



Department of Forestry,  
Queensland



*The Honourable G.H. Muntz, M.L.A. Minister for  
Environment, Conservation and Tourism*

# **ANNUAL REPORT**

**1987-88**

PRESENTED TO PARLIAMENT BY COMMAND  
November, 1988

The Honourable G.H. Muntz  
Minister for Environment, Conservation and Tourism

Dear Mr. Muntz

I am pleased to submit to you the Annual Report  
of the Department of Forestry for the 1987-88 financial year

Yours faithfully

T. Ryan  
Conservator of Forests

**Front Cover**

*The dominant red cedar trees in this photo  
were retained as growing stock after this area of  
North Queensland was selection logged in 1977.  
The area will be ready for the next selection  
logging cycle in about the year 2017.*





# CONTENTS

<b>Key Issues</b> .....	2
<b>Five Year Summary</b> .....	4
<b>The Department of Forestry</b> .....	5
<b>Division of Forest Management</b> .....	7
Plantation Establishment .....	7
Seed Collection and Sales .....	8
Nurseries and Plant Sales .....	8
Weed Control .....	10
Native Forests .....	11
Construction Works .....	11
Fire Occurrence .....	11
Hazard Reduction Burning .....	11
Communications .....	12
Equipment .....	12
Recreation .....	12
Woodworks Forestry and Timber Museum .....	12
Plantation Resources .....	14
Native Forest Resources .....	14
Native Forest Valuation - Tenure Conversion .....	14
Resource Systems Development .....	14
Timber Marketing .....	15
New Sales .....	15
Marketing Development Projects .....	16
Pricing .....	16
Sawmills Licensing .....	16
<b>Division of Technical Services</b> .....	18
Land Use .....	18
Economics .....	21
Survey and Mapping .....	22
Information Services .....	24
Gympie Training Centre .....	25
Forest Research .....	26
Timber Utilisation .....	28
Timber Utilisation Extension .....	32
<b>Division of Administration</b> .....	34
Finance and Accounting .....	34
Administrative Services .....	34
Estates and Legislation .....	37
Management Services .....	37
Personnel .....	38
<b>Information Technology</b> .....	41
<b>Financial Reporting and Appendices</b> .....	42
Appendix 1: Comparative Statement of Receipts for the Years 1986-87 and 1987-88 .....	44
Appendix 2: Comparative Statement of Expenditure for the Years 1986-87 and 1987-88 .....	45
Appendix 3: Statement of Other Financial Information 1987-88 .....	46
Appendix 4: Sources of Revenue and Areas of Expenditure 1987-88 .....	47
Appendix 5: Reservation figures for the year ending 30 June, 1988 .....	47
Appendix 6: State Forests and Timber Reserves listed by Districts and Sub Districts as at 30 June, 1988 .....	48
Appendix 7: Net area of Softwood Plantation established for the year ending 31 March, 1988 .....	49
Appendix 8: Net area of Effective Softwood Plantation as at 31 March, 1988 .....	49
Appendix 9: Net area of Effective Broadleaf Plantation as at 31 March, 1988 .....	50
Appendix 10: Areas of Native Forest Treated 1987-88 .....	50
Appendix 11: Operational Statistics 1987-88 .....	51
Appendix 12: Milling Timber Removals from Crown Lands 1987-88 .....	52
Appendix 13: Pulpwood Removals from Crown Lands 1987-88 .....	53
Appendix 14: Miscellaneous Removals from Crown Lands 1987-88 .....	53
Appendix 15: Milling Timber Processed from Private Lands 1987-88 .....	54
Appendix 16: Pulpwood Processed from Private Lands 1987-88 .....	55
Appendix 17: Staff Distribution - 30 June, 1988 .....	55
Appendix 18: Publications .....	56
Appendix 19: Botanical Names .....	58
Appendix 20: Forestry Districts .....	59



## KEY ISSUES

### **Nomination of Wet Tropical Rainforests for World Heritage Listing:**

In December 1987 the Commonwealth Government nominated the wet tropical rainforests of north east Queensland for World Heritage listing with UNESCO. The Commonwealth's action was taken without the concurrence of the State and, in this regard, was unprecedented in Australian history. In January 1988 the Commonwealth also introduced regulations banning commercial logging in the nominated area, using an external treaty, and the supporting "World Heritage Properties Conservation Act 1983", as its justification and legal basis for the regulations.

The Commonwealth's actions were clearly aimed at shutting down the rainforest based north Queensland timber industry, which utilises less than one-fifth of the native forest area on a selection logging basis. To defend the scientific integrity and merit of the Department's northern rainforest management over the years, and to protect the jobs of north Queensland timber workers, the Department and other elements of the Queensland Government mounted a major challenge to the Commonwealth's unilateral nomination. The preparation of the challenge, based on scientific, legal and socio-economic grounds, occupied a substantial proportion of the Department's human resources during the year, and is more fully explained under "Division of Technical Services - Land Use" in this report.

### **Australian Trees for Fuelwood and Agroforestry:**

Since 1984, the Department has progressively established over 170 species of Australian trees and shrubs near Gympie in a project sponsored by the Australian Centre for International Agricultural Research (ACIAR). The project contributes towards international efforts to restore tree cover in developing countries in tropical and sub-tropical zones.

The ACIAR board of management arranged for review of the first stage of the project in late 1987 by an international panel of scientists. It was decided to continue the project into a second stage. New work will include studies on:

- pasture growth under five different species, and the effects of tree type and spacing on environmental factors such as light, soil moisture and soil nutrients;
- tree species suitable for cultivating in arid and semi-arid environments; and
- the possible effects of plant nutrients on growth habits of a number of Acacia species.

Continuing management of trees planted in the first stage of the project will be directed towards the development of selected specimen trees, evaluation of tree recovery after harvesting and assessment of the value of various woods for fuel and other uses.

**Tree Breeding Strategy:** Good progress has been made in implementing the Department's tree breeding strategy.

Five new hoop pine seed orchards are being developed. Field grafting is nearing completion at three sites in the Yarraman, and Imbil areas. New orchards incorporate the genetic gains in productivity and stem straightness that were made in second generation crossing of superior trees. The most outstanding cross identified in early progeny trials between two parents coded H15 and HG was again bred in 1985-86 and has yielded sufficient seed to establish 50 hectares (ha) of superior plantations.

Controlled crossing of Honduras Caribbean pine has been carried out since 1985 at the Brampton seed orchard near Byfield. Super families produced by crosses between second generation parents are now yielding seed for the first time. The scale of controlled crossing was increased in 1986 and 1987. The aim of the on going program is to produce 20 kilograms (kg) of special seed each year sufficient to establish approximately 500 ha of superior plantations annually. Seedlings produced from 20 of the super families were planted at Beerburum nursery and later trimmed to form hedges. Many thousands of cuttings can be obtained from the hedges by setting shoots in a special potting media and adopting a suitable nursery technique. When sufficiently developed the cuttings are used to produce clonal plantations of superior families.

### **Gympie Fibreboard Plant:**

Progress continued on schedule for an August 1988 commissioning of the new \$73 million medium density fibreboard (MDF) plant being built by Laminex Industries (a subsidiary of ACI Australia Ltd) near Gympie. Trials have already been conducted on the debarking, chipping and heat production units, with testing of

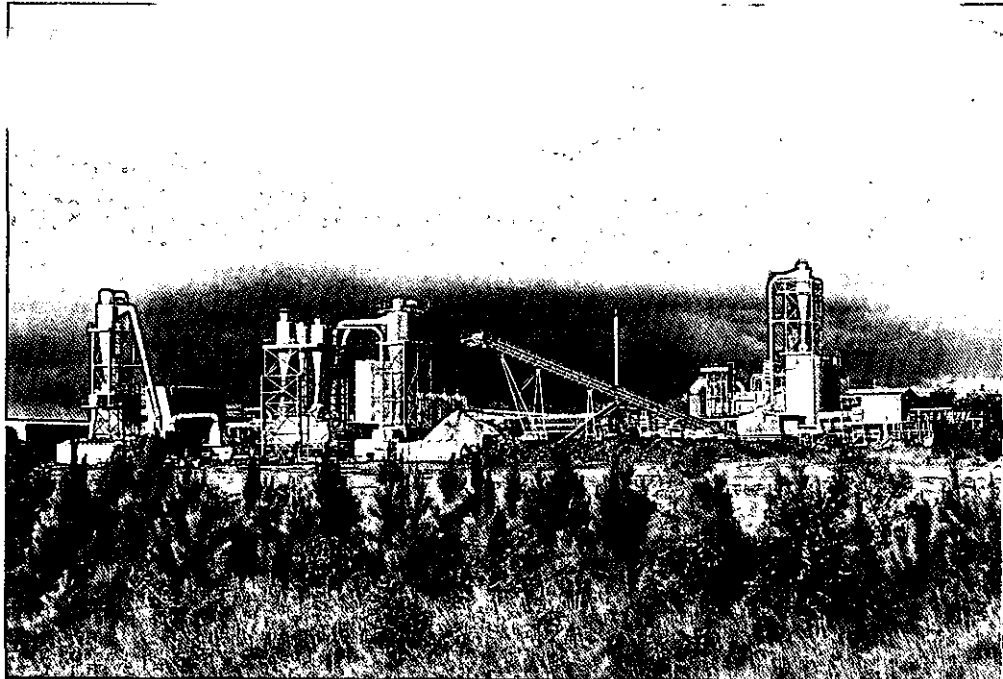
other components continuing. The plant will process up to 300 000 cubic metres (m<sup>3</sup>) per year of plantation pulpwood thinnings from Tuan and Toolara State Forests. A two year schedule of logging operations has been supplied to the firm and extraction planning is well advanced in accordance with the guidelines for the logging of exotic pine thinnings.

This operation will herald a significant increase in harvesting activity in the Tuan-Toolara plantations and see the introduction of "state of the art" harvesting machinery to Queensland. Valmet 901 harvesters will fell and process trees into five metre lengths for forwarding to roadside stockpiles, from where they will be loaded onto shortwood skeletal trailers for transport to the processing plant. Some 60 truckloads of logs per day will be entering the millyard when the facility is fully operational.

**Strategic Planning:** In common with many other Departments, the Department of Forestry has been engaged in a major review of its strategic direction. Considerable progress was made over the past year in this project and a number of important changes in Departmental operating and reporting procedures are impending. These changes will have a major impact on the Department's future performance and it is confidently anticipated that major efficiencies will be achieved. The most important change is the implementation of program management principles from 1 July 1988. From that date all departmental activities will be focused on six primary programs which are:

- Native forest production
- Plantation production
- Other Crown land sales
- Quarry material sales
- Forest services
- Consultancies

*New medium density fibreboard plant constructed by ACI Australia Ltd on Toolara State Forest near Gympie.*



Each of these programs has specific goals which are currently being negotiated at Government level.

The Department's financial information systems are being enhanced to ensure that there is clear accountability for financial performance within each of the above programs. At the same time, reporting procedures are being modified to ensure that there is a clear separation of any socially oriented components of the programs from the commercially oriented activities.

The strategic planning process is now well established within the organisation and, through the vehicle of program management, it is confidently expected that the Department will be able to meet its many challenges while continuing to develop the forest assets of the State for the benefit of current and future generations.



# FIVE YEAR SUMMARY

	1987-88	1986-87	1985-86	1984-85	1983-84
<b>Crown Forest Estate</b>					
State Forest - 000s ha	3 973	3 969	3 930	3 918	3 903
Timber Reserve - 000s ha	531	544	553	558	559
<b>Plantation Forest Management</b>					
Total area - 000s ha	165	160	155	151	147
New area established ha	5 135	5 310	4 935	4 042	3 879
Replanted area - ha	633	533	876	385	169
<b>Native Forest Management</b>					
Area treated - ha	6 010	6 722	5 751	7 128	7 595
<b>Nursery Stock Produced</b>					
For Departmental use - 000s	6 174	5 778	5 915	4 107	4 400
For Amenity and Forest Plot sales -000s	707	588	449	553	601
<b>Hazard Reduction (Prescribed) Burning</b>					
Native Forests - 000s ha	130	158	128	154	76
Plantation - 000s ha	21	7	13	10	20
<b>Wildfires</b>					
Number of fires	99	126	78	81	10
Area burnt - 000s ha	14	44	15	19	-
<b>Roads Constructed</b>					
Kilometres	326	276	292	365	253
<b>Timber Cut on Crown Lands</b>					
Native Forests - 000s cubic metres	450	438	471	467	456
Plantation - 000s cubic metres	497	435	399	324	283
<b>Expenditure</b>					
Forestry Development Fund \$000s	29 173	31 320	28 863	26 136	25 601
Consolidated Revenue Fund \$000s	24 862	21 999	20 907	19 183	16 171
Loan Fund Recreation Facilities - Construction \$000s	699	806	694	496	213
Forestry and Lumbering Fund \$000s*	16 052	18 230	16 907	15 335	13 989
<b>Staff</b>					
Wages	985	1 120	1 143	1 238	1 112
Salaries	656	653	646	645	645

\* Excludes interest and redemption on loans and transfers to other Funds.



# THE DEPARTMENT OF FORESTRY

## MINISTER

Minister for Lands, Forestry,  
Mapping and Surveying  
The Honourable W.H. Glasson  
M.L.A.  
to 8 December 1987, and since then  
Minister for Environment,  
Conservation and Tourism  
The Honourable G.H. Muntz, M.L.A.

## DEPARTMENTAL PERMANENT HEAD AND ACCOUNTABLE OFFICER SUBJECT TO THE MINISTER

Mr J.J. Kelly

## ACTS ADMINISTERED BY THE DEPARTMENT

### **Forestry Act 1959-1987**

An Act to provide for forest  
reservations, the management,  
silvicultural treatment and  
protection of State Forests, and  
the sale and disposal of forest  
products and quarry material,  
the property of the Crown on  
State Forests, Timber Reserves  
and on other lands.  
The Forestry Regulations of 1987

### **Sawmills Licencing Act 1936-1979**

An Act to make provision for the  
stabilisation of the timber  
industry by the licencing of  
sawmills and veneer and plywood  
mills  
The Sawmills Licencing Regulations  
of 1965

### **Timber Utilisation and Marketing Act 1987**

An act to regulate  
. the sale and use of timber  
susceptible to lyctid borers.  
. standards of seasoning for  
the sale and use of timber.  
. standards of preservation  
and branding for the  
production and sale of  
preservative treated timber.  
The Timber Utilisation and  
Marketing Regulations of 1987

### **Diseases in Timber Act 1975**

An act to provide for the taking of  
measures for the extermination  
or the prevention or control of the  
dissemination of any disease in  
timber.  
The Diseases in Timber Regulations  
of 1979

### **The following are jointly administered with the Queensland National Parks and Wildlife Service.**

### **Fraser Island Public Access Act 1985**

An act to provide for the  
authorisation and control of  
vehicle access to and the use by  
the public of Fraser Island  
Recreation Area for Recreation.  
The Fraser Island Public Access  
Regulations of 1985  
The Fraser Island Recreation Area  
By-Laws

## OTHER SIGNIFICANT RESPONSIBILITIES

Management of the Dongmen Forest  
Farm Project in the Peoples'  
Republic of China for the Australian  
International Development  
Assistance Bureau

### **Statutory Bodies Constituted under the Forestry Act and subject to the Minister**

Timber Research and Development  
Advisory Council of Queensland

## PURPOSE AND GOAL STATEMENTS

**Purpose:** The overall purpose of the  
Queensland Department of Forestry  
is the sustainable production of  
forest products and services within a  
balanced conservation program  
which includes the multiple use  
management of State Forest lands  
in accordance with the long term  
best interests of the community.

### **Goals:**

To produce forest products and  
services in accordance with long  
term community requirements.

To ensure State Forests are used  
and managed in an efficient,  
effective and environmentally  
responsible manner.

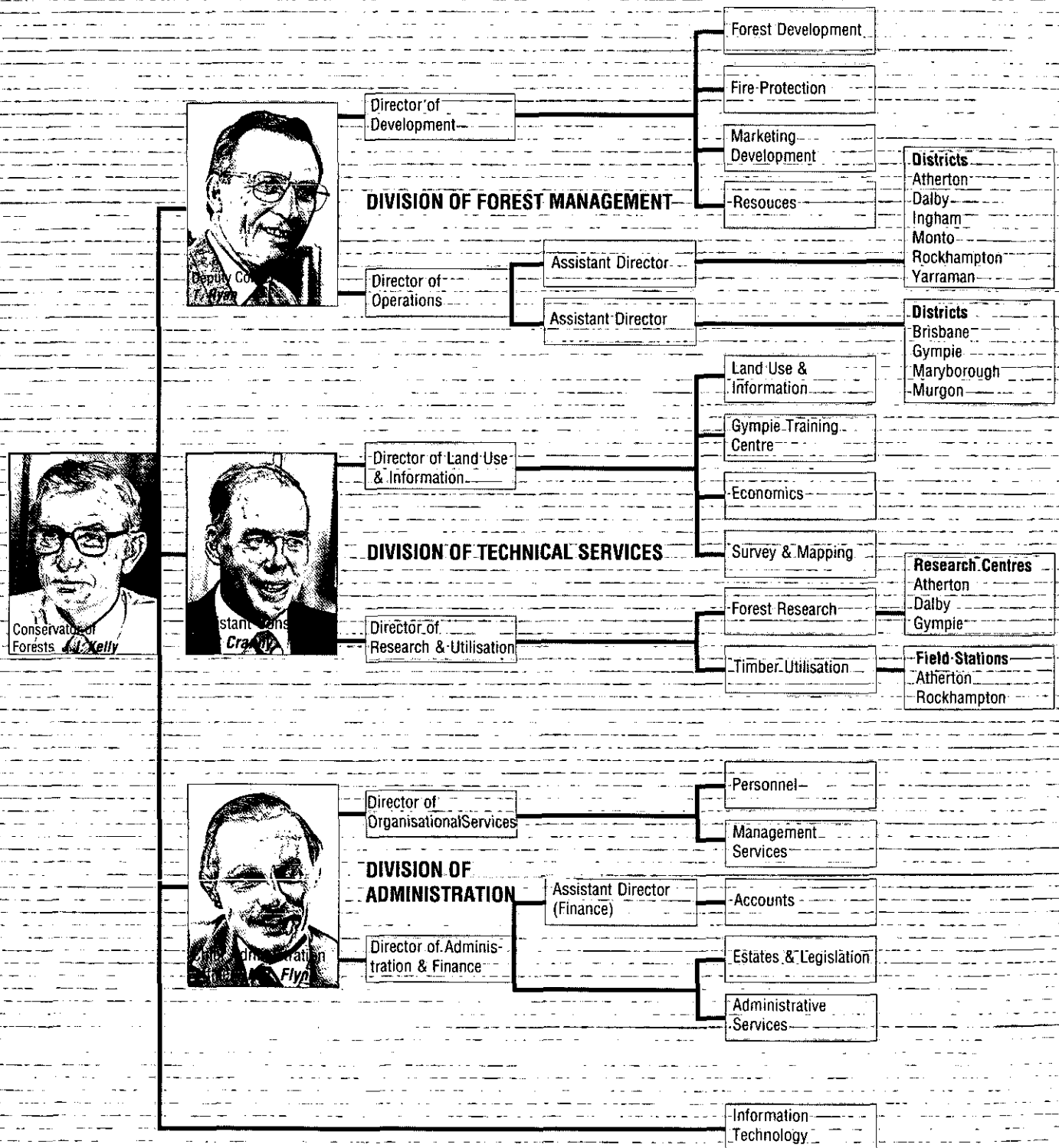
To maximise community benefits  
arising from the management of  
State Forests while ensuring a  
positive return on any investment  
funds utilised.

To encourage and facilitate the long  
term economic viability of the  
Queensland based forest products  
sector.

To encourage the development and  
sound management of private forest  
resources.

To ensure a high level of community  
awareness of the values and diverse  
uses of trees and forests.

# The Department of Forestry







Division of

# FOREST MANAGEMENT

## PLANTATION ESTABLISHMENT

Plantation establishment is a major component of the Department's ongoing work program. It is a relatively complex process, with numerous and distinctive stages of development. These developmental stages are:

**Survey and Design:** The survey and design of a proposed plantation must allow for the location, type and width of firebreaks, roads and tracks, thus ensuring efficient fire protection and access for management and logging. The plan must delineate areas not to be cleared, unplantable sites, streams to be protected, wildlife corridors and areas of scientific significance. Additionally, in exotic pine areas, soil type, depth, texture, colour, drainage status and erodibility must be identified and assessed to enable proper planning for the establishment processes. The design must allow for predicted water flow across the area, so that soil erosion potential, following cultivation, is minimised. Information on soils gained from the survey is also utilised in matching sites with the most suitable species or hybrid.

### **Clearing and Site Preparation:**

Following design and survey, all merchantable timber is logged before the area is cleared by machine and the debris burnt. Little further preparation is required in the establishment of a hoop pine plantation. However, in exotic pine areas, strip cultivation to a depth of 25 centimetres (cm) and a width of two metres (m) or mounding to a

height of 60 cm may be required to facilitate survival and growth in those areas with soils of impeded drainage identified in the survey.

Two locally designed and built Savannah Mounding Ploughs have been instrumental in reducing mounding costs in the past year especially on second rotation sites. A smaller version of the Savannah Plough, linkage mounted rather than drawn has been designed and put into service to mound small areas not accessible to the larger ploughs. A total system for site preparation areas has now been finalised and adopted.

**Preplant Tending:** The object of this is to eliminate as many harmful weeds as possible so that the young plants can grow free from competition. This is achieved by the judicious use of herbicides along the plantation row. In the case of hoop pine, a cover crop of oats, Japanese millet or kikuyu between the rows of planted trees helps to suppress weed regrowth and also has a valuable function of containing soil erosion.

During 1987-88, 378 ha in hoop pine areas and 4704 ha in exotic pine areas were tended before planting.

**Planting:** Hoop pine is planted as tubed stock in early summer at a spacing of 4.5m x 2.7 m, giving 830 stems per hectare. Exotic pine is planted as either tubed stock or open root stock in the summer months in central and north Queensland and in the winter in south east Queensland. In south east Queensland there are two exotic pine zones - a zone away

from pulpwood markets where the aim is to produce sawlogs only, and an integrated zone where the aim is to produce both sawlogs and pulpwood. In the sawlog zone open root stock is planted at a spacing of 5.0m x 2.7m or 740 stems per hectare and tubed stock at 5.0m x 3.0m or 670 stems per ha. In the integrated zone open root stock is planted at 4.5m x 2.1m or 1050 stems per ha and tubed stock at 4.5m x 2.4m or 930 stems per ha.

During 1987-88, 588 ha of hoop pine and 5136 ha of exotic pine were planted. In addition 44 ha of broadleaf (hardwood) were planted for species trials.

**Fertilising:** Hoop pine is planted on relatively fertile sites and no fertilising is necessary. Exotic pines, planted on phosphorus-deficient coastal lowlands soils, require 60 kg of phosphorus per ha at planting time. This is applied either by air, in the form of triple superphosphate, or along the rows or to individual trees in the form of monoammonium phosphate (MAP). The nitrogen component in this fertiliser provides an initial stimulus to tree growth. Poorly drained podzolic soils have a further 5 kg of copper per ha added to the MAP, while from trials to date, there is increasing evidence that potassium should be included in this special mix.

During 1987-88, 4436 ha of exotic pine were fertilised, 1559 ha with triple superphosphate 2506 ha with MAP and 371 ha with special mix. 710 ha of former pasture area planted in 1987-88, which has a history of heavy fertiliser application was excluded from fertilising, as experimental evidence indicates that the residue value of the phosphate fertiliser applied to the pasture should satisfy the needs of the pine crop for a number of years.

## Division of Forest Management

---

**Post Plant Tending:** Tending to control weed competition is carried out until the trees gain control of the site after which the intensity of tending is reduced. As in preplant tending the main tool used is herbicide but mechanical slashing is also common especially in exotic areas where the topography is suitable for machine work. During the year, 5591 ha of hoop pine and 13 901 ha of exotic pine were tended to control weed competition.

**Precommercial Thinning:** This has the effect of removing poor quality stems as well as increasing the growth rate of the better formed stems. In the sawlog zone initial stock is reduced to 500 stems per hectare and in the integrated zone to 750 stems per ha. Thinning is carried out by felling or by the use of herbicide when the average height of the stems is more than 3 m.

During the financial year 1521 ha of hoop pine and 5832 ha of exotic pine were precommercially thinned.

**Pruning:** In hoop pine plantations of adequate development 400 stems per ha are pruned in two stages to a height of 5.4 m. The first stage of pruning is carried out with chainsaws or hand saws to 2.4 m and the second stage is generally accomplished two years later with polesaws.

During 1987-88, 855 ha of hoop pine were pruned to 2.4 m and 1292 ha to 5.4 m.

In coastal exotic pine plantations 300 trees per ha are pruned in two stages to 2.4m and 5.4m. However because of their slower growth inland exotic pines are pruned in three stages to 5.4 m.

During the financial year 2336 ha of exotic pine were pruned to 2.4m and 2284 ha to 5.4 m

**Refertilising:** The volume increment of slash pine over 10 years old can be increased by up to 20% by the addition of 40 kg per hectare of phosphorous. This fertiliser is applied by air in the form of triple super-phosphate. During 1987-88 7531 ha of exotic pine were refertilised.

### SEED COLLECTION AND SALES

The 1988 Caribbean pine seed collection program produced 746 kg of seed for plantation establishment and sales. Increased seed production from the second generation clonal seed orchards will mean even higher quality seedlings for the 1989 planting program. Second generation seed orchards of Caribbean pine now account for 30% of the Departmental Caribbean pine collection program.

The Department's Operational Control Crossing (OCC) program has yielded its second major harvest of control pollinated seed. This year 11.4 kg, sufficient to plant 285 ha of superior family crosses of *Pinus caribaea* var. *hondurensis*, were collected from Brampton seed orchard at Byfield. As well, 31.7 kg, sufficient to plant 792 ha of first generation hybrid between *P.caribaea* var. *hondurensis* and *P.elliottii* var. *elliottii*, were collected from Woodford seed orchard. A highlight in this year's O.C.C. program was the first seed collection of first generation hybrid seed from mono-clonal seed orchards at Byfield. These seed orchards are specifically designed and managed

for hybrid seed production. Major native seed collection programs included the collection of 109 kg of *Eucalyptus grandis* from the Windsor Tableland and 105 kg of *E. camaldulensis* from Petford. Both of these species are widely used in tropical reforestation. Single tree collections of *E.pellita* were also initiated throughout its natural range in north and central Queensland for supply to the Dongmen project in China.

Seed sales have decreased from last year, primarily due to fewer sales of *Acacia mangium*. Total receipts from domestic and international sales amounted to \$121 700.

### NURSERIES AND PLANT SALES

The development of good quality planting stock was again a feature of this year's exotic and hoop pine nursery production. Departmental nurseries raised 519 000 hoop pine and 5 418 000 exotic pine seedlings for plantation establishment and sales. In addition 191 000 eucalypt seedlings were raised for enrichment planting of native forests and 45 000 miscellaneous species for hardwood trials.

Amenity nurseries at Bunya, Salisbury and Dalby provide plants to rural landholders, members of the public and for the Department's concessional planting schemes. A total of 707 000 plants was produced, including 140 000 eucalypts, hoop and bunya pines produced for the Landsborough and Maroochy Shire Councils for reforestation of the catchment area surrounding the Baroon Pocket Dam near Maleny.

Developments within the Department's nursery program this financial year included:

- The construction of a new greenhouse at Beerburrum to produce eucalypt amenity stock.



*Forestry technician John Huth tends exotic pine hybrid seedlings at the Department's Toolara nursery. Over 6 million pine seedlings were raised throughout the State during the year.*

Modernization of propagation facilities at Bunya nursery to increase production efficiency.

The adoption of a system to produce exotic pines in containers for second rotation plantation establishment.

Although generally more costly to produce, container grown stock has a number of benefits over open root stock. These include a lower dependence on seasonal planting conditions and a better survival rate, allowing more efficient use of genetically improved stock. Trials have shown that exotic pine seedling stock raised in containers developed by the Department can be planted by hand more cheaply than open root stock provided that the

site is well prepared. This development is of great importance to the establishment of second rotation plantations where the presence of pine stumps prevents the use of planting machines.

Facilities to produce planting stock by this system will be developed at Beerburrum, Ingham and Toolara nurseries.

An operational trial for the production of planting stock by cuttings.

Propagation by cuttings allows planting stock to be produced from genetically superior families and has prospects for producing plantations with trees more even in height and diameter

than those raised from seed. The Department's Nurseries at Beerburrum and Toolara are raising 30 000 plants from cuttings in a trial to test the procedures at an operational scale.

The continued development of a nursery procedure to raise hoop pine container stock in 12 months instead of the present 24 months.

## WEED CONTROL

In plantation forests, weed control is essential for high initial tree survival and optimum early tree growth. To ensure that field operations are cost effective, safe and responsible, a Weed Control Manual is updated each year and supported by a training program.

In exotic pine plantations, the emphasis is on achieving a high level of pre-planting weed control. This control is achieved by either cultivation or herbicide application. During the past year, herbicide application was improved by the introduction of saddle tanks and an injector filler to support the multi-boom sprayers. In areas previously sown to improved pastures, a residual herbicide is now applied after planting, to secure a weed free zone. After planting, the areas are maintained by directed herbicide application to the tree row and use of slashing in the inter row zone.

In hoop pine plantations, the steep terrain generally prohibits mechanical operations. Weed control is achieved by a combination of residual herbicide application to the tree row and the sowing of cover crops in the inter row. This combination achieves control of both soil erosion and weed growth.



*A new boardwalk constructed along a portion of Eli Creek on Fraser Island allows visitors to view the area's natural beauty in comfort and safety, and with a minimum of environmental impact.*

Infestation of lantana continues to be a problem following the opening of the hoop pine canopy by thinning. The Department is investigating the establishment of Queensland maple which forms a dense understorey immediately after the first thinning as a method of control.

The Department's code of practice for the application of herbicides has been strictly enforced. All persons responsible for mixing herbicides are trained and authorised to handle the concentrates provided. In addition new herbicide tank modules and several new herbicide stores have been introduced to improve safety and handling procedures.

#### NATIVE FORESTS

During 1987-88, 6010 hectares of forest were silviculturally treated while the process of enrichment planting was carried out over 253 ha. In addition 2922 ha received top disposal treatment.

#### CONSTRUCTION WORKS

Provision of recreational and administrative services to the public on Fraser Island will be enhanced on completion of an office, display and interpretive centre in Eurong. Design was carried out by the Department's engineering staff and the building is due for completion in August 1988.

Facilities at Eli Creek, one of the major tourist attractions on Fraser Island, have been significantly improved by construction of a boardwalk and composting toilet block.

Shadehouses with environmental control equipment were completed at Beerburrum, Gympie and Bunya nurseries providing more efficient seedling production facilities.

## Division of Forest Management

Fuel, oil, herbicide and fire equipment storage facilities are progressively being improved by construction of new store buildings.

The Department's major nursery at Toolara has been equipped with a seedling packaging and cold storage building capable of handling 260 000 exotic pine seedlings at a time. The use of this facility has enabled more efficient supply of seedlings to the plantation establishment sites.

The total floor area of buildings completed during the year amounted to 1500 square metres.

A road upgrading project jointly funded by the Department and Hyne and Son Pty Ltd has been completed. The 7.4 m wide bitumen sealed road has been constructed for a length of 9.5 km to link the Tuan Forest Station, and Hyne's Tuan Sawmill to the Maryborough Boonaroo road.

A major road upgrading program has commenced to provide all weather access for plantation logging trucks supplying the Laminex Industries mill at Toolara. Work will be carried out jointly by contract and the Department's workforce.

#### FIRE OCCURRENCE AND DETECTION

The fire season was reasonably mild in spite of dry winter conditions extending well through spring and summer. In late summer the majority of the State received good rain from tropical cyclone "Charlie". This was followed with further soaking rains at Easter resulting in minor flooding and abating any wildfire conditions.

In all, 99 fires burnt a total of 14 562 ha costing \$63 000 to suppress. Fifteen of the fires were deliberately lit in plantation areas at Beerburrum, highlighting the fact that arson is a major problem at this plantation centre. However these fires were lit under mild conditions and a total of 35 ha was burnt with minimal damage.

Ten modular 1000 litre and 2000 litre polythene slip-on units were supplied to the districts. Approximately 22 other tanks and 40 replacement pumps were also supplied to upgrade existing firefighting units.

A replacement steel fire tower was constructed at Nanango to strengthen the detection system in the Yarraman District.

A fire training course was conducted at Gympie in July 1987 for 25 staff, with 5 persons from other agencies including the Queensland National Parks and Wildlife Service (QNPWS) and Forest Service Officers from Malaysia.

Two aerial incendiary machine operators courses were conducted at Rockhampton and Beerburrum for 15 Departmental staff and fire officers of the QNPWS.

#### HAZARD REDUCTION BURNING

The late rain and storms during April 1988 caused a significant reduction in aerial ignition operations. However a total of 34 620 ha of native forests were hazard reduced by this method. A further 94 920 ha were burnt by ground crews.

## Division of Forest Management

---

In exotic pine plantation areas aerial ignition was used on 12 979 ha, with a further 7877 ha being ignited by ground crews.

### COMMUNICATION

*Upgrading of the VHF* communication system was continued and Monto and Ingham Districts were converted to repeaters. Sixty-eight new mobile radios were installed in vehicles and tractors in these two districts.

As well, single side band equipment was upgraded in Rockhampton and Monto Districts and Roma Sub District.

### EQUIPMENT

The Department owns and operates a fleet of approximately 150 items of heavy plant consisting of trucks, tractors and earthmoving equipment and approximately 450 items of light plant consisting of cars, 4-wheel-drives and light trucks. All these have been well maintained by Departmental workshops throughout the State providing employment for approximately 80 people. To improve plant management practices a new on line, computer based fleet management system has been developed. This will provide managers with the necessary information to ensure the fleet and workshops operate to maximum efficiency.

The primary aim of the system is to ensure that each item of plant, and each workshop is self funding. This will be achieved by each machine having its own hire rate, which will

account for all its own operating and maintenance costs as well as the purchase cost of its replacement. An hourly workshop labour charge out rate, covering all costs and overheads, will ensure that the workshops are self funding.

A trial run of the system at Gympie was accepted with enthusiasm by both administrative and workshop personnel, and many excellent ideas were proposed and accepted, resulting in greater efficiencies and job satisfaction.

It is intended that each key field administration centre will have its own terminal allowing access to up to the minute, on line management information as to the financial status of any machine.

Work done to date, using the system, already indicates significantly lower plant hire rates. These can be further decreased with improved efficiencies.

The fleet management system should allow a reduction in equipment owning and operating costs, thus resulting in significant savings for the Department.

The Department's fleet was upgraded during the year by the replacement of 6 dozers, 3 tractors, 112 motor vehicles, and 2 graders.

### RECREATION

During 1987-88 more than one million people visited State Forests for recreational activities such as camping, picnicking, bushwalking, horse riding, and scenic driving. There is an increasing number of

school groups and special interest groups who visit State Forests simply for the opportunity to experience the "great outdoors".

Members of the public are having an increasing input to the planning and management of recreation areas. The draft Fraser Island Recreation Management Plan has been prepared and circulated for public comment. Similarly, user groups have been invited to provide comments and suggestions for the Conondale Region Recreation Development Plan.

One of the four camping areas in Booloumba Creek State Forest Park after being closed for redevelopment works, was opened to the public by the Minister for Environment, Conservation and Tourism, Mr Geoff Muntz, on 25 March 1988, in the presence of representatives from state government, local councils and community groups.

This last year has seen a major improvement in the standard of facilities provided at a number of recreation areas, including Booloumba Creek State Forest Park and Wangoolba Creek and Eli Creek, Fraser Island. These facilities range from individual camping bays, showers, composting toilets, fire pits, and boardwalks to interpretive signs.

### WOODWORKS, THE FORESTRY AND TIMBER MUSEUM

WoodWorks, a museum which provides working displays of tools and equipment used in the early days of timber getting and sawmilling, is attracting more and more visitors each year. Last year 12 905 visitors viewed the working displays and this year that figure increased to 20 953.



*The Honourable the Minister, Environment, Conservation and Tourism, Mr. G.H. Muntz, M.L.A. (centre), the Member for Glasshouse, Mr L.E. Newton (left), and the Deputy Conservator of Forests, Mr T. Ryan, at the official opening by Mr Muntz of the renovated facilities at Booloumba Creek State Forest Park on 25 March 1988.*

## Division of Forest Management

Few people younger than 50 will remember the sparks flying in a blacksmith's shop, but at WoodWorks regular demonstrations are presented in the blacksmith's shop. A comfortable air conditioned theatre screening videos on past and present forestry practices is another popular attraction, while the shop continues a steady trade in books, souvenirs and woodturned articles. However, the most popular exhibit is a working steam driven sawmill. This attraction, along with the blacksmith's shop, was opened on the 11 March 1988 by Premier Mike Ahern and Geoff Muntz, Minister for Environment, Conservation and Tourism. After the opening, a very successful People's Day was held to promote the museum and the Department of Forestry.

### PLANTATION RESOURCES

Yield calculations were carried out for a number of plantation areas during the year. These calculations are part of the ongoing Resources Branch responsibility to provide up to date plantation yield information for senior management (long term planning and marketing) and district staff (day to day operation and management).

A major calculation investigated long term hoop pine availabilities at Yarraman, Imbil, Murgon and Monto. The effects on thinning availabilities due to the increased proportion of pre-commercially thinned stands and changes in thinning merchantability standard were examined.

Thinning and final crop schedules for Toolara, Tuan and Wongi were compiled in preparation for the start up of Laminex Industries' medium density fibreboard plant. Preliminary investigative work began into the effect of integration of salvage from Hyne and Sons final crop operations for Laminex Industries.

### NATIVE FOREST RESOURCES

A reappraisal of the allowable cuts for each supply zone in the south east region of the State confirmed that existing volumes could be maintained in all zones but Boonah/Warwick, where a small reduction was necessary because of the cessation of scrubwood logging in this region.

An Area Information System has been installed in all sub districts, and the relevant data is currently being entered. This system will allow the efficient interrogation and reporting of area information and will greatly assist Departmental staff in yield regulation and marketing activities in native forests.

### NATIVE FOREST VALUATION-TENURE CONVERSION

The program of timber valuation on Crown leasehold lands under application for conversion of tenure to freehold continued. New applications for the year numbered 88, a slight increase over the previous two years.

The overall position at 30 June 1988 was -

<i>Applications</i>	<i>No.</i>	<i>Area (ha)</i>
<i>Total since inception up to 30 June 88</i>	4 789	16 260 092
<i>Completed</i>	4 214	13 965 732
<i>Withdrawn by applicants</i>	510	1 762 602
<i>Being processed</i>	26	121 939
<i>Awaiting field assessment</i>	39	409 819

### RESOURCE SYSTEMS DEVELOPMENT

The new plantation growth plot system has been successfully implemented. This has allowed predominant height information from the growth plots to be used in site index table compilations. Fourteen site index tables have been compiled. These cover all main plantation species, including regional models for some species. Other studies using growth plot data are in progress.

Two major new computer systems, developed in response to recommendations of the Native Forest Resources Task Force, have been completed and will greatly enhance the reliability of resource estimates. The Area Information System is a personal computer based system installed in all sub districts and will provide more accurate and up to date area estimates. The native forest inventory system is installed on the Unix network and simplifies management of inventory data and the production of resource estimates.

The utility of Landsat Thematic Mapper data for the mapping and stratifying of forest types prior to inventory is being investigated.



Initial results are promising, but the final appraisal awaits ground truthing.

Resources Branch forester Rob Preston checks data on a Landsat Thematic Mapper system now under evaluation by the Department. The system, if adopted, will aid in mapping and stratifying forest types prior to inventory.

## TIMBER MARKETING

Prior to this financial year, volumes of timber removed from native forests have been higher than from plantations. This year removals from plantations have exceeded removals from native forests and this trend is expected to continue with an ever increasing proportion of timber removals coming from plantations.

Volumes of timber removed are shown in Appendix 12.

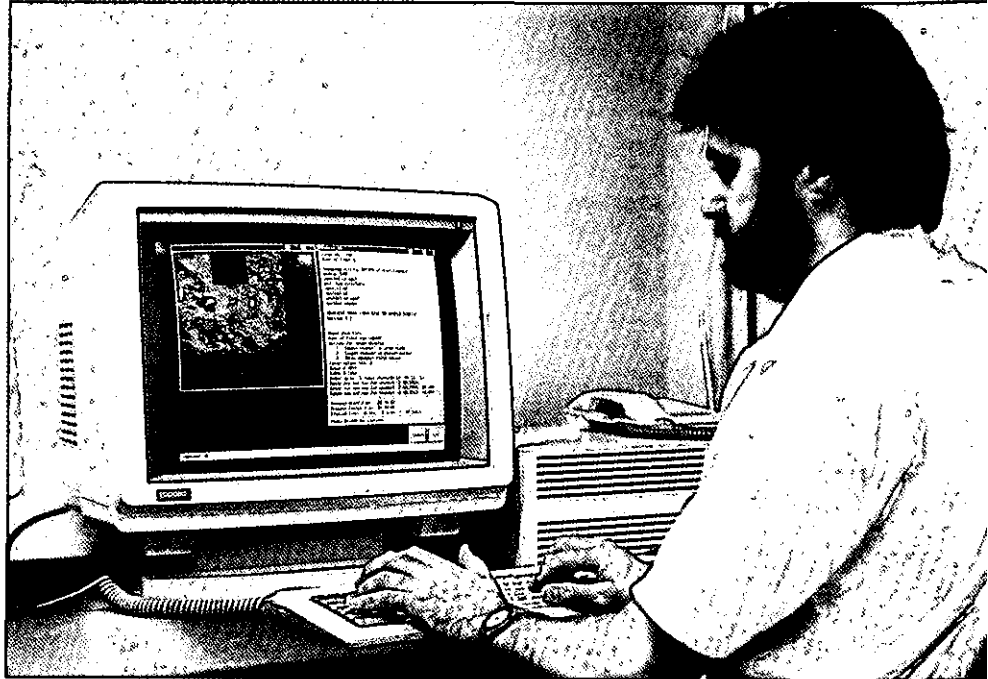
Compared with removals in 1986-87, the following increases or decreases have occurred in 1987-88.

Species Group	Percentage
Forest Hardwoods	+7
Rainforest Structural Timber	-31
Rainforest Cabinet Woods	-34
Cypress Pine	+23
Other Native Pines (Hoop Pine)	-3
Plantation Native Pines (Hoop Pine)	+24
Plantation Exotic Pine	+36
Plantation Exotic Pine Pulp	-47
Plantation Native Pine Pulp	+7

The reduction in rainforest timber removals was caused principally by the cessation of logging in the proposed World Heritage area in north Queensland as from 31 December 1987.

In 1987-88 the volume of cabinet woods logged in north Queensland was 54 825 m<sup>3</sup> compared with 84 159 m<sup>3</sup> in 1986-87.

Forest hardwoods and cypress pine are the main native timbers used in house and building construction. The increased cut this financial year is due to the lowering of interest rates resulting in an increase in building activity.



Final crop logging of hoop pine plantations in 1986-87 was confined to the Yarraman District. During 1987-88 however, final crop logging of hoop pine began in the Mary Valley and this is one reason for the increase in cut of native plantation timber. It should be noted that the revenue from the sale of final crop plantation timber now accounts for 50% of the revenue of all timber sales.

Although the volume of plantation pine cut for pulp has reduced compared with 1986-87, it should increase dramatically in 1988-89 when the Laminex Industries medium density fibreboard plant comes on stream in late 1988.

Total receipts from sales of forest products amounted to \$24 629 200 compared with \$21 967 800 in 1986 - 87.

## NEW SALES

A number of sales of plantation softwood timbers were finalised during the year. These sales will result in the further development of timber-based industries in the State through the expansion of established processing plants and the construction of new capacity. These sales included:

- Mary Valley and Murgon - 130 000 m<sup>3</sup> per year of final crop hoop pine and 10 000 m<sup>3</sup> per year of hoop pine sawlog thinnings.
- Pechey and Esk - 9000 m<sup>3</sup> per year of final crop exotic pine and 8100 m<sup>3</sup> per year of exotic pine thinnings, as well as a once off sale of about 9400 m<sup>3</sup> of old growth final crop exotic pine.

## Division of Forest Management

- Beerburum - 15 000 m<sup>3</sup> per year of final crop exotic pine and 8000 m<sup>3</sup> per year of exotic pine roundwood thinnings.
- Yarraman - 20 000 m<sup>3</sup> per year of final crop hoop pine.
- North Queensland - 10 000 m<sup>3</sup> of final crop and 6000 m<sup>3</sup> of thinnings per year of hoop pine and exotic pine.
- Byfield - 5000 m<sup>3</sup> per year of exotic pine roundwood residues suitable for preservation treatment.

Harvest volumes have also been increased recently at Kalpowar and Byfield, to a total of 20 000 m<sup>3</sup> per annum and 36 000 m<sup>3</sup> respectively, as final crop material becomes available to supplement existing sawlog thinnings commitments.

A shortage in supply of sandalwood from India and the Pacific Islands to south-east Asia saw a revival of interest in the purchase of sandalwood from north Queensland. Following a call for propositions, rights to purchase and process up to 1000 tonnes of sandalwood a year from Crown land were awarded to Unex Industries (Australia) Pty Ltd. Harvesting is underway in the Gulf country under guidelines which ensure that survival of the species is not threatened.

### MARKETING DEVELOPMENT PROJECTS

With the rapid rise in harvest volumes from softwood plantations in Queensland, new and more efficient methods of marking trees for harvesting are necessary. This is particularly so for the high volume, small piece size and relatively low value pulpwood which is removed in

early thinnings operations. Trials have been initiated to examine the feasibility of implementing unmarked thinnings systems for pulpwood operations. Such systems should reduce marking costs and increase manpower efficiency.

As part of a continuing program of review of pricing systems, aimed at simplifying price schedules and achieving a fair return to the State, Marketing Development Branch instituted royalty reviews for several types of forest products during the year. Girder price schedules will be substantially simplified from 1 July 1988 to better reflect current girder sales policy. A program for phasing in significant royalty increases for railway timbers has been approved for implementation, following a review which indicated that these timbers were selling for higher prices in southern states. Other miscellaneous forest product royalties were also reviewed.

New or revised marketing policies and procedures were issued for: sales of piles, sample selling, plantation merchantability standards, hardwood treemarking, native pine sales and girder sales.

### PRICING

Depressed economic conditions in the timber industry delayed the application of planned Crown sawlog royalty and stumpage price increases of 8.9% from 1 July 1987 until 1 January 1988. Prices for miscellaneous forest products rose 8.9% from 1 July 1987.

### SAWMILLS LICENCING

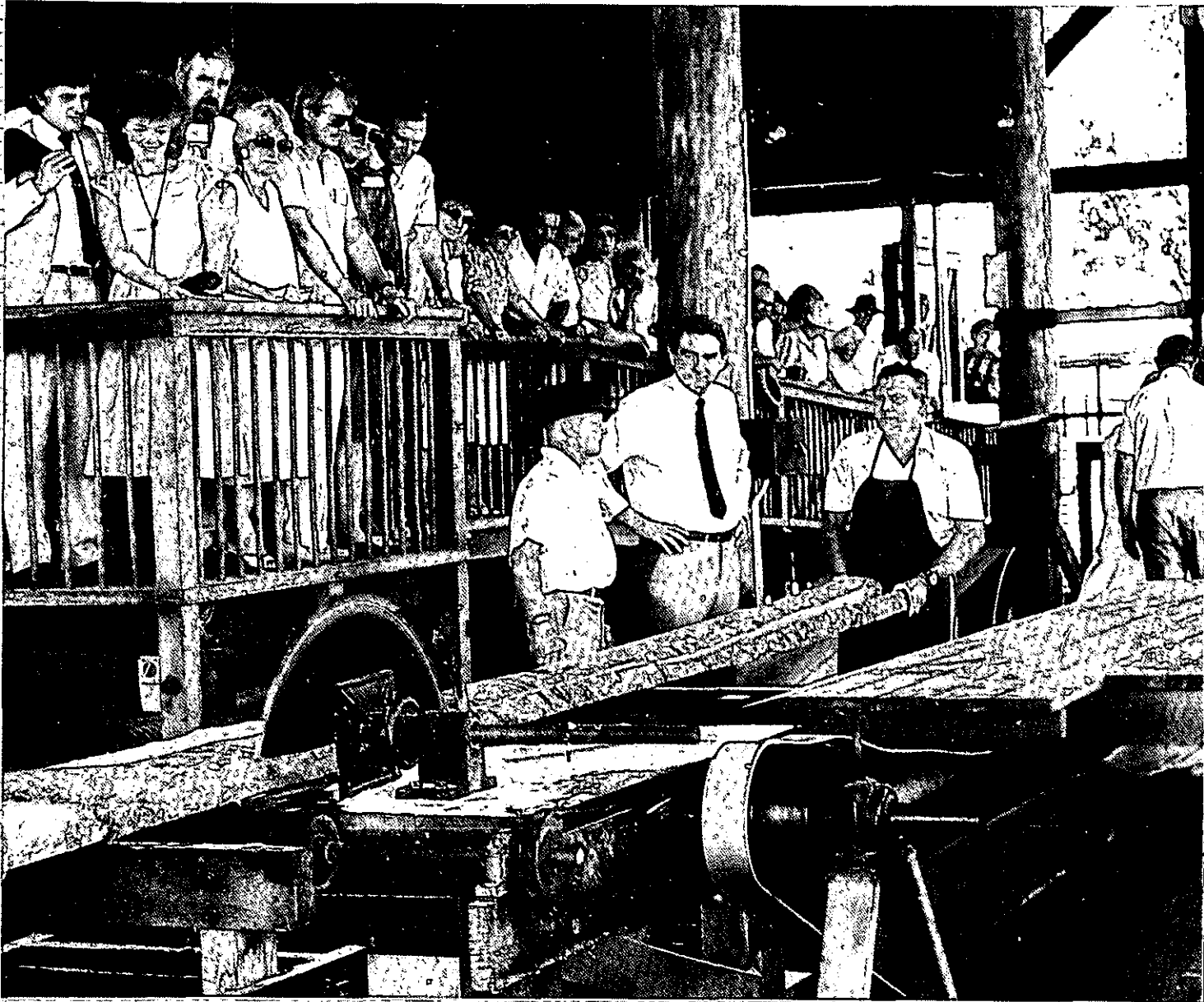
Rationalisation within the timber industry is a continuing process occurring primarily through the amalgamation of sawmills. The number of sawmill licenses withdrawn due to amalgamation together with licenses withdrawn from sawmills no longer in production when offset against the number of new sawmill licenses issued each year has resulted in a gradual decrease in the number of licensed processing plants over the past few years.

There was, however, no overall change in the number of processing plants as the year ended, with the same number of processing plants as at 30 June 1987.

During the year nine sawmill licenses were withdrawn from sawmills no longer in production, whilst there were six amalgamations of sawmill licenses.

Of the new sawmill licenses issued during the year, one was issued for the processing of Crown plantation logs and tops obtained from Tuan - Toolara plantations in the production of medium density fibreboard, one was issued for the processing of privately owned plantation timber in the production of C.C.A. treated pine products, and two were issued for the processing of cyclone damaged Crown plantation timber in the production of woodchips. The balance of new sawmill licenses issued were for the processing of private timber supplies.

Currently there are 352 licensed sawmills of which there are 97 restricted sawmills and 55 portable sawmills.



*The Premier, Mr Ahern, talks with workers on the floor of an oldtime steam sawmill recreated at the WoodWorks Museum in Gympie. The Premier and the Minister for Environment, Conservation and Tourism, Mr Muntz, opened the sawmill on 11 March 1988. Mr Ahern and the workers on the bench saw are being observed by a crowd of guests on opening day.*



Division of

## TECHNICAL SERVICES

### LAND USE

In 1984 the Queensland Cabinet approved the keystone document "Forest Management in Queensland Parts I and II." The publication sets out objectives, policies and strategies for the Department in relation to land use on State Forests and Timber Reserves in Queensland.

Each parcel of forest has different forest values in respect to timber production, catchment protection, flora and fauna conservation, scientific purposes, recreation potential and scenic value. To assist in management for a wider range of values the Department has adopted a process of management priority area zoning through which the important values of specific areas are recognised and catered for in management plans.

### World Heritage Listing

#### Nomination of N.Q. Rainforests:

On 5 June 1987 the Commonwealth Government announced that it would unilaterally proceed to nominate the wet tropical rainforests of north-east Queensland for World Heritage Listing. In December 1987 the Commonwealth Government submitted its nomination, prepared by the Department of the Arts, Sport, the Environment, Tourism and Territories, to the World Heritage Committee, UNESCO, Paris. In January 1988 the relevant Federal Minister, Senator the Honourable Graham Richardson introduced regulations pursuant to the World Heritage Properties Conservation Act 1983 to implement a total ban on commercial logging in

the nominated area, even though the nomination had yet to be considered by the World Heritage Committee. The Commonwealth Government has also attempted to block High Court action of the Queensland Government by legislative amendments contained in the Commonwealth's legislative Amendments Act 1988.

The area of land covered by the nomination is, according to Queensland Government estimates, 897 900 hectares. Almost 98 percent of this is State owned land. Almost 67 percent consists of State Forests and Timber Reserves managed by the Department of Forestry. About 20 percent of the area is preserved in National Parks. The area of wet tropical rainforests included in the nomination is 615 000 hectares.

The nominated area contains 98 percent of the wet tropical rainforest (approximately 160 000 ha) zoned by the Department of Forestry for sustainable timber production. Thus the total ban on commercial logging implemented by the Federal Government will if sustained lead to the virtual closure of the north Queensland timber industry which has operated in the rainforest for nearly 100 years.

The Queensland Government has instituted proceedings in the High Court of Australia to challenge the legality of the Commonwealth action.

The Department of Forestry is involved in three major strategies to deal with the World Heritage Listing proposal:

- implementation of a public relations program concerning the Queensland case, in conjunction with other Government and semi-government agencies;
- assistance to the Crown Solicitor in preparation of the legal case; and
- development and presentation of an alternative Queensland case to the Bureau of the World Heritage Committee which met in Paris in June 1988.

The Queensland Government has advised the World Heritage Committee that along with the majority of the people of north Queensland, all local authorities in the vicinity of the nomination, and all industry associations including the Queensland Confederation of Industry, it opposes the nomination of the wet tropical rainforest in its present form. The grounds for this opposition are:

- Abuse of constitutional powers by the Commonwealth Government
- Inadequate consultation between the Commonwealth and Queensland Governments
- Inadequate scientific and technical data to support the nomination
- Inadequate regard for the Queensland Government's rainforest management arrangements
- Social and economic dislocations which would result if the listing of the wet tropical rainforests proceeded.

Reports commissioned by the Queensland Government show that financial losses resulting from the listing would be \$960 million - assuming that an alternative coal fired plant, costing \$550 million, was needed to replace a hydroelectric development planned in the



*Maturing age classes of north Queensland kauri pine (Agathis robusta), Queensland maple (Flindersia brayleyana) and satin sycamore (Ceratopetalum succirubrum). The density of regeneration indicates the extent of snig track stabilisation less than ten years after the second logging of this area.*

nominated area. It is apparent from both Departmental data and independent studies that World Heritage listing would cause the direct loss of approximately 800-900 jobs in the timber industry in the region and through flow-on impacts up to 2000 jobs in total.

The listing will also mean the loss of a regional industry producing wood and wood products valued at around \$40 million per annum. With the inclusion of flow on effects to other parts of the State the total value of output loss is estimated to be considerably higher at \$90 million.

No value has been placed on the mineral resources of the area. The compensation package of \$75 million announced by the

Commonwealth Government to replace direct and indirect employment loss if the listing were to go ahead, is totally inadequate. The package is based on the initiation of short term employment projects to replace long-term jobs roughly equivalent to 8380 man years. The Commonwealth Government's package allows for only 1307 man years. Whereas the reports commissioned by the Queensland Government estimate the asset loss and shut down cost of the timber industry to be \$110 million, the Commonwealth Government has offered only \$24 million.

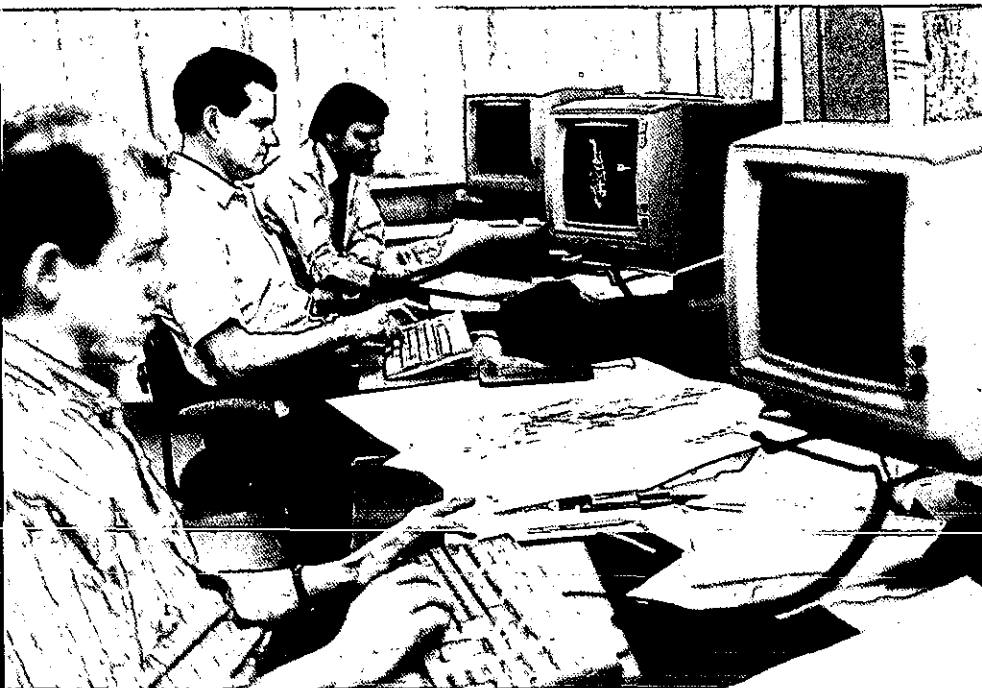
The Queensland Government's case, largely co ordinated and prepared by the Department of Forestry, shows that sustainable utilisation of resources and preservation of the

outstanding values of the wet tropical rainforests to meet the needs of present and future generations can be achieved within the framework of the Biosphere Reserve concept. According to this concept, the wet tropics region can be delineated into a range of zones from key preservation areas, which would be guaranteed full protection, through to natural resource zones, where sustainable selection logging would be permitted, and to rural development zones, which would allow a full range of activities such as agriculture, grazing, forest plantations and rural and town development.

An independent report of the Scientific Committee of the Northern Rainforest Management Agency (NORMA) and the State Government evaluation of the NORMA report clearly show that the high conservation values of the wet tropical rainforest can be incorporated into key preservation areas.

The Queensland Government recommended in its documentation to the World Heritage Committee that the listing be deferred for 12 months to allow the Commonwealth Government to negotiate with the Queensland Government on new boundaries for a World Heritage listing based on key preservation areas. The Queensland documentation included a video "North Queensland: Heritage in the Balance". This allowed north Queenslanders, unable to travel to Paris in June 1988 with the Queensland delegation led by the Honourable Geoff Muntz Minister for Environment, Conservation and Tourism to present the Queensland case, to express their views on the proposed listing.

The World Heritage Bureau has recommended to the World Heritage Committee that the site be inscribed on the World Heritage List subject to the following amendments and clarification:



*Cartographers Tony O'Dempsey (front), Lindsay Redlich and Geoffrey Gibson used the Department's Geographic Information System software to help prepare the Queensland Government's response to the Commonwealth's nomination of the State's wet tropical rainforests for World Heritage listing.*

- A co-operative approach between Commonwealth and State authorities to guarantee effective management of the site
- a review of boundaries
- further information relating to aboriginal lands, private lands, military land, other land uses, and options for the name of the property.

**Management Plans:** Six of the Department's State Forest Group Management Plans have now been completed following a public review period of two months and consideration of comments from interested parties in each case. Positive responses from conservation groups, shire councils and industry have been very encouraging.

A further 5 plans have been completed to a draft stage ready for public comment, and 3 plans are in the process of being edited. Districts have scheduled the remaining 38 Management Plans for completion by December 1989.

#### **Feature Protection and**

**Scientific Areas:** A requirement to have all areas previously designated as Beauty Spots gazetted as Feature Protection Areas has necessitated a review of the suitability of all such areas in Queensland. To facilitate this review, guidelines have been prepared specifying selection criteria and management strategies for these areas.

Guidelines have also been prepared and approved for the selection and management of Scientific Areas. All previously approved Scientific Areas in Queensland are in the process of being gazetted.

## **Division of Technical Services**

### **Preservation of Remnant**

**Vegetation:** The Department has been able to preserve an area of 70 ha of remnant scrub containing Ooline, Crows Ash and Strangler Figs, located on Crown Land held under pastoral lease in the Taroom Shire, with the assistance of the Department of Lands and the National Parks and Wildlife Service.

This unique community, the only one known in the Taroom Shire, will be declared a Departmental and Official Purposes Reserve under the joint trusteeship of the Director, National Parks and Wildlife Service, and the Conservator of Forests.

The occurrence of Ooline also extends onto the adjacent State Forest 164, Parish of Conloi. This area will be declared a Scientific Area and managed for flora protection as a unit with the Department and Official Purposes Reserve.

**Mining:** The current price of gold has resulted in an increased number of mining lease applications and authorities to prospect on State Forests and Timber Reserves.

The Department's policy regarding mining is to ensure that mining activity has a minimal disruptive effect on forest users, that the effect on the forest environment is minimised and that mined areas are effectively rehabilitated by the miners on completion of mining.

To effectively carry out these duties, the assistance of external experts is also required and the Department gratefully acknowledges the assistance from Department of Mines, the Water Quality Council of Queensland and the Queensland Water Resources Commission.

### **ECONOMICS**

One of the key functions of the Economics Branch is to analyse the economic and financial aspects of Departmental operations and to report on any significant developments therein.

With the Department's current commitment to a process of review and redefinition of its strategic direction, Economics Branch has taken a particularly active role in 1987-88 in clarifying the financial and economic goals and strategies for the various commercial and social functions undertaken by the Department.

The adoption of a system of program management by the Department and a commitment to a more appropriate accounting system will mean that from 1988-89 onwards commercial goals will be emphasised in many of the Department's programs. Economic efficiency will become the focus of management activity in these areas.

The long term nature of forestry investments presents particular problems for traditional Government accounting and financial performance assessment. To this end the Branch has been involved in determining and consolidating the principles and methods underlying key financial concepts, including asset valuation, earning rate considerations and financial performance criteria.

At the same time, the branch has participated in a detailed analysis of the Department's present financial situation and contributed to discussions on present and future funding arrangements. It has also

## Division of Technical Services

---

been deeply involved in the analysis of the effects of World Heritage listing of the State's northern rainforests.

During the year, the Branch conducted two regular surveys of economic conditions and activities of relevance to forestry and forest products industries. A statistical summary of the survey was circulated to industry personnel.

### SURVEY AND MAPPING

**Surveys:** The Department's requirements for boundary surveys associated with land acquisition are now undertaken by private surveyors. Surveys were completed at a total cost of \$63 717.

A digital surveying system was developed further, using equipment purchased in the previous year. The system has a particular application in site preparation for exotic pine plantations, although it can be used for collection of any ground surface data, and for general surveying work. It allows the surveyor to collect data, process it through a personal computer program and automatically plot contour and other information which assists in road and plantation design. Other applications will be developed as time permits.

The system was developed originally by the Department of Main Roads and it is through the good liaison between officers of both Departments that a system suitable for Forestry needs has been possible.

Survey control for the Department's computer mapping and Geographic Information System (GIS) within

Gympie and Maryborough Districts were completed during the year. Thirty-nine connections from the State Geodetic network to selected points on State Forests were made. The control ensures that all geographic information digitised in the region will be accurately located on the Australia Map Grid. This facilitates data exchange with other mapping authorities. Details of connections are also deposited in the Department of Geographic Information for access by other users.

**Mapping:** After extensive evaluations of GIS software, the Queensland Centre for Information Technology and Communications (CITEC) purchased the Environmental Systems Research Institute (ESRI) software package (ARC/INFO) which will be used by a number of State Government Departments responsible for land management. The software package is particularly suited to Forestry applications. It was used extensively in the preparation of the State Government's response to the Commonwealth Government nomination of the wet tropical rainforests of north Queensland to the World Heritage list. Conversion of Forestry maps covering Gympie District to digital form using ARC/INFO software commenced early 1988 and is scheduled for completion by mid 1989. Digital maps will form the spatial data base for the Department's GIS.

Several items of computer hardware were purchased during the 1987-88 period including a computer driven plotter which allowed digital maps to be plotted on site.

An extensive program to train the Department's cartographers in computer mapping techniques is continuing.

The Department published 34 maps during the period. Included in this total is an eleven-colour map of Far North Queensland compiled for the Northern Rainforest Management Agency. The map was compiled using predominantly digital methods and identifies rainforest communities within the far north region.

Numerous "provisional" maps were produced specifically to assist in the Department's assessment of areas nominated for listing under World Heritage.

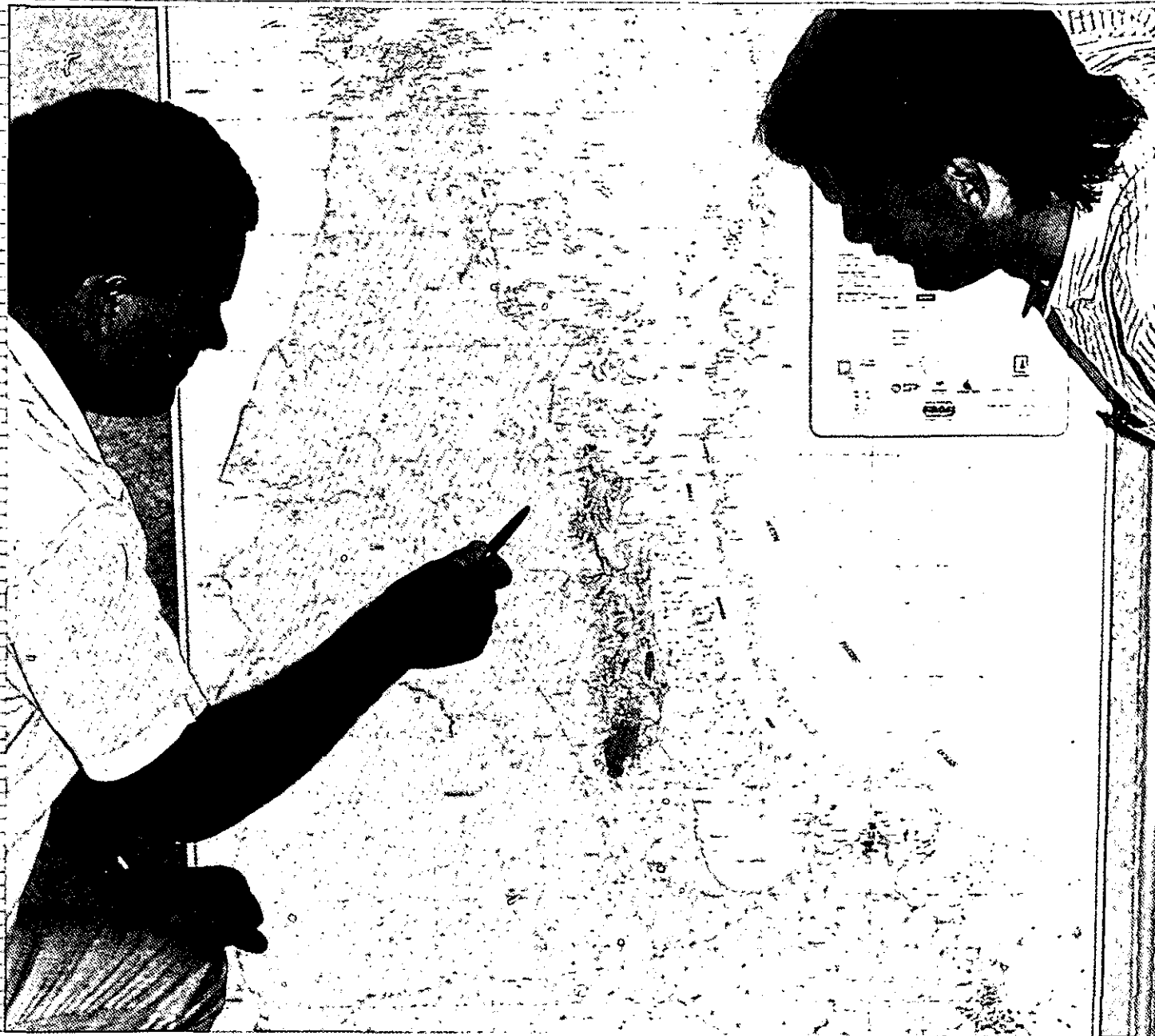
Forestry maps are marketed through SUNMAP centres and agencies in addition to Departmental outlets. A total of 2360 maps to a value of \$11 194 were sold from Departmental outlets during the year. An additional 2185 maps were supplied to SUNMAP for sale through its agencies.

Low level aerial photography continues to be used for mapping and field management purposes. Nine flights were made and approximately 625 frames were printed during the year.

**Cartographic Services:** Cartographic Services section provides illustrative diagrams for the Department's land transactions, leasing and permits and also supplies District centres with maps for day to day operations.

State Forests, Timber Reserves and Specialized Management Areas declared under the Forestry Act have a plan prepared delineating the precise boundary of each reservation or area. Staff prepared 48 plans during the year.





*Graphics co-ordinator Lindsay Redlich (left) and cartographer Paul O'Neill check a detail on the Department's new, eleven-colour map of Far North Queensland compiled for the Rainforest Management Agency. The map identifies dominant vegetation types in the region.*

## Division of Technical Services

---

The section also prepares material for inclusion in the Department's publications, operation manuals and research notes. A desk top publishing system was purchased for use in the preparation of this work. The system will allow substantial savings in the cost of publications in addition to enhancing the quality of the Department's publication material. Several officers have undertaken training in the new system.

A Xerox 2080 plan printer is used to print maps, plans and large documents. The printer is also used by other Government Departments; however, use has decreased since the relocation of the Department's head office to 160 Mary Street, Brisbane. Revenue for the year from printing plans for other Government Departments totalled \$37 118.

### INFORMATION SERVICES

**Community Extension:** Although projects related to the Government's opposition to World Heritage listing of the State's northern rainforests featured heavily in community extension activities, the Department's broader objectives were also served through a variety of activities.

Recreation in State Forests - one of the more popular services that the Department provides to the public at large - was catered for by the production and release of four more descriptive booklets designed to inform the public about forest-based recreation opportunities in the Atherton, Ingham, Wide Bay and Central Queensland areas.

In response to an increasing public demand for more forestry-related information about Fraser Island, a pamphlet was prepared in time for the Easter "rush" season. Other pamphlets prepared during the year included a promotion brochure for the Gympie Training Centre, an updated brochure for WoodWorks Forestry and Timber Museum, and a promotion brochure to encourage teachers in State and private secondary schools to increase their usage of the three-volume ForEd resource kit which was distributed to all secondary school libraries last year.

In April 1988, ForEd won the Australian Geography Teachers Association's award for the most outstanding geographical education reference book for teachers. The awards panel considered the project to be an outstanding example of curriculum resource units and suggested that it be used in secondary schools throughout Australia.

The Department's extensive series of topical information sheets was revised and reissued in an improved format, and a new "Trees and Shrubs" booklet was designed and produced.

Reflecting the growing trend to audio-visual presentations for small audiences, a 13 minute video was produced on "Forest Management in Queensland". The effective, cost saving medium of slide on tape was used - thus eliminating the need to shoot "live" footage on location.

**Library:** The demand for scientific and technical information from the libraries was again at a high level this year. More than 3900 reference enquiries were answered from library resources for Departmental staff and the public. Overseas on line databases were also used extensively to satisfy literature search requests for a varied range of topics.

The monthly accessions lists and lists of current journal articles produced by the Library continued to generate a large number of loan requests from Departmental Officers. The fortnightly journal displays at Central, Indooroopilly and Gympie libraries were also heavily used by research and technical staff during the year.

This year, for the first time, librarians visited north Queensland branch libraries to index collections and talk to staff about library services.

Further investigations into obtaining suitable software for the establishment of an in house computer based library management system were undertaken.

**Displays:** Manned displays form a major part of the Department's publicity and extension program. The attendance of officers at agricultural shows provides an avenue for promotion of Departmental programs in the region and also provides an opportunity for the public to obtain technical and other information and advice. Staff attended 25 shows during the year.

The Department was involved in 15 public events other than agricultural shows.

A very successful people's day was held at the Gympie Forestry Complex following the opening of the

steam sawmill attached to WoodWorks - the Forestry and Timber Museum. Over 8000 people attended and viewed the many static displays and demonstrations.

In conjunction with the timber industry, Timber Week was celebrated with a presentation in Brisbane's Queen Street Mall. Static displays, wood craft demonstrations and tree give-a-ways were popular with the large crowds visiting Brisbane to attend the World Expo 88.

Major presentations at Farm Fest in Toowoomba and north Queensland Field Days in Townsville headed the Department's effort to emphasise the value of trees in preventing and rectifying land degradation. This theme was also pursued at many of the agricultural shows attended.

The RNA display focussed on the traditional art of wood craft using Queensland's finest timbers.

**Overseas Visitors:** The Queensland Department of Forestry is a world leader in tropical forest management. This is reflected in the continuing requests for study tours by overseas forest managers and scientists. Over 50 visitors from 11 countries toured Queensland forest areas on study tours and training courses during the year.

The majority of visitors were from developing countries in the tropical regions of the world including Malaysia, People's Republic of China, Philippines, Sri Lanka, Thailand and Indonesia.

Our native flora contains species which have considerable potential in those regions of the world, particularly for fuelwood production. The visitors were particularly interested in work with native species, tree breeding, site preparation and weed control techniques.

*Gympie Forestry Training Centre's 1987 - 89 Class*

*Back row: Cas Vanderwoude, Brian Spillane, David Barringhaus, Tom Berthelsen, Marc Dargusch, Jonathan Barford, Margaret Hagan, Michele Deveze, Andrew Houley, Martin Ambrose, Ross Cunningham, Tony Sturre, Peter Bartels, Shane Macleod.  
Front row: Teresa Dowden, Gerry Tomkins, Marc White, Warren Raddatz, Rodger Peters, Keith Walker.*



**GYMPIE TRAINING CENTRE**

The Centre currently has 20 students including 2 sponsored by the Fiji Pine Commission.

The Forestry course has been designed to be taught as a series of problems or topics rather than subjects, using the subject objectives as the learning objectives. Trainees are expected to research, analyse and solve work related problems using the resources provided by the lecturing staff.

These students are due to complete their study course in June 1989 and on graduation will be placed in field situations throughout the State. A memorial award has been introduced to the Centre to honour the memory of a previous graduate, Jodie Benson, who was tragically killed in service at Toolara. This award is

given to the trainee voted by his/her peers to have made the greatest contribution to life at the Centre. The inaugural award was won by Ken Robson.

In February 1988, a lecturer spent three weeks in the Solomon Islands as a consultant to the Solomon Islands College of Higher Education for the purpose of providing assistance in staff development and curriculum design for their recently established Forestry Training Centre.

The conference facilities at the Training Centre continue to be well used by groups from the public and private sectors.

## FOREST RESEARCH

### Agroforestry Research in North Queensland:

At the turn of the century, much of the Atherton Tablelands and coastal lowlands of north Queensland were covered by tropical rainforests. Large areas of rainforest have been cleared since then for agricultural and urban development. Resulting land degradation, including erosion and landslip, has frequently occurred in small discontinuous areas. Land degradation can be halted and areas progressively returned to productive use through agroforestry, which is a combination of tree growing and agricultural or pastoral production on the same area. The Department has established a series of trials which will provide basic information on tree establishment

and maintenance in agroforestry systems in north Queensland. Information resulting from the trials will be made available to landholders. Current work includes 14 species with potential for agroforestry use:

- Honduras Caribbean pine grown in improved pastures.
- hoop pine grown in improved pastures, in frost prone areas and on sites covered with undesirable woody weed growth.
- three native eucalypt species (tallowwood, forest red gum and Gympie messmate) that have the potential to produce durable timber suitable for posts and rails (from thinnings) and poles and sawn timber (over longer periods).

- valuable native rainforest species including kauri pine, silver quandong, Queensland maple, southern silver ash and red cedar.
- important exotic rainforest species including West Indian cedar, African mahogany, American mahogany and teak.

When rainforest species are planted in full sunlight, early growth can be enhanced by using individual tree shelters. A demonstration trial using red cedar has been established. The tree shelters, sold under the registered name of Growtube, are made of lengths of 130-micron UV-stabilised plastic tubing. Growtubes are placed over the newly planted tree and supported by three wooden stakes located 30 cm apart in a triangular configuration. Three lengths of Growtube (one, two and three metres) and a control (no Growtube) treatment were used to measure effects on survival, and height and diameter growth of red cedar seedlings.

Results of the trial surpassed expectations. The average height of the trees in the tallest Growtubes exceeded three metres at age six months. By comparison, trees without Growtubes were around one metre in height. Trees in the shorter Growtubes reached between one and three metres. Diameter growth of the trees followed an interesting pattern. While the tree crowns were still within the Growtubes, diameter growth was minimal. As the crowns began to emerge, diameter growth increased noticeably and the trees soon became stable enough to allow removal of the Growtubes.

Work on Growtubes is continuing. The growth of a further six species will be monitored over an extended period of time.



*Hoop pine stump with well-advanced wood-destroying fungus about one year after inoculation. Within two years of inoculation, the stump will crumble with a kick. Accelerated stump decay helps reduce the costs of replanting pine plantations.*

### Biological Breakdown of Pine

**Stumps:** Two fungi, *Phellinus noxius* and *Poria vineta*, cause root rot and kill trees in Queensland hoop pine plantations. Spores of the fungi are carried by the wind, and invasions occur when they land on the surfaces of fresh stumps. When plantations are thinned or clearfelled, the resulting stumps become a major source of infection for nearby trees. Once established, the diseases may spread from tree to tree underground, through points of root contact.

Staff of the biology laboratory have been testing various methods for controlling the two diseases. Promising results have been obtained from a method of biological control. A suspension of a harmless wood-decaying fungus is spread over freshly-cut stumps. The wood-decay then colonises the stump and roots, keeping out invasions of the root rot fungi.

Various wood-decaying fungi have been tested. All occur naturally on hoop pine stumps in Queensland. Two species, *Trametes versicolor* and a *Tyromyces*, have been particularly successful.

In a series of trials on thinnings stumps with three other fungi, *Trametes* was the only one that colonised all the stumps it was applied to, and that prevented *Poria* from developing. In one experiment, the roots of the stumps were artificially infected with *Poria*. The disease was then able to enter the stumps both by way of the stump surface and from underground. *Trametes* prevented infections by *Poria* from either source. *Trametes* has also been applied to infected stumps in active disease patches to test its effectiveness against *Phellinus*.

*Tyromyces* has outstanding potential in clearfelled hoop pine areas. When tested with another wood-decaying

## Division of Technical Services

---

fungus, only *Tyromyces* colonised all treated stumps and prevented *Poria* infections. All stumps treated with *Tyromyces* were completely rotted out in two years and a number in less than one year. Normally, untreated hoop pine stumps take three to four years to rot away. In the laboratory, it was shown that segments of hoop pine roots, once colonised by *Tyromyces*, cannot be invaded by either *Phellinus noxius* or *Poria vineta*.

A *Tyromyces* from hoop pine plantations was applied to fresh stumps of slash and loblolly pines at Beerburrum in 1986-87. After one year, successfully-treated stumps showed 36% decay at 10 centimetres below the ground. Stumps not treated showed 14% decay. After clearfelling of exotic pine plantations, specialised machinery is used to prepare the site for the next tree crop. Site preparation machinery has been damaged by contact with clearfall stumps. Enhancement of stump decay will help prevent costly machinery repairs. A more extensive trial, involving other species of wood decay fungi, is planned for Beerburrum, Toolara and Tuan.

**Potassium Deficiency of Coastal Exotic Pines:** Podzols are nutritionally impoverished soils that have a sandy surface layer and an ironpan or humus layer underneath. The Department has planted increasing areas of podzols with exotic pines since 1970. Vigorous pine plantations can be established on podzols, provided that gross deficiencies of phosphorus are corrected and a dressing of copper is routinely applied.

Recent analysis of experiments has shown that exotic pines grown on podzols may also respond to additions of potassium. A trial involving potassium was planted in 1968 near Bundaberg and measured at age 14.6 years. While no worthwhile response was detected in slash pine, a growth improvement of 10-17% was recorded for three varieties of Caribbean pine.

More clear cut evidence of potassium responses became available from a trial planted with slash pine in 1976, on a well developed podzol at Toolara. The addition of 50 kg/ha of potassium at planting led to a 110% increase in total volume production at age 10 years. Chemical analysis showed that potassium concentration of the foliage, while remaining below critical levels at age nine, had been improved noticeably by fertilizer addition.

A further slash pine trial planted in 1981 at Tuan confirmed the major response to potassium on well developed podzols. By age five years, total volume had been improved by 65% with commensurate increases in foliar potassium levels.

Given the potential gains available from routine application of potassium to selected sites, studies involving potassium are being actively pursued. Current lines of investigation include:

- . the response of established stands to potassium
- . the effects of thinning on the response
- . the response in new plantings to various rates of potassium

## Division of Technical Services

- the effects of two rates of potassium and nitrogen on Caribbean pine, slash pine and a hybrid of the two species
- the distribution of potassium in the tree crown
- identifying sites that are likely to give a response to potassium.

### Fertilising Exotic Pines

#### Established on Pasture Sites:

Large areas of former pasture land recently acquired by the Department are being converted to exotic pine plantations. Previous land owners had applied fertilisers to promote pasture growth. Rates of application varied from site to site but 0-100 kg/ha of nitrogen, 100-250 kg/ha of phosphorus and 100-380 kg/ha of potassium are regarded as typical. Quantities were generally well in excess of normal forestry additions. Fertiliser experiments have been established on former pasture sites since 1980, but no need for renewed applications of fertiliser has been demonstrated. Where exotic pines were given additional phosphorus at planting, phosphorus levels in the foliage have increased. However, unfertilised trees still had adequate phosphorus levels.

Data from a trial planted in 1962 show that phosphorus levels in the foliage, and growth rates, can decline after 14 years. The 1962 trial, on a pasture site, received a total of 154 kg/ha of phosphorus.

The lasting effects of phosphorus applied to pastures depend on how much was added and how long ago. When plantations are established, fertilising with phosphorus may become necessary where the dressing was in limited quantities or applied some time prior to planting.

The following table has been devised to provide guidelines on whether to apply phosphorus to proposed plantation areas.

Total phosphorus applied to pasture (kg/ha)	Age since last application (years)	
	0-4	5-9
0-60	Yes	Yes
60-100	No	Yes
100-400	No	No
140+	No	No

Where application is recommended, a rate of 60kg/ha is used.

The recommendations tend to overestimate the area requiring fertiliser. Allowance is made for small errors in rates applied by farmers, and for the tendency towards small amounts in later fertilisings. Plantation trials have now been established to monitor the performance of pines on a wide range of pasture sites and early evidence of any need to apply fertiliser to developing stands should be available.

#### Conondale Range Fauna Study:

The Conondale Range fauna study remains the Department's main zoological research project and involves studies on fauna in streams, forest birds and arboreal mammals.

Two comparable rainforest streams were selected in 1983 and the effects of hardwood logging on the numbers and growth rates of juvenile giant spiny lobsters have been studied. After an initial 30 month calibration period, hardwood logging began in May 1986 in the catchment of North Booloumba Creek. Disturbance was kept to a minimum in the catchment of the control stream, Bundaroo Creek. Preliminary analysis of results so far suggests a strong seasonal variation in both numbers

and growth rates of the lobsters, but no significant response to logging. The presence of the rare gastric brooding frog in the Conondale streams was one of the major reasons for initiating fauna studies in the area. Regular searches have been made but the species has not been relocated in either the logged or unlogged catchments. The last recorded occurrence was in 1979. Reappearance of the species may occur on a cyclical basis.

A total of 95 bird species have been identified during transect studies. Preliminary analysis of census data suggests that frequency of occurrence of 34 species has altered significantly in response to logging. Of the 34, 12 have become more frequent. A total of 94 km of spotlight transects have been completed so far in the arboreal mammal study. Transects cover a wide range of vegetation types, including sites regenerating after hardwood logging. Analysis of results from the transect studies is not yet completed.

In late 1987, gold mining and refining operations recommenced in the Conondales. Government approval was given to reopen a pre-existing lease that spans both the treatment and control catchments. Impacts on the fauna of the region are being closely monitored.

## TIMBER UTILISATION

### Wood Chemistry and Preservation:

Analytical equipment in the chemistry and preservation laboratory, opened in 1986, has now been linked to a network of personal computers for the automated input and processing of analysis data. Productivity has increased and results are printed out in certificate form. The high standard of facilities and output from the laboratory, has been recognised by both the



*Research forester Grahame Applegate adjusts a Growtube containing a six-month old red cedar planted in an agroforestry trial on the Atherton Tableland. Growtubes, still under trial by the Department, can rapidly accelerate the growth of rainforest seedlings planted in direct sunlight.*

preservation industry and chemical suppliers who have increased their requests for contract and fee for service work.

Matched samples of material analysed by the laboratory were provided to nine other laboratories in Australia and overseas to compare inter-laboratory precision. Information generated showed that the techniques and procedures used by the Wood Chemistry and Preservation Laboratory produce highly accurate and consistent results.

Long term exposure testing is required to evaluate a preservative system and test sites have been established for testing under marine, tropical and sub-tropical conditions. In association with the Department

of Harbours and Marine, a marine exposure site has been installed at Mourilyan Harbour, and the Departments of Public Works, Local Government and Harbours and Marine are participating in the establishment of other exposure sites.

Testing for in-ground use is done at a wet tropical site near Innisfail (latitude 17°) and a sub-tropical site at Mt Mee near Brisbane (latitude 27°). The severity of both sites has been established over several years of operation and a valuable database is now available covering a range of species, chemical formulations and preservative loadings.

The sapwood of cypress pine is very difficult to treat with preservatives and the Australian Timber Research

Institute provided funds for an investigation employing a range of preservative chemicals and processes. Diffusion techniques using a solution of copper salts followed by a solution of chrome and arsenic salts showed the most promise. This was still not good enough to provide adequate penetration.

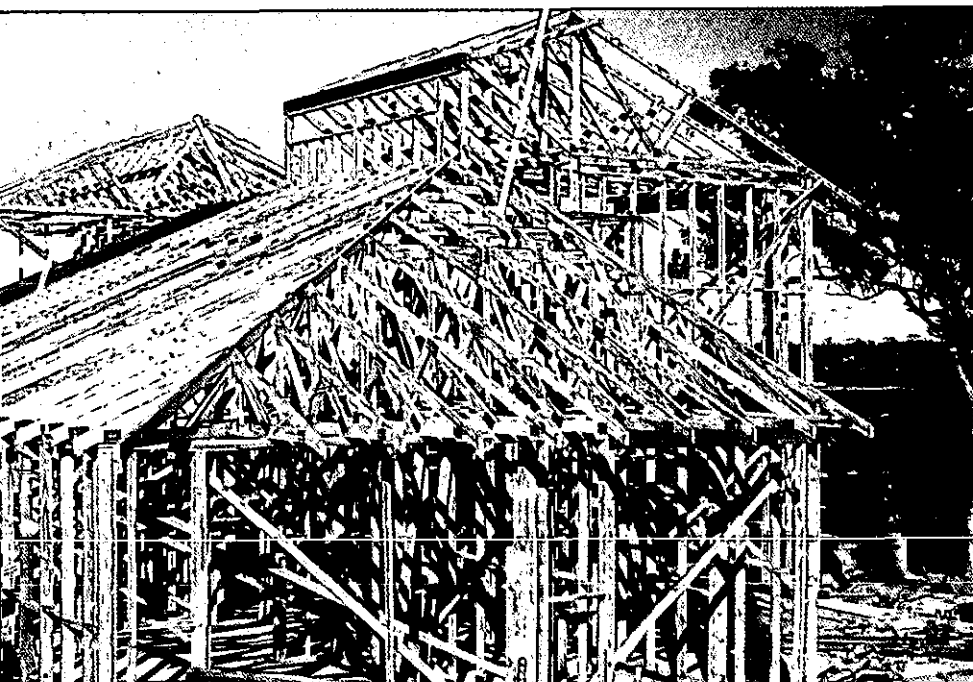
Several timber treatment organisations have formed a company called PINETECH, with the objective of funding the following research investigations by the Department on slash and hoop pine:

- optimum drying techniques for commercial preservative treatment
- the effects of drying and treating regimes on the mechanical and physical properties of the preservative treated timber
- accelerated post treatment drying
- the feasibility of achieving preservative penetration into the heartwood.

Pilot scale tests will be carried out using the Department's treatment plant situated at Salisbury.

A project has been commenced to determine the resistance to soft rot infestation of eucalypt power poles treated to high CCA retentions. Up to 500 poles at least five years old will be assessed and analysed. The information obtained will be useful in reviewing inspection programs for poles in service and in checking the adequacy of current pole preservation standards.

**Timber Utilisation:** The first assessment has been completed on a timber decking trial following 12 months exposure. This trial is being conducted in conjunction with the Timber Research and Development Advisory Council of Queensland, and 96 deck panels are involved.



*Seasoned, stress graded slash pine is an ideal product for house framing. It is versatile and easy to use and is readily adaptable to most house designs. Wood quality research conducted by the Department helps ensure that Queensland timbers will always be more than adequate for the tasks demanded of them.*



Assessment is principally based on a range of appearance related characteristics that reflect the comparative weathering performance of the test panels. It is anticipated that the trial will need to be in place for a few years before the timber species can be ranked for overall deck performance. However, at this preliminary stage it is clear that the protection of both paint and stain finishes is important for decks. Both systems provide a better surface appearance than the unfinished control panels, with the paint finish superior. It is also evident that the shaded panels have a better surface appearance than their sun exposed counterparts. However, the potential for higher decay hazard in the shaded site may yet work against it in the long-term.

Support work for the recently established above ground durability trial has continued. This trial contains 6338 mortise and tenon L-joints set on exposure racks at 11 Queensland and interstate test sites. The first formal assessment of the trial is due in late 1988, and the long-term results will be of considerable practical importance to the building industry. Procedures have been established for processing climate data from all sites, and the possibility of a link between climate indices and timber decay scores will be investigated. Matched pieces from many of the L-joints have been forwarded to CSIRO in Melbourne. These pieces will undergo accelerated laboratory tests to provide limited comparative data on in-ground decay hazards.

Timber use surveys have continued to provide information as a basis for forest management planning. Topics covered during the year were:

- . CCA treated pine production in Queensland
- . Timber use in doors and windows

## **Division of Technical Services**

---

. Building materials used in house construction in Queensland - 1986-87

These reports are also available to the timber industry in the Timber Trend series of publications.

**Wood Quality Research:** Fast grown, heavily thinned stands of Caribbean pine at Cardwell have been sampled and comparisons made with a routinely treated stand over a five year period (rings 6 to 11). The fast grown stands were thinned to 440, 240, 120 and 60 stems per ha at age six and the adjacent routine planting was held at 900 stems per ha from age 3 to 11 years.

Preliminary assessment of results indicates no significant depreciation of wood quality with fast growth. Basic density levels, latewood percentages and fibre lengths have remained relatively constant. Small increases occurred in compression wood and grain spirality. The pith to bark fibre length trend indicates the juvenile/mature wood boundary occurs at about the tenth growth ring but relatively mature values (exceeding 3.7mm) were recorded from the sixth ring outwards.

A study to determine the heritability of basic density, percent latewood, percent compression wood, percent resin content and grain spirality in Caribbean pine has commenced, and 39 open pollinated families planted in a progeny trial at Toolara are also being studied. Results will have importance for south east Queensland plantations. Six control pollinated 'super' families are also being assessed as well as 45 second generation plus tree selections.

Disc samples have been obtained for the heritability study allowing valuable comparison studies of disc versus strip results for basic density and compression wood. These comparisons are important to assess the utility of results obtained from increment core samples.

**Seasoning Research:** The Department has been involved with seasoning research for many years and maintains an ongoing program. The main reason for this interest is that efficient seasoning processes add greatly to the value and range of uses for wood products obtainable from the State's forest resources.

Research projects are either framed to meet the current needs of producers or are more strategic in nature. An example of the former is work sponsored in part by the Australian Timber Research Institute in which various methods for monitoring the moisture content of timber inside a hot, drying kiln have been investigated. Preliminary work suggests that a method based on air temperature measurements across the width of a drying charge has greatest potential.

An example of strategic research work in progress is the development of innovative, fast and cost effective methods for seasoning hardwoods, particularly brush box.

**Conversion Modelling:** The Department is developing a computer based model to simulate and integrate forest growth and timber conversion. This package will allow more flexible and realistic analysis of plantation management options.

## Division of Technical Services

The linking of growth and conversion modelling in one framework is a complex problem, however potential benefits are great. The major difficulties arise with growth modelling. Not only must a growth model accurately predict gross volume increment in a stand of trees, but it must also predict the full range of wood quality features associated with those trees. Wood quality determines the value of final products, such as sawn timber, veneer or pulp.

A detailed tree growth model developed by the Department can simulate the development of a tree crown and the size and location of every knot in the bole. Wood properties such as density can also be mapped for each tree.

### TIMBER UTILISATION EXTENSION

Timber Utilisation Branch continued to provide an extension service to timber specifiers and users. Areas covered by this service included:

- . advice on timber seasoning and preservation
- . advice on timber use
- . advice on timber species suitability and availability
- . timber identification
- . sale of timber samples
- . advice on timber degradation by insects and fungi.

This service includes the production of two series of publications, "Timber Notes", which provide advice on a wide range of topics relating to timber use, and "Timber Species", which provide descriptions of some of the timbers available in Queensland and outline their uses and identification features.

Another service to the timber industry has been to assist in the training of industry personnel and to run seminars for architects and engineers.

**Seasoning Extension:** Increasing interest in timber seasoning as a high value-added process is being received from both industry and private individuals. The information required by industry is becoming increasingly complex and two of the more involved consultancies undertaken during the year were:-

- . An evaluation of the Hyne and Sons high temperature softwood drying kilns at Tuan, and
- . An evaluation of the Tropik Woods pine seasoning facilities in Fiji.

Departmental officers were instrumental in organising an Australia wide series of seminars on timber drying, in collaboration with the Australian Timber Research Institute. A prominent research and extension worker from the U.S.A. was engaged as the lead speaker and funding assistance was provided by the Commonwealth Department of Industry and Commerce. Participation throughout Australia totalled 271. The main objective was to encourage increased investment in value added processes for resource development.

At the local level, a further course for kiln operators was held in cooperation with the Queensland Timber Industry Training Committee.

### Timber Utilisation and

**Marketing Act:** On 1 July 1987, the Timber Users' Protection Act was repealed and replaced with the Timber Utilisation and Marketing Act. The basic objectives of this new legislation are:

- . the effective removal of lyctid borer susceptible timber from the Queensland marketplace.
- . the setting of standards to ensure that all preservative-treated timber marketed in Queensland is readily identifiable as to source and suitability for defined use conditions.
- . the setting of moisture content standards to apply to the sale or use of certain timber products.

The changes are aimed at ensuring that the timber industry operates effectively in these areas. Producers are given a clear set of guidelines under which to operate and timber users now have a level of protection not previously experienced. Complaints received during the year under this Act were as follows:

<i>Seasoning complaints</i>	1
<i>Preservation complaints</i>	1
<i>Lyctus in timber produced in Queensland</i>	1
<i>Lyctus in timber produced in other States</i>	4
<i>Lyctus in timber imported from overseas</i>	6
<i>Borer other than lyctus</i>	1
<b>Total</b>	<b>14</b>

From these figures, it is obvious that the majority of complaints relate to the use of lyctid susceptible timber, almost all of which was imported from other States or overseas.

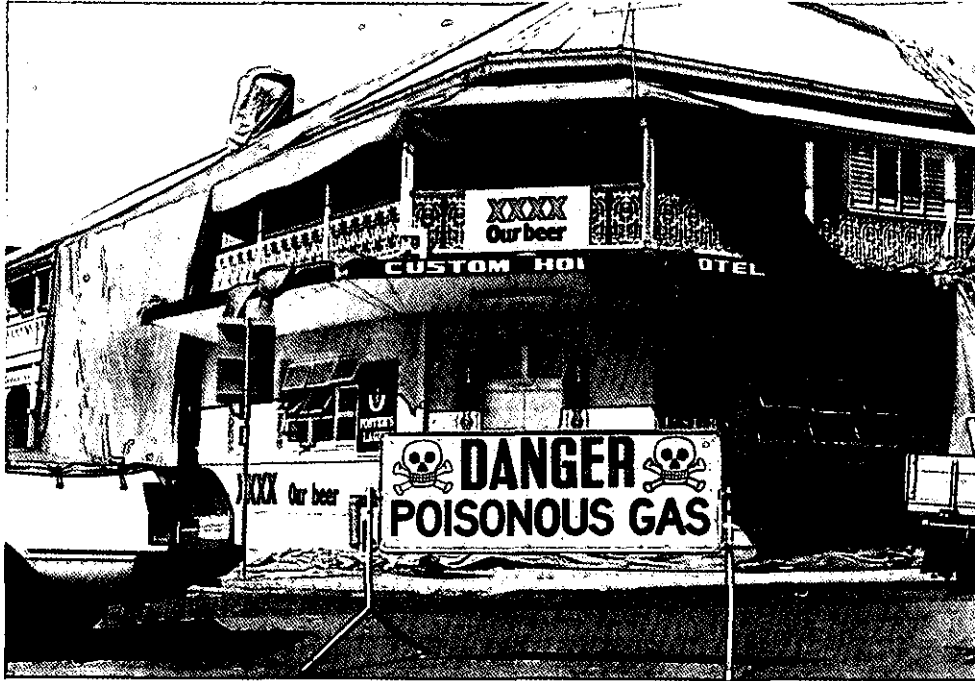
**West Indian Drywood Termite Eradication Program:** During the financial year 931 samples were submitted for identification. The marked increase from 1986-87, when 556 samples were submitted, is attributable to a very successful advertising campaign conducted late in 1987 seeking public assistance in reporting suspected West Indian drywood termite infestations.

Thirty of the samples processed were confirmed as West Indian drywood termite, 18 were from buildings and 12 from furniture. Most of the inspections involved sites in the Brisbane area, though infestations were also detected at Toowoomba, Maryborough and Bundaberg. Of the 18 building infestations, 14 were in localities where the pest had previously been detected.

Commercial fumigation of 29 buildings was supervised by project officers. This total included 11 residences, 2 Commonwealth buildings and an historic hotel at Maryborough.

In 1987-88, as in recent years, program activity has mainly involved detection and mopping up in the vicinity of previously detected infestations. The systematic examination by program officers of buildings in such 'high risk' situations has been assisted by public cooperation in reporting suspected infestations.

*Fumigation proceedings underway at the historic Customs House Hotel in Maryborough to eradicate a West Indian drywood termite infestation.*





Division of

## ADMINISTRATION

### FINANCE AND ACCOUNTING

**Functions:** Accounts Branch provides a wide range of financial management and budgetary services in conjunction with its other primary function of processing, recording and reporting on the Department's receipts and expenditure.

These services are provided to facilitate the effective management of the Department's programs whilst ensuring compliance with all relevant financial legislation, accounting standards and procedural requirements in the Public Accounting Sector.

**Operations:** During the year 6300 receipts were issued and 47 000 expenditure voucher documents were processed to produce cheques in payment of accounts.

Other major functions carried out during the year included payroll processing, budget co-ordination, monitoring of expenditure within appropriation, determination of liability for fringe benefits tax, sundry debtor control and provision of financial advisory services.

**Development:** The Branch has maintained its commitment towards the enhancement of the Department's financial and management accounting functions.

During the year:-

- . A new release of system software was installed on the computerised wages payroll system which has enhanced its processing and reporting capabilities.
- . Increasing use has been made of microcomputers to produce financial, budget and management accounting reports. This has saved considerable manual effort and produced more timely and efficient reports. This trend will continue in the coming year.
- . A program management philosophy has been adopted by the Department, to operate from 1 July 1988. This has necessitated a redesign of the Department's Chart of Accounts and training of personnel in the changed philosophy.
- . Development has continued on the computerised expenditure accounting system. The system has been updated from the latest release of software available to the Government through Management Science America (Australia) Pty Ltd.

The Department will be the pilot installation for the Government for this latest release which incorporates computerised purchase order production, accounting for encumbrances, on line funds checking against budget allocations, computer matching of purchase

orders with invoices as well as the integration of software modules and increased data capture facilities. The operation of this new system is to commence from 1 July 1988.

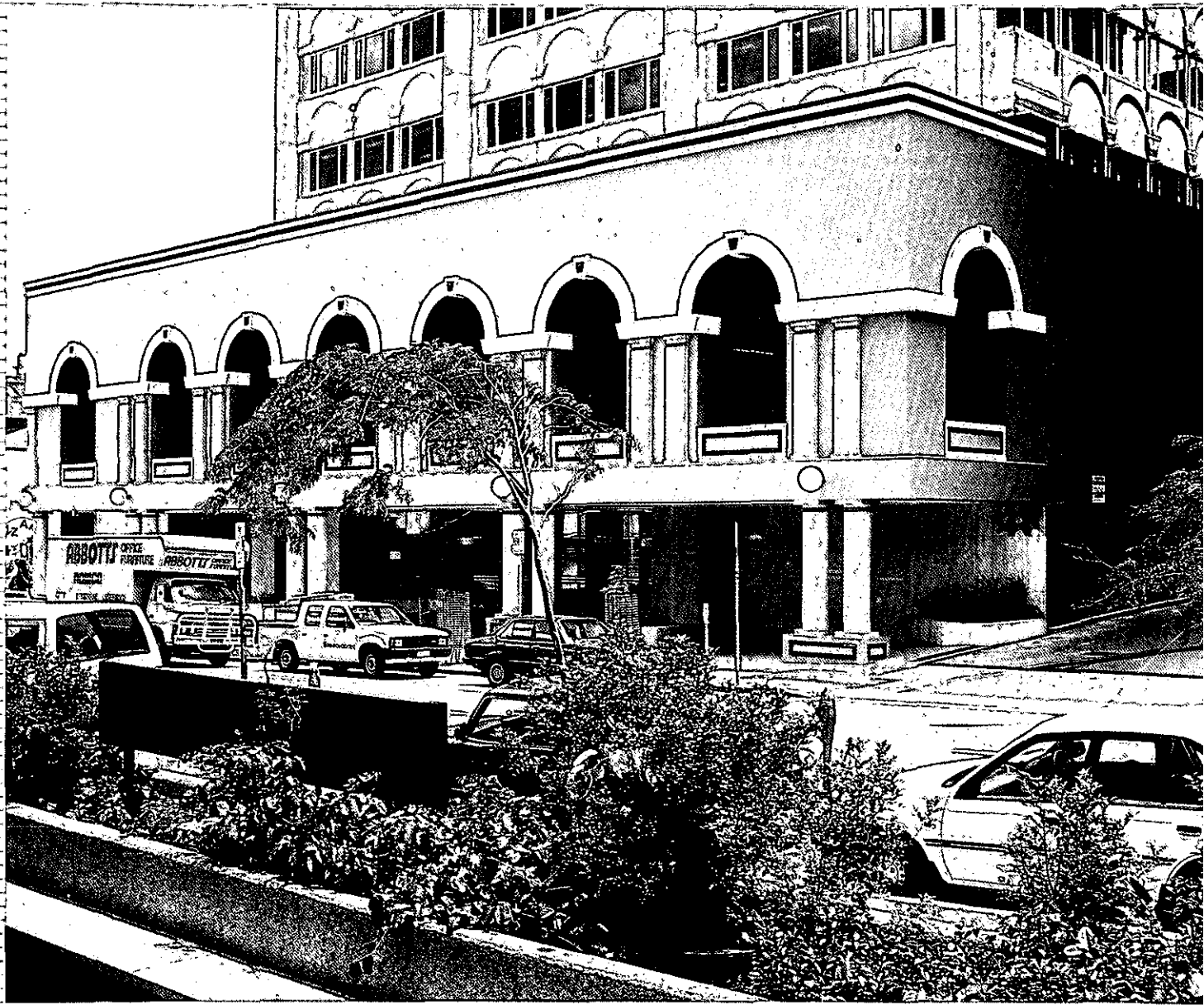
Senior branch staff have been involved in an assessment of the Department's financial direction and methods of funding for the future. Preliminary work has commenced on producing financial accounts on an accrual basis which will determine profitability and provide a measure of the financial viability of the organisation. It is expected that commercial accounts will be produced for the 1989-90 financial year.

The implementation of the aforementioned developments will enable the Branch to provide more meaningful financial and budgetary reports for line managers and external parties.

### ADMINISTRATIVE SERVICES

**Functions:** The Branch provides support services for the Department. The major functions of the Branch are:-

- . Co-ordinate with the Department of Works for capital and minor works, supply of furniture and provision of office accommodation.
- . Provision of a central purchasing operation for the Department.
- . Co-ordinate the provision of office equipment including telephone systems.
- . Implement policy and provide guidelines for administrative matters.
- . Operate the central records system.



*Forestry House, the Department's new home at 160 Mary Street, Brisbane.*

**Accommodation:** In January 1988, Head Office and Brisbane District staff took up occupancy in new accommodation at Forestry House, 160 Mary Street, Brisbane. The new accommodation has provided improved facilities and extra floor space. This has overcome congestion in some work areas.

The new Benarkin Sub District Office located at Blackbutt was completed and occupied in January 1988. This office was officially opened by the Honourable W.A.M. Gunn, M.L.A., Deputy Premier, Minister for Public Works, Main Roads and Expo and Minister for Police and the Honourable G.H. Muntz, M.L.A., Minister for Environment, Conservation and Tourism on 20 May 1988.

Roma staff also moved into new premises in January 1988. The new accommodation is closer to the town centre and provides additional space.

Provision has been made in the Department of Works forward estimates for the construction of a new office in Ingham during the 1988-89 financial year.

**Communications:** New telephone systems were installed at Atherton, Monto and Blackbutt in line with the continued upgrading of facilities in regional centres. In conjunction with this program a number of answering machines have been installed in offices where field staff are absent during working hours. This is an important initiative, particularly where the officer is the local fire warden.

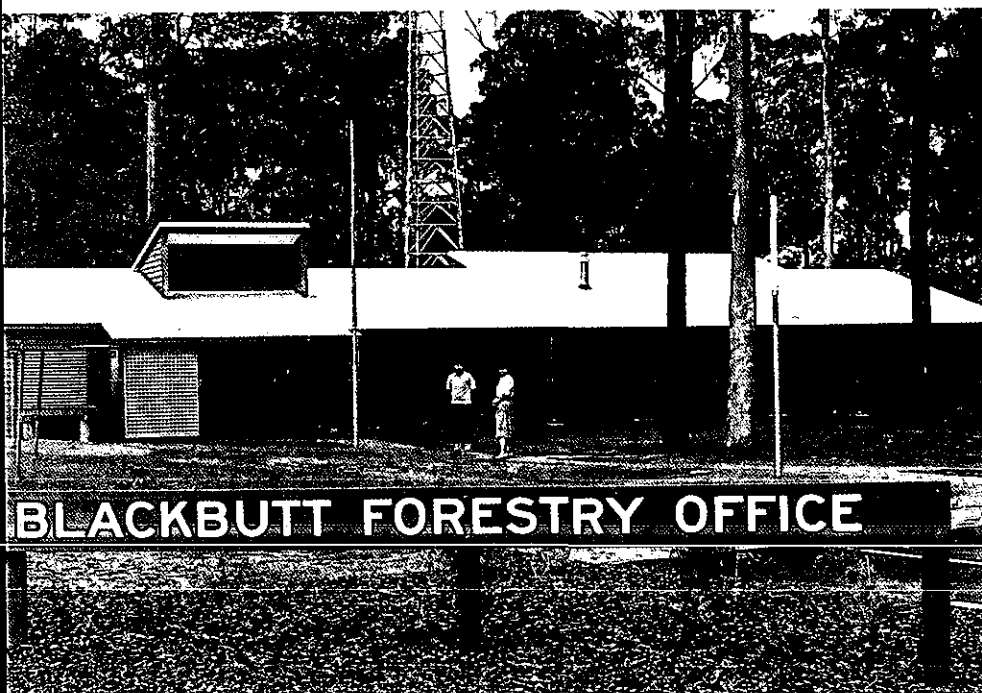
In recognition of the changing face of communication in both the public and private sector the Department has withdrawn its telex network and replaced it with facsimile machines. These have been installed in Head Office, Indooroopilly Research Office and 11 country offices. It is intended to extend the network to other country centres in 1988-89.

**Stenographic Services:** In conjunction with the relocation to 160 Mary Street by Head Office, all typing functions were located in the Divisions with a word processing function the only centralised typing function. Personal computers with a word processing package have been provided for the Divisional typists. These computers will be networked to provide flexibility, especially with the use of printers.

**Stores Section:** During the year, Stores processed the following documents for supply of goods and services:

- . 5 500 requisitions placed for orders to be issued (6 700 1986-87).
- . 6 600 orders issued on firms for supply (8 000 1986-87).
- . 275 stock issue notes processed for the supply of items held in Salisbury bulk store (309 1986-87)
- . 30 contract actions referred to State Stores Board for call of quotations or tenders for specific items used by the Department (60 1986-87)

The decline in the number of actions processed is due mainly to the Department's policy of allowing mechanical workshops in country centres to order replacement parts direct from suppliers and the availability of contract and other items at competitive prices through local suppliers.



*Benarkin Sub District had its Blackbutt headquarters office officially opened during the year. Deputy Premier Bill Gunn and Environment, Conservation and Tourism Minister, Geoff Muntz, performed the honours.*

The Department was represented on three committees at State Stores Board to evaluate the suitability of office equipment for use by all Departments.

Work has commenced on introduction of a computerised system of processing purchase orders. This will be operational early in the 1988-89 financial year and will complement the computerised system of accounts payable already in operation.

## ESTATES AND LEGISLATION

**Function:** The key role of the Estates and Legislation Branch is to provide support to Executive on all matters associated with the administration of the Forest Estate.

**Forest Estate:** The land aggregation of the Forest Estate presently stands at 4 503 577 hectares, a small decrease from the previous year. This was attributable to the revocation by Parliament of some 15 031 hectares of State Forest land. The revoked land was no longer required for its gazetted purpose.

At various intervals throughout the year, the Department as a continuation of its multiple land use concept, made new areas established with young pine plantations available for grazing purposes. Such areas generally attracted keen public interest with many lots being secured well above the determined upset price.

State Forest land attracted considerable interest from mining ventures. This placed heavy demands on the Branch staff to enable the orderly processing of applications.

## Division of Administration

---

**Investigations:** Throughout the year Departmental officers investigated a number of suspected breaches of the Forestry Act. Mostly the cases involved the unauthorised interference with forest products, which are the property of the Crown. Where it was considered warranted, prosecution proceedings were instituted. In all, the Courts imposed fines totalling \$1500. In other cases, the Department sought to recover the value of the forest products interfered with together with a portion of the cost of the investigation. An amount of \$17 368 was received by the Department as a result of demands issued.

**Legislation:** As foreshadowed in last year's Annual Report, the Forestry Act 1959-1984 was amended by the Forestry Act Amendment Act 1987 which was commenced by Proclamation on 1 January 1988. This Amendment Act provided for the amalgamation of the Timber Research and Development Advisory Council of South and Central Queensland and the Timber Research and Development Advisory Council of North Queensland to form the one authority known as the Timber Research and Development Advisory Council of Queensland.

Action is currently proceeding on a review of the Sawmills Licensing legislation following the obtaining of an exemption under the Regulatory Reform Act in respect of the expiry date of the Sawmills Licensing Regulations. A proposal to replace the existing legislation is under consideration and a Green Paper detailing this proposal is intended to be distributed for public comment. A major thrust of this proposed new legislation will be to eliminate statutory control of the

establishment of sawmills and restrictions on the volume of their log throughput.

The impact of initiatives emanating as a result of the Savage Report has significantly increased the work load of the Branch to the extent that work commitments had to be re-scheduled to maximise the availability of staff resources. The Branch was also called upon to examine a number of Green Papers issued by other Departments to assess their impact on Forestry management.

## MANAGEMENT SERVICES

Management Services Branch provides a consulting service to assist in enhancing the efficiency and effectiveness of the organisation and its staff. Activities carried out by the Branch include:

- . undertaking projects aimed at the development of new systems, procedures and organisational structure for particular areas of the Department;
- . conducting team building activities for various branches and sections;
- . implementing training courses for Departmental staff to develop supervisory and personal management skills.

During the year, the Department has been engaged in a major strategic planning project to chart its future direction. Staff from Management Services Branch have been heavily involved in this project

## Division of Administration

assisting in -

- . collecting and analysing information concerning issues facing the Department;
- . designing and running a workshop for Senior Departmental staff;
- . establishing goals and strategies for the Department as a whole and its major program areas.

The ongoing Personal Development Program conducted by Branch staff included training courses in the following areas:-

- . New Age Thinking
- . Effective Written Communication
- . Time Management
- . Managing Yourself
- . Introductory and Advanced Supervisor Development
- . Dealing with the Public

### PERSONNEL

Since its inception in 1980, Personnel Branch has worked towards the achievement of its organisational role, which is to provide specialised services to assist senior and other line managers to establish and maintain effective policies, systems and activities necessary to acquire and manage the human resources required for the achievement of the Department's goals and objectives.

Branch operations during the year may be summarised under the following main activities:

- . Staff and establishment management

- . Personnel administration, including computer based management information systems
- . Accommodation and housing
- . Occupational health and safety
- . Industrial relations
- . Counselling services (personal and career)
- . Staff development (including performance appraisal).

Branch staff have performed their duties in a rapidly changing environment. The ongoing focus on public sector management and the associated legislative and procedural initiatives give every indication that change will not only continue but will accelerate in the foreseeable future.

**Establishment:** Salaried staff establishment increased by three positions to 656, although at the end of the year the actual number of staff employed was 623. At 30 June 1988, 985 wages staff were employed, compared with 1 120 at the end of the previous year.

During the year, 37 salaried officers left the Department. This included 6 who transferred to other Departments and 20 officers who retired after long and meritorious service.

The first trainee accepted by the Department under the Australian Traineeship System was also welcomed by the Branch during the year .

### Overseas Visits:

- . Mr A.M. McNaught, Timber Technologist, Timber Utilisation Branch, visited

Fiji from 17 to 31 August 1987 and 14 to 27 September 1987 to undertake a consultancy on behalf of Tropik Wood Industries Limited.

. Dr R.J. Haines, Senior Forester, Gympie visited the United Kingdom and Belgium from 6 August to 3 September 1987 to undertake discussions and inspections relating to the field of macro and micro-plant propagation. Dr Haines' visit was funded by Shell London.

. Mr J.K. Vanclay, Resources Development Officer, Resources Branch visited Malaysia from 18 June to 3 July 1988 to attend the International Union of Forest Research Organisation's (I.U.F.R.O.) Growth and Yield of Tropical Moist Forests meeting.

. Mr P.T. Cranny, Assistant Conservator of Forests, visited San Jose, Costa Rica from 27 January to 23 February 1988 to attend the International Union for Conservation of Nature and Natural Resources (I.U.C.N.) conference. He also visited Paris, France from June 6 to June 19 to attend a World Heritage Bureau meeting regarding north Queensland rainforests.

. Mr P.J. Shepherd, Forester, Gympie visited the Solomon Islands from 4 to 25 February 1988 to undertake a consultancy on behalf of the Poitete Forestry Training Centre.

. Dr B.N. Brown, Senior Pathologist, Forest Research Branch and Dr F.R. Wylie, Senior Entomologist, Forest Research Branch visited



Indonesia from 24 April to 5 May 1988 to undertake a consultancy on behalf of P.T. Inti Indorayon Utama (a private Indonesian company involved in what is reputed to be the largest reforestation project in South East Asia.)

Mr J.W. Tierney, Plant Pathologist, Forest Research Branch visited Norfolk Island from 10 to 14 April 1988 to undertake a consultancy on behalf of the Australian National Parks and Wildlife Service.

Mr D.K. Gough, Principal Utilisation Officer, Timber Utilisation Branch, undertook a timber seasoning consultancy in Bhutan from 7 March to 24 April 1988 on behalf of the United Nations Industrial Development Organisation. The main purpose of the consultancy was to encourage timber seasoning and the correct use of seasoned timber in Bhutan, and to commission four large kilns, train operators and develop an operational plan for seasoning at a recently opened timber and plywood plant.

The Department continued to act as managing agent for the Australian Overseas Aid Forestry project at Dongmen in the People's Republic of China.

The following Department officers made short term visits to the Dongmen Project during 1987-88. Also shown are trips made by officers to other destinations in association with the project:

Mr R.E. Pegg, Director, Division of Forest Management (Operations), visited Thailand, Burma, Nepal, and China from 19 September to 16 November

Administration assistant Lorraine Trask (standing) makes a point to Tracey Wharton, the first trainee accepted by the Department under the Australian Traineeship System.



1987 for a Dongmen Project Study Tour of South East Asia. Mr Pegg also visited China from 8 April to 10 May 1988 to attend the Project Co-ordination Committee meeting and to plan future project work.

Mr J. Simpson, Senior Forester, Forest Research Branch, Division of Technical Services, Gympie, visited China from 18 January to 15 February 1988 to review the program for foliar sampling at Dongmen.

Mr W.E. Bartels, Senior Plant Inspector, Division of Forest Management (Development), visited China from 9 May to 15 June 1988 for routine inspections of vehicles at Dongmen and at the Australian Embassy in Beijing.

Mr K.J. Harding, Timber Technologist Division I, Division of Technical Services (Research and Utilization) visited China from 6 June to 4 July 1988 for further work on wood sampling.

Mr J.J. Kelly, Conservator of Forests, visited China from 8 to 23 April 1988 to inspect progress on the Dongmen Project and other further developing areas of cooperation between the Queensland and Guangxi Departments of Forestry.

**Staff Development:** The Staff Development and Review Scheme continued during the year as a voluntary performance review process with the Forest Research, Utilisation and Operations areas leading its implementation. The scheme will be reviewed in light of

new service-wide Performance Review and Salary Administration guidelines being developed.

A successful year has resulted under the Study and Research Assistance Scheme with nine staff members graduating during 1987. There was a downturn of 19% in the number of study applicants for 1988 compared with the previous year which could be attributed in part to the introduction of the \$250 administration fee for tertiary enrolment.

A number of external training activities were attended by staff during the year which included Effective Speaking, The New Manager and Managing Strategic Direction courses.

**Industrial and Safety:** The section was responsible for the conduct of the following courses:

- a safety management and information course for sub district staff who have been nominated as safety assistants;
- industrial relations training courses for supervisory staff from Monto, Murgon and Yarraman districts.

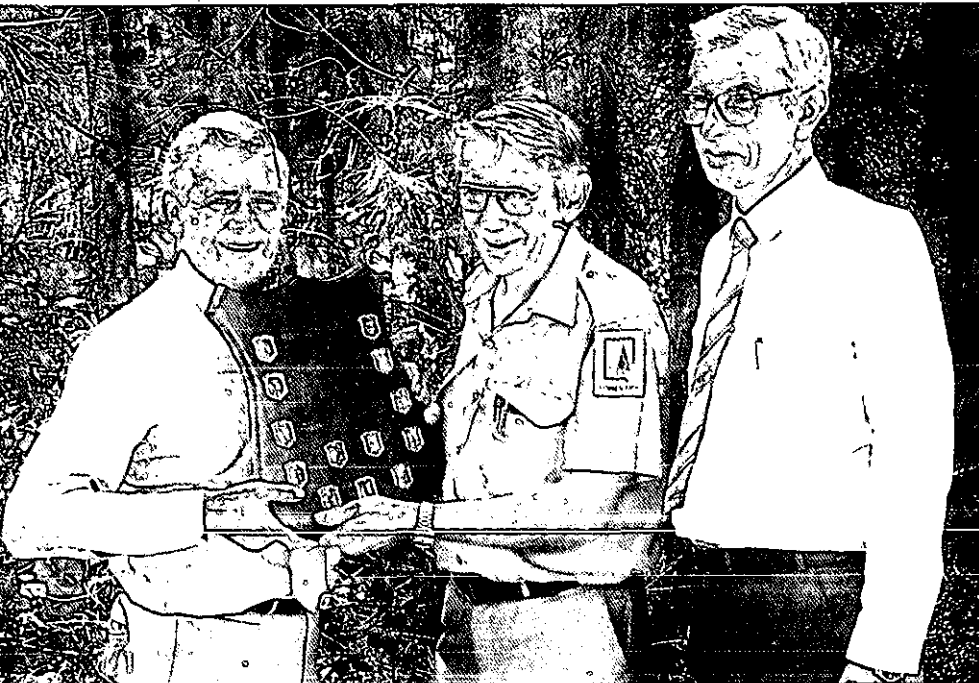
Assistance was also given to Management Services Branch for a supervisory course for the current intake of trainees at the Gympie Training Centre. Appreciation is expressed to the Department of Industrial Affairs for the cooperation given by various officers in organising and participating in such courses.

The computer based accident recording program is presently being redeveloped. The program is intended for installation on all sub district microcomputers and will allow staff responsible for safety matters to analyse their own work injury experience. Once installed, the program will provide a ready means of identifying work safety problems, and thus enable remedial action to be taken.

The major changes in relation to conditions of employment centred on the second tier wage increase where agreement was reached with relevant unions for a two percent increase based on certain changes to existing practices. Discussions are continuing in relation to a further increase on similar grounds.

During the year, the Department's lost time injury frequency rate (LTIFR) fell by 34.78% to an all time low of 47.58. Workers compensation expenditure also fell by 23%, which represents an actual saving of \$84 845 over the previous year. Yarraman District had the lowest LTIFR, with 35.03, and will be awarded the Minister's Safety Shield. The Conservator's Shield for the most improved accident rate will go to Monto District for a reduction of 73.99% to a LTIFR of 46.65.

<i>District</i>	<i>LTIFR</i>
<i>Atherton</i>	<i>66.16</i>
<i>Brisbane</i>	<i>46.87</i>
<i>Dalby</i>	<i>63.40</i>
<i>Gympie</i>	<i>57.71</i>
<i>Ingham</i>	<i>65.86</i>
<i>Maryborough</i>	<i>69.41</i>
<i>Monto</i>	<i>46.65</i>
<i>Murgon</i>	<i>116.33</i>
<i>Rockhampton</i>	<i>38.03</i>
<i>Yarraman</i>	<i>35.03</i>
<i>Head Office</i>	<i>6.10</i>
<i>Departmental</i>	<i>47.58</i>



*The Honourable Bill Glasson, M.L.A. (left), Forestry Minister until December 1987 and then Land Management Minister, presents the Minister's 1987 Safety Shield to Rockhampton District Forester, Peter Tweedy, as Conservator John Kelly looks on.*



# INFORMATION TECHNOLOGY

Following a review of the Departmental computing function during 1987-1988, revised organisational and management structures for information technology have been established. Recruitment to the new Information Technology Branch and establishment of the appropriate management committees has been completed.

Principal functions of Information Technology Branch are to -

- advise the Information Technology Policy Committee (I.T.P.C.) on policy matters;
- coordinate the use of computing resources in line with I.T.P.C. priorities;
- manage the acquisition, installation and use of computer hardware and software on a Departmental basis;
- provide a consultancy service to Departmental information technology users.

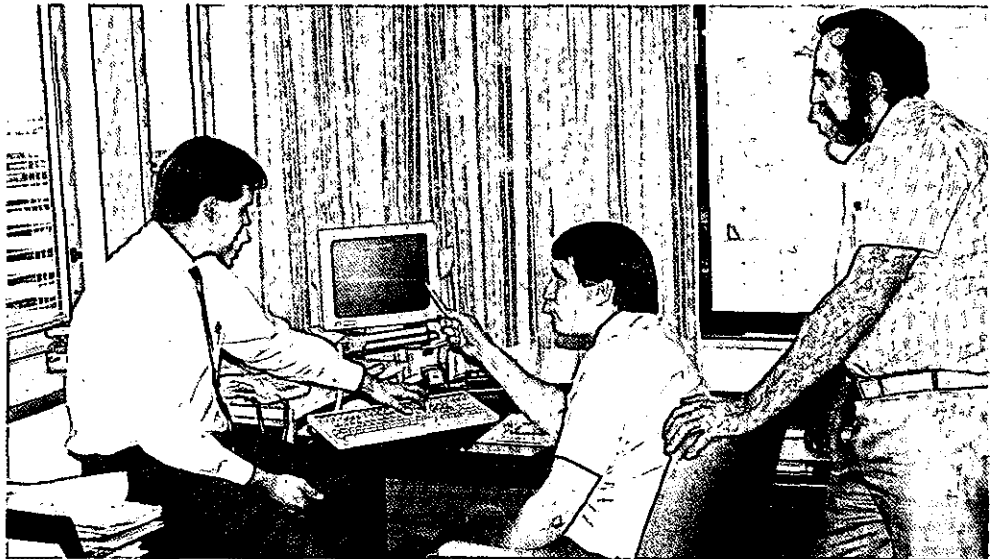
Branch activity this year has been dominated by the continued development of the Forestry Marketing Information System (FORMIS) and the Fleet Management System (FMS). These systems are essential to the Departmental financial and management functions and will form the kernel of the corporate data base. Construction is on schedule with implementation in an on-line distributed environment planned for 1988-89.

Additional significant activities included the following:

- Installation of a new UNIX based computer and 4GL/database software to support the construction and operation of corporate information systems;
- Installation of ethernet based communications infrastructure and computer terminals in Forestry House;
- Installation of microcomputer based office automation facilities to support stenographic, desktop publishing and operational research/development areas of the Department;

- Upgrade of graphic facilities to support Departmental Computer Aided Drafting and Geographic Information Systems requirements;
- Upgrade of a limited number of sub district microcomputers;
- Completion of the microcomputer based personnel system installation;
- Substantial completion of various applications including the Experimental Plot Data Management System, Cypress Pine Detailed Yield Plot System and Personnel Injury Reporting System.

This year saw the consolidation of information technology within the Department. The emphasis on organisational and management structures, information system construction and computing infrastructure has provided a very firm and responsive foundation for immediate and future corporate information and support services requirements.



*Information Technology Branch Manager, Ron Beck (seated, centre), discusses an aspect of the Department's computerised Fleet Management System with assistants Ron Verhoeven (left) and Stewart Patterson. The Fleet Management System is designed to help the Department manage its motor vehicle fleet as efficiently as possible.*



# FINANCIAL REPORTING

## AND APPENDICES

### **Purpose and Scope of Financial Statements:**

The Department of Forestry was established pursuant to the Forestry Act 1959-1987.

The overall purpose of the Department is the sustainable production of forest products and services within a balanced conservation program which includes the multiple use management of State Forest lands in accordance with the long term best interests of the community.

The Department's financial statements are prepared by the Conservator of Forests and certified by the Auditor-General in accordance with Section 37(3) of the Financial Administration and Audit Act 1977-1988.

These statements are prepared in terms of prescribed legislative requirements and are in accordance with Government accounting principles and practices.

### **Accounting Principles:**

**Gross Cash Basis:** Receipts and expenditure are recorded on a cash basis, that is receipts and expenditure are shown on the basis of cash received and payments made in the financial year. Cash accounting is on a gross basis, and receipts and expenditure are not offset.

Under the cash basis of financial reporting, capital expenditure is treated as a charge in the year of payment.

**Materiality:** Explanatory notes are given on matters which, in the opinion of the Conservator of Forests, are of significance in the context of accountability, adequate disclosure and meaningful reporting.

**Asset Registers:** Legislation provides for the establishment and maintenance of Departmental asset registers and requires material losses and deficiencies to be disclosed.

**Funds:** In accordance with the requirements of the Constitution Act of 1867 and Financial Administration and Audit Act 1977-1988 financial transactions are recorded in three funds, the Consolidated Revenue Fund, the Loan Fund and the Trust and Special Funds. The purposes for which these funds are used are explained hereunder.

**Consolidated Revenue Fund:** This fund is used for the purpose of recording transactions in connection with the payment of salaries and related costs, administrative expenditure and the maintenance of recreation facilities established by the Department.

**Loan Fund:** This fund is used for the purpose of recording transactions in connection with the construction of recreation facilities and for recording State loan borrowings used to finance the Department's Capital Works Program as recorded in the Forestry Development Fund.

**Forestry and Lumbering Fund:** This fund is established for the purpose of recording revenue from the sale of forest products and expenditure in connection with the marketing of such products, and the maintenance of Departmental assets. In addition, transactions relating to interest and redemption on loan borrowings, maintenance of plant, the Timber Research and Development Advisory Council of Queensland and other Departmental special projects are recorded in this Fund.

**Forestry Development Fund:** This Fund is established for the purpose of recording transactions in connection with the Department's Capital Works Program, which provides for the management and development of State Forests and includes expenditure on the construction and purchase of assets and plant.

**Accounts:** Financial Statements for the year ended 30 June 1988 are provided as follows:

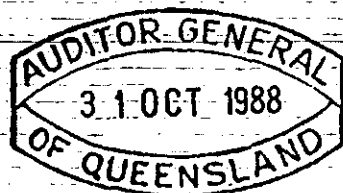
Receipts.....	Appendix 1
Expenditure.....	Appendix 2
Other Financial Information.....	Appendix 3
Sources of Revenue and areas of Expenditure.....	Appendix 4



*Assistant Director of Finance, Stuart Sanderson (standing), discusses Departmental budgets with accountant Peter Richardson and computer operator Amanda Goschnick.*

**APPENDIX 1: Comparative Statement of Receipts for the Years 1986-87 and 1987-88**

Receipts 1986-87	Note	Particulars of Receipts	1987-88		Receipts compared with Estimate	
			Estimate	Receipts	Greater	Less
\$'000			\$'000	\$'000	\$'000	\$'000
		<b>CONSOLIDATED REVENUE FUND -</b>				
		Receipts for Goods/Services -				
71		Plan-Printing Service .....	39	42	3	-
22		Sale of Maps and Publications .....	27	18	-	9
		Capital Recoveries -				
33		Sale of Government Property .....	50	56	6	-
		Miscellaneous Receipts -				
118		Expenditure Recovered .....	36	20	-	16
244		<b>TOTAL - CONSOLIDATED REVENUE FUND</b> .....	<b>152</b>	<b>136</b>	<b>9</b>	<b>25</b>
		<b>LOAN FUND -</b>				
		<b>Commonwealth Payments -</b>				
68		Community-Employment Programme .....				
20		National Estate Programme .....				
88		<b>TOTAL - LOAN FUND</b> .....				
		<b>TRUST AND SPECIAL FUNDS -</b>				
		<b>FORESTRY AND LUMBERING FUND -</b>				
		Forest Product Receipts -				
18 403		Timber Sales .....	22 187	22 495	308	-
401		Freeholding of Grazing Selections .....	450	277	-	173
2 615	1	Contract Timber Supplies .....	2 900	1 348	-	1 552
134		Land-Rentals .....	135	162	27	-
		Receipts for Goods/Services -				
8 417		Plant Hire Receipts .....	9 120	8 449	-	671
549		Plants and Seeds .....	500	509	9	-
		Miscellaneous Receipts -				
340		T.R.A.D.A.C. .....	490	488	-	2
11		Vegetative Propagation Project .....	85	85	-	-
431		Hardwood Plantation Project .....	294	326	32	-
		Research and Development Grants .....	72	18	-	54
378		Miscellaneous .....	380	404	24	-
		Commonwealth Payments -				
794		Dongmen Project, Peoples Republic of China .....	656	573	-	83
69		Gympie Fuelwood Project .....	75	75	-	-
163		Natural Disaster Relief .....	1	-	-	1
35		Community Employment Programme .....				
32 740		<b>TOTAL</b> .....	<b>37 345</b>	<b>35 209</b>	<b>400</b>	<b>2 536</b>
		<b>FORESTRY DEVELOPMENT FUND -</b>				
		Miscellaneous Receipts -				
302		Other .....	310	303	-	7
		Financing Receipts -				
		Repayable Advances -				
27 582		Loan Fund .....	25 675	25 675	-	-
		Plant Account -				
1 280	2	Sale of Vehicles and Plant .....	1 344	2 010	666	-
3 300		Excess Plant Hire .....	3 570	3 881	311	-
		Commonwealth Payments -				
40		Diesel Fuel Rebate .....	80	54	-	26
325		Natural Disaster Relief .....				
89		Community Employment Programme .....				
32 918		<b>TOTAL</b> .....	<b>30 979</b>	<b>31 923</b>	<b>977</b>	<b>33</b>
65 658		<b>TOTAL - TRUST AND SPECIAL FUNDS</b> .....	<b>68 324</b>	<b>67 132</b>	<b>1 377</b>	<b>2 569</b>
65 990		<b>TOTAL - ALL FUNDS</b> .....	<b>68 476</b>	<b>67 268</b>	<b>1 386</b>	<b>2 594</b>

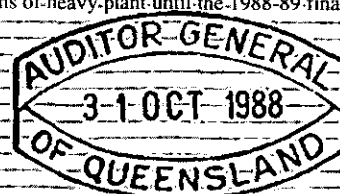


**APPENDIX 2: Comparative Statement of Expenditure for the Years 1986-87 and 1987-88**

Expenditure 1986-87	Note	Headings of Expenditure	Original Budget	1987-88		Total Expenditure	Unforeseen Expenditure Amount to be Authorized	Lapsed Budget
				Transfers	as adjusted by Budget Transfers			
\$'000			\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
<b>CONSOLIDATED REVENUE FUND</b>								
15 813		Salaries .....	16 200	-33	16 167	16 167	-	-
97		Termite Eradication .....	132	-	132	132	-	-
261		Printing and Stores .....	295	-44	251	252	-	-
5 135		Allowances and Incidentals .....	6 763	+54	6 817	7 124	307	-
563		Recreation Facilities - Maintenance .....	764	+23	787	787	-	-
130		Cash Equivalent of Long Service Leave .....	252	+248	500	400	-	100
<b>21 999</b>		<b>TOTAL - CONSOLIDATED REVENUE FUND</b> .....	<b>24 406</b>	<b>+248</b>	<b>24 654</b>	<b>24 862</b>	<b>308</b>	<b>100</b>
<b>LOAN FUND</b>								
806		Recreation Facilities - Construction .....	720	-	720	699	-	21
		Amount to be credited to Forestry .....						
27 582		Development Fund .....	25 675	-	25 675	25 675	-	-
<b>28 388</b>		<b>TOTAL - LOAN FUND</b> .....	<b>26 395</b>	<b>-</b>	<b>26 395</b>	<b>26 374</b>	<b>-</b>	<b>21</b>
<b>TRUST AND SPECIAL FUNDS</b>								
<b>FORESTRY AND LUMBERING FUND</b>								
11 084		Interest and Redemption on Loans .....	14 674	-	14 674	14 939	265	-
2 091	3	Contract Timber Supplies .....	2 640	-	2 640	1 132	-	1 508
5 302		Marketing .....	5 179	-	5 179	4 876	-	303
5 156	4	Maintenance of Plant .....	5 550	-	5 550	4 566	-	984
3 961		Maintenance of Capital Improvements .....	797	-	3 797	3 535	-	262
241		Timber Utilisation .....	232	-	232	218	-	14
722		Dongmen Project .....	728	-	728	645	-	83
340		Amounts Transferred to TRADAC .....	490	-	490	488	-	2
76		Gympie Fuelwood Project .....	76	-	76	75	-	1
		Transfer to Plant Account .....						
3 300		Forestry Development Fund .....	3 570	-	3 570	3 881	311	-
22		Vegetative Propagation Project .....	88	-	88	62	-	26
318		Hardwood Plantation Project .....	407	-	407	437	30	-
		Research and Development Grants .....	72	-	72	18	-	54
<b>32 613</b>		<b>TOTAL</b> .....	<b>37 503</b>	<b>-</b>	<b>37 503</b>	<b>34 872</b>	<b>606</b>	<b>3 237</b>
<b>FORESTRY DEVELOPMENT FUND</b>								
23 044		Reforestation .....	22 069	+430	22 499	22 492	-	7
437		Land Acquisition .....	500	-208	292	290	-	2
4 117	5	Purchase of Plant .....	4 627	-	4 627	3 070	-	1 557
2 802		Construction of Capital Improvements .....	2 682	-146	2 536	2 536	-	-
920		Forest Research .....	861	-76	785	785	-	-
<b>31 320</b>		<b>TOTAL</b> .....	<b>30 739</b>	<b>-</b>	<b>30 739</b>	<b>29 173</b>	<b>-</b>	<b>1 566</b>
<b>63 933</b>		<b>TOTAL - TRUST AND SPECIAL FUNDS</b> .....	<b>68 242</b>	<b>-</b>	<b>68 242</b>	<b>64 045</b>	<b>606</b>	<b>4 803</b>
<b>114 320</b>		<b>TOTAL - ALL FUNDS</b> .....	<b>119 043</b>	<b>+248</b>	<b>119 291</b>	<b>115 281</b>	<b>914</b>	<b>4 924</b>

**Notes to and forming part of the accounts.**

- Actual receipts were less than anticipated due to decreased demand for this timber and to the effect of the World Heritage Listing which has resulted in reduced logging.
- Additional revenue was received due to additional items being sold and higher prices being received.
- Expenditure on contract timber supplies was less than anticipated due to decreased demand for this timber and to reduced logging as a result of the World Heritage Listing proposal.
- Expenditure on maintenance of plant was less than expected due to a substantial reduction in the department's fleet and a concerted effort to reduce costs in this area as part of an overall review of fleet management within the department.
- Expenditure in this vote was less than anticipated due to deferral of acquisition of a number of items of heavy plant until the 1988-89 financial year.



**APPENDIX 3: Statement of Other Financial Information 1987-1988**

Statement of Loan-Indebtedness as at 30 June 1988:-

Source of Finance	1987 \$'000	1988 \$'000
State		
Loan Fund .....	305 131	330 805
Special Projects Fund .....	30 931	30 777
Commonwealth		
Softwood Loans .....	20 684	21 221
<b>Total .....</b>	<b>356 746</b>	<b>382 803</b>

**CERTIFICATE OF THE DEPARTMENT OF FORESTRY**

We have prepared the foregoing financial statements and certify that-

- (a) the foregoing Comparative Statement of Receipts, the Comparative Statement of Expenditure and the Statement of Other Financial Information are in agreement with the accounts and records of the Department of Forestry; and
- (b) in our opinion -

the foregoing financial statements have been drawn up so as to present a true and fair view, on a basis consistent with that applied in the financial year last preceding, of the transactions of the Department of Forestry for the period 1 July 1987 to 30 June 1988 and of the financial position as at the close of that year.

*T. Ryan*  
T. RYAN  
Conservator of Forests

*M. J. Flynn*  
M. J. FLYNN  
Chief Administration Officer

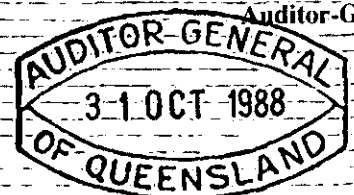
Dated this *27th* day of October 1988.

**CERTIFICATE OF THE AUDITOR GENERAL**

I have examined the accounts of the Department of Forestry and certify as follows:-

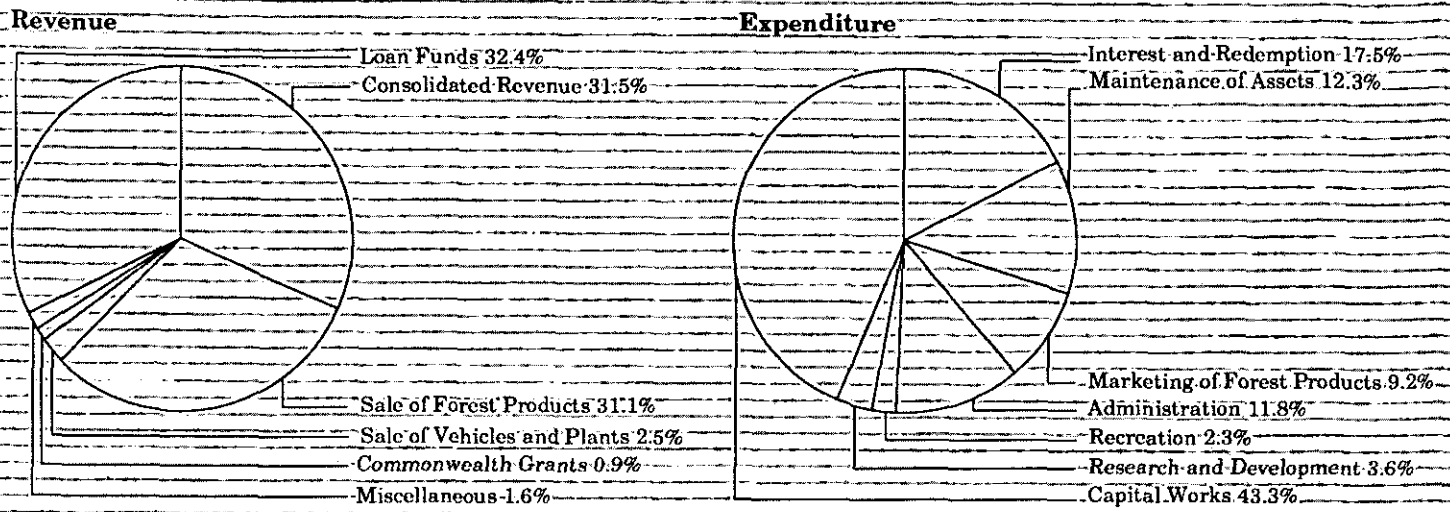
- (a) I have received all the information and explanations which I have required;
- (b) the foregoing Comparative Statement of Receipts, the Comparative Statement of Expenditure and the Statement of Other Financial Information are in agreement with the accounts; and
- (c) in my opinion the foregoing financial statements have been drawn up so as to present a true and fair view, on a basis consistent with that applied in the financial year last preceding, of the transactions of the Department of Forestry for the period 1 July 1987 to 30 June 1988; and of the financial position as at 30 June 1988.

*V.C. Doyle*  
V.C. DOYLE  
Auditor-General





### APPENDIX 4: Sources of Revenue and Areas of Expenditure 1987-88



### APPENDIX 5: Reservation Figures for the year ending 30 June

State Forests	No. of Reservations	Area (hactares)
Total as at 1 July, 1987	480	3 969 363
Crown Land declared State Forest	+3	+4 689
Crown Land declared State Forest and added to existing State Forests	-	+15 974
State Forest partially revoked	-	-15 030
Areas excluded for road and railway purposes	-	-179
Recomputation of boundaries	-	-2 185
Amalgamation of existing State Forests	-2	-
<b>Total as as 30 June, 1988</b>	<b>481</b>	<b>3 972 632</b>

Timber Reserves	No. of Reservations	Area (hectares)
Total as at 1 July, 1987	106	544 012
Crown Land declared Timber Reserve and added to existing Timber Reserve	-	+26
Timber Reserve declared State Forest	-2	-2 756
Timber Reserve declared State Forest and added to existing State Forest	-3	-1 188
Timber Reserve revoked	-	-9 124
Timber Reserve partially revoked	-	-25
Areas excluded for road and railway purposes	-	-1
Recomputation of boundaries	-	-
<b>Total as at 30 June, 1988</b>	<b>98</b>	<b>530 944</b>

**APPENDIX 6: State Forests and Timber Reserves listed by Districts and Sub Districts  
as at 30 June 1988**

Forestry District	Sub District	No. of State Forests	State Forest Areas(hectares)	No. of Timber Reserves	Timber Reserve Areas (hectares)
Atherton	Atherton	31	381 468	22	306 975
	Total	31	381 468	22	306 975
Brisbane	Beerburrum	22	58 387	1	6
	Brisbane	24	49 561	4	4 118
	Warwick	18	38 107	-	-
	Total	64	146 055	5	4 124
Dalby	Chinchilla	20	457 992	1	5 768
	Dalby	12	228 396	2	150
	Inglewood	30	211 780	-	-
	Roma	40	357 243	1	19 653
	Total	102	1 255 411	4	25 571
Gympie	Gympie	20	82 948	-	-
	Imbil	15	63 769	1	1
	Total	35	146 717	1	1
Ingham	Cardwell	7	139 881	1	538
	Ingham	10	142 305	1	260
	Total	17	282 186	2	798
Maryborough	Bundaberg	13	88 873	4	4 945
	Maryborough	24	228 164	7	9 410
	Tuan	6	65 186	1	1
	Total	43	382 223	12	14 356
Monto	Monto	57	379 120	19	27 594
	Total	57	379 120	19	27 594
Murgon	Jimna	4	46 176	-	-
	Murgon	19	94 027	5	2 402
	Total	23	140 203	5	2 402
Rockhampton	Mackay	29	125 441	9	20 956
	Rockhampton	53	652 993	13	125 348
	Total	82	778 434	22	146 304
Yarraman	Benarkin	15	48 362	4	2 812
	Yarraman	12	32 453	2	7
	Total	27	80 815	6	2 819
<b>State Total</b>		<b>481</b>	<b>3 972 632</b>	<b>98</b>	<b>530 944</b>

**APPENDIX 7: Net area of Softwood Plantation established 1 April, 1987 to 31 March, 1988 (hectares)**

District	Hoop Pine			Caribbean Pine		Other Exotic Conifers			Total 1987-88	Total 1986-87
	New Areas	Other Areas	Total Native Conifers	New Areas	Other Areas	New Areas	Other Areas	Total Exotic Conifers		
Atherton				122				122	122	139
Brisbane	59		59	94	39	56	162	351	410	376
Gympie	39		39	1 043	137	581	40	1 801	1 840	1 533
Ingham				558	21	4		583	583	882
Maryborough				1 633		518		2 151	2 151	2 273
Monto	48		48						48	54
Murgon	123		123						123	129
Rockhampton				127				127	127	143
Yarraman	95	224	319						319	278
<b>Total 1987-88</b>	<b>364</b>	<b>224</b>	<b>588</b>	<b>3 577</b>	<b>197</b>	<b>1 159</b>	<b>202</b>	<b>5 132</b>	<b>5 723</b>	
Total 1986-87	302	182	484	4 281	165	691	186	5 323		5 807

**APPENDIX 8: Net area of Effective Softwood Plantation as at 31 March, 1988 (hectares)\***

District	Native Conifers			Exotic Conifers				Total 1987-88	Total 1986-87
	Hoop Pine	Other Native Conifers	Total Native Conifers	Slash Pine	Caribbean Pine	Other Exotic Conifers	Total Exotic Conifers		
Atherton	1 018	108	1 126	3	1 712	101	1 816	2 942	2 823
Brisbane	1 579	11	1 590	13 125	2 631	4 146	19 902	21 492	21 411
Gympie	12 251	259	12 510	24 848	7 778	1 567	34 193	46 703	45 072
Ingham	4	1	5	2	7 433	89	7 524	7 529	6 966
Maryborough	1 465	32	1 497	26 762	17 816	1 060	45 638	47 135	45 147
Monto	3 184	2	3 186	14	2	10	26	3 212	3 164
Murgon	8 949	132	9 081	1		46	47	9 128	9 004
Rockhampton	261	1	262	995	5 767	80	6 842	7 104	6 985
Yarraman	15 284	119	15 403	505	400	1 525	2 430	17 833	17 714
<b>Total 1987-88</b>	<b>43 995</b>	<b>665</b>	<b>44 660</b>	<b>66 255</b>	<b>43 539</b>	<b>8 624</b>	<b>118 418</b>	<b>163 078</b>	
Total 1986-87	43 619	668	44 287	66 660	39 866	7 473	113 999		158 286

\* The net effective area as at 31 March, 1988 equals the net effective area as at 31 March, 1987 plus the net area established during 1987-88 less corrections for write-offs, replantings, boundary recomputations and re-checks.

**APPENDIX 9: \* Net area of Effective Broadleaf Plantation as at 31 March, 1988 (hectares)**

District	Native Forest Hardwoods	Other Broadleaf Species	Miscellaneous Species	Total 1987-88	Total 1986-87
Atherton	28	151	8	187	187
Brisbane	347	2	41	390	391
Gympie	765	88	27	880	865
Ingham	2	1	18	21	41
Maryborough	49		61	110	87
Murgon	17	9	1	27	27
Rockhampton	1	1	6	8	6
Yarraman	113	27	31	171	182
<b>Total 1987-88</b>	<b>1 322</b>	<b>279</b>	<b>193</b>	<b>1 794</b>	
<b>Total 1986-87</b>	<b>1 328</b>	<b>281</b>	<b>177</b>		<b>1 786</b>

\* Previous figures have been adjusted for write-offs, replantings, boundary recomputations and re-checks.

**APPENDIX 10: Areas of Native Forest Treated 1987-88 (hectares)**

District	Eucalypt Forest	Cypress Pine Forest	Total 1987-88	Total 1986-87
Brisbane	234	-	234	110
Dalby	-	4 209	4 209	5 026
Monto	705	-	705	398
Murgon	22	-	22	758
Rockhampton	314	-	314	-
Yarraman	178	-	178	5
<b>Total 1987-88</b>	<b>1 801</b>	<b>4 209</b>	<b>6 010</b>	
<b>Total 1986-87</b>	<b>1 696</b>	<b>5 026</b>		<b>6 722</b>

**APPENDIX 11: Operational Statistics 1987-88**

<b>Operation</b>	<b>Total 1987-88</b>	<b>Total 1986-87</b>
Softwood Plantation Established (hectares)	5 724	5 807
Nursery Stock*, Departmental Use		
Hoop Pine		
Container	518 975	369 714
Caribbean Pine		
Container	135 611	162 151
Open Root	3 753 402	3 863 804
Slash Pine		
Container	-	47 945
Open Root	5 925	105 725
Caribbean/Slash Pine Hybrid		
Container	4 400	89 013
Open Root	1 400 000	767 865
Radiata Pine		
Open Root	87 342	66 120
Loblolly Pine		
Container	1 717	20 000
Open Root	30 084	12 920
Eucalypts		
Container	191 064	217 432
Hardwood Trials	45 000	55 000
Nursery Stock, Sales		
Forest Plots, Windbreaks, Rehabilitation, etc.	493 968	138 201
Amenity Stock	168 431	231 538
Leucaena	44 950	218 280
Total value of seedlings sold	\$274 105	\$314 146
Seed Sales		
Value	\$121 700	\$176 700
Weed Control		
Native Pine Plantation (hectares)	5 591	7 400
Exotic Pine Plantation (hectares)	13 901	13 704
Fertilizing		
Establishment (hectares)	4 436	4 029
Maintenance (hectares)	7 531	10 308
Pruning		
First (hectares)	3 191	3 144
Final (hectares)	3 576	3 242
Operative Plant as at 30 June		
Motor Vehicles and Trucks	419	480
Graders	14	17
Rubber-tyred Tractors and Loaders	70	80
Crawler Dozers	19	25

\* All Departmental use information refers to the 12 months period 1 April to 31 March.

**APPENDIX 12: Milling Timber Removals From Crown Lands 1987-88 (cubic metres gross measure)**

Native Forest Hardwoods and Scrubwoods				
District	Forest Hardwoods	Rainforest Structural Timber	Rainforest Cabinet Woods	Total Hardwoods and Scrubwoods
Atherton	10284	17 465	22 192	49 941
Brisbane	25 082	15	28	25 125
Dalby	14 908			14 908
Gympie	26 456	55	278	26 789
Ingham	777	5 031	10 137	15 945
Maryborough	49 363	15	17	49 395
Monto	32 727	5		32 732
Murgon	33 984	154	6	34 144
Rockhampton	33 370	3 000	1 558	37 928
Yarraman	5 845	103	215	6 163
<b>Total 1987-88</b>	<b>232 796</b>	<b>25 843</b>	<b>34 431</b>	<b>293 070</b>
Total 1986-87	217 285	37 300	52 155	306 740

Native Forest Conifers			
District	Cypress Pine	Other Conifers	Total Conifers
Atherton		2 497	2 497
Brisbane	67	12	79
Dalby	125 024		125 024
Gympie	61	2 223	2 284
Ingham		281	281
Maryborough	1	11 812	11 813
Monto	35	967	1 002
Murgon		2 660	2 660
Rockhampton	1 037	328	1 365
Yarraman		361	361
<b>Total 1987-88</b>	<b>126 225</b>	<b>21 141</b>	<b>147 366</b>
Total 1986-87	102 520	21 972	124 492

Plantation				
District	Native Conifers	Exotic Conifers	Non-Conifers	Total Plantation
Atherton	101	1 692		1 793
Brisbane	579	114 221		114 800
Gympie	42 593	60 730	2 495	105 818
Ingham		790		790
Maryborough	1 817	59 350		61 167
Monto	16 215			16 215
Murgon	5 679	106		6 744
Rockhampton	1 980	23 320		25 300
Yarraman	112 345	3 721		116 066
<b>Total 1987-88</b>	<b>181 309</b>	<b>264 889</b>	<b>2 495</b>	<b>448 693</b>
Total 1986-87	146 104	193 243	2 127	341 474

All Milling Timber		
District	Total 1987-88	Total 1986-87
Atherton	54 231	82 190
Brisbane	140 004	115 610
Dalby	139 932	123 478
Gympie	134 891	97 591
Ingham	17 016	16 569
Maryborough	122 375	96 287
Monto	49 949	47 365
Murgon	43 548	25 252
Rockhampton	64 593	52 618
Yarraman	122 590	115 746
<b>Total</b>	<b>889 129</b>	<b>772 706</b>

**APPENDIX 13: Pulpwood Removals from Crown Lands 1987-88 (cubic metres gross measure)**

District	Plantation		Native Forests	Total 1987-88	Total 1986-87
	Native Conifers	Exotic Conifers	Non- Conifers		
Brisbane	70	25 400	-	25 470	28 018
Gympie	1 404	11 442	-	12 846	18 472
Ingham	-	-	-	-	231
Maryborough	-	8 677	-	8 677	17 293
Murgon	-	-	-	-	251
Rockhampton	-	-	-	-	26 808
Yarraman	-	1 774	9 866	11 640	8 406
<b>Total 1987-88</b>	<b>1 474</b>	<b>47 293</b>	<b>9 866</b>	<b>58 633</b>	
<b>Total 1986-87</b>	<b>2 004</b>	<b>91 154</b>	<b>6 321</b>		<b>99 479</b>

**APPENDIX 14: Miscellaneous Removals from Crown Lands 1987-88**

Product Group	Volume * cubic metres	Value \$
Railway Sleepers and Other Railway Timbers/Non-Railway Sleepers and Like Timbers	24 275	837 673
Round Timbers	25 091	765 407
Mining Timbers	2 365	15 530
Landscaping & Fencing Timbers	20 973	399 909
Quarry Materials	1 164 433	774 362
Minor Forest Products	n/a	366 993

\* Approximate only. Some figures used to calculate these volumes were converted from lineal metres or pieces.

**APPENDIX 15: Milling Timber Processed from Private Lands 1987-88 (cubic metres gross measure)**

District	Native Forests Hardwoods and Scrubwoods			Total Hardwoods and Scrubwoods
	Forest Hardwoods	Rainforest Structural Timber	Rainforest Cabinet Woods	
Atherton	1 870	8 740	7 724	18 334
Brisbane	48 991	492	406	49 889
Dalby	11 482			11 482
Gympie	8 336	3	3	8 342
Ingham	7 722	580	1 941	10 243
Maryborough	46 048	114		46 162
Monto	19 810			19 810
Murgon	10 281			10 281
Rockhampton	28 536	2 458	732	31 726
Yarraman	12 091	3	3	12 097
<b>Total 1987-88</b>	<b>195 167</b>	<b>12 390</b>	<b>10 809</b>	<b>218 366</b>
Total 1986-87*	222 932	7 824	10 996	241 752

District	Native Forests Conifers		Total Conifers
	Cypress Pine	Other Conifers	
Atherton		25	25
Brisbane		7 384	7 384
Dalby	36 275	40	36 315
Gympie		3 787	3 787
Ingham		2	2
Maryborough	2	415	417
Rockhampton	63	185	248
Yarraman	19	174	193
<b>Total 1987-88</b>	<b>36 359</b>	<b>12 012</b>	<b>48 371</b>
Total 1986-87*	32 387	8 211	40 598

District	Plantation			Total Plantation and Imported
	Native Conifers	Exotic Conifers	Imported	
Atherton	26	1		27
Brisbane	407	27 572	15 287	43 266
Maryborough	30			30
Ingham		247		247
Rockhampton	3	331		334
<b>Total 1987-88</b>	<b>466</b>	<b>28 151</b>	<b>15 287</b>	<b>43 904</b>
Total 1986-87*	7 675	19 075	10 404	37 214

District	All Milling Timber	
	Total 1987-88	Total 1986-87*
Atherton	18 386	17 072
Brisbane	100 539	99 319
Dalby	47 797	41 619
Gympie	12 129	21 386
Ingham	10 492	10 608
Maryborough	46 609	48 835
Monto	19 810	24 264
Murgon	10 281	11 247
Rockhampton	32 308	30 495
Yarraman	12 290	14 719
<b>Total</b>	<b>310 641</b>	<b>319 564</b>

N.B. Volumes shown in the above tables have been estimated due to incomplete statistics being available at time of compilation.

\* - Corrected figures



**APPENDIX 16: Pulpwood Processed from Private Lands 1987-88 (cubic metres gross measure)**

District	Forest Hardwoods	Plantation - Exotic Conifers	Total 1987-88	Total 1986-87*
Brisbane	34 131	20 761	54 892	59 512
<b>Total 1987-88</b>	<b>34 131</b>	<b>20 761</b>	<b>54 892</b>	
Total 1986-87*	39 324	20 188		59 512

\* Corrected figures

**APPENDIX 17: Staff Distribution - 30 June 1988**

	Head Office	District	Total 30-6-88	Total 30-6-87
<b>*Salaried Officers -</b>				
Graduate	105	66	171	169
Technical	89	36	125	123
Field Supervisory	1	102	103	104
Administrative/Clerical	142	115	257	257
Sub-Total	337	319	656	653
<b>Wages Employees -</b>				
Reforestation and Research	1	581	582	717
Marketing	17	178	195	193
Construction of Capital Improvements		28	28	27
Maintenance of Plant and Capital Improvements	6	94	100	112
Recreation Facilities -				
Construction & Maintenance		42	42	22
Miscellaneous	18	20	38	49
Sub-Total	42	943	985	1 120
<b>Total 30-6-88</b>	<b>379</b>	<b>1 262</b>	<b>1 641</b>	
Total 30-6-87	379	1 394		1 773

\* Based on establishment figures.

## APPENDIX 18: Publications

### Publications - General

#### Booklets

- "Recreation in State Forests: Atherton Tableland Region"
- "Recreation in State Forests: Ingham-Cardwell-Tully Region"
- "Recreation in State Forests: Central Queensland Region"
- "Recreation in State Forests: Wide Bay/Burnett Region"

#### Periodicals

- "Between the Leaves" (Departmental Newsletter)

### Publications - Research

#### Timber Notes

- No. 31 Queensland Department of Forestry, Division of Technical Services (R&U): (1987). The Timber Utilization and Marketing Act, 1987 - Sales and use of Lytid susceptible timber. 4pp.
- No. 32 Queensland Department of Forestry, Division of Technical Services (R&U): (1987). The Timber Utilization and Marketing Act, 1987 - Seasoning requirements for sale and use of seasoned timber. 2pp.

#### Timber Trends

- No. 10. Greve, D.M. Timber use in doors and windows. (1987). 4pp.
- No. 11. Greve, D.M. Building materials used in house construction in Queensland 1986/87. 14pp.

### Publications - Maps

Reference	Map Name	Edition	District
<b>Scale 1:15 000</b>			
Lannercost Sheet 1		1	Ingham
Lannercost Sheet 2		1	Ingham
<b>Scale 1:25 000</b>			
8062-31	Mt Kooroomool	2	Atherton/Ingham
8062-32	Old Culpa	2	Atherton/Ingham
8062-33	Tully River	3	Atherton
8062-34	Tully Falls	3	Atherton/Ingham
8064-31	Kuranda	2	Atherton
8064-32	Redlynch	2	Atherton
8064-33	Clohesy	2	Atherton
8064-34	Kowrowa	2	Atherton
8161-31	Mt Burnett	2	Ingham
8161-32	Deluge Inlet	2	Ingham
8161-33	Duncan Bluff	2	Ingham
8161-34	Cardwell	2	Ingham
8162-34	El Arish	3	Atherton/Ingham

**Scale 1:50 000**

7965-3	Mt Spurgeon	1	Atherton
9049-2	Kroombit	2	Monto/Rockhampton
9149-3	Clewleys Gap	2	Monto
9244-2	Yarraman	3	Yarraman
9343-3	Crows Nest	3	Yarraman
9346-1	Brooweena	3	Maryborough
9346-3	Burnett Range	2	Murgon/Maryborough
9347-2	Duckinwillā Ck	3	Maryborough
9445-1	Wolvi	6	Gympie
9445-3	Imbil	5	Gympie
9446-1	Boonooroo	5	Maryborough
9446-2	Kauri Ck	6	Maryborough/Gympie
9446-3	Gündiah	5	Maryborough/Gympie
9446-4	Maryborough	5	Maryborough
9546-3	Wide Bay	4	Maryborough/Gympie
	Tuan State Forest and Surrounds	4	Maryborough
	Toollara State Forest and Surrounds	3	Gympie

**Scale 1:500 000**

South East Queensland	3	Brisbane/Dalby/Gympie Maryborough/Monto/ Murgon/Rockhampton/ Yarraman
Far North Queensland	1	Atherton

## APPENDIX 19: Botanical Names

### NATIVE CONIFERS

Bunya Pine	<i>Araucaria bidwillii</i>
Cypress pine	<i>Callitris columellaris</i> Syn. <i>Callitris glauca</i>
Hoop Pine	<i>Araucaria cunninghamii</i>
Kauri Pine	<i>Agathis robusta</i> syn. <i>Agathis palmerstonii</i>

### EXOTIC CONIFERS

Caribbean Pine	<i>Pinus caribaea</i>
Honduras Caribbean Pine	<i>Pinus caribaea</i> var. <i>hondurensis</i>
Loblolly Pine	<i>Pinus taeda</i>
Long Leaf Pine	<i>Pinus palustris</i>
Patula Pine	<i>Pinus patula</i>
Radiata Pine	<i>Pinus radiata</i>
Slash Pine	<i>Pinus elliottii</i> var. <i>elliottii</i>

### EUCALYPTUS

Blackbutt	<i>Eucalyptus pilularis</i>
Forest Red Gum	<i>Eucalyptus teraticornis</i>
Grey Ironbark	<i>Eucalyptus drepanophylla</i>
Gympie Messmate	<i>Eucalyptus cloeziana</i>
Red Mahogany	<i>Eucalyptus pellita</i>
River Red Gum	<i>Eucalyptus camaldulensis</i>
Rose Gum	<i>Eucalyptus grandis</i>
Spotted Gum	<i>Eucalyptus maculata</i>
Swamp Mahogany	<i>Eucalyptus robusta</i>
Tallowwood	<i>Eucalyptus microcorys</i>
White Mahogany	<i>Eucalyptus acmenoides</i>

### OTHER BROADLEAF SPECIES

African mahogany	<i>Khaya nyasica</i>
American mahogany	<i>Swietenia macrophylla</i>
Brown Salwood	<i>Acacia mangium</i>
Brush Box	<i>Tristania conferta</i>
Camphorwood	<i>Cinnamomum oliveri</i>
Cinnamon laurel	<i>Cryptocarya cinnamomifolia</i>
Crows's Ash	<i>Flindersia australis</i>
Hickory Ash	<i>Flindersia ifflaiana</i>
Maple	<i>Flindersia breyleyana</i>
Ooline	<i>Cadellia pentastylis</i>
Satin sycamore	<i>Ceratopetalum succirubrum</i>
Satinay	<i>Syncarpia hillii</i>
Sandalwood	<i>Santalum lanceolatum</i>
Silver quandong	<i>Elacocarpus grandis</i>
Southern Silky Oak	<i>Grevillea robusta</i>
Southern silver ash	<i>Flindersia schottiana</i>
Strangler Fig	<i>Ficus watkinsiana</i>
teak	<i>Tectona grandis</i>
West Indian cedar	<i>Cedrela odorata</i>