

WESTERN AUSTRALIA

1956

REPORT

on the operations of

THE FORESTS DEPARTMENT

for the

YEAR ENDED 30th JUNE, 1956

by

A. C. HARRIS, B.Sc. (Adel.)
CONSERVATOR OF FORESTS

PERTH:

By Authority: William H. Wyatt, Government Printer

1956

Forests Department,

Perth, 25th September, 1956.

To the Honourable Minister for Forests.

Sir,

I have the honour to transmit herewith my report on the operations of the Department for the year ended 30th June, 1956.

Yours faithfully,

A. C. Harris,

Conservator of Forests.

FORESTS DEPARTMENT

Annual Report of the Operations for the Year ended 30th June, 1956

I. SUMMARY.

Sawn and hewn timber production for the year under review, 1955-56, at 19,219,079 cubic feet, exceeded that of any previous year since 1926, being nearly 1.5 per cent. higher than last year. Of this total, 14,651,045 cubic feet were held in the State and 4,568,034 cubic feet were exported, of which about 34 per cent. was sent overseas. The total exports represented 23.8 per cent., as compared with 18.3 per cent. last year.

The production in the square represents about 1.1 million loads of standing timber, and includes small quantities of pine and wandoo. Only 74 per cent. of this timber came from State Forests and Crown Lands, and the balance of the cut was produced from Private Property, which is a rapidly diminishing source of supply. There is virtually no reforestation on Private Property, and the progress of land settlement clearing is rapidly reducing Crown Land supplies outside the State Forest of 4 million acres. Ultimately State Forest will be the only area from which continuous timber production can be expected.

The total value of sawn timber this year was estimated at £10,189,700, while other forest products were calculated to have a value of over £2,000,000.

Departmental revenue from all sources was £1,151,115.

The following table illustrates the recent trends in production and consumption :—

Year.	Production.			Total Export.	Local Consumption.	Sawmills.	Monthly Average of Men Employed.
	Sawn.	Hewn.	Total.				
	cub. ft.	cub. ft.	cub. ft.	cub. ft.	cub. ft.	No.	No.
1925-26	14,522,733	6,277,952	20,800,685	12,001,384	8,799,301	....	....
1937-38	11,720,642	2,573,540	14,294,192	7,545,744	6,748,448	134	3,112
1945-46	8,869,847	14,041	8,883,888	3,373,025	5,510,863	128	2,876
1950-51	12,571,635	1,183	12,572,818	2,342,492	10,230,326	256	4,047
1951-52	14,717,112	....	14,717,112	2,373,553	12,343,559	280	4,708
1952-53	16,973,332	1,761	16,975,093	3,965,188	13,009,905	306	5,395
1953-54	18,343,974	1,454	18,345,428	3,858,956	14,486,472	299	5,724
1954-55	18,915,967	4,561	18,920,528	3,477,249	15,443,279	279	5,879
1955-56	19,213,771	5,308	19,219,079	4,568,034	14,651,045	274	5,804

Restrictions placed on overseas timber exports in past years by the Commonwealth, although welcomed by this State and by South Australia during the peak periods of housing activity, have resulted in the loss of overseas markets which may be difficult to recapture but which are needed today to assist both the economy of the State and the opening up by sawmilling of over-mature forests in the far South.

It is encouraging to note that over the past two years a further 457,480 acres have been permanently dedicated as State Forest, and that the State Land Utilisation Committee has recommended the addition of a further 334,500 acres. There are yet other areas which are worthy of dedication, either as State Forest or Timber Reserves, and studies from air photos in connection with these areas are being pursued.

The necessity to purchase land suitable for the growing of *Pinus radiata* has been recognised, and 6,652 acres were purchased during the last two years. Further acquisitions are contemplated as suitable land which has proved uneconomic for farming becomes available.

The present aim of a planting programme of 2,000 acres per annum has not yet been attained, mainly owing to a shortage of Loan money. The importance of the pine planting policy cannot be over-stressed when it is realised that the present yield from our native forests is about the maximum which can be sustained for the next few decades. Only by plantations of fast growing species can this yield be augmented to provide all local requirements when our population reaches the million mark.

Royalty revisions were completed at the commencement of the financial year and are reflected in the increased gross revenue of the Department.

During the year maps of various types were produced or revised over an area of 2.9 million acres.

During the past two years emphasis on air photo interpretation and field assessment has yielded information for the comprehensive revision of the General Working Plans for Jarrah and Karri, and Wandoo (No. 79), and Pine Plantations (No. 80). Both plans were approved by the Governor in Executive Council in January, 1956, and provide for a further revision in 1960.

Working Plan No. 79 provides for the permissible cut from State Forests and Crown Lands. This has been increased to approximately 900,000 loads per annum, which is made possible only because of the increased utilisation of poorer quality trees by the Sawmilling Industry during the past few years. All assessments of permissible cut depend on the type of log which the industry can accept, and as these standards are reduced, so the cut can be increased. This potential increase of 100,000 loads must come from the development of forests in the far-Southern Region of the State, rather than from the Central and Northern Forest Regions. The plan provides for the reduction of cutting in the North when increased cutting has been organised in the South. Economic conditions at present, however, indicate that the time is not opportune for the development of large-scale milling in the far-South.

Areas cut over each year are being suitably treated to produce natural regeneration of the Forest, and fine sapling stands are resulting.

Expanded Departmental activities necessitated the increase of the vehicle fleet by 48, while several old vehicles were adapted for special use as mobile cranes for bush and plantation work.

The major maintenance workshops at Dwellingup and Manjimup are now well fitted with equipment, and electric lighting plants have been installed at two more centres.

The prolonged wet winter this year curtailed the normal controlled burning period, but in spite of this, good progress was made with the reduction of accumulated debris by prescribed burning.

The fire season included the hottest January in the history of the State, and during the 10 weeks following mid-December no rain at all was received in the Northern forests and only 10 points in the South. Fortunately these conditions did not lead to many serious fires, and the forest area burnt was actually less than for previous years.

Attention of Research Officers has again been focussed on plantation soil surveys. Regrowth thinning experiments have been established in Jarrah and Karri, while silvicultural studies into litter accumulation and disintegration, and work on Crown development and stocking has continued.

Staff training schools were conducted in Fire Control and Timber Inspection during the year.

Associated with the various projects discussed above, some of the major works completed during the year were :—

- 1,038 miles of new roads and tracks.
- 55 miles of new telephone line.
- 32 new houses.
- 7 new offices and a number of other buildings.

2. REVENUE AND EXPENDITURE.

Revenue.

For the first time in the history of the Department the gross revenue exceeded one million pounds. The previous highest revenue received in any one year was in 1954-55, when it amounted to £804,755.

The following tabulation shows a comparison of the two years :—

	Year ended 30th June, 1955.	Year ended 30th June, 1956.
	£	£
Royalties	508,826	798,435
Rents of Leases, etc.	2,124	2,186
Sandalwood	52,752	65,803
Departmental	241,053	284,691
	£804,755	£1,151,115

The major collections under the heading of "Departmental" were :—

	£
Sale of Pine Logs and Pine Timber	126,426
Hardwood Conversion Sales	122,137

(Details appear in Appendix 1A.)

Expenditure.

The total expenditure charged against Consolidated Revenue Fund amounted to £323,929. This amount was expended as follows :—

	£
General Administration of the Forests Act and Regulations, including refunds of	
Royalty to Settlers (£15,357)	137,428
Administration of the Timber Industry Regulations Act	3,449
Direct Conversion of Pine	86,422
Direct Conversion of Hardwood	72,870
Recoupable Projects	23,760
	£323,929

(Details appear in Appendix IA.)

APPORTIONMENT OF NET REVENUE OF DEPARTMENT.

	£	s. d.	£	s. d.
Gross Revenue for Year 1955-56			1,151,115	10 5
Less Revenue from Recoupable Projects			19,377	8 11
			1,131,738	1 6
Consolidated Revenue Fund Expenditure and direct charges by Treasury	327,562	0 10		
Less Expenditure on Recoupable Projects	23,759	15 8		
	303,802	5 2		
Less Timber Industry Regulations Salaries and Incidentals	3,449	4 1		
			300,353	1 1
Net Revenue			£831,385	0 5
Nine-tenths of Net Revenue credited to Reforestation Fund during the year 1955-56.			£748,246	10 4

FORESTS IMPROVEMENT AND REFORESTATION FUND.

	£	s. d.	£	s. d.
Balance—1st July, 1955			244	9 11
Nine-tenths Net Revenue			748,246	10 4
Federal Aid Road Grant			65,000	0 0
Direct Credits			6,221	9 4
			819,712	9 7
Less Expenditure—				
General Account	694,837	14 9		
Federal Aid Road Grant	65,000	0 0		
			759,837	14 9
Balance as at 30th June, 1956			£59,874	14 10

(Details appear in Appendix 1B.)

LOAN FUNDS EXPENDITURE.

	£	s. d.
Plantations	82,434	14 4
Administration	17,565	5 8
	£100,000	0 0

(Details appear in Appendix 1C.)

GROSS EXPENDITURE.

The total expenditure of the Department charged against all Funds was as follows :—

	£
Consolidated Revenue Fund	323,929
Reforestation Fund, including Federal Aid Roads Grant	759,838
General Loan Fund	100,000
	£1,183,767

3. THE FOREST AREA.

State Forest.

As a result of the recommendations of the State Land Utilisation Committee, the area of State Forest was increased by 57,480 acres to the present total of 3,891,687 acres. In addition to the areas finalised, there is a further 334,500 acres recommended by the Committee now awaiting gazettal.

Further areas sought by the Forests Department but still under consideration by the Committee are :—

	acres
Chapman Brook....	24,650
South of Blackwood River	100,000

The Department is continuing the study of large areas East of Mt. Cooke and in the Kent River and Hay River zones to determine whether the quality of the forest warrants an application for its dedication.

Timber Reserves (Forests Act 1918-1954).

The area held under Timber Reserve as at 30th June 1956 was 1,821,271 acres ; the decrease of 10,600 acres was due to the dedication of this area as State Forest.

Of the total area of reserves only about 114,000 acres in the Southwest is capable of producing milling timber. The balance is mainly low grade fuel and mining timber forest of the inland.

Land Purchases.

The policy of acquiring land suitable for growing *Pinus radiata* has been vigorously continued as areas and funds have been available. Much of this land although wholly or partly cleared is of low value for agriculture due to its topography, to its being non-arable and to the difficulties of eradicating bracken and rabbits. Under pine plantation it will form a profitable long-term investment leading to the development of new and integrated industries—pulp, paper, plywood, hardboard, in conjunction with sawmilling.

In addition to pine areas, some natural forest land privately held is found to be of greater value for forestry than for clearing for agriculture and some areas of this nature have been purchased after detailed assessment. Over a period of years it is expected that further areas suitable for dedication as State Forest will be acquired.

During the year 16,760 acres of freehold land were either acquired direct by the Department, or through the Public Works Department ; of this 4,098 acres were purchased for the establishment of a pine plantation in the Blackwood Valley. Included also were a number of townsite blocks required for the extension of the Divisional Headquarters in this locality.

The remaining areas comprising some 12,662 acres carried good forest desirable for inclusion in State Forest.

The purchase price paid for all this land was £38,187.

Land Released.

As a result of 144 applications covering 82,752 acres received by the Department of Lands and Surveys or direct, the Forests Department agreed to the release of 41 964 acres of Crown Land for agricultural and pastoral purposes. Only 83 acres of this area was State Forest.

4. SAWMILLING HEWING AND TIMBER INSPECTION.

Production of 19,219,079 cubic feet of sawn and hewn timber exceeded last year's record figure. Of this 4,948,322 cubic feet were from Private Property. The increase was due to greater production from Crown Land and the slight decrease in Private Property production emphasises that the time is coming when exhaustion of supplies from this source is inevitable.

The reduced production caused by the loss of one large and four small sawmills by fire was more than compensated for by two new mills coming into production and a number of mills increasing their output.

Nineteen new mills were registered during the year and 41 ceased to operate, thus reducing the total to 274 as at 31st December 1955. Of these 151 are on Crown Land and 123 on Private Property.

Details of the production of mill logs and sawn timber are given in the accompanying tables and Annual Log Production (1829-1956) is given in Appendix 2E.

Departmental plantations yielded 21,431 loads of pine thinnings which was an increase of 13.2 per cent.

1,815 loads of Jarrah and Karri, and 540 loads of pine were used in local plywood factories.

With the decrease in local scantling trade and an increase in exports there has been an increased demand for timber inspection by buyers of Western Australian timber.

Sawn sleepers produced during the year under review amounted to 3,596,487 cubic feet of which 1,225,116 cubic feet were from Private Property. Of this quantity, 3,422,035 cubic feet were inspected. Hewn sleepers produced and inspected totalled 5,308 cubic feet, of which 4,067 cubic feet came from Private Property.

Other sawn timber inspected totalled 516,047 cubic feet, of which 19,104 cubic feet were from Private Property. Of the 6,660 piles and poles produced only 135 (2,902 lineal feet) were inspected.

TIMBER PRODUCTION.

Production of Timber for year ended 30th June, 1956, (exclusive of Mining Timber, Firewood, Piles and Poles).

	Mill Logs.					Hewn Timber.		Grand Totals.	
	Jarrah.	Karri.	Other.	Totals.		Jarrah.			
				In Log.	Recovery of Sawn Timber.	In Log.	In Square.	In Log.	In Square.
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Crown Lands	cub. ft. 28,553,757	cub. ft. 8,298,938	cub. ft. *2,952,478	cub. ft. 39,805,173	cub. ft. 14,269,516	cub. ft. 6,205	cub. ft. 1,241	cub. ft. 39,811,378	cub. ft. 14,270,757
Private Property	11,294,291	765,740	†1,692,966	13,752,997	4,944,255	20,335	4,067	13,773,332	4,948,322
Grand Totals	39,848,048	9,064,678	4,645,444	53,558,170	19,213,771	26,540	5,308	53,584,710	19,219,079

Figures in columns (1), (2), (3), (4), (6) and (8) are in the round based on full volume measure. Figures in columns (5), (7) and (9) are the volumes of sawn or hewn timber in the square.

* Comprises :—1,176,821 cub. ft. Pine ; 999,017 cub. ft. Wandoo ; 377,165 cub. ft. Sheoak ; 313,791 cub. ft. Yarri ; 51,434 cub. ft. Marri ; 29,581 cub. ft. Tuart ; 4,495 cub. ft. Yellow Tingle Tingle ; 174 cub. ft. Other. † Comprises :—1,328,264 cub. ft. Wandoo ; 222,174 cub. ft. Yarri ; 63,065 cub. ft. Pine ; 42,651 cub. ft. Sheoak ; 30,464 cub. ft. Tuart ; 4,542 cub. ft. Marri ; 1,806 cub. ft. Other. In addition to the above a total of 76,755 tons of Wandoo logs were treated for Tannin extract.

The Quantity of Sawn Timber and Hewn Timber Produced from Crown Lands and Private Property for the past Two Years.

Year.	From Crown Lands			From Private Property.			Total Quantity.	Estimated Value of Timber Obtained.
	Sawn Timber other than Sleepers.	Sawn Sleepers.	Hewn Sleepers.	Sawn Timber other than Sleepers.	Sawn Sleepers.	Hewn Sleepers.		
1954-55	cub. ft. 11,517,307	cub. ft. 1,941,830	cub. ft.	cub. ft. 4,499,775	cub. ft. 957,055	cub. ft. 4,561	cub. ft. 18,920,528	£ 9,710,278
1955-56	11,898,145	2,371,371	1,241	3,719,139	1,225,116	4,067	19,219,079	10,189,700

5. SAWN TIMBER PRODUCTION AND DISTRIBUTION.

The total production of sawn and hewn timber for the year amounted to 384,381 loads, an increase of 5,971 loads or 1.5 per cent. over the previous year. The increase comprised 2,686 loads of Jarrah and 3,925 loads of other timbers. Although production of sawn Karri fell by 638 loads, the output of 65,265 loads represented 16.99 per cent. of the total.

The distribution of the timber production was as follows :—

Distribution.	Sleepers.		Other Sawn Timber.		Total.
	Karri.	Jarrah and other species.	Karri.	Jarrah and other species.	
	loads.	loads.	loads.	loads.	
Interstate	6,819	17,573	7,975	27,426	59,793
Overseas	<i>Nil.</i>	13,281	11,094	6,228	30,603
Local	<i>Nil.</i>	34,363	39,377	220,245	293,985
Total	6,819	65,217	58,446	253,899	384,381

The per capita consumption of sawn timber (including sleepers) remained high at 259 super feet in spite of the slackened demand for house building timbers towards the latter part of the year.

Most of the small sawmills operating in the Metropolitan area have been drawing their log supplies from Private Property, but this source of supply is nearly exhausted. Eventually most of these mills will have to close down, as there are no alternative log supplies which can be made available to them. These mills started up of their own accord without any encouragement from, or recognition by, the Forests Department; no allowance has been made for them in determining the permissible cut for State Forest.

6. FIREWOOD PRODUCTION AND CONSUMPTION.

Firewood consumption for the State was estimated at 820,517 tons, over half of which was used for industrial and mining fuel. It is interesting to note, however, that sawdust is being increasingly used as fuel by some industrial concerns and sawmills.

Over 103,000 tons of sawdust were used this year.

In the following table, approximately 55 per cent of the firewood produced is accounted for and the remainder must come from Private Property for which specific records are not available.

<i>Production :</i>	Crown Lands	Private Property	Total
	tons.	tons.	tons.
Domestic Firewood—			
Firewood Permits (South-west)	52,643	522	53,165
Mill Waste sold as firewood (estimated at 50 per cent. of total)	36,955	21,938	58,893
Domestic use on Goldfields	26,151	...	26,151
Total Domestic Firewood as shown by returns received	115,749	22,460	138,209
Industrial Firewood—			
Supplied under License—Nos. 3 to 8 pumps	43,884	...	43,884
Other pumps	120	...	120
Factories, etc.	59,679	522	60,201
Mill Waste sold as firewood (estimated 50 per cent. of total)	36,954	21,938	58,892
Mill Waste used as firewood	98,756	3,346	102,102
Total Industrial Firewood as shown by returns received	239,393	25,806	265,199
Mining Firewood	59,159	...	59,159
Total Firewood produced (as shown by returns received)	414,301	48,266	462,567
<i>Consumption :</i>	tons.		
Estimated Domestic	372,028	(at 2 tons per dwelling)	
Industrial	345,326	(ex Govt Statistician)	
Pumping Stations	44,004	(as per F.D. returns)	
Mining	59,159	(as per F.D. returns)	
Total	820,517		



Plate Two—Karri Forest—A Fine Natural Stand. A single large Karri may contain enough timber to build three or four timber homes

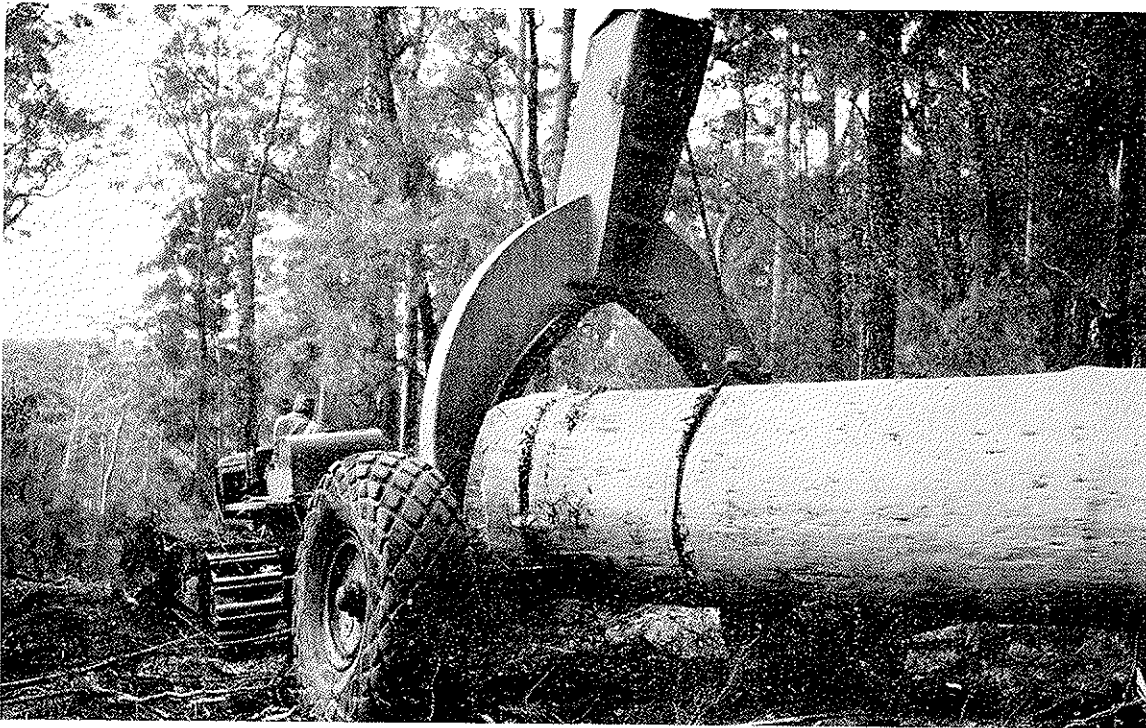


Plate Three—Hauling Karri log by Tractor and Logging Arch

7. SANDALWOOD.

The Sandalwood stock position remained acute, and despite a drive by Departmental officers resulting in an increased tonnage for the year, the demand from overseas continued to exceed the supply. The Laverton area continued to be the main source of supply. Efforts are being continued to increase output further.

This industry provides valuable work for residents of the outback Goldfields areas, and assists prospecting.

Provision has been made for pullers to drop a few Sandalwood nuts in the hole made when a tree is pulled in an endeavour to ensure regeneration. In areas now being tapped there is less risk from destruction of seedlings by sheep and rabbits.

Following the marketing of over 1 ton of Sandalwood grown by the Department on Reserve 2886 near Pingelly, as referred to in last year's Annual Report, it was decided to carry out further experimental plantings in the Narrogin area. Local seed was used for the purpose and six plots were established on Peters, Turner, South, Bald Rock, Stokes and Lol Gray blocks in April-May, 1956.

The quantity of Sandalwood delivered during the year (including deliveries from orders placed during the previous year) was 566 tons as compared with 470 tons for the previous year and was made up as follows :—

	tons.
Crown Lands—	
Logwood (including roots and butts)	544
Pieces	22
Private Property—	
<i>Nil</i>	—
Total	566

The total quantity of Sandalwood exported was 492 tons compared with 390 tons for the previous year. A trial shipment of approximately 2 tons of shavings resulting from machine cleaning at Fremantle was made.

No orders for logwood were placed by the oil distillers, but 115 tons of roots and butts severed from the logwood were delivered to distillers for oil distillation purposes.

7,793 lbs. of Sandalwood oil were produced by local distillers during the year and this was exported out of the State.

8. FOREST PRODUCE.

Piles and poles obtained from Crown Lands totalled 272,014 lineal feet representing an increase of approximately 22,000 lineal feet on last year's production. Of this quantity, 15,923 lineal feet were supplied by Departmental cutting. Records available show that approximately 322,000 lineal feet were obtained from Private Property. In addition, an unknown quantity from Private Property is utilised locally, and of this the Department has no record.

Although 200,000 fence posts and strainers were recorded, this figure must fall far short of actual consumption, as returns are not received from private owners.

Tanning materials, which form an important item of forest produce, exceeded the quantity obtained during the previous year. A total of 1,319 tons of Mallet bark were produced compared with 844 tons last year. 303 tons, including 167 tons from plantation thinnings were stripped from Crown Lands. Wandoo timber utilised for tannin extract production totalled 76,755 tons, of which 35,328 tons came from Crown Lands and 41,427 tons from Private Property.

Timber for mining purposes, apart from that supplied by sawmills, totalled nearly 38,000 tons, of which approximately 95 per cent. was produced under permits and licenses from Crown Lands. Of this percentage, over four-fifths was supplied from Crown Lands of the inland forest areas.

The popularity of Christmas trees continues to increase and 2,672 pine tops were sold for this purpose in 1955. Although originally sales were confined almost wholly to private individuals, retailers showed a greater interest and accounted for 87 per cent. of the sales.

Numerous other items of interest produced from forest areas are shown in the following table.

The estimated total value of this forest produce is over £2 million.

FOREST PRODUCE NOT ELSEWHERE INCLUDED IN PRODUCTION TABLES
OBTAINED DURING YEAR ENDED 30th JUNE, 1956

Description of Forest Produce.	South-Western Division and Agricultural Areas.			Northern Central and Eastern Goldfields.	Total.	
	Supplied by Depart- ment.	Other Crown Lands.	Private Property.*	Crown Lands.		
Mining Timber	Tons	226	19,204	1,706	16,630	37,766 tons
Sleepers for Goldfields Wood Lines	Cub. ft.	.....	.....	.....	7,056	7,056 cub. ft.
Charcoal (includes 11,944 tons ex Wundowie)	Tons	.....	4,296	7,716	.....	12,012 tons
Piles and Poles	Lin. ft.	15,923	256,091	322,023	.....	594,037 lin. ft.
Fencing Posts and Rails	No.	16,025	92,495	5,009	93,486	207,015 No.
Strainer Posts	No.	250	1,914	.....	.....	2,164 No.
Mallet Bark (includes 167 tons Thinnings)	Tons	167	136	1,016	.....	1,319 tons
Wandoo Timber for Tannin Extract	Tons	.....	35,328	41,427	.....	76,755 tons
Bean, etc., Sticks	No.	.....	6,000	.....	3,344	9,344 No.
Boronia Blossom	Lb.	.....	255	125	.....	380 lb.
Christmas Trees	No.	2,672	.....	.....	.....	2,672 No.
Stone	Cub. yds.	.....	4,022	.....	.....	4,022 cub. yds.
Sand	Cub. yds.	.....	376	.....	.....	376 cub. yds.
Loam	Cub. yds.	.....	10	.....	.....	10 cub. yds.
Sawdust consumed as fuel†	Tons	.....	.....	.....	.....	103,151 tons
Scout Staves	No.	144	.....	.....	.....	144 No.

* Complete figures for Private Property are not available. Only information furnished to the Department has been included.

† The apportionment between Crown Lands and Private Property unknown.

9. FOREST MANAGEMENT.

Survey and Map Production.

During the year survey work has covered 101 miles of theodolite control survey, and 522 miles of compass surveys of a lower order. In addition to this work the necessity for long-term records in the form of Progress Plans involved large mileages of approximate surveys to show cut-over areas (which are recorded quarterly for each sawmill permit), and for other operations.

These surveys were used for the construction of a variety of maps, including the control of air photo interpretation, which today has reached a high degree of importance in Forestry and must continue to expand. Photos required were obtained through the organisation of the State Mapping Committee, but at the present time are seriously in arrears due to both weather difficulties and financial stringency.

During the past year the Department obtained air photo coverage for 1½ million acres and carried out vegetation mapping of various types from these photos over a total area of 568,500 acres.

New Maps (scale 1" = 1 mile) have been produced covering 512,000 acres.

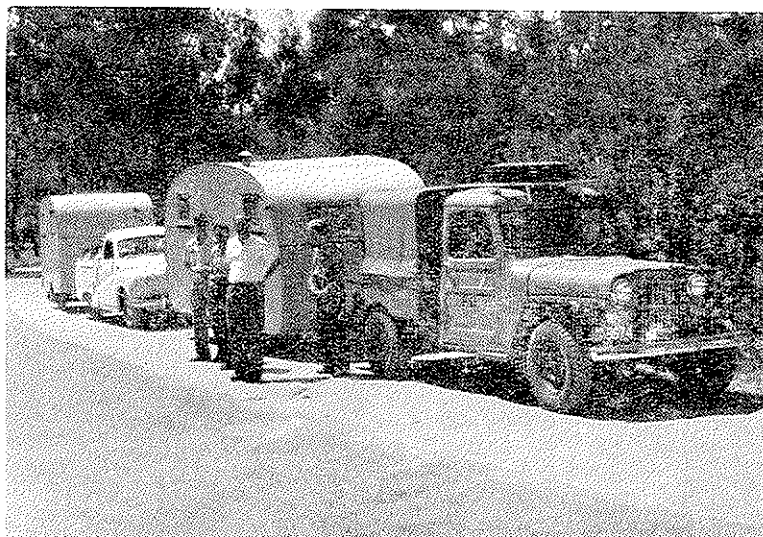


Plate Four—Forest Survey Party which carries out field survey for the control of mapping and air-photo interpretation work of the Department

Air Photo Interpretation and Assessment.

Forestry requires almost continuous assessment of the forest in order to improve the data required for Working Plans. To this end Working Plans offices have been established at Manjimup and Dwellingup with a small staff at each centre. The accurate determination of the permissible cut is largely dependent upon the progress of this work and today Western Australia is rapidly obtaining figures of greater accuracy than were possible in the past.

All assessment today, even that of small pine plantations, is based upon air photo interpretation, and a technique has been developed for our indigenous forests. This technique has reached a high practical stage and has considerably reduced the amount of field work which was necessary before air photos became available.

During the conference of the National Mapping Council in April, 1956, a demonstration was arranged at the Working Plans office, Manjimup, illustrating the methods used by the Department in surveys, assessment and air photo interpretation mapping. The Council commented enthusiastically on the "very comprehensive and efficient system in operation".

Over the past 12 months 5,000 acres have been assessed in the field for use as samples and stereograms on which to base air photo interpretation.

Forest Engineering.

During the year under review, 1,038 miles of new forest roads and tracks were constructed bringing the existing road system to 15,336 miles. 55 miles of new telephone line were built, bringing the total system to 1,670 miles. 32 houses were built, bringing the total to 422. Offices were increased from 38 to 45, together with a number of substantial improvements to the main Divisional centres. Regional maintenance Workshops were established at Dwellingup and Manjimup, and general improvement of all Divisional Workshops took place.

Plant and Equipment.

The works programme and direct conversion activities of the Department continue to increase, and necessitated expansion of engineering facilities.

The fleet of motor vehicles, bulldozers, graders, etc. was increased by the purchase of 57 units and 9 old vehicles were disposed of (6 of these were cannibalised), leaving a total of 354 automotive units, 172 stationary engines and 91 power saws. Of the additions, 37 were trucks, including 23 of the four-wheel drive type. Several older vehicles have now been adapted for use as mobile cranes for bush work.

Purchases included 11 utilities and 9 road-making units. In the field of towed units, 6 caravans have been purchased for the use of officers in the field, while 9 camping trailers for the use of bush workers have been constructed. These not only improve the living conditions of the bush workers, but also mean a considerable saving of labour and time in the shifting of gangs.

The provision of important amenities such as electric light and water supplies for the more isolated forest settlements has not been overlooked. Electric light plants have been installed at Carinyah and Pimelia, while water schemes have been improved at Grimwade by new equipment and at Ludlow by the sinking of a 200 ft. bore.

Communications.

In order to improve the Department's two-way radio system, which allows for direct radio communication between the gangs in the field and the fixed stations, new radio installations and re-installations of fixed stations were carried out at Harvey, Ludlow, Manjimup, Gleneagle, Mundaring Weir and Collier, while a number of vehicles acquired by the Department during the year were wired and fitted with radios for the fire season.

Maintenance to existing telephone lines, the annual overhaul of radio equipment and the repair of telephones throughout the network were successfully kept up to date.

10. REFORESTATION.

The 36,000 acres of forest cut over during the year were treated for regeneration.

Careful control was exercised on all sawmill permits within State Forest to see that under the silvicultural system in operation the correct trees were removed in the first cutting in such a way as to protect existing immature growth and to encourage regeneration. This control was exercised by the actual branding by an officer of the Department of every tree which was felled. After felling, a top disposal operation assisted to protect the immature growth and also to provide both a seed bed and fire protection for the young crop.



Plate Seven—Karri Forest cut over under the Group Selection System provides openings for the establishment of regeneration and leaves groups of young trees to grow on to maturity.

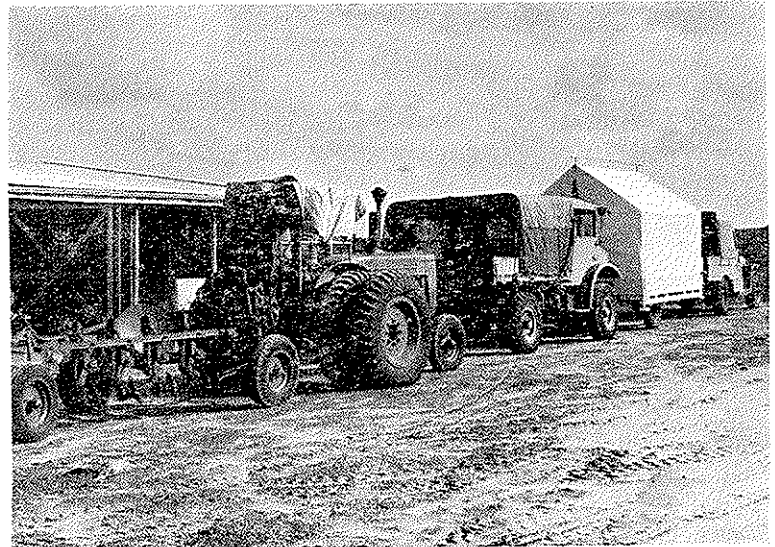


Plate Eight—Forest Work Party outfit ready to depart from Headquarters to set up experimental pine sample plots in the Moore River—Yanchep belt of coastal sands.

11. AFFORESTATION.

In order to cope with the demand for timber and pulping materials which must arise as the population reaches the proportions envisaged in the Stephenson Plan, the 1956 Pine Working Plan sets a goal of 200,000 acres of pine plantations for Western Australia.

The limitation on the rate at which exotic plantations can be established is chiefly financial, and at the present time about 2,000 acres per annum is the maximum which can be undertaken, unless larger Loan Funds become available, as the Reforestation Fund itself must be regarded chiefly as the Fund for the management of our indigenous forests.

A further restriction on the rapid expansion of economic plantations is the shortage of satisfactory sites within State Forest for the growing of *Pinus radiata*, which is the best forestry investment. In pursuance of the Working Plan policy of increasing the area of *Pinus radiata* in comparison with the slower growing *Pinus pinaster*, the Department has purchased suitable land as detailed under the paragraph on Land Acquisition.

In the Stephenson Plan for the Metropolitan area, large areas of *Pinus pinaster* are recommended very close to the City in order not only to save transport costs, but also to fit in with planning ideals in connection with the controlled growth and drainage of the Metropolitan area. Unfortunately most of the land so designated is Private Property and funds are not available through the normal forestry channels for its repurchase.

The Forests Department has commenced the task of testing the suitability for pine planting of an area of some 160,000 acres extending from Lake Pinjar in the South to the vicinity of Lancelin Island in the North. This vast tract of country is undeveloped at present and consists mainly of *Banksia* flats and sandhills. 52 pilot plots varying in size from one acre to 100 acres to test the land for pine growing have been established. To give access to this area 154 miles of tracks were constructed last summer.



Plate Nine—General view of Hamel Nursery.
Pines shown in the foreground.

The present net area of pine plantations is 20,823 acres, of which 1,268 acres were planted during the year ended June, 1956, *i.e.* during the planting season July and August, 1955.

It is of interest that the total volume of pine cut, mainly as thinnings, from the present plantations has now reached 1,071,550 cubic feet per annum and is supporting a number of small sawmills, case factories, and the partial intake of a plywood factory. This annual output is gradually increasing and some of the earlier stands planted in 1922 are nearing the age when they will be finally felled. *Pinus radiata* of this age produces high quality logs very much in demand for the plywood industry.



Plate Ten—Lifting and Bagging—
Nursery grown Pine Seedlings for
transport to South-West Plantations.
The Department raises and plants
more than one million trees per
annum.



Plate Eleven—Planting Machines in operation on the Coastal area at Gnangara, North of Perth. Machines often work close together in echelon.

Areas planted at the various plantations during the 1955 planting season were as follows :—

	acres.
Ludlow	54
Keenan	74
Mundaring	63
Grimwade	154
Gleneagle	94
Gnangara	295
Pinjar	179
Myalup	175
McLarty	90
Harvey Weir	90
Total area planted	<u>1,268</u>

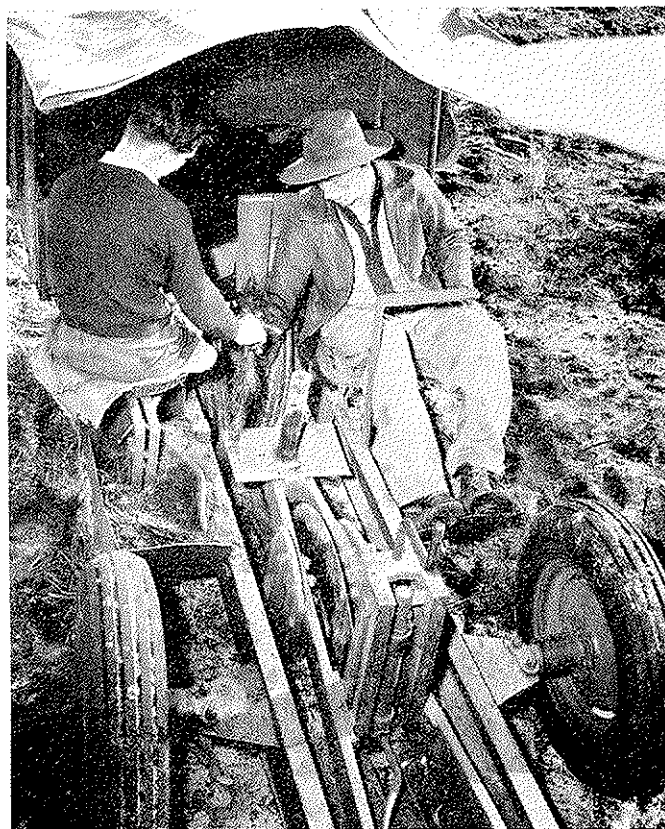


Plate Twelve—Operating the Planting Machine. These machines drawn by a wheel tractor, plant up to 10,000 trees per day for the three-man outfit. They are particularly suitable for the relatively flat coastal sand areas.



Plate Thirteen—Young Pine Stand of *Pinus pinaster* at Gnangara which has been pruned and thinned out for logs for case making and core stock. This species is much slower growing than *Pinus radiata* but will grow satisfactorily on the very poor sandy soils of the coastal plain.

Under the 1956 revision of the General Working Plan for Pine Plantations, experimental areas of various species were to be scattered throughout State Forest with a target area of 500 acres in widely separated plots. 85 acres of plots were established this year.

Areas in process of being made ready for further planting now total 6,055 acres made up as follows :—

	acres.
Cleared but awaiting initial burn	4,619
Part cleared	822
Part cleared following burn, but not yet ready for cultivation	534
Cleared and cultivated, but not yet planted	80
Total	6,055



Plate Fourteen—"Greystones" Homestead, Mundaring Weir, in 1920, prior to plantation establishment. This land was resumed about 1920 for the Mundaring Weir Catchment. The following photos were taken thirty years later within a few yards of the house in this picture.

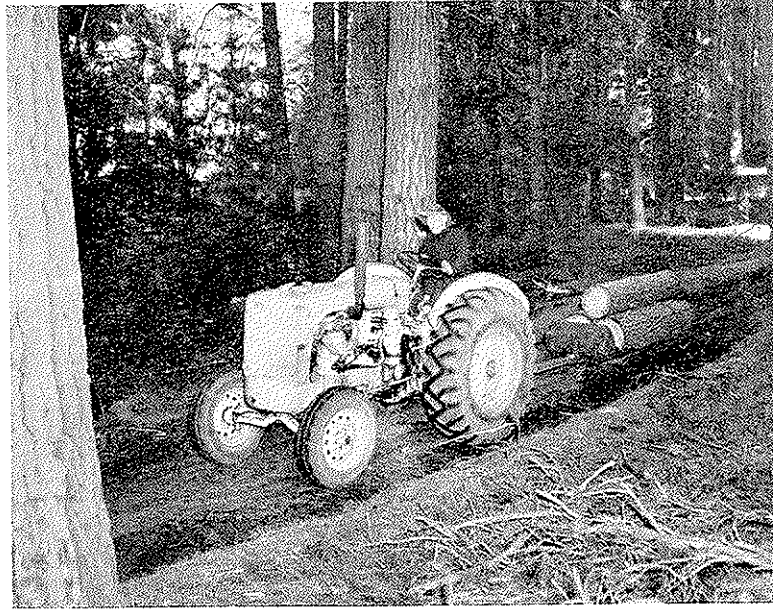


Plate Fifteen—Snigging “ peeler ” logs, Mundaring Weir. These logs from the thinning of *Pinus radiata* plantations twenty to thirty years old provide the raw material for plywood manufacture. Very rapid growth is obtained with this species which requires good soils in the forty inch rainfall belt for the best results.

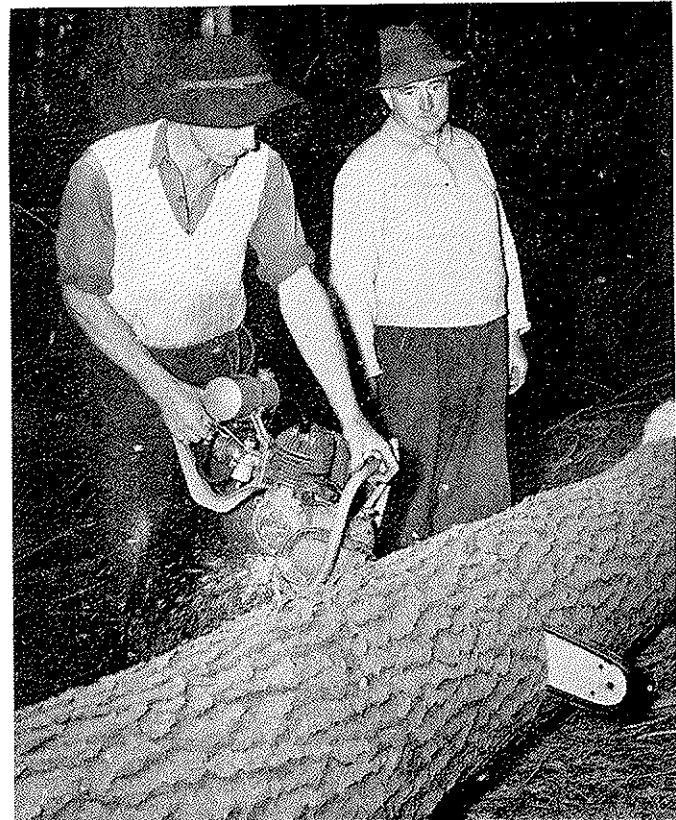


Plate Sixteen—Chainsaw operations on Pine grown on the area shown in plate above.

Department Pine Mills.

Four small pine sawmills operated on thinnings obtained from adjacent plantations. Production amounted to 83,891 cubic feet and consisted mainly of shorts, boards, lining and some case timber.

Logs produced by the various plantations were as follows :—

	loads.
Busselton—	
Ludlow-Willcock	779
Keenan	635
Mundaring	7,445
Collie	24
Kirup—	
Grimwade	2,026
Gleneagle	7
Metropolitan—	
Collier	1,425
Scaddan	629
Somerville	3,163
Gnangara	3,786
Harvey	
Myalup	84
Harvey Weir	477
Pemberton	
Pimelia	951
Total	<u>21,431</u>

Mallet.

The total area of Mallet plantations is now 18,595 acres. For the year under review a further 345 acres were established.

In the course of thinning operations, 167 tons of bark were produced, and lagging poles cut for the mining industry of the Murchison Goldfields amounted to 6,783 cubic feet.

A total of 1,319 tons of bark were produced for the State, of which 1,016 tons came from private property.

Arboriculture.

During the 1955 season, 224,319 seedlings involving 96 species were produced at the Department's nursery at Hamel. Of these, 53,259 were sold to private buyers and Local Authorities, and 170,551 distributed to Departmental plantations and centres.

Pinus radiata again proved the most popular species sold followed by Sugar Gum, Ti-tree, *Pinus pinaster*, Brush Box, and Tuart. These species accounted for 75 per cent. of the sales.



Plate Seventeen—A group of Mallet Saplings, the bark of which provides valuable Tanning material and the timber is also used for Mining and Agricultural requirements.

The Dryandra nursery, which provides trees mainly for inland areas, raised 17,298 seedlings of 56 different species. Of these, 10,265 were sold to farmers and other local bodies, while 1,092 were distributed for Departmental arboreta and experimental planting.

Of the balance a number of plants were unfortunately lost due to a week of severe frost and from disease. The remainder left unsold will be carried over for the next season.

The sales show the order of popularity in inland trees to be, River Gum, Coral-flowered Gum, Salt River Gum, Swamp Yate and Dundas Blackbutt. These species provided 67 per cent. of the sales.

Arbor Day.

Particular attention was directed towards the celebration of Arbor Day this year. This effort was rewarded with a very successful day throughout the State, paving the way for a future revival of interest.

Seed Distribution.

Sales of seed from the Department's Seed Store to Australian and overseas buyers amounted to £950. Parcels of 230 different species were sold of which approximately one-third were Eucalypts.

Tree Planting Information.

During the year the Department handled numerous enquiries relating to tree planting and tree welfare throughout the State. These enquiries varied greatly in both type of advice required and the nature of the persons or body tendering the enquiry. Broadly, they covered the entire scope of tree planting and husbandry, and were received from all representative sections of the State's population.

The background knowledge required to give correct advice under these circumstances is available from the data provided by tree arboreta established by the Department throughout the State.

Many of the queries were answered directly by telephone or interview, while others necessitated considerable investigation, both in the field and by reference to the comprehensive Departmental library and research records.

Private Afforestation.

Enquiries regarding the formation of small farm woodlots and plantations were received from time to time. Provided the person concerned was prepared to follow up the necessary preparatory and maintenance measures, an officer of the Department was detailed to investigate the matter and advise according to his findings.

12. FOREST PROTECTION—FIRE CONTROL.

The area covered by the fire control organisation comprises 1,296,670 acres of State Forest and Plantation areas afforded intensive protection, and 1,115,200 acres over which a lesser degree of control is possible at the present. These figures represent an increase of 93,000 acres mainly in the extreme South and on the Eastern fringe of the forest.

The Fire Season.

Controlled burning weather was curtailed owing to the very wet winter conditions and operations could be carried out on 59 days only compared with 79 for the previous year.

The actual fire season was characterised by long periods of high fire hazards which made it one of the worst for many years.

During a ten weeks' period from mid-December, no rain at all was recorded in the Northern Division, and only ten points at Pemberton. Heat wave conditions prevailed for most of the time including the hottest January on record. In the North, for the thirteen day period from 21st January to 2nd February, all days were over 90 degrees and only two below 95 degrees. On seven days temperatures of over 100 degrees were recorded. The five days from 28th January to 1st February were all over 102 degrees and two days reached 106 degrees. Air masses generally were drier than usual with a total of 41 days with minimum relative humidity of 25 per cent. or less. Of this total, 10 days were less than 15 per cent. and three below 10 per cent. A total of 11 dangerous days and 29 Severe Summer were recorded, compared with 6 and 15 respectively for the previous year.

The average hazard for the Northern Divisions was 6.4 which was higher than the averages for the past 10 years. High fire hazards were also experienced in the Southern Divisions where there were 4 dangerous and 5 Severe Summer days. The average for the year was 5.0.

Controlled Burning.

Despite the very wet winter and curtailment of burning weather a considerable area of useful controlled burning was carried out in all Divisions, previous breaking up of massed fuel areas and increasing experience of the gangs going some way towards offsetting the reduced number of burning days.

During the year 395 miles of firebreaks were burnt, 344,596 acres of prescribed burning carried out and 40,896 acres of advanced burning and top disposal done.

Some very good regeneration burns were secured in the Karri forest.

Detection.

No new towers were brought into operation during the season, but Granite Peaks lookout was fitted out ready for next summer.

The first tower in the Northern region was manned on 24th September, and in the Southern region on 18th November and the last watch ceased on 4th May.

Publicity and Co-operation.

Close liaison with bush fire brigade organisations, with advice or assistance where required, is going far to popularise fire prevention and improve the standard of the rural fire organisation.

Fires during the Season.

The first fire of the season occurred on 8th October and the last on 30th April.

The total number of fires attended by Departmental gangs was 313, compared with the average of 350. In spite of the severity of the season only 10 of these fires reached a size of over 100 acres. The total area burnt in A. Zone was 2,163 acres of which 941 were firebreak belt and wasteland.

16,522 acres of less intensively protected forest were burnt over with negligible damage, except in the extreme South where two large fires originating outside the forest entered on a wide face and caused some severe scorching before being brought under control.

The following table sets out causes of all fires attended by Departmental gangs during the year :—

W.A.G.R. locomotives	....	....	....	....	....	25
Bush locomotives	....	....	....	....	....	43
Escape from controlled burning	....	....	....	....	....	24
Bush workers	....	....	....	....	....	18
Hunters and fishermen	....	....	....	....	....	22
Householders	....	....	....	....	....	13
Farmers burning	....	....	....	....	....	57
Travellers	....	....	....	....	....	23
Deliberately lit	....	....	....	....	....	14
Lightning	....	....	....	....	....	7
Children	....	....	....	....	....	20
Mill surroundings	....	....	....	....	....	10
Mine surroundings	....	....	....	....	....	1
Other Government employees	....	....	....	....	....	13
Escape from previous fires	....	....	....	....	....	9
Natives	....	....	....	....	....	1
Tractors	....	....	....	....	....	1
Stockmen	....	....	....	....	....	6
Unknown	....	....	....	....	....	6
Total	....	....	....	....	....	313

Farmers' burning operations still give the highest figure on this list, but also continue to decrease, 57 fires from this cause represent 18 per cent. of the total fires, as against 23 per cent last year. Hunters, fishermen and travellers show an increase on last year from 10 per cent. to 14 per cent. of all fires attended. Bush locomotives with 43 fires are only just below this figure and show a significant increase from the 10 per cent. of last year. It is of interest to note that once again locomotives fitted with the Brew spark arrester lit no fires.

An encouraging sign this year was the reduction of damage area per fire and the number of fires occurring in or near the forest that were attended by local bush fire brigades or sawmill personnel.

13. RESEARCH.

Extension Work.

Throughout the past twelve months the Perth Office of the Research Branch has functioned mainly as an extension unit. As well as tree-planting, advice on all aspects of tree disorders, utilisation, forest resources and forestry education were made available to State and Commonwealth Departments and to the general public.

Research work has been confined to the collation of field data and summarisation of past experimental work. A Research Working Plan register has been commenced to facilitate field working and office administration.

Karri Silvicultural Research.

Regrowth Thinning Studies.—Thinning plots were established in first quality Karri regrowth of age 25 years at Big Brook, Pemberton. The experiment includes thinning treatments, both from below and above, to leave 20, 40, 60 and 80 elite stems per acre in the first case, and 60 elite co-dominant stems per acre in the second case.

Seedfall and Litter Accumulation.—Five areas of good quality pure Karri types are being investigated to establish litter and seed fall relationships. The selected areas embrace two canopy types with percentages of crown cover of 20 per cent. and 60 per cent. respectively.

Collection by litter trays commenced in January, 1956, and the results to date are as follows:—

SEED FALL IN THOUSANDS PER ACRE.

Cover.	January.	February.	March.	April.	May.	June.	Total.
20%	....	21	31.5	19.5	6	6.5	84.5
*20%	1,030	88	37	14	1	1	1,171
60%	....	122.5	73	23.5	2	8.5	229.5

* Top disposal burn immediately followed the placement of collecting trays.

Apart from the general nature of seeding from these two areas, these initial results indicate remarkably the effect of controlled fire on seed shed.

Litter Collection (Leaf, Twigs, Fruit and Bark)—Lb. per Acre (Oven Dry).

Month.	20 per cent. Cover.	* 20 per cent. Cover.	60 per cent. Cover.
January	200.8	1,352.2	....
February	560.6	295.3	2,896.2
March	211.2	134.4	1,494.9
April	76.5	67.2	351.4
Total, February to April	848.3	496.9	4,792.5

* Top disposal burn immediately followed placement of Collection Trays.

Jarrah Silvicultural Research.

Holmes 10 Thinning Plots.—Thinning experiments in 40 year old, first quality Jarrah regrowth, were designed to investigate the greatest annual yield which could be produced continually from second growth forest at Dwellingup.

In the 1955 thinning, 636 cubic feet log volume of thinnings cut to a minimum top diameter of 6 inches, were converted to the sawn product at the Dwellingup experimental sawmill to give a 28 per cent. recovery.

Fire Protection.

Comparison studies of tree growth on burnt and unburnt areas have been proceeding for approximately 10 years.

Tests between height/girth (u.b.) ratios of matched trees on the two differently treated sites have not indicated any effect of regular light periodic burning on rate of growth.

Forest Litter Studies.

At the end of 1955, five years' litter fall had been studied in three types of Jarrah forest, *viz.*, Virgin, Pole and Sapling forest.

The total annual litter fall for the period is tabulated below :—

JARRAH FOREST.
Annual Litter Fall—1951–1955.

Year.	Amount of Litter Fall—Lb. per Acre.		
	Jarrah Forest Type.		
	Virgin.	Pole.	Sapling.
1951	2,046	2,536	2,300
1952	2,191	2,985	2,291
1953	2,205	3,374	2,925
1954	1,954	3,065	3,255
1955	2,012	3,298	4,191
Total	10,408	15,258	14,962
Mean	2,082	3,052	2,992
Cwt.	18.59	27.25	26.72

The most interesting feature of the table is the steady increase in litter fall shown by the sapling forest in the last three years. This is, no doubt, due to greater crown development in this forest type than in the other two types.

Wandoo Soils.

In conjunction with the Silvicultural Research carried out in the Wandoo forest, a series of soil profiles have been examined from some typical Wandoo sites. The most important fact arising out of this work is that the Southern Wandoo areas show a marked accumulation of salt in the lower horizons. At Quindanning the salt content (NaCl) increased from 0.006 per cent. to 0.170 per cent. down the profile. Similarly, on the Wandoo flat at Mokine Brook, the salt content increased from 0.004 per cent. to 0.090 per cent. down the profile.

Care must be exercised with cutting on such areas, as clear felling with a subsequent rise of the water table could cause a serious rise of salt to the surface horizon. Silvicultural cuttings will be directed at the maintenance of the maximum forest cover consistent with effective utilisation of timber.

14. LIBRARY.

The most marked advance in Library facilities during the year has been the transfer of the Library staff and part of the Library to better accommodation. This has resulted in much more congenial working conditions and greater accessibility for users of the Library. Space is still inadequate and an increased floor area is necessary to house reasonably the remaining publications and staff, and to provide space for readers.

Adjustable steel shelving has been provided in the new Library.

All books, bound and unbound journals and Annual Reports are now classified, labelled and shelved in their respective sections. Work on serials, the largest section in the Library, is proceeding and the recent appointment of a permanent assistant to the Librarian will enable this work to be accelerated.

Twenty-three books, 71 different journals and 428 other publications were received during the year. Two thousand cards have been added to the catalogue, bringing the total to over 7,000 since the inception of classification under the Oxford Decimal System.

Loans of periodicals reached a total of 2,958 during the year, while there was a marked increase in loans of classified articles to 1,350.

The Librarian lectured to the technical staff on the Oxford Decimal System of classification and how to make best use of the Library. A manual detailing all action necessary in running the Library has also been produced.

Close co-operation has been maintained with the Division of Forest Products Library, Melbourne, Forestry and Timber Bureau Library, Canberra, and the State Library and Library Board, all of which have given valuable assistance during the year.

15. EMPLOYMENT IN FORESTRY.

The number of wage earners directly employed in the forest has been estimated at approximately 7,110, made up of :—

Direct employees of the Forests Department—

Professional Officers	....	....	....	....	....	....	....	....	....	....	29
General Field Staff	....	....	....	....	....	....	....	....	....	....	106
Clerical and Drafting	....	....	....	....	....	....	....	....	....	....	67
Wages Employees	....	....	....	....	....	....	....	....	....	....	516
Contractors and employees	....	....	....	....	....	....	....	....	....	....	100
											818
Sawmill employees including bush workers at 30th June, 1956*	....	....	....	....	....	....	....	....	....	....	5,804
Firewood cutters, pole getters, etc. on permits.	....	....	....	....	....	....	....	....	....	....	325
Goldfields firewood cutters, contractors, and woodline employees and carters	....	....	....	....	....	....	....	....	....	....	63
Apiarists, estimated (144 sites are registered)	....	....	....	....	....	....	....	....	....	....	100
											7,110
Total	....	....	....	....	....	....	....	....	....	....	7,110

* Includes employees of all registered sawmills.

16. FOREST OFFENCES.

Eighty-eight forest offences were reported to Head Office during the year. Legal proceedings were taken in 14 cases and resulted in convictions. Fines totalling £142 10 0 and costs of £40 11 0 were imposed.

Warnings were issued in 35 instances and the remainder were dealt with by charging royalty, forfeiture of deposits, collection of damages or confiscation and sale of timber illegally cut. The amount received by the Department in this way totalled £899 10 6.

17. EDUCATION AND PUBLICITY.

At regular intervals throughout the year conferences of Senior staff were held to discuss matters of policy and procedure.

A fire school for Senior field staff was held in October, 1955, which consisted of a number of lectures, but mainly inspections and discussions in the field on controlled burning methods and operations carried out during the previous season.

For the first time in the Department, a comprehensive school for three groups of timber inspectors was held at Ludlow. Prior to this, all instruction of timber inspectors had been carried out individually by the Chief Timber Inspector. With the imminent retirement of this officer, it was desired that he should have the opportunity of conducting this school with a view to passing on his field experience over a lifetime spent with Western Australian timbers.

No further schools were held during the year, although special arrangements were made for operators of circular power saws to receive instruction and practice in the field for periods of two weeks at a time, under experienced power saw operators.

A Forestry scholarship to the value of £800 and covering the second year of the Diploma Course at the University of Western Australia and the third and fourth years at the Australian Forestry School, was awarded to Mr. C. J. Edwards.

A Bursary worth £80 per annum for two years was granted to Mr. D. B. Farquhar of Collie.

Displays.

The Department arranged a window display to publicise Arbor Day and co-operated in the following shows :—

1. *Wild Life Show*.—This featured the work carried out in arresting coastal sand drift.
2. *Wildflower Show*.—Blossoms from various flowering Eucalypts of the State were displayed and attracted wide attention.
3. *Australian Inland Missions (Kalgoorlie)*.—Pine utilisation and hardwood species were illustrated supported by photos and displays of blossom.

18. STAFF MATTERS.

Increased marginal adjustments were granted to officers employed under the Public Service Act and the Forests Act as from the 1st July, 1955.

Two Assistant Divisional Forest Officers, F. J. Campbell and P. N. Hewett, and one Forest Officer, F. D. Podger, were appointed during the year and two cadet draftsmen commenced duty in the Drafting Branch.

Two major losses to the Department were the retirement of the Assistant Conservator, Mr. A. C. Shedley, on the 20th April, 1956, and the resignation of Mr. J. H. Harding, Statistical Officer, on the 20th October, 1955. Mr. Shedley joined the Department as a professional officer in 1924 and rose from Divisional Forest Officer to Assistant Conservator. Farewell functions arranged in his honour by the Institute of Foresters, the Field Staff, General Division, and by Head Office Staff gave a true indication of the high esteem in which he was held both as a Forester, a fellow worker, and as a senior administrative officer. He was also highly respected by the Timber Trade.

Five officers under the Forests Act were promoted or reclassified District Forester Class 5, four were promoted Forester Class 4, and four were promoted or reclassified to Assistant Forester Class 3. Seven officers classified Assistant Forester Class 2 were appointed to the permanent staff and five new Assistant Foresters Class 2 were employed.

I desire to place on record my appreciation of the active co-operation and loyal support of all members of both field and office staffs during the year.

A. C. HARRIS,
Conservator of Forests.

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APPENDIX IA.

CONSOLIDATED REVENUE FUND.

Consolidated Statement of Revenue and Expenditure for 1955-56.

Revenue.				Expenditure.			
	£	s.	d.	£	s.	d.	
Territorial—							By Salaries
To Timber :							Incidentals
Log Royalties	714,150	1	5				Timber Industry Regulations (Incidentals)
Sheep Royalties	44,374	9	5				Direct Conversion of Pine
Sawn Timber Royalties	3,786	15	1				Recoupable Projects
Miscellaneous Royalties	27,486	19	8				Excess of Revenue over Expenditure
Goldfields Revenue	8,636	12	0				
Rents and Leases	2,186	10	6				
				800,621	8	1	
„ Sandalwood				65,892	9	5	
Departmental—							
To Inspection Fees	7,384	6	2				
„ Miscellaneous Sales	4,539	10	6				
„ Pine Conversion Sales	126,426	6	8				
„ Hardwood Conversion Sales	122,136	13	11				
„ Miscellaneous Receipts	4,827	6	9				
„ Recoupable Projects	19,377	8	11				
				284,691	12	11	
				£1,151,115	10	5	
							£1,151,115 10 5

APPENDIX 1B.

Statement of Reforestation Fund Expenditure for the year ended 30th June, 1956.

To	Division 1—	£	s. d.	£	s. d.	By Forests Improvement and Reforestation	£	s. d.
	Busselton	51,358	5 11			Fund—General Account	694,837	14 9
	Keenan	80	14 6			By Federal Aid Roads Grant	65,000	0 0
				51,439	0 5			
..	Division 2—							
	Mundaring			25,456	1 4			
..	Division 3—							
	Dwellingup	49,418	9 10					
	Research Station	771	12 7					
				50,190	2 5			
..	Division 4—							
	Collie			33,657	5 11			
..	Division 5—							
	Kirup			28,450	14 9			
..	Division 6—							
	Manjimup			77,972	3 5			
..	Division 8—							
	Gleneagle			28,739	3 11			
..	Division 9—							
	Collier	2,467	10 7					
	Gnangara	1,443	6 4					
	Julimar	231	19 4					
				4,142	16 3			
..	Division 10—							
	Harvey	47,161	4 10					
	McLarty	252	16 6					
	Myalup	106	2 11					
				47,520	4 3			
..	Division 11—							
	Pemberton			98,059	15 3			
..	Kalgoorlie—							
				337	19 2			
	Total Divisional Expenditure			£445,965	7 1			
Plantations—								
..	Division 1—							
	Blackwood			8,197	5 4			
..	Division 2—							
	Mundaring			12,538	1 9			
..	Division 8—							
	Gleneagle			2,629	0 0			
..	Division 10—							
	Harvey Weir	2,411	13 7					
	McLarty	6,535	1 3					
	Myalup	6,438	0 4					
				15,384	15 2			
	Total Plantation Expenditure			38,749	2 3			
To	Training of Staff			186	13 4			
..	Head Office Research			225	17 0			
..	Preparation of Working Plans, etc.			1,371	8 1			
..	Salaries and Allowances			88,296	17 1			
..	Incidentals			12,258	18 9			
..	Manjimup Drawing Office—Incidentals ..			77	18 3			
..	Workers' Compensation Premiums			5,759	19 6			
..	Fire Insurance Premiums			1,194	1 1			
..	Insurance of Vehicles			4,835	10 8			
..	Communications and Electrical Services ..			6,364	7 8			
..	Equipment not charged to Divisions			125,093	9 9			
..	Purchase of Land			38,187	1 11			
..	Buildings—Collier			10,263	13 5			
..	Pay Roll Tax			7,907	2 5			
..	Cash Orders Unallocated			184	2 9			
				£786,921	11 0			
	Less Miscellaneous Expenditure Recoups ..			27,083	16 3			
				£759,837	14 9			
						£759,837	14 9	

APPENDIX 1C.

Statement of Afforestation Expenditure for year ended 30th June, 1956.

	£	s. d.	£	s. d.		£	s. d.
To Division 1—					By General Loan Fund	100,000	0 0
Busselton	19,840	8 10					
Keenan	7,845	14 11					
			27,686	3 9			
„ Division 5—							
Grimwade			14,090	15 1			
„ Division 7—							
Narrogin (Mallet Plantations)			9,334	1 0			
„ Division 9—							
Somerville	4,229	3 2					
Collier	2,109	2 8					
Gnangara	27,078	3 5					
Scaddan	500	16 0					
			33,917	5 3			
„ Salaries			17,565	5 8			
„ Workers' Compensation Premiums			1,380	18 0			
„ Pay Roll Tax			2,055	9 3			
„ Cash Orders Unallocated			623	11 2			
			106,653	9 2			
Less Miscellaneous Expenditure Recoups			6,653	9 2			
			£100,000	0 0		£100,000	0 0

APPENDIX 2A.

Exports of Timber, Tanning Substances and Essential Oils during the Year ended 30th June, 1956.

Item No.	Item and Country of Export.	Quantity.	£.	Item No.	Item and Country of Export.	Quantity.	£.
	TIMBER.						
349	<i>Logs of Hardwood, Other than Turpentine—</i> Cocos Islands	cub. ft. 202	175	6449	<i>Other, including Architraves and Mouldings :</i> Commonwealth States : Cub. ft. £ Victoria 443 445 South Australia 7,162 5,557 Northern Territory 4,170 3,741 Christmas Island (Indian Ocean)	cub. ft. 11,775 355	9,743 635
352	<i>Undressed Timber—</i> <i>Jarrah Sleepers :</i> Commonwealth States : South Australia 878,653 510,979 United Kingdom 31,839 23,772 Malaya, Federation of 1,156 463 Mauritius and Dependencies 37,410 28,057 New Zealand 575,114 415,065 Egypt 12,948 9,590 Iran (Persia) 5,583 4,361	1,542,703	992,287	6469	<i>Veneers—</i> Commonwealth States : New South Wales sq. ft. 5,100 125 South Australia 1,301 49	6,401	174
354	<i>Karri Sleepers :</i> Commonwealth States : South Australia 340,961 157,031			6479	<i>Physicod—</i> Commonwealth States : New South Wales 4,764 442 Victoria 30,943 2,146 South Australia 235,053 13,340 Northern Territory 11,100 1,260		
410	<i>Softwoods :</i> Commonwealth States : cub. ft. £ Victoria 83 80 Northern Territory 903 1,188 Christmas Island (Indian Ocean) * 986 1,268 387 427	1,373	1,695		Total, Timber Exports (excluding Sandalwood)	281,860	17,188
426	<i>Hardwoods—</i> <i>Jarrah :</i> Commonwealth States : New South Wales 2,624 1,810 Victoria 276,234 155,732 South Australia 1,025,042 565,091 Northern Territory 7,438 5,786	1,311,338	728,419				2,818,716
	United Kingdom 85,819 60,478 Canada 3,551 3,275 Ceylon 21,617 17,385 Christmas Island (Indian Ocean) 1,582 1,776 Mauritius and Dependencies 20,265 12,027 New Zealand 83,497 54,965 South Africa, Union of 52,930 39,108 Belgium 424 365 Netherlands 2,812 1,965 United States of America 3,535 3,673	1,587,370	923,437	6505	WOOD MANUFACTURES.		No.
	<i>Karri :</i> Commonwealth States : New South Wales 1,216 1,023 Victoria 44,574 23,279 South Australia 347,748 181,892 Northern Territory 5,223 3,467	398,761	209,661	6529	<i>Casks and Vats, Empty—New—</i> Commonwealth States : New South Wales 10,601 107,163 United Kingdom * 37 236	10,638	107,399
28	United Kingdom 234,617 162,009 New Zealand 160,698 111,748 South Africa, Union of 69,444 48,145 Belgium 2,146 1,609 Germany, Federal Republic of 14,495 11,516 Netherlands 74,214 59,988	954,375	604,676	6529	<i>Articles of Wood, N.E.I.—</i> Commonwealth States : £. New South Wales 711 Victoria 1,503 South Australia 329 Tasmania 53 Northern Territory 4,306 Christmas Island (Indian Ocean) 6,902 Singapore * 872 Spain 150 500		8,424
29	<i>Other Hardwoods—</i> Commonwealth States : Cub. ft. £ New South Wales 5,973 6,359 Queensland 1,195 1,160 South Australia 4,945 2,326 Northern Territory 117 163	12,230	10,068	6540	<i>Furniture of Wood, or Partly of Wood—</i> Commonwealth States : £. Victoria 24 South Australia 38 Northern Territory 1,173 Cocos Islands 1,235 Christmas Island (Indian Ocean) 1,200		1,201
	Netherlands 8,441 6,069	20,671	16,077		Total, Wood Manufactures		119,459
31	<i>Box Shooks—</i> Commonwealth States : Northern Territory 1,010 752				ESSENTIAL OILS, NATURAL, NON-SPIRITUEOUS.		
35	<i>Shooks, Cask and Vat : Staves, undressed or dressed—</i> Commonwealth States : Cub. ft. £ New South Wales 37,058 37,934 Victoria 240 206 Queensland 6,242 6,343 South Australia 291 295	43,831	44,778	8710	<i>Eucalyptus—</i> Commonwealth States : lb. £. New South Wales 19,572 2,466 Victoria 16,685 2,358 South Australia 228 85	36,485	4,909
1	<i>Sawn Timber, dressed or moulded, N.E.I.—</i> <i>Flooring :</i> Commonwealth States : Cub. ft. £ New South Wales 1,117 1,156 Victoria 15,558 22,676 South Australia 18,848 16,708 Northern Territory 934 1,512	36,457	42,052		United Kingdom 18,592 2,836 Canada 674 192 Germany, Federal Republic of 795 136 United States of America 34,742 4,675	91,288	12,748
	United Kingdom 8,802 6,206 Christmas Island (Indian Ocean) 16,926 1,053 Netherlands 1,223 757	63,408	50,068	8715	<i>Citrus—</i> Commonwealth States : New South Wales 1,234 1,801 Victoria 3,478 4,345 Queensland 826 1,242 South Australia 56 83	5,594	7,471

* Oversea Origin.

APPENDIX 2C

SUMMARY OF EXPORTS OF FOREST PRODUCE SINCE 1836.

Year.	Timber.		Year.	Timber.		Wood Manu-	Tanning	Essential
	Cub. ft.	Value.		Cub. ft.	Value.	factures.	Materials.	Oils.
		£			£	Value.	Value.	Value.
1836 (a)	10,000	2,500	1901	7,150,600	572,354	£	£	£
1837 .....	.....	.....	1902	6,256,750	500,533	.....	.....	.....
1838 .....	.....	.....	1903	7,748,450	619,705	.....	859	.....
1839 .....	.....	.....	1904	8,072,300	654,949	.....	32,876	.....
1840 .....	.....	.....	1905	8,709,500	689,943	.....	154,087	.....
1841 .....	.....	.....	1906	(c) 8,830,700	708,903	.....	140,720	.....
1842 .....	.....	.....	1907	(c) 6,409,550	511,923	.....	98,773	.....
1843 .....	.....	.....	1908	(c) 9,869,509	813,591	.....	79,934	.....
1844	(b)	163	1909	(c) 10,830,450	867,419	.....	59,633	.....
1845 .....	.....	.....	1910	(c) 12,074,100	972,698	.....	93,733	.....
1846	2,550	255	1911	(c) 12,449,500	986,341	.....	83,470	.....
1847	12,200	1,120	1912	(c) 11,297,100	903,396	.....	49,004	.....
1848	3,350	333	1913	(c) 13,619,850	1,089,481	.....	47,377	.....
1849 .....	.....	.....	1914 (d)	(c) 6,279,750	502,153	.....	18,197	777
1850	10,500	1,048	1915 (e)	(c) 9,968,500	808,392	.....	6,127	381
1851	1,250	268	1916 (e)	5,432,100	441,991	.....	10,208	1,102
1852	7,050	806	1917 (e)	3,890,650	310,893	.....	18,959	2,060
1853	52,200	5,220	1918 (e)	3,436,250	274,141	.....	16,886	3,995
1854	58,500	7,023	1919 (e)	4,135,750	332,584	11,535	18,875	3,987
1955	76,900	12,076	1920 (e)	5,065,300	465,731	21,935	22,121	3,704
1856	70,500	9,671	1921 (e)	9,816,250	1,137,819	24,916	23,073	10,107
1857	69,200	9,449	1922 (e)	8,309,750	1,041,047	22,248	13,328	6,878
1858	29,250	2,340	1923 (e)	7,911,310	997,454	12,377	21,161	20,075
1859	67,250	6,051	1924 (e)	11,126,861	1,367,517	11,505	29,606	39,877
1860	54,800	4,932	1925 (e)	11,844,303	1,477,997	13,298	40,136	42,057
1861	27,750	2,497	1926 (e)	12,001,384	1,522,958	10,072	15,056	47,819
1862	68,800	7,151	1927 (e)	12,580,262	1,651,149	8,727	15,818	26,544
1863	32,900	2,963	1928 (e)	10,384,784	1,265,383	7,783	27,662	39,131
1864	58,300	5,508	1929 (e)	7,635,237	960,435	6,603	35,850	63,307
1865	183,950	15,693	1930 (e)	6,579,743	807,425	4,687	40,628	77,510
1866	85,650	6,849	1931 (e)	4,127,856	507,382	26,615	35,333	56,170
1867	56,750	4,541	1932 (e)	3,062,673	361,700	85,488	42,016	59,301
1868	8,000	638	1933 (e)	2,235,540	262,617	80,332	33,352	26,331
1869	179,900	14,273	1934 (e)	4,060,830	487,248	76,107	20,904	26,720
1870	157,200	17,551	1935 (e)	5,326,117	636,466	65,494	15,284	35,363
1871	218,500	15,304	1936 (e)	5,598,180	679,522	50,665	12,237	27,526
1872	37,000	2,590	1937 (e)	5,673,903	699,684	52,338	14,491	38,185
1873	68,150	4,771	1938 (e)	7,545,744	932,420	47,934	13,865	35,128
1874	345,600	24,192	1939 (e)	5,704,250	722,310	43,518	17,842	25,550
1875	342,350	23,965	1940 (e)	5,049,585	634,859	62,796	19,485	47,736
1876	219,050	23,743	1941 (e)	6,091,187	790,876	74,935	13,686	59,867
1877	336,150	26,979	1942 (e)	5,224,634	700,474	64,454	6,896	74,904
1878	580,900	63,902	1943 (e)	3,516,566	603,327	32,426	1,598	70,523
1879	627,250	69,742	1944 (e)	3,645,354	613,994	25,324	1,294	72,704
1880	662,550	66,252	1945 (e)	2,831,475	570,028	27,307	2,795	103,055
1881	792,750	79,277	1946 (e)	3,373,025	722,061 (f)	2,618	4,872	128,050
1882	936,500	93,650	1947 (e)	3,458,628	865,255 (f)	13,118	12,056	151,768
1883	997,000	79,760	1948 (e)	3,584,405	1,099,073 (f)	6,572	9,556	116,465
1884	861,700	68,936	1949 (e)	3,198,212	993,152 (f)	6,639	5,112	75,395
1885	848,150	67,850	1950 (e)	2,837,946	974,493 (f)	13,525	8,243	78,550
1886	626,150	50,092	1951 (e)	2,342,492 (g)	918,485 (f)	25,101	16,581	125,833
1887	354,800	28,384	1952 (e)	2,373,553 (g)	1,032,909 (f)	47,689	19,120	119,109
1888	525,750	42,060	1953 (e)	3,965,188 (g)	2,074,421 (f)	120,095	34,136	70,852
1889	788,500	63,080	1954 (e)	3,858,956 (g)	2,248,320 (f)	59,360	80,248	55,273
1890	1,172,200	82,052	1955 (e)	3,477,249 (g)	1,935,019 (f)	79,893	37,338	80,822
1891	1,273,950	89,179	1956 (e)	4,568,034 (g)	2,818,716 (f)	119,459	554,760	90,928
1892	1,082,650	78,419	Total	405,066,316	53,281,867	1,466,296	2,247,347	2,240,287
1893	512,950	33,888						
1894	1,063,700	74,804						
1895	1,255,250	88,146						
1896	1,545,600	116,420						
1897	2,393,300	192,451						
1898	4,086,150	326,195						
1899	6,913,550	553,198						
1900	5,725,400	458,461						

(a) The exports up to the year 1834 consisted only of supplies to shipping, of which no record is kept.

(b) Not available.

(c) Approximate figures only.

(d) Sixmonths ended 30th June.

(e) Year ended 30th June.

(f) Excludes Casks (principally empty returns) previously included in this Item.

(g) Includes items for which the quantity in cub. ft. is not available.

APPENDIX 2D.

SUMMARY OF IMPORTS OF TIMBER, TANNING MATERIALS AND ESSENTIAL OILS, SINCE 1848.

Year.	Timber, Woodware, etc.	Tanning Materials.	Essential Oils.	Year.	Timber, Woodware, etc.	Tanning Materials.	Essential Oils.
	£	£	£		£	£	£
1848	464			1900	56,266	1,416	1,105
1849				1901	80,134	1,740	1,546
1850	189			1902	97,810	3,418	1,751
1851	3,216			1903	102,383	3,556	1,348
1852	2,479			1904	157,856	1,322	2,122
1853	790			1905	98,494	582	1,592
1854	831			1906	95,229	1,412	1,915
1855	1,464			1907	122,016	2,767	1,549
1856	1,124			1908	93,205	2,392	4,584
1857	744			1909	90,502	4,129	4,033
1858	1,528			1910	171,280	3,531	3,686
1859	690			1911	152,133	2,912	4,938
1860	2,005			1912	167,244	3,089	4,598
1861	1,459			1913	202,640	2,651	5,392
1862	1,920			1914	78,736	629	2,823
1863	1,568			1914-15	107,763	2,082	4,988
1864	894			1915-16	76,849	3,313	4,788
1865	548			1916-17	75,681	2,848	3,848
1866	1,442			1917-18	58,305	2,020	4,358
1867	1,727			1918-19	62,824	1,181	4,168
1868	1,451			1919-20	100,083	3,748	10,043
1869	1,408			1920-21	171,654	*4,899	6,106
1870	1,518			1921-22	92,448	5,865	6,577
1871	736			1922-23	109,428	6,991	4,033
1872	1,660			1923-24	133,983	2,790	3,301
1873	1,008			1924-25	161,893	2,670	4,429
1874	1,774			1925-26	144,989	5,826	4,449
1875	2,707			1926-27	162,193	8,971	4,254
1876	3,098			1927-28	183,196	9,648	6,955
1877	2,036			1928-29	241,601	6,894	4,413
1878	2,947			1929-30	197,532	10,825	3,980
1879	2,340			1930-31	76,533	4,145	3,160
1880	3,061			1931-32	164,496	4,705	3,505
1881	3,639			1932-33	197,916	4,903	3,421
1882	3,692			1933-34	183,944	4,310	3,888
1883	6,667			1934-35	211,056	4,076	5,040
1884	2,930			1935-36	228,451	5,401	3,921
1885	11,479			1936-37	257,164	5,267	4,810
1886	17,888			1937-38	270,126	4,777	6,560
1887	8,136			1938-39	254,315	3,974	7,014
1888	4,461			1939-40	259,399	6,802	23,027
1889	7,686			1940-41	249,111	3,798	32,399
1890	14,979			1941-42	283,611	15,846	33,828
1891	18,406			1942-43	163,480	6,250	47,718
1892	26,713			1943-44	149,928	7,883	68,871
1893	14,493			1944-45	148,838	9,264	75,449
1894	17,964			1945-46	†219,466	19,573	56,295
1895	47,128			1946-47	386,465	12,395	78,091
1896	5,381			1947-48	345,508	8,019	96,769
1897	164,552			1948-49	570,755	8,662	42,926
1898	55,566			1949-50	521,815	24,923	51,197
1899	45,689			1950-51	640,059	21,147	161,358
				1951-52	1,037,499	18,494	167,697
				1952-53	509,667	21,493	69,804
				1953-54	923,367	45,202	58,019
				1954-55	816,052	27,395	76,464
				1955-56	839,581	27,315	131,758
				Total	14,283,262	442,136	1,436,267

* This and subsequent years include tanning extracts, not previously recorded.

† This and subsequent years include values for furniture, bamboo, cane, etc., not previously included.

APPENDIX 2E.

SUMMARY OF LOG VOLUMES PRODUCED IN W.A. SINCE 1829.

Year.	* Crown Land.	Private Property.	Total.	Year.	* Crown Land.	Private Property.	Total.
1829-1916—	Loads.	Loads.	Loads.	1937 (c)	Loads.	Loads.	Loads.
Estimated	.....	.....	13,265,357	1938 (c)	634,077	318,044	952,121
1917 (a)	386,662	42,890	429,552	1939 (c)	634,749	318,579	953,328
1918 (b)	153,311	10,099	163,410	1940 (c)	584,953	221,720	806,673
1919 (c)	399,741	67,809	467,550	1941 (c)	553,202	182,791	735,993
1920 (c)	565,844	115,258	681,102	1942 (c)	561,784	205,780	767,564
1921 (c)	586,179	140,369	726,548	1943 (c)	532,733	112,668	645,401
1922 (c)	722,448	312,803	1,035,251	1944 (c)	472,098	86,459	558,557
1923 (c)	536,146	197,341	734,087	1945 (c)	445,050	89,124	534,174
1924 (c)	840,089	186,856	1,026,945	1946 (c)	439,400	86,191	525,591
1925 (c)	876,658	362,845	1,239,503	1947 (c)	422,530	109,647	532,177
1926 (c)	976,475	500,752	1,477,227	1948 (c)	438,971	156,639	595,610
1927 (c)	937,752	627,122	1,564,874	1949 (c)	445,027	177,438	622,465
1928 (c)	855,625	466,689	1,322,314	1950 (c)	405,236	196,286	601,522
1929 (c)	645,795	221,979	867,774	1951 (c)	421,623	198,653	620,276
1930 (c)	633,083	233,072	866,155	1952 (c)	507,829	214,261	722,090
1931 (c)	376,452	242,970	619,422	1953 (c)	578,851	238,766	817,617
1932 (c)	234,857	82,319	317,176	1954 (c)	684,468	260,428	944,896
1933 (c)	263,313	49,133	312,446	1955 (c)	749,719	271,240	1,020,959
1934 (c)	425,262	126,608	551,870	1956 (c)	749,353	303,909	1,053,262
1935 (c)	549,165	229,035	778,200	1956 (c)	796,227	275,467	1,071,694
1936 (c)	628,012	268,723	896,735	Total	.....	.....	44,425,468

* Includes State Forests, Timber Reserves, Crown Land and Private Property (Timber Reserved).

(a) Year ended 31st December.

(b) Six months ended 30th June.

(c) Year ended 30th June.

APPENDIX 3.

TIMBER INDUSTRY REGULATION ACT, 1926-50.

Annual Report for Year ended 31st December, 1955.

The number of mills registered under the provisions of the Act, at the close of the year totalled 274 (151 Crown Lands, 123 Private Property).

The average number of persons employed on timber holdings each month throughout the year was 5,804, compared with 5,879 last year.

The District and Workmen's Inspectors made 1,234 inspections of timber holdings and investigated and reported on 1,074 notifiable accidents, of which 8 were fatal.

The number of accidents per 100 persons employed was 18.5, compared with 15.4 last year.

The total period of incapacity as a result of accidents was 25,955 days, an average of 24.2 days per injured person (compared with 25.8 days last year).

Returns as listed hereunder have been prepared, but are not included in this report.

1. Number of notifiable accidents reported in accordance with Section 14 of the Act, according to months, and indicating the age and nationality of the injured person, the period of incapacity, and the number of cases on which the first-aid outfit was used.
2. The number of accidents reported during 1955, and their classification according to location and nature of injury.
3. The number of accidents classified according to cause of accident and location of injury.
4. The number of accidents according to cause of accident and nature of injury.
5. The number of accidents classified according to the months and days of the week, on which the accident occurred.
6. The number of hours worked on the day and up to the time of injury by the person injured.
7. A return showing by months the time at which the notifiable accidents occurred.
8. A return showing the personal cause of accidents as determined by the Inspectors.

The cost to the Forests Department of administering the Timber Industry Regulations Act for the year ending 30th June, 1956, was as follows :—

	£
Salaries	2,106
Mileage and Travelling Allowances	1,031
Sundries	312
Total	<u>£3,449</u>

A. C. HARRIS,

Controlling Officer.