
QUEENSLAND FOREST SERVICE.

Forests Office,
Brisbane, 23rd August, 1924.

SIR,—I have to present to you my Report upon the operations of the Queensland Forest Service for the year 1923.

I have, &c.,

E. H. F. SWAIN, Director of Forests.

The Hon. W. McCormack, M.L.A.,
Secretary for Public Lands, Brisbane.

QUEENSLAND FOREST SERVICE.

Annual Report of the Director of Forests for the Year ended
31st December, 1923.

INDEX.

	PAGE
INTRODUCTION	2
RESERVATIONS	2
TECHNICAL OPERATIONS—	
SILVICULTURE	4
FOREST PROTECTION	11
FOREST ORGANISATION	12
FOREST SURVEY AND ENGINEERING	14
WOOD TECHNOLOGY	19
TRADING OPERATIONS—	
THE TIMBER MARKET	20
FOREST SERVICE SAWMILLING	23
ADMINISTRATION—	
FINANCIAL	26
PERSONNEL	27
REORGANISATION	27

FORESTRY, 1923.

By the end of 1923 the many and diverse operations of the Forest Service had reached some magnitude.

The gross log sales revenues, which in 1917 had been £66,200, were now £367,686. The expenditures in log and sawn timber marketing, then nil, were now £185,253. The costs of administration, then £6,326, had become £39,130. The personnel upon the State's forests, then numbering about 30, had grown to 376. The net surplus paid into the Treasury, £52,270 in 1917, became £103,191 in 1923.

The work achieved had been both substantial and profitable, and represented a real developmental gain to the community in the direction of the proper organisation and perpetuation of its timber supply and the rendering permanent of the wood-working industries of the State.

The pressure of progress, however, has had its effect upon the organisation, which towards the end of the year showed signs of wear. Proposals for the consolidatory reorganisation of the personnel and administrative systems were submitted by the Director of Forests in November.

The forests assets of Queensland are of very great industrial consequence, and no measures which will encompass their efficient control should be overlooked. The functions of forest management are complex in themselves, and the administration needs support and strengthening against the difficulties of the day and moment.

At the present rate of deforestation supplies of prime raw material for the timber trades will be used up long before the new crops are ripe.

The Forest Service is making effort towards the greater utilisation of the secondary woods in order to eke out present resources. Medang Walnut, Red Satinay, and Canary Ash have been placed upon the plywood market, and Rose and Grey Satin Ash have found favour for furniture, whilst a number of other lesser species have been introduced to the various industries in wood. The pushing of hardwood for flooring has also tended to retrieve the pressure upon Hoop Pine. An extension of the useful work of the Fancy Woods Section appears desirable.

RESERVATIONS.

The increase in area of reservations during the year amounted to 76,591 acres.

PERMANENT RESERVATIONS.

STATE FORESTS.

Fourteen new State Forests were gazetted in 1923, having a total area of 93,587 acres. Of these two are noteworthy—R. 251, Tully River State Forest, has an area of 20,900 acres, which comprises 7,900 acres, previously a Timber Reserve, and 13,000 acres of Crown lands; and R. 946, Cairns, Dinden, and Grafton, a very large reserve of 50,600 acres situated in the vicinity of the Barron Falls, carrying a stand of Northern Cabinet-woods.

NATIONAL PARKS.

National Parks now number twenty-two for a total area of 169,539 acres.

PROVISIONAL RESERVATIONS.

The number of areas proclaimed as Timber Reserves stood at 31st December, 1923, as 325, with an acreage of 3,090,077.

The following schedule is illustrative of the changes in forest reservations:—

FOREST RESERVATION—DECEMBER, 1923.

STATE FORESTS.		Number.	Area in Acres.
At 31st December, 1922	.. .. .	117	1,410,364
Proclaimed 1st January to 31st December, 1923	.. .. .	14	93,587
		<hr/> 131	<hr/> 1,503,951

TIMBER RESERVES.

	Acres.	Area in Acres.
At 31st December, 1922 (by recomputation)		3,123,072
Converted into State Forests	66,228	
Cancelled (2)	2,502	
Revoked	1,346	
Total deductions		70,076
Balance		3,052,996
Additions to Reserves	1,270	
New Reserves	35,811	
Total additions		37,081
Total forest reservations at 31st December, 1923		3,090,077

NATIONAL PARKS.—31st December, 1923.

National Parks at 31st December, 1922 (by recomputation)	168,809
Proclaimed 1st January, 1923 to 31st December, 1923	730
Total National Parks at 31st December, 1923	169,539
Grand total Reservations at 31st December, 1923	4,763,567

RESUMPTIONS OF TIMBER LANDS.

Areas of 229 and 160 acres in the parish of St. Agnes were purchased and proclaimed State Forests.

Another area of 115 acres was repurchased in the parish of Eungella and gazetted a Timber Reserve.

ALLOCATION OF FOREST AREAS.

The following schedule shows the district distribution of the various forest areas:—

RETURN OF STATE FORESTS, TIMBER RESERVES, AND NATIONAL PARKS IN THE STATE OF QUEENSLAND ON 31ST DECEMBER, 1923.

Land Agent's District.	STATE FORESTS.			TIMBER RESERVES.			NATIONAL PARKS.		
	No.	Area.		No.	Area.		No.	Area.	
		A.	R. P.		A.	R. P.		A.	R. P.
Atherton	7	22,978	1 9	3	36,185	0 0	..	..	..
Bowen .. .. .	..	..	..	13	144,738	2 20	..	..	..
Brisbane	23	76,667	0 0	48	216,672	0 25	9	48,627	1 31
Bundaberg	6	55,545	1 9	25	101,099	3 25	..	..	..
Cairns	3	107,194	0 0	3	51,750	0 0	1	79,000	0 0
Charleville .. .. .	..	..	..	1	0	0 37	..	..	..
Charters Towers .. .. .	..	..	..	1	125,000	0 0	..	..	..
Clermont .. .. .	..	..	..	4	136,800	0 0	..	..	..
Cooktown .. .. .	..	..	..	7	424,050	0 0	..	..	..
Dalby	5	338,000	0 0	18	245,827	2 0	1	13,540	0 0
Gayndah	2	10,087	1 20	18	58,598	2 12	..	..	..
Gladstone	5	38,007	0 0	18	95,507	2 16	..	..	..
Gympie	15	101,245	3 17	33	343,193	2 7	1	106	2 7
Herberton	3	21,631	3 8	3	8,086	0 30	3	1,040	0 0
Ingham .. .. .	..	..	..	6	173,470	0 0	..	..	..
Inglewood	5	80,540	0 0	6	17,990	0 0	..	..	..
Innisfail .. .. .	..	..	..	1	2,966	0 38	..	..	..
Ipswich	13	98,920	1 30	28	63,815	0 0	1	224	0 0
Isisford .. .. .	..	..	..	1	25,600	0 0	..	..	..
Mackay .. .. .	..	..	..	11	236,891	3 23	..	..	..
Maryborough	7	257,840	0 0	24	92,829	1 24	2	1,050	0 0
Nanango	27	116,828	1 13	16	55,127	3 6	1	22,500	0 0
Port Douglas .. .. .	..	..	..	5	21,324	0 0	..	..	..
Rockhampton	3	117,640	0 0	10	284,718	0 0	1	216	2 0
Roma	1	8,695	3 0	5	33,572	0 0	..	..	..
Springure .. .. .	..	..	..	1	17,200	0 0	..	..	..
St. George .. .. .	..	..	..	1	3,072	0 0	..	..	..
Taroom .. .. .	..	..	..	1	2,240	0 0	..	..	..
Toowoomba	3	17,810	0 0	4	35,430	2 15	..	..	..
Warwick	3	34,320	0 0	8	26,930	0 0	2	3,235	0 0
Windorah .. .. .	..	..	..	1	240	0 0	..	..	..
Winton .. .. .	..	..	..	1	9,111	0 0	..	..	..
Totals	131	1,503,951	0 26	325	3,090,077	0 38	22	169,539	1 38

Total area reserved for National Parks	169,539	1 28
Total area reserved for State Forests	1,503,951	0 26
Total area reserved for Timber Reserves	3,090,077	0 38

4,763,567 3 12

THE FOREST AREA, 1900-1923.

The fluctuations in the total reserved forest area for the State during the period 1900-1923 are shown in the Schedule following:—

Date.	No.	State Forests.	No.	National Parks.	Timber Reserves	Total.
		Acres.		Acres.	Acres.	
31st December, 1900 .. .. .	..	..	..	..	1,622,855	1,622,855
31st December, 1901 .. .. .	..	..	..	..	2,219,177	2,219,177
31st December, 1902 .. .. .	..	..	..	..	3,124,160	3,124,160
31st December, 1903 .. .. .	..	..	..	..	3,518,520	3,518,520
31st December, 1904 .. .. .	..	..	..	..	3,673,331	3,673,331
31st December, 1905 .. .. .	..	..	..	..	3,606,709	3,606,709
31st December, 1906 .. .. .	..	..	..	..	3,460,826	3,460,826
31st December, 1907 .. .. .	..	416,872	..	..	3,255,706	3,672,578
31st December, 1908	15	793,097	5	23,175	3,019,919	3,836,191
31st December, 1909	18	809,697	7	26,645	2,981,111	3,817,353
31st December, 1911	24	819,937	7	26,645	2,868,337	3,714,919.
31st December, 1912	25	855,037	7	26,645	3,211,855	4,093,537.
31st December, 1913	25	886,137	7	26,645	3,195,688	4,108,470
31st December, 1914	37	962,557	8	26,751	3,076,159	4,065,467
31st December, 1915	52	1,003,733	9	73,751	2,998,851	4,076,335
31st December, 1916	54	1,006,829	9	73,751	2,887,646	3,968,226
31st December, 1917	64	1,069,134	9	73,751	2,804,967	3,947,852
31st December, 1918	69	1,121,900	14	73,980	2,671,139	3,867,019
30th June, 1919	71	1,151,500	14	73,980	2,559,717	3,785,197
30th June, 1920	84	1,260,832	14	73,980	2,583,450	3,918,262
30th June, 1921	100	1,273,830	15	74,316	2,679,091	4,027,237
31st December, 1921	103	1,320,647	16	153,316	2,722,835	4,196,798
31st December, 1922	117	1,410,364	21	168,809	3,123,072	4,702,245
31st December, 1923	131	1,503,951	22	169,539	3,090,077	4,763,567

TECHNICAL OPERATIONS.

SILVICULTURE, 1923.

By the end of 1923, the processes of silviculture for the Queensland Forests were emerging in all districts from their primary experimental phases, and taking definite shape in ordered programmes co-ordinate to the felling plans in process of development for the various Working Plan Areas.

The invention of the tubing vehicle for the overcoming of planting difficulties with the tap-rooting species in these summer rainfall sub-tropical climates was a forward step of considerable silvical consequence, which is bound to have momentous effect upon all future forest extension projects. The success obtained with this planting vehicle has been consistent throughout all operations conducted with its aid, and it is now being applied universally towards the quantity production of tree-lings for all planting and interplanting work in Queensland.

Whilst experimental research upon the silvical characteristics and requirements of the hitherto silvically unknown local species has been antecedent necessarily to any considerable embarkation in reforestation, a condition still more requisite to applied silviculture is the development of systematic and intensive utilisation of the immense range of tree species which congregate confusedly in the mixed forests of this State. As yet, the ideal logging operation is far distant, and the forester's problem is that he must either mark time until utilisation be carried further than it is to-day or he must be prepared to sacrifice to his plans a timber stand of secondary woods which in other less richly endowed countries would be held in high esteem. Whilst the Red Satinay (Turpentine) and Brush (Satin) Box trees of Fraser Island are unsaleable, the forester is baulked of his full forest regeneration ambitions. Similarly in the case of the cabinet-woods jungle where the cutting of favourite timbers by a fastidious timber trade leaves the forest in a state altogether unready for replenishment. In the case of the hardwood reserves also, until the successive operations of the girder and pile getter, the mill-logger, and the sleeper and fencing-post getter are completed, the reforestation process is compelled to hang fire.

As far as may be, however, the reproduction projects are being paired with the utilisation programme under the preliminary Working Plans for the general Working Plan Areas so far defined, and operations for reforestation are proceeding by compounded methods of natural regeneration plus liberation plus interplanting, supplemented by the complete planting-up of blanks where they exist.

In practically all forests the preliminary silvical operation consists in the selection removal of the utterly useless veterans of undesired species, followed by or associated with the logging of the marketable trees by 100-acre compartments. This is succeeded in the case of the Eucalyptus forests by a seeding ringbarking of the remnant stand of inutilisable trees of approved seed-tree species, and the regeneration burning of the ground slash and brush to create a seedbed. Interplanting or planting up of blanks 12 x 12, with nursery plants of species designed to improve the composition of the stand produced

by the natural regeneration, will be carried out subsequently if necessary. In the case of the Hoop Pine and Maple jungles, a liberation of the advanced growth takes place after or with the logging, followed by interplanting or planting up of the blanks with chosen species.

In shelterwood planting, a spacing of 12 x 12 is adopted, with clear felling; the espacement of plantations is 12 x 12 for Eucalyptus and Kauri Pine and 8 x 8 for other species.

The method of Taungya was introduced experimentally during the year to permit of the fullest possible utilisation of site values on pocket areas left within the State Forests which are considered suitable for banana-growing. In such instances, it is planned to establish plantations of Cavendish bananas at 8 x 8 spacing, and two to three years later to introduce Beech, Maple, or Hoop Pine between the banana plants, so that, when the profitable life of the banana plant ends in its seventh year, a new forest is left in possession of the soil. The method has considerable promise for such areas where it is possible to apply it, as on parts of the Mary Valley Working Plan Area.

The afforestation of the Wallum lands of the coast has been the subject of some thought, and experimental work has been initiated close to Maryborough on typical waste land, with the intent to test out an extensive list of possible local and exotic species.

It has not been practicable yet, owing to financial reasons; to launch the Stanthorpe proposition for the development of plantations of *Pinus insignis* and other coniferous species to furnish the future case-timber supplies of this important yet practically timberless fruitgrowing district. The Forest Service hopes that the ensuing financial year will witness the beginning of this project, which is one affording ample assurance of success and profit.

The close of the year witnessed a promising fall of Hoop Pine and Bunya seed, and considerable quantities were stored in anticipation of a wide extension of reforestation operations during 1925.

NOTES ON DISTRICT SILVICULTURE.

FRASER ISLAND.

Climatic.

Rainfall was above the average, but unevenly distributed, April furnishing over 33 per cent. of the year's fall of 61½ inches—May, September, October, and November being dry. Frosts were numerous.

Nursery Work.

Thirty-eight pounds of seed of various species were sown and 30,000 plants secured. Tallowwood (*E. microcorys*), Blackbutt (*E. pilularis*), and Red Stringybark (*E. resinifera*) were the main species dealt with.

Plantations.

The report period saw a change of policy in respect of silvicultural operations on Fraser Island. Previously, owing to the necessity of plumbing the possibilities of the various conditions existing, operations had been diffuse and were scattered in different parts of the forest; but progress has been such as to permit of the concentration of operations, and a subdivision of the forest into compartments having been made, attention was focussed on a conveniently located compartment (McKenzie I.—White Cliffs Logging Area—an area of 100 acres) and this was treated in its entirety, by felling the scrub for planting during 1924. This policy is being followed up, and compartments McKenzie 2 and 3 White Cliffs Logging Area have been marked for next treatment. On Compartment 3, 15 acres of brushing had been done at the end of the report period.

Of other operations, an area clear-felled in 1921 was burnt in January of the year under review, and 50 lb. of *Callitris arenosa* seed and a small quantity of *Grevillea robusta* seed were sown in April, on an area of 8½ acres. From April to September, Hoop Pine (12,000) plants were planted 12 x 12 ft. over 42 acres, and subsequently interplanted with 17,120 *Pinus densiflora*, 3,639 *Pinus Thunbergii*, and 2,970 *Pinus halepensis*. At the end of the year 60 per cent. of the plants were surviving.

On an area of 950 acres between Rocky and Wungoolba Creeks, which had been ringbarked and brushed during 1921-2, 416 acres were seed-spotted in March and April, 1923, with *Callitris arenosa* seed. Tubed Blackbutt and Tallowwood were planted 12 x 12 ft. and Turpentine seed was sown at a spacing of 12 x 6 ft. over an area of 11 acres. Two acres of each of the following experimental plantings were also made:—

Tubed plants of Tallowwood planted 12 x 12 ft., with Turpentine seed-spotted 6 x 6 ft.

Hoop Pine planted 12 x 12 ft. and Turpentine seed sown 6 x 6 ft.

Hoop Pine planted 12 x 12 ft., Silky Oak sown 6 x 6 ft.

In December tubed Tallowwood plants were planted at a spacing of 12 x 12 ft.

The tubed Eucalyptus gave an 80 to 95 per cent. survival, while the Hoop Pine, which were open-root planted, showed 50 per cent. success only. The sowings of Turpentine and Cypress seed gave scattered germination only.

An experimental planting of a few hundred Kauri and white Beech gave 75 per cent. to 90 per cent. success, whilst Tallowwood planted in tubes yielded an 80 per cent. survival, and of 1,300 Hoop Pine 600 succeeded. A few Balsa-wood were experimentally planted out, but did not survive the frosts.

The planting up of blanks from previous silvicultural operations was proceeded with.

Seven thousand two hundred Hoop Pine were planted on Area 1, with one-third success.

Two thousand eight hundred Tallowwood, Red Stringybark, and *Eucalyptus Staigeriana* (Lemon-scented Ironbark) were planted on Area 2, 60 per cent. surviving at the end of the year.

On Area 3, 1,400 plants of the same three species were used, 60 per cent. of the Tallowwood and Red Stringybark, and 80 per cent. of the Lemon-scented Ironbark succeeding.

Four acres of Area 9 were harrowed and sown broadcast with Cypress Pine seed.

Blanks in Area 18 were planted up with 800 Hoop Pine trees, of which 600 survived.

Six hundred White Beech were put in along the White Cliffs road in December, and at March of the current year 75 per cent. were thriving.

The Deputy Forester offers some interesting figures as regards maximum height growths of planted species:—

Species.	Age.	Girth.	Height.
Hardwoods.			
	Years.	Inches.	Feet.
<i>Eucalyptus resinifera</i>	6	23	58
<i>E. maculata</i>	7	20	68
<i>E. maculata</i>	5	18	58
<i>E. citriodora</i>	5	14	42
<i>E. pilularis</i>	6	23	55
<i>E. pilularis</i> at Bogimbah	8	40	80
<i>E. microcorys</i>	6	22	50
Softwoods.			
<i>Grevillea robusta</i>	6	17	32
<i>Agathis robusta</i>	6	13	25
<i>Araucaria Cunninghamii</i>	6	13½	25
Red Cedar (<i>Cedrela australis</i> , repeatedly attacked by borer)	5	15	22
White Cedar	5	..	17
Quondong (<i>Elæocarpus grandis</i>)	5	..	26
Bunya	6	..	12
<i>Pinus insignis</i>	5	11½	25
<i>P. taeda</i>	6	9	18
<i>P. maritima</i>	5	..	18

Remarking on these figures, the Deputy Forester says that the growth of the Eucalypts easily surpasses that of the conifers, the latter remaining stagnant for the first two or three years, then making 4 to 8 ft. height-growth per annum. The site quality has a most decided effect on growth; in loamy sand depressions, Hoop and Kauri made 25 ft. height-growth in six years; on Box and Turpentine country they reached 20 ft. in the same time, whilst in the low carrol type 12 and 14 ft. respectively were the best heights recorded. Similarly, in best locations Spotted Gum reached 58 ft., Tallowwood 42 ft., Blackbutt 55 ft., Scented Gum 45 ft., as against 30 ft. in the carrol type. A comparison of growth over a period of six years on second-class forest locations is interesting:—Red Stringybark, 54 ft. high; Spotted Gum, 68 ft.; Hoop Pine, 9 ft., and Kauri Pine 14 ft.

Natural Regeneration.

No new areas were treated.

Expenditure was confined to a small sum spent in fire protection, which is the key to the successful regeneration of a large portion of Fraser Island with Cypress Pine and other species.

The Deputy Forester reports that the work at Bowaraddy, hitherto deemed unsuccessful, is bearing fruit in the numerous young Hoop Pines coming into evidence interspersed amongst the other species.

ATHERTON DISTRICT.

Rainfall for North Queensland district was heaviest in March and April, during which months practically half the year's total was recorded.

Nursery Work.

A small nursery was laid down on Reserve 194 during the year.

Planting.

Work was confined to tending existing experimental plots and seed-spotting of Cypress. This, however, experienced a prolonged drought and did not succeed.

Natural Regeneration.

On R. 194 Barron, 400 acres were treated for the natural regeneration of Eucalypts. The work of prime silvicultural importance in North Queensland—viz., the treatment of Maple-bearing areas for the natural regeneration of this most valuable species—was continued with success along the previously established lines. An additional area of 162 acres was given a first treatment, and further treatment given to 140 acres of Gadgarra State Forest 310. On R. 418 Danbulla, 56 acres were similarly treated, whilst 45 acres of Reserve 191 Barron were given attention with a view to securing regeneration of Red Cedar.

At the end of the report period an area of 1,040 acres had been treated in North Queensland, and the programme for 1924-25 will cover extension of these operations as fast as funds and conditions will permit.

DALBY DISTRICT.

Climatic.

The year under review was one of drought, and most unfavourable conditions for silvicultural work prevailed.

Natural Regeneration.

The silvicultural problems of the Western forests were investigated during the year, and as a result a series of cutting rules for operators was laid down, in order that later silvicultural treatment would be most effective in producing natural regeneration of the chief commercial species—viz., Narrow-leaf Ironbark, Spotted Gum, and Cypress Pine. Rules for silvicultural treatment after utilisation were also formulated.

On 600 acres of Nudley State Forest, natural regeneration work was carried on, but dry conditions had at close of the year prevented results from showing. Some seed-spotting done during rain resulted in excellent germination of Spotted Gum and Ironbark, which is being watched with interest.

The programme for future operations on the Western forests provides for extension of proved treatment for regeneration.

ROCKHAMPTON DISTRICT.

On the Maryvale Reserve, where one man is employed in the general work of plantation experiment on pseudo-Wallum lands, the rainfall was 38½ inches for the year. A number of species were raised in the nursery, the chief being Hoop Pine, Cypress Pine, *Pinus insignis*, *Pinus halepensis*, *Taxodium distichum*, *Eucalyptus pilularis*, and *Eucalyptus Staigeriana*. Plantation sites totalling about 40 acres have been prepared on this area, and a number of Hoop and Kauri Pines were planted during the year. The weather subsequently was adverse to continuance of planting, but it is proposed to complete the planting during 1924. Some seed-spotting work was also undertaken.

IMBIL DISTRICT.

Climatic.

Rainfall was very low, being but 3 in. better than the previous droughty year, and 15 in. below the average. The bulk of the fall was experienced in April.

Nursery.

At the end of 1923, 6,000 Hoop Pine plants were in stock in the nursery, these representing the balance of the stock raised from the seedfall in January 1920. At the close of the year another general seeding was in evidence, from which it is expected to fully stock up the nursery, and to store sufficient seed for all needs until the next crop.

Some thousands of planting tubes were supplied to the nursery during the year, and it is proposed to supply a much greater number for use in forthcoming operations.

Planting.

On Brooloo State Forest some 50,000 Hoop Pine plants and a few thousand White Beech were planted during the report period. The plants used had been root-wrenched for the purpose of developing a root system to ensure resistance against dry conditions, but this did not prove as successful as was anticipated.

The Forest Factor in charge draws attention to the splendid results from Silky Oak plots, the trees planted in August 1917 having seeded with a resultant thick crop of natural regeneration.

The results of trials of exotic species indicate that *Cryptomeria japonica* is one of the few introduced species which give promise of being suited to Queensland conditions.

At the end of 1923, the position as regards planting work in the district was:—

Brooloo State Forest—

	Acres.
Clean felled and planted	130
Liberated and planted	135
Areas clean felled, burnt off, seed-spotted ready for planting	202
Area liberated, ready for planting	320

Reserve 256, Imbil—

Clean felled for planting	32
Liberated	35

Reserve 435, Amamoor—

Liberation and Regeneration Fellings:—

Compartment 1—Zachariah Creek Logging Area ..	about	35 acres.
Compartment 2—Zachariah Creek Logging Area ..	about	8 acres.
Compartment 6—Zachariah Creek Logging Area ..	about	17 acres.
Compartment 7—Zachariah Creek Logging Area ..	about	40 acres.
Skyring Creek Logging Area ..	about	48 acres.

Nursery: $\frac{1}{2}$ acre well fenced, ploughed, and about $\frac{3}{4}$ of the area covered with low standard shades.

Experimental Plantations: 4 acres of scrub felled and burned, and about 7 acres heavy scrub drastically liberated.

Liberation of Hoop Pine Advance Growth.

Where Hoop Pine regeneration is present, operations take the shape of removing competing weed trees, and, by interplanting, stocking up the area with Pine and valuable scrubwoods.

Liberation work was carried out over an area of about 150 acres on Brooloo State Forest and about 20 acres on Reserve 256 Imbil. The Forest Factor states that exceptionally good regeneration has been secured, particularly of the *Flindersias* (Yellowwood, Crow's Ash, and Bumpy Ash).

Natural Regeneration of Eucalypts.

Forty-five acres of Brooloo State Forest were treated by removing useless trees with a view to securing extension of the stands of the more valuable hardwoods.

MACKAY DISTRICT.

The centre of silvicultural operations in the Mackay District is the Eungella Plateau, which suffered very dry conditions, the rainfall of 38 in. being less than half the average.

Nursery Work.

Construction of a nursery on Reserve 6 Eungella was put in hand, and a good site adjacent to water was fenced, and beds prepared. To the end of the year no sowings had been commenced. Seed of Red Cedar was collected in February and sent to other districts.

Operations planned for the Eungella Forest for 1924-25 include the planting of Maple and Hoop and Bunya Pine, and experiments in the promotion of regeneration of Red Cedar.

BENARKIN DISTRICT.

Climatic.

The year in the Benarkin district was disastrously dry, and only 19 ins. were recorded (most of it in December) against an average of 29 in. This following on drought the previous year provided conditions extremely unfavourable to forestry.

Nursery.

Construction of two new nurseries was commenced during the year—one on the Bunya Mountains State Forest covering $\frac{1}{2}$ acre, and one of the same area on State Forest Reserve 299 Avoca. Advantage was taken of a natural spring, giving an excellent water supply, in selecting the Bunya Mountains site.

At the close of the report period, Benarkin nursery stock was 80,000 plants, principally of exotic species, including 10,000 tubed.

Plantations.

Planting work on a commercial scale was prevented by the dry conditions. Small experiments only were carried out.

Natural Regeneration.

The pursuance of operations for the natural regeneration of hardwoods was hampered by the dry weather, and only small areas were treated.

In connection with the natural regeneration of pine a new departure was made during the year. The usual contract felling by which utilisation of this species is made is not usually entirely satisfactory; young trees are destroyed in the process, and trees which should be removed are left standing.

To overcome this difficulty the policy has been tried out of cutting by day labour in certain localities, and this has had an excellent effect, the day labour cutters operating as cheaply as the contract men and with much better results as far as silviculture is concerned.

Natural regeneration operations were as follows:—

On Reserve 283, the natural stands on 349 acres were improved by ringbarking; thinnings were made on 297 acres; 13 acres were strip-felled for encouragement of regeneration; and freeing of existing stands was effected on areas aggregating 72 acres. The total area treated was 666 acres, some of the areas having been both thinned and ring-barked.

On Reserve 289 Cooyar, 64 acres of Spotted Gum country were treated for regeneration; Pine stands on 25 acres were freed; strip-felling was carried out on 40 acres; and 20 acres of Eucalyptus forest were treated for regeneration.

On Reserve 316 Cooyar, Pine regeneration on an area of 191 acres was freed of competition; and on Reserve 379 Cooyar, similar treatment was given an area of 25 acres.

On Bunya Mountains State Forest, about 300 acres were treated in the same manner, while strip-felling on 3 acres was carried out.

On Reserve 299 Avoca, the work consisted of 25 acres of strip-felling, and freeing 38 acres of Yellowwood regeneration and 217 acres of young Hoop Pine.

On Reserve 257 Cooyar, &c., 65 acres of Hardwood were treated and 5 acres of scrub strip-felled.

GYMPIE DISTRICT.

The year's rainfall was below the average. Records from some of the stations are:—R. 220 Kilkivan (Sinai), 23.15 in.; R. 287 Woowoonga (10 months), 27.54 in.; R. 221 Kilkivan, 29.19 in. This rainfall was provided in a few heavy storms, mostly in December.

Nurseries.

On R. 220 Kilkivan the provision of water supply for the nursery was proceeded with; a tank-stand and tank were erected, and engine installed. The nursery site was extended, the new area being grubbed, ploughed, and fenced. The area now enclosed is roughly $1\frac{1}{4}$ acre. A quantity of seed of the following species was collected:—Hoop Pine 86 lb., Silky Oak 30 lb., Silver Beech 1 lb., White Cedar 3 lb., Black Bean 242 lb., *Flindersia australis* $\frac{1}{2}$ oz. Seed of the following species was sown:—Hoop Pine, Red Cedar, *Callitris Macleayana*, *Cryptomeria japonica*, *Cupressus sempervirens*, *Flindersia australis*, *Grevillea robusta*, *Ochroma lagopus*, *Juniperus procera*, *Melia Azedarach*, *Podocarpus Ladei*, *Pinus insignis*, *Pinus patula*, *Pinus canariensis*. Nursery stocks are shown in the general return.

The nursery on R. 355 Kilkivan was extended by one square chain during the year, and water supply was installed. Two hundred and forty pounds of Hoop Pine seed were collected. Seed of Hoop Pine, Silky Oak, *Pinus canariensis*, *Pinus insignis*, and *Callitris Macleayana* was sown.

On Reserve 74 Nangur, seed of Silky Oak and White Cedar was collected. Maintenance costs of the nursery were £3 2s.

Three hundred pounds of Hoop Pine seed were collected on Res. 287 Woowoonga, and a quantity of Red Cedar seed was sown in the nursery on the same reserve.

On R. 221 Kilkivan, seed of Silky Oak was collected; and sowings in the nursery were made of Silky Oak, *Pinus insignis*, *Juniperus procera*, and White Cedar. The nursery soil was improved during 1923, and water supply was provided.

Water supply was established during 1923 for the nursery on Reserve 26 Kilkivan.

Plantations.

On Reserve 220 Sinai, 7 acres of plantations were created, the species used being Hoop Pine, Silky Oak, and *Harpullia pendula*.

Four and a-quarter acres were planted up on R. 355 Kilkivan, with Hoop Pine, Silky Oak, and *Pinus densiflora*.

FOREST PROTECTION.

The Forest Service continued its work of protecting the forests during the year. Efforts were directed along the lines of fire prevention, eradication of noxious plants, and investigation of insect and bird relationships to the various species. In this latter work the Service availed itself of the services of the Government Entomologist of the Department of Agriculture, with whom Forest Service officers have been in active correspondence.

FIRE PROTECTION.

The protection of the forests from fire received the attention of the district staffs in conjunction with forest organisation operations, and roads constructed also serve as firebreaks. Special fire protection work done includes the construction of firelines and the actual fighting of fires.

As elsewhere reported, the year generally was a dry one, and the fire menace was serious throughout the State right up to the last fortnight in December. Fires were reported from all districts, and in some cases good saves were made by the resident staff; but it is not possible, with the present skeleton organisation, to deal with more than a small fraction of the fires which occur on the forests in every dry season. Effort has been devoted to saving only the most valuable stands and those under treatment on the areas in course of organisation.

The work done is shown in the table hereunder:—

Description of Work.	Cost.			Total.		
	£	s.	d.	£	s.	d.
Atherton—						
Fire fighting—National Park, Cairns	11	19	8	..	..	..
R. 315, Dulanban	6	0	8	..	..	..
R. 194, Barron	4	19	8	..	..	..
R. 310, Gadgarra	8	6	4	..	..	..
				31	6	4
Benarkin—						
Construction firelines—R. 472, Taromeo	21	3	10	..	..	..
R. 452, Taromeo	9	12	0	..	..	..
R. 283, Benarkin	32	6	9	..	..	..
R. 283, Taromeo Road	17	9	10	..	..	..
R. 480, Taromeo	7	10	4	..	..	..
Maintenance firelines—R. 283, Benarkin	20	15	2	..	..	..
Cleaning roads—R. 289, Cooyar	47	18	6	..	..	..
R. 379, Cooyar	2	5	2	..	..	..
R. 316, Cooyar	2	19	8	..	..	..
Construction—Firebreak, No. 1 R. 299, Avoca	19	5	8	..	..	..
Firebreak, No. 2 R. 299, Avoca	14	7	10	..	..	..
				195	14	9
Imbil—						
Fire Protection—Brooloo State Forest	73	3	9	..	..	..
R. 435, Amamoor	51	10	8	..	..	..
R. 256, Imbil	11	14	10	..	..	..
				136	9	3
Fraser Island—						
Fire fighting	53	11	10	..	..	..
Construction firelines	436	4	10	..	..	..
Maintenance	175	0	0	..	..	..
				665	16	8
Gympie—						
Fire protection—R. 220, Sinai	33	12	4	..	..	..
R. 700, Gympie, &c.	8	12	9	..	..	..
R. 287, Woowoonga	50	19	9	..	..	..
R. 221, Kilkivan	7	9	0	..	..	..
				100	13	10
Brisbane—						
Forest protection—R. 318, Maroochy	363	13	3	..	..	..
R. 69, Bunya	53	3	5	..	..	..
				416	16	8
			
				1,546	17	6

NOXIOUS PLANTS.

Prickly Pear.—The district mostly affected by this pest is Dalby. In 1923, operations were confined to two reserves. About 65 acres were cleared on R. 4 Braemar at a cost per acre of £1 5s. 1d., and about 300 acres re-cleared at 6s. 4d. per acre; total cost, £176 4s. 3d. On R. 337 Yeulba about 200 acres were cleared at £1 per acre; total cost, £197 12s. 4d. Cost for district, £373 16s. 7d.

Small patches of pear were reported in Benarkin District. On R. 120 two patches were cleared at a cost of £4 4s. 9d. On Brooloo State Forest (Imbil District) plants found were destroyed. Three acres of pear-infested land on R. 74 Nangur. (Gympie District) were cleaned up.

The constitution of the Prickly Pear Land Commission during the year will, it is expected, have a favourable effect on the work of destruction of pear on infested forests.

Lantana.—In order to render silvicultural operations possible on the various reserves under organisation it has been necessary to deal with this pest, and a considerable amount of attention has been given to its destruction.

During the year the lantana fly was released on several State forests, but, whilst this is a measure of great assistance in checking the pest, complete eradication is not possible unless clearing operations are also undertaken.

On Brooloo State Forest, a large acreage on Derrier Logging Area, and portions of Casey's Gully and Coonan Gibber Logging Areas were cleared of the pest, whilst on Res. 256 Imbil the spread of the pest to clean lands was prevented.

On R. 318 Maroochy the sum of £114 11s. 9d. was spent in eradication of lantana.

The few small patches discovered on Fraser Island were cleared.

In the Benarkin District some £50 was expended on the clearing of this pest. Ten acres of lantana were eradicated from S.F.R. 257, Emu Creek, and S.F.R. 283 was also dealt with; and the Monsildale Reserves, which are heavily infested, are marked for future attention.

In the Gympie District about 10 acres of R. 220 Kilkivan (Sinai) were cleared at a cost of £6 1s., whilst £16 was spent in clearing 30 acres on R. 353 Kilkivan, from lantana and other plants. On R. 124 Glastonbury, 372 acres cost £97 16s. to clear, and, at a cost of £3, 3 acres of R. 700 Gympie and Curra were cleared. A noxious plant known as wild cotton was eradicated from 2 acres of R. 74 Nangur, at a cost of £3 2s.

FOREST ORGANISATION.

The work done under this head during the year embraced not only the establishment and maintenance of buildings, horse paddocks, and other requirements of the local forest administration, but also work in connection with the management of the grazing resources of the State Forests, and the construction of roads for logging purposes. Details are set forth hereunder:—

BUILDINGS.

Description of Work.	Cost.			Total.		
	£	s.	d.	£	s.	d.
Fraser Island—						
Bath-house	1	1	4			
Wagon-shed	5	19	10			
Blacksmith shop	3	8	8			
Stables	6	12	6			
Shed at beach	7	3	0			
Tool-room and office fittings	8	0	8			
Administrative tramline, beach	5	19	6			
Lining and ceiling office	36	17	11			
Purchase of materials	3	5	0			
Maintenance of buildings	3	15	9			
				82	4	2
Dalby—Extension, Overseer's dwelling, Nudley State Forest	2	4	0	2	4	0
Gladstone—Erection of hut, Res. 20 Maryvale	8	18	9	8	18	9
Mackay—Erection of bunk-house, Res. 6 Eungella	182	2	7	182	2	7
Benarkin—						
Extension to office, R. 283 Taromeo	33	12	0			
Bath and tool room, R. 283 Taromeo	4	9	11			
Quarters (painting), R. 283 Taromeo	4	15	10			
Completion of barracks, R. 289 Cooyar	27	4	5			
Cottage for Overseer, R. 257 Cooyar, &c.	332	3	4			
Barracks, R. 257 Cooyar, &c.	70	7	8			
Cottage for Overseer, R. 299 Avoca	289	4	4			
Barracks, R. 299 Avoca	123	13	8			
Cottage for overseer, R. 151 Neumgna, &c.	223	9	8			
Barracks, R. 151, Neumgna, &c.	103	8	7			
				1,212	9	5
Imbil—Bunk-house, R. 256 Imbil	2	17	1	2	17	1
Atherton—						
House on R. 310	104	0	0			
Hut on R. 194	76	0	0			
				180	0	0
Gympie—						
Erection engine-house, R. 220 Kilkivan	9	19	4			
Maintenance, buildings, R. 220 Kilkivan	5	16	6			
Erection quarters, R. 355 Kilkivan	84	10	0			
Additions to cottage, R. 355 Kilkivan	14	14	0			
Maintenance, buildings, R. 355 Kilkivan	0	10	0			
Erection, smithy, R. 393 Woondum	14	12	4			
Maintenance, buildings, Corella Forests	1	9	8			
Maintenance, buildings, R. 287 Woowoonga	29	15	0			
Maintenance, buildings, R. 26 Kilkivan	3	19	1			
				165	5	11
				1,836	1	11

GRASS AND WATER PROVISION.

Description of Work.	Cost.			Total.		
	£	s.	d.	£	s.	d.
Fraser Island—Trial planting of grasses—Kikuya, Paspalum, &c.	13	14	8	13	14	8
Mackay—Establishment of Forest Paddock No. 1	83	4	8	83	4	8
Benarkin—						
Water supply dam, Nursery site R. 299	87	17	10			
Water supply well, R. 299 Avoca	40	7	7			
Forest paddock No. 2, Pimpimbudgee L.A., R. 151 Neumgna	61	15	0			
Extension Forest Station Paddock, Taromeo R. 283	273	7	4			
Emu Creek Paddock, R. 283	93	1	8			
Forest Paddock, R. 52	195	0	6			
Railway Bridge Paddock, R. 283	51	3	10			
Forest Paddock No. 1, Muddy Creek R. 283	54	4	3			
Forest Paddock, Possum Creek	323	17	8			
Forest Paddock, Portion 59v, Taromeo	4	3	4			
Forest Paddock No. 1, R. 257 Cooyar, &c.	410	19	6			
Forest Paddock No. 2, R. 257 Cooyar, &c.	446	13	4			
Horse Paddock Forest Station, R. 257 Cooyar, &c.	66	16	10			
Horse Paddock, R. 289 Cooyar	74	10	9			
Forest Paddock No. 1, R. 316 Cooyar	58	3	6			
Forest Paddock, R. 120 Meandu Creek	222	17	8			
Horse Paddock, R. 299 Avoca	90	12	9			
Forest Paddock, Greenwood Creek R. 299	245	3	6			
Forest Paddock No. 1, R. 151 Neumgna	57	1	2			
Forest Paddock No. 2, R. 151 Neumgna	28	14	6			
Horse Paddock, R. 151 Neumgna	46	3	5			
Forest Paddock, Wengen Creek R. 151	42	1	1			
				2,974	17	0
Imbil—						
Fencing Paddock, R. 235 Amamoor	13	8	8			
Fencing No. 18 Paddock, Yabba	0	5	10			
Forest Paddock No. 9, B.S.F.	0	1	0			
No. 13 Paddock, Coonoon Gibber Creek	11	9	2			
Grassing Compt. 4A, Derrier L.A.	30	4	0			
Grassing Compt 5, Derrier L.A.	22	1	5			
No. 14 Paddock, R. 256 Imbil	40	14	7			
No. 14 Paddock, R. 256 Imbil, improvements	0	17	3			
				119	1	11
Gympie—						
Forest Paddock No. 3, R. 220 Kilkivan	11	19	5			
Maintenance, Forest Paddock, Kilkivan	1	10	4			
Maintenance, Forest Paddock, R. 355 Kilkivan	3	0	0			
Forest Paddocks, R. 124 Glastonbury	138	0	0			
Maintenance, Forest Paddocks, R. 221 Kilkivan	2	16	2			
Horse yard, R. 26 Kilkivan	4	0	10			
				161	6	9
				£3,352	5	0

ROADS.

Description of Work.	Cost.			Total.		
	£	s.	d.	£	s.	d.
Atherton—Construction road, Gadgarra S.F. 310	198	15	2	198	15	2
Mackay—						
Construction road, Res. 6 Eungella	48	3	0			
Corduroy, Pioneer River	95	11	10			
Construction, Mirani-Pinevale road	86	10	3			
Snig-track Gorge Creek	68	2	10			
Road Reconnaissances	30	3	6			
Purchase, road equipment	47	16	7			
Construction, roads, Res. 6 Eungella	57	1	8			
Construction, Bee Creek road, Eungella	43	18	2			
				477	7	10
Gympie—						
Maintenance, Gap Creek road, R. 220 Sinai	5	1	5			
Maintenance, Roads, R. 355, Kilkivan	7	0	0			
Construction and repairs, roads, 124 Glastonbury	599	8	0			
Road Maintenance, R. 700 Corella	13	16	5			
Road Maintenance, R. 74 Nangur	2	6	6			
Road Maintenance, R. 287 Woowoonga	7	8	0			
Road Maintenance, R. 221 Kilkivan	1	9	8			
				636	11	0
Benarkin—						
Ryan's road, R. 283—Construction	41	4	2			
Repairs, Roads, Taromeo	43	5	0			
Road P-Q, R. 283—Construction	14	6	5			
Repairs, roads, Benarkin	6	5	5			
Possum Creek road, R. 283—Construction	46	1	8			
Main road, Benarkin—Construction	19	17	9			
Road "A," R. 299 Avoca—Construction	89	15	4			
Road "B," R. 299 Avoca—Construction	3	15	6			

ROADS—continued.

Description of Work.	Cost.	Total.
<i>Benarkin—continued.</i>		
Main road, R. 120 Tarong—Construction	36 4 2	
Construction road, Tarong to "J7" and "J," R. 289 Cooyar	65 4 10	
Road Compartments 65 and 71, R. 289, Cooyar	41 3 6	
Road, Compartment 1, R. 289 Cooyar	9 1 8	
Road, "A," R. 316 Cooyar	76 16 3	
Road, Middle Creek, R. 151, Tureen, &c.	31 11 9	
Road, Pimpimbudgee, R. 151 Tureen, &c... .. .	33 8 1	
Road, Main Ride	21 6 7	
Road, "C," R. 257 Cooyar	8 11 9	
Widening main road, R. 257 Cooyar	95 18 3	
Construction, Road "A," R. 257 Cooyar	81 5 10	
		765 3 11
<i>Imbil—</i>		
Section 3, Road 2, R. 135 Brooloo	123 9 2	
Ryan's Creek road, R. 256 Imbil	71 19 9	
Booulumba Creek road, R. 243 Cambroon	208 13 11	
		404 2 10
<i>Fraser Island—Maintenance, Roads</i>	4 13 8	4 13 8
		£2,486 14 5

NOTES.

On Fraser Island continued effort was made to find a suitable fodder plant for planting on the sand. A number of species were tried but with indifferent results, and most promise was shown by Rhodes Grass and a new species tried, Kikuya Grass, which, though slow to spread, forms a deep root system and is likely to become permanent.

In the construction of the bunk-hut built on Res. 6 Eungella, Mackay District, a number of local woods, the commercial value of which requires demonstration, were used, the species being marked for observation purposes.

FOREST SURVEY AND ENGINEERING.

CLASS I.—INSPECTIONS OF VACANT CROWN LANDS.

		Acres.
Designed portions 189-195, 201-206, 208-218	Samson Vale	15,295
Por. 122	Mia Mia	17,563
Portions 1-6	Crediton	17,437
R. 74	Miriam Vale	1,710
R. 77	Eurimbula	5,200
R. 86		900
R. 95		15,500
R. 102		11,000
R. 166		3,800
Vacant lands	Upper Burnett and Callide Valley	300,000
R. 303	Doongul	2,680
R. 402	Gilbert	1,830
	Tully River, Palmerstone Areas, Murray River	320,000
		712,915

CLASS II.—FLYING ASSESSMENT SURVEYS OF VACANT CROWN LAND, PROCLAIMED TIMBER RESERVES, AND STATE FORESTS.

		Acres.
Vacant Crown land	Sahl, Dundas, and Burnett	2,900
Designed portions 166, 219, 232-235	Samsonvale	2,141
R. 578	Kenilworth	204
R. 531	Kenilworth	910
R. 6	Eungella	6,285
R. 394	Lacy, Bloomsbury, Macartney	66,000
R. 3	Fraser Island	57,023
R. 75	Polmailly, Rodd's Bay	3,400
R. 115	O'Connell	
R. 99, 115	Polmailly	1,500
R. 676	Broomfield	9,750
R. 27	Woocoo	
R. 400	Emu Vale	1,100
R. 401	Gilbert	2,550
R. 405	Gladfield	5,289
R. 49	East Haldon (part)	600
Vacant Crown lands	Tin Can Bay Area	440,000
R. 303	Doongul	2,680
R. 31, 315, and 42	Garioch, Dulaban, and Mowbray	10,000
R. 19	Garioch (Spear Creek)	5,000
Vacant Crown lands	Meunga	13,000
	Total	630,332

FOREST SURVEY AND ENGINEERING—*continued.*
CLASS III.—VALUATION AND ORGANISATION OF STATE FORESTS.

R. 283 (Southern Section)	.. ..	Colinton (Compartments)	.. ..	Acres.	2,000
R. 257	.. ..	Emu Creek and Cooyar	.. ..		9,111
R. 299 and 149	.. ..	Avoca, Coolabunia	.. ..		2,700
R. 399	.. ..	Emu Vale	.. ..		2,864
R. 135	.. ..	Brooloo, Cambroon	.. ..		4,000
R. 292	.. ..	Maroochy	.. ..		1,450
R. 318	.. ..	Maroochy	.. ..		6,600
R. 445, 572, 583	.. ..	Kenilworth	.. ..		16,200
Total					44,925

BRISBANE DISTRICT.

Class I. surveys of vacant Crown lands in the parishes of Dundas, Sahl, and Burnett together with Class II. surveys of selected areas, were finalised towards the end of January, an area of 2,900 acres being dealt with. The camp was then moved *via* Brisbane to Leacy Creek near Dayboro. Designed portions in the parish of Samsonvale were then treated by Class I. and II. surveys. Practically all the country worked over was exceptionally rough and broken.

The Survey Camp was then shifted to Kureelipa near Mapleton, and Reserves 292 and 318 Maroochy, together with R.'s 445, 572, 583, 531, and 578 Kenilworth, were subsequently dealt with by a modified Class III. survey. Main traverses were run with theodolite, so that a base of control for elevations was established, while on the small areas, as in the case of R. 531 Kenilworth, the elevations were carried around boundaries with Abney.

Details of mileage are as follows:—

	Miles.	Chains.
Theodolite and chain	22	39
Compass and chain	10	17
Compass and step	7	41
Strip survey	190	72
Levels	16	29
Exploratory investigation	443	0

The location and survey of a logging road to Foxlowe beyond Yednia was carried out in November, and the construction is now proceeding. The original road had a grade of 1 in 4 against the load, while the average grade with the load was 1 in 5½ for more than a mile. The new road when constructed will serve the bulk of State Forest 207, parish of Monsildale.

Particulars of mileage are given hereunder:—

	Mile.	Chains.	Links.
1st (forest) deviation near Yednia	1	3	92
1st (scrub) deviation near Foxlowe	0	18	52
2nd (scrub) deviation near Foxlowe	0	10	52
3rd (forest) deviation near Foxlowe	0	26	17
Total	1	58	44

BENARKIN DISTRICT.

During the first two months of the year a small survey camp, consisting of one workman and a Forest Foreman, completed compartment surveys on the Benarkin Logging Area, R. 283 Colinton. At the end of February camp was moved to S.F. 257 Emu Creek and Cooyar. It was considered necessary to make a theodolite traverse of one side of the main Crow's Nest to Blackbutt road which runs through the reserve, and of the road which runs south-westerly from the Forest Station to the Crow's Nest road. Scrub edges were defined with a view to projecting proposed fence lines. Three logging areas were laid out and subdivided into compartments.

From June the personnel of the camp was increased to a foreman in charge and two workmen.

On S.F. 299 Avoca, these two workmen were engaged in running compass lines for two logging areas for compartments boundaries to enable pine-freeing and other urgent improvement work to be undertaken.

On the 28th November the Fraser Island camp arrived at Nanango and commenced a Class III. survey of this State Forest, and this was continued until 19th December, on which date the camp was closed for the Christmas holidays.

Details of Forest Foreman's mileage are as follows :—

	Miles.	Chains.
Theodolite and chain	8	54
Marked compass lines	114	63
Compass and step	17	50

Particulars of mileage of Fraser Island Camp :—

Theodolite and chain	2	67
Levels	4	26
Exploratory investigation	35	0

GYMPIE DISTRICT.

Timber estimate of Casey's Gully and Derrier Logging Areas was continued by Survey Camp No. 3, in conjunction with tramway survey from Imbil towards the head of Derrier Creek. The latter was suspended on the 7th April, and a Class III. survey commenced on R. 135 Brooloo which is still proceeding.

In October, Survey Camp operating in the Warwick District was amalgamated with the Gympie Camp, the Deputy Forester in charge of the former taking over, and the personnel being reduced.

The following are details of mileage :—

	Miles.	Chains.
Theodolite and chain	29	76
Compass and chain	151	8
Strip survey	85	38
Exploratory investigation	23	40
Levelling	8	73

Tramway Survey—

Preliminary traverse	6	14
Final location	9	15

A new Forest Survey Camp was formed at the beginning of the year and approximately 440,000 acres was dealt with by Class I. and II. survey in the Tin Can Bay District. This area comprises practically an unbroken stretch of coastal land from the Noosa River to Maryborough, and forms the basis of an extensive reforestation scheme.

Field work was finalised at the end of the report period. Details are as follows :—

	Miles.	Chains.
Compass and chain	274	12
Compass and step	65	34
Strip survey	31	48
Exploratory investigation	1,203	0

A Class II. survey of R. 27, 676, and 303, parishes of Woocoo, Broomfield, and Doongul, occupied the attention of the Survey Camp transferred from the Gladstone District in March. These reserves were completed towards the end of June and amalgamation with the Tin Can Bay Camp effected.

Details of mileage are as follows :—

	Miles.	Chains.
Old boundaries cleared	15	52
Compass and chain	17	16
Compass and step	3	76
Strip survey	48	44
Exploratory investigation	61	0

A Compartment Survey was carried out of one logging area on R. 26 Kilkivan, a total of 2,797 acres being dealt with. This area was divided into twenty compartments averaging 140 acres each, a total of 24 miles 5½ chains of compass-and-chain survey being run. Compass surveys were also made of compartments, horse paddock, house buildings, and nursery on R. 220 Kilkivan.

MACKAY DISTRICT.

Survey work on R. 6 Eungella was continued throughout the year and was considerably hampered by staff shortage. The camp at the beginning of the year consisted of a foreman, one workman, and a cook. This number was subsequently altered to one foreman, three workmen, cook, and horseboy, but dwindled again at the end of the year to two sub-foremen and one cook.

From the beginning of the year to the 10th March, a foreman and workman alone were engaged in fieldwork. From 23rd March to 1st May, camp was engaged on other projects; thereafter continuously on survey of R. 6 until 13th October. From 12th November to 15th December, field operations were confined to R. 394 Lacy.

Apart from above the main survey camp carried out Class I. inspection of several areas within the district.

Portion 122 Mia Mia, of 17,563 acres, was examined and report and recommendation for reservation forwarded; an area of about 7,400 acres being subsequently reserved for timber.

Grazing Farm pors. 1 to 6, parish of CREDITON, also came under review. On examination portions 1 and 6 and part of portion 2 were found to contain excellent stands of Hardwood, especially Ironbark and Spotted Gum. Consequently this area was recommended for reservation.

Particulars of mileage of each reserve are as follows:—

R. 6, *Eungella*—

	Miles.	Chains.
Theodolite and chain	23	9
Compass and chain	15	0
Strip survey	43	49
Exploratory investigation	55	0

R. 394, *Lacy*—

Compass and chain	3	60
Exploratory investigation	137	0

Grazing Farms adjoining R. 6—Exploratory investigation .. 145 0

FRASER ISLAND.

The Class II. survey of the whole of the timber-bearing areas on Fraser Island was resumed on the 9th January and finalised on the 12th November. For the greater part of this period the main camp was divided into two sections, making for more efficient and faster working. The establishment of sixteen flying camps was necessary owing to the difficult nature of the Fraser Island work.

Camp left Fraser Island for Maryborough on 18th November, and horses were dipped, the camp being closed down for a week. The camp was then transferred to the Benarkin District.

Details of mileage on Fraser Island are as follows:—

	Miles.	Chains.
Compass and chain	140	31½
Compass and step	7	0
Strip survey	222	78
Exploratory investigation	497	40
Pegging	54	0

For balance of work done by this camp, see "Benarkin District."

GLADSTONE DISTRICT.

Class II. surveys of R. 75 and 115 Polmally, Rodd's Bay, and O'Connell were completed and the camp then carried out Class II. surveys of R. 99 and 115 Polmally. Class I. inspections were also undertaken and finalised of R. 74 Miriam Vale, vacant Crown lands in the parish of Rodd's Bay, and R. 77, 86, 95, 102, and 166 parish of Eurimbula.

Details of mileage on these areas are as follows:—

	Miles.	Chains.
Compass and chain	3	37
Strip survey	20	18
Exploratory investigation	42	30

This camp was then moved to the Gympie District in March, and commenced operations on R. 27 Woocoo.

It was considered necessary to examine and locate timber areas in the Upper Burnett and Callide Valley lands, on the Rannes-Monto-Many Peaks railway route. With this object in view two field officers were despatched with packhorse outfit, and covered approximately 510 miles. Operations were confined to within a six-mile radius on either side of the surveyed route. As a result it was found that, with the exception of good Spotted Gum and Ironbark stands in the parish of Coomblingah, timber was very scattered and not worthy of reservation.

WARWICK DISTRICT.

The operations of this camp were resumed in January on R. 399 Emu Vale, and were completed in May. Survey work conducted on R. 399 was in very rough country; grass was scarce and work held up by the scarcity of surface water.

The following reserves were also treated by Class II. survey:—

T.R. 400	Emu Vale
T.R. 401	Gilbert
T.R. 405	Gladfield
S.F. 49	East Haldon

In addition to above, an inspection with the Forest Engineer was made during August, over R. 399 and 400 Emu Vale, R. 401 Gilbert, and R. 405 Gladfield, covering 291 miles by road and 40 miles on foot.

A further inspection in May was carried out on R. 164, parish of Killarney, to cancel a timber sale agreement.

R. 402.—An inspection of this area was carried out in connection with an application for purchase of standing pine. This necessitated 89 miles travel by road and 14 miles by foot. Drought conditions prevailed while working on R. 401 and R. 405, which in addition to a very severe winter, combined with falls of sleet and snow and four months' westerly wind, made survey work very arduous. On the 1st October the camp was transferred to the Gympie District.

The year's operations are set out hereunder, showing mileage done on each area:—

<i>R. 399 Emu Vale—</i>							
Theodolite survey	..	..	..	..	..	..	Miles. 11 Chains. 68
Strip	..	..	..	..	..	..	27 78
Exploratory investigation	..	..	..	..	..	..	13 40
<i>R. 400, Emu Vale—Strip survey</i>							
	..	..	..	..	..	..	8 4
<i>R. 401 Gilbert—</i>							
Compass and chain	..	..	..	..	..	..	12 63
Strip survey	..	..	..	..	..	..	12 67
Exploratory	..	..	..	..	..	..	52 0
<i>R. 405 Gladfield—</i>							
Strip survey	..	..	..	..	..	..	25 29
Exploratory investigation	..	..	..	..	..	..	12 0
<i>S.F.R. 49, East Haldon—</i>							
Strip survey	..	..	..	..	..	..	3 17
Exploratory investigation	..	..	..	..	..	..	6 0

ATHERTON DISTRICT.

At the beginning of the year, the Northern Survey Camp operated on the western side of Black Mountain, in the parishes of Garioch and Mowbray. The completion of the area to the north and the trial location for a tramline were finalised.

A good route was located from the corner of portion 124 Mowbray, thence along the divide between Gorge and Robbins Creek; this country along the divide being flat in most places and the balance easy slopes to side. This route means the easiest outlet apart from the opening up of the area through which it passes. Strips were run up on the western slopes of Black Mountain and the country to the north. These show a considerable amount of standing timber, also colossal cyclone damage in places.

On the completion of the work in the above area, the camp was shifted in February to Spear Creek, near Mount Molloy in the parish of Garioch, and a feature survey made. This country though very broken is by no means inaccessible, and contains the nearest supply of timber to Molloy. A suitable route for a main logging road was located up Spear Creek for some distance, thence up Johnstone Creek to a gap along the main divide. From this point onwards, the divides are easy to negotiate for the subsidiary roads. Inspections were carried out of the country from the heads of the Tully and Murray Rivers to the Herbert River Gorge. An inspection was also made of the Palmerston Area, and the camp of the investigation Commissioner under Land Commissioner Harvey visited.

Returning to Molloy in August, the camp was moved to a site on the top of the range 10 miles from Kirrama Station. This meant packing the camp 65 miles. The work of traversing the main scrub edge was proceeded with, in conjunction with a traverse of the existing road over the range towards Cardwell. The location of a main route to the coast was then undertaken, as the whole scheme hinges on access. The existing route was utterly impossible, and it crossed a gap 2,500 ft. above sea-level. A gap on the head of Smoko Creek was chosen, which is on the Herbert River fall, and the feature work done showed that there will be no difficulty in linking up with the Murray River Areas.

Work done by the camp for the twelve months is as follows:—

Theodolite	..	..	..	..	..	..	Miles. 5 Chains. 0
Compass and chain	..	..	..	..	..	..	136 17
Exploratory investigation	..	..	..	..	..	..	80 0

An inspection to Cardwell, Tully, Murray, and Palmerston Areas was also done with one man.

COST OF SURVEY CAMPS, 1923.

		£	s.	d.
Atherton	Survey Camp (Curry)	1,918	2	7
Benarkin	Survey—R. 283 Colinton	212	10	0
	R. 257 Cooyar	460	2	6
	R. 299 Avoca	164	14	8
Brisbane	Survey Camp (Twine)	1,197	19	5
Fraser Island	Survey Camp (Allom)	2,113	7	4
Gladstone	Survey Camp (Markwell)	492	7	0
Gympie	Survey Camp (Imbil)	1,856	16	1
	Survey Camp (Markwell)	1,862	13	10
	Compartment Surveys	260	14	1
Mackay	Survey Camp (Cole)	1,144	13	8
	Class I.—Surveys	3	7	0
Warwick	Survey Camp (Saunders)	785	4	5
		£12,477	12	7

WOOD TECHNOLOGICAL BRANCH.

The work of this branch of the Forest Service includes—

- (1) The identification and prescription of native woods for industrial purposes;
- (2) Testing, experimental and general research work in wood;
- (3) Advertising showrooms and displays of timbers for which new markets are sought;
- (4) Herbarium and timber collections;
- (5) Publications relating to Wood Technology.

The functioning of the Wood Technological Section has an important bearing upon the general forestry programme in Queensland, because no really satisfactory advance can be made in the application of silvical measures to our mixed sub-tropical forests until it becomes possible to utilise more fully the masses of secondary trees which still occupy the forest floor after the first favourite species of the pioneer timber trade have been culled from the stand.

The Forest Service has devoted considerable thought towards devising ways and means of extending utilisation in the desired directions. Basic to all endeavours has been the work of classification, industrial analysis, and trade grouping and naming of the four or five hundred species which compose its timber assets. A long-sustained and difficult research was consummated by the end of 1923 by the completion of the Universal Wood Index System and the classification thereunder of all the woods of Queensland. The results are now available for publication. The system is such as to have international application, and to provide means whereunder the woods of all countries may be brought under a comparative classification which is also a universal key to timbers.

The first Index collection was despatched to the British Empire Exhibition.

Advantage was taken of this exhibition to make a representative display of Queensland woods, with due emphasis upon those for which an export market was sought, notably Medang Walnut, Silky Oak, Tulip Oak, Red Satinay, Grey and Rose Satinash, and Brush Satinbox. Ten thousand machine-dressed hand samples were consigned for distribution to inquirers, together with explanatory literature.

Wood technological research during the year resulted in the introduction upon the markets of a number of woods previously unregarded.

Tulip Oak (*Tarrietia argyrodendron*) and Medang Walnut (*Endiandra Palmerstoni*) were found to possess an exceedingly high degree of resistance to the passage of an electric current—to wit, 2,000 megohms as against 300 megohms shown by most woods. On this account, the postal authorities are now applying them to the purpose of switchboards.

Blush Coondoo (*Sideroxylon Richardii*) proved suitable for the manufacture of casks, T squares, planes, &c., with the drawback, in common with Medang Walnut (*Endiandra Palmerstoni*), of containing a high percentage of silica.

The three Brown Bollywoods (*Litsea reticulata*, *Bursera australasica*, and *Persea Baileyana*) have proved suitable for brush-backs and electric light blocks; and Brown Alder (*Ackama Muelleri*) has been found most suitable for turnery work and especially good for boot-heels.

Red Cocobolo (*Erythrophloeum Labouchei*) and *Acacias fasciculifera* and *rhodoxylon* proved comparable with imported woods for the manufacture of sounding instruments such as xylophones.

Brown Malletbox (*Rhodamnia argentea*) and Rose Marara (*Weinmannia lachnocarpa*) are now in request by the Postmaster-General's Department. Small sales of fishing-rod tips have created quite a demand for Saffron-heart (*Halfordia scleroxyla* and *drupifera*), Queensland Greenheart (*Endiandra compressa*), and Brigalow (*Acacia harpophylla*).

White Hazelwood (*Symplocos spicata*) and Red Satinash (*Eugenia* sp.) for motor-body building, Brown Plumwood (*Pleiogynium Solandri*) and Rose Butternut (*Nephelium Lauterianum* and *Alphitonia franguloides*) for furniture, Threaded Oak and Black Ironbox (*Eucalyptus Raveretiana*); for walking-sticks, &c., are amongst other results of the utilisation tests.

Requests for identification and prescription of woods for various industrial purposes to the number of several hundred were disposed of during the year, and samples were made available to business inquirers at cost price.

The preparation of a publication upon the commercial woods of Queensland was commenced.

HERBARIUM WORK.

A large number of leaf and flower specimens were added to the Herbarium collection and, as with the wood, numerous inquiries answered. The Forest Service acknowledges its indebtedness to the Government Botanist for his assistance in this direction.

TIMBER TESTS AT QUEENSLAND UNIVERSITY.

Tests of North Queensland timbers at the University have been arranged to extend over a period of eighteen months, being taken (a) when timber was green, (b) after six months' seasoning, (c) after twelve months' seasoning, and (d) after eighteen months' seasoning.

(a) Green timber. Spur Mahogany (*Dysoxylon Pettigrewianum*) was the only timber tested in this stage. This was carried out during the latter part of 1922. However, Saffron-heart (*Halfordia scleroxylla*), Satin Poonwood (*Calophyllum costatum*), and Red Satinash (*Eugenia* sp.) were treated subsequently (after immersion), under conditions similar to those prevailing with "green" timber, for the bending and shear tests only.

In all 225 tests were made, an officer of this Service assisting. These tests will be continued during 1924.

TIMBER TRADING OPERATIONS.

THE TIMBER MARKET.

Milling Logs.—Throughout the year a healthy tone prevailed in the log market, and there was a good demand for all classes offered. From the Crown areas there was an increase in the output of mill logs; the cut for the year was 61,000,000 sup. ft., which exceeds that of 1922 by 6,000,000 sup. ft., and is greater than that in any year during the pre-war period. The cut in 1914, which was a year of very heavy logging, was greater by 4,000,000 sup. ft. than that during 1923.

The following table compares the total State log-cut with the Forest Service cut in the years 1914, 1918, the triennial period 1919-21, 1922, and 1923:—

Year.	State Cut.	FOREST SERVICE CUT.	
		Quantity.	Percentage of Total.
1914	253,072,000	66,099,000	26.1
1918	179,402,000	46,057,000	25.6
1919-21 (3 years)	584,433,000	120,601,000	20.6
1922	187,529,000	55,156,000	29.4
1923	212,191,000	61,166,000	28.8

The above table indicates the source of supply of mill timber, and, while private lands still supply the bulk of the milling log requirements of the State, the percentage of Crown cut is becoming greater, due to the exhaustion of private supplies. The pine resources on private lands are rapidly being depleted, but the heavy cut of hardwood and Northern woods on alienated lands still maintains the percentage of logs from private lands at a high figure.

The pressure of land settlement, which in some instances only means timber trafficking, is still causing areas of timber-bearing lands to be alienated despite the efforts of the Forest Service, and this will continue to have its effect on the figures of timber cut from Crown and private lands.

Details of the Forest Service log-cut for the periods 1920-21, June to December, 1921, 1922, and 1923, are shown in the following table:—

FOREST SERVICE TIMBER CUT—MILL LOGS.

	1920-1921.	June to December, 1921.	1922.	1923.
Hoop and Bunya (logs and tops) ..	33,887,627	13,567,263	41,768,829	44,512,655
Kauri	1,333,175	1,553,530	1,927,232	2,615,060
Cypress Pine	1,578,396	1,117,841	2,542,021	2,261,706
Other Softwoods	1,501,576	710,088	..	..
Hardwoods	7,600,189	3,245,462	6,553,831	8,276,444
Other Mill Timbers .. .. .	..	..	2,364,161	3,500,308
Grand Total	45,900,963	20,194,184	55,156,074	61,166,173

The State's log-cut has furnished employment in sawmilling, as indicated in the table hereunder (supplied by the Registrar-General).

SAWMILLS—QUEENSLAND, 1919 TO 1923.

	1919.	1920.	1921.	1922.	1923.
Number of sawmills	226	223	239	264	257
Number of hands employed	3,973	4,306	3,958	4,314	4,452
Value machinery and plant	£431,278	£519,946	£574,542	£612,142	£619,103
Value land and premises	£186,355	£212,576	£244,272	£257,844	£267,543
Pine cut—					
Sup. ft.	100,690,008	85,313,246	73,554,024	76,597,543	78,957,995
Value	£1,265,128	£1,471,945	£1,277,179	£1,305,121	£1,375,838
Cedar cut—					
Sup. ft.	629,485	194,126	311,657	428,396	350,290
Value	£13,160	£5,153	£8,717	£11,392	£11,879
Hardwood cut—					
Sup. ft.	43,069,357	50,497,185	30,026,956	36,982,182	46,000,000
Value	£606,632	£857,503	£511,180	£594,119	..
Other timbers—					
Sup. ft.	(Included above)	(Included above)	9,094,653	12,079,828	16,363,400
Value	(Included above)	(Included above)	£207,976	£273,295	£1,085,510*
Planing, moulding, &c.	£105,580	£81,974	£68,008	£57,859	£105,527

* Value of Hardwood and Other Timbers combined.

PRICES OF LOG TIMBER.

In the schedule at the foot of this paragraph are illustrated the changes in the Forest Service Price Lists during the year. These reflect accurately the market prices.

PRICE FLUCTUATIONS, LOG TIMBER.

Species.	Log Class.	Price at—	Particulars.
Red Cedar	6 ft. to 7 ft. 11 in. ..	F.o.b. Cairns ..	January, 35s. to 37s. 6d.
Maple and Silkwood ..	8 ft. to 9 ft. 11 in. ..	F.o.b. Cairns ..	January, 34s., June, 33s.
Kauri Pine	6ft. plus	F.o.b. Cairns ..	January 26s. to 28s., April 26s. to 29s., June 24s. to 28s., July 25s. to 29s.
White Beech (Teak) ..	6 ft. plus	F.o.b. Brisbane ..	January 30s., June 35s.
Bolly Wood	5 ft. plus	F.o.b. Brisbane ..	January 23s.
Silver Quandong	5 ft. plus	F.o.b. Brisbane ..	January 23s.
Rose Mahogany	6 ft. plus	F.o.b. Brisbane ..	January 22s. 6d.
Yellowwood Ash	6 ft. plus	F.o.b. Brisbane ..	January 26s. 6d., June 21s. 6d.
Crow's Ash	6 ft. plus	F.o.b. Brisbane ..	January 25s. 6d., June 21s. 6d.
Silver Ash	5 ft. plus	F.o.b. Brisbane ..	January 19s.
Pink Poplar	5 ft. plus	F.o.b. Brisbane ..	January 17s.
Brown Tulip Oak	5 ft. plus	F.o.b. Brisbane ..	January 14s. 6d.
Marara	5 ft. plus	F.o.b. Brisbane ..	January 14s. 6d.
Brush Box	6 ft. plus	F.o.b. Brisbane ..	January 15s.
Water Gum (Satin Ash)	5 ft. plus	F.o.b. Brisbane ..	January 15s.
Southern Maple (Rose Walnut)	6 ft. plus	F.o.b. Brisbane ..	January 22s. 6d.
Hoop Pine	Special	F.o.b. Brisbane ..	January 30s. 6d.
Hoop Pine	5 ft. plus	F.o.b. Brisbane ..	January 26s., June 25s.
Hoop Pine	5 ft. plus	On trucks, Brisbane	January 22s., December 22s. 6d.
Cypress Pine	All sizes	Central-Western Lines	January 14s. 6d.
Hardwoods	All sizes	West-S.W. Lines ..	January 11s.
Hardwoods	All sizes	Central Line	January 14s.
Silky Oak	7 ft. plus	F.o.b. Cairns	January 24s.
Silky Oak	6 ft. plus	F.o.b. Cairns	July 20s.
Brown Tulip Oak	6 ft. plus	F.o.b. Cairns	January 20s.
Walnut (Medang)	8 ft. plus	F.o.b. Cairns	January 26s., June 22s.
Satin Walnut	6 ft. plus	F.o.b. Cairns	January 26s., June 20s.
Silver Silkwood (Putt's Pine)	5 ft. plus	F.o.b. Cairns	January 27s., April 26s.
Water Gum (Satin Ash)	8 ft. plus	F.o.b. Cairns	January 20s., June 22s.
Bolly Wood	6 ft. plus	F.o.b. Cairns	January 20s., April 16s. 6d.
White Beech (Teak) ..	.. .. .	F.o.b. Cairns	October 26s.
Silver Quandong .. ..	.. .. .	F.o.b. Cairns	October 26s.

Hardwood prices did not fluctuate during the report period, but special logs brought higher rates than price list. The demand for pine tops for case timber continued brisk, and all lots offered were accepted.

For the fostering of the Queensland Ply industry and to insure the utilisation of the select logs of Queensland Pine, the Forest Service adopted the policy of segregating these logs and offering them for sale in special lots. These commanded a ready sale.

Further progress was made with the establishment of a uniform log classification.

Miscellaneous Timber Sales.

The market as regards miscellaneous timber showed a general improvement. In the case of timbers for railway purposes, the increase in the turnover was marked. The number of sleepers cut on Crown forests increased by 116,000 on the previous year's figures; piles, girders, and similar timber showed an increase of 27,000 lin. ft.; and of the squared pieces, headstocks, crossings, &c., 146,000 sup. ft. were sold more than in 1922. In this connection it is worthy of note that the Forest Service itself is supplying a large part of the Railway Department's timber requirements.

Telegraph poles and similar timbers were in better demand during 1923 than for any year since 1915. The increase on the previous year's cut was 44,000 lin. ft. Mining timbers showed a slightly increased demand, but are not now required in quantities approaching those of a few years back.

Fuel sales continued on the increase and were 2,500 tons in excess of the previous year's figure, which was also high (80,000 tons).

The attached schedule gives the figures for the miscellaneous timber cut:—

RAILWAY, MINING, AND MISCELLANEOUS.

	1919-20.	1920-21.	June to Dec., 1921.	1922.	1923.
Sleepers (pieces)	181,316	469,379	35,000	188,859	304,071
Posts, rails, and palings (pieces) .. .	97,285	90,615	33,562	120,084	232,813
Piles, girders, corbels, and sills (lin. ft.) ..	434,559	95,982	10,868½	116,292	143,520
Headstocks, transoms, and crossings (sup. ft.) ..	..	944,814	78,022	198,937	342,741
Telegraph poles and house blocks (lin. ft.) ..	126,116	215,864	55,209	191,430	285,221
Mining and Miscellaneous (lin. ft.)	692,727	484,242	18,478	56,386	84,345
Miscellaneous—					
Sup. ft. .. .. .	..	102,119	2,434	31,719	22,885
Lin. ft. .. .. .	..	..	..	35,830	1,473
Fuel (tons)	49,333	64,532	33,790½	80,078	82,589
Sandalwood (tons)	546	388	247	224	135
Mangrove (tons)	18	54	..	48	44
Guano (tons)	139	..	..	917	..
Foam Bark (cwt.) .. .. .	..	13	..	..	..
Ebonywood (tons) .. .. .	..	3½ tons	20 lb.	1.35 ton	..
Sand and gravel (loads) .. .. .	..	37	..	20	..
Charcoal (bags) .. .. .	..	1,222	6,845	1,243	995
Lawyer Cane (tons) .. .. .	..	..	..	5.9	..

NOTES ON THE TIMBER BUSINESS.

NORTH QUEENSLAND.

Maple and Kauri—the pre-eminent woods of the North—always command a ready sale, and are becoming harder to supply each year. There are numerous other woods in North Queensland, however, not so much sought after, and in the past buyers have always endeavoured to secure sales of Kauri or Maple alone, neglecting the secondary woods. In order to serve the dual purpose of rationing out the supplies of the prime woods and at the same time securing the utilisation of a resource formerly being destroyed, the policy has been initiated of selling mixed lots containing a percentage of Maple or Kauri, the balance being composed of woods regarded as of lesser value. With this policy thoroughly in operation, the process of extinction of the Maple and Kauri supplies will be stayed, and the timber resources of the North husbanded to the fullest possible extent. The difficulties of the timber trade in North Queensland are chiefly those of transport. Shipping facilities at Cairns are not good, and there is often congestion, especially during the sugar season. Competition for truck supply, which has been acute at various times in the past, has to some measure been obviated by the extension of the direct marketing system, this ensuring that, all timber at some ramps being Forestry timber, there is a more systematic despatch. Transport from the forests to rail and mill is not yet properly organised, but this matter is receiving attention.

North Queensland woods were prominent in the display sent to the British Empire Exhibition at Wembley. Approval has also been given to the despatch to England of a parcel of sawn Northern woods, for testing out the English and Continental markets.

Mackay.—In the Mackay District there is to be found what is practically the sole remnant of the once extensive Red Cedar jungles of Eastern Australia. This wood, interspersed with good though unused jungle timbers, is found in the belt of rain-forest making up the Eungella "Tableland"—really a narrow strip of level country on the crest

of the Eungella Range. The marketing of these timbers is rendered very difficult by the shortage of transport and exorbitant haulage charges, especially when the sugar season is at its height.

Earnest consideration is being given the question of manufacturing and transport costs in Mackay District, with a view to the placing upon the market of a large quantity of timber now in danger of destruction. In this district during the year the system of direct haulage was instituted, and Red Cedar to the value of £2,642 was hauled. This timber, sold at market rates, realised in the neighbourhood of £6,000. The gross receipts from timber sales for the year were £7,500.

Dalby District.—Operations during the year were confined to stump sales of milling timber—Hoop Pine, Cypress Pine, and hardwood—and to supplying a large quantity of hewn timbers for railway purposes, the latter being purchased at railside by the Railway Department.

The demand for Hoop Pine was good, but the market for Cypress Pine and hardwood was seriously affected by the drought which prevailed in the district.

Gladstone District.—Direct haulage operations in the Boyne Valley forests were continued during the year, and no difficulty was experienced in disposing of timber supplies available.

Benarkin District.—Timber reservations in this district have all been subjected to more or less intensive stocktaking, and as a result the permissible annual cut of Pine timber can be arrived at with a reasonable degree of accuracy. During the year this possibility was closely adhered to, and further increase would be impossible without endangering most seriously the timber industry of the district. The cut was concentrated on a number of reserves close to rail, inaccessible reserves remaining untouched, under the group arrangement permitted by the Working Circle policy.

Competition for all lots of Pine offered was good. The cut of Pine for the year was 17,000,000 sup. ft., and of other timbers 500,000 sup. ft. The best price obtained for Pine on the stump was 18s. 6d. per hundred sup. ft. on a reserve near Blackbutt.

The revenue derived from sales of timber was £81,907, and the costs of haulage paid by the Department were £10,143.

Railway Timbers.—Operations in railway timbers were very brisk during the second half of the calendar year period, and more timber was supplied during this period than during the preceding year. The cut-out state of the Benarkin forests (former centres of railway operations) brought into prominent notice the difficulty of obtaining the superior classes of railway timbers, and the Deputy Forester estimates that there is only a five years' supply of these classes in sight in the district, at the following annual rate of supply:—Girders, 10,000 to 15,000 lin. ft.; piles, 5,000 lin. ft.; corbels, 1,000 lin. ft.; and sills 1,000 lin. ft.

The following table shows the railway timbers supplied during the year:—

RAILWAY TIMBERS SUPPLIED, 1923.

	January to June.	July to December.	Total.	Previous Year.
Split palings	3,045 pieces	610 pieces	3,655 pieces	3,439 pieces
Sl. blocks	2,063	6,526	8,589	1,228
R. posts	1,193 ft. 6 in.	1,410 ft. 6 in.	2,604 ft.	5,626 ft. 6 in.
Transoms 7 ft. 6 in. x 9 x 4½ in. ..	11,957 sup. ft.	23,933 sup. ft.	35,890 sup. ft.	14,674 sup. ft.
Sleepers	2,985 pieces	13,742 pieces	16,726 pieces	3,761 pieces
Split rails	119 pieces	811 pieces	930 pieces	240 pieces
Split posts	782 pieces	2,445 pieces	3,227 pieces	1,409 pieces
Girders	2,303 ft. 3 in.	8,437 ft. 9 in.	10,741 ft.	10,884 ft.
Piles	393 ft.	2,357 ft. 3 in.	2,750 ft. 3 in.	2,107 ft.
Crossings	14,857 sup. ft.	19,933 sup. ft.	34,790 sup. ft.	42,142 sup. ft.
Headstocks	126 sup. ft.	2,274 sup. ft.	3,535 sup. ft.	8,114 sup. ft.
Wales	1,820 sup. ft.	..	1,820 sup. ft.	..
Corbels	26 lin. ft.	924 ft. 6 in.	950 ft. 6 in.	532 ft. 6 in.
Sills .. .. .	..	132 lin. ft.	132 lin. ft.	..
Longitudinals .. .. .	..	6,689 sup. ft.	6,689 sup. ft.	..
Capsills .. .. .	..	..	..	3,041 sup. ft.

FOREST SERVICE SAWMILLING OPERATIONS.

The mills in operation were those at Silkwood, Birimban, Imbil, Benarkin, and Injune, and the planing mill and timber-yards at Valley, Brisbane.

For the year ended 30th June, 1923, the net profits for the mills and timber-yard as a whole amounted to £5,001. In addition, interest was paid to the Treasury in the sum of £4,000. The combined result represents a dividend of 11 per cent. on the capital invested, depreciation having been provided for fully elsewhere. The accumulated profits at 30th June, 1923, amounted to £18,414. These were disposed of as follows:—

- (a) £3,400 was written off the assets.
- (b) £6,550 was placed to Reserve Account for depreciation.
- (c) £3,400 was placed to Reserve Account for stock valuation adjustment.
- (d) £5,064 was carried forward on Profit and Loss Appropriation Account.

Whilst the operations as a whole are profitable, and the project of State sawmilling under the Forest Service generally sound, the passage of time renders improvements and extensions necessary if the conception is to survive.

The Imbil mill is a declining investment, and removal and reconstruction are requisite. The small Injune Cypress Pine mill has been closed down owing to losses resulting from the drought-stricken condition of the district which it served; it will not be reopened until its markets improve. The Silkwood mill has never been a satisfactory proposition and closure is indicated.

The Biringan mill is being devoted entirely to the supply of sawn sleepers urgently called for by the Railway Department.

Balance-sheet and Trading and Profit and Loss Accounts for the concern as a whole, for the year ended 30th June, 1923, are supplied herewith for general information.

The Forest Service sawmilling organisation in 1922-23 employed directly 160 men; the total sales amounted to 6,700,000 sup. ft.; the number of customers served was over 1,400; the value of timber purchased for resale over and above that sawn by our own mills was £47,000. A special concessionary price of 12½ per cent. below list was struck in the case of timber for workers' dwellings.

In his report upon the year's results, the Forest Engineer writes:—

"With present equipment the turnover of our sawn pine organisation has almost reached its limit, and extra sawing capacity is required to increase it. With the turnover limited we can take no effective measures to lower the margin between log and sawn timber prices, which margin is entirely fixed by competition among different millers. By merely increasing our turnover of sawn timber the average price of sawn timber can be reduced without in any way effecting log prices or *vice versa*.

"The Forest Service sawmilling organisation can be made a powerful weapon in controlling the timber industry of the State. Developed along considered lines, it spells extinction to timber combines, and the State will enjoy the full benefits of its timber wealth. Prices of sawn timber can be lowered to the consumer without lessening the revenue from log sales. At the present time there are about £80,000 of Loan and Trust Funds invested in sawmilling. In addition to nearly £4,000 interest paid annually to the Treasury another £5,000 profit is annually made, which has been used in expanding the business, making a total return of about 11 per cent. on the investment. Further expansion is at present blocked by inadequate sawmilling plant.

"As already decided by a conference of officers, the most efficient mill for supplying the metropolitan market is a bandmill of 25,000 to 30,000 daily log capacity situated in Brisbane. The Supervisor of Sawmills and myself have estimated the cost of such a mill, together with an efficient planing and case plant, at approximately £32,000. We have on hand at present about £4,000 worth of material which could be used in the new mill, leaving £28,000 as the amount of new money required for construction.

"With State sawmilling controlled by Forestry, the central bandmill is not the only solution of the milling problem, as the sawmill can be made an efficient instrument of logging. Having regard to the big figure (£40,000) required to finance this mill, and the present tightness of the money market, I submit the following proposition as an alternative means of solving our milling problem.

"The Forest Service has several reserves which can be most efficiently worked by a mill built on the reserve. In the normal course of events the timber on these reserves would be auctioned in sufficiently large quantities to warrant the construction of a mill. The present mill at Imbil, which is in dire need of reconstruction, could be profitably improved and rebuilt on such a reserve at a cost of £4,000, the capacity of the mill being increased to 3,000,000 ft. of logs annually.

"In view of the urgent necessity for rebuilding the Imbil Mill and taking into consideration the financial situation, I recommend that the idea of building a central bandmill in Brisbane be abandoned for the present, and that the present Imbil Mill be reconstructed on a suitable reserve such as Res. 405 Gladfield or Res. 82 Grongah, at a cost of £4,000.

"Action in this matter is urgent, as the present Imbil Mill is in a dilapidated condition and must either be rebuilt or superseded by a more modern mill. It would be folly to rebuild the mill on its present site or on its present lines. There is no question that, with the supply of logs diminishing, many mills must go under in the struggle for existence. Victory will be with the large modern mill centrally situated on rail, and its smaller counterpart situated in the timber at a distance from rail."

The personnel of the Forest Service sawmills calls for some rearrangement. It is also of first consequence that the overhead accounts of the operations should be transacted at Head Office at the right hand of the general management, in which is centred the duties of supervision, organisation, and reorganisation. These necessary rearrangements should be made at the earliest possible moment. It is anomalous that the overhead accountancy work should be carried out under the ægis of a branch unit. The general management at Head Office has been gravely incommoded by this arrangement, which it has been unable to alter.

FOREST SERVICE SAWMILLS.

TRADING ACCOUNT FOR THE YEAR 1922-23.

				£	s.	d.					£	s.	d.
To Stock	..	..	..	30,549	1	10	By Sales	..	..	..	138,879	14	9
„ Purchase logs, &c.	..	..	..	74,542	13	2	„ Stock	..	..	..	38,754	7	8
„ Cartage, sawn	..	..	..	3,257	14	6							
„ Royalty	..	..	..	17,622	2	6							
„ Wages	..	..	..	23,747	15	7							
„ Gross profit	..	..	..	27,914	14	10							
				£177,634	2	5					£177,634	2	5

PROFIT AND LOSS ACCOUNT FOR THE YEAR 1922-23.

				£	s.	d.					£	s.	d.
To Audit fees	..	..	..	80	0	0	By Gross profit	..	..	..	27,914	14	10
„ Bad debts	..	..	..	768	1	7	„ Rent	..	..	..	415	11	3
„ Cartage	..	..	..	495	1	4	„ Wells, Birimgan—rent	..	..	..	73	10	6
„ Depreciation	..	..	..	3,410	13	5							
„ Fire insurance	..	..	..	756	3	8							
„ Ground rent	..	..	..	18	0	0							
„ Holidays	..	..	..	1,216	10	8							
„ Interest	..	..	..	3,767	14	2							
„ Maintenance tramway, Birimgan	..	..	..	208	12	5							
„ Office expenses	..	..	..	353	0	9							
„ Workers' compensation	..	..	..	655	15	0							
„ Discount	..	..	..	4,541	15	2							
„ Wells, Birimgan (written off)	..	..	..	73	10	6							
„ Automatic fire alarm	..	..	..	89	0	0							
„ Repairs and maintenance	..	..	..	1,890	12	6							
„ Salaries	..	..	..	2,620	11	6							
„ Sick pay	..	..	..	111	0	10							
„ Unemployment insurance	..	..	..	29	16	6							
„ Travelling expenses	..	..	..	489	11	6							
„ Trade expenses	..	..	..	1,826	17	9							
				£23,402	9	3							
„ Net profit	..	..	..	5,001	7	4					£28,403	16	7
				£28,403	16	7							

FOREST SERVICE SAWMILLS.

BALANCE-SHEET, 30TH JUNE, 1923.

LIABILITIES.				ASSETS.			
	£	s.	d.		£	s.	d.
H.M. Treasury Loan Account—	£	s.	d.	Land Freehold—	£	s.	d.
To balance, 1st July, 1922	47,614	0	9	Brisbane	3,287	0	3
Add expenditure	8,411	19	4	Taromeo	534	1	3
	56,026	0	1	Imbil	369	18	0
Less annual redemption to Treasury	512	9	0	Silkwood	135	8	9
	55,513	11	1		4,326	8	3
H.M. Treasury Trust Account	24,254	4	1	Buildings—			
Sundry creditors	10,775	12	10	Brisbane	3,454	7	4
Profit and Loss Appropriation Account—				Taromeo	377	4	7
Balance, 1st July, 1923	14,033	17	1	Imbil	848	14	9
Less written off	621	4	4	Imbil cottages	1,011	17	1
	13,412	12	9	Liverpool Creek	1,149	17	8
Add net profit for year ended 30th June, 1923	5,001	7	4	Injune	971	14	3
	18,414	0	1	Birimgan	531	1	2
				Liverpool Creek quarters	105	9	9
					8,450	6	7
				Plant—			
				Brisbane	4,646	14	8
				Taromeo	2,118	4	11
				Imbil	3,280	11	3
				Liverpool Creek	2,291	9	7
				Birimgan	1,597	11	1
				Injune	2,151	17	8
					16,086	9	2
				Railway Siding, Brisbane	177	18	6
				Liverpool Creek	81	7	3
				Reconstruction sleeper mill, Birimgan	330	19	8
				Wells, Birimgan	588	4	0
				Loose plant	348	14	1
				Office and store furniture	199	13	5
				Automatic fire alarm, Brisbane	801	5	0
				Live stock—			
				Injune	10	0	0
				Taromeo	7	0	0
					17	0	0
				Sundry debtors	38,675	4	4
				Less reserves	1,678	11	3
					36,996	13	1
				Bills receivable	454	14	4
				Cash in hand and in transit	1,343	7	1
				Stock on hand	38,754	7	8
					£108,957	8	1
					£108,957	8	1

ADMINISTRATIVE OPERATIONS.

FINANCIAL.

From 1904 to 1923 inclusive, the receipts of the Forest Service amounted to £1,705,708, of which amount a sum of £326,477 has been paid for the conversion to marketable shape of timber from the Crown forests. The net revenue during the twenty-year period was therefore £1,379,231, and of this amount a sum of £417,443 has been spent in collecting the revenue and in the general management of the forests. A stock-taking of the assets established by the Forest Service is at present under way, and it is expected that detailed figures will be available for inclusion in my next report. Apart from these improvements, the Forest Service during the last twenty years has returned to the Treasury as surplus the sum of £961,788, of which £413,509 has been earned during the last six years.

Schedules are appended, giving figures for each year 1904 to 1923 inclusive, and tables subjoined to state the composition of the expenditure and the revenue for the report period.

FINANCIAL STATEMENT, 1904-1923.

Year.	Gross Revenue.*	Payments in connection with Marketing of Forest Service Timber.	Net Revenue.	OTHER EXPENDITURE.			Surplus.
				Overhead.	Capital Improvements, &c.	Total.	
	£	£	£	£	£	£	£
1904	11,441	..	11,441	837	..	837	10,604
1905	11,577	..	11,577	712	..	712	10,865
1906	14,560	..	14,560	1,331	..	1,331	13,229
1907	22,236	..	22,236	1,549	..	1,549	20,687
1908	27,979	..	27,979	2,132	..	2,132	25,847
1909	35,200	..	35,200	2,448	..	2,448	32,752
1910	39,645	..	39,645	2,548	..	2,548	37,097
1911	53,840	..	53,840	2,930	..	2,930	50,910
1912	63,447	..	63,447	3,724	1,673	5,397	58,050
1913	62,973	..	62,973	5,106	2,280	7,386	55,587
1914	74,729	..	74,729	5,959	1,694	7,653	67,076
1915	69,793	..	69,793	5,670	1,746	7,416	63,377
1916	60,401	..	60,401	5,594	3,879	9,473	50,928
1917	66,200	..	66,200	6,326	7,604	13,930	52,270
1918	71,481	..	71,481	9,919	11,958	21,877	49,604
1919 to 30th June, 1919	38,574	..	38,574	5,619	6,947	12,566	26,008
1919-20	121,152	13,876	107,276	16,015	29,648	45,663	61,613
1920-21	163,461*	23,578	139,883	22,830	64,785	87,615	52,268
31st December, 1921 (½-year)	61,517†	11,825	49,692	15,005	23,060	38,065	11,627
1922	267,816‡	91,945	175,871	35,482	31,193	66,675	109,198
1923	367,686§	185,253	182,433	39,130	40,112	79,242	103,191
	£1,705,708	£326,477	£1,379,231	£190,866	£226,577	£417,443	£961,788

* Revenue includes T.C.O. recoupments.

† Includes £1,990 Departmental refund.

‡ Includes £7,754 transferred to Expenditure, and £698 repayments to Vote. These figures also included in Expenditure.

§ Includes repayments to Vote; excludes deposits refunded.

EXPENDITURE.

Item.	JANUARY TO DECEMBER, 1923.			Total.	Per Cent.
	Revenue.	Loan.	Trust.		
	£	£	£	£	£
Overhead Expenses—					
Salaries	20,049	..	..	20,049	..
Administration	523	10,375	..	10,898	..
Extra living allowance to officers	457	..	..	457	..
Travelling and incidentals	7,076	..	..	7,076	..
Postages, telegrams, &c.	650	..	..	650	..
	28,755	10,375	..	39,130	14·8
Forest organisation work, surveys, research work, &c.	5,630	34,482	..	40,112	15·16
Timber trading operations—					
Harvesting and marketing (log timber) including road work	1,922	..	84,486	86,408	..
Lumbering (hewn, split, and pole timber) .. .. .	..	..	98,845	98,845	..
	1,922	..	183,331	185,253	70·04
Total .. .. .	..	..	..	£264,495	100·00

RECEIPTS.

The gross receipts of the Forest Service for the year, exclusive of sawmilling, viz., £267,816, were made up as follows:—

	£
Revenue from sale of log timber (<i>less</i> refunds, £2,565)	301,654
Payments to Votes	1,406
Payments to Vote, Forestry and Lumbering Fund recoupments	64,626
	£367,686

The log sales revenue of £301,654 was contributed to by the various districts as follows:—

	Per cent.
Gympie-Maryborough	38
Ipswich-Nanango	29
Atherton	11
Brisbane	9
Gladstone	4
	91

The balance of 9 per cent. was chiefly comprised of collections in the Mackay District.

PERSONNEL.

The Director of Forests regrets to have to record the resignation at the end of the year of Mr. M. H. Simon, Chief Forester, the loss of whose valuable services was a distinct blow to the Forest Service. Mr. Simon left to enter the private timber business. The same avenue attracted the managing clerk of the North Queensland District, Mr. T. D. W. Harvey.

REORGANISATION PROPOSALS.

Important proposals for the reconstitution of branches and reorganisation of the personnel of the Forest Service were submitted on 30th October, 1923. These proposals had not been dealt with at the date of writing this Report.

The proposals provide for the further development of the system and personnel of the Forest Service. The basis of the propositions is that the Forest Service should be divided and reorganised along the lines of its two main functionings:—

- (1) The sale of the old crop;
- (2) The production of the new crop.

The sale of the old crop comprehends all processes from forest and sawmill engineering to marketing; it is the revenue-producing branch of the Forest Service, and is based upon the votes for harvesting and marketing, and forestry and lumbering. It covers sales of logs from the State forests, the Railway timber contracts, the sawmills and timber-yards, the Forest Engineer's section, part of the survey processes, and so on.

The production of the new crop comprehends all processes from silvical studies and investigations to forest organisation and reforestation measures. It is the branch of Silviculture, and operates on the Forest Organisation, Development, and Silviculture votes. It represents the reinvestment aspect of forestry.

The proposal is that immediate responsibility for the sale of the old crop should centre at Head Office in the Forest Engineer, and for production of the new crop in the officer in charge of Silviculture; and that the two lines of action should be carried through to the field as far as possible without merging under local District Forester organisation.

As it happens, the conventional amalgamations of the two functionings under local District Forester appears to have had the effect of reducing local responsibility for both, and of hampering ultimate control of policy from Head Office.

The proposals afford a practicable outlet for the further development of the Forest Service organisation in the direction of efficiency and fixed responsibilities.

Closer control of the sawmilling branches by Head Office is urgently necessary, and proposals to consummate this objective similarly await approval.

It is of first consequence that the evolution of the Forest Service should be in the direction of a commercialisation rather than an officialisation of procedures and management. The present position is not entirely satisfactory.

Owing to financial stringency, the numerical strength of the Forest Service employees decreased during the year, and at 31st December, 1923, was as follows:—

	Number.
Salaried officers	82
General	157
Forest Service Sawmill employees	137
Total	<u>376</u>
Strength at 31st December, 1922—	
Salaried officers	74
General	213
Forest Service Sawmill employees	132
Total	<u>419</u>

AWARD.

The Awards which affect the Forest Service—viz., the Forestry Employees' Award and the Government Sawmilling Award—underwent a change in November 1923, when, by consent of the parties, a clause relating to loss of pay during temporary closedowns without notice was deleted from the former award, and modified in the latter award.

Appendix A.

FORESTRY.

RETURN OF COLLECTIONS UNDER THE TIMBER AND QUARRY REGULATIONS FOR THE YEAR 1923.

District.	License Fees.	Royalty.	Deposits.	Totals.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Atherton	40 13 6	32,219 4 10	1,890 12 7	34,150 10 11
Barcaldine	13 8 0	99 8 0	4 0 0	116 16 0
Blackall	15 8 6	26 16 7	...	42 5 1
Boulia	4 7 0	0 17 0	...	5 4 0
Bowen	28 11 0	1,277 1 7	60 4 6	1,365 17 1
Brisbane	34 15 0	28,769 9 3	957 7 6	29,761 11 9
Bundaberg	9 17 0	2,129 6 9	131 14 6	2,270 18 3
Burketown	2 13 0	10 8 7	...	13 1 7
Cairns	1 4 0	...	...	1 4 0
Charleville	8 15 6	1 15 1	4 10 4	15 0 11
Charters Towers	16 0 0	591 19 0	34 0 0	641 19 0
Clermont	9 5 0	1,504 16 7	25 0 0	1,539 1 7
Cloncurry	6 8 0	64 7 11	...	70 15 11
Cooktown	1 1 0	50 0 0	5 0 0	56 1 0
Cunnamulla	7 15 0	9 12 9	12 10 10	29 18 7
Dalby	2 8 0	1,160 14 6	58 18 9	1,222 1 3
Gayndah	4 12 0	162 8 3	6 6 3	173 6 6
Georgetown	0 10 0	...	...	0 10 0
Gladstone	15 1 0	11,232 0 6	212 18 3	11,459 19 9
Goondiwindi	5 7 6	186 13 7	2 0 0	194 1 1
Gympie	12 8 0	109,300 7 0	1,088 14 0	110,401 9 0
Hughenden	50 7 0	201 3 1	...	252 10 1
Ingham	33 15 0	502 2 9	60 10 0	596 7 9
Inglewood	6 9 0	1,537 0 3	18 4 10	1,561 14 1
Innisfail	1 3 0	356 19 9	...	358 2 9
Ipswich	1 13 0	84,061 6 7	5,013 10 4	89,076 9 11
Isisford	0 11 6	...	...	0 11 6
Jundah	5 5 0	7 8 7	...	12 13 7
Longreach	26 15 0	84 15 10	...	111 10 10
Mackay	20 6 0	7,465 13 2	21 0 0	7,506 19 2
Maryborough	45 1 6	4,652 9 9	313 5 0	5,010 16 3
Normanton	2 17 0	33 16 9	14 0 0	50 13 9
Port Douglas	0 14 0	5 10 0	...	6 4 0
Rockhampton	75 17 6	1,798 12 5	96 8 3	1,970 18 2
Roma	3 3 0	604 9 0	49 10 10	657 2 10
Springsure	4 17 6	678 9 9	60 10 0	743 17 3
Stanthorpe	0 14 6	66 10 10	4 5 0	71 10 4
St. George	4 17 6	80 16 11	1 5 5	86 19 10
St. Lawrence	0 7 6	...	...	0 7 6
Surat	0 5 0	2 9 2	...	2 14 2
Tambo	7 19 6	30 9 5	...	38 8 11
Taroom	1 7 6	16 9 11	0 10 0	18 7 5
Thargomindah	0 10 0	...	...	0 10 0
Toowoomba	27 12 0	893 5 0	836 0 0	1,756 17 0
Torres	7 8 0	24 6 1	1 0 0	32 14 1
Townsville	17 15 6	524 17 6	27 10 0	570 3 0
Warwick	1 5 0	17 4 10	125 10 0	143 19 10
Windorah	0 9 0	2 17 2	...	3 6 2
Winton	17 17 0	28 12 9	...	46 9 9
Totals	£ 607 11 0	292,475 5 0	11,136 17 2	304,219 13 2

