

9(2)



FOREST NOTES

Forests Department Perth Western Australia

VOL 9 NUMBER 2

F O R E S T N O T E S

Volume 9 - No. 2

September 1971

Material printed in this issue of Forest Notes cannot be reprinted elsewhere without the approval of the Conservator of Forests of Western Australia.

TABLE OF CONTENTS

THE VALUE OF WINTER BURNING UNDER PINES N. Bukelis.	1.
THE OTHER SIDE MOUNT CRAWFORD FOREST - WILLIAMSTOWN R. J. Burke.	4.
FIRE INTENSITY IN <u>PINUS PINASTER</u> AN EXERCISE J. McCormick.	7.
FIELD SURVIVAL OF <u>P. CINNAMOMI</u> IN CLOUDS OF DISEASED SOIL F. Batini and J. Cameron.	9.
THE KARRI SEED CYCLE P. Christensen.	13.
VOLUMES OF LARGE TREES F. J. Bradshaw.	14.
REGRADING ON PIECEWORK K. Kelers.	16.
ITS GOOD FOR THE PUBLIC TO TAKE INTEREST J. McCormick.	18.
KALGOORLIE SAFARI DIARY - APRIL 1971 P. Richmond.	19.
REGIONAL NOTES	23.
SAFETY NEWSLETTER	28.

EDITOR: R. J. UNDERWOOD

THE VALUE OF WINTER BURNING UNDER PINES

by

N. Bukelis

Protective burning under P. pinaster was started at Somerville in 1965 after some earlier experiments elsewhere. In that year it was still on a trial basis and only a small area was burnt but subsequent annual burning progressively reduced the ground litter over most of the plantation. By now (May 1971) some 80% of the planted 1,800 acres have been winter burnt more than once.

Within the same period since 1965 this Metropolitan plantation has withstood a total of 102 wildfires.

Consequently we now have a fairly good picture of the progressive effects of winter burning. We can see how it has reduced not only the severity of summer fires but also the total cost of fire protection.

In the table below is the number and severity of pine fires in successive years.

Severity shows up in terms of average size and suppression cost. The latter is the wages and plant cost of knock-down, mop-up and patrol and includes assistance by other divisions.

Year	Number of Fires	Total Acres Burnt	Ave Size Acres	Total Cost	Average Cost
1965-66	9	7.4	0.82	\$ 1,432	\$ 159
1966-67	7	6.2	0.88	1,103	158
1967-68	9	3.1	0.34	292	32
1968-69	9	1.6	0.18	350	39
1969-70	23	3.1	0.13	422	18
1970-71	45	17.4	0.39	1,238	28

As you can see, in the first two seasons the average sizes and costs remained steady. Then winter burning started to take effect and for the next three seasons the figures speak for themselves.

In the last season things were a bit different. Here the downward trend was upset by a single large fire in February 1971.

Unlike all the others, this one was not under pine canopy. Eleven and a half of its 14.5 acres burnt in an area which was last year felled for the new university, leaving only ten trees per acre and the rest had been totally clear felled earlier. Suppression was difficult because of the wide open access to wind and sun. It was deliberately lit on a six chain front, across wind and this didn't help either. Total suppression costs were \$713.00 of which \$529.00 was assistance by other Divisions.

The remaining 44 fires of that season altogether burnt only 2.9 acres. This makes their average size 0.07 acres and the average cost \$12.00 each.

The jump in the number of fires in the last two seasons is evidently related to increasing population pressures.

Rapidly dwindling areas of other bushland have made the Kardinya Pines a favourite spot for more and more people and all sorts of activities. Horse riders and children are particularly abundant and they also cause most of our fires.

Less common causes have included a signal rocket, two or three burning motor cars and an eager youth who tried to chase a snake by lighting a fire.

In the second table I have tried to show the influence of winter burning on the annual costs of protecting the plantation.

The "acres" column refers to each winter's burning under pines. The "protection costs" column is the total of the costing items of fire prevention, suppression and maintenance of firebreaks. It thus covers all the field-work towards fire protection and, of course, includes winter burning. These costs are for wages, plant and materials.

Year	Acres control burnt under pines	Protection costs \$
1965	less than 100	6,050
1966	570	5,970
1967	890	4,850
1968	605	2,450
1969	609	3,330
1970	768	2,660

Here again the progressive effects can be seen in the costs, and these have diminished despite wage rises. Between November 1965 and November 1970, a Forest Worker's weekly earnings rose from \$40.52 to \$54.55 - an increase of 35% - yet costs have dropped from \$6,000.00 to around \$3,000.00 per year.

Thus, our policy of insurance by burning has cost no extra and has even produced a handsome bonus in savings.

Heavy thinning of pines, however, tends to nullify the benefits of protective burning and therefore our worries are by no means over.

But results so far have been good -- let's keep it that way.

THE OTHER SIDE

MOUNT CRAWFORD FOREST - WILLIAMSTOWN

by

R. J. Burke

Mount Crawford forest is 5 miles from Williamstown on the south-eastern edge of the Barossa Valley. Twenty-eight thousand acres of *P. radiata* at Cudlee Creek, Kersbrook, Mount Crawford are managed from here.

There is no managed natural forest in the area, in fact the only remaining hardwood forest consists of scattered uncleared or part-cleared areas on private land.

The undulating to hilly country in the Mount Crawford and Kersbrook forests was originally forested with River Red Gum (*E. camaldulensis*) Blue Gum (*E. leucoxylon*) and Manna Gum (*E. huberiana*) while Cudlee Creek - an area somewhat akin to Nannup in its 35° slopes - supported good stands of Blue Gum and Stringybark (*E. obliqua*).

The 1971 planting area amounted to 800 acres, most of which was planted by hand due to the steepness of the country. All planting is done on wages, and no-one works in the rain, so I leave the costs to your imagination!

I noted with some interest the practice of "ripping". All land for planting in South Australia is ripped to a depth of 18" on lines 8' apart by a large dozer. It is claimed that when the pines are subsequently planted in the rip-rows, the extra water-gathering capabilities combined with the loosened soil around the roots give the plant a considerable advantage over one planted on bare pasture.

Ripping has been practiced for a number of years now, and the local bulldozing contractors while cautious at first, will now rip slopes impossible to walk down. One hillside was pointed out to me where the work was done by two machines - one ripping top to bottom, and the other on top winching him back up! Costs run out at about \$10 per acre.

All land being planted in these areas currently is re-purchased farm land and water catchments. There are several reservoirs in the Adelaide Hills and the authorities are very much aware of the pollution problem created by human habitation and recreation. Consequently land in the catchments is being resumed and planted.

In the Mount Crawford and Kersbrook forest *P. radiata* is grown on a far poorer soil than in Western Australia, and fertilizing is necessary. Super is applied by hand at the rate of 4 - 6 cwt per acre immediately after planting, and a further dose 5 or 6 years later if required. Rainfall in the Adelaide Hills averages about 30".

Policy of the South Australian Woods and Forests Department says no pruning is to be done for clear timber, the reason given being that the returns at present don't justify the expense involved. Some pruning of course is done for access, and for fire control reasons in areas of high risk.

Most of the forest and breaks here are grazed on a lease basis, with a certain amount of damage to trees, 1 to 5 years old, especially if the amount of stock is excessive.

The total annual output from these forests is $11\frac{1}{2}$ million super feet - the unit of measurement in South Australia. This is over 19,000 lds, which is divided between two mills in Williamstown and seventeen other mills and associated plants in the area and in Adelaide - 35 miles away. Allan Shepherdson - a partner in the Williamstown sawmill is a brother to the Manager of the Mill at Wilga - near Grimwade.

Fire Control in the Adelaide Hills in my view leaves a lot to be desired. One tower serves the whole area, being situated in the Mount Crawford Forest; a distance of 6 miles from Kersbrook, and 13 miles from Cudlee Creek forest. The tower is manned from 9.30 a.m. to about 4.00 p.m. on days of (W.A) "High Summer" and Higher. On days equal to Severe and Dangerous, this is supplemented by an aerial patrol for about 6 hours.

I personally felt the inadequacy of the organization in March, when during a dry thunderstorm lightning scored a direct hit on my backyard "thunderbox", reducing it to a heap of ashes before the valiant fire fighters were on the scene. (To add insult to injury, it was a week before the new loo arrived!)

Most South Australian staff are graduate foresters, with a recently instituted two year night school course being run in Mount Gambier by the Adult Education Board in conjunction with the Woods and Forests, supplying an increasing number of Technical Assistants. Most of these men are employed in Working Plans or Research Work of a similar nature to that of their counter-parts in the West.

Foresters are not paid overtime, and receive a Fire Duties Allowance of \$150-\$220 per year, depending on rank. This is paid over 12 months. With a staff of three at Mount Crawford, standby averages 2 weekends on and 1 off through the summer months. Wages employees receive a rate of \$1.10 per hour for standby and time and a half for all fire fighting.

Agriculture is the only other industry in the area, sheep, dairy and beef cattle and of course the wine industry in the Barossa Valley. Like farmers in most places they are in difficulties, the result being no shortage of land being offered to the Department for forestry.

Unfortunately there appears to be little interest in preserving any of the small areas of indigenous forest occurring on most of these properties. This is a pity as a paddock of the smooth barked Blue Gum and River Red Gum is a fine sight and a welcome contrast to the advancing regiments of pine.

FIRE INTENSITY IN PINUS PINASTER - AN EXERCISE

by

J. McCormick

In the special issue of "Forest Notes" dealing with fire control matters, two tables are to be found on page 46 which give litter and slash fuel weights for P. pinaster. One of the uses to which the tables can be put is in an exercise in estimating possible fire intensity in the event of a wild fire taking place.

Fire intensity is recorded as heat release in British Thermal Units per second per foot of the fire front using Byram's formula in its simplified form - fire intensity equals rate of spread in feet per minute times fuel consumption in tons per acre times six point eight. A typical exercise might be as follows.

A wildfire is progressing through a fourteen year old P. pinaster compartment (which had previously been thinned from 900 to 300 stems per acre) at the rate of seven feet per minute; the ground fuel being in a dry state. The mean butt girth of the thinning tops is 14 inches; the mean fuel depth is 2.5 inches and the total dead wood fuel weight attributed to thinning tops is 5.5 tons per acre. This last figure was arrived at by using van Wagner's line intercept method in a fourteen year old recently thinned P. pinaster compartment in McLarty plantation.

The total available fuel from tables (ex "Forest Notes") and van Wagner's line intercept method would be:-

	Foliage	Twigs $\frac{1}{2}$ " thick	Total
600 dead crowns	6 x 1.00	6 x 0.24	7.44
300 green crowns	3 x 1.00	3 x 0.24	3.72
Litter 2.5" deep	9.85	-	9.85
Dead thinning tops (wood over $\frac{1}{2}$ " thick)	-	5.5	5.50
			<u>26.51</u> TPA

Now a fuel consumption figure of 26.51 tons per acre O.D.W. could be considered minimal for this figure does not include bark, extruded resin from standing trees and assumes also that no green wood over half an inch thick would be consumed in such a fire: edge effect fuels and the presence of scrub has also been ignored. The minimum heat output from such a fire progressing at a conservative rate of seven feet per minute would be 1,262 B.T.U's per sec./ft of fire front and if we add a mild five tons of fuel to represent those fuel factors mentioned but not accounted for, the heat output would be 1,500 B.T.U's per sec/ft.

This then would be the minimum fire intensity expected in a 14 year old thinned P. pinaster fire once established in dry fuel conditions. The buildup time for such a fire would be in the region of 10 to 30 minutes depending on the weather factor at the time of ignition and in times of dangerous fire hazard, even less. An average flame height of 45 feet with sporadic flaming to 60 feet, i.e. double tree height could well be the result.

A comparison can be made with fire behaviour in controlled burns, e.g. in normal controlled burning operations in P. pinaster a ceiling limit of 60 B.T.U's in unthinned and 100 B.T.U's in thinning tops would rarely be reached and a maximum three foot average flame height with sporadic flaming in tops to 20 feet hardly ever exceeded - in the few cases in which this has happened, severe crown scorch and loss of growth on affected trees has been the result.

It is noted that the amount of fuel available in this particular exercise approximates 1,000 tons O.D.W. per 30 acre block.

FIELD SURVIVAL OF P. cinnamomi
IN CLODS OF DISEASED SOIL

by

F. Batini and J. Cameron

SUMMARY

Small samples of soil naturally infested by P. cinnamomi were exposed in different field situations for varying periods of time. The data indicates that fungal propagules in diseased soil falling on freely drained sites or roads are unlikely to survive the harsh West Australian summers. In moisture gaining sites or where the inoculum is buried, the chances of survival are greater. In the more propitious autumn season, the pathogen survived irrespective of the site on which the samples were placed.

INTRODUCTION

There is plenty of evidence in the Western Australian forests which demonstrates that soil from dieback areas is an effective inoculum for establishing a new infection in a previously healthy site. Considerable weights of soil can be readily transported on logging and other equipment and hygiene prescriptions have been implemented in all forest operations so as to reduce the artificial spread of inoculum to a minimum.

Transport of inoculum is only one facet of the process for the pathogen must be able to survive in its new environment until conditions suitable for infection occur. Controlled experiments from overseas indicate that an uninterrupted drying cycle of two months will severely affect the survival of P. cinnamomi in roots and soil. A trial to investigate the ability of this pathogen to survive our generally hot and dry summers was therefore established in November, 1969.

METHOD

Soil was collected from an active dieback gully near Dwellingup. This lateritic silt was baited to establish the presence of P. cinnamomi and 100 gram samples of soil and roots were then placed in bags made from 95 percent sarlon shade cloth. The moist samples were then placed in three ecological situations (road surface, ridge top site and valley bottom site) in the months of November, January and May.

The samples placed in January and May were kept moist in the Como shadehouse until ready for use. All sample bags were collected during June and baited for the presence of P. cinnamomi using the lupin technique of Chee and Newhook. In a separate trial, samples were placed in the field in November and treatments were removed and baited in the months of March, May and June. In the ridge top and valley bottom sites, half the samples were placed on the soil surface and the other half were buried at a depth of three inches. Four replicates of each treatment were used throughout the experiment. At monthly intervals between November and June, temperature and moisture data was recorded for each of these sites.

RESULTS

The lateritic silt yielded good recoveries of the pathogen at the commencement of the trial. Monthly temperature measurements indicated that the samples placed on the road were subjected to extremely high temperatures during the day. During the summer months from December to April the recorded temperatures at 10 a.m. ranged from 30°C to 48°C. In contrast the soil temperature on the ridge top site at a depth of three inches never exceeded 25°C and fell as low as 17°C. The valley bottom site was approximately 1.5°C cooler still. Moisture data indicated that the samples on the road surface dried out more rapidly and to a lower final moisture content than did those samples on the other two sites.

The recovery of P. cinnamomi from soil and root samples is presented in Tables 1 and 2.

TABLE 1

Recovery of P. cinnamomi, by lupin baiting, from small clods of diseased soil exposed in different ecological situations for varying period of time.

TIME		ECOLOGICAL SITUATION				
PLACED	BAITED	ROAD SURFACE	RIDGE TOP (Soil surface)	VALLEY BOTTOM (Soil surface)	RIDGE TOP (buried at 3" depth)	VALLEY BOTTOM (buried at 3" depth)
Nov.	June	0/4	0/4	0/4	1/4	1/4
Jan.	June	0/4	0/4	1/4	2/4	3/4
May	June	4/4	2/4	3/4	3/4	3/4

TABLE 2

Recovery of P. cinnamomi, by lupin baiting, from small clods of diseased soil exposed in different ecological situations for varying periods of time.

TIME		ECOLOGICAL SITUATION		
PLACED	BAITED	ROAD SURFACE	RIDGE TOP (buried at 3" depth)	VALLEY BOTTOM (buried at 3" depth)
Nov.	March	0/4	2/4	2/4
Nov.	May	0/4	2/4	1/4
Nov.	June	0/4	1/4	1/4

The recoveries of P. cinnamomi from clods of diseased soil indicate that the survival of the pathogen is highly dependent both on the season and on the ecological situation where the inoculum is placed. There is an obvious trend in the data which indicates an inter-action between site and season. During the more suitable autumn season, the pathogen could be recovered irrespective of the site on which it was placed. During the hot dry summer months, survival of P. cinnamomi was affected, even in the more ecologically suitable sites. The fungus could not be recovered from samples placed in a harsh site for even part of the summer.

The Data in Table 2 supports these trends. Where samples were buried at three inches depth, the pathogen was able to survive right through the summer, albeit at reduced levels. No recoveries could be obtained from any samples which were exposed on a road surface during the summer months.

DISCUSSION

This data is not presented as an argument against carrying out hygiene operations during the summer months. In fact, to relax hygiene regulations during this time of the year would be most unwise. Obviously these results could be influenced by seasonal differences from year to year and some survival during an unusually wet summer or during a wet spell in a normal summer could still occur.

Nonetheless, the data suggests that a number of sites in the northern Jarrah forest are not propitious for the survival of P. cinnamomi during the hot dry summer months which are a feature of our climate. Temperature and moisture regimes and length of exposure appear to be significant factors affecting fungal survival.

If these factors are considered in the planning and execution of Management programmes in the forest area, then the chances of implementing a successful hygiene programme are markedly increased.

THE KARRI SEED CYCLE

by

P. Christensen

The annual karri seed and floral component sampling has been completed. Samples have been collected throughout the karri areas and the following is a summary of the situation.

There is a light to mediocre crop of capsules present in most areas. However, as the number of seeds per capsule is higher than usual this year this tends to compensate for the rather poor crop of capsules. Regeneration burning will therefore be possible in most areas during this spring or autumn. Little seed is expected to carry over till next season.

The next general flowering is expected in 1973 although there should be the usual very light scattered flowering next year. As there is only a light seed crop and a pin bud crop on the trees at present, it is expected that a further bud crop may develop next year. From past experience its development may be expected to accelerate so that it contributes to the 1973 flowering. If this happens then a good to very good flowering may be expected in that year. This should result in a good seed crop in 1974/75.

VOLUMES OF LARGE TREES

by

F. J. Bradshaw

The volume in large trees has always provided a ready source of arguments. The range of volumes for two large karri trees as presented here should provide support for almost any estimate ever made on these trees. All that is necessary to define the method of measurement.

A recently developed method of photographic measurement of upper stem diameters was used on two large karri trees - one on Riverside Road near Shannon and the other on Barker's Road in Warren Block. Although these measurements may be slightly biased because only one-side diameters were measured, they provide the basic data for a comparison of various methods of volume estimation. All volumes exclude a three foot stump.

	Riverside Road Karri		Barkers Road Karri	
	Dimen- sions	Error %	Dimen- sions	Error %
1 G.B.H.O.B.	30.7'		29.2'	
2 Bole Height	157'		145'	
3 Volume under bark				
(a) Graphical method ("truth")	<u>85 lds</u>		<u>77 lds</u>	
(b) Using centre girth				
i direct	77 lds	-9%	62.5lds	-19%
ii derived by meaning sectional areas of butt and crown	141 lds	+65%	122 lds	+58%
iii derived by meaning girths of butt and crowns	127 lds	+49%	108.5lds	+41%
(c) Using centre girth of a number of 30' logs + odd log	83.5	-2%	71.5	- 7%

The Riverside Road tree has a girth of 15.2' at 157' and the three foot stump has a volume of 5 loads.

REGRADING ON PIECEWORK - TRIAL

by

K. Kelers

Regrading of roads and firebreaks on piecework basis was commenced at Mundaring in September, 1969. The trial produced excellent results - and I feel is worthy of a comment.

Brief Comparison between daywork and piecework operations:

1. Actual operating time of machine was increased to about eight hours per day. Pieceworker often put in ten hours (gross) per day.
2. Daily output in miles graded was almost doubled.
3. Ineffective time (travelling, etc) was reduced.
4. There was an overall increase in productivity, i.e. unit cost per mile was reduced.
5. Quality standards were maintained.

Conditions of contract and quality control:

Piecework grading was prescribed by an officer for a fortnight in advance and this was shown on a plan. All road classifications were taken as shown on latest departmental 80. The following rates applied to labour, all plant was supplied by the Department. (NOTE: These rates are old rates and should be taken as a guide only).

<u>Road Class</u>	<u>Rate/Mile in 1970</u>
Arterial	\$8.42
Sub arterial	6.31
Tracks and Firelines	4.21

The above rates included:-

1. Daily maintenance on machine
2. Removal of logs
3. Cleaning of culverts

4. Installing "run off" drains.
5. All minor hold ups. (Major maintenance and holdups to be done on daywork as required).

Upon close of each pay, the grading was inspected by an officer who ensured that proper standards were maintained.

In conclusion, the trial worked well with a very experienced grader operator and enabled the Division to catch up on a backlog of maintenance grading.

IT'S GOOD FOR THE PUBLIC TO TAKE INTEREST

by

J. McCormick

An extract from "The Rosy Crucifixion" by Henry Miller being in effect a copy of a letter addressed to a New York parks commissioner:-

"Honourable Sir,

I wish that you would kindly have the men of the Park Department prune, trim and pare off all the dead wood, twigs, springs, stumps, stickers, shooters, sucker-pieces, dirty and shaggy pieces, low, extra low and overhanging boughs and branches from the good trees and to prune them extra close to the bark and to have all the good trees thoroughly and properly sprayed from the base to the very top parts and all through along by all parts of each street, avenue, place, court, lane, boulevard and so on... and thereby give a great deal more light, more natural light, more air, more beauty to all the surrounding areas."

To Mr. Miller we are in debt.

KALGOORLIE SAFARI DIARY APRIL 1971

by P. Richmond

Chose an auspicious day, April the 1st, on which to make our move from Nannup to Kalgoorlie! However all went well, an overnight stop in Perth and camped in our new abode in Kalgoorlie on the night of April the 2nd.

All our possessions travelled well, and was informed by the removalists they had to hammer shut the door of their forty two ton capacity van. Well calculated Doug Field!

The first week was mostly spent getting orientated in Kalgoorlie, meeting heads of different government departments and some local business people.

Had one day out in the bush inspecting firewood cutting of dead Euc. salmonophloia on one area and on another area dead mulga about twenty five miles away.

Firewood cutters are obviously a breed apart and live, or at least these two individuals did, in very isolated circumstances. Removal of the dead trees certainly cleans up the bush.

Thence on for a late lunch at 'Dead Mans Pool'. So named after the grave adjacent with rough mulga posts and rails and cross, having the following inscription punched with nail holes, in immaculate draftsmans sloping printing, on what is now rusty sheet tin:

Grave of P. Mack

Aged 31

Killed by Blacks 14/7/'96

Thence returned to Kalgoorlie across country through Comet Vale and past Scotia nickel mine.

The long Easter break was fully utilized around the house, but did manage an afternoon out to Broad Arrow. It is shameful the way graffiti have spoiled the 'hippy' murals in the old railway station.

Had some more work to complete in the arboretum before visiting the Greenmount Reserve ↑ 10446 south of Southern Cross. Thence return to Kalgoorlie.

Day in the office and then a trip down to Esperance via Coolgardie and Spargoville.

Visited the bush operations of Golden Mile and Murchison Timber Company, in an area north of Norseman, west of the highway, mainly cutting lagging from *Euc. dundasii* for Norseman Gold Mines, stopped overnight in Norseman.

Bill Brennan pointed out some roadside *Eucalyptus annulata*, which only occurs in the Norseman district. Stopped and examined them, very like gimlet, not so red in the bark and has very distinctive red buds which showed up very well on this occasion.

Kept a look-out for a shrub *Ricinocarpos stylosus*, subject of an enquiry from Eire, forwarded from Head Office. Probably we found it, but without flowers no positive identification could be made.

Arrived in Esperance that evening. Spent a whole day in the plantations, really just getting to know where they were and the general condition of the different planting years.

By chance met Ted Fox who is in charge of the Agricultural Research Station, they have a lease over 1,012 acres of the reserve (↑ 23527). Arranged with him for maintenance of road and a few other small items.

On the return journey called in at the Anaconda exploration camp to deal with some queries and also to expound a little on the planting of trees around new mining camps and quarters.

Until the end of the month was in Kalgoorlie. Tuvic and Freimann arrived to work on the house extension, praise be.

Inspected the clearing on the site of the Western Mining Corporation Smelter and arrangements were made for utilization of green firewood at the Abattoirs.

After Easter a safari to Southern Cross and around. Firstly Marvel Loch through some very fine stands of *Euc. salubris*, thence to the Burbridge area and inspected gridding carried out by Union Miniere and also City and Rural Surveys, who have been contracted by the Mines Department to survey mineral leases in the Yilgarn area.

In both cases the work was satisfactory with minimal damage to vegetation.

South to Reserve 240499 through some very severely fire damaged area, fortunately mainly scrub and only damaged the fringe of forest country.

At the Constance Una Gold Mine sighted my first Mallee hen, I imagine coming to the camp, which was empty at that time, for scraps. Then back to Marvel Loch.

Next onto Southern Cross, en route stopped and measured a very fine *Euc. salmonophloia*, 10'6" G.B.H.O.B. and 40 feet bole length to first fork, having a full spreading crown, looked magnificent in the early morning sun.

At Southern Cross we did the assessment of *Euc. camaldulensis* in the arboretum and had a conducted tour of the town to see the street tree planting which has mainly taken place over the last few years.

Having received report of a sighting in Bullfinch of semi trailer load of posts, an investigation was obviously warranted. Unfortunately the sighting was made by an individual who, according to gossip from the local hostelry, had been solidly on the 'hops' for the past two or three weeks.

Nevertheless, when interviewed in an adjacent, (to the pub), humpy the informant was quite articulate and swore a semi trailer load of fence posts had passed through. Further extensive enquiries could not substantiate this and the matter had to be left in abeyance.

Trough Wells, north of Bullfinch, where extensive line clearing for survey has to be carried out to regularize areas which have been pegged and over pegged two or three times.

In this locality there are quite extensive stands of *Euc. salmonophloia*, open parkland type of forest. Because of this I was pleased to rendezvous with the surveyor in charge in Southern Cross on the Friday morning, and explain to him what was required to protect the vegetation.

Finally had a day out on collection of sandalwood pieces in the Yindi, Pingin Station areas.

The sandalwood operation was going extremely well, the two operators had collected an estimated two tons in just over one day. The vehicle used, an International Utility, with an engine bonnet about half the length of our Toyota, headlamps as big as aircraft cowls, this vehicle I feel sure would have gladdened the heart of P. & M.E. Tom Welch.

On the subject of antiquity, during the return journey I stopped and closely examined a notice on the boundary of the Bullock Holes sandalwood reserve. There cannot be many F.D. notices of this vintage still in use and I consider it well worth recording the notice here in full, viz:

PUBLIC NOTICE

BULLOCK HOLES RESERVE

For the protection and regeneration of sandalwood

The pulling of sandalwood, depasturing of stock otherwise interfering with any vegetation on this Reserve is prohibited.

S.L. Kessell
Conservator of Forests

REGIONAL NOTES

METRO REGION

Planting Season -- one of the driest on record --

The 1971 pine planting season must have been one of the driest ever recorded and the normally rapid, continuous programme was a real staccato affair. The programme was completed by the end of July. However, providing there are reasonable spring rains, the survival is expected to be up to the normal high level.

Staff --

Retirements Terry Amer from Work Study, Como; Alan Ashley Cooper and Don Walton, both of Wanneroo Division; Frank Gallager from Mundaring.

New Appointments Graham Goodin as Clerical Assistant at Gnangara.

Transfers John Brealey from Mundaring to Wanneroo Division.

Utilization --

In an otherwise dismal pine log market situation, a small parcel of Pinus pinaster mill logs were sold from Gnangara to a well known sawmiller and hardware retailer: kiln dried and dressed boards from this parcel are selling well in the home handyman racks and look very presentable too.

Recreation --

1. New picnic area developments at Lesley and at Mount Dale in Kelmscott Division, feature a routed version of the new look Forests Department emblem.
2. A new recreational activity - a Pony Club rideathon - was conducted in State Forest near Mundaring on August 22nd. As a preamble to the event, one of the organisers was featured in the A.B.C. programme "This Day Tonight" and gave the Departmental recreational efforts a good coverage.

HARVEY REGION

Plantations --

The Murray Valley plantation scheme is "off again" following the refusal by the Commonwealth Government to support an increased planting programme during the second five year period of the S.F.A.A.

A large scale trial of aerial post planting scrub control over 850 acres of 1969 and 1970 *P. radiata* planting at Blackbutt Point was carried out in June.

The spraying, carried out on our behalf by Doggett Aviation, is a comparatively cheap method of applying 245T and early results look very promising, a good coverage having been obtained.

Pole orders --

V. and D. Ridolfo and R. and N. Palmer have been awarded a contract to supply 5,000 transmission poles to Hammersley Iron. These poles, which range in length from 41'6" to 63', are to be pressure tested at Picton.

Mining --

Alcoa mining works are proceeding quickly at Dwellingup and the mobile crusher, conveyor belt, and other works are nearing completion.

South Dandalup Dam --

Work on the new Dam for the Metropolitan Water Supply on the South Dandalup river is proceeding to schedule and the contract for the wall and associated works has been let to Leighton Contractors for \$2,821,240.00

The capacity of the completed dam will be 45,800 million gallons.

Dryandra --

The Hon. Minister for Forests has approved in principle the granting of a lease over the old Dryandra Settlement to Lions international for the purpose of making a camp for under privileged children and for other youth and scientific groups using the area.

Staff --

Forest Guard Bob Burns has resigned from the Department and has joined the Commonwealth Forestry in the Northern Territories.

BUSSELTON REGION

Staff --

F/A J. E. (Ian) Bean commenced work at Margaret River on 17th May, 1971.

C/T Jeanette Low left work on 25th June, 1971.

F/G Shaun (Tom) Sawyer commenced work at Margaret River as Forest Guard under training.

F/G Bill Harris of Ludlow will be taking up a position with the Commonwealth Department of Interior in the Northern Territory shortly. He will be engaged as a Technical Assistant. We wish him the best of luck in his new venture.

S/F H. E. Dawson will be retiring on 17th September, after more than 50 years of service with the Forests Department. It is understood that only one other Officer has achieved this milestone.

Joe Mahoney is now full time Timber Inspector.

Neil Phelps has been promoted to A/F Nannup.

Miss Beverley Dean resigned to get married.

Miss Sandra Craigie has been appointed as Clerk Typist at Nannup.

Peter Richmond has been transferred from Nannup to Kalgoorlie.

Harold Pears has been transferred from Nannup to Collie.

John Evans has been transferred from Collie to Nannup.

David Bottrill has been appointed Forest Assistant at Nannup.

Bob Smith has been transferred from Nannup to Manjimup Research.

Terry Ashcroft has been transferred from Nannup to Kirup.

Bill Muir has been appointed as Forest Guard in training at Nannup.

Alf Lorkeiwicz has been appointed as F/G in training at Kirup.

C/T Jeanie Stewart is the local entrant for the Miss Australia Quest at Nannup. We wish her well.

GENERAL

The Nannup Golf Day was once again successfully held on the 25th July, 1971.

Trophy Winners --

Winner Mens	Bob Brierley
Runner up	N. Phelps (on count back from W. Tame)
Ladies	Mrs. Pat Phelps
Teams	Nannup retained the shield
Best Tryer	T. Lansdowne

SAFETY

Nannup achieved 100,000 accident free hours last March and were presented with the National Safety Council's pennant award by the Minister for Forests, the Hon. T. D. Evans.

This was a noteworthy honour, because apart from being one of the Minister's first official functions since assuming office, it was the first occasion that a Minister for Forests had officiated at a Department Safety Award presentation.

COALS TO NEWCASTLE?

Pemberton recently ordered 15,000 karri seedlings from the Margaret River nursery for planting in regeneration areas.

SOUTHERN REGION

Record Cutting --

In an earlier edition of Forest Notes a superb days cutting at the Northcliffe Mill was reported. This is now eclipsed by this effort from the Pemberton Mill of Bunning Bros:-

Date:	6.8.71
Intake:	348 loads (round measure)
Production:	149 loads (square)
Recovery:	42%

This was done in two shifts during which a total of 62 men are employed under the mill roof. The major production was of karri sleepers for Robe River.

Tourist attraction --

Gloucester Tree is one of the major tourist attractions of the Pemberton area (it is, after all, the tallest karri tree fire lookout IN THE WORLD, according to the Tourist Bureau propaganda). For some years now the towerman has kept records of the numbers of visitors who climb to the cabin while it is officially manned. These are 1968-69 4,829, 1969-70 4,935, 1970-71 5,002. On Easter Saturday, 1971, 232 people climbed the tree in the 7 hours it was open - i.e. about 1 every 2 minutes. Not known are the numbers who climb the tree during the non-fire season or the numbers who visit the tree but who do not climb it. Over the 23 years since the tree was constructed, it is safe to estimate that the total numbers who have climbed the tree is in excess of 100,000 people.

SAFETY NEWSLETTER

WORKER SAFETY

It is extremely gratifying to record that during the year ended June 1971 our efforts to combat the incidence of on the job accidents has met with further success. Records reveal that during the year under review the entire departmental workforce working a total of 1,808,406 manhours suffered 48 D.I.A. for a loss of 458 mandays. These figures in safety terms represent a F.R. of 26 and a duration rate of 9 as compared with 1,901,020 manhours worked, 70 D.I.A. sustained, 721 mandays lost for frequency and duration rates of 37 and 10 respectively during 1969-1970. Although it will be noticed that our success has not been as spectacular during the past two years as that in 1967-1968 and 1968-1969, we can still derive satisfaction from the fact that fewer people are suffering injury accidents that necessitate loss of time than did prior to the implementation of our safety programme.

Now although the above figures for the current year show that twenty two (22) less workers were absent from work due to work injuries than were during 1969-1970, I feel that the high number of injury accidents which necessitate medical attention that are still occurring should receive far more attention if we are to really believe that we are making a complete success of accident prevention. At present we have undoubtedly succeeded in reducing D.I.A., but are falling far short of reducing all injury accidents which is the primary objective of a safety programme.

The following figures of the injury accidents which occurred during the year under review may be of interest.

<u>D.I.A.</u>	<u>M.H.W.</u>	<u>F.R.</u>
48	1,808,406	26
—		
<u>S.I.A.</u>		
158	1,808,406	87
—		
ALL INJURY		
206	1,808,406	113

Maximum results in safety can be achieved by concentrating on those factors which are causing accidents on any particular job, - unsafe acts, unsafe conditions, or both.

Also over emphasis of the concept that 88% of all accidents are attributable to unsafe acts can lead to trouble because many of the so-called unsafe acts may turn out to be unsafe conditions when all the facts are thoroughly examined. Evidence exists which indicates that many worker errors have been touched off by faulty design, inadequate guards, poor working conditions - in short, unsafe conditions that actually trapped the worker into performing the so-called unsafe act. Perhaps a close examination of unsafe acts and unsafe conditions would reveal that many accidents result from a combination of unsafe acts and unsafe conditions rather than solely from an unsafe act or an unsafe condition.

Therefore instead of accepting that minor injuries are inevitable in our particular occupation, we should be concentrating more on eliminating or minimising the contributing factors that are the basic cause, for these same factors could well result in the serious or fatal accident of tomorrow.

Since our last safety newsletter two further safety awards have been won - Nannup achieved 100,000 manhours free of D.I.A. and Collier Somerville reached the 50,000 manhours mark. A number of other divisions who have already received safety awards are also maintaining excellent safety records and are contributing to our continuing success.

A Departmental summary to show the success achieved since the implementation of the safety programme appears on page 30.

DEPARTMENTAL STATISTICS SUMMARY

	<u>1961-67</u>	<u>1967-68</u>	<u>1968-69</u>	<u>1969-70</u>	<u>1970-71</u>
DISABLING INJURY ACCIDENTS/YEAR	184±16	124	96	70	48
MANPOWER	904	980	1,000	980	988
HOURS WORKED/YEAR	1,808,000	1,896,000	2,020,000	1,901,020	1,808,406
FREQUENCY RATE	102+	65	48	37	26
MAN DAYS LOST/YEAR	2,896	1,701	1,738	721	408

DIVISIONAL SUMMARYDISABLING INJURY ACCIDENTS

	1968-1969	1969-1970	1970-1971
BUSSELTON	8	7	5
MUNDARING	4	3	4
DWELLINGUP	6	1	1
COLLIE	7	4	2
KIRUP	9	14	4
MANJIMUP	13	4	4
NARROGIN	NIL	1	NIL
KELMSCOTT	5	6	1
COLLIER- SOMERVILLE	5	3	1
WANNEROO	12	7	7
HARVEY	12	3	3
PEMBERTON	1	3	4
NANNUP	5	6	2
WALPOLE	1	4	5
TRAINEES	NIL	NIL	NIL
W/PLANS	3	1	4
RESEARCH	3	3	1
HEAD OFFICE	1	NIL	NIL
KALGOORLIE	1	NIL	NIL
TOTALS	96	70	48

A BRIEF EXAMPLE OF VALUE OF PROTECTIVE
SAFETY EQUIPMENT

Of interest, I am sure, is the following near-miss accident in the Pemberton Division. Forest workman Bill Adam was using a chainsaw to square a marri log into a bridge stringer. The chainsaw skidded off the log and at full power came into contact with his right foot. The saw chain ripped the leather of his boot and then stalled as it bit into the steel cap of his safety boot.

Net Result: one torn boot.

Adam complained about the damage to his boot, which was less than a month old - but admitted that new boots were easier to obtain than new toes. I feel he would definitely have lost the top end of his foot had he not been wearing safety boots.

VEHICLE SAFETY

GET UP TO SCRATCH .. CHECK YOURSELF OUT IN THIS A.B.C.

Experimentation and development surround us at an every increasing rate, however, the task of driving a motor vehicle is STILL one that remains largely in the HANDS, the FEET and the MIND of the driver. Its as important to us as the A.B.C.

Your driving may have deteriorated since you received your driving licence. Check yourself out on this simple A.B.C.

Ability -- The full application of specialised knowledge and skill by a motorist to the driving task. It is being able to anticipate and so avoid an accident situation. To maintain control, not only of the vehicle, but also a variety of personal emotions.

Do YOU have this ability?

Behaviour -- As a society we have attempted to legislate for acceptable behaviour on the highways through the enactment of traffic laws. As a deterrent to those who do not accept these guide lines, the law provides penalties. Driving behaviour is determined by knowledge, attitude, judgement, experience and foresight.

What about YOUR driving behaviour?

Concentration -- Most traffic accidents are caused by the failure of one or more drivers to concentrate on the driving task. Day to day driving is beset by many distractions, such as looking for a parking space, street numbers, road signs, passengers, pedestrians. Other distractions include boredom, financial worries, work problems, irritation with other drivers.

Do YOU concentrate?

WHAT IS SAFETY?

Safety is not, necessarily, a seat belt. Safety is not perfect brakes and new rubber, nor is it a warning sign or ten warning signs, or even one thousand.

Yellow lines, white lines, fluorescent warning signs, road safety posters, pamphlets or films are not safety either.

Safety is learning, without experience, that a seat belt can keep you from sailing through a windscreen.

Safety is learning that following too close leads to a rear-end collision.

Safety is understanding that there is a "point of no return" at which, despite brakes and good tyres speed is too great to avoid an accident - an understanding that encompasses the fact that the energy of a force increases as the square of the speed. Impact at 70 m.p.h. is not twice that of 35 m.p.h. - it is four times more.

Safety is the eagerness to know and to apply knowledge; to read and absorb safety material and apply it in the normal driving practice.

Safety is tolerance and it is the intelligence which convinces us that all the signs, warnings, speeches, scripts, films and posters are invented and promoted for one reason - our survival.

Safety is a continuing education ... it never stops.

Safety is as Safety does.

SEAT BELT REPORT

To give readers an opportunity of reaching their own conclusions on the value of seat belts "The West Australian" has arranged with the Police Department to publish monthly traffic branch accident reports.

The progressive figures of accidents investigated in the Metropolitan area in the first seven months of the year are:

	Jan.	Feb.	Mar.	April	May	June	July	Total	
Accidents	348	323	449	403	422	435	520	2,900	
Injured	315	296	378	273	394	396	472	2,524	
Killed	11	13	21	16	11	12	10	94	
Vehicles involved	680	610	818	754	842	950	1,013	5,667	
Vehicles with seat belts	275	259	363	283	335	335	448	2,298	
Not wearing belts:	Jan.	Feb.	Mar.	April	May	June	July	Total	
People	719	682	884	880	917	1,036	1,170	6,288	
Injured	300	274	353	252	354	368	434	2,395	
Killed	11	13	21	16	11	12	10	94	
Wearing belts:	Jan.	Feb.	Mar.	April	May	June	July	Total	
People	111	160	209	230	203	244	252	1,409	
Injured	15	22	25	21	40	28	38	189	
Killed	0	0	0	0	0	0	0	0	
Total injured								2,522	
Not wearing belts								92.6	per cent
Wearing belts								7.4	per cent
Total killed								94	
Not wearing belts								100	per cent
Wearing belts								0	per cent

IF ...

fathers killed could meet the wife and children
left behind

and step into the darkened home, where once the sunlight
shined -

and look upon the vacant chair where once they used to sit,
I'm sure their reckless driving would ease up quite a bit.
