Submission to the Sustainability Strategy Unit, Department of Premier and Cabinet

Concerning

Fire Management in Southwest Forests

By Tony Pedro

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Introduction

As a long time resident of the southwest region, and conservationist, observing the affect of fire on forest ecology has been a keen interest of mine for many years. Arriving in Tingeldale in 1960, as a 7-year-old, the forest behind our dairy farm (now the Walpole-Nornalup National Park) was my backyard and playground. With the Frankland River less than a kilometre from our boundary, I can recall running barefoot through the open understory tingle forest to the river to catch Marron.

During such an expedition one summer, I witnessed the lighting of the first major prescribed burn in this forest type, and the subsequent affects that this fire had on the forest ecology. The Fire turned an open understory forest dominated by large Tingle and Karri trees into a impenetrable Wattle and Hazel thicket with some 250 000 plants per hectare. I also vividly remember numerous ancient and previously healthy tingles crashing to the ground due to the devastating effects of this single fire event.

35 Years later, this forest is beginning to recover and resemble the open understory character which I recall from my youth. It is a major concern of mine that the current government policy with reference to prescribed burning will continue this cycle of destruction followed by the generation of unnaturally high fuel loads due to the mass germination of understory species after prescribed burns.

Prescribed Burning and Sustainability

I believe that the type of fire management currently being practiced in the Karri and Tingle forests of the Southwest is an important sustainability issue for the following reasons:

I believe that these delicate ecosystems, the only ones of their type left in the world, cannot continue to support the inappropriate fire regimes imposed on them under the management of CALM. I believe the current CALM policy of burning to ‘mineral earth’ or scorching the landscape until bare earth can be seen is highly damaging to the forest ecosystems especially the subsoil components such as micro-organisms and fungi species. This impact on the natural soil biota, combined with the significant impact of fire lighting and control machinery leaves the forest soils open to the introduction of the highly damaging root disease dieback.

Furthermore, based on my experience of these forest types, I believe that fuel reduction burning for the protection of private property is in fact counterproductive. This is due to the sharp increase in fuel loads after a prescribed burn due to an unnaturally high and uniform germination of understory plants over the large areas normally subject to much too frequent fire regimes.

A third and serious concern of mine is the significant levels of greenhouse emissions associated with the unnecessary and ecologically destructive prescribed burning in these areas.

These ecologically damaging and unsustainable fire regimes arise as a consequence of the following issues relating to fire management in Southwest forests:

- The mechanism used by CALM and their selected scientific community to establish the past fire history of Karri and Tingle forests is problematic, and inappropriate for this ecosystem type, an issue compounded by
- A consistent misinterpretation and misappropriation of traditional aboriginal fire management in Southwest forests.
- Also, the current method used by CALM to measure fuel loads (i.e. measuring dead biomass only) in Karri and Tingle forests is inappropriate for forests of this type, leading to;
- A failure to recognise the long-term decrease in fuel following a fire, due to the death and subsequent decomposition of the majority of short-lived understory species.

Examples of both prescribed burning and fire protection management methods exist at present, but unfortunately a policy exists whereby long unburned areas are targeted by CALM and FESA (Fire and Emergency Services Australia) for urgent prescribed burning. For example, an area of 130ha near Mount Lindsay and surrounded by farmland was torched earlier this month. This area is known to have been protected from fire since 1961, and had established classic long unburned style of relatively little understory. This area has now lost its scientific value and unique ecology as a long unburned area. The mass germination of understory species in Kari and Tingle forests after fire events causing high fuel loads is very different to what I believe is the natural state of these forests. In my experience, understory species occur sparsely throughout the forest, thereby maintaining

a sustainable seed bank in the soil without the need for fire events of the frequency of current prescribed burning regimes.

From what I have observed in the Southwest, different forest types reach the stage of sparse low-fuel understory at different ages after a fire event;

- Karri / Tingle 25 to 40 years
- Jarrah / Red gum 15 to 25 years
- Wandoo 10 to 15 years

I believe that far from following the supposed aboriginal practice of burning the environment on a regular basis, in time it will be come to be known that the very opposite was the case. From what I have learned, the aboriginal peoples used fire very strategically and with a degree of control we do not begin to understand. They used fire with amazing control over less than 1% of the landscape, attracting the game to small areas for easy hunting and entrapment. I believe the vast majority of the land in the Southwest was managed in a way which a scientific approach can never understand, it was left to be, in its own complexity.

Aboriginal fire management was described to me by an elder who I met at a CALM fire seminar, and who I respect enormously. On completion I asked why he did not contradict the CALM policy of supposedly following aboriginal broad scale burning in the southwest forests. Initially he ignored my enquiry, but then under much pain with tears in his eyes he explained that what was suggested as following his ancestors fire management was so far from the truth that he did not bother to even try and correct the government policy. I will tell you how we did it he said.

'When we were ready to leave our summer or winter camp site and we could see a cold front coming and we knew it was going to rain soon, a group of us would be sent by the elders to the area selected for next seasons camp site, near an estuary or river, and light a fire or series of fires. Knowing the wind direction and conditions until the cold front and rain came, we could predict the shape and size of the camp area for next season with all its new growth that would attract the game from the vast area we had chosen to leave unburned.'

This is the degree of skill that I believe we will have to learn, as well as developing more appropriate fire fighting equipment to suit the terrain and conditions of Southwest forests. In no other industry on Earth do we use equipment so out of date and poorly designed for the job than that that used

for bushfire suppression in the Southwest forests. Turning up to a bushfire with a truck is about as effective as arriving at a house fire with a plastic bucket. Trucks cannot be driven through the bush to access fires that are further away from roads than the length of the hose on board the unit. In most bushfires the units are useless, and a bulldozer has to be brought to the fire, sometimes taking hours by which time wildfires become uncontrollable.

I have invented a machine to overcome this problem, and invested $75 000 to build two working examples (photographs are attached). This machine is capable of quickly traversing the environment in which it is to work, while carrying water, and clearing its own track or creating firebreaks. This is the most sophisticated ground-based bushfire suppression unit in Australia, and possibly in the world, however CALM and FESA have shown no interest in the trial or possible use of this machine. I believe that the use of fast-response equipment such as this provides a more sustainable alternative to fuel reduction burning for the purpose of bushfire prevention in Southwest forests.

Recommendations

I therefore have three main recommendations with respect to fire management in Southwest forests

1) Effort should be made to maintain examples of long unburned forest areas in the Southwest. These areas should form the basis of investigations, which compare fuel levels over time in unburned areas with those under current fire management. A new technique for measuring fuel levels in Southwest forests should be developed for this purpose, which must take into account both living and dead biomass in appropriate weightings. The long-term effects of prescribed burning on the ecology of forest areas should also be compared against the unburned areas to increase our knowledge of the relationships between fire regimes and forest species. The precautionary principle should be exercised with respect to prescribed burning in Southwest forests from now on.

2) Research into fire ecology and the relationship between prescribed burning and fuel levels should be conducted by independent organisations such as university ecology departments or the Kings Park Herbarium. A research institution of this type should be funded independently of the department of CALM to ensure no conflict of interest jeopardizes the

research outcomes as I believe has been the case with CALM and CSIRO fire ecology research to date.

3) The use of effective ground and air-based fast response fire fighting equipment should be seriously considered as an alternative to ecologically damaging and effectively fuel increasing prescribed burning. This type of equipment must be coupled with effective early bushfire detection methods to enable firefighting before small manageable fires develop into wildfires.

Thank you for taking the time to consider this submission


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