

29/1/87

025404

DEC LIBRARY ARCHIVE
NOT FOR LOAN

LIBRARY
DEPARTMENT OF ENVIRONMENT
& CONSERVATION
WESTERN AUSTRALIA

General Manager
Director, Nature Conservation

CALM OPERATIONS AND THE REVISED SCHEDULE OF DECLARED RARE
FLORA.

On the 18/12/86 you requested a summary on the implications to CALM operations staff of declaring the revised schedule of rare flora.

Information concerning the distribution (within CALM regions) and the land status of all currently Declared Rare Flora and their known populations is presented in Tables 1, 2 and 4 (attached). The same information for all rare flora to be declared as per the revised schedule is presented in Tables 1, 3 and 5. In all CALM regions, except the Wheatbelt, there is approximately a 50% increase in the number of Declared Rare Flora as recommended by the revised schedule. In the wheatbelt this increase is greater than 100% (Table 1).

With regard to the land status of the currently Declared Rare Flora approximately 65% of the species occur in National Parks and Nature Reserves, road reserves or private land with the remaining species occurring in the 20 other categories of land indicated (Table 2). When individual populations are considered 58% fall into the four categories mentioned previously although there are also a significant number of populations in State Forest and Vacant Crown Land (Table 4). The relatively high number of populations in State Forest is primarily due to five species *Adenanthos detmoldii*, *Franklandia triaristata*, *Grevillea drummondii*, *Grevillea ripicola* and *Lambertia rariflora* which are now known to be more common than previously thought and have been recommended for deletion from the list of Declared Rare Flora in the revised schedule.

Similarly when the land status data for species and populations recommended in the revised schedule are considered 67% of the species and 65% of the populations occur in National Parks and Nature Reserves, road reserves or private land (Tables 3 and 5). There is a marked increase in the number of populations in all four of these categories following the revised schedule with the most dramatic occurring for Shire road reserves. One of the few categories to show a reduction in the number of populations is State Forest which follows from the recommended deletion of the five species mentioned previously. Clearly with the number of populations involved, management of road reserves and private land is likely to pose a major problem following declaration of the revised schedule.

There are a number of further management problems or areas of concern for CALM operations that may arise with the new schedule. They can be considered as follows:

1) Forest Operations

There are a few, if any, impacts on activities (logging, clear felling, mining) in State Forest, other than fire, that are likely to affect the Declared Rare Flora. Recreation on granite rocks such as Mt Chudulup may need control in regard to *Kennedia glabrata* and the development of appropriate fire regimes would seem essential for the survival of populations within state forest of species such as *Caladenia plicata*, *Caladenia aff longiclavata*, *Caladenia aff longicauda* and *Daviesia microphylla*.

2) Fire Regimes

There are a number of cases where inappropriate fire regimes are likely to pose problems for the effective management of Declared Rare Flora populations. Examples, in addition to those already mentioned include:

- i) Too frequent burning of railway reserves at Mogumber impacting on *Anigozanthus humilis* s.sp *chrysanthus*.
- ii) Deleterious effect of too frequent wildfires on *Banksia brownii* on the Milbrook Nature Reserve.
- iii) Determination of adequate fire regimes for *Banksia verticillata* and other rare *Banksia* species which rely on fire for seed release and germination.

3) Mining

Mining has and will continue to cause major problems in relation to the destruction and disturbance of Declared Rare Flora. For example:

- i) Sand mining on +31030 (south of Eneabba) destroying *Leucopogon obtectus*.
- ii) Destruction of *Thomasia aff montana* east of York by sand mining.
- iii) Mining for gold and nickel on leases covering the Ironcaps area east of Hyden affecting *Banksia sphaerocarpa* var *dolichostyla* and *Eucalyptus steedmanii*.
- iv) Potential coal mining by CRA in the Mt Lesueur region affecting *Banksia tricuspis* and *Hakea meglasperma*.
- v) Disturbance of *Daviesia purpurascens* by sand mining south west of Coolgardie.
- vi) Potential for mining operations in the Helena and Aurora ranges endangering *Tetratheca aphylla*.

4) Dieback

Dieback is likely to affect a large number of Declared Rare Flora particularly in the South Coast region. Already populations of *Banksia brownii* and *Dryandra* sp nov (F. Lullfitz) are badly affected on Bluff Knoll as are further populations of *Banksia brownii* in the Milbrook Nature Reserve and the Hassell National Park.

In conclusion the management of Declared Rare Flora on road reserves and private land looms as the major issue confronting the Department following the declaration of the revised schedule. With respect to CALM operations the major areas of concern would appear to be in National Parks and Nature Reserves where management relating to fire regimes, dieback and mining will need to be carefully considered. Operations in State forest would appear likely to have only a minimal effect on Declared Rare Flora with the major factor being fire rather than logging, clearfelling or mining.



DR D.J. COATES
Research Scientist

January 29, 1987

RARE FLORA

NUMBER OF SPECIES

CALM REGION	CURRENTLY DECLARED	TO BE DECLARED AS PER THE REVISED SCHEDULE
SOUTH COAST	52	71
SOUTHERN FOREST	6	11
CENTRAL FOREST	13	20
WHEATBELT	29	72
NORTHERN FOREST	16	19
METROPOLITAN	5	8
GREENOUGH	25	49
GOLDFIELDS	2	5
PILBARA	0	2
KIMBERLEY	0	2

Table 1. Number of species of currently Declared Rare Flora and proposed Declared Rare Flora (from the revised schedule) within CALM regions.

CALM REGION

LAND STATUS

	South Coast	Southern Forest	Central Forest	Wheatbelt	Northern Forest	Metropolitan	Greenough	Goldfields	Gascoyne	Pilbara	Kimberley	Total
National Park	38		4	1	3		2					48
Nature Reserve	15	1	3	17	4	3	6	1				50
State Forest		3	6		3							12
Common	1				1				1			3
Shire Road Reserve	4		7	13	3	1	8					36
MRD/Road Reserve	1	3	1	4	2		6					17
Town Site	1		2									3
Private	4	2	6	12	7	2	16					49
Commonwealth	2				1		1		1			5
Vacant Crown Land			1	3	2		6		1			13
Water Reserve			1	8	3		1					13
Pastoral Lease							1	1				2
Railway Reserve				1	1		1	2				5
Dept of Agriculture				2								2
State Housing Commission						3						3
Education							3					3
Government Requirements					1							1
Special Lease							2					2
Recreation Reserve	1		1	1	2		2					7
(MRPA) SPA					2							2
CALM Timer, Water & Camping			1									1
Shire Rubbish Reserve	1		1									2
Unprotected Reserve	1				1		2					4
Shire Reserve	1		3		2		2					8
Unknown Status	4			4	4	1	5					18
TOTAL	74	9	37	66	42	10	64	4	3			309

Table 2. Land status of currently gazetted rare species within CALM regions.

CALM REGION

LAND STATUS

	South Coast	Southern Forest	Central Forest	Wheatbelt	Northern Forest	Metropolitan	Greenough	Goldfields	Gascoyne	Pilbara	Kimberley	Total
National Park	52	3	5	1			4					65
Nature Reserve	16	2	2	35	8	2			1			66
State Forest		5	5	1	4							15
Common	2				1				1			4
Shire Road Reserve	8		9	26	4	2	21					70
MRD/Road Reserve	3	3		7			7					20
Town Site	1		3	2								6
Private	7	2	9	28	9	3	26		1			85
Commonwealth			1		1		1		1		1	5
Vacant Crown Land	4		1	4	2		7		1	1		20
Water Reserve		1	1	12		1	1					16
Pastoral Lease				1			3	1	1		1	7
Railway Reserve				2	1		5					8
Dept of Agriculture				2								2
State Housing Commission						2						2
Education				1			3					4
Government Requirements					1		2					3
Special Lease							2					2
Recreation Reserve	2		2	3		1	3	2				11
(MRPA) SPA						1						1
CALM Timer, Water & Camping		1		1								2
Shire Rubbish Reserve	1		1									2
ated Reserve	1			1	2		3					7
Shire Reserve	1	1	3	2	2	1	3					13
Unknown Status	3	1	1	4	3	2	8			1		23
TOTAL	101	19	43	133	38	15	99	3	6	2	2	461

Table 3. Land status of proposed gazetted rare species (as determined by the revised schedule) within CALM regions. This includes currently gazetted rare species minus those recommended for deletion.

Table 4. Land status of all populations of 131 declared rare species (excluding the hybrid Thelymitra macmillanii) within CALM administration regions

LAND STATUS	CALM REGION											
	Total	South Coast	Southern Forest	Central Forest	Wheatbelt	Northern Forest	Metropolitan	Greenough	Goldfields	Gascoyne	Pilbara	Kimberley
National Park (CALM)	101	84	-	7	1	6	-	3	-	-	-	-
Nature Reserve (CALM)	83	15	1	4	38	6	11	7	1	-	-	-
State Forest (CALM)	54	1	4	39	-	10	-	-	-	-	-	-
CALM Timber, Water & Camping	1	-	-	1	-	-	-	-	-	-	-	-
Shire Road Reserve	84	7	2	11	40	6	1	17	-	-	-	-
MRD/Road Reserve	24	1	3	2	4	4	-	10	-	-	-	-
Town Site	2	-	-	2	-	-	-	-	-	-	-	-
Private Property	161	7	5	22	28	32	3	64	-	-	-	-
Commonwealth	2	-	-	-	-	1	-	-	-	1	-	-
Vacant Crown Land	67	2	1	-	8	3	-	50	-	3	-	-
Water Reserve	23	-	-	1	14	7	-	1	-	-	-	-
Pastoral Lease	10	-	-	-	-	-	-	1	9	-	-	-
Railway Reserve	6	-	-	-	3	-	-	2	1	-	-	-
Dept of Agriculture	2	-	-	-	2	-	-	-	-	-	-	-
State Housing Commission	5	-	-	-	-	-	5	-	-	-	-	-
Education Reserve	6	-	-	-	-	-	-	6	-	-	-	-
Government Requirements	5	-	-	-	-	3	-	2	-	-	-	-
Special Lease	16	-	-	-	-	-	-	16	-	-	-	-
Recreation Reserve	11	1	-	1	1	6	-	2	-	-	-	-
State Planning Authority	6	-	-	-	-	6	-	-	-	-	-	-
Shire Common	3	1	-	-	-	1	-	-	-	1	-	-
State Rubbish Reserve	2	1	-	1	-	-	-	-	-	-	-	-
Unvested Reserve	3	1	-	-	-	1	-	1	-	-	-	-
Shire Reserve	7	1	-	3	-	2	-	1	-	-	-	-
Unknown Status	99	31	-	-	9	12	2	44	1	-	-	-
TOTAL	783	153	16	94	148	106	22	227	12	5	-	-

CALM REGION

LAND STATUS	South Coast	Southern Forest	Central Forest	Wheatbelt	Northern Forest	Metropolitan	Greenough	Goldfields	Gascoyne	Pilbara	Kimberley	Total
National Park	115	3	8	1			8					135
Nature Reserve	18	2	2	50	11	2	9	1	1			96
State Forest		5	11	2	11							29
Shire Common	2				1				1			4
Shire Road Reserve	12	2	16	76	8	2	41					157 *
MRD/Road Reserve	3	2		7	1		15					28
Town Site	1		4	2								7
Private	13	5	20	48	22	11	66		1			186
Commonwealth			1		1				1		1	4
Vacant Crown Land	6	1		11	2		51		3	1		75
Water Reserve		1	1	15	1	1	1					20
Pastoral Lease				2			3	10	1		2	18
Railway Reserve				6			8	1				15
Dept of Agriculture				2								2
State Housing Commission						2						2
Education				1			6					7
Government Requirements					3		3					6
Special Lease	1						16	3				20
Recreation Reserve	1		3	3	4	1	2					14
(MRPA) SPA						1						1
CALM Timer, Water & Camping		1		1								2
Shire Rubbish Reserve	1		1									2
Unrested Reserve	3			1	2		3					9
Wildlife Reserve	1	1	3	3	2	1	2					13
Unknown Status	34	3	1	11	9	3	11			1		73
TOTAL	211	26	71	242	78	24	245	15	8	2	3	925

Table 5. Land status of all populations of proposed gazetted rare species (as determined by the revised schedule) within CALM region.