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THE VEGETATION

OF

HATTAH LAKES NATIONAL PARK

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INTRODUCTION

In 1960 forty-four thousand acres in the far north-west of Victoria were reserved as Hattah Lakes National Park.

Most of the national park supports mallee scrub, representing two major soil types. Nevertheless the diversity shown in the list of plant species found in the national park reflects the presence of three other main land-systems, that is, saline flats, open sandhills and the River Murray floodplain. In terms of acres, these three associations are unfortunately poorly represented within the national park, although somewhat more extensive tracts of them may be seen outside the boundaries.

It is with pleasure that I introduce this comprehensive catalogue of the vascular flora of the Hattah Lakes National Park. A considerable amount of work has gone into its preparation and sincere thanks go to all those who contributed.

The list of 566 species includes 102 species not native to Australia, evidence of widespread grazing of stock before the national park was declared.

I feel sure that the list will prove to be an indispensable guide for all those who wish to learn more of the remarkable flora of this national park.

L.H. Smith
Director of National Parks

THE VEGETATION OF HATTAH LAKES NATIONAL PARK

Most of Hattah Lakes National Park is sandy, semi-desert country supporting various species of mallee eucalypts. The annual rainfall may vary from as little as 4.37 inches (1967) to as much as 20 inches (1956) and averages about 11½ inches. Consequently, many plants are ephemeral, that is, short lived, and take immediate advantage of suitable conditions.

Plants rarely seen at other times may flourish in a year of good rainfall. The time of the year in which rain falls may also have an important bearing on the flora, particularly the annuals. For instance, the exceptional autumn rains of 1969 resulted in a quite remarkable growth of members of the family Chenopodiaceae and of Variable Spear-grass. A fire, also, will cause germination of seeds which have lain in the sand for many years, while the regeneration of River Red Gum and other claypan plants is closely associated with the flood pattern of the Murray River.

The accompanying checklist indicates the ecological association in which each plant is most likely to be found. But, as already mentioned, plant populations may fluctuate greatly and species referred to a certain habitat may at times occur in any of the others. The following notes described the major vegetation types.

Mallee (M)

By far the largest area of the national park is covered with low eucalypt trees of the mallee growth habit, with several stems arising from each rootstock. Two rather distinctive soil types support this mallee scrub; a light-coloured unstable sand and a rather more stable, but still erosion-prone reddish yellow sand to sandy loam.

One of these extremes may be observed in the north-western corner of the National Park near Nowingi siding, while the other may be seen on a long sand ridge, known locally as the Zig Zag, which crosses the Calder Highway about a mile and a half south of the township of Hattah.

On the reddish sandy loam near Nowingi the dominant trees are relatively large examples of white Mallee, with scattered smaller trees such as Cattle Bush and shrubs such as Hop-bush and Cassia. The most common smaller plants are species of the genera Bassia, Atriplex and Zygophyllum.

The light-coloured deep sands of the Zig Zag ridge support a rather more diverse plant community, the dominant group again being mallee, of rather shrubby forms such as Yellow Mallee. Other small trees of note are Scrub Cypress Pine and Shrubs such as Green Tea-tree, Nealie, Small Cooba and Desert Grevillea are common. The understorey consists of herbs such as Eutaxia, Common Aotus, and Guinea-flowers, while during the spring greenhood orchids and small annuals such as Sticky Long-heads and Bow-flowers may be seen in bloom.

Lakes System (L)

Only a small portion of the River Murray-fed Kulkyne lake system lies within the National Park boundaries. As used in this list, the term includes the lakes themselves, their shorelines and the non-saline clay flats and grey sands up to the outer margins of the Black Box woodland (roughly high flood level). Several plant species, notably River Red Gum and Black Box, are confined to this ecological unit.

Open Sandhills (O)

Between the mallee scrub and the perimeter of the lake system occur small rises of reddish sand and sandy loam, somewhat more fertile than those soils supporting mallee vegetation further west. It is on these open rolling dunes that Buloke and Native Pine (*Callitris* species) are found as remnants of a one-time more extensive woodland. Long before the National Park was declared, many trees were cut down for fence posts while others were felled to provide stock feed in times of drought. The Woolly Scurf-pea, the rather rare Desert Chinese Lantern, and two species of *Sida* are plants which are found almost exclusively in this habitat.

Saline Flats (S)

Clay soils with high salt content occur at three separate localities in the Mallee. Varying degrees of saltation may also be observed in parts of the lake system and open sandhills particularly to the east of Lake Hattah. Salt tolerant species such as the Glassworts are restricted to saline flats.

The Lendrook plain in the southern section of the National Park is a flat basin with shallow soil overlying deposits of "copi", which is a white powdered form of gypsum (Calcium sulphate). Interesting plants to be seen on the Lendrook plain include Nitre-bush, and a Sea-heath which in the national park is restricted to this area.

A number of species not native to the district including Golden Wattle and Australian White Cedar, were planted around the Rangers' houses before the National Park was dedicated in 1960. Cereal Rye has been planted on a sand blow just to the north of the main entrance road in an attempt to arrest wind erosion. These exotic species have not been included in the checklist.

Species are listed alphabetically within families which are themselves in alphabetical order. The most recently recognized common names have been used.

References

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Acknowledgements

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For further information, please do not hesitate to contact the National Parks Service or the Ranger staff at Lake Hattah.

THE VEGETATION OF HATTAH LAKES NATIONAL PARKPTERIDOPHYTA

Azolla filiculoides	Pacific Azolla	L
Azolla pinnata	Ferny Azolla	L
Marsilea angustifolia	Narrow-leaf Nardoo	L
Marsilea drummondii	Common Nardoo	L
Ophioglossum coriaceum	Austral Adder's-tongue	M, O

GYMNOSPERMS

Callitris columellaris	White Cypress Pine	O
Callitris preissii	Slender Cypress Pine	O
Callitris verrucosa	Scrub Cypress Pine	M

ANGIOSPERMSMONOCOTYLEDONSAmaryllidaceae

Calostemma purpureum	Garland Lily	L, O
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Centrolepidaceae

Centrolepis cephaloformis	Cushion Centrolepis	S
Centrolepis polygyna	Wiry Centrolepis	S
Centrolepis strigosa	Hairy Centrolepis	

Cyperaceae

Cyperus aristatus	Bearded Flat-sedge	L
Cyperus gymnocaulos	Spiny Flat-sedge	L
Cyperus nervulosus	Flat-sedge	L
Cyperus pygmaeus	Dwarf Leaf-rush	
Cyperus rigidellus	Flat-sedge	L

<i>Eleocharis acuta</i>	Common Spike-rush	L
<i>Eleocharis pusilla</i>	Small Spike-rush	L
<i>Gahnia lanigera</i>	Desert Saw-sedge	M
<i>Lepidosperma viscidum</i>	Sticky Sword-sedge	M
<i>Lipocarpa microcephala</i>	Button Rush	L
<i>Schoenus subaphyllus</i>	Desert Bog-rush	M
<i>Scirpus antarcticus</i>	Club-rush	L
<i>Scirpus australiensis</i>	Club-rush	L
* <i>Scirpus hamulosus</i>	Club-rush	
<i>Scirpus platycarpus</i>	Club-rush	L
<u>Graminae</u>		
<i>Agrostis avenacea</i>	Blown Grass	L
* <i>Aira caryophyllea</i>	Silvery Hair-grass	S
<i>Alopecurus geniculatus</i>	Marsh Fox-tail	L
<i>Amphibromus neesii</i>	Swamp Wallaby-grass	L
<i>Amphipogon caricinus</i>	Long Grey-beard Grass	M
* <i>Avellinia michelii</i>	Avellinia	
* <i>Avena fatua</i>	Wild Oat	M, L
* <i>Avena sativa</i>	Oat	
* <i>Bromus diandrus</i>	Great Brome	
* <i>Bromus rubens</i>	Red Brome	M, O, L
* <i>Bromus sterilis</i>	Barren Brome	L
* <i>Bromus unioloides</i>	Prairie Grass	M, O
<i>Chloris acicularis</i>	Spider Grass	O
<i>Chloris truncata</i>	Windmill Grass	O
<i>Cynodon dactylon</i>	Couch	O, L
* <i>Dactylis glomerata</i>	Cocksfoot	L
<i>Danthonia caespitosa</i>	Common Wallaby-grass	M, O
<i>Danthonia setacea</i>	Bristly Wallaby-grass	
<i>Digitaria sanguinalis</i>	Summer Grass	O
<i>Enneapogon avenaceus</i>	Bottle-washers	O
* <i>Eragrostis cilianensis</i>	Stink Grass	O
<i>Eragrostis dielsii</i>	Mallee Love-grass	L, O
<i>Eragrostis elongata</i>	Close-headed Love-grass	
<i>Eragrostis lacunaria</i>	Purple Love-grass	L

6.

* <i>Hordeum leporinum</i>	Barley-grass	O, L
* <i>Koeleria phleoides</i>	Annual Cat's-tail	L
* <i>Lamarckia aurea</i>	Golden-top	
* <i>Lolium perenne</i>	Perennial Rye-grass	O
<i>Neurachne alopecuroidea</i>	Fox-tail Mulga Grass	M
* <i>Parapholis incurva</i>	Coast Barb-grass	
* <i>Parapholis strigosa</i>	Slender Barb-grass	S
<i>Paspalidium jubiflorum</i>	Warrego Summer-grass	O, L
* <i>Phalaris paradoxa</i>	Paradoxical Canary-grass	
* <i>Phalaris tuberosa</i>	Toowoomba Canary-grass	
<i>Poa drummondiana</i>	Knotted Poa	M
<i>Pseudoraphis spinescens</i>	Spiny Mud Grass	
* <i>Schismus barbatus</i>	Arabian Grass	M, O, L, S
<i>Stipa acrociliata</i>	Graceful Spear-grass	M
<i>Stipa elegantissima</i>	Feather Spear-grass	M
<i>Stipa hemipogon</i>	Spear-grass	M
<i>Stipa nitida</i>	Balcarra Grass	M, O
<i>Stipa platychaeta</i>	Flat-awned Spear-grass	M
<i>Stipa variabilis</i>	Variable Spear-grass	M, O
<i>Tragus australianus</i>	Small Bur-grass	M, O
<i>Triodia scariosa</i>	Porcupine Grass	M
<i>Triraphis mollis</i>	Needle Grass	M, O
* <i>Trisetum pumilum</i>	Tiny Bristle-grass	M, O, S
* <i>Triticum aestivum</i>	Wheat	
* <i>Vulpia bromoides</i>	Squirrel-tail Fescue	M, O, L, S
* <i>Vulpia myuros</i>	Rat's-tail Fescue	M

Hydrocharitaceae

<i>Ottelia ovalifolia</i>	Swamp Lily	L
<i>Vallisneria spiralis</i>	Eel-weed	L

Hypoxidaceae

<i>Hypoxis glabella</i>	Yellow Star	O
<i>Hypoxis pusilla</i>	Tiny Star	O

Juncaceae

Juncus australis agg.	Austral Rush	L
Juncus bufonius	Toad Rush	L
* Juncus capitatus	Capitate Rush	
Juncus pallidus	Pale Rush	
Juncus radula	Hoary Rush	
Juncus subsecundus	Finger Rush	L

Juncaginaceae

Triglochin calcitrapa	Spurred Arrowgrass	M, L, S
Triglochin centrocarpa	Dwarf Arrowgrass	M, O, L, S

Liliaceae

Anguillaria dioica	Early Nancy	O
Arthropodium minus	Small Vanilla-lily	O
* Asparagus asparagoides	Smilax Asparagus	O
* Asphodelus fistulosus	Orion-weed	O, L
Bulbine semibarbata	Leek Lily	O, L
Caesia lateriflora	Sand Lily	O
Dianella laevis	Pale Flax-lily	O, L
Dianella revoluta	Black-anther Flax-lily	M
Lomandra effusa	Scented Mat-rush	M
Lomandra glauca	Pale Mat-rush	M
Lomandra juncea	Desert Mat-rush	
Lomandra leucocephala	White Mat-rush	M
Thysanotus baueri	Mallee Fringe-lily	M, O
Thysanotus patersonii	Twining Fringe-lily	M
Tricoryne elatior	Yellow Rush-lily	M

Orchidaceae

Caladenia dilatata	Green-comb Spider-orchid	M
Calochilus campestris	Copper Beard-orchid	M
Prasophyllum fusco-viride	Mallee Midge-orchid	
Prasophyllum odoratum	Sweet Leek-orchid	

8.

<i>Pterostylis biseta</i>	Rusty-hood	M
<i>Pterostylis mutica</i>	Midget Greenhood	M
<i>Pterostylis nana</i>	Dwarf Greenhood	M
<i>Thelymitra aristata</i>	Scented Sun-orchid	M

Potamogetonaceae

<i>Potamogeton ochreatus</i>	Blunt Pondweed	L
<i>Potamogeton sulcatus</i>	Furrowed Pondweed	L

DICOTYLEDONSAizoaceae

<i>Disphyma australe</i>	Rounded Noon-flower	M, O
* <i>Gasoul crystallinum</i>	Common Ice-plant	M
<i>Glinus lotoides</i>	Hairy Carpet-weed	L
<i>Glinus oppositifolius</i>	Slender Carpet-weed	
* <i>Psilocaulon tenue</i>	Wiry Noon-flower	M, O
<i>Sarcozona praecox</i>	Sarcozona	M
<i>Tetragonia tetragonioides</i>	New Zealand Spinach	O

Amaranthaceae

<i>Alternanthera denticulata</i>	Joyweed	L
<i>Amaranthus grandiflorus</i>	Large-flower Amaranth	O
<i>Ptilotus exaltatus</i>	Lamb-tails	M
<i>Ptilotus seminudus</i>	Rabbit-tails	M
<i>Ptilotus spathulatus</i>	Pussy-tails	O

Anacardiaceae

* <i>Schinus molle</i>	Pepper-tree	
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Asclepiadaceae

<i>Leichhardtia australis</i>	Austral Doubah	M
<i>Pentatropis quinquepartita</i>	Purple Pentatropis	M

Boraginaceae

Cynoglossum australe	Austral Hound's-tongue	M, 0
Cynoglossum suaveolens	Sweet Hound's-tongue	
Halgania cyanea	Rough Halgania	M
Halgania lavandulacea	Lavender Halgania	M
* Heliotropium europaeum	Common Heliotrope	L
* Lithospermum arvense	Corn Bromwell	
Omphalolappula concava	Burr Stickseed	M
Plagiobothrys elacantha	Hairy Forget-me-not	
Plagiobothrys plurisepala	White Rhochelia	M, 0

Caesalpinaceae

Cassia nemophila	Desert Cassia	M, 0
var. coriacea	Desert Cassia	
var. platypoda	Desert Cassia	

Callitrichaceae

Callitriche sonderi	Water Starwort	L
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Campanulaceae

Pratia concolor	Poison Pratia	L
Wahlenbergia communis	Tufted Bluebell	M, 0
Wahlenbergia fluminalis	River Bluebell	L
Wahlenbergia gracilentata	Annual Bluebell	0
Wahlenbergia quadrifida	Sprawling Bluebell	0, L
Wahlenbergia tadgellii	Tadgell's Bluebell	0

Caryophyllaceae

Gypsophila australis	Austral Chalkwort	
* Herniaria hirsuta	Herniaria	L
* Petrorhagia velutina	Hairy Pink	0
Sagina apetala	Common Pearlwort	
Sagina procumbens	Spreading Pearlwort	
Scleranthus minusculus	Knawel	M, 0

10.

* <i>Silene longicaulis</i>	Portuguese Catchfly	M, O
* <i>Silene nocturna</i>	Mediterranean Catchfly	M, O
<i>Spergularia diandra</i>	Lesser Sand-spurrey	
* <i>Spergularia rubra</i>	Red Sand-spurrey	M, O, L, S
<i>Stellaria filiformis</i>	Thread Starwort	
* <i>Stellaria media</i>	Chickweed	
<i>Stellaria multiflora</i>	Rayless Starwort	O

Casuarinaceae

<i>Casuarina cristata</i>	Belar	S
<i>Casuarina luehmannii</i>	Bull-oak	O
<i>Casuarina muellerana</i>	Slaty She-oak	M

Chenopodiaceae

<i>Arthrocnemum halocnemoides</i>	Grey Glasswort	S
var. <i>pergranulatum</i>	Shrubby Glasswort	S
<i>Arthrocnemum leiostachyum</i>	Brown-head Glasswort	
<i>Arthrocnemum lylei</i>	Slender Glasswort	S
<i>Atriplex acutibractea</i>	Saltbush	M
<i>Atriplex eardleyae</i>	Saltbush	
<i>Atriplex inflata</i>	Swollen Saltbush	O
<i>Atriplex leptocarpa</i>	Slender-fruit Saltbush	L
<i>Atriplex lindleyi</i>	Desert Saltbush	O
<i>Atriplex nummularia</i>	Oldman Saltbush	O
<i>Atriplex papillata</i>	Saltbush	S
<i>Atriplex prostrata</i>	Creeping Saltbush	M, O, L, S
<i>Atriplex semibaccata</i>	Berry Saltbush	M
<i>Atriplex spongiosa</i>	Spongy Saltbush	M
<i>Atriplex stipitata</i>	Kidney Saltbush	M
<i>Atriplex suberecta</i>	Saltbush	O, L
<i>Atriplex vesicaria</i>	Bladder Saltbush	S
<i>Babbagia acroptera</i>	Babbagia	
<i>Bassia brachyptera</i>	Hairy Bassia	
<i>Bassia diacantha</i>	Two-spined Saltbush	M, O

<i>Bassia obliquicuspis</i>	Oblique-spined Saltbush	M, O
<i>Bassia paradoxa</i>	Curious Saltbush	M
<i>Bassia parviflora</i>	Prickly Saltbush	M
<i>Bassia patenticuspis</i>	Spear-fruit Saltbush	M
<i>Bassia quinquecuspis</i>	Five-spined Saltbush	
var. <i>villosa</i>	Five-spined Saltbush	O, L
<i>Bassia sclerolaenoides</i>	Woolly-fruit Saltbush	M, O
<i>Bassia stelligera</i>	Star-fruit Bassia	O, L
<i>Bassia tricuspis</i>	Three-spined Saltbush	M, O
<i>Bassia uniflora</i>	Bassia	L
<i>Chenopodium album</i>	Fat Hen or White Goosefoot	
<i>Chenopodium atriplicinum</i>	Starry Goosefoot	L
<i>Chenopodium cristatum</i>	Crested Goosefoot	O
<i>Chenopodium desertorum</i>	Desert Goosefoot	M
* <i>Chenopodium murale</i>	Sowbane	O
<i>Chenopodium nitrariaceum</i>	Nitre Goosefoot	
<i>Chenopodium pseudomicrophyllum</i>	Small-leaved Goosefoot	M
<i>Chenopodium pumilio</i>	Clammy Goosefoot	
<i>Enchylaena tomentosa</i>	Barrier or Ruby Saltbush	M, O
<i>Kochia brevifolia</i>	Short-leaved Bluebush	M
<i>Kochia erioclada</i>	Rosy Bluebush	M
<i>Kochia excavata</i>	Bottle Bluebush	
<i>Kochia georgei</i>	Satiny Bluebush	O
<i>Kochia oppositifolia</i>	Heathy Bluebush	S
<i>Kochia pentagona</i>	Slender Bluebush	
<i>Kochia pentatropis</i>	Bluebush	M
<i>Kochia pyramidata</i>	Black Bluebush	M
<i>Kochia sedifolia</i>	Hoary Bluebush	O
<i>Kochia tomentosa</i>	Bluebush	M, S
<i>Kochia villosa</i> var. <i>tenuifolia</i>	Common Bluebush	
<i>Pachycornia tenuis</i>	Slender Glasswort	
<i>Rhagodia gaudichaudiana</i>	Cottony Saltbush	M
<i>Rhagodia nutans</i>	Nodding Saltbush	M, O, L
<i>Rhagodia spinescens</i>	Hedge Saltbush	M
<i>Salsola kali</i>	Prickly Saltwort or Roly Poly	M, O
<i>Threlkeldia salsuginosa</i>	Bone-fruit	S

Compositae

Actinobole uliginosum	Flannel Cudweed	M, O
Angianthus pusillus	Dwarf Cup-flower	M
Angianthus strictus	Stiff Cup-flower	M, O, L, S
Angianthus tomentosus	Hairy Cup-flower	M, L
* Arctotheca calendula	Capeweed	O
* Bidens pilosa	Cobbler's Pegs	O
Brachycome basaltica var. gracilis	Daisy	
Brachycome ciliaris var. lanuginosa	Fringed Daisy Fringed Daisy	M, O, S
Brachycome goniocarpa	Dwarf Daisy	M
Brachycome lineariloba	Hard-head Daisy	M, O, S
Brachycome perpusilla var. tenella	Rayless Daisy	O
Calocephalus drummondii	Dwarf Beauty-heads	M
Calocephalus sonderi	Pale Beauty-heads	
Calotis cuneifolia	Bindi-eye	L
Calotis cymbacantha	Yellow Burr-daisy	M
Calotis erinacea	Burr-daisy	M, O
Calotis hispidula	Bogan-flea	M, O
Calotis scabiosifolia	Burr-daisy	
* Carduus tenuiflorus	Slender Thistle	M, L
* Carthamus lanatus	Saffron Thistle	M, O, L
* Centaurea melitensis	Maltese Cockspur	M, O, L
* Centaurea repens	Creeping Knapweed	
Centipeda cunninghamii	Common Sneezeweed	L
Centipeda minima	Spreading Sneezeweed	L
* Chondrilla juncea	Skeleton-weed	O
Chthonocephalus pseudevax	Earth Stars	M, O
* Cirsium vulgare	Spear Thistle	L
* Conyza bonariensis	Flax-leaved Fleabane	L
Cotula australis	Common Cotula	L
* Cotula bipinnata	Ferny Cotula	L
Craspedia pleiocephala	Soft Billy-buttons	M
Cymbonotus preissianus	Austral Bear's-ear	L
Eclipta platyglossa	Yellow Twin-heads	L

<i>Elachanthus pusillus</i>	Elachanth	O, S
<i>Epaltes australis</i>	Spreading Nut-heads	L
<i>Epaltes cunninghamii</i>	Tall Nut-heads	
<i>Eriochlamys behrii</i>	Woolly Mantle	
<i>Gnaphalium indicum</i>	Indian Cudweed	
<i>Gnaphalium involucreatum</i>	Common Cudweed	M
<i>Gnaphalium luteo-album</i>	Jersey Cudweed	L
* <i>Hedypnois cretica</i>	Cretan Hedypnois	O
<i>Helichrysum apiculatum</i>	Common Everlasting	M
<i>Helichrysum bracteatum</i>	Golden Everlasting	M
<i>Helichrysum catadromum</i>	Ridged Everlasting	M
<i>Helichrysum leucopsideum</i>	Satin Everlasting	M
<i>Helichrysum tepperi</i>	Delicate Everlasting	M
<i>Helipterum demissum</i>	Tiny Sunray	M
<i>Helipterum moschatum</i>	Musk Sunray	O
<i>Helipterum pygmaeum</i>	Sunray	M, O, L, S
<i>Helipterum stuartianum</i>	Sunray	O
* <i>Hypochaeris glabra</i>	Smooth Cat's-ear	M, O, L, S
* <i>Hypochaeris radicata</i>	Flatweed	
* <i>Inula graveolens</i>	Stinkwort	M, O, L
<i>Isoëtopsis graminifolia</i>	Grass Cushion	M, O
* <i>Lactuca serriola</i>	Prickly Lettuce	L
<i>Leptorhynchos waitzia</i>	Button Immortelle	M
<i>Microseris scapigera</i>	Yam-daisy	M
<i>Millotia macrocarpa</i>	Large-fruited Millotia	M
<i>Millotia myosotidifolia</i>	Broad-leaf Millotia	
<i>Millotia tenuifolia</i>	Soft Millotia	M
<i>Minuria cunninghamii</i>	Bush Minuria	O, S
<i>Myriocephalus rhizocephalus</i>	Woolly-heads	L
<i>Myriocephalus stuartii</i>	Poached-Eggs Daisy	M, O
<i>Olearia ciliata</i>	Blue Daisy-bush	M
<i>Olearia lepidophylla</i>	Club-moss Daisy-bush	M
<i>Olearia muelleri</i>	Dusky Daisy-bush	M
<i>Olearia pimeleoides</i>	Burrobunga or Pimelea Daisy-bush	M, O
<i>Olearia rudis</i>	Azure Daisy-bush	M
<i>Olearia teretifolia</i>	Daisy-bush	M

* Onopordum acaulon	Stemless Onopordum	M, O
Podolepis capillaris	Wiry Podolepis	M
Podolepis rugata	Pleated Podolepis	M
Podosperma angustifolium	White or Sticky Longheads	M
* Reichardia tingitana	Reichardia	O
* Scorzonera laciniata	Scorzonera	O, L
Senecio glossanthus	Groundsel	M
Senecio lautus	Variable Groundsel	M
Senecio platylepis	Groundsel	
Senecio quadridentatus	Cotton Fireweed	M
Senecio runcinifolius	Tall Groundsel	L
* Senecio vulgaris ?	Common Groundsel	
* Sonchus asper	Rough Sow-thistle	M, L
* Sonchus oleraceus	Sow-thistle	M, L
* Taraxacum officinale	Dandelion	
Toxanthes muelleri	Common Bow-flower	M, O, S
Toxanthes perpusilla	Tiny Bow-flower	M, O, S
* Verbensina encelioides	Crown-beard	L
Vittadinia triloba	Common New Holland Daisy	M, O
Waitzia acuminata	Orange Immortelle	M
* Xanthium spinosum	Bathurst Burr	O

Convolvulaceae

Convolvulus erubescens	Blushing Bindweed	O, L
Cressa cretica	Rosin weed	L, S

Crassulaceae

Crassula colorata	Dense Stone-crop	M
Crassula helmsii	Swamp Crassula	
Crassula macrantha	Spreading Crassula	
Crassula peduncularis	Purple Crassula	
Crassula sieberiana	Austral Crassula	M, O

Cruciferae

Alyssum linifolium	Desert Alyssum	
Arabidella trisecta	Woody Cress	M
* Brassica tournefortii	Mediterranean or Wild Turnip	M, O, L
* Capsella bursa-pastoris	Shepherd's Purse	
Cardamine hirsuta	Northern Bitter-cress	L
* Diplotaxis muralis	Wall Rocket	
Geococcus pusillus	Earth Cress	L
Harmsiodoxa blennodioides	May Smocks	O, L
Hymenolobus procumbens	Oval Purse	S
Lepidium fasciculatum	Bundled Pepper-cress	
Lepidium hyssopifolium	Common Pepper-cress	
Lepidium leptopetalum	Slender Pepper-cress	M
Lepidium monoplocoides	Winged Pepper-cress	M, O
Lepidium papillosum	Warty Pepper-cress	M
Menkea australis	Fairy Spectacles	M
Pachymites cardaminoides	Sand Cress	M
Rorippa islandica	Marsh Yellow-cress	L
* Sisymbrium irio	London Rocket	O
* Sisymbrium orientale	Indian Hedge-mustard	
Stenopetalum lineare	Narrow Thread-petal	M
Stenopetalum sphaerocarpum	Pea Thread-petal	M

Cucurbitaceae

* Citrullus colocynthis	Colocynth	O
* Citrullus lanatus	Water, Bitter or Bastard Melon	O
* Cucumis myriocarpus	Paddy Melon	O
Melothria micrantha	Mallee Cucumber	L

Dilleniaceae

Hibbertia sericea	Silky Guinea-flower	M
Hibbertia stricta	Erect Guinea-flower	M
Hibbertia virgata var. crassifolia	Guinea-flower	M

Elatinaceae

Elatine gratioloides Waterwort

Epacridaceae

Leucopogon cordifolius Heart-leaf Beard-heath M

Leucopogon rufus Ruddy Beard-heath M

Euphorbiaceae

Adriana hookeri Mallee Bitter-bush M

Bertya mitchellii Olive Bertya M

Beyeria leschenaultii Pale Turpentine-bush M

Beyeria opaca Dark Turpentine-bush M

Euphorbia drummondii Flat Spurge M, O

Euphorbia terracina Flat Caper L

Poranthera microphylla Small Poranthera M

Frankeniaceae

Frankenia crispa Hoary Sea-heath S

Frankenia foliosa Sea-heath S

Fumariaceae

* *Fumaria bastardii?* Fumitory

* *Fumaria capreolata* Ramping Fumitory O, L

Gentianaceae

* *Centaurium pulchellum* Centaury

Centaurium spicatum Austral Centaury M

Geraniaceae

* *Erodium botrys* Big Heron's-bill O

* *Erodium cicutarium* Stork's-bill M, O

Erodium crinitum Blue Heron's-bill O

Pelargonium australe Austral Stork's-bill M

Goodeniaceae

<i>Dampiera lanceolata</i>	Grooved Dampiera	M
<i>Dampiera marifolia</i>	Velvet Dampiera	M
<i>Dampiera rosmarinifolia</i>	Rosemary Dampiera	M
<i>Goodenia affinis</i>	Silver Goodenia	M
<i>Goodenia glauca</i>	Pale Goodenia	O
<i>Goodenia heteromera</i>	Goodenia	
<i>Goodenia pinnatifida</i>	Cut-leaf Goodenia	O
<i>Goodenia pusilliflora</i>	Goodenia	M, O, S
<i>Goodenia varia</i>	Sticky Goodenia	M
<i>Scaevola aemula</i>	Fairy Fan-flower	M
<i>Scaevola depauperata</i>	Skeleton Fan-flower	M
<i>Scaevola spinescens</i>	Prickly Fan-flower	M
<i>Velleia connata</i>	Cup Velleia	M
<i>Velleia paradoxa</i>	Spur Velleia	L

Gyrostemonaceae

<i>Codonocarpus cotinifolius</i>	Bell-fruit	M
<i>Gyrostemon australasicus</i>	Wheel-fruit	M

Haloragaceae

<i>Haloragis heterophylla</i>	Raspwort	
<i>Haloragis odontocarpa</i>	Toothed Raspwort	M
<i>Loudonia behrii</i>	Golden Pennants	M
<i>Myriophyllum propinquum</i>	Water-milfoil	L
<i>Myriophyllum verrucosum</i>	Water-milfoil	L

Hypericaceae

<i>Hypericum gramineum</i>	Small St. John's Wort	L
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Labiatae

<i>Ajuga australis</i>	Austral Bugle	M, O, L
* <i>Marrubium vulgare</i>	Horehound	O, L
<i>Prostanthera microphylla</i> <i>forma aeruginosa</i>	Small-leaf Mint-bush	M

18.

* <i>Salvia verbenaca</i>	Wild Sage	
* var. <i>vernalis</i>	Wild Sage	M, 0
<i>Teucrium racemosum</i>	Grey Germander	0
var. <i>tripartitum</i>	Grey Germander	0
<i>Westringia rigida</i>	Stiff Westringia	M
 <u>Lauraceae</u>		
<i>Cassytha melantha</i>	Large Dodder-laurel	M
 <u>Loganiaceae</u>		
<i>Logania nuda</i>	Bare Logania	M
 <u>Loranthaceae</u>		
<i>Amyema linophyllum</i>	Slender Mistletoe	on Bull-oak
<i>Amyema miquelii</i>	Box Mistletoe	on eucalypts
<i>Amyema miraculosum</i>	Fleshy Mistletoe	
<i>Amyema pendulum</i>	Drooping Mistletoe	
<i>Amyema preissii</i>	Wire-leaf Mistletoe	on acacias
<i>Lysiana exocarpi</i>	Harlequin Mistletoe	
 <u>Lythraceae</u>		
<i>Lythrum hyssopifolia</i>	Lesser Loosestrife	M
 <u>Malvaceae</u>		
<i>Abutilon otocarpum</i>	Desert Chinese-lantern	0
<i>Abutilon theophrasti</i>	Swamp Chinese-lantern	L
<i>Lavatera plebeia</i>	Australian Hollyhock	L
<i>Lawrenxia glomerata</i>	Clustered Lawrenxia	S
* <i>Malva parviflora</i>	Small-flowered Mallow	L
<i>Selenothamnus squamatus</i>	Thorny Plagianth	S
<i>Sida ammophila</i>	Sand Sida	0
<i>Sida corrugata</i>	Variable Sida	
<i>Sida intricata</i>	Twiggy or Tangled Sida	0

Mimosaceae

<i>Acacia acanthoclada</i>	Harrow Wattle	M
<i>Acacia brachybotrya</i>	Grey Mulga	M
<i>Acacia colletioides</i>	Wait-a-while	M
<i>Acacia hakeoides</i>	Hakea Wattle	M
<i>Acacia ligulata</i>	Small Cooba	M, O
<i>Acacia microcarpa</i>	Manna Wattle	M
<i>Acacia oswaldii</i>	Umbrella Wattle	M, O
<i>Acacia rigens</i>	Nealie	M
<i>Acacia sclerophylla</i>	Hard-leaf Wattle	M
<i>Acacia spinescens</i>	Spiny Wattle	M
<i>Acacia stenophylla</i>	Eumong	L
<i>Acacia victoriae</i>	Bramble Wattle	O
<i>Acacia wilhelmiana</i>	Dwarf Nealie	M

Myoporaceae

<i>Eremophila glabra</i>	Common or Dwarf Emu-bush	M
<i>Eremophila longifolia</i>	Berrigan	O
<i>Myoporum platycarpum</i>	Sugarwood	M

Myrtaceae

<i>Baeckea behrii</i>	Broom Heath-myrtle	M
<i>Baeckea crassifolia</i>	Desert Baeckea	M
<i>Callistemon brachyandrus</i>	Prickly Bottle-brush	L
<i>Calytrix tetragona</i> (awnless form)	Fringe-myrtle	M
<i>Eucalyptus camaldulensis</i>	River Red Gum	L
<i>Eucalyptus dumosa</i>	Dumosa Mallee	M
<i>Eucalyptus foecunda</i>	Slender-leaf Mallee	M
<i>Eucalyptus gracilis</i>	Yorrell or White Mallee	M
<i>Eucalyptus incrassata</i>	Yellow Mallee	M
<i>var. costata</i>	Angular Yellow Mallee	M
<i>Eucalyptus largiflorens</i>	Black Box	L
<i>Eucalyptus oleosa</i>	Acorn or Oil Mallee	M
<i>Eucalyptus socialis</i>	Grey Mallee	M

Leptospermum laevigatum var. minus	Mallee Green Tea-tree	M
Melaleuca acuminata	Mallee Honey-myrtle	M
Melaleuca halmaturorum	Salt Paper-bark	
Melaleuca lanceolata	Moonah	M
<u>Nyctaginaceae</u>		
Boerhavia diffusa	Tar-vine	O
<u>Oleaceae</u>		
Jasminum lineare	Desert Jasmine	M
<u>Onagraceae</u>		
Ludwigia peploides ssp. montevidensis	Clove-strip	L
* Oenothera striata	Common Evening Primrose	O
<u>Oxalidaceae</u>		
Oxalis corniculata	Yellow Wood-sorrel	M, O
<u>Papaveraceae</u>		
Papaver aculeatum	Bristle Poppy	
* Papaver hybridum	Wild Poppy	M
* Papaver somniferum	Opium	M
<u>Papilionaceae</u>		
Aotus ericoides	Common Aotus	M
Daviesia ulicifolia	Gorse Bitter-pea	M
Eutaxia microphylla	Eutaxia	M
Glycine canescens	Silky Glycine	O
Glycyrrhiza acanthocarpa	Australian Liquorice	L
Kennedia prostrata	Running Postman	
Lotus cruentus	Crimson Trefoil	O
* Medicago minima	Small Burr Medic	O
* Medicago polymorpha	Burr Medic	
* Medicago sativa	Lucerne	O, L

* <i>Medicago truncatula</i>	Barrel Medic	O
* <i>Melilotus indica</i>	Sweet Melilot	M
<i>Psoralea cinerea</i>	Hoary Psoralea or Scurf-pea	L
<i>Psoralea eriantha</i>	Woolly Psoralea or Scurf-pea	O
<i>Swainsona laxa</i>	Swainsona	
<i>Swainsona microphylla</i>	Swainsona	O
<i>Swainsona oroboides</i>		
var. <i>reticulata</i>	Swainsona	
var. <i>sericea</i>	Swainsona	O
<i>Swainsona phacoides</i>	Swainsona	O
<i>Templetonia egena</i>	Round Templetonia	L
<i>Templetonia sulcata</i>	Flat Templetonia	M
* <i>Trifolium arvense</i>	Hare's-foot Clover	O
* <i>Trifolium tomentosum</i>	Woolly Clover	O
<i>Trigonella suavissima</i>	Sweet Fenugreek	
* <i>Vicia sativa</i>	Common Vetch	
 <u>Pittosporaceae</u>		
<i>Billardiera cymosa</i>	Sweet Appleberry	M
<i>Bursaria spinosa</i>	Sweet Bursaria	M
<i>Pittosporum phillyreoides</i>	Weeping Pittosporum	M, O
 <u>Plantaginaceae</u>		
* <i>Plantago pritzelii</i>	Dark Plantain	
<i>Plantago varia</i>	Variable Plantain	M, O, L, S
 <u>Plumbaginaceae</u>		
* <i>Limonium thouinii</i>	Winged Sea Lavender	M
 <u>Polygalaceae</u>		
<i>Comesperma scoparium</i>	Broom Milkwort	M

Polygonaceae

* <i>Emex australis</i>	Three-corner Jack	O
<i>Muehlenbeckia cunninghamii</i>	Tangled Lignum	L
<i>Muehlenbeckia diclina</i>	Twiggy Lignum	M
* <i>Polygonum aviculare</i>	Wire-weed or Prostrate Knotweed	L
<i>Polygonum lanigerum</i>	Woolly Knotweed	L
<i>Polygonum lapathifolium</i>	Pale Knotweed	L
<i>Polygonum plebeium</i>	Small Knotweed	L
<i>Polygonum prostratum</i>	Trailing Knotweed	L
<i>Rumex brownii</i>	Slender Dock	
* <i>Rumex crispus</i>	Curled Dock	M
<i>Rumex crystallinus</i>	Glistening Dock	L

Portulacaceae

<i>Calandrinia calyptrata</i>	Pink Purslane	
<i>Calandrinia corrigioloides</i>	Strap Purslane	M
<i>Calandrinia eremea</i>	Tiny Purslane	O, L, S
<i>Calandrinia neesiana</i>	Pigmy Purslane	M

Primulaceae

* <i>Anagallis arvensis</i>	Scarlet Pimpernel	M
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Proteaceae

<i>Grevillea huegelii</i>	Comb Grevillea	M
<i>Grevillea ilicifolia</i> (& var. <i>lobata</i>)	Holly-leaved Grevillea	M
<i>Grevillea pterosperma</i>	Desert Grevillea	M
<i>Hakea leucoptera</i>	Silver Needlewood	M
<i>Hakea muellerana</i>		M
<i>Hakea vittata</i>	Hooked Needlewood	O

Ranunculaceae

<i>Clematis microphylla</i>	Small-leaved Clematis	M
<i>Myosurus minimus</i>	Mouse-tail	L
<i>Ranunculus pentandrus</i>	Inland Buttercup	L
<i>Ranunculus pumilio</i>	Buttercup	
<i>Ranunculus sessiflorus</i>	Buttercup	

Rhamnaceae

<i>Cryptandra leucophracta</i>	White Cryptandra	M
<i>Cryptandra propinqua</i>	Silky Cryptandra	M
<i>Cryptandra tomentosa</i>	Prickly Cryptandra	M
<i>Spyridium eriocephalum</i>	Heath Spyridium	M
<i>Spyridium subochreatum</i>	Velvet Spyridium	M
<i>Spyridium tridentatum</i>	Trident Spyridium	M

Rosaceae

* <i>Aphanes arvensis</i>	Sheep Burr	
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Rubiaceae

<i>Asperula conferta</i>	Wimmera Woodruff	L
<i>Opercularia turpis</i>	Twiggy Stinkweed	M
<i>Opercularia varia</i>	Variable Stinkweed	

Rutaceae

<i>Boronia caerulescens</i>	Blue Boronia	M
<i>Eriostemon difformis</i>	Small-leaf Waxflower	
<i>Phebalium bullatum</i>	Desert Phebalium	M

Santalaceae

<i>Exocarpos aphyllus</i>	Leafless Ballart	M
<i>Exocarpos sparteus</i>	Broom Ballart	M
<i>Santalum acuminatum</i>	Sweet Quandong	M
<i>Santalum murrayanum</i>	Bitter Quandong	M

Sapindaceae

<i>Dodonaea angustissima</i>	Slender Hop-bush	M, O
<i>Dodonaea bursariifolia</i>	Small Hop-bush	M
<i>Heterodendrum oleifolium</i>	Cattle Bush	M, O

Scrophulariaceae

Glossostigma drummondii	Desert Mud-mat	
Glossostigma elatinoides	Small Mud-mat	L
Limosella australis	Austral Mud-mat	L
Limosella curdieana	Large Mud-mat	L
Morgania glabra		
var. floribunda	Blue-rod	L
Veronica peregrina	Wandering Speedwell	L

Solanaceae

Anthocercis myosotidea	Small-leaf Ray-flower	M
* Datura innoxia	Recurved Thornapple	O, L
Lycium australe	Australian Box-thorn	S
* Lycium ferocissimum	African Box-thorn	L
Nicotiana glauca	Tree Tobacco	M, L
Nicotiana velutina	Velvet Tobacco	M, O
Solanum esuriale	Quena	O
* Solanum nigrum	Black Nightshade	L
Solanum simile	Oondoroo	M, L

Stackhousiaceae

Stackhousia monogyna	Creamy Stackhousia	M
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Sterculiaceae

Lasiopetalum baueri	Slender Velvet-bush	
Lasiopetalum behrii	Pink Velvet-bush	M

Thymelaeaceae

Pimelea dichotoma	Diosma Rice-flower	
Pimelea simplex	Desert Rice-flower	S
Pimelea trichostachya	Spiked Rice-flower	M, S
Pimelea williamsonii	Williamson's Rice-flower	

Umbelliferae

Daucus glochidiatus	Austral Carrot	M, O
Hydrocotyle capillaris	Pennywort	
Hydrocotyle medicaginoides	Pennywort	S
Hydrocotyle rugulosa	Pennywort	
Trachymene anisocarpa	Wild Parsnip	
Trachymene cyanopetala	Purple Trachymene	M

Urticaceae

Parietaria debilis	Forest Pellitory	M
* Urtica urens	Stinging Nettle	O, L

Verbenaceae

Verbena officinalis	Common Verbena	L
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Violaceae

Hybanthus floribundus	Shrub Violet	M
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Zygophyllaceae

Nitraria schoberi	Nitre-bush	S
Tribulus terrestris	Caltrop	O
Zygophyllum ammophilum	Sand Twin-leaf	M
Zygophyllum apiculatum	Pointed Twin-leaf	M
Zygophyllum aurantiacum	Shrubby Twin-leaf	M
var. eremaeum	Shrubby Twin-leaf	M
Zygophyllum crenatum	Notched Twin-leaf	M
Zygophyllum glaucum	Pale Twin-leaf	M, O
Zygophyllum ovatum	Dwarf Twin-leaf	M

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Total number of species: 566

Number of introduced species: 102

DICOTYLEDONSAmaranthaceae

Ptilotus nobilis	Yellow-tails
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Ceratophyllaceae

Ceratophyllum demersum	Common Hornwort
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Chenopodiaceae

Atriplex muelleri	Mueller Saltbush
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Compositae

Calocephalus citreus	Lemon Beauty-heads
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Gnaphalium japonicum	Common Cudweed
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Helipterum corymbiflorum	Paper Sunray
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Olearia subspicata	Daisy-bush
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Podolepis arachnoidea	Podolepis
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Cruciferae

Arabidella nasturtium	Yellow Cress
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Euphorbiaceae

* Ricinus communis	Castor-oil Plant
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Geraniaceae

Geranium solanderi	Austral Cranesbill
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Goodeniaceae

Goodenia robusta	Woolly Goodenia
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Labiatae

Mentha australis

River Mint

Mentha diemenica

Slender Mint

Myoporaceae

Myoporum parvifolium

Creeping Myoporum

Myrtaceae

Eucalyptus calycogona

Red Mallee

Eucalyptus oxypoma

Deniliquin Box

(E. camaldulensis X E. largiflorens)

Eucalyptus porosa

Black Mallee Box

Papilionaceae

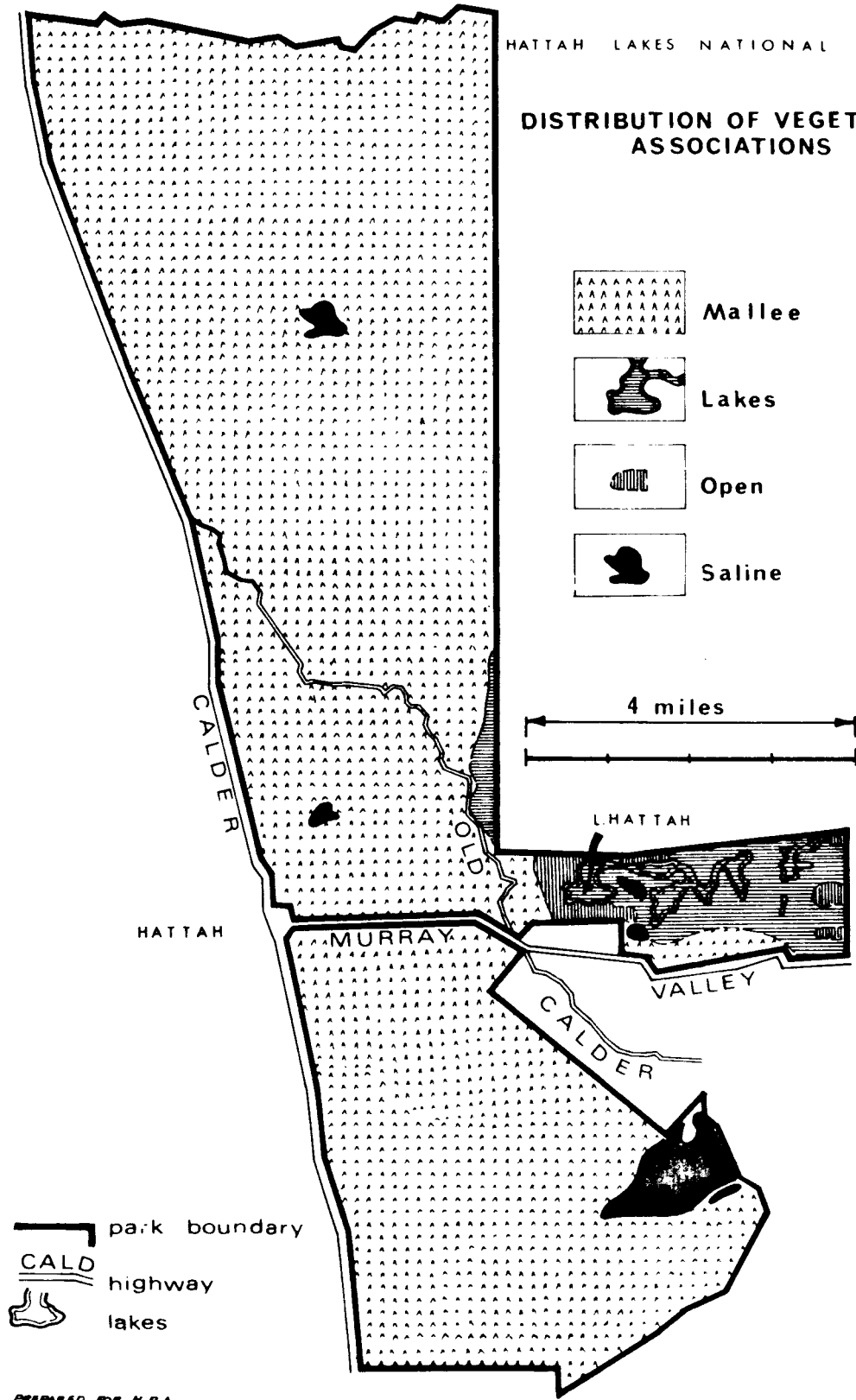
* Vicia monantha





One-flower Vetch

NOWINGI

HATTAH LAKES NATIONAL PARK




DISTRIBUTION OF VEGETATION ASSOCIATIONS



-  Mallee
-  Lakes
-  Open
-  Saline

4 miles



-  park boundary
-  highway
-  lakes

PREPARED FOR N.P.A.
BY S.C.A. AUG 1970 D.L.

MOSSES

Acaulon integrifolium
Aloina sullivaniana
Barbula pseudopilifera
Breutelia affinis
Bryum campylothecium
Bryum pachytheca
Campylopus introflexus
Ceratodon purpureus
Desmatodon convolutus
Funaria hygrometrica
Gigaspermum repens
Goniomitrium enerve
Pleuridium nervosum
Pterygoneurum ?kemsleyi
Sematophyllum homomallum
Tortella calycina
Tortula princeps
Triquetrella papillata

(18 spp.)

Recorded by J.H. Willis