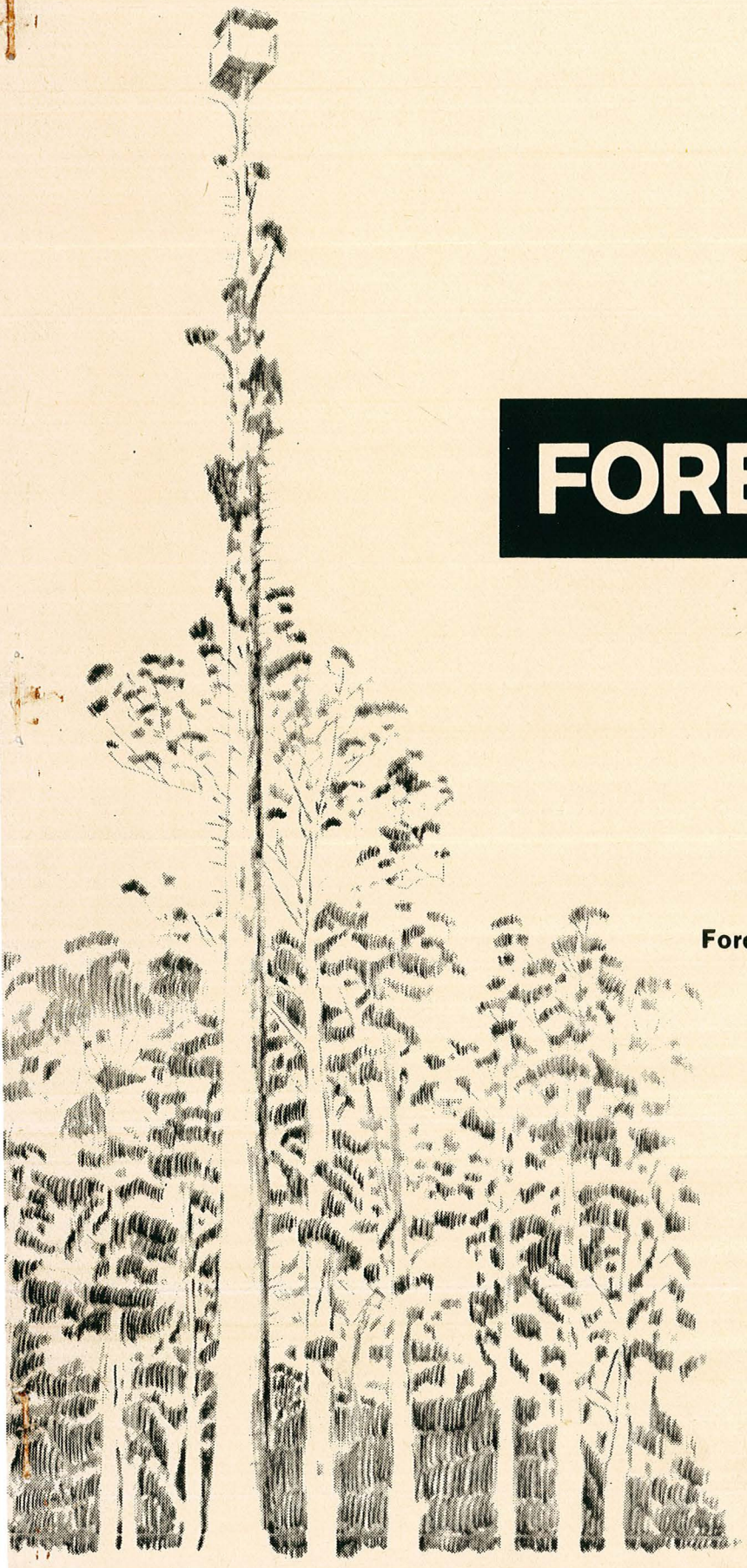

FOREST NOTES

Forests Department Perth Western Australia

VOL 17 NUMBER 1

FOREST NOTES

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CONTENTS

EDITOR'S NOTE

This issue of Forest Notes may be the last. The decision to cease production has yet to be made, but problems of collecting material, editing, reproducing diagrams and rising costs may well lead to its demise.

TIMBER IN THE WESTERN AUSTRALIAN ECONOMY

by N. G. Ashcroft

In the early days of the Western Australian colony, timber production played a dominant role in the local economy. This dominance has gradually decreased with rural development and industrial expansion in the state, and at present timber might be considered a minor contributor to the local economy.

Foresters often use figures on annual royalties or annual values of sawn production ($30-35 million), but that seems to be where they stop. However, the timber which they had tended and despatched from the bush landing does not stop there. The employment created in growing and initial breakdown of the log similarly does not stop there either. This timber proceeds through many and varied trades and industries, generating additional value and employment until final consumption. The various stages a commodity passes through on its way to consumption, are known as forward linkages and, because of the many uses to which timber can be put, the forward linkages of forests can be numerous. Chenery and Watanabe (1958), calculated the linkage effects in 29 industries in the U.S.A., Japan and Italy, finding pulp and paper to rank third and timber twelfth - these being well above the overall average.

One method of evaluating the full role of timber in the community is to analyse the contribution to Gross National Produce (G.N.P.). This can be done by identifying the forward linkages of timber and forest products and computing the values generated by timber at each stage of production. The sum of all Values Added by all industries in the economy is the G.N.P. Since many of the basic materials are used in the production of most commodities, care must be exercised, in the case of timber, to attribute only that portion of the industry's Value Added that is generated by timber (e.g. furniture industry, construction industry).

Value Added figures are now given in the Western Australian Year Book (the derivation is outlined in Appendix I). However, these figures are not presented in such a form that can be used to identify the total role of timber in the economy and calculations that follow are thus necessary. Hair (1963) was the first to complete a comprehensive study of this kind and used the 1958 U.S.A. economy as his base. Table 1 summarises the estimated Value and Employment Added for the W.A. economy (1969/70) with a more complete breakdown and mode of derivation being given in Appendix II. Because of inadequate local data in many instances, assumptions equating productivity and industrial structure between U.S.A. (in 1958) and W.A. (in 1969/70) have been made (Appendix II).

Figures are given in Table 1 for both local wood consumption and total wood consumption (i.e. inclusive of imports primary pulp and paper). Gross multipliers indicate the level of economic benefit arising per dollar invested in forest management (or per forest employee).

TABLE 1

ESTIMATED VALUE AND EMPLOYMENT ADDED ATTRIBUTABLE TO TIMBER IN THE WESTERN AUSTRALIAN ECONOMY - (1969/70).

		Value Added ($'000,000)	Employment Added	Value Added per $ Forest Management*	Employment Added per Forest Employee*
FOREST MANAGEMENT		5.0	959	1.0	1.0
MANUFACTURING					
Attributable to W.A. Timber		28.0	5190	5.6	5.3
Imports (pulp & paper)		23.8	3970	4.8	4.2
SUB-TOTAL		51.8	9160	10.4	9.5
CONSTRUCTION		46.0	8800	9.2	9.2
TRANSPORT & MARKETING					
Attributable to W.A. Timber		16.3	1805	3.3	1.9
Imports (pulp & paper)		8.5	724	1.7	0.7
SUB-TOTAL		24.8	2529	5.0	2.6
TOTAL	Attributable to W.A. Timber	96.3	16754	19.1	17.4
	Total Wood Usage	128.6	21448	25.6	22.3

* Gross multipliers obtained by dividing with forest management figures.

The precision of these figures may be questioned because -

(i) of the assumptions made in computation;
(ii) of the lack of suitable data;
(iii) not all forward linkages have been identified (i.e. no account has been taken of pole and pile operations, transport of manufactured goods, port handling, education, minor forest produce etc., and this would lead to an underestimate).

The assumptions have been made pessimistically and because only major industries in the sector have been identified, the figures are considered to be conservative. However, the figures do give a broad indication of the value of timber in the economy and a vastly different picture emerges compared to that of "ground level" forestry (i.e. at least 5% of the State's contribution to G.N.P.).

Such calculations can benefit the Forests Department in a number of ways.

(i) Since the days are now gone when royalties covered Departmental expenditure, Value and Employment Added in the wood sector must enhance submissions for Treasury aid. This will be increasingly important as we now "compete" with other Departments for much of our funds.

(ii) Knowledge of a commodity's full influence in the economy is vital to Government planning and decision making. For example, it is probable that the major economic benefit of the recent Marri Chipwood Agreement with Japan will flow to the transport and port authority sectors rather than to forestry itself. Thus alternate land uses, and hence, alternate investment opportunities, are affected.

Value Added measures contribution to G.N.P. but does not account for economic efficiency. Since inefficient industries also contribute to G.N.P., Value Added cannot be considered on its own for investment evaluation. However, it can be utilised in conjunction with cost-benefit analysis whereby total economic efficiency is estimated.

An analysis of the Value Added concept will give a better appreciation of the role of timber in the economy. Forestry today is having to "stand up and be counted" amongst the rest of the business world where the alternatives of expenditure are much more broadly based than they have been in the past. Technically, forestry has generally been well to the fore but managerial and economic expertise has been sadly lacking and, thus, is an area where most of the future battles will be won or lost.

Value Added is just one aspect of a whole range of economic data being investigated by forest authorities throughout the world. The time is right for forestry in Western Australia to start analysing itself in this light. The broad calculations presented here, if they do nothing else, indicate that we play a larger role in the community than the Annual Report or the Western Australian Year Book would suggest.

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AUTHOR'S FOOTNOTE: The above article was written in 1975 and uses 1969/70 values. Conversion using general inflation rates, will give the approximate position today, i.e. value of sawn production in 1976 was $53 million dollars. The relative impact on the economy in terms of contribution to G.N.P. and employment is expected to be similar now to what is reported in the text.

APPENDIX I

DERIVATION OF VALUE ADDED

1. Sales, and transfers out, (to other establishments of the enterprise), of goods manufactured by the establishment).

PLUS 2. Sales, and transfers out, of goods not manufactured by the establishment;

PLUS 3. Bounties and subsidies on production;

PLUS 4. All other operating income;

PLUS 5. Capital, work done for own and/or for rental or lease;

EQUALS - VALUE OF TURNOVER

PLUS 6. Value of closing stocks;

PLUS 7. Value of opening stocks;

LESS 8. Purchases, and transfers in, of materials, electricity, fuels, containers etc.

LESS 9. Purchases, and transfers in, of goods for resale;

LESS 10 Charges for commission and subcontract work:

LESS 11 Repair and maintenance expenses;

LESS 12 Outward freight and cartage, motor vehicle running expenses, sales commission payments;

EQUALS - VALUE ADDED

Source: 1973 Western Australian Yearbook.

APPENDIX II

ESTIMATED VALUE ADDED AND EMPLOYMENT ATTRIBUTED TO TIMBER IN WESTERN AUSTRALIA 1969/70.

Activity	Value of Product or Service ($ x 10^6)	Value Added		Employment	
		Total ($ x 10^6)	Attrib. to Timber ($ x 10^6)	Total	Attrib. to Timber
1. Forest Management:	5.0	5.0	5.0(1)	959	959
2. Manufacturing:					
Wood, wood products and furniture	93.1	45.4	28.0(2)	8391	5190(2)
Paper, paper products and printing.	62.2	34.1	23.8(3)	5674	
Sub-total	155.3	79.5	51.8	14065	3970(3)
3. Construction:	-	277.0	46.0(4)	44000	8800(4)
4. Transportation and Marketing:					
(a) Wholesale Trade					
Building material & supplies.	122.7	26.1	5.2(5)	4513	903(5)
Household appl. & hardware	47.1	10.6	0.2(6)	1317	26(6)
Paper, paper products books and stationery	19.5	-	3.7(7)	-	512(7)
(b) Retail Trade					
Newspapers, books & stationery.	24.1	4.8(8)	4.8(8)	-	212(8)
Furniture, mattresses & floorcoverings	41.0	10.2(9)	4.1(9)	-	97(8)
(c) Transportation Timber products only.					
Rail	2.1	1.7	1.7(10)	-	226(10)
Road	-	5.1	5.1(11)	-	552(11)
Sub-total	-	-	24.8	-	2529
Total Attributed to Timber — W.A. Timber	-	-	96.3	-	16754
Timber Usage in W.A.	-	-	128.6	-	21448

Appendix II (cont'd)

1. Value of forest expenditure less estimated cost of materials used.

2. 1972 Yearbook showed 67% of sawmilling value as being Value Added (V.A.) and Hair (1963) showed 90% of this V.A. to be attributable to timber. Similarly, he also showed V.A. by furniture as being 40% attributable to timber and 90% of V.A. by veneer and plywood as being attributable to timber. These figures are therefore the basis of this V.A. and employment estimate.

3. Hair shows 90% of V.A.in primary pulp and paper manufacturing is attributable to timber, and 70% of V.A. in secondary paper manufacturing. Because W.A. imports pulp for its paper making, the lower figure is used, but note that this V.A. is not attributable to W.A. timber, but to timber in use in W.A.

4. Total V.A. derived from Hair, who showed a V.A. per 1000 employees of $9 million and V.A. attributable to timber of $1.5 million/1000 employees. This figure is multiplied by 0.7 to convert from U.S. to Australian dollars. Similarly, from Hair, employment due to timber is 20% of total employment. This calculation would presume the same employment value, construction having 20% of the value of the buildings in timber products.

5. 1973 W.A. Yearbook shows 20% of wholesale sales on own account are attributable to timber in this item, therefore 20% of V.A. is assumed attributable to timber.

6. 5% of the turnover of this item is due to furniture mattresses and blinds. It is therefore reasonable to assume 4% is due to furniture, and therefore from (2), 2% is attributable to timber.

7. 1973 W.A. Yearbook shows this item to represent 1.6% of total wholesale turnover. It is therefore assumed that it represents 1.6 of total V.A. (and also employment).

8. Hair showed that in retail trade of timber products, 25% of total value was V.A. and all this was attributable to timber. This V.A. represents 0.004% of total retail value, and therefore this percentage is applied to total employment in the retail trade.

9. Derived V.A. and total value as per (6) and (8) and employment as for (8).

10. Assumes 20% of growth revenue to cover fuel, electricity etc. Employment attributable to timber is assumed to be the same as the ratio of timber revenue to total revenue (i.e. 5%). This assumption corresponds to Hair's figures.

11. Since rail transport accounted for 25% of timber cut, road transport must have catered for 75% of the total cut. The figure here is therefore assumed to be 3 times the rail V.A. figure. Employment is only multiplied by two, however, on the basis that private road haulage will probably have less administrative personnel than the W.A. Government Railways.

Source: Derived from the 1973 Western Australian Yearbook, 1972 Australian Yearbook, Hair (1963) and the 1972 Forests Department Annual Report, the above means.

CADET GRADUATION, DECEMBER, 1978

A group of 80 people, comprising cadets, parents and senior staff of the Department a-sembled in the Auditorium at the Como Institute of Forest Research and Protection on December 7, 1978 for the annual Graduation ceremony.

Special Guests were: The Hon. D. Wordsworth, Minister for Lands and Forests and Mrs Wordsworth, the Conservator of Forests and Mrs Beggs, Mr D. Glennon representing the Industrial Foundation of Accident Prevention, and Mr Ken Brehaut, Superintendent of Technical Education.

After short addresses by Mr Wordsworth, Mr Beggs and Mr Glennon the graduating cadets were awarded their certificates and a special safety award was accepted by Cadet Gillard on behalf of the group.

New Graduates are:

J. Gillard - Keyne's Prize winner

G. Durell - Conservator's Prize winner

R. Asher

* M. Bowles

M. Cantelo

P. Davies

* R. Fairclough

D. Michaelson

J. Ridley

M. Scantlebury

G. Standing

M. Carter

Congratulations to all new Graduates and welcome to the staff of the Department.

* Messrs Bowles and Fairclough have since resigned.

Ed.

STUDY OF LAMPREYS IN THE PEMBERTON AREA

by R.J. Sneeuwjagt

Lampreys are one of the most fascinating fish species existing today. Together with the hag-fishes, the lampreys represent the last existing forms of a group of fishes which evolved at the beginning of vertebrate evolution as evidenced in many fossil records of the Carboniferous era (280 million years ago). In addition these fish spend four years in fresh water rivers, then migrate into the ocean for a year or two where they travel thousands of kilometres before returning to spawn in the rivers again.

The lamprey found in the rivers of southwestern Western Australia is Gestria australis. These lampreys live in the tributaries and brooks of the major rivers, including the Warren, Donnelly, Blackwood, Gardner, King and Kent.

Until very recently, the bulk of man's knowledge of the life history of these fish has come from studies of the Northern Hemisphere lamprey, and the studies that have been made on Gestria australis are showing it to be quite distinct and unique from the bulk of the world's lamprey species. (approximately thirty altogether).

In order to learn a great deal more about the life history and behaviour of our lamprey, a 3-year research project was initiated in 1977 by Professor Ian Potter of Murdoch University. Two of his graduate students, Rob Hilliard and David Macey, spend many weeks of the year trying to capture these fish and obtain information on their feeding, sexual and spawning habits. These researchers, along with other students from both Murdoch and the University of W.A., utilise the 'Cork Oak' hut in the Pemberton settlement for their laboratory and sleeping quarters.

Life History

Although very little study has been done to date on the life history of our lamprey, Gestria australis, enough is known to make interesting reading.

Sexually mature adults of Gestria spawn in the southwest rivers, probably between October and December, although very few reports have ever been made about the spawning, the actual time of year and exactly what kind of place the adults seek before spawning, such as gravel beds, shallow or deep pools. The Northern Hemisphere species are known to spawn in groups, over a shallow, fast running section of the stream, probably over gravel and in clear, clean waters.

The adults spawn once only as death follows soon after. The eggs hatch probably three weeks after spawning, and the tiny lamprey larvae, called "ammocoetes", are about 8-10 mm in length, and superficially resemble brown tadpoles in appearance. The ammocoetes are blind and immediately burrow into sandy banks of the shallow edges of the streams. They probably remain burrowed in these banks for the first four years of life, feeding on organic debris using a filter system more usually found in invertebrates rather than vertebrates. They grow quite slowly and change (metamorphose) into miniature adults of about 100 mm (4") in length after four years. The metamorphosis is fairly dramatic and is similar to the metamorphosis of a tadpole into a frog. The previously blind amoecetes develop large silver eyes, change colour from brown to deep marine blue with a silver belly, and finally sport two irridescent metallic blue-green stripes down the length of their back.

Sea Migration Phase

Metamorphosis starts in the summer months and the young adults are ready to migrate out to sea in the following winter months.

George Cassells of the Pemberton Trout Hatchery often catches the young adults on their way out to sea, as they get sucked down the Hatchery's water supply pipes, and end up in the filter nets.

Invariably they migrate during the hours of darkness only, and will not start to feed until reaching the estuaries and their first taste of salt water. Metamorphosis equips them with a sucking mouth, full of tiny, needle sharp teeth, plus a tongue similarly armed.

Lamprey feed by sucking onto a host fish, and boring a small hole through the side of the host fish until they are able to freely suck the fish's blood. Gestria australis probably feeds in the same manner, although at present there are no reports at all concerning what it attacks and how it eats. Attached to its host, the lamprey will travel many thousands of miles throughout the southern oceans.

Return Journey

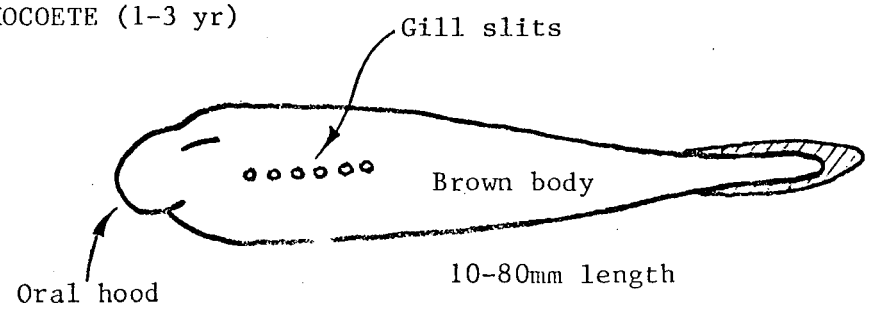
The lamprey return to the coast when they are 60-80 cm (3') in length and search for estuaries of major rivers along the southwest coast. They start the upstream migration in early August, and at Pemberton can be found trying to get around (or climb over) the town weir between late August and December. These upstream migrants are not yet sexually mature, and will spend twelve months until the following spring hiding at the head of the river systems before finally spawning and dying. During this time they do not feed, but live off their own body reserves and fats, stored during the marine phase.

Many questions still remain unanswered about these incredible eel-like animals. Professor Potter and his research team would be delighted to receive any reports of sightings of these fish as these may help to fill many of the gaps of knowledge of this little known fish of Western Australia.

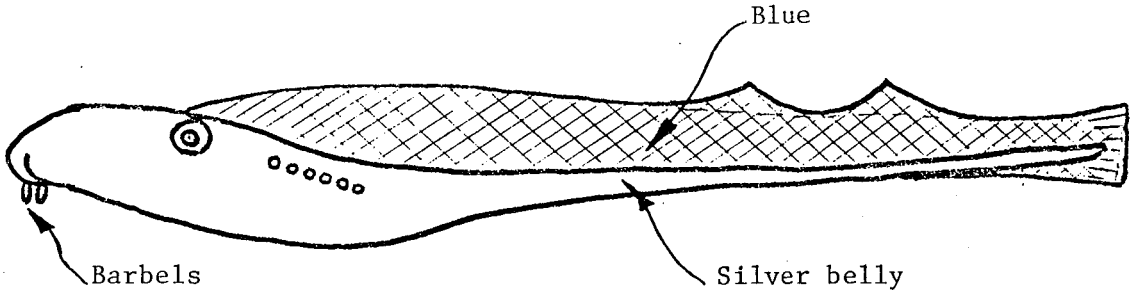
Editor's Note: Since receipt of this article an occurrence near Dwellingup has been recorded.

DEVELOPMENT PHASES OF GESTRIS LAMPREY

1. AMMOCOETE (1-3 yr)



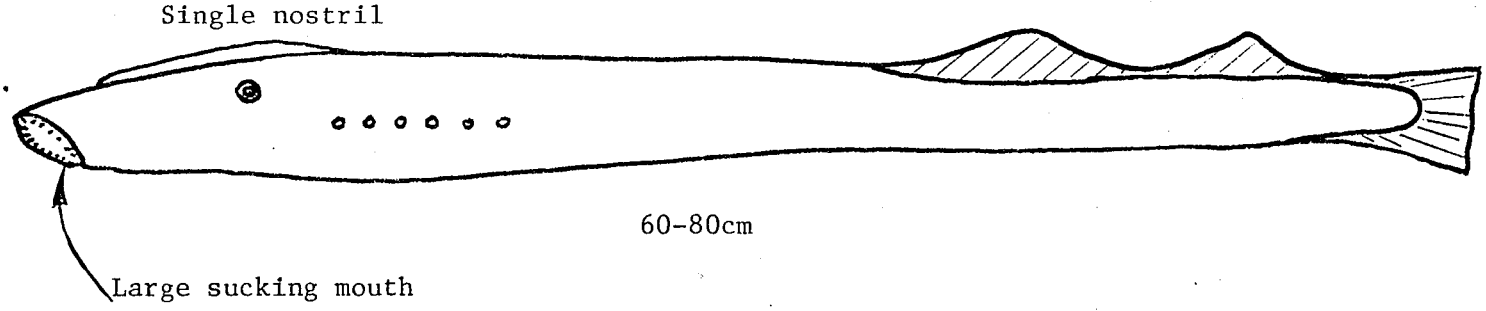
2. DOWNSTREAM MIGRANT (age 4)



8-10cm

3. UPSTREAM MIGRANT (age 6)

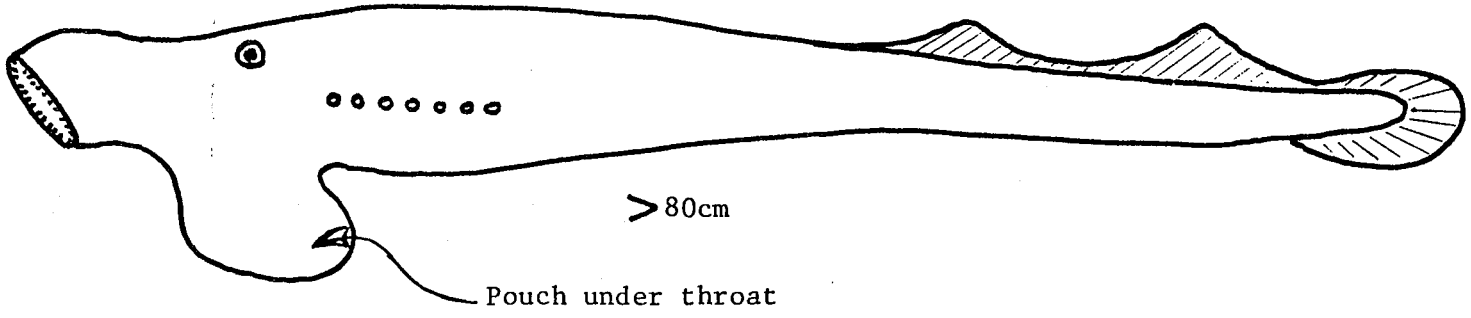
Single nostril



60-80cm

Large sucking mouth

4. MATURE MALE (age 7)



GARDNER TREE

by "Dombakup"

The music coming from the radio was as familiar as it was evocative: the lovely gentle lines and swelling rhythms of Bach's Goldburg Variations. It took me back, as it always does, to one of the more memorable episodes of my youth, my time as fire lookoutman on Gardner Tree .....

It is evening, somewhere in the karri forest west of Pemberton. A young man sits drinking a mug of coffee on the step of a tiny hut. Behind and above him swings a hissing Tilley lamp, and the soft night air is unexpectedly full of the sounds of a harpsichord. The music comes from the horn of an ancient wind-up gramophone which stands on a small wooden stool in the centre of the hut. The gramophone, together with a slim stack of scratchy 78's, was a gift from friends of the family where it had been superceded by a more modern appliance. It provides a civilizing influence in this lonely bush scene, and is the young man's pride and joy.

It is a very good hut. Only 12 feet by 10, but securely clad in thick karri weather boards and fully lined with brightly varnished and heavily knotted pine. At one end a Metters No. 1 stove is set into a bricked chimney, and is hung about with blackened saucepans, a billy and an enormous frying pan. At the other end a small louvred window looks out onto a wall of green karri scrub. Near the window is an antique Erikson telephone, complete with bells, a crank and detachable earpiece. Beneath the 'phone a yellowed card is tacked to the wall, and on it are typed the various code rings for contacting headquarters and the other towers on the line. An iron-framed bed with prickly horsehair mattress and grey Government-issue blankets occupies one side. Opposite, and within arm's reach, stands a deal table and a Coolgardie safe. A fruitcase has been nailed to this wall above the table, and on its crude shelving stand the dietary staples: packets of tea, sugar and salt, a tin of condensed milk, vegemite, tomato sauce. It is a very satisfactory hut.

Outside the door stands the TREE. The massive butt measures 25 feet in circumference and the whole thing is nearly 200 feet in height. But it is more than just a great karri. It is a tree long since destined to become interwoven with the affairs of man. This tree had been specially sought and then chosen from a myriad of others in the forest. Its heights had been scaled, the mightly crown lopped off and a tiny cabin bolted into the topmost forks. A ladderway had been pegged into the bole, linking its lofty eminence with the prosaic world below. Telephone wires had been strung, cement poured into holes, a towerman's quarters constructed at its foot. In its conversion to a lookout tower the tree had suffered many indignities - and yet somehow it had never been really conquered.

At least this is what the young man feels as he sets out each morning to climb to the top and carry out his appointed duties as "watchman of the forest".

He carries a small haversack over one shoulder. This contains provisions for the day: bread and vegemite, cold sausages hoarded from the previous evening's meal, dried fruit, a bottle of cold tea. At the foot of the ladder he pauses and glances up, and there is a moment of almost palpable stiffening of the mental sinews. Then the climb begins, a measured steady hand over hand, up and around the spiral, a wooden peg and metal spike alternatively clasped and released. The first 100 feet or so is easy going. The leafy regrowth along the stem provides shade and shelter, and the massive trunk always at his left

is a constant source of strength and security. There is time to look about, to take in a scene of infinite variety and scale, from the ever-changing perspectives of the surrounding forest to the minutiae of insect life on the bark of the stem. But a point is suddenly reached beyond which the tree is dead, and here a step or two takes him from the green and familiar world of the forest out into the empty bowl of the sky. It is now no longer a tree, but a puny grey spar jutting up into the void, knobbly with old severed limbs, festooned with wire and pegs, and surmounted by a preposterous little cabin, eerily silent and uninviting. Here the climbing becomes difficult. Awkward bumps and limb stubs must be negotiated, the metal spikes dip alarmingly as they take the weight and the wooden pegs in the dead wood are loose and treacherous.

Closing his mind to all the possibilities, the young man steadily works his way up, finally to heave himself through the trapdoor, slam shut the lid and know that he has made it again, and is safe. It may be false security, he reflects, but its better than none.

The lookout cabin is six feet square, half timbered below and with sliding glass windows on the four sides. It contains the usual paraphenalia of the fire lookout: map table, direction finder, log book, scale rule, pencils, wind gauge. The latter is unsophisticated - a short length of binder twine suspended from a rafter. He has been taught to gauge the strength of the wind by its deviation from the vertical.

It is 8 a.m. and the daily routine commences. He rigs the direction finder and checks it against the Pemberton mill smoke off to the northeast and Silver Mount to the west. Telephone contact is made with the outside world, and he records the forecast and greets the other towermen. He has spent many hours chatting on his 'phone with the four other towermen on his network, but has never met them.

Beyond the cabin windows extends the vision splendid of the southern karri country. To the south lies the coast, and the great glittering masses of the Yeagarup and Meerup Dunes, but on the other three sides the karri forest sweeps away, from the sharply focussed plumage in the foreground to the distant grey-green haze of the summer day. Immediately below the tree, and in odd patches here and there, are occasional glimpses of semi-cleared paddocks of old Group Settlement blocks, the brown pastures thickly dotted with huge ringbarked stags.

It is cool in the cabin, and there is very little for the young man to do. He scans the forest, almost hopefully, for something of importance to report. He write a letter, reads fitfully, chats with the other towermen. Each hour he makes a brief report on his visibility and the wind strength and direction, a welcome burst of activity to mark off the crawling passage of the day.

He sees no smoke all day. It had been different earlier in the summer he remembers, before the burning season closed, especially when the cattlemen had been lighting up their leases down along the coast. Then the towermen had been very busy, and it had been a time of constant serious discussion and peering through the binoculars as the various smokes were sighted, described and reported, and of constant interrogation from the harrassed foresters at headquarters. On one occasion, following a dry thunderstorm, they had all been required to stay up the trees well into the night, plotting lightning strikes from their glow.

But today, it is a relief from boredom, not anxiety when finally at 6 p.m. the Duty Officer at headquarters gives the O.K. to go down. The log book is ruled off and signed, the map covered and the instruments packed away. Looking down through the trap, the leafy boughs below seem like welcoming arms, and he hastens to their embrace. When the solid earth is finally reached, it feels very good. He turns his back on the tree and heads for the hut, thinking about getting the stove alight and cooking tea. Above, the tree still seems to be watching out, its glassy eyes catching the last of the evening sun, remote, impassive, unconquerable .....

It was only 20 years ago, but it seems like a lifetime to the days when I was a towerman on Gardner Tree. There is no Gardner towerman today, nor, for that matter are any of the old tree towers of the karri country still in use. Technology has caught up with fire spotting and the job is now done from light aircraft.

Gardner was condemned in 1971, and the bottom section of ladder taken away. No-one can make that incredible ascent and descent again. The hut at the bottom is gone and the small clearing is slowly filling up with waterbush and karri wattle. But the tree itself still stands, and the tiny cabin at the top, slightly the worse for wear and lack of maintenance, seems, as ever, to mock the puny observer on the ground. I called in there the other day, on the way home from somewhere, and wandered briefly about, gazing up with that familiar feeling of awe and respect. The last rays of daylight were illuminating the dreaded top. And as the gloom gathered in the surrounding forest, I thought I could almost hear the notes of a harpischord .....

EXAMINATION RESULTS, 1978

The 1978 Staff Promotional Examinations introduced, for the first time, a written assignment as part of the assessment of performance. This innovation was considered a success, and the practice will be retained for the 1979 examinations.

Congratulations are due to the following successful examination candidates:

Examination	Candidate
District Forester:	R. Simmonds
Forester:	N. Brass
	N. Bukelis
	A. Lorkewicz
	L. Mathews
	R. Mead
	L. Piggott
	R. Walter
Assistant Forester:	R. Banks
	P. Bidwell
	B. Commins
	G. Ellis-Smith
	F. Mersch
	K. Tiedeman
Technical Officer: (Grade 1)	R. Fremlin
	G. van Didden
Technical Officer: (Grade 2)	N. Hamilton
Technical Assistant: (Grade 1)	C. Vellios
Forest Assistant: (Grade 1)	W. Armstrong
	R. Burton
	W. Montanus
	C. Chambers

Extract from J.B. Johnstone & Sunset Books (1976) - Woodcarving Techniques and Projects, Lane Books, Menlo Park, California, U.S.A. (supplied by Owen Loneragan).

HOW TO SEASON GREEN WOOD

Membership in a coven of wood witches might be the best diploma for the wood seasoner. Science seems to have thrown up its hands on the subject of air-drying green woods and retreated to the relative predictability of kiln and radio-frequency drying. Both kiln and radio-frequency drying are beyond the means of the do-it-yourselfer, though if you live near such installations you may be able to persuade the operators to dry small batches of home-cut wood for you.

Air-drying, in spite of its unpredictability, is often the only hope for the average woodcarver who wants to carve rare or commercially scarce woods - such as diamond willow, madrone, manzanita, persimmon, ginkgo, baywood, or Osage orange.

Your worst enemy in air-drying or seasoning is the too-rapid evaporation of surface and end layers versus the too slow drying of the interior. This results in cracks, splits, and shakes which, in some species, can reduce a large log to a tiny, carvable remainder.

To dry logs, leave the bark on and coat the cut ends - including branch cut-off points - with wax, shellac, one of the commercial lumber end-sealers available through most large lumber yards, or the black tree-and-grafting sealer sold at most nurseries. Some of the dark sealers will stain wood up to an inch or so into the end grain, so allow for this when cutting logs to lengths for specific jobs.

Raise logs off the ground and separate from adjoining logs to allow air circulation. A shelter from rain, snow, and strong sun is helpful. A warm dry attic, basement, or shed is ideal. Keep watch on the ends and reseal if cracks appear in sealant. Control humidity with a plastic tarpaulin if drying appears too fast. Use undiluted polyethylene glycol (POLAWAX 100) treatment for green logs.

Seasoning time varies according to the density of the wood, water content, cross-section thickness of the wood, temperature, and humidity. Only experience is a fairly accurate guide. Generally, relative weights of wood give a fair clue to seasoning time, within the scale of 1 through 4 summers. Some pines and firs dry reasonably well in one year as logs, and in one or two months as cut lumber (in a relatively dry summer). A red oak, manzanita, or rosewood may take several summers in the log form.

If you have the equipment, you might bore a hole through the center of the log heartwood, which will greatly speed drying. A variation in this was used by medieval carvers who often had to work with less-than-dry woods. They hollowed the backs of statues intended for wall-mounting, leaving a carved shell which dried with a minimum of cracking.

Drying your own wood will bring many a temporary heartache over a log split beyond use, but the odds are you will have enough successes with a few exotic logs to make up for all the failures.

PORTENT

by J. McCormick

Down in the forest lived Fungalpi,
His diet was the living tree;
The latter he devoured whole,
First the crown and then the bole.

In nature's scheme he was by right
A beneficial parasite;
For sickly trees he would attack
And trees whose limbs by storm did crack.

Thus the lame and lazy he'd destroy,
Assisting nature in'ts selective ploy;
A living part of nature's plan
Until this was upset by man.

FIREWEED SURVEY URBRAE BLOCK

by J. Gillard

INTRODUCTION

The fireweed survey took place at Urbrae Block north of the South Dandalup Dam in the Dwellingup area. North East Road was used as a base line to establish a grid of survey lines fifty metres apart. A total of 39 lines were run with sample points 50 metres apart and each sample point being 1 metre square. The number of legumes in each sample point were counted, topography, soil type and estimated fire intensity (from known scorch levels) were also recorded. Results indicate a relatively good stocking of legumes over the area although Acacia pulchella was not as widely distributed as first hoped for.

AIM

To count the number of fireweeds on a 50 metre square grid and to determine the numbers of each species in relation to fire intensity, topography and soil type, and the frequency and relative densities of each species.

LOCATION

The burn was carried out at Urbrae Block, map reference (Dwellingup 80) CO 63-64, comprising an area of approximately 150 hectares situated 12 kilometres north of Dwellingup and 3 kilometres north of the South Dandalup Dam. The main access road is North East Road which runs along the northern edge of the burn. Appendix I shows a map of the area.

DESCRIPTION OF AREA, PRE-BURN

(i) Topography

The area has a southerly aspect with a creek and an area of swamp running northwest to southeast through the centre of the area. Ridge tops comprise 25% of the area along the northern edge and southwestern corner. The rest of the area is made up of midslope areas comprising 50% of the area. Appendix II shows a map of topography.

(ii) Soils

The majority of the area comes under the broad category of gravels being found on ridge tops and midslopes. Other soil types present were loam, sand and clay being found in the low-lying areas. Some cap rock was also found on the ridge tops. Cap rock was defined as cap rock underlying a shallow soil profile or protruding floaters. Appendix III shows a map of soil types.

(iii) Overstorey

The overstorey is predominantly jarrah poles and jarrah-marri types with some Casuarina on the upper slopes with blackbutt and bullich in the lower areas.

(iv) Understorey

The understorey was mainly composed of blackboys, zamia palms Persoonia spp., Banksia spp., and Acacia spp. Only some 20% of the understorey was made up

legumes or Phytophthora resistant species while 80% was composed of Phytophthora susceptible species.

The entire area of the burn has been classed as non-protectable from Phytophthora. The small area on the map (Appendix IV) shown as "Doubtful Protectable" has since been classed as non-protectable.

(v) Logging History

The area of the burn has been uniform and selectively logged since 1969 under Bunnings saw-milling permit. This was prior to the area being assessed for Phytophthora infection. Since then the area has been surveyed and found to be infected. Since the area is non-protectable it was clean cut in 1975 where all merchantable timber was removed.

It should be noted that the area is to be mined by ALCOA in the near future and they have an intensive drilling grid set up over the area.

DETAILS OF THE BURN

(i) The burn was carried out on April 5, 1977. Lighting up commenced at 1420 hours on the eastern boundary moving westwards in north-south lines to the swamp. Once completed the area to the south of the swamp was lit up.

(ii) The fuel was generally in the six year old range approximating 10-11 tonnes per hectare of leaf litter. There was also an area of dense tops in the western half and scattered tops in the east and southern half resulting from the logging operations.

(iii) Weather data - maximum temperature 21.5°C, relative humidity 33.5%, the winds were variable from south-south-west to west-south-west and from 5 km to 30 km/hr with no cloud cover.

(iv) Fire behaviour - flame height varied from 0.8 to 2.0 metres in the areas between tops and from 2.0 to 7.0 metres in the tops. The rate of spread varied from 24 m/hr at 1425, to 60 m/hr at 1600 hours. Some spotting over North East Road took place in the area of tops.

(v) Fire intensity - varied from 600 kw/m in areas of half crown scorch, through 1200 kw/m; this was full crown scorch to 2,500 kw/m which resulted in total defoliation. The areas of high intensity 1200-2500 were those with a concentration of tops. Approximately 24% of the area was covered by fire of 600 kw/m, 68% by 1200 kw/m and 7% by 2500 kw/m with 1% being unburnt. Appendix V shows a map of estimated fire intensity.

(vi) The fire was monitored by Dwellingup Research Branch. Fifty asbestos tags were placed throughout the fire area to monitor heat penetration and duration. The probes were placed at depths of 2, 4 and 8 cm and checked at intervals for four hours. In the area of intensity 600 kw/m temperatures at 2, 4 and 8 cm never exceeded 25°C. After one hour the 2 cm probe that reached 30°C and the 4 and 8 cm probes were below 25°C. After two hours the 2 cm probe had reached 80°C, the 4 cm probe 50°C and the 8 cm probe was still below 25°C. After three hours the temperature at 2 cm was 155°C, at 4 cm 70°C and at 8 cm 24°C. After four hours the temperature at 2 cm was peaking at 190°C, at 4 cm 70°C and at 8 cm 40°C.

In the area of intensity 1200 kw/m - 2500 kw/m the following resulted. After one hour the temperature at 2 cm was 205°C and decreasing after a peak of 230°C, at 4 cm 100°C and at 8 cm 50°C. After two hours the temperature at 2 cm was 150°C, at 4 cm 110°C and at 8 cm 75°C. After three hours the temperature at 2 cm was 160°C, at 4 cm 190°C and at 8 cm 90°C. After four hours the temperature at 2 cm was 120°C, at 4 cm 215°C and peaking, and at 8 cm 105°C.

METHOD

Three months after the burn in August, 1977 the first fireweed assessment was carried out by the Cadets. A 50m square grid was set up over the area with lines running north and south from North East Road at intervals of 50 m. The lines were identified by numbered pegs being placed on the southern edge of North East Road. In each line the first sampling point was 50 m from the road and identified by placing ribbon on a nearby tree or log. A wire metre square was then placed on the ground and a wire peg placed in the northwest corner of the assessment frame as a means of identifying the sampling point in later surveys. The presence of Bossiaea aquifolium and Acacia spp., within the frame was then recorded. The soil type and topographical position of the sample point were recorded along with the overstorey and understorey types of the area. Fire damage, scorch height and the presence of an ashbed were also recorded.

Cadets again assessed the area in October, 1977. This assessment was mainly concerned with the survival of the fireweeds in the sample squares. However, the germinants were still too small to allow positive identification so they were placed into the broad categories used in the first survey. They were Bossiaea aquifolium and Acacia spp. The numbers of each type were recorded as individuals or clumps. Apps VI, VII, VIII show distribution of 3 species.

A third survey was carried out by Cadets in March, 1978. In this survey the species were accurately identified and the numbers present in the assessment frame were recorded. During this survey another wire peg was placed in the southeast corner of the assessment frame to make locating the sample point easier. The species counted were: Acacia pulchella, Acacia extensa, Acacia strigosa, Acacia urophylla, Bossiaea aquifolium, Hakea amplexicaulis, Adenanthos barbigera, Leucopogon verticillatus, Dryandra nivea, Clematis aristata and Lasiopetalum floribundum. The three species which this report is concerned with are Acacia pulchella, Acacia strigosa and Bossiaea aquifolium.

Acacia divergens was extremely abundant in swampy areas but was not included in the survey because it occurred in a E. megacarpa swamp and the survey was not concerned with this area.

RESULTS

Based on the March, 1978 survey

(i) The abundance of the three main species was calculated by means of the following equation:

$$\text{ABUNDANCE } (\bar{x} \text{ No/QUADRAT}) = \frac{\text{TOTAL NO. OF INDIVIDUALS}}{\text{TOTAL NO. OF QUADRATS}}$$

The total number of quadrants for the area was 527 and the number of individuals found was as follows:

Acacia pulchella	=	79
A. strigosa	=	1256
Bossiaea aquifolium	=	636

Table No. 1 shows the mean number of individuals per metre square of the block.

TABLE 1

ABUNDANCE OF SPECIES FOR COMPLETE BLOCK

Species	A. pulchella	A. strigosa	B. aquifolium
$\bar{x}$ No/M^2	0.15	2.38	1.21

(ii) The abundance of the species was calculated for fire intensity also; the figures were calculated using the same equation as in (i) above for the three different intensities.

LESS THAN HALF SCORCH

Total number of quadrats was 133
Number of individuals was:-

Acacia pulchella	=	12
A. strigosa	=	246
B. aquifolium	=	112

FULL SCORCH

Total number of quadrats was 357
Number of individuals was:-

Acacia pulchella	=	65
A. strigosa	=	966
B. aquifolium	=	482

TOTAL DEFOLIATION

Total number of quadrats was 37
Number of individuals was:-

Acacia pulchella	=	2
A. strigosa	=	49
B. aquifolium	=	62

Table No. 2 shows the number of individuals per metre square of the three different intensities.

TABLE 2

ABUNDANCE OF SPECIES FOR FIRE INTENSITY

Species	A. pulchella	A. strigosa	B. aquifolium	Type
$\bar{x}$ No/m^2	0.09	1.85	0.84	Less than half scorch
	0.18	2.71	1.35	Full scorch
	0.05	1.32	1.67	Defoliation

(iii) The abundance of the species was calculated for topography using the same equation as in (i) for the three topographic areas.

RIDGE TOPS AND UPPER SLOPES

Total number of quadrats 134
Number of individuals:-

Acacia pulchella	=	39
A. strigosa	=	134
Bossiaea aquifolium	=	44

MID SLOPES

Total number of quadrats 311
Number of individuals:-

Acacia pulchella	=	38
A. strigosa	=	615
B. aquifolium	=	531

LOWER SLOPES AND VALLEY BOTTOMS

Total number of quadrats 82
Number of individuals:-

Acacia pulchella	=	1
A. strigosa	=	498
B. aquifolium	=	76

Table No. 3 shows the number of individuals per metre square of the three different topographical areas.

TABLE 3

ABUNDANCE OF SPECIES FOR TOPOGRAPHY

Species	A. pulchella	A. strigosa	B. aquifolium	Type
$\bar{x}$ No/m^2	0.29	1.00	0.33	Ridge tops Upper slopes
	0.12	1.98	1.71	Mid slopes
	0.01	6.07	0.93	Lower slopes Valley Bottoms

(iv) The abundance of the species was also calculated for soil type using the same equation as in (i) for the three main soil types. Sand, clay and swamp were deleted from the results because they were poorly represented.

CAP ROCK

Total number of quadrats 27
Number of individuals:-

Acacia pulchella	=	7
A. strigosa	=	28
Bossiaea aquifolium	=	8

LOAM

Total number of quadrats 51
Number of individuals:-

Acacia pulchella	=	2
A. strigosa	=	462
B. aquifolium	=	63

GRAVEL

Total number of quadrats 415
Number of individuals:-

Acacia pulchella	=	70
A. strigosa	=	682
B. aquifolium	=	547

Table No. 4 shows the number of individuals per metre square of the three main soil types.

TABLE 4

ABUNDANCE OF SPECIES FOR SOIL TYPE

Species	A. pulchella	A. strigosa	B. aquifolium	Type
$\bar{x}$ No/m^2	0.26	1.04	0.30	Caprock
	0.04	9.06	1.24	Loam
	0.17	1.64	1.32	Gravel

(v) The frequency or percent distribution for the species was calculated by means of the following equation:

$$\text{FREQUENCY} = \frac{\text{NO. QUADRATS IN WHICH SPECIES OCCURRED}}{\text{TOTAL NO. QUADRATS}} \times \frac{100}{1}$$

Total number of quadrats 527
Number quadrats:

A. pulchella	=	41
A. strigosa	=	174
B. aquifolium	=	68

Table No. 5 shows the frequency for the three species.

TABLE 5

FREQUENCY

Species	A. pulchella	A. strigosa	B. aquifolium
% Distribution	7.8	33.0	13.0

(vi) The relative density - percent contribution for the species was also calculated by means of the following equation -

$$\text{RELATIVE DENSITY} = \frac{\text{TOTAL NO. INDIVIDUALS OF SPECIES}}{\text{TOTAL NO INDIVIDUALS}}$$

Total number individuals 1971
Number A. pulchella = 79
Number A. strigosa = 1256
Number B. aquifolium = 636

Table No. 6 shows the relative density for the three species

TABLE 6

RELATIVE DENSITY

Species	A. pulchella	A. strigosa	B. aquifolium
% Contribution	4.0	63.7	32.3

DISCUSSION

The distribution and abundance of the species was examined to obtain an overall picture of the effectiveness of the burn.

Acacia pulchella: had a lower abundance than was first hoped for, showing a lower mean number of individuals than expected.

The reasons why Acacia pulchella never showed up in the survey could have been -

(i) the individuals were subject to browsing. Acacia pulchella is particularly susceptible to browsing because it is rich in nitrogen.

(ii) there was a lack of seed in the area or a lower quantity of seed than first estimated.

Good stocking was obtained in areas of full scorch which covered sixty eight percent of the area. At both lower and higher fire intensities the abundance rapidly decreased.

The ridge tops and upper slopes were well stocked with A. pulchella with the number of individuals decreasing going down the mid-slopes and into the

valley bottoms. This is closely related to the soil types where A. pulchella preferred the caprock areas and gravels with a very poor stocking on the loams.

Acacia strigosa: is very widely distributed over the area and showed a preference to the areas of full scorch and less than half scorch rather than those areas that were totally defoliated. The number of individuals increased going down slope toward the valley bottoms with a large proportion of the total number found on the lower slopes and valley bottoms. This is consistent with the soil types where A. strigosa showed a strong preference for the loams than the gravels with some individuals in the caprock areas.

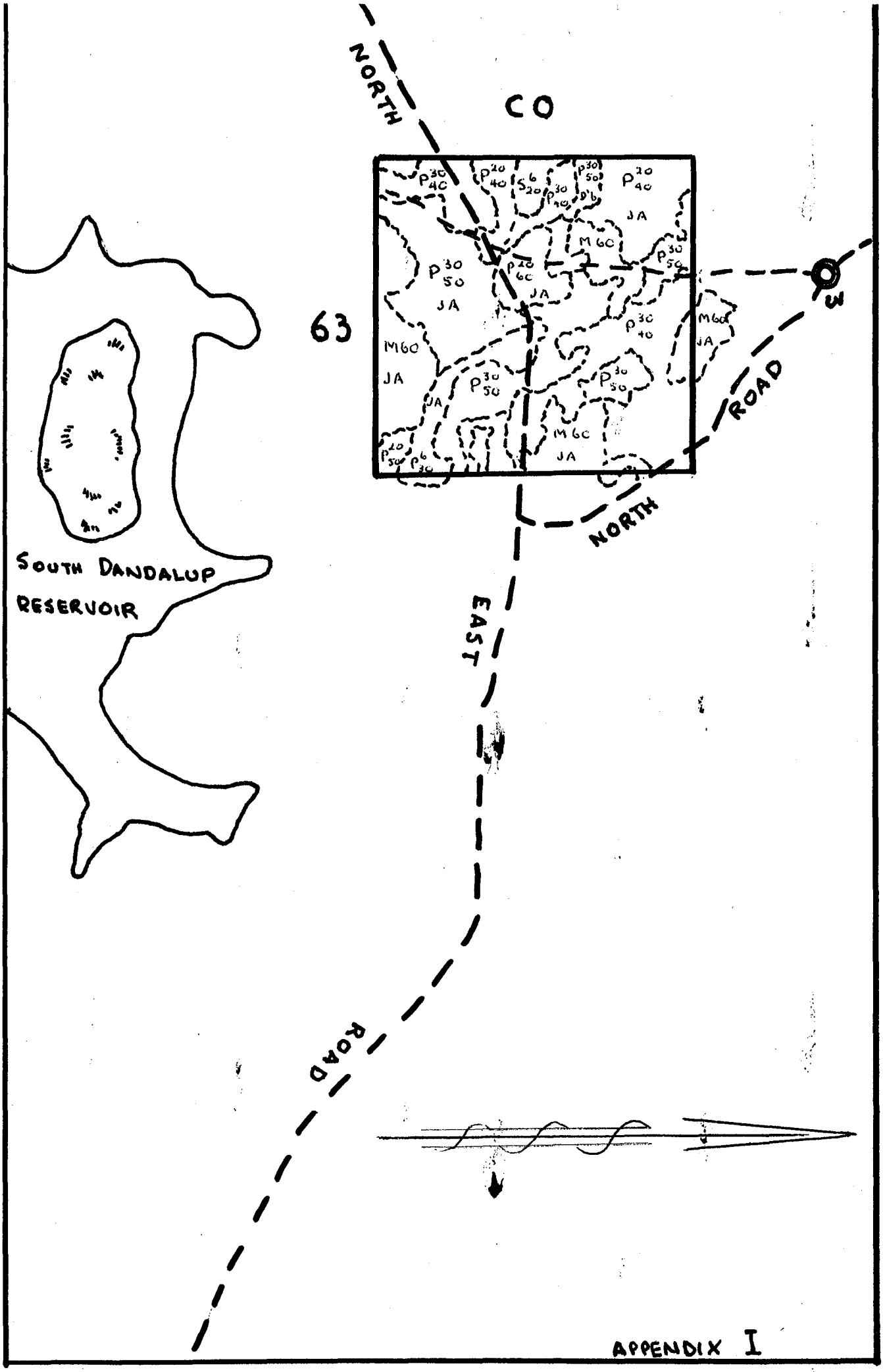
Bossiaea aquifolium: was present in large numbers with the abundance increasing as the intensity of the fire increased. The deep distribution of the seed is most likely the reason for this pattern. The species was poorly represented on the upper slopes and ridge tops with large numbers being found on the mid-slopes and to a lesser degree the lower slopes and valley bottoms. This is consistent with the soil types where B. aquifolium was poorly represented on the caprock areas and showed a strong preference to the gravels and loams.

Acacia strigosa was the more widely distributed of the three with Bossiaea aquifolium being reasonably widely distributed and Acacia pulchella being confined to the ridge tops and upper slopes.

In actual numbers of individuals found A. strigosa was the dominant species making up nearly two thirds of the population with A. pulchella more poorly represented and making up only four percent of the population.

Further surveys are to be carried out in the spring of this year and they will include an assessment of crown recovery and bole damage. Also, a more in-depth analysis of the data will be made after these surveys with particular attention to the interactions such as fire intensity and slope in relation to the abundance of the three species.

In conclusion, the burn was successful in obtaining a good stocking of the fireweed species. It has also shown that burns of the intensity of 1200 kw/hr (that is full crown scorch but no defoliation) produce the best results in relation to the number of fireweeds germinating.



APPENDIX I

APPENDIX II

LEGUME FIREWEED SURVEY

URBRAE BLOCK

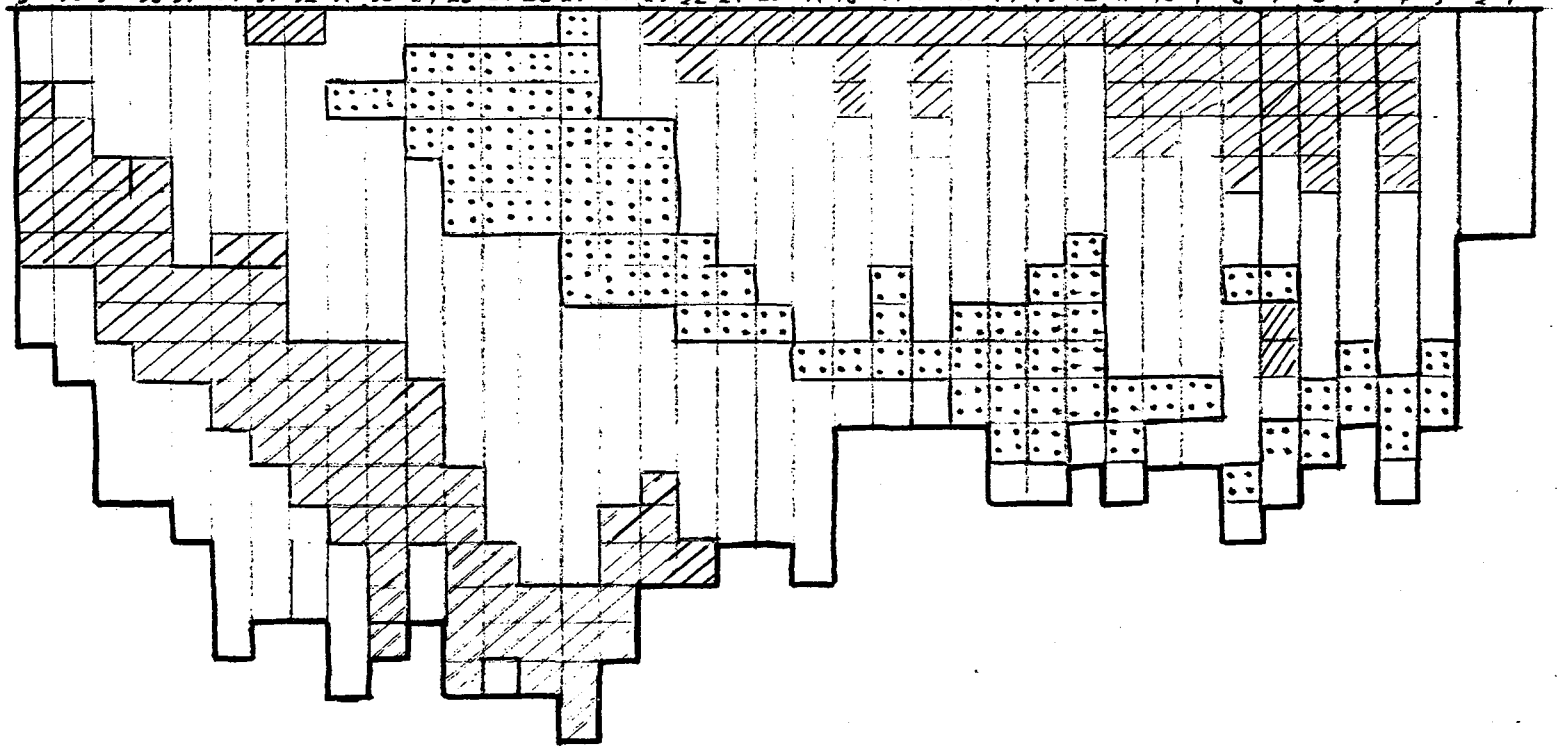
TOPOGRAPHY

KEY:

- Ridge tops
- Mid-slopes
- Valley bottoms

N.E. Road

Line No. 39 38 37 36 35 34 33 32 31 30 29 28 27 26 25 24 23 22 21 20 19 18 17 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1



1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19

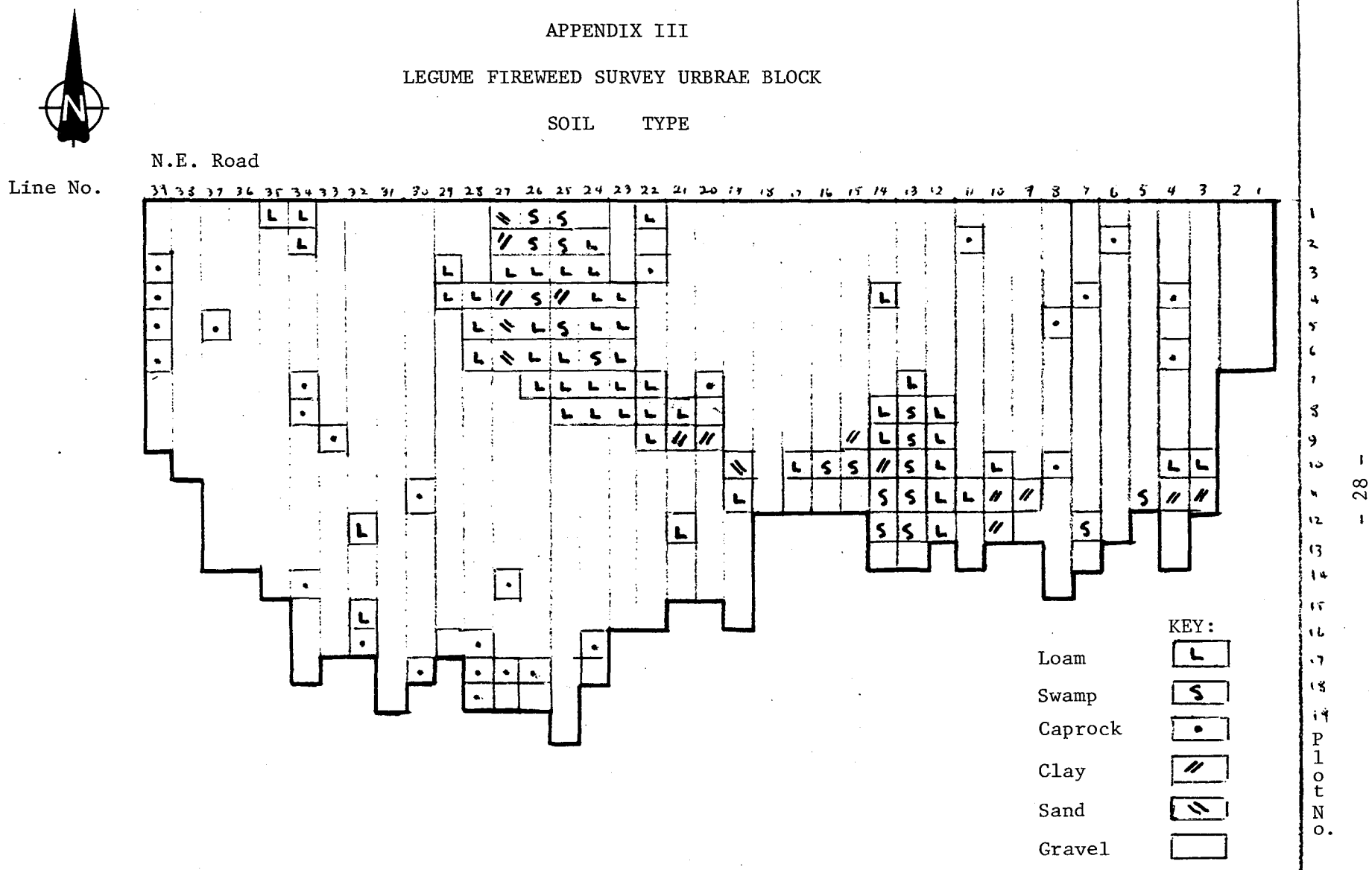
Plot No.

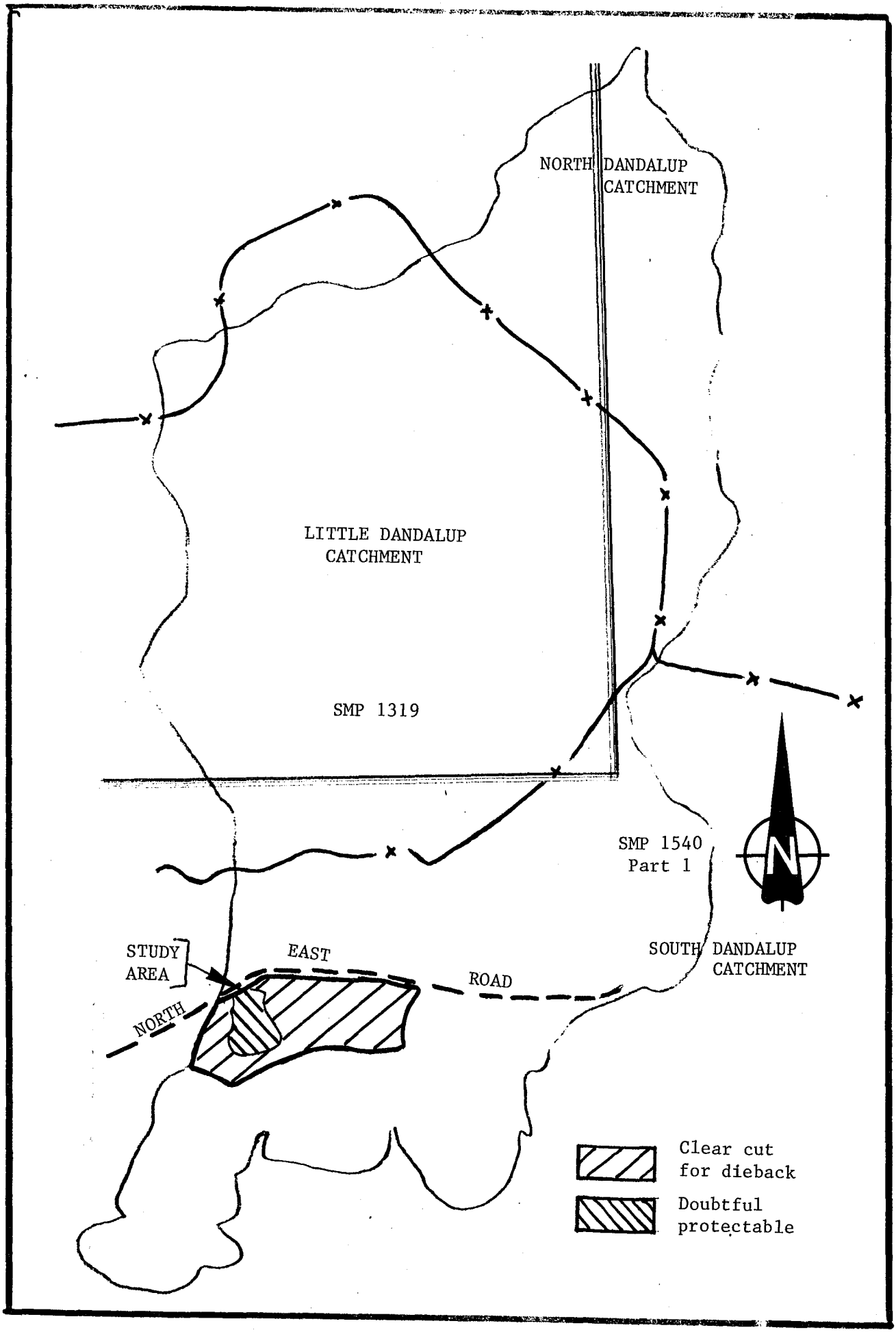
Valley bottoms	15.78%
Mid-slopes	58.82%
Ridge tops	25.43%

APPENDIX III

LEGUME FIREWEED SURVEY URBRAE BLOCK

SOIL TYPE

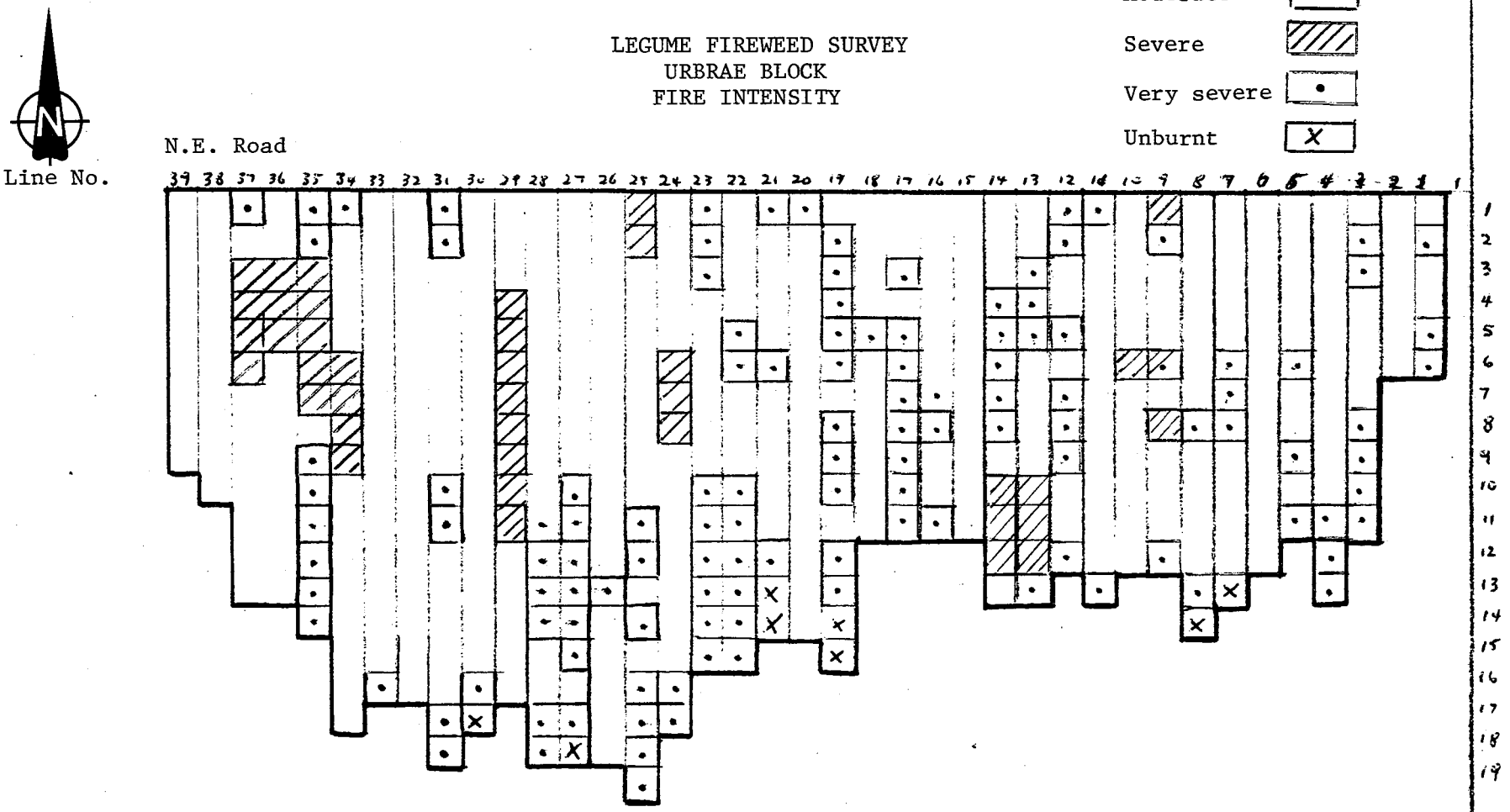



NORTH DANDALUP CATCHMENT
LITTLE DANDALUP CATCHMENT
SMP 1319
SMP 1540 Part 1
N
STUDY AREA
EAST
ROAD
NORTH
SOUTH DANDALUP CATCHMENT
Clear cut for dieback
Doubtful protectable

APPENDIX V

LEGUME FIREWEED SURVEY
URBRAE BLOCK
FIRE INTENSITY

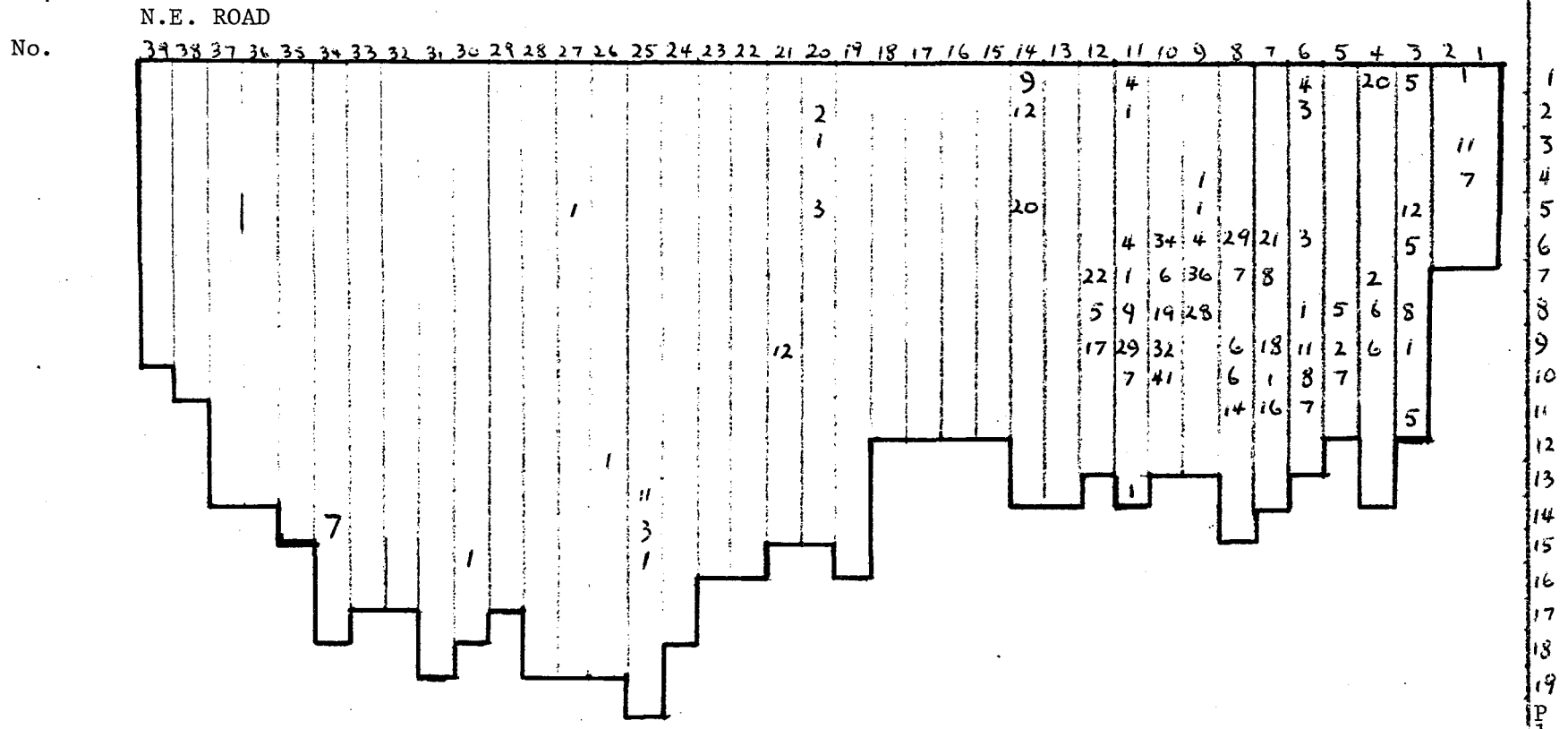
KEY: Moderate
Severe
Very severe
Unburnt



% Moderate	23.95%
% Severe	67.69%
% Very severe	7.03%
% Unburnt	1.33%

APPENDIX VII

LEGUME FIREWEED SURVEY URBRAE BLOCK
NO OF INDIVIDUALS PRESENT
BOSSIAEA AQUIFOLIUM - MARCH 1978

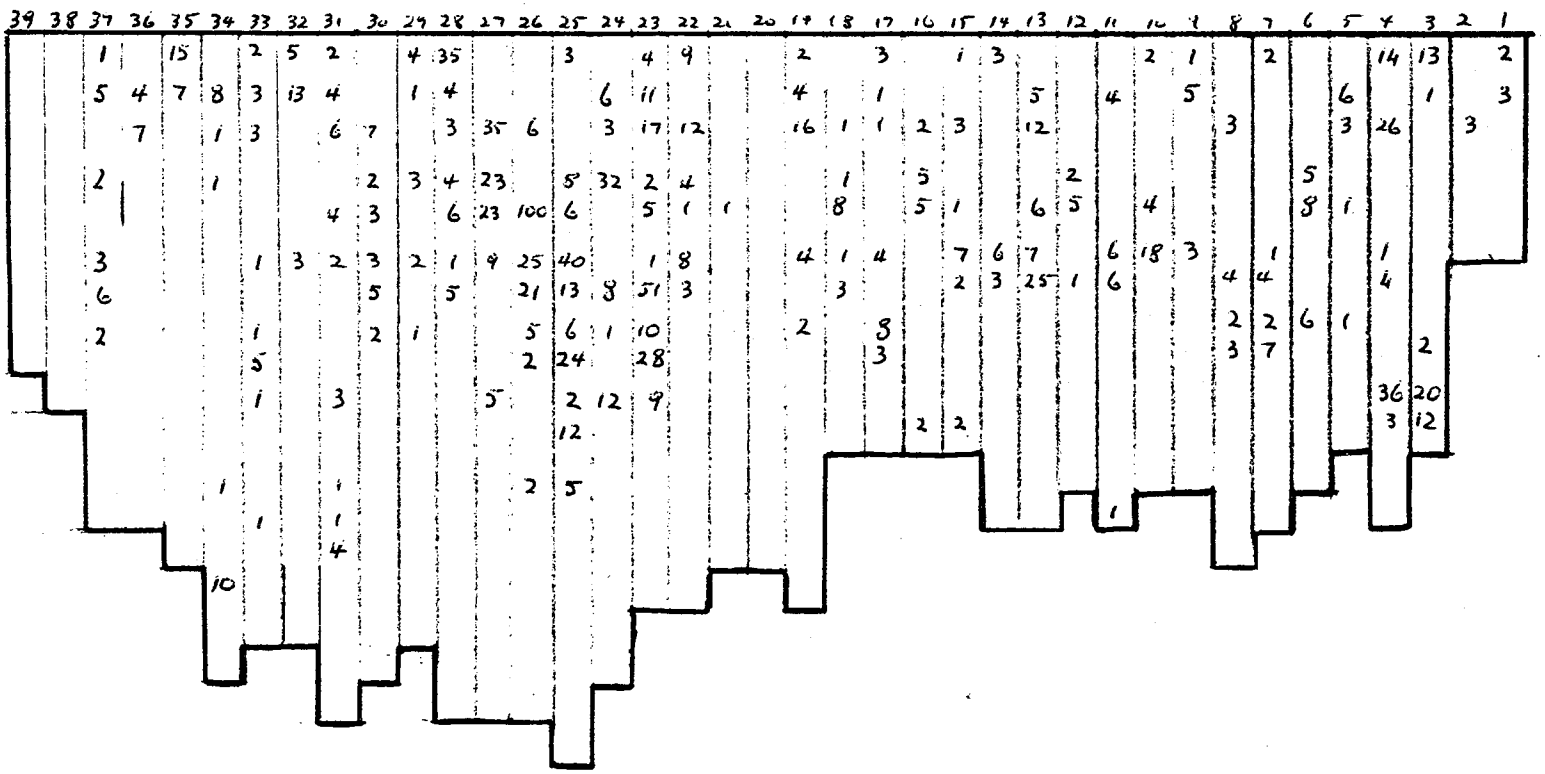


APPENDIX VIII

LEGUME FIREWEED SURVEY URBRAE BLOCK
NO OF INDIVIDUALS PRESENT
ACACIA STRIGOSA - MARCH 1978

N.E. ROAD

Line No



WHERE DID WE GO WRONG?

J. McCormick

The following is a quotation from G.B. RYLE, Chairman, I.O.W., Naturalists Trust Ltd., United Kingdom.

"The Forest Laws of William the Conqueror were stringent.

Though there seems to be no foundation for the stories that he laid waste to all the hamlets in the forest in order to ensure full privacy for his hunting, it is quite certain that inhabitants and travellers alike needed to obey very strict codes of behaviour if they wished to avoid the death penalty.

Minor forest offences were comparatively lightly dealt with just by blinding or maiming for life."

MURPHY'S CORNER

Murphy's Law, which in its most basic form states that "If something can go wrong, it will", is well known to almost every worker in the management or research field.

Variants of Murphy's Law, as they apply to forestry have never been well documented. While most of its theorems are familiar to us all, the effort has not yet been made to commit them to paper. This needs to be done, for the various propositions provide many a valuable lesson for both the aspiring forest manager and the future historian.

Contributions are welcome, and may be recorded in future issues of Forest Notes. In the meantime, here are just a few of the better known "Axioms of Murphy", as contributed by our old friend D.F.O. Codswollop of Ballsdup Division.

1. For any sawmilling permit, problems of management and control are always in inverse proportion to the permissible intake of the mill.

2. Irrespective of the season of the year a prolonged period of fine hot weather will always follow any showdown with the industry over winter logging problems. (Corrollary No. 1: An unseasonable drought will commence on the day after planting has started. Corr. No. 2: Post-mortem investigations of serious wildfires always occur during a snap period of intense cold and heavy rain.)

3. In a naturally seeded karri regeneration area, full seedling germination will never occur until remedial planting has been completed.

4. An unexpected upgrading of log quality by the Industry is always timed to precede an unexpected bit of permit control by a senior officer by a period insufficient for the D.F.O. to have heard about it.

5. The bloke hooking logs on the mill landing will always be fully and accurately informed about the details of F.D. staff transfers in advance of the officers who are themselves to be transferred.

6. Bulldozers, heavy duties and V.H.F. repeaters will always break down for the first time in months on the eve of a bushfire crisis.

7. Any hop-over from a prescribed burn will always be drawn to the highest value area on the burn perimeter - irrespective of wind direction at the time!

8. At any F.D. Staff Conference or meeting, those to arrive late will always comprise those with the least distance to travel (Corrollary No. 1: At the same meeting, time spent discussion any agenda item will be directly correlated with the triviality of the subject matter of that item).

A CONSERVATIONIST'S LAMENT

The world is finite, resources are scarce,
Things are bad and will be worse.
Coal is burned and gas exploded,
Forests cut and soils eroded.
Wells are dry and air's polluted,
Dust is blowing, trees uprooted.
Oil is going, ores depleted,
Drains receive what is excreted.
Land is sinking, seas are rising,
Man is far too enterprising.
Fire will ravage with man to fan it,
Soon we'll have a plundered planet.
People breed like fertile rabbits,
People have disgusting habits.

THE TECHNOLOGISTS'S REPLY

Man's potential is quite terrific,
You can't go back to the Neolithic.
The cream is there for us to skim it,
Knowledge is power, and the sky's the limit.
Every mouth has hands to feed it,
Food is found when people need it.
All we need is found in granite
Once we have the men to plan it.
Yeast and algae give us meat,
Soil is almost obsolete.
Men can grow to pastures greener
Till all the earth is Pasadena.

K. Boulding.

The following has been supplied by the Chief Analyst, BIOSIS Previews, National Library of Australia, for inclusion in Forest Notes.

"INFORMATION SERVICES IN THE LIFE-SCIENCES

The Australian National Scientific and Technological Library (ANSTEL), a branch of the National Library of Australia, has been established to improve the access of the Australian community to the world's scientific and technological literature. To this end, ANSTEL has developed a wide range of services based on computerised information retrieval systems.

One such service is the BIOSIS Previews data base. BIOSIS Previews is the magnetic tape equivalent of BioReserach Index and Biological Abstracts. It covers over 8,000 serial and non-serial publications from over 100 countries and provides access to more than a quarter of a million articles per annum.

This service has arisen through the development of modern printing technology. Over the past thirty years publications such as Biological Abstracts and BioResearch Index have been increasing in size, matching the growth of the number of articles, reports, reviews and letters published. To keep up with this increase, many publishing houses have had to turn to computer phototypesetting. The master tape used for this process can also be used as an information source in its own right. By using quite simple logic an analyst can set up a search which will pull out very specific articles to form a list of titles tailored to an individual's information needs. Anyone needing information in the life-sciences area will find this service a great time-saver.

There are three ways to use the service. A current awareness search provides a subscriber with twelve computer print-outs per annum. Each citation is printed on a card which can be used to build up a subject file. Searches of this type can be amended at anytime should the subscriber's information needs change. Secondly, a retrospective search can be set up to cover any period from 1969 to the present. These searches are carried out on computers located in California, U.S.A., and the print-out, in the form of a series of pages, is mailed to Australia. The third type of service consists of monthly information bulletins, these are designed to provide general coverage of broad, and fairly popular, subject areas such as heavy metal pollution, pest control, pupulation genetics etc.

Yearly subscriptions to information bulletins and current awareness searches are $10 and $75 respectively. Retrospective search charges vary, ranging upwards from a base price of $50 depending upon the complexity of the search and the size of the print-out. Prior approval is required before analysts go ahead with searches expected to cost more than the base price.

ANSTEL also provides a back-up service. Articles can be obtained through the ANSTEL National Lending Service by the use of pre-paid photocopy/loan forms. Search request forms, information about pre-paid forms and further information about BIOSIS Previews or any other ANSTEL service can be obtained by contacting the Chief Analyst, BIOSIS Previews, ANSTEL, Post Office Box E333, Canberra, A.C.T., 2600. 'Phone (062) 621 548."

SAFETY AWARD GOES NATIONAL

By now, most personnel will have learned that the Department has received both the State and National 1978 C.M.L. Awards for Industrial Safety.

Assistant Conservator F.J. Campbell and Safety Officer A. Kesners made the hazardous Nullarbor crossing to collect the National Award in Melbourne on Friday, November 3, 1978.

For your information, we reproduce the key paragraphs of two circular letters from the Conservator.

September 25, 1978.

"On Friday, 22nd September, 1978, I attended the presentation of the C.M.L. Industrial Safety Award for W.A. by the Premier, The Hon. Sir Charles Court, O.B.E., M.L.A., and had the pleasure of being presented with the winning Award on your behalf.

The citation for the Award reads as follows :-

> "FORESTS DEPARTMENT OF WESTERN AUSTRALIA:
>
> Highly commended for a most attractive and comprehensive Presentation, amply supported by quantitative information on Injury Frequency and Severity, demonstrating continued improvement over many years and by excellent comprehensive job safety instructions and background material.
>
> W.A. STATE AWARD WINNER FOR 1978. ELIGIBLE FOR FINAL JUDGING TO DETERMINE THE NATIONAL AWARD."

November 9, 1978.

> "I am pleased to advise that on Friday 3 November 1978 the Western Australian Forests Department was announced the winner of the National Award. We were selected from amongst the winners for all other Australian States and will hold the National Trophy for one year. The name of the W.A. Forests Department has been engraved on the roll of winners, and it is particularly pleasing to take the inaugural place on this roll.
>
> To be awarded Australia's top award for Industrial Safety, ahead of private companies and Government Departments in the other six States is an outstanding achievement of which I am very proud."
>
> "I take this opportunity to thank each and every one of you for your contribution to our current Industrial Safety performance."

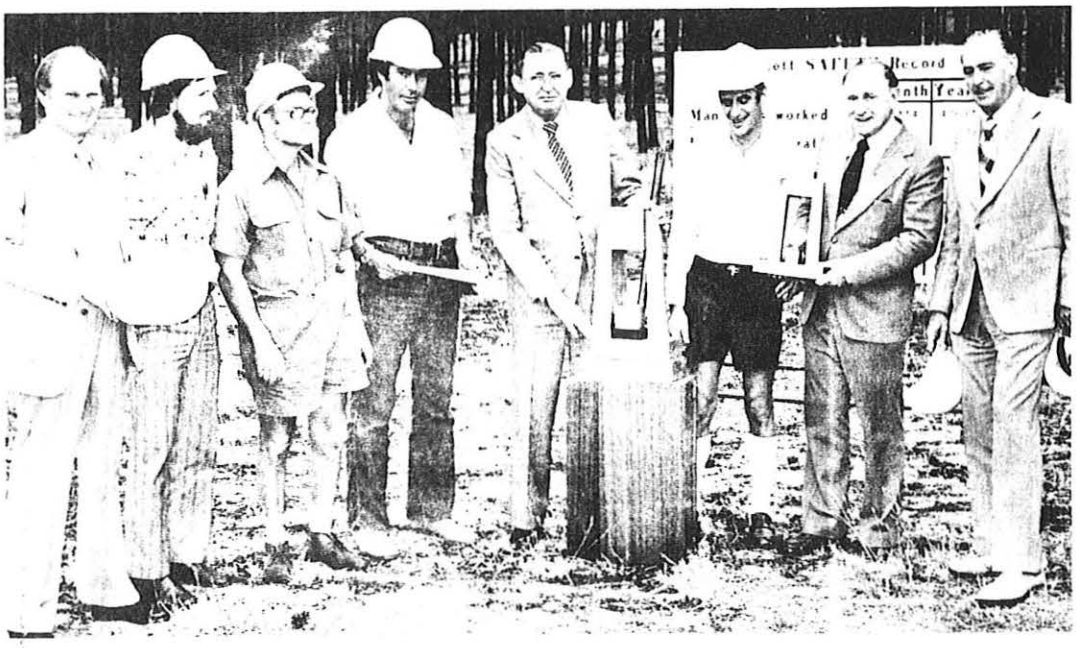
The front page of "I.F.A.P. News' of December, 1978 is reproduced on the following page.

A WINNER'S BONUS

By now we all know that the W.A. Forests Department won the prestigious C.M.L. national safety award, run in conjunction with the National Safety Council of Australia, for the excellence of their entry and their safety success over a long period since the first programme was introduced. IFAP is proud to have been associated with this safety programme.

One or the proudest men at the Melbourne presentation was Safety Officer Arthur Kesners.

The Department was so delighted with the effort that Arthur was not only flown over to Melbourne for the presentation but was also given a week's study tour of industrial sites in and around Melbourne. This provided Arthur with a wonderful opportunity to see the safety problems, and how they were overcome, of other industries and in some cases relate them to his own.



Pictured showing the trophies which went with the Award at the Kelmscott Forests Department site are the Conservator of Forests, Mr Bruce Beggs, holding the C.M. L. National Safety Award in the centre of the group. Assistant Conservator Mr Frank Campbell is holding the Award for the State winner and on his left is the Safety Officer Mr Arthur Kesners. On the left of the group is Mr Alan Hill, Chairman of the Forest Department Safety Committee.

AWARD TO JACK MARSHALL

Her Majesty Queen Elizabeth II has made an award to the first Forests Department Safety Officer.

Senior Forester Jack Marshall who was the Department's Safety Officer from 1966 until his retirement in 1977, has been awarded the Imperial Service Medal for "faithful and meritorious service as a member of the Public Service".

Jack's dedication to the cause of accident prevention and his leadership qualities played a large part in the success that the Forests Department achieved in the field of Safety.

CONGRATULATIONS, JACK!

C H E C K A G A I N!

Some drivers glance into the rear view mirror to see if things are clear before making a move. Then they wait several seconds before making the move, but don't re-check the rear. The rear view picture can change drastically in a few seconds!

BUSHFIRE

The man was driving along the road
The trees looked tall and green;
But the undergrowth looked dry and brown
As dry as he had seen.

The air was hot and hard to breathe,
He felt like he would choke,
And as he drove around the bend
He saw the drift of smoke.

He took no notice, at least not at first
It was nothing new to him,
But the further he went, the thicker it got
Till the sun was very dim.

"What's this?" he thought as he slowed right down
For this he did not desire;
Then suddenly he became aware of the terrible thing,
It was a wild bushfire.

He stopped the car so he could see,
He tried to turn around;
But the smoke was thick, the road not wide
He could hardly see the ground.

His mind ran wild, as the smoke encroached,
He was no schizophrenic.
He thought of the things he'd read on fire
His first thought "Do not panic".

Just the thought of the word was enough for him,
He wanted to scream and yell;
He wanted to get out upon the road
And run like flamin' hell!

By now the flames had reached his car,
He felt like he would faint;
It was hot, red hot, he could hardly breathe,
He could smell the burning paint.

"Stay in the car" he told himself
For this is what he'd read;
"The moment you open the door of the car
You can consider yourself as dead".

The heat got worse, his mouth was dry,
His lungs felt scorched and seared;
Death was sitting at his door
And this is what he feared.

At last he saw the flames die down,
The moment he'd waited for
When he could brace his aching lungs
And open up the door.

He opened the door and ran like mad,
Stark horror on his face;
He ran and ran from the burning car
To where the fire had left a space.

Time went by, the fire died down
His mind was all perplexed
For he was alive, very much alive
But his car was totally wrecked.

The trees were black, the scrub was gone
And no thing looked the same;
The fire had destroyed the lot of it
Engulfed in searing flame.

The moral of this story,
Or some may say a poem,
Is read those books on "Safety"
And make sure they sink right home!

N. D. HADDRILL
OVERSEER - YANCHEP