaks would now only be 20m with the 30% canopy apparently a minimum standard. Amongst the roads listed (p 74 Appendix 2) for a 40 m clearing is Paradise Plains Road which for many kilometres has old growth and prime Leadbeater Possum habitat on both sides of the road.

We have discussed the question of firebreak effectiveness with Dr Kelvin Tolhurst who suggested there is a balance between having the break wide enough to help with back burning and not so wide as to create serious turbulence. He indicated 20-30m (including the road) and suggested that if a backburn is going to spot backwards greater than this, then it is too dangerous to do a back burn anyway. Dr Tolhurst agreed that the wetter forests were less suitable for these breaks (for the reasons above) and would be more useful in peppermint gum forests but not in stringybark forests where the flammable bark makes their presence in or near the break problematic.

Controversy about the real need for these firebreaks, especially in the wetter forests where the impact is greater is yet another reason for requiring a proper assessment that looks at the full costs and benefits of the breaks in different areas.

## **Conclusion**

The proposal is clearly a controlled action and is also part of a staged proposal which should be evaluated as a whole. Its complex nature means it deserves full public scrutiny including public submissions on detailed documentation which should include surveys to better locate the various State and Federal threatened species. An independent public inquiry should be part of the assessment.

On the basis of the present evidence the VNPA believes the firebreaks, particularly in the wetter forests are not justified and will result in significant environmental damage for fire protection that may not be realized.

We request that:

- the current and the yet to be lodged retrospective assessment for breaks built last summer, plus any remaining proposed breaks in Victoria's Central Highlands, be assessed jointly;
- that a fuller and further assessment be undertaken of the justification for the breaks, and their design and routes.
- That there be consideration of appropriate offsets as part of this joint assessment.