

Flora Survey Compartments 13, 14 and 16 Royal Camp State Forest

Methods

A flora survey of compartments 13, 14 and 16 Royal Camp State Forest was conducted on the 24th and 25th of March 1997. This entailed roadside surveys along major tracks and random cross-country traverses through each compartment. All plant species encountered were identified and recorded (see attached list) and careful searches made of potential habitat for threatened, rare and regionally significant plants. Unidentified plants were forwarded to the NSW Herbarium for determination.

References used for determining the significance of recorded plants were: (i) Schedules 1 and 2 of the NSW Threatened Species Conservation Act, 1995, (ii) Briggs and Leigh (1995), also known as the ROTAP (Rare or Threatened Australian Plants) list and (iii) Sheringham and Westaway (1995) for regionally significant species.

Codes for regionally significant species given below follow categories of conservation significance in upper north-east NSW from Sheringham and Westaway 1995:

1. Nationally rare or threatened
2. Uncommon throughout distribution
3. Rare in NSW
4. Regionally uncommon
5. Depleted habitat/sparse
6. Endemic
7. Disjunct
8. Distributional limit
9. Atypical habitat

General Description

Royal Camp State Forest consists of gently undulating hills on the western margin of the Richmond River-Bungawalbin Ck floodplain. Soils are silty clays formed on low quartz sedimentary rocks. The compartments are dominated by Spotted Gum (FT 74) of the lowland *E. henryi* sub-type, a corridor of wet sclerophyll forest along Sandy Creek (FTs 48, 53 and 60) and reserved Paperbark/Forest Red Gum (FT 31/92) in compartments 14 and 16.

Most of the Spotted Gum forest in these compartments carries an open grass and herb understorey with a sparse to mid-dense mid-stratum of *Acacia concurrens* and *Alphitonia excelsa* with the exception of the western half of compartment 14 which has a well developed understorey of *Oxylobium aciculiferum* (and some *Pultenaea villosa* and *Pultenaea euchila*). The latter species are obligate seeders and probably indicate a different fire history (lower fire frequency?).

Significant Plant Species

The following significant plant species were recorded:

TSC Act Threatened Species

***Cyperus aquatilis* (NSW TSC Act Schedule 1 Endangered)**

A sedge occurring on the edge of seasonal swamps and ponds.

Two records of this species from compartment 14 were supplied by NSW NPWS. Tentative identifications (to be confirmed by NSW Herbarium) were made of the species at both sites, one being on a first order stream with small pools and the other on a billabong to Sandy Creek. A third occurrence was located in the eastern end of compartment 16 in protected forest type 31/92

Regionally Significant

***Acmea grandiflora* (3 8S)**

An herbaceous plant in the daisy family growing in seasonally flooded swamp forest. Listed as rare in NSW in Sheringham and Westaway (1995).

Recorded at the eastern end of compartment 16 within reserved forest type 31/92 (Paperbark/Forest Red Gum) where the population will not be disturbed by logging.

***Notothixos incanus* (5)**

A mistletoe occurring on *Melaleuca* species. Listed as depleted habitat/sparse in Sheringham and Westaway (1995)

Recorded growing on *Melaleuca styphelioides* in the reserved forest type at the eastern end compartment 16 (FT 31/92) and extending into fringing Spotted Gum with a *Melaleuca* understorey. The population is protected from logging disturbance in the area of reserved forest type 31/92.

***Isotoma armstrongii* (4? 7 8S)**

A herb with pale blue flowers found in swampy areas. Listed as possibly regionally uncommon in Sheringham and Westaway (1995).

Recorded in swampy forest at the eastern end of compartment 16 (FT 31/92) in the area of reserved forest where the population will not be disturbed.

Hygrophila angustifolia (3 8S)

A herb with blue flowers found in swampy areas. Listed as rare in NSW in Sheringham and Westaway (1995).

Recorded in compartment 16 along a swampy drainage line (2nd order stream). Protected from logging disturbance within a filter strip.

Amyema conspicuum (3 8S)

A mistletoe occurring almost exclusively on *Alphitonia excelsa* (Red Ash). Listed as rare in NSW in Sheringham and Westaway (1995).

Recorded in the western end of compartment 16 scattered through an area about 50 metres wide in Spotted Gum-Grey Box (FT 72). Although Red Ash is common in the compartments surveyed, *A. conspicuum* was not recorded elsewhere and is known to the writer from only one other location locally (cpt 28 Braemer SF).

Galactia sp. A (3? 8S)

A trailing, herbaceous legume. Listed as possibly rare (?) in NSW in Sheringham and Westaway (1995).

Recorded in spotted gum (FT 74, 70) in all compartments where relatively common. This plant is widespread in grassy open forest in upper north east NSW and does not warrant a rare ranking.

Locally Significant

Geodorum densiflorum (Geodorum Orchid)

A terrestrial orchid with pleated leaves occurring in "dry sclerophyll forest on coastal sands" (Hardin 1991). One colony found during the survey in Spotted Gum forest (FT 74) on clay soil. Known from only a few locations locally.

Alstonia constricta var. mollis (Quinine Bush)

A small tree occurring in dry rainforest and eucalypt woodland. A group of about 15 were recorded in compartment 16 on the margin of Spotted Gum (FT 72) and Forest Red Gum (FT 92). Locally uncommon and warranting protection.

Significant Plant Species recorded in Compartments 13, 14 and 16 Royal Camp State Forest

Species	Significance	Map Reference	Numbers	Comments
Cyperus aquatilis	TSC Act Sch.1	488600 6790200 cpt 14 488600 6789300 cpt 14 495400 6793900 cpt 16	5-10 30+ 50+	found in reserved forest type 31/92
Acmella grandiflora	State/Region	495800 6794300 cpt 16	30+	found in reserved forest type 31/92
Notothixos incanus	State/Region	495400 6794100 cpt 16	10-20	found in reserved forest type 31/92
Isotoma armstrongii	State/Region	495400 6793900 cpt 16	50+	found in reserved forest type 31/92
Hygrophila angustifolia	State/Region	494000 6793400 cpt 16	10-20	found within filter strip
Amyema conspicuum	State/Region	490700 6791600 cpt 16	30-50	
Galactia sp. A	State/Region	494500 6793800 cpt 16 and several other sites	100+	regionally common protection not warranted
Geodorum densiflorum	Local	488600 6790500 cpt 14 trees marked	15	
Alstonia constricta var. mollis	Local	495400 6794200 cpt 16	10-20	

Plant Species List - Campament 13, 14 ~~and 15~~ Royal Camp S. 1
25a ~~at 26a~~ March 1997.

<i>Imperata cylindrica</i> VC	<i>E. leuynii</i> VC	<i>Eleocharis</i> sp.
<i>Cymbopogon refractus</i> C	<i>E. argentea</i> (violet) C	<i>Cyperus aquaticus</i> ?
<i>Hyssopus gramineus</i> C	<i>B. popuquin</i> O	<i>Eurhachia coriacea</i>
<i>Pruri purpurea</i> C	<i>E. strobilacea</i> C	<i>Phyllanthus gastroem</i>
<i>Elochula ferdinandi</i> C	<i>Vernonia eueria</i> C	<i>Spennococa brachystea</i>
<i>Augoplane subulima</i> C	<i>Aristida vagans</i> C	<i>Opercularia dyphylla</i>
<i>Eragrostis leucostachya</i> C	<i>Paspalum distans</i> C	<i>Helichrysum opicalae</i>
<i>Brazieria oblongifolia</i> O	<i>Beluopogon ruspitatus</i> O	<i>Daviesia ulicifolia</i>
<i>Alphiuma excelsa</i> VC	<i>Eustrephus laefolius</i> O	
<i>Moula dianensis</i> R	<i>Brazieria oblongifolia</i>	<i>Xanthorrhoea molucc</i>
<i>Coryza parva</i> R	<i>Phyllanthus virgatus</i> C	<i>Erocarpus cypripifol</i>
<i>Apocynum arborescens</i>	<i>Desmodium rhynchophyllum</i> C	<i>Fimbristylis dictyota</i>
<i>Glycine clandestina</i> C	<i>Thunbergia asiatica</i> VC	<i>Murdannia graminea</i>
<i>Oplismenus aemula</i> C	<i>Allocaena variatissima</i> O	* <i>Oxylobium scandens</i>
<i>Sporobolus diander</i> C	<i>Polygala taberna</i> O	<i>Euc. moluccana</i>
<i>Acacia melanoxylon</i> C	<i>Desmodium varians</i> O	<i>Fimbristylis chinensis</i>
<i>Aristida canescens</i> O	<i>Lagenifera sinuata</i> C	<i>Dichrochloa micrantha</i>
* <i>Galactia</i> sp. A C	<i>Trachocarpa laurina</i> O/C	<i>Cleistomeria cyn.</i>
<i>Cyperus polytrichus</i> R	<i>Pilea liliifolia</i> C	<i>Stachytarax univ.</i>
<i>Cyperus gracilis</i> O	<i>Melichthys urceolaris</i> O	<i>Capillipedium spicag.</i>
<i>Lomandra filiformis</i> O	<i>Lantana camara</i> O	<i>Excochorda rotundif.</i>
<i>Lomandra multiflora</i> R	<i>Gnaphalium sphaerocarpum</i> C	<i>Ottocloa gracilina</i>
<i>Hybanthus enneaspermus</i> C	<i>Glossogyne tanneri</i> R	<i>Calamagrostis conifolia</i>
<i>Plectranthus parviflorus</i> C	<i>Commelina cyanea</i> C/O	
<i>Plantago youngiae</i> R	<i>Lomandra longifolia</i> C	
<i>Clematis glyciphylla</i> R	<i>Veronica plebeia</i> R	
<i>Panicum effusum</i> C	<i>Crotalaria montana</i> O	
<i>Laxmannia gracilis</i> C	<i>Zernia dyerophylla</i> O	
<i>Eragrostis trachystylis</i> O	<i>Chelidonium sieberi</i> C	
<i>Diglossa parviflora</i> VC	<i>Euc. intermedia</i> O	
<i>Microbena stipitata</i> O	<i>Brunneria asiatica</i> O	
<i>Acacia conchocarpa</i> VC	<i>Lepidospora latrode</i> R	

<i>Gmelina leichliniana</i>	R	<i>Macrorhiza polli-guilleri</i>	O
<i>Loplostemon confertus</i>	O	<i>Acacia falcata</i>	C
<i>Syneilesis glauca</i>	O	<i>Wilkesia indica</i>	O
<i>Persicaria strigosa</i>	C	<i>Stylidium graminifolium</i>	R
<i>Psychotria leucocarpa</i>	C	<i>Sorghum leiocladum</i>	R
<i>Acacia smithii</i>	O	<i>Davallia umbellata</i>	O
<i>Loplostemon scaberulus</i>	C	<i>Marsilea scoparia</i>	R
<i>Polyscias elegans</i>	O	<i>Maytenus bilobata</i>	R
<i>Momida yosuvachy</i>	C	<i>Hibiscus obtusifolius</i>	O
<i>Rhodanthe rubra</i>	O	<i>Helichrysum discifolium</i>	R
<i>Dubautia myoporoides</i>	O	<i>Dodonaea viscosa</i>	C
<i>Acacia irrorata</i>	C	<i>Ehretia orpera</i>	C
<i>Euc. brevicornis</i>	O	<i>Echinochloa telmatophila</i>	C
<i>Persicaria orientalis</i>	O	<i>Eragrostis elongata</i>	O
<i>Persicaria decipiens</i>	R	(clustered lovegrass)	
<i>Cyperus exaltatus</i>	C	Floating Grass	C
<i>Maclura cochinchinensis</i>	O	Leucopogon sp. (spore)	
<i>Cissampelos antarchia</i>	O	orchid roses	
<i>Ficus coriacea</i>	O		
<i>Mallotus philippensis</i>	O	VC - very common	
<i>Notholaena longifolia</i>	O	R - common	
<i>Cryptocarya microcarpa</i>	O	O - occasional	
<i>Pithecellobium latifolium var. oblongum</i>	O	R - rare	
<i>Tachypheta scoparia</i>	O		
<i>Bradyrhoeo microcarpa</i>	O		
* <i>Geodorum densiflorum</i>	R		
(1.1 km Pebbly Ridge Rd SW side)			
<i>Pultenaea acutata</i>	O		
<i>Oxylobium aciculiferum</i>	W		
<i>Pultenaea villosa</i>	O		

Plant Species List - Comparteur 16 Royal Camp SF
26th of March 1997.

<i>Angophora subvelutina</i>	c	<i>Sacciolepis indica</i>	o
<i>Euc. tereticornis</i>	c	<i>Paspalum dilatatum</i>	c
<i>Lophostemon succulentus</i>	c	* <i>Notodictyon vicarius</i>	R
<i>Melaleuca quinquenervia</i>	c	<i>Alphitonia excelsa</i>	c
<i>Melaleuca alternifolia</i>	c	<i>Parsonsia straminea</i>	o
<i>Melaleuca nodosa</i>	c	<i>Eustrephus latifolius</i>	o
<i>Euc. serrata</i>	c	<i>Conopsea sphaerica</i>	c
<i>Acacia melanoxyla</i>	c	<i>Acacia concinna</i>	vc
* <i>Acacia grandiflora</i>	o	<i>Isotria medeoloides</i>	
<i>Ranunculus</i> sp.	c	<i>Fleochlamys</i> sp.	o
<i>Commersonia cyanea</i>	c	<i>Panicum effusum</i>	c
<i>Brassica elongata</i>	c		
<i>Centella asiatica</i>	c	<i>Euc. laevis</i>	vc
<i>Mordantia granifera</i>	c	<i>Allocaena littoralis</i>	c
<i>Arctostaphylos affinis</i>	c	<i>Digitaria parviflora</i>	c
<i>Oplismenus hirtellus</i>	o	<i>Euc. intermedia</i>	c
<i>Imperata cylindrica</i>	vc	<i>Dasmodium rhynchophyllum</i>	c
<i>Praxi purpurea</i>	c	<i>Eutolmia indica</i>	c
<i>Galactia</i> sp. A	c	<i>Chilanthum indicum</i>	c
<i>Breynia oblongifolia</i>	o	<i>Lumnitzera racemosa</i>	c
<i>Sporobolus diander</i>	c	<i>Dodonaea triquetra</i>	c
<i>Cymbopogon refractus</i>	c	* <i>Alstonia conchocarpa</i> var <i>mollis</i> (short panicle)	R
<i>Eclypta platyglossa</i>	c	<i>Lagenaria stipitata</i>	c
<i>Fimbristylis dichotoma</i>	c	<i>Vellaea paradoxa</i>	c
<i>Phyllanthus virgatus</i>	c	<i>Allosteropsis senegalensis</i>	R
<i>Capillipedium spicigerum</i>	c	<i>Fimbristylis nutans</i>	o
<i>Leersia hexandra</i>	c	<i>Glochidion forsteri</i>	o
<i>Cyperus polystachyos</i>	c	<i>Jacksenia scoparia</i>	c
<i>Veronica cinerea</i>	c	<i>Cymbidium suave</i>	R
<i>Pennisetum australis</i>	c	<i>Eclypta pycnantha</i>	o

'Araucaria'

'Hedyotis'; others *Bomachloa*, *Cyperus* 'gracilis', *Cyperus* 'nervosus', 'nervosus'

Cpt 16 Royal Camp S.F.

<i>Opercularia dyphylla</i>	C	<i>Fragaria leptostachya</i>	C
<i>Pinella laifolia</i>	C	<i>Pinella coarctata</i>	O
<i>Wahlenbergia communis</i>	O	<i>Tosmum gracillimum</i>	O
<i>Hypochaeris radicata</i>	O	<i>Helichrysum apiculatum</i>	O
<i>Persoonia smadbeckensis</i>	O	<i>Poltenaea spinosa</i>	O
<i>Lantana camara</i>	C	<i>Daviesia ulcifolia</i>	O
<i>Drosera oviculata</i>	O	<i>Hardenbergia violacea</i>	R
<i>Xyris</i> sp.	O	<i>Gloxynia tamensis</i>	R
<i>Paspalum articulatum</i>	O	<i>Fremontia debilis</i>	R
<i>Eragrostis</i>		<i>Amegilla perbella</i>	O
<i>Hybanthus aureispinus</i>	C	<i>Lomandra filiformis</i>	O
<i>Crotalaria lanceolata</i>	O	<i>Calceolaria ovatifolia</i>	R
<i>Malaleuca sphyalioides</i>	C	<i>Brachycaulis microcarpa</i>	R
<i>Euc. maluccana</i>	C	* <i>Hydrophila angustifolia</i>	O
<i>Goodenia rotundifolia</i>	O	<i>Adiantum aculeatum</i>	R
<i>Euc. siderophylla</i>	C	* <i>Amegilla conspicua</i>	O
<i>Aristida vagans</i>	C	<i>Heteropogon contortus</i>	R
<i>Richardia brasiliensis</i>	O	<i>Eriochloa procera</i> (?)	R
<i>Glycine clandestina</i>	C	<i>Ludwigia octovalvis</i>	C
<i>Glycine tabacina</i>	O	<i>Epilobium australe</i>	C
<i>Spergularia brachystema</i>	O	<i>Alternanthera denticulata</i>	C
<i>Stachys viridis</i>	O		
<i>Goodenia paniculata</i>	R		
<i>Stylidium debile</i>	R		
* <i>Isotria armstrongii</i>	O		
* <i>Cyperus aquatilis</i> (?)	O		
<i>Lomandra multiflora</i>	R		
<i>Euc. prostrata</i>	C		
<i>Aristida ramosa</i>	C		
<i>Xanthorrhoea malacophylla</i>	O		

uk - *Amegilla*, op. loc.