George
Roger Underwood <yorkgum@westnet.com.au>
Wed 24/04/2019 11:11 AM
Dear Friends and Colleagues

As many of you will have heard already, George Peet died on Easter Sunday. This was the culmination of a long period of debilitation and illness.

George was truly a Western Australian and a forestry hero. He was there the night Dwellingup burned. He pioneered fire behaviour science in WA forests, producing the first tables and burning guides. With David Packham, he invented aerial burning. Later, as the department's Fire Operations Officer, he oversaw the development of the finest bushfire management system in the world, as implemented by the forestry districts at the time. He was a demanding senior officer, setting and insisting on the highest standards, and woe betide you if you failed to meet them. At the same time, off the job, he was a great bloke, who loved fishing, kayacking (with Jim Willo), cycling, and humorous yarns over a beer or a campfire.

In 2002 I wrote a biographical essay on George. This was later published in *Old Growth Foresters*. I have attached a copy as many of you will not have read it. Not mentioned in this story was that George was an inaugural member of The Bushfire Front, where he was an uncompromising force for attacking the then-department for not implementing the sort of bushfire management that George himself had once overseen and knew to be effective and efficient.

I consider myself privileged to have known and worked with George Peet, to have been the beneficiary of his brilliant bushfire work, and to have been his friend.

Sincerely

Roger

GEORGE PEET 1

By Roger Underwood (2002)

Walking my dog along the cycle path near Point Walter early one Sunday morning recently, I suddenly had to step aside as a phalanx of yellow-jacketed cyclists emerged around a bend in the track and swept towards me. One of them looked familiar – a stocky, muscular figure, cycling with fierce concentration, and up with the leaders. "Hey George!" I cried (for it was indeed George Peet), and he saw me, broke from the pack with a skilful manoeuvre, and coasted back for a brief and pleasant chat. I was in the mood for a yarn. But George was impatient to get going, and he soon mounted up and tore away, clearly intent on getting back to the head of the group before they reached Attadale. I would have been disappointed if he had behaved otherwise.

It was good to see him. For many years George was a profound influence in my life, especially when I was a young forester trying to make my way in the world of Western Australian forestry. Today I regard him as one of the immortals, in particular of that generation of foresters who worked in the native forests between 1960 and 1990. He is truly one of the people of whom it can be said that they changed the thinking of an era, and the practice of forestry.

I have known George for nearly 40 years. In fact I knew him before I met him, as a result of the reputation he left behind him at the Australian Forestry School at Canberra, where he preceded me by two years. It was an intriguing reputation. It intermingled rugby playing, VW beetle-driving, chairmanship of an influential student group euphemistically named "The Friday Night Glee Club" (which regularly cut a swathe through Yarralumla), and a predilection for drinking rum at a time when beer was the universal student drink.

George was one of those who came to forestry via farming. He had completed his high school matriculation at the Muresk Agricultural School at Northam (after three years at Wesley College) and then gone on to work for several years in the wheatbelt as a farm labourer, with the vague intention of getting into sharefarming. These were the hardest years of his life, he told me later, working 14 hours a day, 6 days a week, summer and winter, for a pittance, and batching in shearers quarters. Compared with the latter, the single men's huts provided by the Forests Department at the time were the height of luxury. All of this led George to set aside his farming ambitions, and go to University to study forestry. He joined the Forests Department after graduation in the fateful year of 1961, just in time to experience first-hand the summer of the great Dwellingup Fires.

I started work with the Department in 1963, and was transferred to Dwellingup at the end of that year to take over the Cadet Training program. There I soon met George. He was my neighbour - he and his wife Gillian lived next door to the Single Officer's Quarters where I was batching. Although George was an officer of the Research Station at Dwellingup, he was also the Department's designated Fire Weather Forecaster (under the mentorship of that famous forestry research officer Allan Hatch, who uniquely combined expertise in soil science and meteorology). One of my training roles was to teach the cadets how to read weather instruments and synoptic charts and to sense what was going on around them in terms of bushfire weather. So one or more of us was often in the little radio room at the back of the district office at 7.30 in the morning. There George would be standing, wreathed in a

fug of blue pipe smoke, studying barometric charts and weather data, weighing wooden rods on a beam balance, doing calculations on the back of an envelope and talking on the HF radio to various district officers down in the south-west about their weather observations. After a few minutes deliberation he would take up his pen and paper and write out the day's weather forecasts for the jarrah forest and the karri forest, and then read them out over the radio to "all stations". After this he would go home for breakfast.

I was deeply impressed. Looking back, George's performance as a weather forecaster was a revealing indicator of his personality and modus operandi. He was good with technical detail, had the capacity to analyse a complex situation and reduce it quickly to a concise and sensible plan of action, and once having decided what he wanted to do, he got it done with a minimum of fuss and then went and did something else.

The big forestry research issue of the day, and the problem in which George was up to his neck, was to get an understanding of fire behaviour in the jarrah forest, and then to find the means for applying this understanding to prescribed burning. The 1961 fires and a subsequent Royal Commission had provided the spur to a much wider-scale, and more effective means of prescribed burning for fuel reduction. The trouble was, the basic science was lacking. We needed a quantitative way of predicting rate of fire spread and fire intensity from easily measured or forecast variables. This in hand, a controlled burning guide could be developed. The way this was achieved was by lighting hundreds of "experimental fires" out in the jarrah bush, measuring their development, and equating this to weather data, fuel characteristics, season and topography. Controlling an experimental fire, as well as measuring it, was hairy work, especially in areas of heavier fuel, and often (literally) it became a matter of all hands to the pump.

The Cadets and I assisted with some of George's experimental burns, and got a first-hand appreciation of the work. I also used to see George at his desk back in the Research building, where I shared an office with Andy Clifton. George would agonise over complex mathematics as he tried to develop equations which incorporated all the variables and gave a good fit to observed fire intensity and rate of spread. This was 1963/4, and not only did research officers not have a computer to do the multivariate analysis for them, they didn't even have an electric calculator! All the maths had to be done longhand or with a hand-cranked "Facet" calculator, and the sort of thing a computer would do in three seconds today might take a week of laborious work by hand. George would grunt and swear to himself, tear at his hair, get up and stomp down the corridor, snarling at passers-bye, and produce a smoke pall from his pipe which blotted out the sun. But he was wonderfully dogged, and in the end, produced the first Fire Behaviour Tables, and a Jarrah Forest Prescribed Burning Guide. This sort of stuff is completely taken for granted by bushfire managers these days, but at that time, George's work was way ahead of the rest of the world, matched only by the parallel studies being undertaken by Alan McArthur in NSW and ACT.

The other great challenge of the day was to get enough burning done to get in front of the annual fuel accumulation. Aircraft burning had not been thought of, and there was a huge backlog of forest which had not been burnt for a great many years. Burning was done by gangs walking striplines through the bush, lighting up as they went and it would take all day to get a few hundred acres alight. It was also inefficient because we didn't have a handle on the interactions between fuel quantity and moisture content, so often a good day was missed or not taken advantage of, or alternatively a lot of manpower was put into a burn which failed to do the job.

I well remember another of George's innovations at the time – the Sun Compass. He worked out a way of getting gang members to walk through the bush lighting a burn, but out of sight of each other. Previously, all lighting was done by gang members walking in "echelon formation" 30-50 metres apart, keeping in touch. This gave a regular lighting pattern, but greatly minimised productivity. George realised

the inefficiency of this, and using his new Burning Guide he showed how to calculate a line and spot spacing to maximise the areas burned on a good day. Gang members were issued with a hand-held sun compass (a sort of sundial) to guide them accurately on a long leg though the bush, with individual lighters up to 150 metres apart.

I was there the day the new sun compasses were first issued and tested. Unfortunately the Mark 1 model had a fault of some sort, and things went badly awry. Even more unfortunately, the Deputy Conservator Roy Wallace was present, down from Head Office for the day to watch the new research being implemented. He had done some pioneering fire research himself back in the 1930s, and maintained his interest. Most of the senior foresters of the day had a lot of time for Mr. Wallace, but I always found him critical and sarcastic. So he was this day, giving poor George a hell of a serve, and in front of the crews. It was a good demonstration of personnel management at its worst.

Needless to say the Mark 2 Sun Compasses were soon developed, and they worked well. They became a standard bit of equipment until aerial burning made big broad-acre "hand" burns obsolete.

Having conquered the jarrah forest, George then set out to tackle the karri. He moved south to the Manjimup Research Station and started work on karri fire behaviour. Again our paths crossed, as by then I had been appointed DFO (District Manager) at Pemberton. Prescribed burning in the southern forests was a fearsomely dangerous and difficult thing in those days. We used to get a daily weather forecast, but had little scientific understanding of fire behaviour, and the fuels were far heavier and more complex than in the

jarrah forest. Furthermore, the understorey was so thick and prickly it was physically impossible for forest workmen to walk through the forest lighting spot fires, especially in the areas which had not been burned for many years. I mostly relied upon the instinct and experience of the older field foresters and overseers. For example, I remember one morning asking Ernie Percival (who had lived almost his entire life in the karri forest) whether he thought it would be a suitable day to go burning. Ern took a box of matches from his pocket, went outside the office, and dropped a lighted match into the leaf litter under a Cottoneaster bush growing by the back veranda. The leaves burnt fitfully and the fire fizzled out. "Nup'" said Ern, "too damp yet."

George Peet and his crew, which by then included a gifted young ADFO named Rick Sneeuwjagt, had a research area in karri forest out on the Four Mile Brook, and here they conducted their experimental fires. Compared with the northern jarrah forest, it was bafflingly difficult. Indeed it was not until Rick had identified that there were six different vegetation/fuel types in the southern forests, and coupled this to an understanding of the way the fuel profiles for each type dried after rain (which they did in two directions), that it was possible to construct the first fire behaviour tables for the southern forests. This was in the early 1970s, and the tables were published as the now famous "little red book".

But by this time, George was pioneering Aerial Burning2. The idea had been born from discussions over beers at the pub between George and a brilliant young scientist from the CSIRO's Bushfire Research Unit by the name of David Packham, who was working on various projects in WA at the time. David was a pilot as well as a fire scientist, and listening to George expound on fire behaviour, burning technique, productivity and especially the problems of inaccessibility in the karri country, the Great Idea suddenly emerged. Aerial ignition, coupled up to the new fire behaviour knowledge, would provide the solution to prescribed burning in thick forests, and to getting the necessary daily production rates to enable a forest-wide system of fuel management to be accomplished. Packham immediately focused on developing the technology, while George Peet turned to the practical issues of converting the idea into reality.

George basically designed the aerial burning methodology which is still used today, and used all over Australia and in many countries around the world. But he not only designed it, he participated in the development right through to implementation. George flew as Navigator (i.e., the Skipper) in every aerial burn for the first couple of years, before Mike Rowell took over this role. To give an idea of how the technology has evolved, I can remember the first aerial burn in the northern jarrah forest, somewhere east of Mundaring Weir. We did not have RDF beacons in marker vehicles as they do today to mark the flight lines. The start and endpoints of the lines were marked by helium filled balloons, which were unwound on a long length of twine. The things were always getting caught in a gust of wind and becoming entangled in tree branches, or failing to clear the canopy for one reason or another, and were a major source of frustration on the ground as well as in the air.

Incidentally, many years later, both George and David Packham received the Order of Australia Medal for their work on the development of aerial burning.

As a Navigator, George was a tiger for action. I well remember one early burn in the Quinninup area (the first rotation burn of P11, in Sutton Block), where I was the Controller, and George was circling above. He was raring to go, but preparations on the ground had not been completed. Messages of increasing impatience kept coming at me over the VHF in George's unmistakable rasp, and I kept telling him to wait on. Although George did a lot of flying, he suffered badly from airsickness, and he was always keen to get a burn over and done with. On the other hand, I was accountable for the result, and didn't want to go until ready. It was a good contest.

Preparations on the ground in those days were not insignificant. In the first place we always had to light test fires and measure rates of spread, so as to validate the estimates of fire behaviour and the proposed lighting pattern. And as each new burn was being done with 25 year-old fuel on both sides of all edges, any mistake could mean you had a wildfire on your hands. We used to set the burns up like a Large Fire, with a Controller, a Fire Boss at a control point, sectors nominated, with Sector Bosses and crews in place, and always a dozer on a low-loader in attendance. The Fire Boss in the early days was usually Len Nicol, and then later Gordon Styles. They were wonderful men – cool and resourceful, with a lifetime of fire experience behind them. Both could handle George's tearaway enthusiasms better than I could.

The involvement with aerial burning took George away from research, but by then Rick Sneeuwjagt was already taking over the technical and scientific aspects of the research, on his way to international recognition. These arrangements were formalised when George was appointed the Department's Fire Operations Officer (known as FOO), replacing Frank Campbell who had moved up to a senior position in Head Office. As FOO, George ran the Fire Branch from Como. His mission was a simple one: quality control of fire management in forest districts throughout the Department.

Now whilst I have always admired George highly, I have to admit that there were times when I was seriously intimidated by him. This was in the days before he took up daily jogging, cycling and weekend marathon races. He would work off his excess energies on the beardless whelps of district managers (such as myself) who failed to achieve the standards of fire control perfection which he, as FOO, set for us. George was a frequent visitor to the field, and he was ruthlessly demanding of high performance.

No minor error of judgement in a crisis, no failure to anticipate the merest suggestion of a trough movement, no trivial patch of scorch in the middle of a 4000 ha aerial burn would escape his attention. His district inspections were carried out with the assistance of a nine-page checklist, and when he carried out a washup after an inevitable instance of fire control mismanagement the culprit would be so well washed up, for the condition to be almost terminal.

All the best management textbooks note that fear is not a good motivator, but the person who wrote that had not been a DFO in the WA Forests Department when GB Peet was FOO. Fear of one of George's regular inspections certainly motivated me! I was never really frightened of George, only of not pleasing him. I wanted to do a good job and to please George not because I feared him, but because I liked him, because he was widely admired as a world authority in the field, and because I knew that he only asked me to do the possible - and he knew it was possible because he had done it himself. These views were shared by all the district managers of the day.

It was of course, a different world then. In the first place, the whole department was behind the prescribed burning program. There was not an officer of my age or older who had not been involved somehow in the big fires of 1961, and a great many of them had also experienced the terrible fires all through the 1950s. We believed that prescribed burning was an effective way of minimising the damage such fires caused, and that the program was “buying us time” to get other systems and research programs in place. George had the full support of senior Departmental staff, and they had the full support of the Minister. Unlike today’s fire specialists, George did not have to spend a high proportion of his time defending himself against policy-makers, drafting replies to Ministerial correspondence, briefing the EPA, or fending-off sensation-seeking journalists. He just had unlimited time to concentrate on fire operations at the front.

After the Forests Department introduced regional management in 1975, George introduced quarterly meetings of Fire Branch and the regional fire operations staff. The meetings would move around the forest, one meeting at Mundaring, and the following one at Walpole and so on, so that all districts were covered eventually. The idea was for the local foresters to demonstrate their fire management record and system, and to subject them to rigorous questioning and examination. It brought a whole new meaning to the phrase "being judged by your peers". This coincided with the time George (for health reasons) suddenly gave up smoking, converted to eating lettuce instead of steak, and cut back massively on his daily alcohol intake. Overnight, he became noticeably less amiable, and harder to please. At this point one of us (I think it was Ron Kitson) found a strange and fearsomely spine-covered fish washed up on the Warren Beach. Gordon Styles mounted it on a plaque inscribed with “Prickly bastardus - the George Peet Fish". Old Prickly was awarded annually to the district manager who had the best fire protection system, as decided by George. The year he gave up smoking, no one won it.

The result of all this was that, based on George's research, his technical developments and then his drive, toughness and his rigorous expectations (and despite his own judgement of our deficiencies), the WA Forests Department was recognised world-wide for its fire management competence. Foresters and national parks managers from the eastern States, the USA and Canada were frequent and regular visitors. George himself was always in demand to visit other places and countries and sort them out. On one occasion he spent some time in Kenya helping their forest service design a fire management system, under a contract with the FAO.

Ironically his supervisor for the FAO contract was Alistair Mather, the suave Scottish forester who had been the DFO at Manjimup when I was at Pemberton, and had been a great supporter of George during the early days of aerial burning. George had a great respect for the fire-toughened DFOs of the time like Alistair, as well as for the senior district field staff and the leadership figures in the regions like Steve Quain, Don Grace, Alan Hill, Jock Smart and Peter Hewett. George knew that they were the ones taking the big risks in the implementation of the new systems, and were the ones who would carry the can if things went wrong.

There were some mistakes. Burns got away or went too hot or too cool. Even today the completion of an aerial burn in mixed vegetation types, with flats, jarrah and two or three types of karri fuels is still as much an art as a science. There were recriminations and the careers of some professional staff faltered on the basis of poor performance in the fire management arena. But in general the system of the day had a greater tolerance for error than that of today.

We also had some bad fires in the south in 1969 and 1970, but as with the great fires of 1961, these were taken advantage of, in the sense that they became teaching events. As a result, the decade 1965-1975 saw an incredible revolution in forest fire management in WA. In addition to the new capacity to forecast fire behaviour and the advent of aerial burning, this period also included the introduction of spotter aircraft for fire detection, the move from HF to VHF radio, the development of a system for regeneration burning using a moisture differential between slash and forest fuels, the appointment of fire specialists to each of the three regional groups, a whole new fire training system for staff, prescribed burning of pine and the development of the Large Fire Organisation (now known as the Incident Management System). These were massive changes and rapidly accomplished, something made possible only by the high level of teamwork, professionalism and dedication in forestry at that time. A notable feature was the exceptionally close relationship between research, Fire Branch specialists and operational staff in the regions and districts. I find it hard to imagine that the exhilaration of it all, plus the spirit of mutual respect, tolerance and goodwill that prevailed then could ever be recaptured.

In 1985, when he was in his mid-50s, George Peet made a major career change, moving from the Fire Branch to become one of the inaugural Regional Managers when CALM was formed. This was a tough assignment. It quickly got tougher, with politicians, environmentalists, the Miscellaneous Workers Union, Crawley, wet-behind-the-ears journalists and Cottesloe Doctors Opposed to Prescribed Burning gathering around him like storm clouds. For the first time in his professional life, George found himself having to deal with people who were actively trying to obstruct and annoy him. Furthermore, they were succeeding. To his credit, George stuck it for several years, and did as good a job as was possible in the circumstances, but it got to him in the end and he retired gracefully. His era as a Regional Manager was not without highlights, however. I particularly rejoice in the memory of the time he drew a huge, glinting carving knife from his briefcase to make a point in the style of Crocodile Dundee, at a meeting of senior staff in the Como training centre.

Had George been born a generation earlier, I often think, he would have become the brilliant commander of a fighting force in some theatre of World War II, having risen from private to colonel through sheer energy, single-mindedness, attention to detail and a ruthless demand for excellence from those around him.

Back in my bachelor days at Dwellingup, nearly 40 years ago now, George once invited me round to tea at the neighbouring Peet homestead. He and I had been out together all that day with the fire research team, and many happy hours had been spent lighting up roaring bushfires in the jarrah forest. When I arrived for tea, there was his lovely wife Gillian giving George the mother of a dressing down - for his inability to light a decent fire in the kitchen stove! There was also a gaggle of little children running around, getting in the way and insisting Daddy do this or do that. George was taking all this with an expression on his face like a puppy getting its tummy scratched. In later years I often saw George beaming proudly over the scholastic or musical achievements of these same little kids, as they grew into beautiful and accomplished young women. And he is still liable to a serious dressing down for coming up with a smoky little excuse for a decent fire in the lounge room hearth on a winter evening.

Thus I knew both George Peets – the tough, dedicated forester and pioneering fire management expert, and the husband and father, content in the bosom of his loving family. It was a privilege to know both, and to have been associated, even at the periphery, with his outstanding achievements.

May 2002

1 This story was written in 2002 and published in Old Growth Foresters (2006). York Gum Publishing, Perth WA