

III Vegetation and Flora

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The structural formations of the Youanmi-Leonora Study Area have been described and mapped at a scale of 1:1,000,000 by Beard (1976) who included thirteen broad groupings. One of these, Mulga low woodland, dominates the Study Area with more than half of the total area. This reflects the dominance of Broad Valley as the most extensive landform unit with its wide plains of friable loamy soils.

During this survey 23 sites were selected to cover the ten landform units present in the Study Area. These sites are described in Appendix I.

Breakaway (B): Breakaways in the Youanmi-Leonora Study Area generally occupied the high-lying ground within Broad Valleys developed over granite. A rough, slightly overhanging bluff 2-4 m high often terminated a gently sloping mesa and thus separated two plains of slightly different elevations. The soil on Breakaways was a stony loam, often with kaolin visible at the base of the bluff, and was poorer in nutrients, more saline and often more sharply texture-differentiated than the soil on Granite Exposures. The vegetation was floristically similar to that of Broad Valleys and Granite Exposures, but the trees were reduced to tall shrubs and a number of distinctive elements occurred in the understorey.

A site was examined on the road between Mount Magnet and Sandstone, at 28°01'S, 118°56'E, on the plain immediately above a low breakaway. The site had a gentle, even slope, with loose fragments of nodular laterite at the surface and a relatively pale soil (compared to Broad Valleys). Most of the surface was covered by soil rather than rock material, stones covered 1% and pebbles 2%. There were occasional large exposures of ferricrete. Soil texture was Loam or Sandy Clay Loam. Emergents consisted of 3-5 m high *Acacia quadrimarginea*, *A. aneura* and one other species, together having canopy cover about 3%. Shrubs 1.5-2 m high formed the main stratum (canopy cover about 10%), consisting of *A. aneura* (needle-, narrow- and fairly broad-phyllode forms), *Melaleuca* sp., small amounts of *Acacia ramulosa* and occasional *Santalum spicatum* and *Eucalyptus kingsmillii*. Shrubs 0.5-1.5 m were *Eremophila* ? *platycalyx*, *E. latrobei*, *Acacia tetragonophylla*, *Enchylaena tomentosa*, *Dodonaea petiolaris* and four other species, totalling 6% canopy cover. A very sparse understorey was contributed by *Ptilotus obovatus*, *Solanum lasiophyllum*, *S. nummularium*, *Stylidium* ? *desertorum*, *Sida* spp., *Monachather paradoxa* and five other species. *Triodia basedowii* was rare.

Drainage Line (C): Drainage Lines are relatively uncommon in the Youanmi-Leonora Study Area, owing to the scarcity of Undulating Plains which form the main watersheds for abrupt run-off of heavy rainshowers. The vegetation depended on the degree of development of the creek, ranging from a relatively tall dense stand of mulga (*Acacia aneura*) on minor Drainage Lines in mulga-covered landforms, to a clearcut line of tall trees of *Eucalyptus camaldulensis* where a well-developed creek bed of sandy or gravelly material separated creek banks up to 2 m high. Small Drainage Lines observed within

Undulating Plains south of Sandstone, with greenstone visible in the creek bed, had *Acacia acuminata* and traces of *E. camaldulensis* and *Pittosporum phylliraeoides*.

Dunefield (D): Dunefields were relatively uncommon in the Youanmi-Leonora Study Area, whether of the siliceous type (associated with Sandplains) or the gypseous type (associated with Salt Lake Features). This was partly a consequence of the relatively small area of Sandplains and Salt Lake Features found in the Study Area. Those Dunefields which did occur were generally intermediate in soils and vegetation between those Study Areas to the immediate north and south. The most common type of vegetation on Dunefields associated with Sandplains was *Eucalyptus gongylocarpa* over *Triodia basedowii*. The trees of *E. gongylocarpa* were often stunted relative to those on Sandplains, presumably reflecting different soil moisture relations.

Granite Exposure (G): This landform occurred as isolated enclaves in Broad Valleys throughout the Youanmi-Leonora Study Area. Minor occurrences were also recorded in other landforms such as Sandplains and Salt Lake Features. However, bedrock was generally deeply mantled by superficial deposits in these other landforms.

The vegetation of Granite Exposures was generally an Open Scrub of *Acacia quadrimarginea*, the bedrock usually having cracks permeable to plant roots. *Acacia craspedocarpa* occurred in some places. A common low shrub was *Ptilotus obovatus*. The understorey was very sparse except where pockets of deep soil had accumulated at the base of exposures of the granite. However where soil was available a rich community of dwarf ephemerals was characteristic. The composition of these communities shared many elements with that of Salt Lake Features despite the fact that Granite Exposures soils had a different origin and chemical composition. *Helipterum roseum* was a good example. This link was particularly strong on colluvial flats or basins at the base of Granite Exposures where traces of chenopodiaceous shrubs appeared. Under a slightly higher-rainfall on the western edge of the Study Area the upper stratum was noted as *Brachychiton gregorii*, tall *Acacia quadrimarginea* and *A. aneura* and a shrub stratum of *Eremophila* sp.

Hill (H): There were relatively few Hills in the Youanmi-Leonora Study Area. Soils and vegetation varied according to bedrock type as described for adjacent Study Areas. The general cover was of Open Scrub of *Acacia* spp. with scattered shrubs of *Cassia* and *Ptilotus obovatus*, and herbaceous plants such as *Cheilanthes* spp. and a surprisingly well-developed community of low ephemerals.

Salt Lake Feature (L): The main salt lake occurring in the Youanmi-Leonora Study Area is the long and narrow Lake Noondie. A minor northeastern extension of Lake Barlee also enters the southeast of the Study Area from the adjacent Barlee-Menzies Study Area.

A landform catena was characteristic of Salt Lake Features, including soils of varying salinity at slightly different elevations above the salt lake floors. The edges of salt lakes, as well as the floors of small arms of the lake beds themselves, had a saline sandy clay covered in samphire (*Halosarcia* spp.). At a slightly higher level were narrow zones of

loamy to sandy soil with a very compact, sodium-contaminated subsoil. Vegetation of these and other situations within Salt Lake Features were similar to those in the adjacent Sandstone-Sir Samuel Study Area. Four sites are described in Appendix I.

Calcareous Plain (P): Calcrete valley fills form scattered oblong tracts of Calcareous Plains along the edges of Salt Lake Features in the Youanmi-Leonora Study Area. The characteristic topography is an abrupt, slightly raised, gently undulating platform, interrupted in places by tongues of lower ground. The soil was calcareous, pale and stony. The vegetation was an open scrub of the wattle *Acacia burkittii* (or open woodland of *Casuarina cristata* in places), with little understorey except for a continuous carpet of lime-loving ephemerals in season. Examples of the type are described in Sites 10 and 11 in Appendix I. Adjacent areas of low ground sometimes featured *Eucalyptus camaldulensis*.

It was interesting to compare the floristic composition on Calcareous Plains with that of closely allied *Eucalyptus striatocalyx* vegetation of calcareous soils on Salt Lake Features (Sites 6 and 10, Appendix I). The soils were very similar, although the Calcareous Plains soil was shallower or more compact. The dominant perennials were different, species shared being subordinate in terms of canopy cover. These were mainly widespread forms with a wide habitat tolerance (e.g. *Cassia nemophila*, *Enchylaena tomentosa*, *Ptilotus obovatus*, *Solanum lasiophyllum*, *S. nummularium*, *Acacia tetragonophylla* and *A. aneura*). Ephemerals restricted to the site on Calcareous Plains included *Cephalopterum drummondii*, *Calocephalus* sp. (indet.), *Plantago drummondii*, *Ptilotus helipteroides*, *Euphorbia drummondii*, *Tribulus astrocarpus* and *Athrixia athrixioides*. These species were generally allied to mulga on Undulating Plains. Ephemerals restricted to the site on Salt Lake Features included *Stenopetalum filifolium*, *Angianthus tomentosus*, *Brachycome ciliocarpa*, *Helipterum maryonii* and *H. humboldtianum*. These were generally species characteristic of "succulent steppe" types, where Chenopodiaceae, particularly *Maireana* spp., were the dominant perennials.

Sandplain (S): The main area of Sandplains in the Youanmi-Leonora Study area occurred in the southwest. Elsewhere scattered large patches were found, often just behind Breakaways. Characteristically Sandplains included two types of topography, one quite flat and the other slightly elevated and gently undulating. The second type was transitional to Dunefields and included scattered sandridges which are considered separately (see *Dunefields*). The soil throughout was a simple reddish-coloured earthy sand composed almost exclusively of grains of quartz.

The characteristic vegetation on the extensive flat areas of Sandplains was *Acacia coolgardiensis* over *Triodia basedowii*. The 3 m high wattle had an insubstantial canopy with thin, upright phyllodes. In places there were very sparse emergents of *Acacia aneura* (5 m high) or *Eucalyptus kingsmillii* (5.5 m high). One or two well-grown trees of *Brachychiton gregorii* were noted. The cover of *Acacia coolgardiensis* was generally patchy, at the scale of a few hectares at a time. Canopy cover exceeded 20% in dense patches but was usually less than 10%. The lower stratum included a definite admixture

of low ericoid shrubs of Myrtaceae. Scattered areas of the size of a football field or larger consisted only of dense *Triodia* (dominant) and ericoid shrubs, tall shrubs being limited to widely scattered 2-3 m examples of *Grevillea* spp. and *Hakea* spp. This condition seemed to correspond to areas where gravel was close to the surface and often coincided with low-lying portions of Sandplains. *Duboisia hopwoodii*, a successional species after fire or disturbance, typically grew along verges as occasional plants. *Exocarpos* sp. was sparse though conspicuous in places. Ephemerals were virtually absent, even after adequate rains.

On slightly elevated, gently undulating Sandplains where the sand was deeper (and slightly paler) than on the flats, the vegetation consisted of tall trees of *Eucalyptus gongylocarpa* over a similar understorey of *Triodia basedowii*. *Grevillea juncifolia* and *Eucalyptus kingsmillii* formed a sparse intermediate stratum in places, and there were scattered patches of dense *Acacia aneura* (the form with broad, silvery phyllodes). At the transition from flat areas on Sandplains to Broad Valleys *Acacia aneura* became dominant and *A. coolgardiensis* and *Triodia basedowii* thinned out correspondingly.

Sandplains in the southwest of the Study Area had slightly different vegetation than elsewhere, with *Eucalyptus* spp., *Hakea* spp. and *Acacia* spp. in fairly dense stands tending to thickets, over *Triodia*.

Undulating Plain (UN): Undulating Plains occupied only a small area in the Youanmi-Leonora Study Area and were generally similar to those of the Sandstone-Sir Samuel Study Area to the north. The surface was generally stony or gravelly and the soil dark, noticeably darker than the stony, elevated areas within Broad Valleys. This difference was owing to the different bedrock (greenstone instead of granitic rocks).

The vegetation was a low open stand of *Acacia aneura* with little perennial understorey apart from sparse *Ptilotus obovatus*. On a few areas of relatively friable soil on colluvial flats, *Eremophila leucophylla*, wanderrie grass (*Eragrostis*), and other grasses (*Monachather*, *Eriachne*) occurred, providing similarities with Broad Valleys. A dense cover of low ephemerals was characteristic in season on Undulating Plains, including *Ptilotus helipteroides*, *Cephalopterum drummondii* and several members of the Chenopodiaceae. In places *Acacia aneura* was replaced by *A. grasbyi*.

An interesting difference from Broad Valleys was that the common and conspicuous ephemerals on Undulating Plains, *Cephalopterum drummondii* and *Helipterum roseum*, did not show a pattern of clumping under shrubs and if anything preferred open spaces. Undulating Plains near the western border of the Study Area, with scrub of *Acacia quadrimarginea* and *A. burkittii* on a "red" clay loam over a soapy greyish rock, had dense stands of the yellow everlasting *Helipterum venustum*.

Broad Valley (V): Broad Valleys were by far the most extensive landform in the Youanmi-Leonora Study Area. The characteristic topography was wide smooth plains and the characteristic soil a friable loam with a siliceous hardpan at depth. Vegetation consisted of various variations of mulga (*Acacia aneura* dominant).

Typical Broad Valleys were described from a locality in the northwest of the Study Area (on Windsor Station, 93 km from Mount Magnet on the road towards Sandstone,

at 28°01'S, 118°37'E). The vegetation was typical mulga (*Acacia aneura*) with an understorey of ephemeral Asteraceae. There were traces of quartz pebbles on the surface and a scatter of pavement covering only 1-5% of the area. The soil was dark reddish brown (2.5YR Δ) Sandy Clay Loam. Vegetation structure was Open Low Woodland B over Herbs. The upper stratum was about 5 m high and ephemeral cover not restricted to the areas under trees or tall shrubs. The mulga consisted of normaland broad-phyllode forms. The main ephemerals were *Calocephalus* ? *knappii*, *C. skeatsianus* and *Erodium* ? *cygnorum*. On slightly deeper soil 5 km distant (28°01'S, 118°40'E) the topsoil colour was the same but the texture was Clay Loam and surface rock fragments were virtually absent. The understorey was slightly different and more mixed. The vegetation was Open Low Woodland A over Herbs, the trees being 6 m high. No single ephemeral species dominated. There were about 17 perennial species and about 38 ephemeral species. Another, very similar, site in the southwest of the Study Area, at Microbe Well on Youanmi Downs Station (28°30'S, 199°00'E), had an even more mixed community of the usual ephemerals of Broad Valleys. Shrubs of *Acacia ramulosa* and low shrubs of *Eremophila* sp. constituted weak additional strata.

The typical ephemerals on Broad Valleys were *Velleia rosea*, *Helipterum* spp, and in places *Brachycome ciliocarpa*, *Cephalopterum drummondii*, *Helichrysum cassinianum* or *Podolepis canescens*. *Brachycome ciliocarpa* kept strictly to the areas immediately under the shrubs or trees or among fallen branches, *Helichrysum craspedioides* and *H. cassiniana* less so and *Velleia rosea* less so again although still clumped to a certain extent. On sandy soil with *Triodia basedowii* the ephemeral Asteraceae *Myriocephalus gueriniae* and *Helichrysum davenportii* showed the same clumping in shelter and litter. *Cephalopterum drummondii* had a fairly wide range of habitats although it was apparently most at home on shallow and gravelly or stony soils where trees were sparse. This species was always near-dominant where it occurred. Although it was found on Broad Valleys it was more typical of Undulating Plains.

Although occurring widely in System 11', *Acacia ramulosa* was noticeably common only west of Sandstone. Large expanses of Broad Valleys in the west of the Youanmi-Leonora Study Area were covered by relatively dense *A. aneura*, with *A. ramulosa* playing a prominent role. Sandier soils had a 6 m high overstorey of *Callitris columellaris* over fairly low *A. aneura* together with *A. ramulosa* and conspicuous though sparse *Santalum acuminatum*. *Eucalyptus* (e.g. *E. ewartiana*) were slightly more in evidence here than in the northern or eastern parts of the Study Area but was by no means a prominent component of the vegetation. At the western border itself, *Callitris* attained canopy cover of up to 5%, so that stratification of the vegetation was as follows: 7 m high *Callitris* over relatively tall (6 m) trees of *A. aneura* over relatively tall (3 m) shrubs of *A. ramulosa*; there was very little understorey. Occurring as scattered plants in the mulga in this western area were *Acacia acuminata* and *Hakea leucoptera*.

Where run-on occurred on Broad Valleys, stands of mulga were noteworthy for their height and density. A site, marginal to Granite Exposures, was examined on the western border of Anketell Station (28°01'S, 118°49'E) 114 km from Mount Magnet on the Sandstone road. The soil was dark reddish brown (2.5YR 3/4) Clay Loam. The

vegetation was Open Low Woodland A over Dense Herbs with the mulga consisting mainly of the broad-phyllode form, 7 m high, with about 20% canopy cover. There was a definite but sparse lower stratum, consisting of tall shrubs of *Acacia ramulosa* and *A. tetragonophylla*. Low shrubs were confined to *Eremophila latrobei*, *Eremophila* sp., *Enchylaena tomentosa*, *Rhagodia eremaea* and *Eriostemon* sp. The ephemerals consisted of *Calocephalus skeatsianus*, *C. ? knappii*, *Erodium ? cygnorum*, *Podolepis ? kendallii*, *Gnephosis ? leptoclada*, *Stenopetalum ? anfractum*, *Helichrysum ? cassinianum*, *Lepidium ? oxytrichum*, *Crassula colorata*, *Myriocephalus rhizocephalus*, *Emex australis*, *Ptilotus gaudichaudii*, *Goodenia ? havilandii*, *Helipterum moryonii*, *Maireana carnosa* and occasional *Waitzia acuminata* and *Calandrinia lehmannii*.

Relatively sandy soils on Broad Valleys represented a transition to Sandplains. One such site was inspected 58 km from Sandstone on the road towards Youanmi. The soil was dark red (2.5YR 3/6) Loam or Fine Sandy Loam with an easily friable surface free of rock fragments of any kind. The vegetation was Open Low Woodland A over Open Hummock Grass over Open Herbs, consisting of trees of *A. aneura* 7 m high over *Triodia basedowii*. The cover of ephemerals was limited although greater than on Sandplains, and consisted mainly of five equally common species (*Waitzia acuminata*, *Ptilotus polystachyus*, *Brunonia australis*, *Myriocephalus guerinae* and *Podolepis canescens*). Examples of other species present here, typical of Broad Valleys and not Sandplains, were *Angianthus strictus*, *Plantago drummondii* and *Velleia rosea*.

An area was examined on Sandplains adjacent to Calcareous Plains, where calcium had been transported from the calcrete ramp on to the adjacent plain but the soil was otherwise unusually nutrient-poor despite a firm consistency difficult to dig (faunal site 1 on Yuinmery Station, 1 km SW of Shepherds Well at 28°31'S, 119°05'E). The vegetation consisted of an upper stratum of *Eucalyptus trivalvis* 6-7 m high over *Triodia basedowii*, with trees of *Acacia aneura* and sparse shrubs of *A. tetragonophylla* and *A. ramulosa* between these strata. Other perennials included *Cassia nemophila*, *Eremophila* aff. *glabra*, *E. clarkei*, *Ptilotus obovatus*, *Solanum* spp., *Monachather paradoxa*, *Eragrostis ? eriopoda*, *Eriachne helmsii* and *Olearia pimeleoides*. Ephemerals were sparse but peculiarly mixed in their composition. They included species generally absent from Broad Valleys and typical of Salt Lake Features such as *Helipterum roseum* and *Gnephosis ? brevifolia*.

It was therefore interesting to compare this site with another at the edge of the same area of Calcareous Plains, abutting Salt Lake Features. The soils in these sites were texturally similar (loams free of any obvious lime or gravel) and both overlay granite. Both areas appeared to have been overgrazed. Although data were not collected, the area at the edge of Salt Lake Features probably had significantly better nutrient status (phosphorous >250 ppm). *Triodia* was absent from the Salt Lake Features site. Fewer than half of the perennial species were shared, mainly species widespread over a variety of landforms. Ephemeral species restricted to the site associated with Salt Lake Features were *Angianthus strictus*, *A. burkittii*, *Helipterum tenellum*, *Eragrostis dielsii*, *Chthonocephalus pseudevax*, *Brachycome ? ciliocarpa*, *Aizoon glabrum* or *Neogunnia*

septifraga, *Tetragonia* ? *eremaea*, *Gnephosis* ? *foliata*, *Centrolepis polygyna*, *Chrysocoryne trifida*, *Senecio glossanthus* and *Gnephosis* sp., in keeping with other vegetation dominated by *Maireana* spp. on firm, relatively nutrient-rich and sodic soils. Species restricted to the Sandplain site associated with Broad Valleys included *Brachycome* sp., *P. polystachyus*, *P. gaudichaudii*, *C. skeatsianus*, *Calandrinia* ? *eremaea*, *W. acuminata*, *P. canescens*, *H. davenportii*, *Goodenia occidentalis*, *Podotheca gnaphalioides*, *Calocephalus* sp., *Stenopetalum* ? *anfractum*, *Helipterum stipitatum*, *Ptilotus carlsonii* and possibly *Daucus glochidiatus* and *Vittadinia* sp. These were mainly species characteristic of sandy soils on Broad Valleys.

Discussion

The distribution of vegetation in the Youanmi-Leonora Study Area is relatively simple, with a long central area of "succulent steppe" (*sensu* Beard, 1976) on Salt Lake Features, surrounded by a very extensive area of "mulga low woodland" on Broad Valleys. Scattered large blocks of "tree and shrub steppe" on Sandplains are found especially in the southwest. This type is less common in the east and northeast of the Study Area although Broad Valleys include numerous small areas of sandy ground with transitional vegetation of mulga over spinifex. Four small, broken bands of low, open mulga with an understorey relatively rich in chenopods on Undulating Plains can be distinguished, running northwest to southeast; the largest blocks lie along the northern border of the Study Area. Granite Exposures with their "wattle scrub" and rich herbaceous communities are fairly frequent throughout the Study Area. Small scattered patches of *Casuarina* and wattles on Calcareous Plains lie at the fringes of the main Salt Lake Features. In addition are the slightly different types of vegetation associated with scattered Dunefields, and the few Drainage Lines or Hills. Breakaways with their mulga or wattle scrub and distinctive understorey have a considerable occurrence in the Study Area, mainly in the interfluves of Broad Valleys.

The flora of the Youanmi-Leonora Study Area includes several southwestern elements, usually associated with Sandplains or Breakaways. These are generally absent from other Study Areas in System 11 and the Youanmi-Leonora Study Area abuts the northeastern limits of their main areas of distribution. A southwestern influence can also be detected in the vegetation structure, e.g. the overstorey of *Callitris* found in some areas of mulga low woodland.

Conservation

The conservation status of the Youanmi-Leonora Study Area may be assessed at the levels of (i) vegetation systems, after Beard (1976), (ii) landforms used in this study (iii) plant communities, (iv) individual plant species and (v) special features in the landforms of the Study Area.

According to Beard (1976), the Study Area falls entirely within the Austin Botanical District (Eremaean Botanical Province). It is roughly equally divided between three types within this category, i.e. the Barlee Sub-region (southwest), Wiluna Sub-region (north) and Laverton Sub-region (east). However, the boundaries of these types are

Table 1. Landforms in the Youanmi-Leonora Study Area, showing geological units and vegetation sample sites (Appendix 1) and conservation status (1 = very well conserved, 2 = moderately well conserved, 3 = moderately conserved, 4 = moderately poorly conserved, 5 = poorly conserved, 6 = threatened). Geological units are those used by Stewart *et al.* (1983) and Thom & Barnes (1977).

Landform	Geological Unit	Vegetation Sample Site No.	Conservation Status
1. Breakaways (B)	—	1	3
2. Drainage Lines (C)	part of Qpv	1	3
3. Dunefields (D)	part of Wrs, Qps, Qpk	3	3
4. Granite Exposures (G)	part of Qpm, Ag	4	3
5. Hills			
(i) Basalt (HB)	Ab, abt, abu	—	?
(ii) Granite (HG)	Agm, Ag, Agb, Agr, Agl, Agx, Aug, Am, Anl	5	3
(iii) Quartz (HQ)	—	—	?
(iv) BIF (HI)	Aiw, Aic, Aif	—	3
(v) Dolerite (HD)	Ad	—	?
6. Salt Lake Features (I)	Qra, Qrs, Qrm (?Ql, Tk)	6, 7, 8, 9	3
7. Calcareous Plains (P)	Czk	11	4
8. Sandplains (S)	Qps (?Ts)	12, 13, 14, 15	2
9. Undulating Plains (U)	Tl, part of Qc or Qqc, Qqf, Czl	16, 17, 18	4
10. Broad Valleys (V)	Qz or Qqz, part of Qqc, Qpv	19, 10, 21, 22, 23	3

arbitrary owing to the gentle topography and gradual, slight changes in climate across the Study Area.

No plant species or vegetation types are known to be restricted to the Youanmi-Leonora Study Area. Although the Study Area differs in several ways from adjacent areas, its general character is intermediate between the Barlee-Menzies Study Area to the south and the Sandstone-Sir Samuel Study Area to the north.

There are no existing conservation reserves in the Study Area. The whole area is given over to pastoral leases except for two blocks of Unreserved Crown Land in the southwest, between Youangarra and Lake Barlee Stations, and the bed of Lake Barlee itself (largely bare). Despite this the conservation status of Youanmi-Leonora Study Area is moderately good. Pastoral land here is in fair condition. This is possibly because the relatively nutrient-poor soils over much of the area can only support stock at fairly low densities. It is the relatively fertile landforms with chenopodiaceous vegetation which are the foci of heavy stocking rates elsewhere in System 11, with consequent degradation of the ecosystem. Extensive areas of Salt Lake Features and Undulating Plains do not occur in this Study Area. In addition the mulga-covered Broad Valleys in the Youanmi-Leonora Study Area are of a relatively nutrient-poor type with widespread occurrence of unpalatable plants such as *Triodia*. The palatable "wanderrie" type of understorey, characteristic of moderately eutrophic, recently transported sandy surfaces derived from erosion of Undulating Plains or Salt Lake Features, is rare in the Study Area. The widespread death of the tree stratum, so characteristic of the Sandstone-Sir

Samuel and Duketon-Sir Samuel Study Areas to the north, is not a noticeable feature here. Sandplains and included Dunefields of extremely infertile soils in the southwest of the Study Area are essentially unused by man or his stock and are virtually in pristine condition.

The two areas of Crown Land in the southwestern corner of the Youanmi-Leonora Study Area provide the potential for a new declared conservation area. Both blocks are roughly the size of pastoral leases and, joined by intervening tongues of leasehold land, would form a nature reserve of substantial size. This would straddle the border of the Study Area and would form an extension into the Youanmi-Leonora Study Area of a very large tract of vacant land in the western half of the Barlee-Menzies Study Area. Such a reserve, although dominated by Sandplains, would help to secure the conservation status of a number of vegetation types.