

## How to Burn

Double Creek, Mallacoota 17<sup>th</sup> September 2016

Vic Jurskis BSc (Forestry)

Somewhere in the material promoting this event I saw the question to burn or not to burn. Well that's not the right question. The real question is how to burn.

When Aboriginal people were managing the country it was open and safe. They survived fifty thousand years without emergency services bureaucracies, water bombers, fire engines, computer models and uniforms. The fire disasters we are seeing now are due to lack of responsible land management. And they have nothing to do with climate change.



### **Fire Safe, Low Fuel Red Gum Woodland**

For example, on 5<sup>th</sup> December 1792, Aboriginal fires were burning northwest of Sydney and Parramatta in temperatures above 109<sup>0</sup> Fahrenheit or 43<sup>0</sup> Celsius. They were driven towards the European settlements by searing north westerly gales. But the whitefellas beat them out with green branches. At Sydney they lost only one hut and a few gardens and fences, even though the roofs were mostly thatched. At Parramatta they thought they had “got it under” when an ember from the top of a burning tree landed on a hut and destroyed it with its outbuildings and a stack of newly harvested wheatsheaves. But that was all.

Two centuries later, in January 1994, fires burning under identical weather conditions around Sydney destroyed hundreds of houses and claimed human lives. An army and air force of firefighters with the best technology couldn't stop them. Thousands of people were evacuated. There were only four places where the fires were contained before they got into the suburbs. Each of these areas had been previously burnt to reduce fire hazards.

The difference in 1792 was that the whole landscape was safe. In 1994 it was choked up with three dimensionally continuous fuels. Extreme fire weather is inevitable as it has been for many thousands of years, but firestorms are not. They are a consequence of 3 dimensional continuous fuels.

In 1802, Matthew Flinders described the results of a mega-fire started by lightning on Kangaroo Island. The island had been uninhabited for about 4,000 years after rising sea levels cut it off from the mainland 5,000 years earlier. Flinders saw huge dead trees, standing and



# SouthEastTIMBERassociation

fallen, in a young even-aged forest with a dense understorey on deep “vegetable soil”. He contrasted this wilderness against the open grassy vegetation and mineral soil maintained by Aboriginal people on the mainland.

On our **big** island, the first mega-fire for about 40,000 years burnt what’s now called the Strzelecki Ranges around 1805 less than 2 decades after local Aborigines were devastated by smallpox (in 1789) and abandoned their management of the rougher country. There were no whitefellas around there at the time to witness it, but the history is evident in descriptions of the so-called virgin scrub by settlers who started clearing it from the 1860s. There were big old dead trees, a thick young even-aged forest, impenetrable scrub and fallen timber. Just like the wilderness described by Flinders on Kangaroo Island. When they cleared the South Gippsland Scrub, they found lots of stone axes, grinding stones, cooking ovens and other signs showing that until recently most of the scrub had been open country managed by Aboriginal people.

Our second mega-fire burnt 5 million hectares of Victoria in 1851, less than 2 decades after European settlers disrupted Aboriginal management of the flatter country. By the 1860s, Alfred Howitt recognized that big scrubs, mega-fires and so called eucalypt dieback, better described as chronic decline, were direct consequences of disruption of Aboriginal fire management.

In the early 20<sup>th</sup> Century, forest services were established. They were run by foresters educated in Europe who had no idea about the natural role of mild fires in eucalypt forests and woodlands. They thought that ecosystems shaped by fifty thousand years of Aboriginal burning had to be protected from fire. Scrub invasion, mega-fires, chronic eucalypt decline and pestilence were rampant.

On black Friday, 1939, Victoria exploded once again. Two million hectares burned, 71 people were killed, and 650 homes and shops were destroyed, as well as 69 sawmills. Stretton’s Royal Commission found that the disasters were a result of scrub growth because burning by the Forestry Commission was “ridiculously inadequate”. Here in East Gippsland there was extreme weather and heaps of fires too, but no serious damage as John Mulligan explained. The Forestry Commission hadn’t managed to subdue the local graziers, so the bush was still well managed and safe.

In the high country, trees that weren’t incinerated by mega-fires were dying anyway, and they fed plagues of stick insects from the 1940s to the 1960s. Thousands of hectares of alpine ash forests and hydro catchments were sprayed from the air with nasty insecticides in diesel fuel. On New South Wales’ central coast, sick trees fed psyllid insects. Bellbirds eat these insects so they irrupted and spread across the landscape as they have done here.

On the eve of Australia Day in 1952 a mega-fire exploded across southeast New South Wales. Phil Collins, who ended up as fire control officer at Bega, fought that fire and told me the horrific details. You can still see where it went because so much of the forest is 64 years old. In 1961, Dwellingup and three other towns in the jarrah forests of southwestern Australia were totally destroyed by fire. Foresters finally learnt from their mistakes. They introduced broad area burning and aerial ignition. David Packham played a large part in developing the technology.

Forest health and fire safety improved. For example, an aerial burn in the rough country west of Bega in 1968 saved the valley and the town from a big fire during the subsequent extreme fire season when 14 people were killed and 150 homes and buildings were lost in other parts



# SouthEastTIMBERassociation

of the state. There were no major pest outbreaks in New South Wales' native forests for the next 20 years.

When I started as a forester, fire management was handed to me on a plate. Blokes like Phil Cheney, Roy Free, David Packham and Roger Underwood had done all the hard yards. The bush was open and grassy and safe. Burning was easy. It didn't matter what your nominal job was, when conditions were right your job was burning. There were no silly rules or regulations. We didn't sit in the office ticking boxes and writing plans. We burnt wherever and whenever we could.

I started work in the headwaters of the Richmond and Clarence Rivers, where CSIRO scientist John Calaby had found the richest mammal fauna anywhere in Australia. He attributed this to the combination of forestry and cattle grazing. The key to management for both foresters and graziers was burning.

Then ecologists like Malcolm Gill started dreaming up theories that people shouldn't interfere with the environment; that deliberate burning will drive all sorts of plants and animals to extinction. They don't understand that people, with their firesticks were the most important factor in the environment for 50,000 years. They deny our prehistory and our history. Or, in the case of the charcoal records, they totally misrepresent it. Environmentalists embraced the silly theory and the underlying wilderness myth. State Forests became National Parks. Graziers gave way to hobby farmers and the fire stick started to fizzle out from the nineteen eighties.

Mountain ash is a good example of the problem with the ridiculous theory. It's supposedly a fire sensitive species that is killed by any sort of fire and doesn't re-sprout, so it has to regenerate from seed. Mountain ash saplings don't produce much seed until they're about twenty years old, so if you light up mountain ash bush more often than once in twenty years you'll supposedly wipe it out.

But mountain ash was called black-butt by the early settlers. The butts of the trees were invariably blackened by fires. It's not at all sensitive to mild or even moderately intense fires in light fuels. The theory is nonsense. History shows that if you keep fire out of mountain ash forest for twenty years you create a time bomb. Dense scrub develops. You can't burn it in mild weather. When it inevitably burns in extreme weather, the trees die and you regenerate a dense, young, scrubby even-aged stand that is certainly fire sensitive. You've started a vicious circle.

The only way to restore open, grassy, fire safe and diverse forests is to burn properly. But it's not easy anymore. The less you burn, the harder it gets. We're hearing excuses now that there's too narrow a window of opportunity. We can't burn anymore. Well I reckon we've got to open the window. The big problem is the stupid rules and regulations and bureaucracy that make it impossible to do it right. We're not allowed to burn often enough to achieve mild burns, and we've lost the skills

When foresters developed aero-burning in flat country in Western Australia they realized you could get good coverage **and** a mild burn, by dropping incendiaries on a grid at a spacing that ensured the spots of fire would meet up at the end of the burning day when the temperature started to drop and the humidity started to climb. On the other hand, when they wanted to do top disposal or regen burns to bare the ground in clear-felled coupes, they realized that lighting lines of fire on the perimeters would quickly generate fast moving fronts that would draw together and generate a mini tornado.



# SouthEastTIMBERassociation

What I'm seeing now in National Parks in New South Wales are more like regen burns than hazard reduction burns. In fact they're increasing the fire hazard because they're burning down old trees, turning standing green shrubs into dry fuel and stimulating germination and re-sprouting of additional trees and shrubs.

When you've got the sort of mess that we currently have across the landscape, the first burn is usually going to be too hot. You've got to go in and burn again as soon as you can to actually start the hazard reduction process. You've got to burn the standing dry fuel and kill the woody seedlings before they can grow into trees and bushes. To do the job properly and set yourself up for hazard reduction burning is illegal in New South Wales. You can only get around it if you burn outside the bushfire danger period when you don't need a permit, but the authorities routinely stuff us up by invoking the bushfire danger period as soon as conditions are right for burning. Then they complain because there are so many burns and escapes in the week before it comes in.

I was amazed when I saw Victor Steffenson on TV talking about traditional Aboriginal burning. He's gathered knowledge from the elders in North Queensland and now teaches good burning all around Australia. I was even more amazed when I saw him in action at Mandalong. He demonstrated all the techniques that the old foresters had showed me when I started. Burning outwards from a spot, burning down from the top, filling in by burning spots progressively into the wind, raking around rough barked edge trees and so on. He explained how a proper burn was good for the animals and the trees. He explained about nutrient cycling and forest health. He could have written my book, but much more eloquently.

He showed up the local Rural Fire Service bureaucracy. They did a little burn according to their plan. They lit a wall of flame and then spent half an hour squirting water up trees. Victor wasn't impressed with the result or the noise. Nor was anyone else except the bureaucrat in charge. He stood by the inflexible approach to timing and planning and lighting pattern.

We've got to reduce the bureaucracy and increase the performance for the sake of the bush as well as our lives and homes and property. We've got to burn willingly and frequently and skilfully.

## One More Question



**Do we want to accept more of this?**



**Or more of this?**

