

PART VIII: FLORISTICS OF THE WANDI NATURE RESERVE, TOWN OF KWINANA.

INTRODUCTION

Wandi Nature Reserve (Reserve 36110) is a small triangular shaped reserve of 30.59 hectares situated in the Town of Kwinana on Hope Valley Road. This area of bushland was recognised in the System 6 Report as being an area of *Banksia* Open Woodland on grey sands (Bassendean Sands) 'in an undisturbed condition' and was recommended for vesting as a reserve for the conservation of flora and fauna. This recommendation has been implemented for several years.

GEOMORPHOLOGY AND SOILS

Wandi Nature reserve is located on the western margin of the Bassendean Sands (S8: Gozzard 1986). These aeolian sands are extremely well drained and have been leached since their deposition.

VEGETATION

A vegetation map is not necessary for this area as *Banksia* (*B. menziesii* and *B. attenuata*) and Sheoak (*Allocasuarina fraseriana*) Low Woodland covers all of Wandi Nature Reserve. A permanent site has been established in the area which will be included in a detailed floristic Survey of the Swan Coastal Plain, the GinGin to Busselton Bushland Survey. However the shrub, herb and sedge strata in the Reserve show considerable diversity in the species present and the density of some of these species. For example the dominant sedge in the sedge layer changes from *Lyginia barbata* on the low lying eastern side of the Reserve to *Mesomelaena pseudostygia* on the ridge to the west. The presence of *Mesomelaena pseudostygia* is interesting as it is generally found to be indicative of the Spearwood Dune System. *Eremaea pauciflora* follows the same pattern of distribution in the Reserve. The density of species present throughout the Reserve also changes, for example *Leucopogon conostephioides* is the dominant shrub on the ridge, but only one of three dominants to the east.

Wandi Nature reserve is mapped by Heddle et al. (1980) as being in the Bassendean Complex - Central and South, which encompasses the plant community observed at Wandi. However Heddle et al. record a transition from *Eucalyptus todtiana* to *E. marginata* in the region of Perth but both of these species are present at Wandi over 25 kms south of Perth.

The vegetation indicates that the Wandi Nature Reserve is located in the area of the interface between the Spearwood and Bassendean Sands.

Vegetation Condition

The Reserve is in Very Good Condition (Appendix 1, p 68) with all strata in the communities intact and only a few species of common non-aggressive weed species present. Such weeds are **Ursinia anthemoides*, **Hypochaeris glabra* and **Aira cupaniana*. The dense understorey has allowed few opportunities for weed propagules to become established. The presence of mature *Jacksonia sternbergiana*, *Kunzea ericifolia* and *Adenanthos cygnorum* shrubs over two metres in height indicates that the bushland has not been disturbed by repeated fire and/or dieback. The absence of these two disturbance factors, so common in small patches of bushland in the metropolitan area, has contributed to the very good condition of the understorey.

On the southern margin of the Reserve there is some marginal occurrences of **Ehrharta calycina* that do not penetrate into the bushland.

FLORA

Wandi Nature Reserve contains over 165 taxa (Appendix 2, p68). Of these 158 are natives and 7 exotics. The Anthericaceae (13 taxa), Asteraceae (8 taxa), Cyperaceae (8 taxa), Dasypogonaceae (7 taxa), Epacridaceae (7 taxa), Fabaceae (13 taxa), Haemodoraceae (7 taxa), Myrtaceae (11 taxa), Orchidaceae (8 taxa), Proteaceae (9 taxa) and the Stylideaceae (7 taxa) are the most species diverse families.

These groups represent nearly two-thirds of the taxa present and are the principal components of the tree, shrub, herb and sedge strata of the plant communities of the Reserve. The shrub flora is rich in species of Epacridaceae, Fabaceae, Myrtaceae and Proteaceae as is expected in the south-west of WA but is relatively poor in the Mimosaceae (4 taxa). Indications are now that there is a low percentage of this family on the entire Swan Coastal Plain (GinGin to Busselton Bushland Survey, observations).

Significant Flora

Five species present at Wandu are of significance. These are

- *Gonocarpus pithyoides*, a Priority 3 species.
- *Brachyloma preissii* is an uncommon species of the sands on the western Swan Coastal Plain, currently; this is the only population of this species recorded from a reserve in the Perth area.
- *Caesia occidentalis* which on the Swan Coastal Plain has previously only been recorded in winter wet flats in Bassendean Sands.
- *Macarthuria australis*, here at the southern limit of its range (Marchant et al., 1987) and this population has a covering of golden hairs on young branchlets, a character it shares with an undescribed species of *Macarthuria* found in the Coojarloo area during the Sandplain Survey (Griffin and Keighery, 1989).
- and *Eucalyptus todtiana* is here south of the recognised southern limit of its range, Armadale (Marchant et al., 1987).

CONCLUSION

Wandi Nature Reserve is a very good example of *Banksia* Woodland on the interface between the Spearwood and Bassendean Sands south of Perth. Although small in area the Reserve has a relatively high species diversity and the vegetation in remarkably good condition and deserves its recognition as a Nature Reserve.

ACKNOWLEDGEMENTS

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Appendix 1: Vegetation Site Description for the Wandii Nature Reserve

Site 1 : *Banksia* Woodland.

Banksia attenuata, *B. menziesii* and *Allocasuarina fraseriana* Low Woodland over *Adenanthos cygnorum* and *Kunzea ericifolia* High Open Shrubland over *Stirlingia latifolia*, *Leucopogon conostephioides*, *Scholtzia involucreta* and *Hibbertia hypericoides* Low Open Heath over *Amphipogon turbinatus* Open Grassland, mixed Open Herbland and *Lyginia barbata* Open Sedgeland.

CONDITION	Rating	Very Good	
Soil:	grey sand over grey sand:	S8	Gozzard (1986)
Litter	90%	Bare Ground	2%
Drainage:	good	Aspect:	gentle, SE

Appendix 2: Flora of the Wandii Nature Reserve

Records from quadrat data and opportunistic collecting, 1992-93. Families in alphabetical order. An * indicates non-native taxa.

GYMNOSPERMS

ZAMIACEAE

Macrozamia riedlei

ANGIOSPERMS

AIZOACEAE

**Carpobrotus edulis*

AMARANTHACEAE

Ptilotus drummondii
Ptilotus polystachyus

ANTHERICAEAE

Arnocrinum preissii
Arthropodium capillipes
Caesia occidentalis
Corynotheca micrantha
Laxmannia ramosa
Sowerbaea laxiflora
Thysanotus manglesianus
Thysanotus multiflorus
Thysanotus patersonii
Thysanotus sparteus
Thysanotus triandrus
Thysanotus thyrsoideus
Tricoryne elatior

APIACEAE

Homalosciadium homalocarpum
Hydrocotyle callicarpa
Platysace compressa
Trachymene pilosa
Xanthosia huegelii

ASTERACEAE

Asteridea pulverulenta
**Hypochaeris glabra*
Lagenifera huegelii
Pithocarpa pulchella
Podolepis gracilis
Podotrochea chrysantha
**Ursinia anthemoides*
Waitzia suaveolens

BRASSICACEAE

Stenopetalum gracile

CAMPANULACEAE

Wahlenbergia preissii

CASUARINACEAE

Allocasuarina fraseriana
Allocasuarina humilis

CENTROLEPIDACEAE

Centrolepis drummondiana

COLCHICACEAE

Burchardia umbellata

CRASSULACEAE

Crassula colorata

CYPERACEAE

Isolepis cernua
Lepidosperma angustatum
Lepidosperma ?tenu
Mesomelaena pseudostygia
Schoenus clandestinus
Schoenus curvifolius
Schoenus subbulbosus

- Tetragia octandra
- DASYPOGONACEAE
 Dasypogon bromeliifolius
 Calectasia cyanea
 Lomandra caespitosa
 Lomandra hermaphrodita
 Lomandra nigricans
 Lomandra preissii
 Lomandra suaveolens
- DILLENACEAE
 Hibbertia huegelii
 Hibbertia hypericoides
 Hibbertia racemosa
 Hibbertia subvaginata
- DROSERACEAE
 Drosera erythorhiza
 Drosera leucoblata
 Drosera menziesii ssp. penicillaris
 Drosera pallida
- EPACRIDACEAE
 Astroloma pallidum
 Brachyloma preissii
 Conostephium pendulum
 Conostephium preissii
 Leucopogon conostephioides
 Leucopogon parviflorus
 Lysinema ciliatum
- EUPHORBIACEAE
 Monotaxis grandiflora
 Phyllanthus calycinus
 Poranthera microphylla
- FABACEAE (PAPILIONACEAE)
 Bossiaea eriocarpa
 Daviesia divaricata
 Daviesia triflora
 Gompholobium aristatum
 Gompholobium confertum
 Gompholobium tomentosum
 Hardenbergia comptoniana
 Hovea trisperma var. trisperma
 Isotropis cuneifolia
 Jacksonia furcellata
 Jacksonia sternbergiana
 Kennedia prostrata
 Nemcia reticulata
- GOODENIACEAE
 Dampiera linearis
 Lechenaultia floribunda
 Scaevola canescens
 Scaevola repens
- HAEMODORACEAE
 Anigozanthos humilis
 Anigozanthos manglesii
 Conostylis aculeata ssp. aculeata
 Conostylis juncea
 Conostylis setigera
 Haemodorum spicatum
 Phlebocarya ciliata
- HALORAGACEAE
 Gonocarpus pithyoides
- IRIDACEAE
 *Gladiolus caryophyllaceus
 Patersonia occidentalis
- JUNCACEAE
 Juncus bufonius
- LAMIACEAE
 Hemiandra pungens
- LAURACEAE
 Cassytha flava
 Cassytha pubescens
- LOBELIACEAE
 Lobelia gibbosa
 Lobelia tenuior
- LOGANIACEAE
 Mitrasacme paradoxa
- MIMOSACEAE
 Acacia huegelii
 Acacia pulchella
 Acacia stenoptera
 Acacia willdenowiana
- MOLLUGINACEAE
 Macarthuria australis
- MYRTACEAE
 Calytrix angulata
 Calytrix flavescens
 Calytrix fraseri
 Eremaea pauciflora
 Eremaea aff. brevifolia
 D.Coates M175
 Eucalyptus marginata
 Eucalyptus todtiana
 Hypocalymma robustum
 Kunzea ericifolia
 Melaleuca thymoides
 Scholtzia involucreta (prostrate)

ORCHIDACEAE

Caladenia flava
Caladenia latifolia
Elythranthera brunonis
Leporella fimbriata
Lyperanthus nigricans
Prasophyllum calcicola R.Bates
Pterostylis recurva
Pterostylis vittata

PHORMIACEAE

Dianella divaricata

POACEAE

*Aira cupaniana
Amphipogon turbinatus
*Briza maxima
Danthonia occidentalis
*Ehrharta calycina
Neurachne alopecuroidea
Stipa compressa
Stipa flavescens

POLYGALACEAE

Comesperma calymega

PORTULACACEAE

Calandrinia corrigioloides

PROTEACEAE

Adenanthos cygnorum
Banksia attenuata
Banksia ilicifolia
Banksia menziesii
Dryandra nivea
Persoonia saccata
Petrophile linearis
Stirlingia latifolia
Synaphaea spinulosa

RESTIONACEAE

Alexgeorgia nitens
Loxocarya cinerea
Loxocarya flexuosa
Lyginia barbarta

RUBIACEAE

Opercularia vaginata

RUTACEAE

Boronia crenulata
Eriostemon spicatus

SANTALACEAE

Leptomeria cunninghamii

STYLIDIACEAE

Levenhookia stipitata
Stylidium brunonianum
Stylidium calcaratum
Stylidium junceum
Stylidium piliferum
Stylidium repens
Stylidium schoenoides

VIOLACEAE

Hybanthus calycinus

XANTHORRHOEACEAE

Xanthorrhoea preissii