

Fire, prescribed burning and the conquest of nature

WA Forest Alliance (Wafa) and the Conservation Council of WA 9420 7265 www.wafa.org.au April 2002

In recent years there has been a vigorous campaign to increase the amount of pre-emptive ('prescribed', 'controlled', 'hazard reduction', 'fuel reduction') burning in WA. Recently this gained added impetus as a result of the emotive reporting of the NSW fires and some resentment of the WA government's decision to protect old growth forests from logging. However, rather than more burning, what WA really needs is a sophisticated fire management and protection policy which is effective and does the least harm.

Recent pre-emptive burning extent in south west WA

1992-93: 120,000 ha
 1995-96: 200,000 ha
 1997-98: 125,000 ha
 2000-01: 80,000 ha [CALM Annual Reports]

"The greenies are stopping CALM burning."

According to the 2000-2001 CALM Annual Report, less prescribed burning was done last year because of: continuing reductions in burn size; the increasing complexity of burns; the need to protect increasing areas of fire sensitive forest regeneration; efforts to minimise smoke haze over Perth; and the risk of severe fire behaviour and possible escapes.

The pre-emptive burn 'target'

CALM still maintains an annual 'target' of 250,000 ha of pre-emptive burning in the South West. Not only is this target ecologically, financially and operationally unsustainable; the attempt to reach it involves considerable risk and damage while the consistent 'failure' to reach the target is then used by the proponents of more burning to claim that the community is in danger of "another Dwellingup". This is a no-win situation for the whole community.

Fire and science (1)

"Frequent fires can reduce the native fauna species diversity of an area and the habitat availability... There is increasing evidence in the [scientific] literature, and via personal communications from experts in their fields, that frequent fires have a disastrous effect on many species of flora and fauna and their habitat structure." [Kings Park Bushland Management Plan, 1995-2005]

"Species of fungi that require the conditions associated with a litter layer will not be favoured by a fire regime where the litter layer is frequently removed by burning." [EPA, 1992]

"What fire control and land management authorities describe as 'fuel' and a 'hazard', I prefer to think of as the food and the energy that keeps our ecosystems functioning." [Professor Harry Recher, Edith Cowan University]

This is just a small sample of the scientific research and expert opinion that contradict claims that frequent burning is harmless and effective (see over for more). Numerous peer-reviewed and published scientific papers setting out the risks and impacts of frequent repetitive burning are available from the WA Forest Alliance/Conservation Council office.

What scientific research indicates again and again is that many components of our natural environment are in fact fire sensitive, and not, as the proponents of more burning claim, uniformly adapted to frequent repetitive burning. If WA's environment was as fire-prone, as fire-adapted, and -- frequently burnt as the proponents of more burning

Attempts have also been made to construct a version of Aboriginal fire use in south west WA that justifies frequent repetitive burning. The proponents of more burning now claim that the Noongar people of south west WA burnt the entire jarrah forest (about four million hectares pre-European extent) every four years, which means a million hectares of burning per year. The only way such a massive annual burning program could have been achieved is by vast uncontrolled wildfires that would have destroyed wildlife, habitat, and everything else the Noongar people needed and valued.

The D'Entrecasteaux National Park fire

The 2002 wildfire in D'Entrecasteaux National Park has been used to target conservationists and promote more burning. In fact, as is so often the case, this fire could have been suppressed before it became a wildfire if appropriate resources had been used when the fire was first detected. A series of recent fires in conservation reserves seems to indicate a policy of allowing small fires to turn into wildfires, which are then used to justify more pre-emptive burning.

The Dwellingup wildfire – example of what?

The reason the infamous Dwellingup wildfire was so severe was not the lack of pre-emptive burning. The 1961 Royal Commission report says: *"Statements that the Forests Department does not carry out controlled burning in the Dwellingup forests are entirely without justification. The Department has control burnt extensive areas each year for the last 40 years and more than ever at the present day."* Rather, logging operations, which had opened up the forest canopy and created vast amounts of logging debris, were a major cause.

The NSW wildfires

Responding to the chorus of calls for more and bigger prescribed burns in NSW, Rural Fire Service Chief Commissioner Phil Koperberg warned:

"The previous practice of broad acre burns runs the risk of permanently changing the balance among the plants and animals which make our landscape unique and attract millions of tourists each year.... The prospect of regular, comprehensive prescribed burning to convert the entire 5.4 million hectares of national parks into a garden landscape is, however, out of the question... Strategic fuel reduction, not widespread burning, is central to protect lives and property." [Sydney Morning Herald, 7 January 2002; full article available from Wafa]

Fire and the greenhouse effect

"On the other side of the issue, fire has short-term potential feedback effect into the greenhouse effect. N. Burrows (pers comm.) has calculated that the present fuel reduction burning program throughout State forests produces annually about 46,000 tonnes of particulate matter and 4.14 million tonnes of CO₂."
 [Blyth, J., A.J. M. Hopkins, F.J. Bradshaw, "The greenhouse effect and Western Australian forests." CALM, unpublished, 1991.]

Not only does pre-emptive burning contribute to WA's massive annual greenhouse emissions, but the already apparent climate change occurring in the South West (e.g. the 20% decline in rainfall over the past 25 years) has significant implications for fire management, e.g. the ability of ecosystems to cope with repeated burning. It is increasingly apparent that fire can no longer be considered in isolation: the cumulative impacts of, and interactions between, climate change, fire, pests and diseases

Facts about pre-emptive burning

There are five facts that must be explicitly taken into account in the formulation of fire policy:

- frequent burning does have harmful ecological impacts;
- doing less pre-emptive burning but targeting it more carefully will produce better results than increased broadscale burning;
- pre-emptive burning is of limited effectiveness under severe conditions, while other strategies may be more effective;
- CALM's risk assessment and fuel accumulation methodologies are crude and outdated;
- frequent burning can make us more vulnerable to fire, not less, by promoting fire-prone species and conditions.

Fire policy is slowly evolving

Traditionally, land and resource 'management' has meant high-impact intervention and heavy-handed manipulation of natural systems. This outdated approach is gradually being replaced by a new understanding of the values and sensitivities of natural systems. In the area of fire management there are moves to modify and modernise approaches to fire and pre-emptive burning by reducing and varying the size, intensity and frequency of burns and varying their season.

The government has promised a major public review of fire and fire management, to be conducted by the EPA in 2002.

A rational approach

Pre-emptive burning at the scale and frequency proposed by the proponents of more burning will impoverish our natural environment and leave our community just as, or even more, vulnerable to fire.

The rational response to fire risk is more investment in a sophisticated, multi-faceted approach to fire management and protection, which includes limited and carefully targeted pre-emptive burning, but does not rely upon it. We need four things:

1. More focus on preventing fires, including arson. There is a risk that constant talk of the need for more burning, and of how much our environment likes fire, will encourage arson;
2. More investment in our capacity to detect fires soon after they start, and our capacity to put fires out before they become wildfires. This means better aerial fire fighting capacity and also ground-based rapid response teams;
3. More care in where we allow settlements to occur, discouraging building in areas at risk from wildfires. If people choose to live in such places they must accept the risk of wildfire;
4. More focus on improved strategic firebreaks and buffers around vulnerable communities and assets, as opposed to frequent broadscale burning of remote bushland.

Fire and science (2)

"Detrimental fire regimes contributed to the extinction of two of the three bird species, and three of the four sub-species [including two WA sub-species: Rufous Bristlebird and Lewin's Rail] which have disappeared from Australia since European colonisation. Inappropriate fire management is now a factor in the threatened status of at least 51 nationally recognised threatened bird taxa.... Of the threatened [bird] species whose relationships with fire regime has been comparatively well documented, almost all show clear preference for much less frequent fire than that currently prevailing. The long-unburnt

ability. The persistence of these species is further jeopardized by habitat fragmentation, which accentuates the handicap of these traits for recolonisation following fire....[In temperate eucalypt forests] the most detailed long-term study suggests that frequent mild fires will lead to the decline and loss of some species which are now perceived as common and little affected by mild fires."

"Too frequent burning has endangered species such as Noisy Scrub-bird, Western Bristlebird, Malleefowl and Ground Parrot. The old growth (or mid to late seral) vegetation that these species require, or are most abundant in, is now becoming disappearingly rare.... The endangerment of so many species reliant on relatively old vegetation is a clear indication that land managers are generally burning far more extensively or frequently than prior to European settlement, or that fires now are generally more destructive. The very low fire frequency, or fire exclusion, required by many of these species (e.g. preferred intervals of at least 20 years for most threatened heathland birds, or at least 60 years for Malleefowl) will pose serious management problems...."

Woinarski J.C.Z., Fire and Australian Birds: A Review, in *Australia's Biodiversity – Responses to Fire*, Environment Australia Technical Paper No. 1, 1999, pp. 57, 83

"This research indicated that frequent burning resulted in a simplification of large-scale spatial patterning in the litter (fine-fuel) environment. The components (leaves, twigs, bark etc) that give the leaf litter its physical structure changed with regard to their relative abundance and spatial distribution.... Top-soil moisture levels were, on average, 18% lower following 20 years of frequent burning.... These shifts in [invertebrate] community composition were substantial and suggested that the extensive and frequent application of fuel-reduction burning could result in a reduction in terrestrial invertebrate biodiversity at a regional scale, with this decrease potentially as high as 50%.... [T]here remains a need to establish secure refuges for species with specialist requirements and limited dispersal abilities, and provide links (i.e. corridors) between habitat patches to facilitate recolonisation.... Realistically, the conservation of biodiversity cannot be achieved without consideration of the important role that invertebrates play.... [S]ubstantial measured changes in the structure of invertebrate assemblages and the loss of species associated with the decomposer cycle implies frequent burning may be impacting upon nutrient cycling and transfer within these forests. If this is the case, it would have serious implications with regard to the maintenance of ecological sustainability."

York, A., Long-term effects of repeated prescribed burning on forest invertebrates: management implications for the conservation of biodiversity, in *Australia's Biodiversity – Responses to Fire*, Environment Australia Technical Paper No. 1, 1999, pp. 183-4

"Historically, many plant species have become locally extinct due to too-frequent fires. Typically, these species have fire-sensitive adults and rely on seed for their re-establishment after fire ("obligate seeder species"). Fire-sensitive species may become rare and become confined to "fire shadows" in the landscape.... Fires are easy to ignite and can spread widely. They can be a cheap management tool and a costly reality.... Examples of fire-induced local extinctions of native plants in Australia span the continent.... Leigh and Briggs (1992) list 19 species as being threatened with extinction at state or federal level due to the inappropriateness of current fire regimes."