SYSTEM 6 BUSHLAND SUBMISSION FORM
FOR CONSIDERATION IN THE UPDATE PROGRAMME

If you wish to submit more than one area for consideration in the System 6 update, please use a separate form for each area.

Please fill in each section giving as much information as possible.

LOCATION, OWNERSHIP AND ZONING OF THE AREA

1. Location

Please give as accurate and detailed a description as possible of the site location

Please include either a hand drawn or copied map showing the area of the area

a) Bordering Roads: JARRAH, KENT, ETWELL & SUSSEX STREETS (SEE MAP ON ATTACHMENT II)

b) Nearest Corner: ETWELL, SUSSEX & KENT STREETS

~~Reserve 36914~~

c) Lot Number: 200 Street Number: .....

d) Town/Suburb/Location: TOWN OF VICTORIA PARK (EAST)

e) Local Council: TOWN OF VICTORIA PARK

f) Site Name (if any): MOFFLYN ESTATE

g) Approximate size of the area (ha): 5 HECTARES / 2·5 HECTARES BUSHLAND

h) Please locate the area on a map and give us map references if possible:

.....

i) Map: ..... Streetsmart /UBD/Other: .....

j) Map no.: .....

k) Grid Ref: .....

l) Please give any other information that may help us to find the location:

.....

m) Are you aware of any development proposals that are likely to affect the area?

AN APPLICATION FOR REZONING IS CURRENTLY BEFORE COUNCIL AND COUNCIL ARE SEEKING FUNDS TO PURCHASE THE REMAINING BUSHLAND.

NOTE: Areas that have already been given development APPROVAL should not be nominated

A VALUER GENERAL'S OFFICE VALUATION IS ATTACHED. THIS IS UP TO $1 MILLION LESS THAN THE VALUATION PROVIDED BY THE LAND OWNER. NEGOTIATIONS ARE IN PROCESS TO DETERMINE A PROPER VALUATION SO THAT COUNCIL CAN APPROACH THE GOVERNMENT FOR A GRANT TO PURCHASE.

Please fill out those questions that you can answer

2. Who owns the area? (If owned by the person/s making the nomination please indicate) .....

UNITING CHURCH OF AUSTRALIA (WA SYNOD)

3. If you own the area, and may be interested in participating in conservation on private land initiatives please indicate (and leave your name and address at the end of this submission form) .....

4 .What is the area zoned? (please indicate whether zoning is Town Planning Scheme or Metropolitan Region Scheme) R20 TOWN OF VICTORIA PARK TOWN PLANNING SCHEME No. 1.

CAN YOU TELL US A LITTLE ABOUT THE PHYSICAL CHARACTERISTICS OF THE AREA

5. Why do you consider this area important? (Refer to Guiding Issues paper)
THIS IS THE LAST POCKET OF BUSHLAND THAT ADEQUATELY & REPRESENTATIVELY DESCRIBES THE ECOLOGICAL COMMUNITY THAT ONCE EXISTED THROUGH THIS WHOLE REGION WHEN COMBINED WITH THE ADJACENT KENSINGTON BUSHLAND. (OWNED BY COUNCIL)

6. What is/are the soil type/s and colours ? GREY SAND PLAIN.

Type: Sand/Clay/Gravel/Loam/Silt
Colour: White/Grey/Brown/Orange/Yellow/Red/Black

7. Does the area have any special features such as unusual landforms / landscapes that still retain their natural vegetation? (Yes) / No

If yes, what are they? UNDULATING LAND WITH A THICK COVERAGE OF BANKSIA (SEVERAL VARIETIES) AND JARRAH TREES (SEVERAL UP TO 400 YEA SHEOAK GROVES (MALE & FEMALE) AND NUMEROUS WILDFLOWERS (UP TO 60 VARIETIE

8. Is the area a wetland or does it include a wetland? NO - BUT ONLY ABOUT 5M FROM WATER AT LOWEST POINT.

If yes, what kind of a wetlands is it?

a) lake

b) river

c) stream

d) swamp

e) estuary

f) seasonally wet

(g) other

9. What percentage of the wetland is open water in summer? ....N/A.....

CAN YOU TELL US A LITTLE ABOUT THE VEGETATION /FAUNA ON THE NOMINATED AREA.

10. What percentage of the area is indigenous vegetation? ....ALL.....

11. If the area includes regions cleared of native bushland please indicate reasons for the inclusion. ..APPROXIMATELY HALF OF THE BLOCK (2.5 HECTARES) HAS BEEN DEVELOPED FOR USE BY THE UNITING CHURCH OF WA...

12. Has any previous flora or fauna survey work been done on the area? ....YES.....

If yes, please give details of the work ....SEE REPORT BY CONSULTANT BOTANIST MALCOLM TRUDGEON (ATTACHMENT I).....

.....

13. How would you rate the condition of the native bushland? (see attached table)

a) pristine
(b) excellent
c) very good
d) good
e) degraded
f) completely degraded
g) don't know

14. Please indicate the disturbances affecting the area and where appropriate the percentage of the area disturbed.

(a) Partial clearing 10 %
b) fragmentation N/L
(c) Selective removal of species: timber cutting, wildflower picking, mowing dieback and other plant diseases 20 %
(d) Fire regime, including intensity, season and frequency N/L (INFREQUENT)
(e) 'Enrichment plantings' that is plantings of species not found in that community UP TO 1%
(f) Weed invasion 40 % (BUT CONTROLLABLE)
(g) Animal impact: horses, foxes, rabbits, cats, dogs, camels, goats etc N/L
(h) Soil movement, both removal and dumping 0.01 % (MINIMAL)
(i) Changes in water regimes; flooding, drainage and watering N/L
j) Salinity N/L
k) Fertiliser drift and along waterways nutrient influx N/L
l) Mining, including that for road works N/L .

m) Grazing: stock, overgrazing by feral or native mammals NIL

n) Proliferation of tracks, fire breaks and walk trails 2%.

o) Off-road vehicle use NIL

p) Use as service corridors by the SEC, Main Roads, Water Authority. NIL.

(Source: B Keighery. Bushland Plant Survey, September 1994)

15. Does the area contain any plant species of special interest that you know of? (eg. declared rare flora, priority taxa, outlier populations) ...YES.....

Do you know what they are? ...BLUE ORCHID., SAND PLAIN SPIDER ORCHID.....
TRIGGER PLANTS.....

16. Do you know of any native animals that use the area? ...YES.....

Can you list those you know of? (birds, mammals, reptiles, amphibians etc) BLACK COCK
HONEY EATERS (LARGE & SMALL), MATING GALAHS, 28's, ROSELLAS, BOO-BOOK OWLS,
MAGPIES, BUTCHER BIRDS, WILLY WAGTAILS, MUD LARKS, GREEN EYES, SWIFT, CROWS, KOOKABURRA
17. Is the area used by any native animals of special interest? (eg. endangered species, large/important populations)...YES..... TAWNY FROGMOUTH OWL.

If yes, please name them and indicate source of information
...BOO-BOOK OWL —.....

.....

CAN YOU TELL US A LITTLE ABOUT THE SURROUNDING AREA

18. Are there any bushland areas (including wetlands) near to this area?
..YES.....

If yes, how close are they ? ...KENSINGTON (BARRON-HAM COURT) BUSHLAND.....
...SEE ATTACHMENT II (" KENSINGTON BUSHLAND MANAGEMENT PLAN)

.....

Are they already conservation reserves? ..ALMOST - IF NOT, SHOULD BE.....

What is their approximate size? .....

19. Does the submitted area link other bushland areas? ...YES.....
...TO KENSINGTON BUSHLAND.....

.....

Please attach any additional information about the area which may be of use when assessing it.

Similar crater wounds have been reported on various species of toothed and baleen whales (Mackintosh and Wheeler 1929; van Utrecht 1959), pelagic fishes such as marlin and tuna (Jones 1971), the rubber sonardomes of nuclear submarines (Johnson 1978), and on northern elephant seals, *Mirounga angustirostris* (LeBoeuf, McCosker and Hewitt 1987).

Isistius brasiliensis is a small (maximum total length of 50 cm) oceanic and circumtropical shark usually found at midwater depths from 85-3,500 m (Compagno 1984). It is presumed to be a vertical migrator on a diel cycle spending the daytime in deep waters and ascending to midwater depths and to the surface at night. A similar pattern in response to food movements has been suggested for *M. pelagios* by Taylor, et al. (1983) and by the sonic tracking of Megamouth V (Lavenberg, personal communication). The slow swimming speed of megamouth would make it easy prey for the active cookiecutter shark (Diamond 1985).

I. brasiliensis is facultative ectoparasite that attaches to its prey with the help of suctorial lips and a modified pharynx. With a twist of its body the large saw-like teeth of the lower jaw cut a conical plug of flesh from the sides of its prey leaving a crater-like wound (Compagno 1984: 94).

ACKNOWLEDGEMENTS

The main responsibility for preserving megamouth fell to Nick Haigh. He handled this huge task with his usual efficiency and good humour. John Bass lent his expertise to the measuring process. Kailis and France Pty. Ltd. offered the use of their freezer which was vital to the storage of megamouth immediately after its discovery. The Mandurah Shire and its workers facilitated the recovery of megamouth from the beach. K. Petryk printed the black and white photos from our colours slides. We appreciate all of this help.

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FROM FIELD AND STUDY

Subm 170

Notes on the fauna of a remnant bushland in Victoria Park — Remnant areas of bushland in the inner metropolitan area contain examples of the fauna that would have existed over large areas before subdivision for housing. A one hectare block on the corner of Berwick Street and Hillview Terrace, Victoria Park has large numbers of native plant species — three banksias, a number of Christmas Trees and many small flowering shrubs which are not apparent from the road. The soil type is Bassendean Sand.

A study was made of the site from 18 to 27 November 1990. Six pitfall traps of 50cm deep, 17cm diameter PVC piping were placed 8 metres apart and connected by a 50m long, 30cm high fence of aluminium flywire mesh. Each pit was covered at the bottom by flywire to prevent burrowing animals from escaping. The pits were checked daily at 6am and all species were recorded and vertebrates were weighed, measured and released. Bird species were also recorded at this time.

NPN

The ten day study in spring found that at least four species of reptiles survive on the site. The fast moving *Ctenotus lesueurii* striped skink was particularly

abundant and 15 were trapped. Two other small skinks *Menetia greyii* (5) and *Lerista elegans* (1) were recorded, as was the Bobtail *tiliqua rugosa* (1).

The introduced House Mouse *Mus musculus* was trapped and dog and cat tracks were seen. No native mammals were recorded.

Six native and two introduced bird species were sighted during the study. The Singing and Brown Honeyeaters *Lichmera indistincta* and *Meliphaga virescens* were abundant and feeding on the flowering Candlestick Banksia *Banksia attenuata* and the Christmas Trees *Nuytsia floribunda*. The Australian Magpie *Cracticus tibicen* was present as individuals as well as a family group and the Black-faced Cuckoo-shrike *Coracina novaehollandiae*, the Red Wattlebird *Anthochaera carunculata* and the Willy Wagtail *Rhipidura leucophrys* were also recorded. The Laughing Dove *Streptopelia senegalensis* and the Spotted Dove *S. chinensis* were also recorded.

Numerous invertebrates were sighted but only those in the pitfall traps were recorded. These were a beautiful golden centipede, two species of carab beetles (both in great numbers), wolf spiders, ants, earwigs, bush cockroaches, European bees, an orange and black wasp and a solitary ant (wingless female thynnid wasp).

The block is a surprisingly rich bushland considering its small size and the fact that it has been surrounded by housing for about forty years. This bushland is about 1km from Reserve 3694 which was reported on in *West. Aust. Nat.* 18: 131-138.

— MARGARET C. TURPIN, 175 Hensman Street, Kensington, 6151

Food Items of Red Wattlebirds — In Spring and early Summer Red Wattlebirds, *Anthochaera carunculata*, sit near a beehive and catch honeybees in my garden. The bee is either pounced on as it nears the hive entrance or hovers around the hive. Up to six bees were taken within one hour by the same bird (recognisable by feather damage). Sometimes the birds perched nearby, squashed the bees in their bill and swalloed them. No precautions were taken in dealing with the bee's sting. Sometimes the bees were taken away, perhaps to be fed to nestlings.

Red Wattlebirds also take the white, fleshy, sweet petals of a Guava, *Feijoa sellowiana*, which flowers for about six weeks in Spring.

— OTTO MUELLER, 7 Hamer Avenue, Wembley Downs 6019.

A spider capturing a centipede — In February 1981, I was staying in the staff quarters at the Department of Youth, Sport and Recreation Centre, Point Peron, 47 km south of Fremantle, Western Australia.

On the morning of 10 February in the "wash-basin" area, I observed a spider with a centipede in its web. At the time, the prey was feebly struggling and the spider had its chelicerae firmly sunk into the soft pleural membrane close to the 8th segment.

By the time I returned with camera and flash equipment, the spider was swathing the victim with more web. After taking pictures, I delayed collecting the specimens till later in the day. This was an unfortunate decision as the cleaners removed all traces. The photograph (Figure 1) shows the spider with its prey.

The spider has been identified by Dr Barbara Main as *Archaearanea* sp. (family Theridiidae) and the centipede was determined by Dr Lucien Koch as a member of the family Scolopendridae.

Centipedes are known to prey upon spiders in their burrows (Main 1957, *Australian Journal of Zoology*, 5:453) and McKeown (1952, *Australian Spiders: their lives and habits* p. 175, 177) cites examples of the Red-back Spider, *Latrodectus hasselti* capturing and eating centipedes. My observation adds another example of a spider to the list of those preying on a centipede.

I thank Drs Barbara Main and Lucien Koch for identifying the specimens from the photograph.

— R. PETER McMILLAN, W.A. Museum, Francis Street, Perth, W.A. 6000.

Nest Predation by Grey Butcherbird — In February 1991 in Wembley Downs I saw a Grey Butcherbird, *Cracticus torquatus*, and a Laughing Dove, *Streptopelia senegalensis*, tumbling from a Tuart tree. The birds disengaged near the ground and the butcherbird flew off, closely pursued by the dove. Another butcherbird was in the tree tearing at a dove fledgling wedged in a forked branch. Another dove sat nearby. Soon after, the butcherbird picked up the dead fledgling and flew off pursued by the second dove. An empty dove nest was later found in the Tuart.

— OTTO MUELLER, 7 Hamer Avenue, Wembley Downs 6019.

Department of Environmental Protection

Head Office:
8th Floor, Westralia Square
141 St Georges Terrace
Perth, Western Australia 6000
Tel (09) 222 7000 Fax (09) 322 1598

Waste Management Division:
Ground Floor, 32 St Georges Terrace
Perth, Western Australia 6000
Tel (09) 222 0422 Fax (09) 222 0455
or PO Box Y3030, East, St Georges Terrace
Perth, Western Australia 6832

Regional Offices:
Bunbury • Karratha • Kalgoorlie • Kwinana

Mr K Williams
Co-ordinator of Property and Finance
Uniting Church of Australia
GPO Box M952
PERTH WA 6843

Your Ref
Our Ref 67/91
Enquiries N Thorning

Dear Mr Williams

SYSTEM SIX UPDATE PROGRAMME - FLORA SURVEY INFORMATION

Thank you for providing permission for our botanical team to survey the bushland on your property. As arranged between Mr Lloyd Collins and Miss Natalie Thorning of this Department, the bushland on Mofflyn Estate was visited on 20 September 1995.

The botanical survey provides us with information on the natural plant communities found in the area, and their condition. This information is needed to assist the Department of Environmental Protection in its programme to update the conservation recommendations for System 6 and the coastal plain portion of System 1. The main objective of the programme is to ensure that the proposed conservation estate is representative of the ecological communities extant in the region.

As part of this programme the Department has advertised for the public to submit areas of bushland that they consider to be of regional significance. Our botanical team is surveying these submitted areas as well as those it considers may be important based on other factors such as their location and soil type etc. The botanical survey provides us with information on the natural plant communities found in the area, and their condition. Please note that the area is one of many sites that we have surveyed. The fact that we visited and surveyed the site does not indicate that it will necessarily be included in the updated System Six Recommendations.

The update programme has employed the botanical survey methodology used in Gibson et al. (1994), 'A Floristic Survey of the Southern Swan Coastal Plain', to provide the main information base upon which to review the adequacy of the existing System recommendations and to assess other bushland areas.

A general description of the vegetation and an assessment of its condition was completed during the visit. The information collected during the visit will be used to assess the relative conservation values of the bushland area. The final selections for inclusion in the updated System Six Recommendations will be the best possible examples of bushland containing plant community types that are either unrepresented or poorly represented in the current and proposed conservation system.

If you are interested in the information we have collected or any other additional information on the System Six Update Programme please don't hesitate to contact Miss Natalie Thorning (222 7051) or Mr Kevin McAlpine (222 7055).

Once again, thank you very much for your support for this programme.

Yours sincerely

Colin Sanders
DIRECTOR
POLICY AND STRATEGIC STUDIES

14 November 1995

ATTACHMENT I

Malcolm Trudgen
Consultant Botanist

Ms C. Taylor & Ms L. Somers

90 Arkwell Street
Willagee, 6156
28 October 1994

Dear Cathy and Linda,

Bushland on Etwell Street south of Kent Street

I visited the area of bushland on Etwell Street as you asked, and can make the following comments:

- the vegetation of the area has suffered from partial clearing at some stage in the past but still has a good overstorey of Banksia menziesii, Banksia attenuata, Jarrah (Eucalyptus marginata) and Sheoak (Allocasuarina fraseriana).

- while the understorey is largely gone a number of species remain, including species of Conostylis (three different species were observed), Lomandra (two species were observed), Alexgeorgia nitens, Lyginia barbata, Bossiaea eriocarpa, Gompholobium tomentosum, Loxocarya flexuosa, Pronaya fraseri, Burchardia umbellata, Tricoryne tenella, Acacia pulchella, Nemcia reticulata, Thysanotus arenarius?, Acacia huegelii, a Jacksonia species, a Leucopogon species, Hardenbergia comptoniana (Native Wisteria), Daviesia nudiflora and Daviesia triflora.

- the Banksia menziesii present includes a number of trees (not all were flowering) of an unusual and possibly rare colour form. These had either pale yellow flowers or flowers pale yellow except for pink styles. The normal colour form is reddish.

- sites such as this often have others species (especially orchids) which are not able to be found during summer as they aestivate during this time. The

value of the site for these would need to be assessed during spring.

- the site has value for landscape as a densely treed area in an otherwise mostly urban area and also some historical value because the trees represent a remainder of the original vegetation.

- the area would have significance at a local level for some wildlife species, including birds (for nesting and feeding), small reptiles (lizards, legless lizards) and insects (particularly those adapted to living on the remaining tree species).

- while the conservation value for flora is quite limited, species could be re-introduced using seed from the few remaining areas of bush nearby, this would help to conserve some of the local flora.

Yours faithfully

Malcolm Trudgen

PS Some of the large Jarrah would have particular local value as historically important remnants of the original tree cover of the area.

MT.

ATTACHMENT III

School of Biology

curtin
University of Technology
Perth Western Australia

GPO Box U 1987
Perth 6001
Western Australia
Fax (09) 351 2495
Telex AA92983

Telephone
(09) 351 7368

BL:jk

14th June, 1989

The City Clerk
Perth City Council
St Georges Terrace
PERTH WA 6000

Dear Sir,

I wish to draw your attention to uncleared land owned by PCC bounded by Kent Street, Baron-Hay Court, Kensington Primary School and Harold Rossiter Park in Kensington. I have been looking for a suitable remnant of native vegetation for studies by my students at nearby Curtin University, and was most impressed with its potential on my inspection visit today. It contains excellent specimens of a range of trees that once used to be common in Perth City east of the Swan River, including the Prickly Bark Eucalypt (Eucalyptus todtiana). There is remarkably little invasion by veld grass and other weeds, apart from Gladiolus, so that the original shrubs, such as Hoveas, Daviesias, Star-of-Bethlehem and Leucopogons continue to thrive. I even noticed the one-sided Bottlebrush (Calothamnus quadrifidus) present in flower.

Because of the wide range of flowering plants, especially three species of Banksia, the Reserve attracts many native birds, and honeyeaters were especially active during my visit. This also makes the site suitable for studies by zoologists at Curtin University. I understand that a vegetation map and list of over 150 plant species for the Reserve is available from the Department of Conservation and Land Management. This increases the value of the site for our studies of the biology of native plants.

I would welcome permission to visit the Reserve with students on a regular basis, noting that we would need to take small specimens for identification purposes once a year.

I do not think you should underestimate this site as a educational and recreational resource to institutions in the vicinity, such as Kent Street High School, Kensington Primary School, Bentley Technical College, the WA Herbarium (located in the Department of Agriculture), Department of Conservation and Land Management, and Curtin University, as well as local residents. From my searching, this is one of the few good examples of the original Banksia woodland left in the 'older' part of Perth and deserves some formal protection, such as nature conservation zoning.

Your sincerely,

per.

Dr Byron Lamont
Senior Lecturer
School of Biology

cc. Prof. B. Collins, Head, School of Biology

Copy for Enid Griffin wife
(enclosed note with her
name on it!)

Ms C. Taylor,
Convenor of Environment Subcommittee,
Victoria Park Residents & Ratepayers Association,
42 McMillan St,
Victoria Park, W.A. 6100.

Dear Cathy,

I am writing on behalf of members of the Local Plants Group to support your association's bid to preserve the bushland occurring near Kent St and adjacent to Baron-Hay Ct, East Victoria Park. This area is close to the border of the Karrakatta Dune System and Bassendean Dune System and consists primarily of Banksia woodland, the two most common trees being Banksia attenuata and B. menziesii. The other main tree species are Eucalyptus todtiana, E. marginata, Allocasuarina fraseri and Banksia ilicifolia.

Banksia woodlands are characteristic of areas on the Swan Coastal Plain with deep sands of very low nutrient levels. Although rich in plant and animal species, they do not generally contain many endangered species. This is true of the Kent St site, where over 200 species of native plants have been recorded by Ray Cranfield but none is sufficiently rare to be on the present list of species gazetted as rare.

The Kent St bushland is well worth preserving because of the large number of species and, more importantly perhaps, because the plant community present, as defined by the tree species listed above, is already rare and becoming rarer. There are some statistics available for Banksia woodlands, including of course ones quite different from the Banksia woodland at Kent St. In one of the papers from the Banksia Woodlands Symposium (published in 1989, J. Roy. Soc. W.A. vol. 71) Hopper & Burbidge estimated that by 1986, at least 85.5% of the Banksia woodlands in the region from the Swan River south to Busselton had been cleared and that a mere 1.6% of the Banksia woodlands was protected by being on reserves. Since 1986, the housing boom has resulted in a further loss of Banksia woodlands in the southern suburbs of Perth.

With best wishes,
Yours sincerely,

Barbara Rye,
Co-ordinator, Local Plants Group,
92 Dyson St, Kensington 6151.
27th November 1989.

ATTACHMENT IV

RJ Cranfield (unpublished)

final version should be available by now W.A. Herbarium (part of CALM)

Plants of Jarrah Road Reserve in alphabetical order

163 Acacia pulchella R. Br.
163 Acacia sphacelata Benth.
163 Acacia stenoptera Benth.
163 Acacia truncata (N. L. Burman)Hort. ex Hoffmanns.
163 Acacia willdenowia H. L. Wendl.
 90 Adenanthos cygnorum Diels
 31*Aira caryophyllea L.
 39 Alexgeorgea arenicola Carlquist
293*Anagallis arvensis L.
 55 Anigozanthos humilis Lindl.
345*Arctotheca calendula (L.)Levyns
 54 Arnocrinum preissii Lehm.
288 Astroloma pallidum R. Br.
 31*Avena barbata Link.
 90 Banksia attenuata R. Br.
 90 Banksia ilicifolia R. Br.
 90 Banksia menziesii R. Br.
 60*Babiana stricta (Aiton)Ker-Gawl.
165 Bossiaea eriocarpa Benth.
345 Brachycome bellidioides Steetz
138*Brassica tournefortii Gouan
 31*Briza maxima L.
 31*Briza minor L.
 31*Bromus diandrus Roth
 31*Bromus rubens L.
 54 Burchardia umbellata R. Br.
 66 Caladenia discoidea Lindl.
 66 Caladenia flava R. Br.
 66 Caladenia huegelii H. Reichenb.
 66 Caladenai patersonii R. Br.
111 Calandrinia corrigioloides F. Muell. ex Benth.
111 Calandrinia granulifera Benth.
 54 Calectasia cyanea R. Br.
273 Calothamnus sanguineus Labill.
273 Calytrix angulata Lindl.
273 Calytrix flavescens A. Cunn.
131 Cassytha racemosa Nees
 70 Allocasuarina fraseriana (Miq.)L. A. S. Johnson
 70 Allocasuarina humilis (Otto & Dietr.)L. A. S. Johnson
334*Centranthus macrosiphon Boiss.
273+Chamelaucium uncinatum Schauer
 54 Chamaescilla corymbosa (R. Br.)F. Muell. ex Benth.
183 Comesperma calymega Labill.
288 Conostephium pendulum Benth.
288 Conostephium preissii Sonder
 55 Conostylis aculeata R. Br. ssp. aculeata
 55 Conostylis aurea Lindl.
 55 Conostylis junceum Endl.
 55 Conostylis setigera R. Br.
345*Conyza bonariensis (L.)Cronquist
345*Conyza sp.
149 Crassula glomerata Bergius
 31*Cynodon dactylon (L.)Pers.
341 Dampiera linearis R. Br.
 54 Dasypogon bromeliifolius R. Br.
165 Daviesia divaricata Benth.
165 Daviesia juncea Sm.
165 Daviesia nudiflora Meisn.
 54 Dianella revoluta R. Br.

Plants of Jarrah Road Reserve in alphabetical order

31 Digitaria sanguinalis (L.)Scop.
207 Dodonaea hackettiana W.V.Fitzg.
143 Drosera huegelii Endl.
143 Drosera macrantha Endl.
143 Drosera menziesii R.Br.
143 Drosera stolonifera Endl.
31*Ehrharta calycina Sm.
31*Ehrharta longiflora Sm.
31*Eragrostis curvula (Schrad.)Nees
273 Eremaea pauciflora (Endl.)Druce
175 Eriostemon spicatus A.Rich.
167*Erodium botrys (Cav.)Bertol.
273 Eucalytpus marginata Donn ex Sm.
273 Eucalyptus todtiana F.Muell.
185 Euphorbia peplus L.
185*Euphorbia terracina L.
60+Freesia crispa N.L.Burman
136*Fumaria capreolata L.
60*Gladiolus caryophyllaeus (N.L.Burman)Poir.
165 Gompholobium tomentosum Labill.
55 Haemodorum spicatum R.Br.
165 Hardenbergia comptoniana (Andr.)Benth.
345*Hedypnois rhagodioloides (L.)Schmidt
345*Helianthus sp.
138*Heliophila pusilla L.f.
345 Helipterum cotula (Benth.)DC.
313 Hemiandra pungens R.Br.
226 Hibbertia huegelii (Endl.)F.Muell.
226 Hibbertia hypericoides (DC.)Benth.
226 Hibbertia racemosa (Endl.)Gilg
31*Hordeum leporinum Link
165 Hovea trisperma Benth.
243 Hybanthus calycinus (DC. ex Ging.)F.Muell.
31*Hyparrhrnia hirta (L.)Stapf
345*Hypochaeris glabra L.
273 Hypocalymma robustum Endl.
165 Jacksonia furcellata (Bonpl.)DC.
165 Jacksonia lehmannii Meisn.
165 Jacksonia sternbergia Huegel
54 Johnsonia pubescens Lindl.
165 Isotropis cuneifolia (Sm.)Benth.
165 Kennedia prostrata R.Br.
31*Lagurus ovatus L.
345 Lagenifera huegelii Benth.
54 Laxmannia squarrosa Lindl.
32 Lepidosperma angustatum R.Br.
39 Lepidobolus preissianus Nees
92 Leptomeria cunninghamii Miq.
273 Leptospermum spinescens Endl.
288 Leucopogon conostephioides DC.
288 Leucopogon parviflorus (Andr.)Lindl.
343 Levenhookia stipitata (Sonder)F.Muell.
340 Lobelia tenuior R.Br.
31*Lolium perenne L.
54 Lomandra endlicheri (F.Muell.)Ewart
54 Lomandra preissii (Endl.)Ewart
54 Lomandra suaveolens (Endl.)Ewart
39 Loxocarya flexuosa (R.Br.)Benth.
165*Lupinus sp. 1
165*Lupinus sp. 2

Grevillea leucoptera

Plants of Jarrah Road Reserve in alphabetical order

39 Lyginia barbata R. Br.
288 Lysinema ciliatum R. Br.
110 Macarthuria australis Huegel ex Endl.
16AMacrozamia riedlei (Fisch. ex Gaud.)C. A. Gardner
165*Medicago polymorpha L. ssp. polymorpha
273 Melaleuca scabra R. Br.
32 Mesomelaena pseudostygia (Kuekenth.)K. L. Wilson
107*Mirabilis jalapa L.
185 Monotaxis grandiflora Endl.
31 Neurachne alopecuroidea R. Br.
97 Nuytsia floribunda (Labill.)R. Br. ex Fenzl
345 Olearia paucidentata (Steetz)Benth.
320 Orobanche australiana F. Muell.
345*Osteospermum clandestinum (Less.)T. Norlindh
168*Oxalis pes-caprae L.
165 Oxylobium capitatum Benth.
60 Patersonia occidentalis R. Br.
167*Pelargonium capitatum (L.)L'Herit.
31*Pentaschistis airoides (Nees)Stapf
90 Persoonia sulcata Meisn.
113*Petrorhagia prolifera (L.)Ball & Heywood
90 Petrophile linearis R. Br.
55 Phlebocarya ciliata R. Br.
263 Pimelea suaveolens (Endl.)Meisn.
31*Poa annua L.
345 Podotheca angustifolia Less.
345 Podotheca chrysantha (Steetz)Benth.
185 Poranthera microphylla Brongn.
152 Pronaya fraseri (Hooker)E. M. Bennett
66 Pterostylis vittata Lindl.
138*Raphanus raphanistrum L.
60*Romulea rosea (L.)Eckl.
341 Scaevola canescens Benth.
341 Scaevola paludosa R. Br.
32 Schoenus curvifolius (R. Br.)Benth.
32 Schoenus sp.
273 Scholtzia involucrata (Endl.)Druce
32 Scirpus marginatus Thunb.
345*Senecio vulgaris L.
113*Silene gallica L.
345 Siloxerus humifusus Labill.
315*Solanum nigrum L.
152 Sollya heterophylla Lindl.
345*Sonchus oleraceus L.
54 Sowerbaea laxiflora Lindl.
60*Sparaxis grandiflora (Delaroche)Ker-Gawl.
202 Stackhousia brunonis Benth.
313*Stachys arvensis (L.)L.
185 Stachystemon vermicularis Planch.
288 Styphelia tenuiflora Lindl.
31*Stipa semibarbata R. Br.
90 Stirlingia latifolia (R. Br.)Steud.
343 Stylidium brunonianum Benth.
343 Stylidium calcaratum R. Br.
343 Stylidium carnosum Benth.
343 Stylidium piliferum R. Br.
343 Stylidium repens R. Br.
343 Stylidium schoenoides DC.
90 Synaphea spinulosa (N. L. Burman)Merr.
66 Thelymitra nuda R. Br.

Plants of Jarrah Road Reserve in alphabetical order

54 Thysanotus arenarius N.H.Brittan
54 Thysanotus patersonii R.Br.
54 Thysanotus tenellus Endl.
54 Thysanotus triandrus (Labill.)R.Br.
281 Trachymene pilosa Sm.
173*Tribulus terrestris L.
54 Tricoryne elatior R.Br.
165*Trifolium angustifolium L.
165*Trifolium arvense L.
165*Trifolium campestre Schreber
165*Trifolium tomentosum L.
345*Ursinia anthemoides (L.)Poir.
273 Verticordia densiflora Lindl.
31*Vulpia bromoides (L.)S.F.Gray
339*Wahlenbergia capensis (L.)A.DC.
339 Wahlenbergia gracilienta Lothian
345 Waitzia suaveolens (Benth.)Druce
60*Watsonia meriana (L.)Miller
60*Watsonia pyramidata (Andr.)Klatt
54 Xanthorrhoea sp.
281 Xanthosia huegelii (Benth.)Steud.

165*Lupinus sp.

MOFFLYN ESTATE

LANDSCAPE
&
ENVIRONMENTAL ASSESSMENT

PETER CALA & ASSOCIATES
Landscape Architects & Urban Designers
51 Forrest Street, Subiaco WA 6008

BOWMAN BISHAW GORHAM
Environmental Consultants
1298 Hay Street, West Perth WA 6005

April, 1995

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MOFFLYN ESTATE
LANDSCAPE & ENVIRONMENTAL ASSESSMENT.

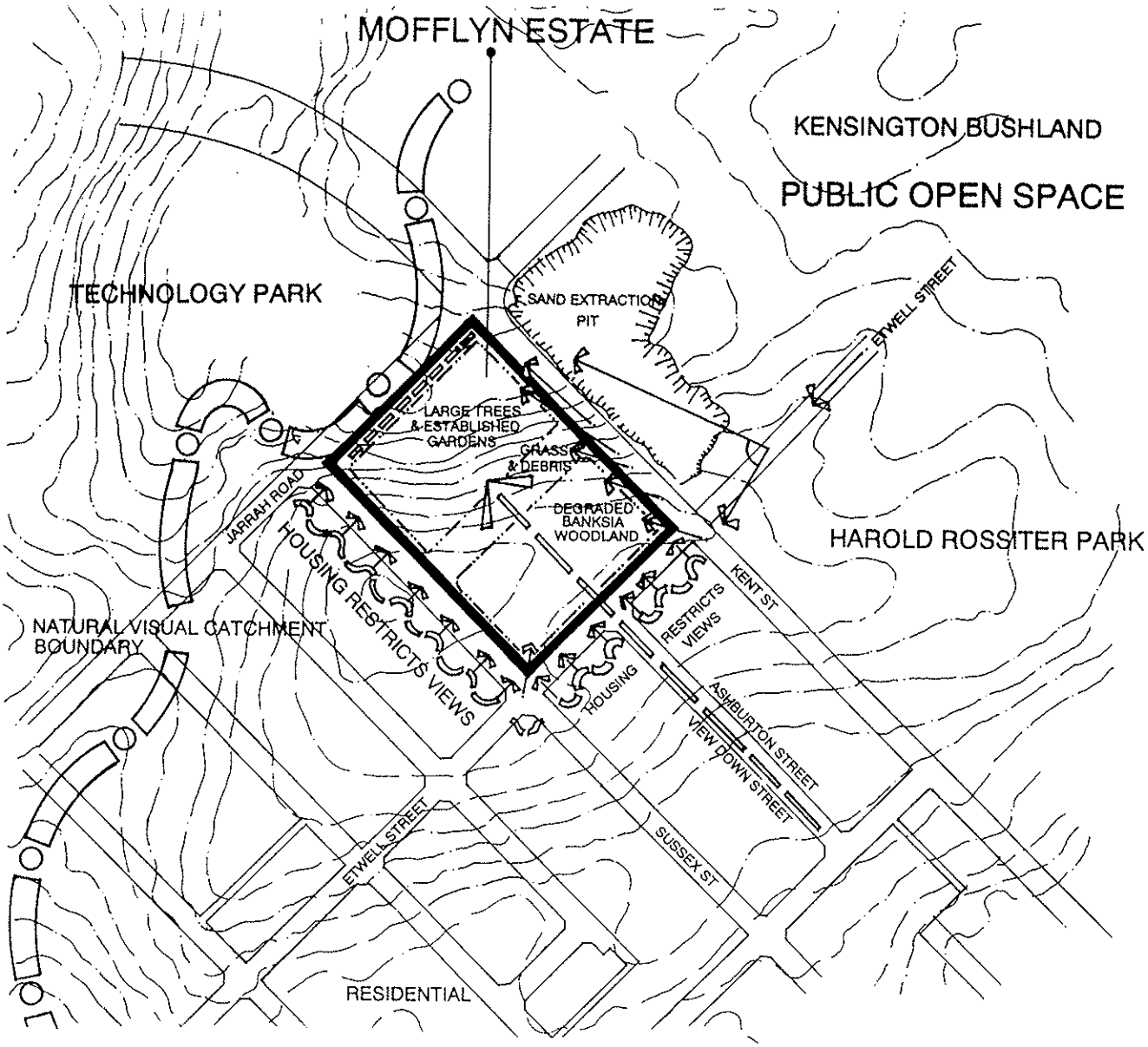
INTRODUCTION

The following landscape assessment of the Mofflyn Estate in East Victoria Park was prepared for the Estate's trustees by Peter Cala & Associates. Relevant botanic and environmental advice was provided by Bowman Bishaw Gorham.

The primary objective of this assessment is to evaluate the landscape amenity and environmental quality, health and long term viability of the remnant Banksia woodland remaining on the undeveloped area of the site.

Mofflyn Estate is located just over 5 Km from Perth City centre, approximately 2.7 Km from the Swan River in East Victoria Park. This 5.028 Ha site is bounded by Kent, Sussex & Etwell Streets and Jarrah Road. Two sides are bordered by housing, the Technology Park lies to the South West and extensive parkland and open space to the North and West along Kent Street.

The site is a low, dunal sand ridge & shallow valley with the land rising steadily from the flat, undeveloped N/Eastern half of the site, 9 metres to a ridge line adjacent Jarrah Road. This ridge has numerous residential and institutional buildings, extensive gardens and trees including Jacarandas, Schinus molle, Melia azedarach, Liquidamber sp., Eucalyptus maculata, Erythrina sp. and others. Most noteworthy are the large Eucalyptus maculata growing near the centre of the site.



MOFFLYN ESTATE LANDSCAPE CONTEXT

VEGETATION SURVEY OF WOODLAND UNDEVELOPED AREA

In contrast the low lying N/Eastern half of the site has a distinctly different landscape and vegetation characteristics and it is this area of bushland that is the detail focus of this assessment.

Vegetation Description

The site occurs on Bassendean Sands. The natural vegetation associated with this landform and soils is Eucalyptus marginata (Jarrah) – Allocasuarina fraseriana (Sheoak) – Banksia sp (B grandis, B. menziesii, B, attenuata) Woodland on higher dunes, and Banksia – Eucalyptus todtiana (Pricklybark) Low Woodland on shallower sands. The vegetation complex occurs in the Perth transition zone of jarrah and pricklybark (Heddle et al 1980).

Under natural conditions, the understorey is dense and diverse. In an assessment of the conservation value of banksia woodland on the Swan Coastal Plain, Trudgen (1990) listed 616 species as being recorded from Bassendean Sands. Of these 616 species, 337 were recorded from Bassendean Central – South Complex. Typical understorey species include: Banksia litoralis, Banksia ilicifolia, Kunzea vestita, Hypocalymma angustifolium, Verticordia spp, Adenanthos obovatus, Adenanthos
cygnorum, Daviesia nudiflora, Hibbertia aurea, Hibbertia huegelii, Hibbertia hypericoides, Calytrix flvescens, Clytrix fraserii, melaleuca scabra, Regalia inops, Conostephium pendulum, Leucopogon conostephiodes, Dampiera linearis, Stylidium sp., Eriostemon spicatus, Oxylobium capitatum (Nemcia), Hovea trisperma.

The area has been logged of all but a few Jarrah trees, most of which have regenerated from copse. Three large jarrah trees (approximately 20m tall) occur in the NE corner of the site. These trees appear to have been extensively sawn when younger, with some branches currently affected by termites. The site contains mostly similar age mature Banksia attenuata – B. menziesii trees of 6–8 metres in height. Several Banksia grandis, Banksia ilicifolia (Holly-leaf Banksia) and Allocasuarina fraseriana trees were also noted. The banksia was profusely flowering at the time of visit, however the majority of infructescences and whole plants were sterile. No natural regeneration of banksia or other understorey species was obvious.

The presence of a native understorey is virtually nonexistent, with ground cover consisting of annual veldt grass (Erharta sp) at approximately 70% – 80% cover. Seven native understorey species were recorded on the site, occurring at a density of approximately 1 per 25m2 (approximately one plant per 625m area). Understorey species recorded were Conostylis juncea, Acacia pulchella, Thysonotus patersonii, Gompholobium tomentosum, Burchardia umbellata. Caladenia flava and Isotropis cuneifolia were noted on site by CALM (CALM correspondence – 5 October 1990). Including overstorey species, this represents less than 4% of the species recorded for this vegetation complex.

Quality Banksia woodland with healthy, diverse understorey in nearby Kensington Bushland.

Banksia with degraded understorey dominated by an invading understorey of exotic grasses as found throughout the Mofflyn Estate.

Evidence of Disturbance

In addition to the almost complete absence of understorey species and the high level of weed invasion, the site is crossed by several fire breaks which do not appear to be excessively used by pedestrians (For example: rainfall 10 days previously had erased tracks, thereby providing a good indication of frequency of pedestrian use of the area – only one set of footprints were observed on the firebreaks and throughout the site).

Based on the ecology of Banksia species and the noticeable lack of native regeneration, it is estimated that the site has not experienced a hot fire for at least 6–8 years, (although correspondence from CALM states that the area has been subject to frequent fires). Absence of fire for a further 10–15 years would result in the Banksia trees becoming senescent. Although Banksia species are notable for low seed set, the extremely high levels of sterility observed appear to indicate a lack of cross–pollination which may be due to the absence of mammal pollinators in the subject land.

Rubbish disposal is obvious, although minor, with the some verges being used for disposal of lawn clippings. The road reserve also contained several exotic plant "garden escapes" and planted non–endemic Eucalyptus species.

Flora

Vegetation of the Bassendean Central South Complex in good condition has been noted as being of potential importance for Rare and Priority flora (Trudgen, 1990). However most of this flora is associated with wetlands or low–lying depressions, neither of which occur on the site. Any other species are highly likely to be absent due to the extensive and dense weed invasion over the site.

Fauna Observations

The lack of protective ground cover and food resources would preclude most fauna. However, given the high density of flowering Banksias and the presence of the few old jarrah trees on the site, the trees may have value as nesting habitat and food resources for bird species, particularly nectar–feeders. The limited bird observations made during the site visit (one hour devoted to observations from three locations) revealed only three bird species utilising the study area. Most of the birds remained in the periphery of the site where the majority of Eucalyptus species (including non–endemic planted species) occurred within the road reserve or adjacent to the outer firebreak. The Senegal Dove was observed in highest numbers (7 individuals) which mainly foraged in open ground. The Western Honey Eater (six individuals) was observed flying throughout the site and roosting in Banksia trees, although none were observed feeding. The Magpie (2 individuals) remained close to the tall Eucalyptus species near the road reserve. Although higher species diversity and feeding would occur at dawn and dusk when maximum bird activity would occur, the bird–life observed was noticeably poor in comparison to other areas of Banksia woodland in better condition, observed at similar times of the day.

Vegetation Condition

The vegetation was assessed on a standard scale applied to vegetation of the Swan Coastal Plain (see Table 1). Based on this assessment, the site condition may be classified as Very Poor.

Table 1

Condition rating scale used to assess vegetation
(Trudgen, 1990)

Condition Code	Condition
E	Excellent. Pristine or almost so, with no obvious signs of damage caused by European humans.
VG	Very Good. Some slight signs of damage caused by European humans, e.g. damage to tree trunks caused by repeated frequent fires. Some, relatively non-aggressive weeds (e.g. Ursinia anthemoides, Briza minor).
G	Good. Some signs of damage caused by European humans, fire damage, very light grazing, indications of old logging. Weed invasion by more than non-aggressive species but levels low.
P	Poor. Still retaining basic structure of vegetation and or ability to regenerate to it after obvious impacts of European humans such as grazing or partial clearing or very frequent fires. Weed levels not high but aggressive species present.
VP	Very Poor. Severely impacted by clearing, fire or grazing or combinations of these. Scope for some regeneration but not to good condition without intensive management. Weed invasion moderate to high.
C	Cleared. Completely degraded, bare paddocks with weeds or introduced pasture, or parkland cleared.

VISUAL FEATURES

Mofflyn Estate has only a localised sphere of visual influence. Housing in Sussex and Etwell Streets confine S/East and S/West views of the site to a few immediate neighbours and occasional local traffic. Landscape, buildings tree and road berms block any views of the undeveloped area of the site from Jarrah Road.

Views along Etwell and Sussex Streets are confined by front gardens and street trees to the extent that apart from a few large trees growing along the verge the woodland area is not visually significant until near to it.

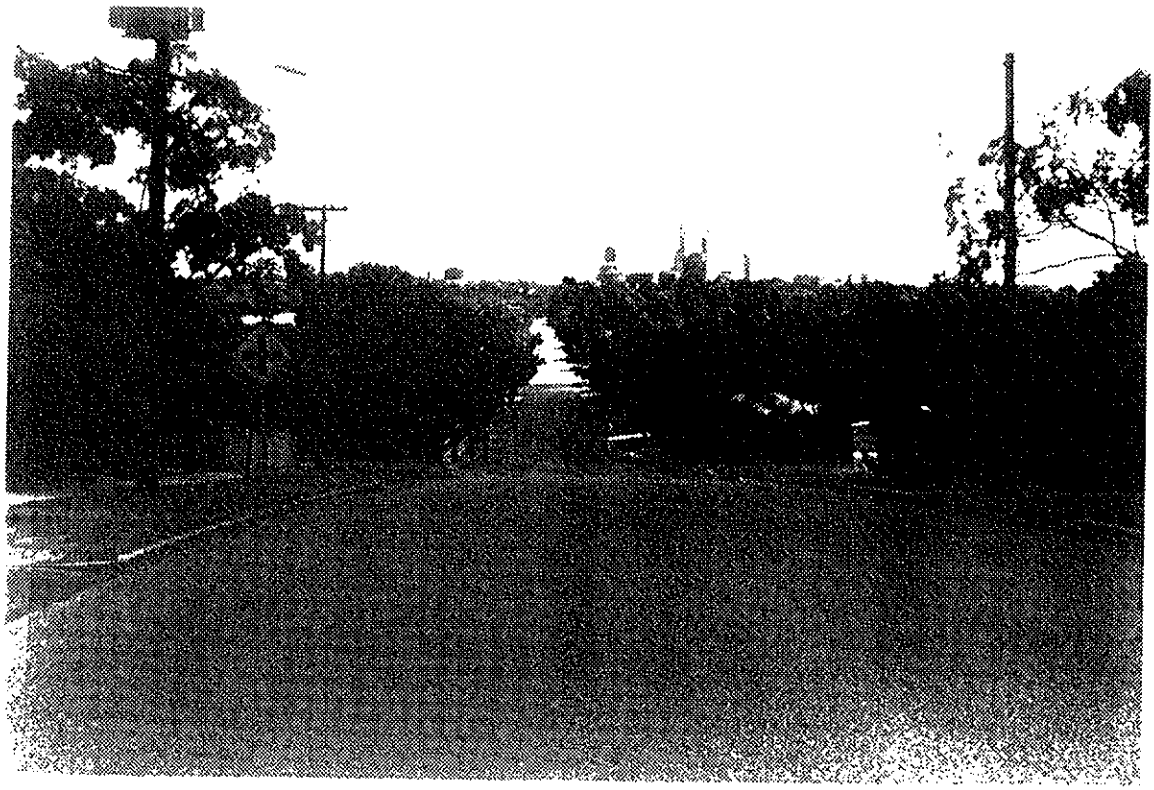
Etwell Street has a more consistent woodland frontage dominated by Banksias and several established Eucalyptus trees. The street frontage is visually degraded by overhead lines, rough grass and debris. Sussex Street lacks a consistent woodland frontage, disrupted by open areas and rough grass and debris.

Mofflyn's tree covered hillside does provide an attractive landscape focus along the length of Ashburton Street, the only street aligned directly into the property.

The site is most widely viewed from Harold Rossiter Park to the North and by Kent Street traffic. Street trees and garden frontage form a confined view corridor down Kent Street restricting distant views of the site. Nearer the Etwell Street intersection there are more immediate views, dominated by a dead Eucalyptus tree, rough grass, Casuarina regrowth, a short roadside fringe of Banksia and an established line of Eucalyptus trees on higher ground near Jarrah Road. There are clear, open views of the site from the North Western portion of Etwell Street, adjacent Harold Rossiter Park.

Throughout the undeveloped area of the site the understorey is dominated by unattractive rough exotic grasses, weeds, rubbish and debris. There is an absence of the diverse flowering heath, woodland shrub and ground cover species that are an attractive feature of more pristine woodland. Although there is adequate density of mature Banksia, Eucalyptus and Casuarina to provide an initial impression of Banksia woodland appearance this fragments on closer inspection.

There are occasional attractive multi-stemmed regenerated Jarrah trees and interesting gnarled aging Jarrah.



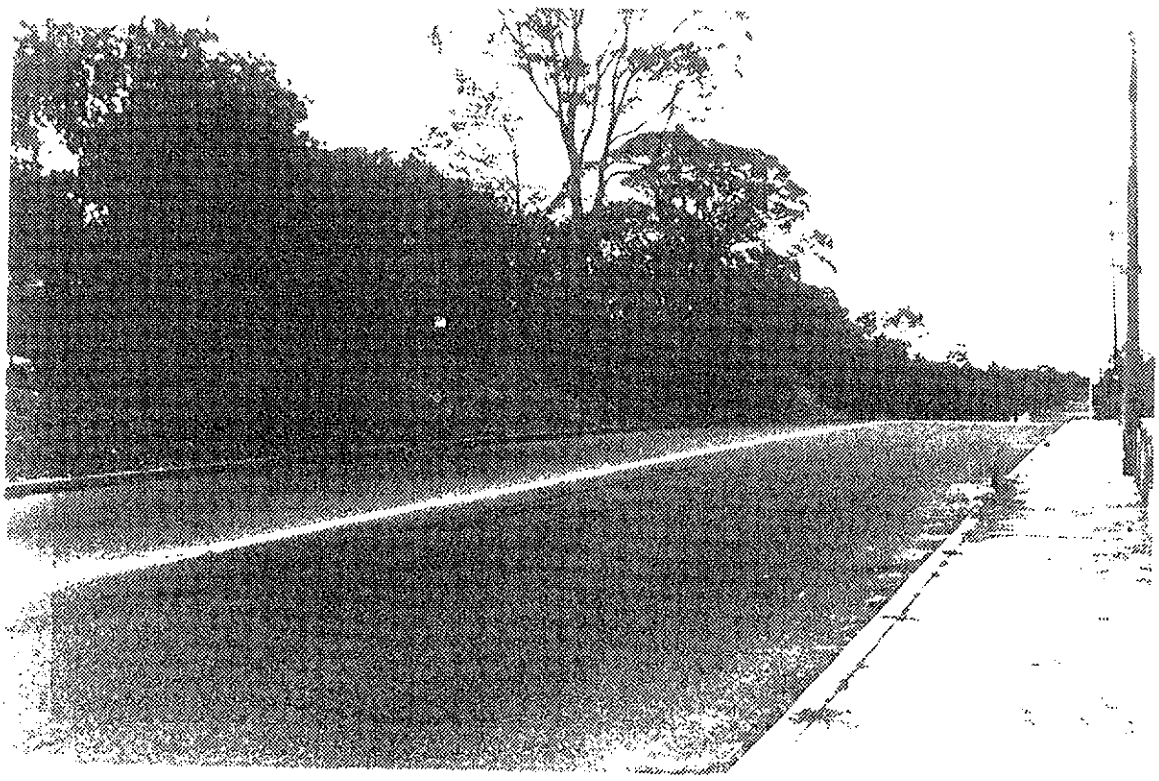
View down Etwell Street from the ridgeline, showing tops of the tall Eucalyptus on the Sussex St corner.

Approaching Sussex St corner on Etwell St, shows mature Eucalyptus on corner and Banksia tree on road verge.

View along Etwell St across Kent St, showing woodland street frontage and effective residential garden frontages.

View of Etwell / Kent St corner from entrance to Harold Rossiter Park.

Corner of Kent St & Jarrah Road showing transition between adjoining visual catchments and attractive line of Eucalypts.



Jarrah Road views of the site restricted by roadside berm, trees and buildings

REGIONAL VALUES

1. Landscape Values

The Mofflyn site is one of thousands of similar dunal basins and ridges common throughout the Bassendean sands landscape. It does not hold any strategic place in the landscape such as nearby Mt Eliza, the Narrows or Heirrison Island.

The most notable natural feature of the undeveloped area of the site is the vegetation cover.

The landscape qualities of the site's vegetation as may be observed from existing roads can be classified most simply as "Banksia woodland". Whilst it is acknowledged that the floristic and structural qualities of Banksia woodland may vary from complex to complex, it is nevertheless an important category in terms of general landscape quality from a lay-persons perspective.

Of the twenty-six vegetation complexes mapped and identified by Heddle et al. (1980) on the Swan Coastal Plain, 20 vegetation complexes contain Banksia species as a dominant component of the structural formation and hence it is recognised as a significant landscape quality contributor.

In a regional assessment of the extent to which Banksia woodland is contained within conservation reserves, at least thirty-five Reserves were found to contain this general Banksia woodland vegetation type (Bowman Bishaw Gorham, 1992). The area of these reserves is approximately 66,000 Ha. Twenty-six of these reserves are System 6 areas (16 metropolitan and 10 country), with the remainder being reserves vested in the Department of Conservation and Land Management for the purposes of conservation or forestry. One Reserve is not vested. This does not include Banksia Woodland on private owned land.

In relation to the size and quality of the Banksia woodland which exist in these reserves, the Banksia woodland on the Mofflyn site has little regional conservation value.

2. Vegetation and Flora Value

The classification of the vegetation on the Swan Coastal Plain is primarily based on overstorey structure and the composition of the understorey species. Although Bassendean Central-South vegetation complex is poorly represented in secure conservation reserves, and remnant bushland is becoming increasingly scarce in the Metropolitan area, the site has no value for representation of this vegetation complex due to the absence of understorey species and its very poor condition. Similarly, the value of the site for conservation of Priority Flora species or species that are at or near the end of their range is negligible.

3. Fauna

Due to the very poor condition of the vegetation, the site has little regional significance for fauna. The bird species which are likely to utilise the site are common in the Metropolitan area and do not confine themselves to the species which occur on the site.

From the above discussion it can be seen that the Mofflyn site does not hold any significant regional landscape, flora or fauna values. Landscape and conservation value, if any are essentially local.

LOCAL LANDSCAPE VALUES

The very poor conservation values of the site in terms of containing representative vegetation, and flora and fauna habitat have been discussed. However the value of remnant vegetation may be elevated in a local context if it provides an important link in a corridor for fauna (in this case, birds), and/or is valued by the community in terms of landform, recreation, education and landscape. The values of the Mofflyn site in relation to the presence of other areas of bushland in the vicinity are discussed below:

Landform. Bassendean landforms range from dunes, plains and wetland depressions. Due to its small size, the study site does not contain unusual or diverse landforms which warrant conservation.

Recreation: The study area occurs adjacent to a major parkland recreation reserve. Other areas of bushland in the area (ie Baron-Hay Court Reserve, Kensington Bushland) provide a much greater 'bushland experience' than the study area with respect to bushwalking. The low level of pedestrian activity observed on the site indicates that it is poorly or irregularly used.

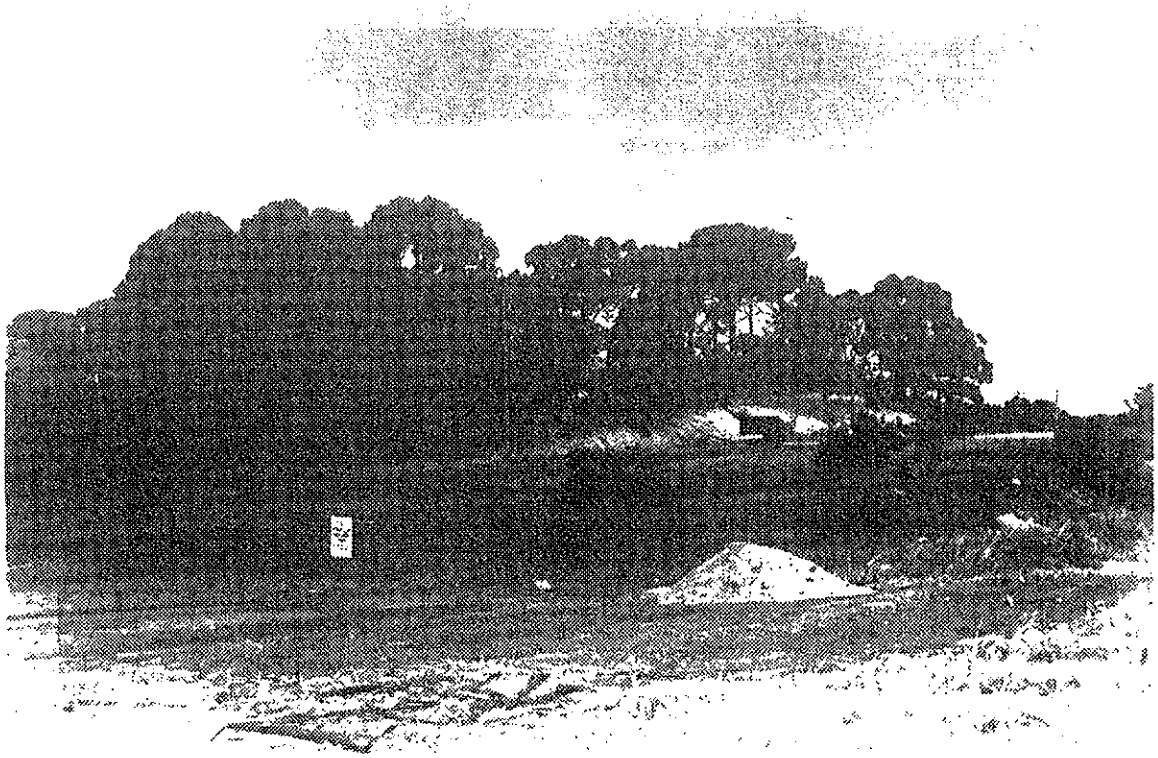
Education: Other than providing an opportunity for rehabilitation studies or a research site for specialised studies on the ecology of degraded bushland (which would rely on the continued deterioration of vegetation), the site has extremely limited botanical and zoological opportunities for education purposes. The recent use of the site by UWA student Marion Hercock was for comparison with other areas of native bushland, in terms of designing a simple method for lay people to assess the biodiversity of remnant bushland using the different heights and shapes of vegetation. The results of the study and the relative rating of the Mofflyn site in comparison to other sites has not been assessed by this author.

Corridor for bird movements. The lack of vegetation understorey and invertebrate diversity provides a limited food resource for birdlife. Nevertheless, the Banksia tree canopy and the few larger Eucalyptus species have habitat value. The 'importance' of the site as a corridor for bird movement however is questionable due to the larger and better quality bushland in the locality. Without active fire management, the Banksia trees are only likely to survive for a further 10-15 years before senescence and mortality.

Landscape Amenity: Due to the site's confined visual catchment its landscape amenity value is primarily confined to a few members of the community living directly opposite on Sussex and Etwell Streets; in total about 15 properties. The residents of Ashburton Street may appreciate the treed vista at the end of their street. Passing local residents using Sussex & Etwell Sts may also accept the woodland as part of their overall urban environment.

A larger number of people view the site as they travel along Kent St. However, from the North East view corridors are confined by street trees and residential gardens. The degraded state of the woodland on the Etwell St corner and the short length of woodland frontage further reduce the value of the undeveloped area of the site in the overall streetscape.

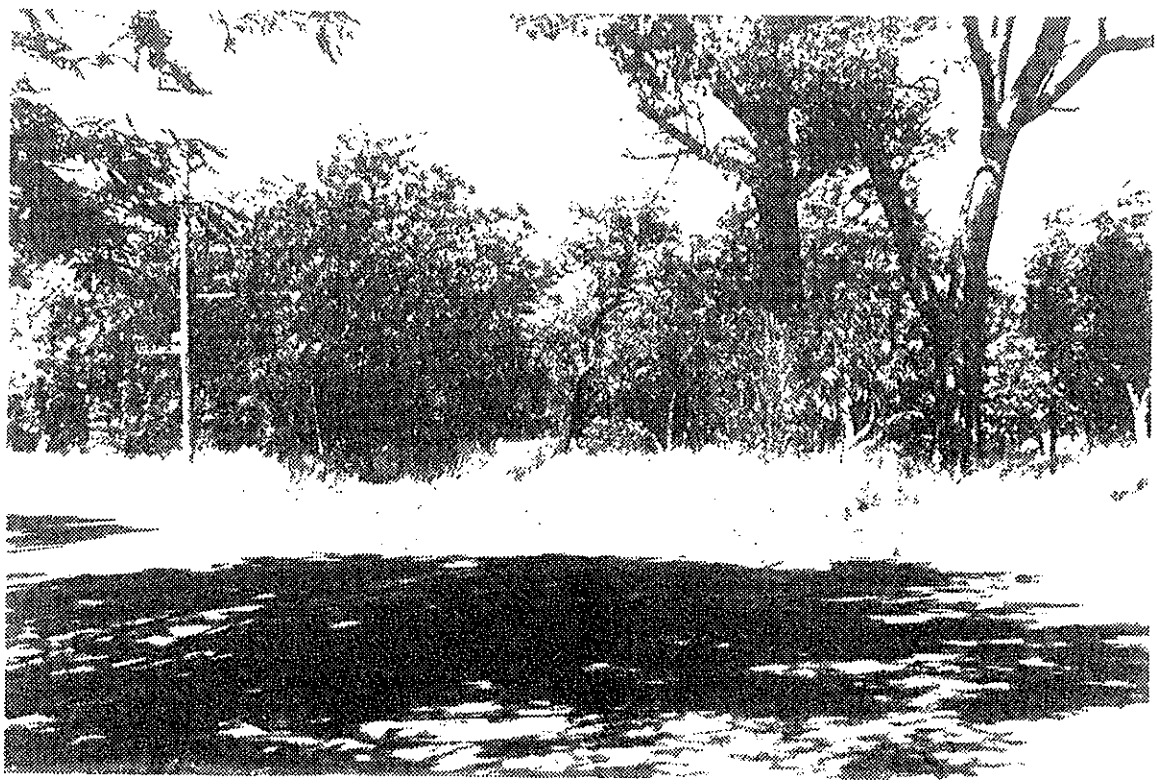
Ample open space parkland provided for in adjacent Harold Rossiter Park.



View of the developed upper half of the site, showing large mature Eucalyptus maculata on the skyline

Typical views from Sussex Street into the site

The impact of removing verge trees and replacement of the Banksia canopy with buildings, street trees and urban garden frontages will be limited to the immediate properties adjoining the Estate. The proposed landscape changes will simply reinforce the existing attractive urban landscape.



Views from residential properties on Etwell Street into the site.

View down Sussex St showing limited views of woodland area and extent to which existing street trees and residential gardens provide an attractive streetscape.

View down Sussex St towards the site shows limited views of the subject Banksia woodland.

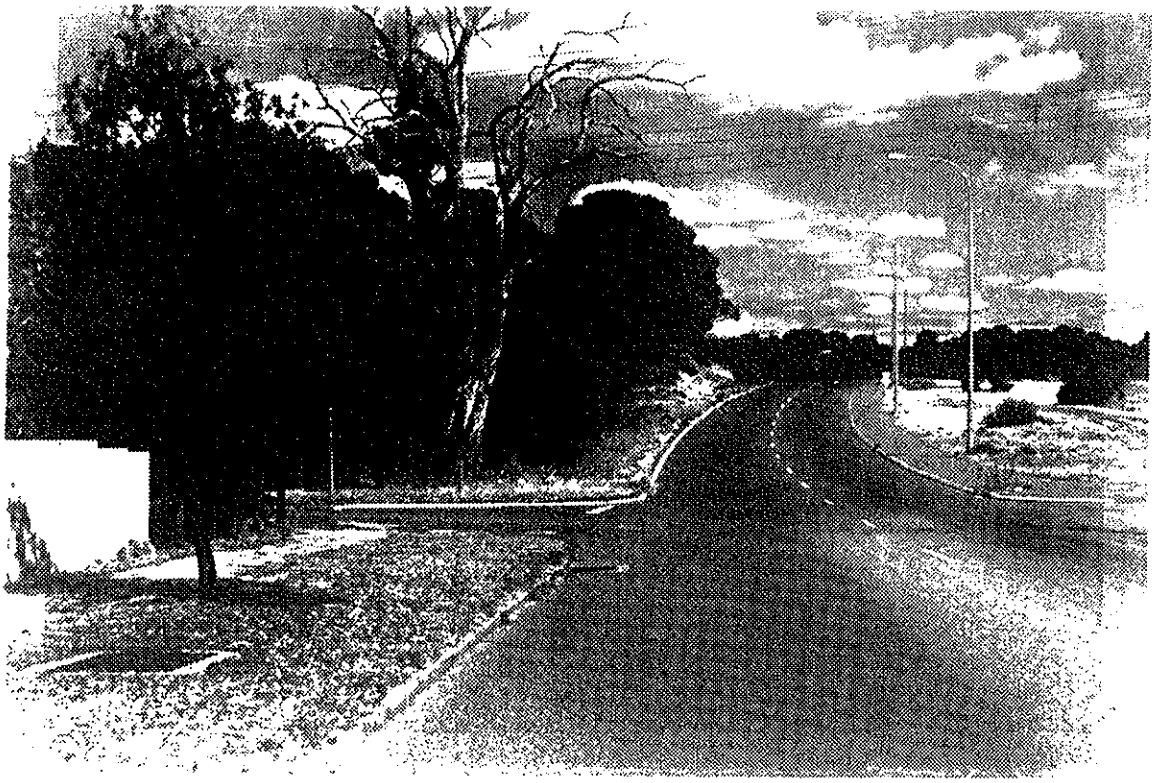
LONG TERM HEALTH & VIABILITY

As remnant bushland becomes increasingly scarce in urban settings, its relative values as perceived by the local community tend to increase. At times bushland may have high conservation value due to its good condition and presence of representative regional vegetation and flora and/or high quality fauna habitat; at other times the bushland may preserve landscape amenity and be well used by the community in the face of rapidly disappearing "bushland experience". Other objections to loss of bushland may simply be a desire to exclude development. In any of these examples, the cost to the community of "keeping" bushland with respect to environmental management responsibilities and its financial cost are often ignored or underestimated.

In regard to the degraded Mofflyn site, the area requires costly and extensive rehabilitation and ongoing management to firstly, regain and retain any conservation value in a biological sense; and secondly, to maintain biological viability, particularly due to its small size (2.5ha). For example, ratepayers would initially need to fund the purchase of the site from the owners, and then subscribe to management items including fire management (including preparation of a fire management plan), replanting programmes, weed removal and yearly maintenance, the provision of walking trails and the costs of contractors to undertake and maintain the works. In areas of recognised high conservation value (For example Bold Park and Hepburn Heights), members of the community may implement the management plans themselves, however these community members are often in the minority.

In contrast, the highest valued functions of the Mofflyn site, namely the landscape amenity and provision of bird habitat, may be conserved through judicious clearing and sensitive landscaping within the proposed development without financial cost to the community. Retention and additional planting of trees within the road reserve will assist in preserving this amenity. Landscaping with selected native ornamentals (such as Grevillea sp and other nectar-producing plants) will also provide replacement of bird habitat which may often be greater than that of natural bushland.

Alternately, incorporation of some of the woodland into the proposed future development is also unlikely to succeed in the long term. Established Banksias are generally intolerant to the changes in water regimes likely to occur with development. Residential development will also increase soil nutrient levels, adversely affecting Banksia health. The use of garden mulches and soil conditioners will change soil moisture levels encouraging soil bourne pests and disease. With development, increased activity of machines and possible transportation of soil will further increase the possibility of dieback being introduced.



View of site at the corner of Kent & Etwell Streets showing dying Eucalyptus, rough grass verge & road berm. Road parallels boundary, giving limited view of the site.

Distant view down Kent St showing confined visual corridor, restricted views of site.

CONCLUSION

The Mofflyn Estate is located in an established urban environment; situated on the side of a low dunal ridge and has no major distinguishing regional landscape significance. It has no priority flora protection value and due to its location and poor vegetation cover has no regionally significant fauna. The birdlife found on the site is common to the Metropolitan region. Opportunities for botanic or zoological educational use are extremely limited. In relation to existing Banksia woodland reserves on the Swan coastal plain, the Mofflyn site has little or no regional value.

In a local context the site does not provide an important natural corridor or linkage nor does it contain unusual or diverse landforms. Although half the site has Banksia woodland cover, it is assessed as being in very poor condition. Quality bushland can be found nearby in the Kensington Bushland reserve.

The site offers no recreation or open space amenity not already found in the existing public parks and reserves within the immediate vicinity.

Although the remnant Banksia woodland may have symbolic landscape value to the local public, it is visually compromised and lacks the understorey diversity and colour of pristine woodland.

The woodland is in an advanced process of ongoing environmental decline that would require substantial resources to manage and rehabilitate if any landscape and biological conservation values or viability is to be retained or restored.

As views of the woodland are confined and limited to a small number of adjacent residential properties, the development of the Estate would directly affect only a small proportion of the community. Apart from Ashburton Street, no adjoining road looks directly into the site therefore future proposed residential development with appropriate garden frontages and street tree planting could be easily integrated into the existing streetscape with little loss of overall landscape value.

Furthermore, retention of some key trees, garden development and the use of selective native ornamental shrubbery will provide replacement bird habitat.

As discussed in the body of the report, incorporation of Banksia into the proposed development is unlikely to be successful in the long term.

Therefore, given the poor quality of the existing woodland, the lack of regional, landscape and conservation values, limited local amenity value and the proximity of parkland with superior woodland and open space values it is difficult to recommend retaining this small area of degraded Banksia woodland on the undeveloped half of the Mofflyn Estate.

View down Ashburton St showing attractive vista stop provided by vegetation on Mofflyn Estate.

This is the only street that looks directly into the site.

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