File 98/78.

BJB:EW
Mr. Beggs

PSB

Chairman,
PUBLIC SERVICE BOARD:

SURVEY OF STAFF REQUIREMENTS - FORESTS DEPARTMENT

I attach for your attention a fully documented report on the current staff requirements for the Forests Department.

This report has already been submitted to the Hon. Minister for Forests, who has endorsed it for onward transmission to you.

In my submission to the Hon. Minister, I drew his attention to the acute need for additional staff for the Forests Department. This staff is essential if the Department is to adequately carry out only those tasks which are necessary to maintain the existing responsibilities vested in the Department. To take on any additional work load is out of the question at this time.

Having already discussed this proposition in general terms with both the Assistant Under Treasurer and yourself and having noted your comments at that time, I now propose to place this submission before you for study by yourself and your senior officers without further general explanation.

No doubt questions of detail will arise later which can best be handled by immediate discussion between ourselves and our officers at the appropriate time.

B.J.B.

CONSERVATOR OF FORESTS

6 May 1980

10.5.80
Secretary 20.5.80

HON. MINISTER FOR FORESTS

I wish to draw your attention to the attached documents that arise from a thorough examination of the work load and staff availability in the Forests Department.

A comparison has been made over the period 1964 to 1979, fifteen years of rapid change in forest management policy which has strained the resources of the Department almost to breaking point.

I believe the documents show conclusively the need for immediate increases in several staff areas, increases that are essential to maintain the efficient management of our forests. Further documentation is available which shows annual changes in work load and staff allocations, should you wish to be informed in more detail.

It has been apparent for several years that staff numbers were not increasing rapidly enough to maintain efficient management. A detailed staff review in 1975 (attachment 3) identified a then need for staff numbers which is only now approaching realisation. The subsequent five year period has been of further dramatic growth in forest industries, mining, recreation and catchment management.

The major areas of growth dealt with in more detail in attachment 2 are as follows:-

- forest regeneration, maintenance and protection associated with plantations; jarrah forest dieback, mining and catchments; and karri forest cut for sawlogs and woodchips.

- forest harvesting for sawlogs, woodchips and particleboard logs.

- implementation of multiple-use policies adopted in 1974 and involvement demanded by greater public interest in forest conservation, environmental protection, impacts of dieback disease and quarantine.

- research associated with production; protection from fire and disease; monitoring and rehabilitation following forest industries and mining; and multiple-use forest management.

In association with the need for more precise data to allow sophisticated management techniques, planning and control of major industries such as woodchipping, questions raised in Parliament in 1974 concerning over-cutting of hardwood forests led to concentration of staff on Inventory and Planning. In fact, the demands in this and research were so great that staff numbers involved in field operations have of necessity been excessively restricted.

.../2

The increasing work load was for some years accommodated through such means as :-

improved technology, e.g. aerial burning and detection,
mechanisation of appropriate operations, e.g. pine planting, pruning and harvesting, and
improved man management, e.g. safety programmes and job analyses.

It is now obvious following the recent studies that in recent years the increased work load has not been effectively accommodated. The staffing for most jobs has been pared down until some requirements such as - patrol of dieback disease risk areas, supervision of environmental standards of chip log cutting and planning for industry operations, are receiving less than acceptable minimums. Though the deficiency is only two or three men for each function the total requirement is now large.

Attached data sheets show the numerical change of work load and staff on each function during the fifteen years to 1979 (the last date for which data are correlated) and forecast the expected change by 1981.

In order to meet the minimum staff requirement for effective management of the 1980/81 works programmes, it will be necessary to appoint an additional 15 professional foresters, 7 other Public Service Act staff and 31 Forests Act staff. To carry out minimum research requirements it will be necessary to appoint a further 5 professional officers and 8 general staff. The case prepared for additional research needs is also attached (attachment 4).

The case for and justification of additional staff has been presented verbally to the Chairman of the Public Service Board and the Assistant Under Treasurer. Both were most complimentary of the work and staff assessment method and agreed in principle to a demonstrated need. Details are at present under investigation by a P.S.B. Inspector.

Prior to my formal submission of this request to the Public Service Board, I respectfully request your endorsement of the proposal.

Subject to your approval and my subsequent submission to the P.S.B., I understand that the P.S.B. will then consult with Treasury which in turn will advise you of the presentation of the request to Cabinet.

B. J. Beggs.

CONSERVATOR OF FORESTS

2 May 1980

TECHNICAL STAFF

SECTION	1964 (June)	1975 (JUNE)			1980 (MARCH)			CLASSIFICATION
	Actual	Actual	Additional Requested	Total Required	Approved (Establishment)	Total Required	Additional Required	
Research	6	11	5	16	16	21	5	P.S. Act Prof. Fors.
	8	38	9	47	40	48	8	For. Act General Staff
SUB TOTAL	14	49	14	63	56	69	13	
Inventory and Planning	3	8	3	11	11	13	2	P.S. Act Prof. Fors.
	9	20	8	28	27	31	4	Fors. Act General Staff
SUB TOTAL	12	28	11	39	38	44	6	
Extension Services	Nil	2	1	3	3	7	4	P.S. Act Prof. Fors.
	Nil	2	4	6	5	5	Nil	Fors. Act General Staff
SUB TOTAL	Nil	4	5	9	8	12	4	
Timber Utilisation	2	2	-	2	1	1	Nil	P.S. Act Prof. Fors.
	3	3	-	3	2	2	Nil	For. Act General Staff
SUB TOTAL	5	5	-	5	3	3	Nil	
Plant and Equipment	-	-	-	-	1	1	Nil	P.S. Act Prof. Engineer
	5	5	-	5	3	6	3	Fors. Act General Staff
SUB TOTAL	5	5	-	5	4	7	3	
Other	1	2	-	2	1	1	Nil	P.S. Act Prof. Fors.
	Nil	1	-	1	1	1	Nil	For. Act General Staff
SUB TOTAL	1	3	-	3	2	2	Nil	
Radio Communications	3	6	-	6	8	8	Nil	For. Act General Staff
TOTALS	12	25	9	34	33	44	11	P.S. ACT PROF. FORS.
	28	75	21	96	86	101	15	FOR. ACT GENERAL STAFF

HEAD OFFICE AND FIELD OPERATIONS STAFF

SECTION	1964 (June)	1975 (JUNE)			1980 (MARCH)			CLASSIFICATION
	Actual	Actual	Additional Requested	Total Required	Approved (Establishment)	Total Required	Additional Required	
Head Office								
Executive	5	7	-	7	12	12	Nil	P.S. Act Prof. Fors. *
Drafting	10	18	2	20	27	19	2	P.S. Act Prof. Draft.
	9	8	2	10		13	3	P.S. Act Gen. Draft. Assts. & Trainees
Clerical	44	47	5	52	56	58	2	P.S. Act Accounts, Gen. & Stores
Library & Other	4	4		4	5	5	Nil	P.S. Act
SUB TOTAL	72	84	9	93	98	105	7	
Field Operations (incl. Protection)	29	28	13	41	35	44	9	P.S. Act Prof. Fors. *
	112	114	44	158	150 -	174 -	24 (x)	Fors. Act General Staff ++
SUB TOTAL	141	142	57	199	184	217	33	
Field Clerical	40	57	7	64	70 -	73	3 3✓	Fors. Act General Staff ++
	34	35	13	48	47	56	9	P.S. Act Prof. Fors. *
TOTALS	67	77	9	86	88	95	7	P.S. Act Clerical & Draft.
	152	171	51	222	220 -	247	27 ~~40~~	Fors. Act General Staff ++

STAFF SUMMARY

SECTION	1964 (June)	1975 (JUNE)			1980 (MARCH)			CLASSIFICATION
	Actual	Actual	Additional Requested	Total Required	Approved (Establishment)	Total Required	Additional Required	
HEAD OFFICE	5	7	Nil	7	12	12	Nil	P.S. Act Prof. Fors. *
	67	77	9	86	88	95	7	P.S. Act Other
FIELD OPS. INCL. PROT.	29	28	13	41	35	44	9	P.S. Act Prof. Fors. *
(INCL. CLERICAL)	152	171	51	222	220	2447	247 40	For. Act General Staff ++
TECHNICAL	12	25	9	34	33	44	11	P.S. Act Prof. Fors. &* 1 Engineer
	28	75	21	96	86	101 ✓	15 13	For. Act General Staff ++
	46	60	22	82	# 80	100	20	P.S. Act Prof. Fors. *
TOTALS	67	77	9	86	88	95	7	P.S. Act Other
	180	246	72	318	## 306	~~345~~ 348	~~39~~ 42 53	For. Act General Staff ++

\# Excludes officers - F. Batini, J. Robley and Cadets

Excludes Cadets

F I N A N C E

OPERATION	INDICATIVE CHANGE IN WORK LOAD			COMMENT
	1963-64	1978-79	1981 forecast	
INCOME				
$ millions 1964 equivalents	3.25	3.3	3.9	Increases expected in woodchip and particle board returns. Increases expected from softwood sawlog sales. Decreases expected from hardwood sawlog sales.
EXPENDITURE				
$ millions 1964 equivalents	3.72	5.9	6.5	Increases in expenditure have resulted from introduction of major industries - woodchips and particle board, environmental controls associated with them and mining, with multiple land use management for catchments, recreation and conservation and dieback disease.
TOTAL FUNDS ADMINISTERED	6.97	9.2	10.4	

FOREST ESTABLISHMENT AND TENDING

OPERATION	INDICATIVE CHANGE IN WORK LOAD			COMMENT
	1963-64	1978-79	1981 forecast	
HARDWOOD REGENERATION				
Jarrah				
Annual area cut over.	23,650 ha.	25,000 ha.	25,000 ha.	Little change.
Annual replanting of dieback.	-	152 ha.	200 ha.	Increase.
Annual re-foresting mined areas.	-	270 ha.	400 ha.	Major increase.
Annual forest improvement in mining envelope.	-	240 ha.	1,200 ha.	Major increase.
Catchment reforesting Wellington.	-	400 ha.	1,000 ha.	Major increase.
Karri				
Annual area selection cut and burned for natural regeneration.	1,830 ha.	-	-	
Annual area clear felled and burned for natural regeneration.	-	288 ha.	300 ha.	
Annual area clear felled, burned and hand seeded or planted.	-	1,711 ha.	1,700 ha.	Major increase due to essential hand planting.
Seed collection.	Experimental	Major work	Major work	Major increase.

FOREST ESTABLISHMENT AND TENDING

OPERATION	INDICATIVE CHANGE IN WORK LOAD			COMMENT
	1963-64	1978-79	1981 forecast	
SOFTWOOD				
Annual planting rate	1,059 ha.	2,810 ha.	3,000 ha.	Major increase.
Clearing Pruning Scrub control Fertilising Non commercial thinning				Work loads on all these work types are directly proportional to annual planting rate.
Total area	15,723 ha.	45,731 ha.	51,700 ha.	Major increase.
Road maintenance Fire suppression Fire detection Fire equipment Fire detention Fire breaks				Work loads on these jobs are directly proportional to total area planted.

M I N I N G

OPERATION	INDICATIVE CHANGE IN WORK LOAD			COMMENT
	1963-64	1978-79	1981 forecast	
BAUXITE				
Total area cleared	34 ha.	2,096 ha.	Wagerup and Worsely starting	Continuing supervision and protection is directly proportional to total area.
Av. annual area cleared	18 ha. (Dec.)	242 ha. (av. for 5 yrs.)	400 ha.	Major increases.
Re-establishment and all tending operations are directly proportional to annual area cleared.				
COAL) TIN) HEAVY METALS) OTHER)				All are producing increased demand for staff involvement through environmental control requirements at prospecting, mining and rehabilitation phases.

FOREST HARVESTING

OPERATION	INDICATIVE CHANGE IN WORK LOAD			COMMENT
	1963-64	1978-79	1981 forecast	
HARDWOOD				
*Sawlogs	1,066 000m^3	858,000m^3	800,000m^3	Decrease.
*Residue logs	375,000 tonnes firewood	604,000 tonnes firewood and wood chip	850,000 tonnes firewood and wood chip	Major increase in wood chip.
SOFTWOOD				
*Sawlogs	50,000m^3	51,000m^3	51,000m^3	No change.
*Residue logs	215m^3	126,000m^3	160,000m^3	Major increase for particle board.
DEPARTMENTAL SAWMILLS NO.	6	2	1	Decrease.

* Staff committed to planning and organising have increased considerably to meet the degree of scale, environmental control and sophistication now demanded.

PROTECTION

OPERATION	INDICATIVE CHANGE IN WORK LOAD			COMMENT
	1963-64	1978-79	1981 forecast	
FIRE				
Area of Prescribed burning				The change to aerial ignition resulted in major savings in wages and employee numbers but more sophisticated planning and control involves more salaried staff.
Annual ignition by hand	360,670ha.	65,270ha.	70,000ha.	
Annual ignition by aircraft	Nil	311,730ha.	300,000ha.	
Areas prescribed burnt for other organisations		40,000ha.	50,000ha.	
Direct assistance to other organisations (mutual aid or recoup formally agreed).	Denbarker Shires/ Bush Fires Board	Denbarker Shires/ Bush Fires Board	Denbarker Shires/ Bush Fires Board	Continuing involvement.
		Avon Valley Shires & Departments	Avon Valley Shires & Departments	" "
		South Coast vacant crown land	South Coast vacant crown land	" "
		Army - Bindoon	Army - Bindoon	" "
		Worsely - Collie	Worsely - Collie	" "
		National Parks Authority	National Parks Authority	" "
		Bush Fires Board	Bush Fires Board	" "
	(1)	(7)	(8)	

PROTECTION Contd.

OPERATION	INDICATIVE CHANGE IN WORK LOAD			COMMENT
	1963-64	1978-79	1981 forecast	
DISEASE				
Disease Risk Area (Area Quarantined)	Nil	720,000ha.	720,000ha.	Major increase, further increases likely on south coast catchments.
Quarantine patrols	Nil	835	1,000	Major increase
Entry permits	Nil	1,273	1,200	Major increase heavy demand for salaried staff.

FOREST RESEARCH

OPERATION	INDICATIVE CHANGE IN WORK LOAD			COMMENT
	1963-64	1978-79	1981 forecast	
PRODUCTION	Pine -tree breeding -silviculture	Pine -tree breeding -silviculture	continuing increase needed	To integrate developing industry; to solve second rotation problems.
	Karri -silviculture Jarrah-silviculture	Karri -silviculture Jarrah-silviculture timber utilisation	increase needed increase needed	To allow tending regeneration. To allow logging following quarantine.
PROTECTION	Fire -behaviour in Jarrah Fire -behaviour in Karri Fire -behaviour in Pine	Fire -behaviour in Jarrah Fire -behaviour in Karri Fire -behaviour in Pine Disease - dieback	increase needed continuing continuing increasing	For Acacia regeneration and multiple use. Demand from other research organisations.
MONITORING and REHABILITATION (mining, woodchipping, burning)	Nil	Karri Ecology (woodchips) Rehabilitation - after mining - after logging	increasing increasing continuing	
MULTIPLE USE	Nil	Jarrah Conservation Hydrology Native Forests Hydrology Pines Agro-forestry	continuing increasing continuing increasing	

PUBLIC SERVICES - MULTIPLE USE MANAGEMENT - STAFF

FUNCTION	INDICATIVE CHANGE IN WORK LOAD			COMMENT
	1963-64	1978-79	1981 forecast	
RECREATION				
No. of sites maintained	Nil	122	138	Increasing demand.
Annual development rate	Nil	8	16	Increasing demand.
Toilets, picnic areas	Nil	8	16	Increasing demand.
Forest Visitors	20,000	300,000	450,000	Estimates from physical surveys 1969-70 and 1978-79.
Area on which management for recreation will receive top priority.	Nil (ad hoc response to specific needs)	67,900ha.	100,000ha.	Increasing demand.
EXTENSION	Ad hoc response through field staff.	Organised response through specialist and field staff.	Organised response through specialist and field staff.	Increasing demand.
Primary involvement	fire control	fire control	fire control	Increasing demand.
	inland arboreta	inland arboreta	inland arboreta	Increasing demand.
		conservation	conservation	Increasing demand.
		urban enquiries (5000/yr.)	urban enquiries (5000/yr.)	Increasing demand.
		landscape assessment & design	landscape assessment & design	Increasing demand.
		experimental planting	experimental planting	Increasing demand.
		publicity	publicity	Increasing demand.
		public education	public education	Increasing demand.

PUBLIC SERVICES - MULTIPLE USE MANAGEMENT - STAFF

FUNCTION	INDICATIVE CHANGE IN WORK LOAD			COMMENT
	1963-64	1978-79	1981 forecast	
Flora and Fauna Management and Conservation	Licensing & control under Native Flora Protection Act.	Licensing & control under Native Flora Protection Act.	Areas of responsibility reduced to State Forest.	Continuing responsibility.
		Involvement with Conservation through Reserves Systems 1-6.	Involvement with Conservation through Reserves Systems 1-6.	Reduced effort in future.
		Definition of areas on which management for conservation of flora and fauna will receive top priority.	Management of areas set aside for conservation.	Major increase in demand for staff to manage areas defined in General Working Plan No. 86.
		327,435 ha.	327,435 ha.	

OPERATION	INDICATIVE CHANGE IN WORK LOAD		
	1963-64	1978-79	1981 forecast
Acts Administered	Forests	Forests	Continuing
	Sandalwood	Sandalwood	Continuing
	Timber Industry Regulations	Timber Industry Regulations	Continuing
	Native Flora	Native Flora	Discontinued
		Softwood Forestry Agreement	Discontinued
		Wesply Dardanup Agreement	Continuing - increasing
Acts under which Forests Department's responsibilities are defined.	Bush Fires	Bush Fires	Continuing
	Wildlife Conservation	Wildlife Conservation	Continuing
	Alumina Ref. Agreement	Alumina Ref. Agreement	Continuing
	Alumina Ref. Agreement (Pinjarra)	Alumina Ref. Agreement (Pinjarra)	Continuing
		Woodchip Industry Agreement	Continuing - increasing
		Environmental Protection Authority	Continuing - increasing
		Alumina Agreement (Muchea)	Continuing - nominal
		Alumina Agreement (Worsley)	Continuing - increasing
		Wundowie Charcoal Iron Industry Sale	Continuing
		National Parks Authority	Continuing
		Country Areas Water Supply Amendment 81 of 1978	Continuing - increasing
		Alumina Ref. Agreement (Wagerup)	Continuing - increasing
		Collie Coal (Western Coll.) Agreement	Continuing
		Collie Coal (Griffin) Agreement	Continuing
		Collie Coal (Western Coll. & Dampier) Agreement	Continuing

TERTIARY MANAGEMENT

OPERATION	INDICATIVE CHANGE IN WORK LOAD		
	1963-64	1978-79	1981 forecast
INTER-DEPARTMENT COMMITTEES	Crown Land Tribunal	Discontinued	
	Water Purity	Water Purity	Continuing
	Consultative Committee on Forestry & Timber	Continuing	Continuing
		Road Verges	Continuing
		Hunt & Kelsall	Continuing
		Conservation through Reserves	Continuing
		System 6	Complete
		Parks and Reserves	Continuing
		Mining & Management Programmes - Alcoa	Continuing - increasing
		Coal mining	Continuing
		Water Resources Council	Continuing
		Darling Range Study	Continuing
		Darling Range Research	Continuing
		Dieback Research	Continuing

1.3 Wages Staff

Wages employees have been cut back by 1.1% p.a. over the 10 years. This reduction has only been possible by the distinct improvement in operational techniques, particularly in fire control and by some increase in the use of private contractors for certain works.

However, the position reached at 30th June 1975, i.e. only 505 employees, was considered to be an absolute minimum to which we could descend. In fact, if a bad fire season should occur it could very easily be beyond the danger level.

1.4 Increased Work Loads

Reference has already been made to the fact that staff increases have been held in check in recent years, basically in an endeavour to counter inflation in staff and general costs, during a period when extra workloads had to be accepted by the Department.

Most of the areas of increased workload are well known, but it is felt to be necessary that they be committed to the record in this document. They are :-

1.4.1 Total areas of Departmental pine plantations increased by approximately 125%. With the inception of the Softwood Forestry Agreements in 1966 the planting rate rose from a previous 1100 ha/yr to 2400 ha/yr.

Pine logging, wholly controlled by Departmental staff, rose by approximately 100% during the decade.

1.4.2 Vastly improved prescribed burning techniques, developed from new and intensive research during the period, allowed far better protection of the forests in general, forested catchments and communities living in or bordering the forests. The application of these more sophisticated techniques over larger yearly areas has, however, increased officer participation markedly.

1.4.3 Phytophthora cinnamomi was isolated as the causative agent of jarrah dieback in late 1964 -- This gave rise to greatly increased research programmes and physical efforts in control attempts.

1.4.4 Alcoa (Aust.) commenced bauxite mining in the northern jarrah forest in 1963. Yearly area coverage increased very nearly tenfold in the past decade. Primarily, this not only led to increased supervisory and administrative workloads, but also to immediate investigations of possibilities and methods of revegetation of the mined areas.

1.4.5. The effects of Alcoa's mining together with dieback, burning and other operations throughout the forest has led to a very marked increase in the level of hydrological studies the greatest share of which has been borne by this Department in its capacity as general-manager of practically all of the utilisable water catchment areas. As a natural consequence these studies have led to the full consideration of all land-use aspects of the northern forest region.

1.4.6. Provision of facilities and studies of the requirements concerning public recreation and amenity within the forest areas have been undertaken at far greater levels in recent years.

1.4.7. The increased level of studies directed to virtually all factors of the forest environment has been essential to enable sound decisions to be made concerning every present and intended use to which the forests are put.

1.4.8. Planning the operational detail and researching the economic and environmental justification of the Marri Chipwood Project, the Wesply Particle Board Industry and the extension of the Departmental pine planting projects have occasioned an immense amount of detailed work by all officers.

1.4.9. All the areas mentioned in 1.4.1 to 1.4.8 above have given rise to far greater involvement with and work for other Government Departments, private industries and other private organisations and individuals than ever before undertaken.

The increased need to publicise the Department's operations, research findings and intentions, to attend meetings, symposia, etc., and to answer public, private and parliamentary questions and enquiries has placed what can only be described as an undue strain on our staff resources.

N.B. Although strictly not an increase in work load, the extra week's annual leave, granted in the middle of the review period, was not able to be absorbed by the intake of additional staff and indirectly contributed to the shortages.

2. Assessment of Required Additional Staff

During the next twelve months there will be a need to staff the operational sides of the Marri Chipwood Project, the Dardanup Particle Board Plant's supplies and the implementation of the die-back quarantine legislation. These works will be additional to the continuing and extending of the operational, planning, research, conservation and extension commitments already accepted by the Department.

Senior officers have very seriously considered what level of staffing will be necessary to cope efficiently with these present, extended and additional tasks.

The results of their considerations are shown in Table 3 and, in the total scene, these give a required increase of 138 or 15.4% on the 897 as at 30 June 1975. Considered separately this shows as a 35 or 6.9% increase in wages staff and 103 or 26.2% in salaried staff.

(N.B. - These additions may appear to constitute a very drastic increase indeed, but they have been very seriously vetted in detail by the senior officers concerned and they can see no way of reducing them further. They do, in fact, reflect the hopeless position into which we have been forced in the past decade.)

TABLE 3

Forests Department Staff - Additional Requirements

Category	Existing 30/6/75	Additional Required	Total Required	Incr. %
(a) Salaried Staff				
Professional (P.S. Act)	62	22	84	35.5
Clerical & Drafting (P.S. Act)	81	9	90	11.1
Field Staff (Forests Act)	249	72	321	28.9
	392	103	495	26.2
(b) Wages Staff				
Employees (All awards)	505	35	540	6.9
	897	138	1035	15.4

The requirements in the Professional and General divisions are shown in Table 4 (on next page) set out in categories similar to those of Table 2.

261
158
207
202

WHE:LMF
Mr. Bastman

THE UNDER TREASURER

APPOINTMENT OF PROFESSIONAL OFFICERS

I desire to confirm discussions I had with you on Tuesday, 26th August 1975, concerning the Department's difficulty in gaining professional staff and the need to increase existing staff in order to meet Departmental commitments.

In this discussion you agreed that the following new staff could be appointed during the current financial year in accordance with anticipated financial allocations.

6 x graduate foresters (incl. one Cadet already on staff list) - P.S. Act professional division

2 x clerical officers (C II 2 & C II 4 Accounts) P.S. Act clerical division

16 x Field Cadets - Forests Act - general division

Based on your agreement, we have confirmed arrangements with the Public Service Board whereby we will take immediate steps towards obtaining the professional staff.

CONSERVATOR OF FORESTS

1st September, 1975.

150/75 206 201

CONSERVATOR OF FORESTS:

FORESTS DEPARTMENT STAFF

Attached is the original of report arising from the review of Departmental staff carried out last year.

This report was compiled last September and you will remember that, at that time, you obtained verbal approval, from the Chairman of the Public Service Board and the Under Treasurer, of the second and third recommendations - see section 4.1 at p.12 of the report. (We confirmed these approvals in writing on 1st September, 1975, and photocopies of those confirmations are attached.)

The first recommendation (section 4.1, p.11) and the fifth (section 4.3.1, p.13) dealing with professional and field cadets respectively were also verbally approved at that time and have since been confirmed by action rather than in writing.

The benefits derived from the adjusted procedures have been plain to see during the past few months. The Department has, with comparative ease, been able to recruit a number of "first choice" new graduates and has for the first time in two to three years shown a nett gain in the Forests Act "general operations" staff.

The report thus becomes more a document of record at this stage, but it is intended that it also become the basis of an annual review of the whole staff situation.

W.H. Eastman.

DEPUTY CONSERVATOR OF FORESTS

WHE/PC
19th January, 1976.

Note PP 26A - 26P amalgamated into 150/75 13.10.77

ATTACHMENT 4

156
205
200

FUTURE STAFF REQUIREMENTS

DIVISION OF RESEARCH

The most basic, or perhaps the most direct way of arriving at the staff needs of the Research Division, is to consider what problems face the Department and what steps have been taken to solve them. In reviewing the objectives, the same breakup of research will be used as in the graphical representation of the past research effort.

1. PRODUCTION FORESTRY

(a) Jarrah Silviculture

The key question that has to be answered is:

can jarrah forest be managed in such a way as to meet the many, often conflicting demands placed on it?

In order to answer this very broad question, it is also necessary to ask:

can the forest be logged, regenerated and tended in the presence of Phytophthora?

can its chance of survival and its productivity be improved by the removal of Banksia?

can this be achieved with existing methods?

Some of these questions are being partially answered, but on the whole, much remains to be done. The silvicultural research in the jarrah forest has been put on ice for close on to ten years due to the threat posed by bauxite mining and the dieback disease.

There is currently no officer fully involved in this sphere, though some (Kimber, Loneragan) could make an important contribution by writing up their past work, and others have low but growing involvement (P. Ritson, O. Ritson). An ideal solution would be the integration of the two sources resulting in the writing up of past work and the build-up of younger officers' experience.

An important need is the integration of the silviculture with utilisation, as without it much of the silvicultural treatment is not economically feasible, e.g. the conversion of uneven aged, Banksia infested stands to uniform young stands and the thinning of older uniform stands. The contribution of the industry is, therefore, important here, and an officer capable of integrating research and operations, silviculture and utilisation, is needed.

(b) Karri Silviculture

The basic question to be answered by research is:

can karri forest be managed intensively for the production of hardwood without serious degrade of the environment?

This very broad question can be broken up into several more specific questions, such as:

can the soil erosion and stream siltation caused by high levels of logging be kept at acceptable levels, even in wet winters?

can the perturbances within the natural ecosystem, in particular those in vegetation and fauna components, be absorbed, so that the ecosystem ultimately returns to pre-logging conditions?

can the nutrient balance be restored to a level where no loss of health or productivity is incurred?

Some partial answers have already been obtained to these questions, but on the whole, the information is not advanced beyond the early stages of regeneration. The indications are much more promising than in the case of jarrah, but there is still a great need for continuation and expanding of existing research.

Although the recent solution of our most immediate problems has prompted the shift from karri to jarrah-marri silviculture when ADFO Schuster was transferred to operations, it would be naive to assume that we either know the lot or even that we can keep in front of operational needs for any length of time. We are dealing with a highly dynamic situation in which new problems and new needs are thrown up continually. An officer is needed to return to this work full time as soon as possible.

(c) Pine Silviculture and Nutrition

(i) Pinus Pinaster. The key question here is:

can we put the very considerable resource built up over the past half a century to full and proper use whilst at the same time eliminating the main potential source of conflict with the water supply authorities?

Basically, this means maintaining pine stands at low density.
The two issues which are as yet inadequately backed by research are:

can we utilise the considerable accumulation of small dimension wood of low quality in order to free the final crop trees for optimum growth?

can we prevent decline of productivity in second rotation?

There is a gross unbalance between the very considerable silvicultural knowledge accumulated over the past 1½ decades and the lack of utilisation activity, particularly in the northern plantations. The need is, therefore, overwhelmingly in the latter sphere. Altogether, the accumulated knowledge on even the most broadly defined silviculture is probably adequate; our tree-breeding is of world class, the hydrological impact of the plantation establishment is well understood, the techniques are highly mechanised. The only exception is second rotation, where a very real problem exists and where a sound and extensive experiment has been established but had to be postponed because of the Sunkland dieback crises. T/O Stukely would appear to be ideally suited for the task and should be returned to it as soon as possible. The technical support at Wanneroo has been progressively reduced over the years and would be inadequate to tackle this task. What little staff remains will be needed for ongoing research particularly in tree-breeding of P. radiata. Although SDFO Butcher has made a major effort in writing up past research, much remains yet to be finalised.

(ii) Pinus Radiata. As the department has been largely prevented from obtaining more of the relatively fertile sites of the Blackwood Valley, the only option open is the relatively infertile sites in the Sunkland. Here the chief question to be answered is:

can the fertility of these poor sites be lifted to a level which is adequate for the more demanding Pinus radiata?

A secondary question is:

are the Pinus radiata plantations yielding the optimum mix of timber?

Although much has been done over the past decade, the move into the new and adverse environment of the Sunkland has thrown up many new problems. A very strong research input is needed if this large operation is not to develop into a disaster. Much of this will be discussed under protection, as the threat of Phytophthora attack is by far the greatest problem. However, there are still other problems only partially solved; although much has been done on the early nutrition, there is still no certainty about the continuing health and growth of Pinus radiata on the poorer sites. This means both additional research on radiata nutrition during the rest of the rotation and as a fail/safe measure, research into the nutrition and silviculture of the alternate pine species. Much remains yet to be done on the important agro-forestry concept in the high rainfall areas of the Sunklands and Blackwood Valley; in the former to provide the nitrogenous nutrition; in the latter to reduce fire danger. ADFO McGrath, who is currently doing pine nutrition research at the University of W.A., is best fitted to cover the nutrition when he returns to research.

Since the departure of Dr. McKinnell from Busselton and ultimately from the Central Region as a whole, the work at the research/utilisation interface has largely atrophied, as there has been no officer of sufficient experience and stature to carry it on. In my opinion, to direct Dr. Siemens, when he joins the Department, to the work formerly carried out by ADFO Moore (chiefly agro-forestry) would be a waste of his past training and experience. His greatest strength is at the utilisation-research interface and that is where our need also is.

2. PROTECTION

(a) Protection Against Fire

The evidence accumulating against mild prescribed burning in spring necessitates a complete review of our fire protection strategy, particularly as it becomes intricately interwoven with disease protection. The chief question to be answered is:

Can we switch to an alternative scheme of fire control if it is shown that spring prescribed burning is conducive to dieback by encouraging banksias rather than acacias?

Can we handle the increasing difficulty and complexity of fire protection in areas broken up by bauxite mining and logging for wood chips, particularly as the resulting young stands are much more vulnerable to fire?

Can we cope with the constraints on fire protection generated by protection against disease?

Can we make good our claim that we can manage the forest, in particular Management Priority Areas, so as to foster native flora and fauna?

Can we accomodate summer recreation within forest without raising the fire risk to unacceptable levels?

None of these can be competently answered at present.

I have argued for the past eight years against the self-destructive tendency to draw-off any research officer that has reached a satisfactory degree of competence to operations. We are fortunate that the situation has not proved more disastrous. When Mr. Peet was drawn-off, Mr. Sneeuwjagt proved a winner, although his performance at University was far from promising. Similarly, when Mr. Sneeuwjagt was transferred out of research, Mr. Jones blossomed out after initial disappointing performance. When he, in turn, was removed out of research, Mr. Borrough partly filled the gap, despite his total lack of experience and our inability to provide specialist guidance.

It has perhaps not been realised that up to 1972 our research was well ahead of practice but since then, we have largely lived off our accumulated fat and that is now largely gone. The partial return of Mr. Jones to the research-operations interface is a highly desirable step but far short of what is needed. Several major issues remain unsolved and are not likely to be resolved at the present level of commitment.

Whilst research may not solve all the problems, without research the answers are unlikely to be found at all. In my opinion, there is no alternative to a major injection of staff - a minimum of a research officer and two technical assistants.

(b) Protection Against Disease

Although we have made tremendous progress in recent years in the research into Phytophthora-caused dieback disease, we still do not have a foolproof answer to two important questions, one of which has already been asked under Production Forestry, namely:

Can we manage the forest for multiple use in the presence of Phytophthora?

The second, equally important, question is:

Can we tip the natural balance against the pathogen and in the favour of the forest?

All that can be said at this stage is that we have more promising leads than at any time since the disease was first discovered, but we are a long way from being able to apply them reliably on a larger scale. The flareup of pine disease in the sunklands further expands the scope of the problem.

There can be no argument that in the widespread jarrah dieback disease caused by the introduced Phytophthora cinnamomi, we are facing a problem of such magnitude that few other forestry organisations have ever had to face. It has the potential to alter irrevocably the bulk of our forests and in doing so, greatly reduce their economic productivity, their protective function on catchments and their recreational and evironmental value. Although our own efforts, and the efforts of the C.S.I.R.O. and the tertiary education institutions have been considerable over the past year, particularly since the massive injection of funds by Alcoa, they still do not match the magnitude of the problem. An absolute minimum is the appointment of two technical assistants, to enable us to service the field needs of other organisations involved in the dieback research. Without it, the research by tertiary institutions will contract to theoretical, laboratory-based research of limited practical value. We should also not lose sight of the fact that some of our staff are employed on relatively short term contracts, some of which, in particular that with the Rural Research Fund, are unlikely to be renewed. If we are not to lose experience and continuity, provision will need to be made to employ these experienced researchers within our own organisation. R.O. Boughton is a prime example of this situation.

The flareup of pine deaths in the Sunklands has opened a new field of urgently needed research. In the past year, we have responded by tapping Rural Research Fund (R.O. Boughton) by transferring emphasis from hydrology to pathology (ADFO Chevis) and by transferring an officer trained in pathology from Wanneroo to provide the necessary laboratory back-up (T.O. Stukely). Potentially, the pine deaths present a serious threat. If intensified to the point where a significant proportion of the stand is lost, it would open us to accusations of misdirecting public funds and of professional incompetence. It would also undermine our ability to meet supply contracts to the chip board industry. Two of the officers operate without any technical back-up (Boughton, Stukely)

and additional two technical assistants are needed for this work if it is to be increased to a level commensurate with the urgency of the situation. Research into Phytophthora-resistant strains of P. radiata will greatly increase the load of SDFO Butcher.

(c) Protection Against Other Destructive Agencies

The main question to be asked here probably is:

How much longer can we sidestep some of the as yet minor problems, such as the death of trees in the agricultural landscape and the leaf miner attack on jarrah, before they escalate into major problems?

Although drought is a major problem in our plantations, the solution to it is not so much in new research as in the ability to apply the already available research findings, e.g. through correct silvicultural treatments, the economic feasibility of which often depends on our ability to utilise the by-products of such treatments, especially small diameter logs.

So far, we have got by with minimum research into insect pests and parasitic plants. Partially this has been possible because allied organisations, such as the Department of Agriculture and the C.S.I.R.O., carried out such investigations on our behalf, partially because some problems, such as the tuart bud weevil, could be ignored as economically insignificant. The mistletoe controversy in the agricultural regions over the past year would seem to indicate the economic factors are not the only ones that need to be considered. One step towards meeting this need could be the sending of one of our younger officers, perhaps ADFO Chevis, to do a recently established M.Sc. course in Plant Protection at the Waite Agricultural Institute in South Australia, when the Sunkland emergency has been dealt with.

3. MONITORING AND REHABILITATION

The number of objectives that could be set up here is almost infinite in that every new industrial development has some degree of adverse impact on the environment and more often than not we are asked to become involved either in research or in an advisory capacity. The key question, which is possibly too general, is:

How much more degrade can the environment of the southwest absorb without serious repercussions?

The second question is:

Do we really understand all the secondary and tertiary impacts, e.g. the effect that bauxite mining has on the dieback disease situation and the ultimate joint impact of mining and dieback on water supplies, conservation and recreation?

There is no single answer to this, but separate slightly different answers for each climatic zone.

This category of research is a relatively new one, having made its appearance over the past decade in response to the growth of environmental movement and its demands. We have been drawn in either because our own activities have been seen as damaging the environment or because we were requested to monitor the impact of the activities of other organisations. An example of the former is the woodchip industry, an example of the latter is the bauxite mining. This type of research received a major impetus from the establishment of the Hunt and Kelsall Committees by the State Government. The monitoring of the bauxite mining and the rehabilitation of the forest areas affected by it continues to increase. However, our own input has remained fixed at the level of 1975, whereas the input by Alcoa his increased greatly. This does give them certain competitive advantage, which may yet work against us in such issues as the review of Management Priority Areas and the future management of rehabilitated mine pits and the intervening forest. There is, therefore, a need for additional staff input, but not at the same priority level as for the other major projects in this section - the monitoring of the wood chip industry and the rehabilitation of areas adversely affected by it.

In this case we are not the judges or even the prosecutors but the prosecuted. The repeated attacks by the environmentalists, the visits by Senate Committees, and the recent preliminary report by the Kelsall Committee, are ample proofs of that.

With the transfer of ADFO Pentony to Extension and her subsequent resignation, and the transfer of Inspector Kimber to Bunbury, their investigations into the effect of our activities on fauna and flora were never fully completed. Parallel but different investigations are under way by Dr. Christensen and Mr. Whitely. However, Dr. Christensen has not only responsibilities as O.I.C. of the Manjimup Research Station, but also has a watching brief on environmental matters, especially fauna, over the whole State Forest. Mr. Whitely has serious limitations, particularly in ecological monitoring which shares his attention with hydrology, in which his performance is somewhat better. Their combined capacity is below the level needed to keep us ahead of our critics. In the field of hydrology, our involvement has been reduced as broad-scale surveys have been completed (project 1) and the coupe monitoring (project 4) has entered the less intensive post-establishment stage. We may, however, have to intensify our efforts if a wet year, or series of wet years, aggravate the existing situation. Closely tied up with this is the monitoring of logging damage, With the transfer of ADFO O. Ritson to silviculture as a replacement for ADFO Schuster, this aspect of our investigations will once more drop to a low level.

A desirable situation at Manjimup would, I believe be:-

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(i) O.I.C. (At present Dr. Christensen, fauna ecology)
(ii) 1 Hydrologist (Whitely)
(iii) 1 Silviculturist (jarrah-marri, O. Ritson)
(iv) 1 Plant Ecologist (post-logging, fire)
(v) 1 Fire Researcher (Burroughs)
(vi) 1 Silviculturist (karri)

Of these, positions (iii), (v) and (vi) have already been covered under production and protection research. As logging damage involves soil, water and plants, co-operative effort by positions (ii), (iv) and (vi) would be involved.

Monitoring of our activities in the Sunkland is also at a low ebb. The early hydrological work indicated that risks of deterioration of the resource were low due to relatively low salt storage in the soil, and mild topography. Consequently, hydrological studies were partly tapered off and partly taken over by P.W.D. Ecological studies, carried out by Inspector Kimber and Dr. Christensen, were primarily concerned with establishing the situation prior to conversion of native forest to pine. Further studies will be needed to establish the post-planting situation.

In the Blackwood plantations, where the land was under pasture prior to planting, studies were concentrated on the post-planting situation. They are about to be published and further work is not anticipated.

On the coastal plain north of Perth, past work has been primarily concerned with the impact of plantations on the replenishment of superficial aquifers. This has now been published and the work tapered off. The study of the impact of ground water withdrawal on native vegetation has, following the resignation of Dr. Mattiske, been handed over to M.W.S.S.D. Board and will in future be probably handled by contract.

4. MULTIPLE USE OF FOREST

On the positive side, we can claim with some justification that we have taken this concept much further than any other forest services in Australia. However, what we have achieved has mainly served to underline the complexity of the situation, in particular the interaction of the biophysical and socioeconomic factors. For instance, we have made a fair progress in the recognition of the importance of the forests in maintaining water quality, but it is estimated that it will require years to answer the questions:

Can bauxite mining take place in those parts of forested catchments where there is an accumulation of salt in the soil profile?

What species can be planted as a rehabilitation measure on sites mined for bauxite, so that the stored salt is not released into the streams?

Similarly, we have pioneered the use of agroforestry in rehabilitating catchments cleared for grazing, and have developed some promising techniques. We have yet to answer the important question:

Can agroforestry on catchments be made economically feasible and socially acceptable?

This topic is so broad that it overlaps, of necessity, with the topics already discussed. For instance, hydrological studies do not merely monitor the effect of the various economic activities on the quantity and quality of water yield, but also provide a basis for catchment management. Similarly, ecological studies do not merely study the impact of bauxite mining or woodchipping on flora and fauna but also provide the basis of catchment management and flora and fauna conservation. The integration of this information has already been attempted (Northern Jarrah Perspective, LUMP) and in future will be the function of the Inventory and Planning Section or of the regional organisations. Whilst it is highly desirable to carry out additional ecological studies of the Management Priority Areas, currently the ecologist (Dr. Abbott) is forced to concentrate on the dynamics of banksia understorey and the effect of intense fires on some invertebrates. He operates without a permanent technical assistant. He could probably share a technical assistant with pine pathology workers. As a temporary measure, Dr. Christensen has grouped the MPAs into several broad categories for the purpose of specifying appropriate management strategies for them.

The most significant projects relevant to multiple use forestry in the future will be in the joint studies of silviculture, utilisation and hydrology of several small catchments in the Dwellingup area which have now been monitored for a number of years. The officer principally responsible for these is ADFO P. Ritson, who is planning to make this research the basis of an external M.Sc. study. As this research project and the study are relatively long term, some stability of appointment is essential.

In view of the importance of agro-forestry in the rehabilitation of the Collie catchment, the research into this would best be carried out in the Central Region, particularly as there is a certain overlap with the work in the Sunklands and Blackwood. It can be assumed that with the transfer of Inspector Batini on secondment, the agro-forestry research in the Helena catchment, carried out in conjunction with C.S.I.R.O., will atrophy. Some spill-over from the work of DFO Bartle on the rehabilitation of mined catchments is probable, but the rehabilitation of farmed catchments will remain a major task. ADFO Moore has recently initiated important agro-forestry trials with the Agriculture Department, but as he is to be transferred to Administration, will need to be replaced in that function.

5. SUMMARY

Summing up, the questions that I have posed and the research objectives that I have enumerated illustrate the fact that although we have an active research branch and a greater staff and resources than what is usual, our problems are even greater.

The staff requirements of the Division of Research over the next three years can be summarised as follows:

Research Topic	Requirements	Priority Rating
1.a Jarrah silviculture, in particular the silviculture-utilisation interface.	1 Silviculturist, preferably funded by the sawmilling industry or even employed by it.	1 - long neglected, new opportunities now opening.
1.b Karri silviculture, in particular tending and thinning of young stands, and improvement of seed sources.	1 Silviculturist 1 Technical Assistant	2 - competes with silviculture of southern jarrah-marri forests - largely abandoned in favour of it.
1.c Second rotation problems in pine plantations	1 Research Officer 1 Technical Assistant	1 - experiment established but staff transferred to Sunkland emergenc
1.c Integration of pine silviculture and utilisation.	1 Appointment of Dr. Siemens.	1 - long overdue.
2.a Moderate intensity prescribed burning of jarrah forests, protection strategy for mutliple use forestry.	1 Research Officer 2 Technical Assistants	2 - competes with protection of karr forest, inadequately covered from Manjimup.
2.b Protection against Phytophthora: - Jarrah forest - Sunkland pine	2 Technical Assistants (Dwellingup) Transfer of R.O. Boughton from contract to permanent. 2 Technical Assistants (Como)	1 - inadequately staffed. 1 - work underway bu inadequately, temporarily staffed.
2.c Protection against insect pests and parasitic plants.	Direction of a junior officer to further specialist studies.	2 - desirable, but officers potential suitable cannot be spared.
3 Monitoring of, and rehabilitation following woodchip operations.	1 Research Officer 1 Technical Assistant	3 some work underway but inadequate w.r risks involved.
4 Agro-forestry, particularly as a means of catchment rehabilitation	1 Research Officer	1 officers involved at present either have been, or will be transferred to other duties.

11/3/80

Treasury Dept

BJB:EW
Mr. Beggs

UNDER TREASURER:

This memorandum confirms points raised in discussion with you last week.

The Forests Department is facing a serious staff shortage and to permit an accurate assessment of this we have recently completed a staff appraisal which became a corporate planning exercise.

The background of our problem is briefly set out as follows :

1) In the 20 years since 1960 the Department has increased about 10% from 930 to 1,030 people total. During this time annual leave has gone from two to four weeks, so a considerable amount of that increase is taken out by the additional annual leave.

2) In that time we have had the development of bauxite mining, a three-fold increase of the pine plantation programme with the consequential increase in maintenance of the plantation area, Phytophthora has been identified as the cause of jarrah dieback, the woodchip industry has been established together with the largest particle board plant in the southern hemisphere which draws resource from our plantations.

3) During this period there has been a tremendous increase in public interest in forests which has given rise to the need for a far greater degree of sophistication in planning and while this is desirable it takes additional staff.

4) Considerable additional activity is taking place within the forest in planning and research in a number of areas. Most of these require support from the Forests Department one way or another and while we are keen to give it it draws on officer time.

5) We have reconstructed in an endeavour to match the needs, have reduced our wages complement and substituted them with technicians to enable us to do the work and still keep staff numbers to an absolute minimum.

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The position we now face is that we are unable to cover all the jobs in hand without additional staff. Our requests have been considered by the Chairman of the Public Service Board and his staff and my understanding is that they consider them reasonable. You will recall that you arranged for Mr. Rolston to be present when I made a presentation of the position to Mr. McKenna.

In summary, our requirements to meet the work load as of September last year, involved an increase of 69 total of whom only 42 are estimated to be available immediately, the balance required to be trained through our Cadet Scheme. This additional staff does not cover the anticipated demands in implementing aspects of Government policy put forward during the recent Election.

We are nearing completion of the review of chipwood royalty which, under the terms of the Agreement, can apply from September of this year. Information now to hand indicates that an additional sum of $775,000 can be anticipated as revenue this year and this will more than cover the additional staff requested.

As indicated to you and earlier to the Chairman of the Public Service Board, I do not feel that I am in a position to indicate priorities on this request but believe it will be necessary for Government to give direction as to which works should be discontinued to enable staff reallocation if our request cannot be met.

CONSERVATOR OF FORESTS

30 July 1980