# Vascular Flora of Cane River Conservation Park, Western Australia

***A report to the Bush Blitz Program, Australian Biological Resources Study***

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**Nomenclature and taxonomy used in this report (as applicable) is consistent with that from:**

Florabase – The Western Australian Plant Census (WACensus)
http://florabase.dec.wa.gov.au/

The Australian Plant Name Index (APNI)
http://www.anbg.gov.au/databases/apni-about/index.html

The Australian Plant Census (APC)
http://www.anbg.gov.au/chah/apc/about-APC.html

Family taxonomy follows the APG III system (Angiosperm Phylogeny Group 2009).

Cover photo. View from a ridge of banded iron formation of surrounding *Acacia bivenosa* and *Triodia* hummock grasslands on stony plains, near Cane River homestead.

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UNSW: University of New South Wales
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## Abstract

A flora survey was undertaken at the Cane River Conservation Park in June 2011, which involved opportunistic collections and rescoring eight quadrats from a previous survey. A total of 318 taxa (species, subspecies and varieties) was compiled mostly from collections. Eighty eight taxa were new records for the survey area according to herbarium databases. Seventeen of these records were range extensions for the taxa (> 100 km) and two of these were significant range extensions (>350 km). These new records filled a notable gap in the distributions of nineteen taxa. Two taxa of state conservation significance were collected, *Eremophila forrestii* subsp. *viridis* (P1 – WA listing) and *Ptilotis mollis* (P4 – WA listing). These collections were from new (previously unrecorded) populations. Two collections (one of *Corchorus* and *Abutilon* respectively) could be of new taxa, but this relies upon further work for confirmation.

Twelve non-native species were located in the Cane River Conservation Park, most of which are environmental weeds. Buffel grass (*Cenchrus ciliaris*) was the most frequently encountered species, which formed dense infestations in a number of habitat types. No National Weeds of Significance were located in the reserve.


# 1. Introduction

Prior to this current survey, there has been one major floristic survey centred on the conservation reserve (Landscope Expeditions 1999) and eight survey plots had been established within the survey area as part of the wider regional Pilbara Biological Survey (Department of Environment and Conservation).

Of these surveys, the Landscope Expedition was the most comprehensive and first systematic biological survey in the area (Kendrick *et al.* 1999). Run by the department of Conservation and Land Management (CALM) and in association with the University of Western Australia's UWA Extension programme, a team of volunteers and CALM staff conducted a flora and fauna survey of the Cane River station in May 1999. This pastoral lease was later acquired by the conservation agency, combined with the Mount Minnie station and part of Nanutarra Station to become the Cane River Conservation Park. The Landscope Expedition listed 209 taxa of vascular plants identified from 273 collections and 42 sightings (field identifications). A search of herbarium records (Western Australian Herbarium 1998- ) found that 272 accessions had been lodged. This tally of taxa suggests that this Landscope survey was an adequate but not comprehensive survey.

The recent Pilbara Biological Survey found a further c. 56 species not recorded by the Landscope survey, although these PBS survey records have not been finalised.

The aim of this survey was to add to inventory of flora known from the Cane River Conservation Park. This includes an additional area (Mt Minnie Station) proposed for

inclusion in the reserve which had not been surveyed by the Landscope Expedition. Expectations were for a moderate increase in flora records to add to those from the previous two surveys. This survey also provided an opportunity to confirm a number of Landscope sighting records not supplemented with a herbarium voucher.

**Location**: The Cane River Conservation Park is located from 20 to 100 km SE of Onslow township, in the Western Australian shire of Ashburton. The survey area is an irregular polygon spanning a maximum distance E-W of 76 km, and N-S of 68 km (Figure 1). Coordinates for the central point are approximately -22.183333° S, 115.533333°E.

**Climate**: The climate of the survey area is arid (semi desert) climate (Leighton 2004), with mild winters and high summer temperatures (with maximum temperatures exceeding 40°C occurring in the summer months) and most rain failing between January and June (Bureau of Meteorology 1908). Most of the survey area lies in a hot dry summer-mild winter climatic zone, with the most northwestern section of the reserve being closer to the coast and therefore experiencing a hot humid summer – warm winter climate (Leighton 2004). The survey area lies at the 300 mm annual rainfall isohyet (Leighton 2004), and the annual rainfall recorded at the nearest meteorological stations are 276 mm (Onslow (1886 – 2011), 326 mm (Onslow airport: 1940-2011); 290 mm (Minderoo: 1912 – 2006) and 323 mm (Mt Stuart: 1900-2008) (Bureau of Meteorology 1908-). At Mount Minnie station, there was good rainfall in the months preceeding the survey, with 108.9 mm in January followed by 220 mm in February (Bureau of Meteorology 1908-) and some more falls up until June.

**Geology and landforms**: A wide range of landforms occur in the survey area, including ranges, hills, mesas, creeks and rivers, granite outcrops and domes, gibber plains and sandplains (Figures 2 – 3). Ranges and hills include the Parry Range, Mt Minnie and The Tombs. The Cane River bisects the reserve and, with this, is a significant drainage system in the eastern half of the survey area.

The Cane River Conservation Park spans two physiographic regions as defined by Payne (2004a); the Onslow Plain and Augustus Ranges. The northwestern-most section abuts the N-S trending longitundinal dunes of the Carnarvon Dunefield region (Payne 2004a). The northwestern part of the survey area is claypan-dominant terrain – with longitundinal & net dunes of red-brown sand interrupted by claypans. This grades into plains of calcrete and alluvium (clay, silt, sand gravel), interrupted by outcrops of rocky laterite & Nanutarra formation sandstone, siltstone, Proterozoic granites and granitic gneisses (van de Graaff *et al*. 1980, van de Graaff *et al*. 1982, Seymour et al. 1988). Much of the eastern half of the reserve consists of ranges and hills of Precambrian sandstone & dolomite (notably the Parry Range), and rocky plateaux and mesas of wacke, mudstone, ferrugineous mudstone topped with weathered laterite (e.g. The Tombs) and deposits of Quaternary sediments of colluvium and alluvium which form sandy and stony plains (Payne 2004a, van de Graaff *et al*. 1980, van de Graaff *et al*. 1982, Seymour *et al.* 1988).

**Vegetation**: Most of survey area occurs on the southwestern margin of the Pilbara Bioregion (Interim Biogeographic Regionalisation for Australia (IBRA), Department of Sustainability, Environment Water, Population and Communities 2011), with the northwest portion extending into the Carnarvon bioregion. The Pilbara bioregion is equivalent to Beard's (1975) Fortescue Botanical District, and lies in the Eremaean Botanical Province (Beard 1975). Of the Pilbara bioregion, the survey area spans across parts of the Roebourne and Hamersley subregions. As part of the mapping of the wider Pilbara region, Beard (1975) mapped several (c. 11) of vegetation units for the Cane River Conservation Park which incorporate combinations of *Acacia xiphophylla* / *Acacia victoria* (now *A. synchronicia*) shrublands and shrub steppe, *Acacia pyrifolia (*now including *Acacia inaequilaterifolia) / Acacia bivenosa* shrublands and shrub savannah, *Triodia basedownii / Triodia wiseana* spinifex steppe and *Triodia pungens – Triodia wiseana spinifex steppe. Eucalyptus camaldulensis / Eucalyptus victrix woodlands* are associated with the major rivers (Beard 1975, van Vreeswyk 2004).

*Fire:* Fires are a common occurrence in the survey area, being lit for management purposes, started by accident / arson or from lightning strikes. Significant proportions of the survey area had been burnt within the past two – five years, notably along the northern Parry Range and on areas of sand dune c. 40 km south of Onslow.

# 2. Methods

## 2.1 Site selection

There were two phases of the flora survey - rescoring survey plots and then searching for taxa. The Pilbara Biological Survey plots were established in 2004 and rescored in 2006. These were rescored again during this survey to capture any additional species and note any changes. Four of these had been burnt recently (within the past two years).

The Landscope Expedition sites were not revisited. Originally it was planned to update the species inventory from these sites, but these inventories are not currently available. Therefore, the focus shifted to sampling from areas which had not been subject to previous surveys.

As the Pilbara and Landscope surveys only concentrated on comparatively widely occurring surfaces, they were broadscale, regional 'snapshots' of the area. A wider range of specific habitats and landforms were targeted for opportunistic botanical collection, including a range of habitats / geologies and landforms, including rocky outcrops and ranges, wetlands and drainage features, sandplains and gibber plains (Figures 2-3). Post-burn vegetation was also sampled. Digital images were taken of many of the collections and collection sites. An overview of the site vegetation communities are given in Appendix 1, illustrating the range of Land systems of

Payne (2004a, 2004b) and communities visited. The map of the survey area (Figure 1) was produced using DIVA-GIS Version 7.4 freeware (DIVA-GIS 2011).

The survey area is bounded roughly by the four coordinates of (21.833801°S, 115.133244°E); (21.966947°S, 115.866477°E); (22.433129°S, 115.297716°E) and (22.391148°S, 115.750915°E) (Figure 1). Waypoints are listed in Table 1.

**Table 1: Latitude and Longitude (decimal degrees) of flora collection sites in the Cane River Conservation Park.**

| WAYPOINT | LAT | LONG |
|---|---|---|
| Cattle Pool | -21.9871 | 115.569004 |
| Davis Bore | -22.01303 | 115.63275 |
| enroute to WP"BIF" | -22.01154 | 115.626157 |
| Lobelia | -22.430044 | 115.290111 |
| Mt Minnie Homestead | 21.971422 | 115.432214 |
| creek crossing enroute to WYW13 | 21.989028 | 115.575506 |
| Top of 1st Mesa | 22.007102 | 115.855818 |
| Tops Mesa17 | 22.244723 | 115.480882 |
| wp 27 | -22.15723028 | 115.5464355 |
| WP Acacia | -22.42840581 | 115.3351136 |
| WP ADRI | -22.43495442 | 115.3126176 |
| WP BIF | -22.01312173 | 115.6323015 |
| WP Bowerbird | -22.43081317 | 115.5784791 |
| WP Cane hmsd | -22.08854922 | 115.6273744 |
| WP Cane River | -22.09274679 | 115.6197839 |
| WP Comm | -22.43183644 | 115.2898279 |
| WP Dodon | -21.98061889 | 115.6688049 |
| WP Forrest | -21.98062635 | 115.7686713 |
| WP Granite | -22.43472945 | 115.2888683 |
| WP Grass | -21.98382514 | 115.6941811 |
| WP Helio | -22.31010865 | 115.6717758 |
| WP Maimel | -21.97850145 | 115.7353455 |
| WP Mesa2 | -22.43371356 | 115.3118367 |
| WP MesaNE | -21.99980004 | 115.8611941 |
| WP Pad | -22.14504065 | 115.7879631 |
| WP Poly | -22.26336345 | 115.6569374 |
| WP Pti | -22.006963 | 115.857076 |
| WP Scatom | -21.92245988 | 115.2532086 |
| WP Schist | -22.15399805 | 115.7989257 |

| | | |
|---|---|---|
| WP Scaev | -22.09232108 | 115.6295469 |
| WP Seep | -22.4328105 | 115.2890421 |
| WP Sida | -21.98126773 | 115.7794578 |
| WP Snake | -22.43364953 | 115.2889559 |
| WP Sporo | -22.43121693 | 115.2894217 |
| WP STBM | -21.87424215 | 115.1729981 |
| WP Stemodia | -22.11636088 | 115.663025 |
| WP TopSeep | -22.43210558 | 115.2891586 |
| WP Trachy | -22.34611714 | 115.7097425 |
| WP0002SD | -22.18679 | 115.55399 |
| WP0003SD | -21.995759 | 115.590317 |
| WP0004SD | -22.009617 | 115.570351 |
| WP0005SD | -22.180227 | 115.530307 |
| WP0006SD | -22.219066 | 115.456301 |
| WP0007SD | -22.244498 | 115.481545 |
| WP0008SD | -22.157138 | 115.54614 |
| WP0009SD | -21.977054 | 115.665573 |
| WP0010SD | -21.983827 | 115.671575 |
| WP0011SD | -21.98371 | 115.693644 |
| WP0012SD | -21.977292 | 115.714023 |
| WP0013SD | -21.979606 | 115.752627 |
| WP0014SD | -21.98619 | 115.859788 |
| WP0015SD | -22.003821 | 115.859608 |
| WP0016SD | -22.004717 | 115.85813 |
| WP0017SD | -22.006019 | 115.856852 |
| WP0018SD | -22.005997 | 115.859498 |
| WP0019SD | -21.935619 | 115.282074 |
| WP0020SD | -21.922623 | 115.252769 |
| WP0021SD | -21.875188 | 115.172216 |
| WP0022SD | -21.860209 | 115.142163 |
| WP0023SD | -21.885212 | 115.142228 |
| WP0024SD | -22.030581 | 115.350539 |
| WP0025SD | -22.103677 | 115.30243 |
| WP0026SD | -22.12591 | 115.350687 |
| WP0027SD | -22.484358 | 115.48474 |
| WP0028SD | -22.433668 | 115.289353 |
| WP0029SD | -22.433669 | 115.28933 |
| WP0030SD | -22.434799 | 115.287982 |
| WP0033SD | -22.42956 | 115.351343 |

| | | |
|---|---|---|
| WP0036SD | -22.43252 | 115.578834 |
| WP0037SD | -22.431028 | 115.575686 |
| WP0039SD | -22.427606 | 115.578766 |
| WP0040SD | -22.427933 | 115.581884 |
| WP0041SD | -22.427581 | 115.583568 |
| WP0042SD | -22.428503 | 115.585071 |
| WP0043SD | -22.264937 | 115.661422 |
| WP0044SD | -22.304679 | 115.667528 |
| WP0045SD | -22.065329 | 115.620645 |
| WP0046SD | -22.011436 | 115.621845 |
| WP0047SD | -22.188167 | 115.859523 |
| WP0048SD | -21.835397 | 115.133967 |
| WP0049SD | -21.835175 | 115.135228 |
| WP0050SD | -21.832688 | 115.140687 |
| WP023(AM) | -22.21991351 | 115.45533677 |
| WP024(AM) | -22.22032825 | 115.4565857 |
| WP025(AM) | -22.24174141 | 115.46990904 |
| WP026(AM) | -22.24478764 | 115.47461389 |
| WP027(AM) | -22.24452395 | 115.4797851 |
| WP028(AM) | 115.80160073 | -21.98264069 |
| WP029(AM) | -21.9852141 | 115.8448837 |
| WP030(AM) | -22.01241983 | 115.8554541 |
| WP031(AM) | -21.93555971 | 115.2822635 |
| WP033(AM) | -21.92107771 | 115.2571926 |
| WP034(AM) | -22.13989718 | 115.3507557 |
| WP035(AM) | -22.48960711 | 115.4260888 |
| WP036(AM) | -22.43327083 | 115.5782134 |
| WP037(AM) | -22.16570732 | 115.5741759 |
| WP038(AM) | -22.14021611 | 115.7012669 |
| WP039(AM) | -22.14643003 | 115.7660093 |
| WP040(AM) | -22.14708039 | 115.791668 |
| WP041(AM) | -22.15507354 | 115.7998705 |
| WP042(AM) | -22.16033243 | 115.8227089 |
| WP044(AM) | -22.01195153 | 115.3442477 |
| WP045(AM) | -22.01199931 | 115.3221167 |
| WP046(AM) | -21.83218905 | 115.1509826 |
| WP047(AM) | -21.83298843 | 115.1506496 |
| WYW01 | 22.10447 | 115.56792 |
| WYW02 | 22.12014 | 115.57031 |

| | | |
|---|---|---|
| WYW03 | 22.16994 | 115.561 |
| WYW04 | -22.1886 | 115.554 |
| WYW05 | 22.19319 | 115.55389 |
| WYW06 | 22.25581 | 115.49028 |
| WYW07 | 22.25561 | 115.43675 |
| WYW13 | 21.99867 | 115.59119 |

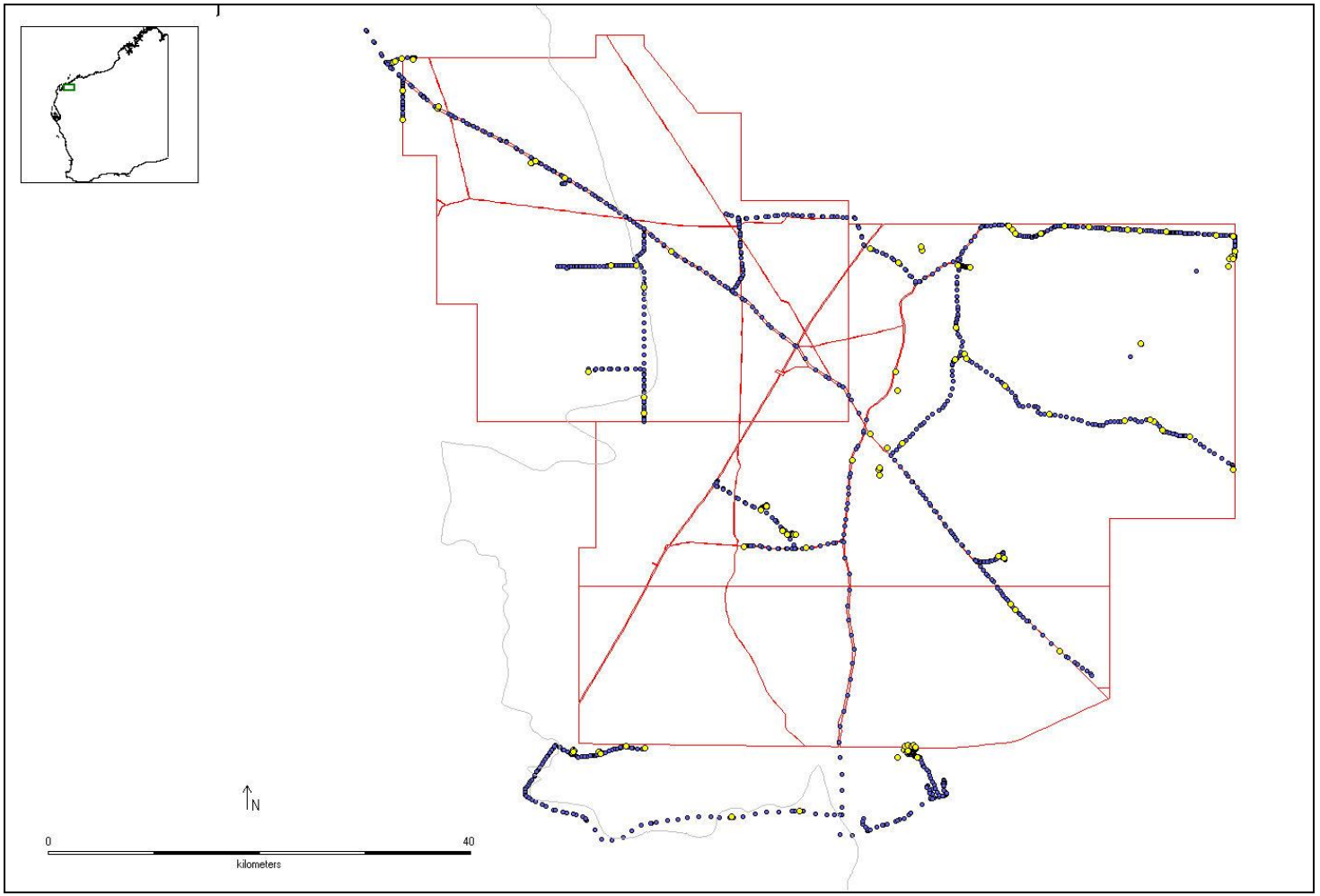


Figure 1: Map of Cane River Conservation Park in Western Australia (inset). Waypoints (yellow dots) and tracks (blue lines) made during the bushblitz survey are shown. Red lines indicate fencelines, roads and the boundary of the reserve.


Figure 2: A: large claypan in northwestern sandplain - claypan system, B: small claypan supporting herbs and tussock grasses, C: *Eucalyptus camaldulensis* dominated riparian vegetation along the Cane River, D: alluvial plain of scattered trees of *Corymbia hamersleyana* and *Acacia trachycarpa* open shrubland over *Triodia* hummock grassland E: Dune crest shrublands over *Triodia* hummock grassland, F: *Eucalyptus victrix* mallee over *Eulalia aurea* tussocks in seasonally inundated clay flat between sand dunes.


Figure 3: A: massive Proterozoic granite dome, B: the southern Parry Range, C: stony colluvial plain flanking lateritic mesa, D: lateritised metasedimentary mesa topped with aeolian sand deposits, E: Sparse *Acacia inaequilaterifolia* shrubs over *Triodia* hummock grassland on gravelly plain, F Sparse *Acacia xiphophylla* shrubs over *Triodia* hummock grassland on gibber plain.

## 2.2 Collection methods

Collections were made while rescoring the Pilbara Biological Survey plots (50 x 50m quadrats, presence/absence data) and opportunistically collections of quality plant material for identification and vouchering.

A Florabase Virtual Herbarium was taken into the field for 'road-testing', but there was little opportunity to test the utility of this database in field conditions because of the demands of collection, pressing and processing specimens.

Targeted collections were made of particular groups of taxonomic interest (*Tephrosia*, *Corchorus*, *Cheilanthes*, *Portulaca, Solanum* and *Sida*). Collections for these focussed on both suitable habitat (e.g. rock outcrops, wetlands) and known locations (from herbarium records). Specimens were photographed, and material collected for vouchering, identification and for molecular studies (ferns, Malvaceae, *Tephrosia*).

## 2.3 Identifying the collections

All but six species (*Ptilotus helipteroides*, *Vachellia farnesiana, Hakea lorea, Senna glutinosa* subsp*. glutinosa, Sarcostemma viminale and Mukia maderaspatensis)* were identified from collected material. These species were written down in sight records and usually photographed, but were not collected by oversight rather than deliberately. Identifications of collections were based on morphological characters only (gross and macroscopic), and these were conducted at the Western Australian Herbarium (WAH) where there was access to a reference herbarium, a library and a laboratory with dissecting compound microscopes. The main collections were closed for relocation to new premises at the time of this survey. All collections were pressed and dried when examined, but some wet collections (in 70% ethanol) had been made and these were of considerable use for some taxa (*Peplidium*, *Portulaca*). A number of field guides, electronic keys and systematic publications were used for identifications (Table 2). Many more taxonomic publications were used for specific taxa, which are too numerous to list in Table 2. Records were databased using Max V 3 (DEC 2011), MS Access and MS Excel. Digital images taken in the field assisted greatly with identifications.

Herbarium records were obtained online from the Western Australian Herbarium (1998-) and from Australia's Virtual Herbarium (AVH 2010).

**Table 2: Reference material for identifying collections for Cane River Conservation Park**

| Taxon | Author | Type |
|---|---|---|
| General arid-zone field guide | Mitchell & Wilcox (1994) | Book |
| Regional Flora | Jessop (1981) | Book |
| Regional Flora | Wheeler Rye Koch & Wilson (1992). | Book |
| Regional Flora | The Western Australian Herbarium (1998-) | Online searchable database |
| General arid-zone field guide | Moore (2005) | Book |
| Invasive flora field guide | Hussey, BMJ, Keighery GJ, Cousens RD, Dodd J & SG Lloyd (1997) | Book |
| Invasive flora field guide | Lamp C & F Collect (1989) | Book |
| *Acacia* field guide | Maslin B & van Leeuwen S (2008) | Book |
| Interactive species identification key to *Acacia* | Maslin, van Leeuwen & Reid (2010) | Lucid interactive key |
| Interactive species identification key to *Eucalyptus* | Brooker, Slee, Connors & Duffy (2006) | Lucid interactive key |
| Interactive species identification key to *Goodeniaceae* | Collister (2011) | Lucid interactive key |

Additional queries were directed to DEC or ANH staff specialising in particular groups, these being Kelly Shepherd (*Tecticornia*), Robert Davis (*Ptilotus* and *Gomphrena*), Bruce Maslin (*Acacia*), Paul Wilson (Asteraceae), Stephen van Leeuwen (miscellaneous Pilbara taxa), Ryonen Butcher (*Tephrosia*), Neil Gibson (miscellaneous Pilbara taxa), Greg Keighery (*Cylindropuntia*), Michael Lyons (*Peplidium, Mimulus*) and Brendan Lepschi (*Solanum sturtianum*). Details about these contributors been given at the start of this report.

# 3. Results and Discussion

## 3.1 Overview of collecting

The winter flowering season at Cane River was a reasonable following the preceding autumn-winter rains, with good flowering among non-grass taxa (Figure 4). A total of 318 taxa (species, subspecies, varieties and forms) from 53 families and 138 genera were recorded from the Cane River Conservation Park (Appendix 2). This includes two currently unnamed forms of *Euphorbia australis*. The most common families were the Fabaceae (53 native and one introduced taxa), Malvaceae (37 native and one introduced taxa), Poaceae (33 native and four introduced taxa), Amaranthaceae (25 taxa), Chenopodiaceae (14 taxa), Asteraceae (12 native taxa and 2 naturalised taxa), Goodeniaceae (10 taxa), Myrtaceae (9 taxa), Convolvulaceae (8 taxa), Solanaceae (7 native and one introduced taxa), Euphorbiaceae (7 taxa) and Boraginaeae (7 taxa). The most species-rich genera were *Acacia* (20 taxa), *Ptilotus* (17 taxa), *Solanum* (7 taxa), *Sida* (8 taxa), *Tephrosia* (8 taxa), *Senna* (6 taxa), *Eremophila* (6 taxa), *Heliotropium* (6 taxa), *Euphorbia* (6 taxa) and *Abutilon* (6 taxa) (Appendix 2). This representation of families and genera is characteristic of the wider Pilbara region (van Vreeswyk 2004), although the number of Asteraceae taxa is relatively low.

The majority of taxa recorded in this survey have broad distributions across northern Western Australia (Pilbara – Kimberley), the Eremaean (Murchison-Gascoyne), extending into central Australia or along the western coastal (Carnarvon-Irwin) regions. A smaller proportion of taxa have more restricted distributions. Some are confined to the Pilbara region (e.g. *Corchorus tectus, Sida arsiniata*) or their ranges extend (some only marginally) into adjacent regions (e.g. *Abutilon dioicum, Acacia atkinsiana, Acacia tumida* var. *pilbarensis, Gomphrena affinis* subsp*. pilbarensis, Gossypium robinsonii, Corchorus laniflorus, Heliotropium crispatum, Hibiscus goldsworthii, Rhodanthe margarethae, Sida* sp. Pilbara (A.A. Mitchell PRP 1543), *Triumfetta chaetocarpa*, *Triumfetta maconochieana, Clerodendrum floribundum* var. *angustifolium, Corymbia hamersleyana, Solanum horridum* and *Ptilotus mollis).* Three species have *a relatively* limited distribution on sand plains in or around Carnarvon bioregion (*Hakea stenophylla* subsp*. stenophylla, Hannafordia quadrivalvis* subsp*. recurva* and *Verticordia forrestii*).

There were no formerly named or informally-named taxa recorded which were endemic to the survey area (local endemics) or could be considered regional endemics with a restricted range (occupying area of $\leq$10000 km$^2$ or range of $\leq$ 400 km radius). There were four taxa recorded which have a relatively restricted range but were not considered endemics, these being *Indigofera petraea*, *Scaevola pulchella, Stemodia* sp. Onslow (A.A. Mitchell 76/148) and *Ptilotus appendiculatus var. appendiculatus*. There are only 16 herbarium records for *Indigofera petraea,* which appears to be restricted to rocky hills on the southern Parry and Barlee ranges. *Scaevola pulchella* and *Stemodia* sp. Onslow (A.A. Mitchell 76/148) both occur in red sand and clay substrates on the plains between Exmouth, Nanutarra and Onslow.

The majority of taxa were identified from 707 collections. 286 collections have been numbered in preparation for lodging, and of those 286, ten collections have already been lodged. Vouchers and DNA material from three species of *Cheilanthes* have been distributed to Michael Bayly and Leon Perrie (Melbourne University, Te Papa Museum (Wellington, NZ)). *Tephrosia* collections were submitted to Ryonen Butcher (WAH), and four of these have already been vouchered. Two vouchers of *Solanum* have been forwarded to Anthony Bean (Queensland Herbarium).

## 3.2 Named taxa newly recorded for the reserve

Eighty eight taxa are new records for the Cane River Conservation Park (Table 3), as deduced from herbarium records, the ABRS species lists and from confirmed / verified records from both the Landscope Expedition and DEC Pilbara Biological Surveys for the reserve. Thirty three of these taxa are known from areas close to the reserve area boundary (< 20km). Many of these new records come from granite and NW sand dune-clay pan areas which had not been surveyed previously. Some of the southwestern plant sampling sites were just outside the reserve boundary by a few hundred meters, and selected because they were at the vertebrate trapping sites on massive granite outcrops. Similar habitats are located nearby and within the reserve, so it is reasonable to assume that these species will also occur within the reserve. Further survey is recommended to verify this, particularly of granite outcrops (which are relatively rare features in the reserve) and seasonal claypans.

Seventeen of these 88 new taxa locality records are notable range extensions (>100 km), and two of these (*Heliotropium diversifolium and Polygala linariifolia*) are a significant range extensions (>350 km) (Table 3). Nineteen of these new taxa records filled in a gap in the species' distribution in the region. Most of these (13 taxa) were > 100 km from the nearest known population, and two species (*Dipteracanthus australasicus subsp. australasicus* and *Polygala isingii)* were > 200 km the nearest known population (Table 3).

Also of note are species which haven't been collected in the survey area for over 100 years (*Keraudrenia nephrosperma, Petalostylis labicheoides, Gossypium robinsonii, Goodenia lamprosperma, Pluchea ferdinandi-muelleri* and *Maireana georgei*).

Several species which were on the lists were provided by ABRS were not located in herbarium records, and these were included in Table 3. It is assumed that these lists incorporated records from a wider area around the survey area and taxa recorded in these lists were not necessarily from within the survey area.

Figure 4: A selection of species at Cane River which had responded to the autumn – winter rains, A: *Dipteracanthus australasicus* growing on rocky hill B: *Grevillea wickhamii* flowering well on an alluvial plain C: *Hannafordia quadrivalvis,* found growing in an aeolian sand deposit on top of a mesa, D: *Verticordia forrestii*, a species typical of dune crests, E: *Marsilea hirsuta* and *Peplidium aithocheilum* growing in seasonally inundated claypan, F: detail of the flowers of *Pimelea ammocharis*, found on stony colluvium at the base of a mesa.

**Table 3. Named taxa newly recorded from Cane River Conservation Park. These taxa have not been previously recorded from within the survey area according to herbarium records. Range extensions are noted, as is when a gap in a species' distribution in Western Australia is filled. Approximate distance to the nearest known population (according to herbarium records) is given. Geographical limits of range are noted if they occur in the survey area. Some species had previously known populations just (<20km) outside of the reserve boundary, and this is indicated by an asterisk.**

| Taxon | Comment | Naturalised/native |
|---|---|---|
| *Abutilon dioicum** | Nearest population c.20 km NE. | native |
| *Abutilon fraseri* | **Fill gap in distribution,** nearest population c.100 km S | native |
| *Abutilon otocarpum* | **Fill gap in distribution,** nearest population c.140 km E | native |
| *Acacia acradenia* | **Range extension,** nearest population c.150 km NNW | native |
| *Acacia coriacea subsp. coriacea* | **Fill gap in distribution**, nearest population c.50 km NW | native |
| *Acacia coriacea subsp. pendens* | **Fill gap in distribution**, nearest population c.50 km SW. | native |
| *Acacia murrayana** | Nearest population c.20 km SW. N edge of range | native |
| *Acacia sclerosperma subsp. sclerosperma** | Nearest population c.20 km | native |
| *Acacia wiseana* | **Range extension**, nearest population c. 120 km SW. NW limit of range. | native |
| *Alternanthera nodiflora** [1] | Nearest population c.23 km E | native |
| *Alyogyne pinoniana var. pinoniana* | **Range extension**, nearest population c. 100 km SW. N limit of range.. | native |
| *Amaranthus undulatus** | Nearest population c.50 km N. | native |
| *Ammannia multiflora* | **Range extension**, nearest population c. 120 km SW. | native |
| *Bergia pedicellaris* | **Range extension,** nearest population c. 250 km ENE. W limit of range. | native |
| *Bergia perennis** | Nearest population c.50 km N. | native |
| *Capparis spinosa var. nummularia** | Nearest population c.30 km. | native |
| *Cassytha capillaris* | Fill gap in distribution, nearest population c.200 km W | native |
| *Cheilanthes brownii* | **Range extension,** nearest population c. 150 km SE. W limit of range. | native |
| *Chloris barbata* | **Range extension,** nearest population c. 150 km NW. SW limit of range. | introduced |
| *Chloris pectinata** | Nearest population c.20 km. | native |
| *Commelina ensifolia* | Fill gap in distribution, nearest population c. 110 km. SW limit of range. | native |
| *Corchorus tectus** | Nearest population c.20 km. W limit of range. | native |
| *Crotalaria cunninghamii subsp. sturtii** | Nearest population c.15 km N. | native |
| *Cucumis melo subsp. agrestis* | **Range extension,** nearest population c. 200 km NE. NW limit of range. | introduced |
| *Cylindropuntia sp. (?fulgida)* | **Fill gap in distribution,** nearest population c.150 km | introduced |
| *Cyperus vaginatus** | Nearest population c.40 km S. | native |
| *Dactyloctenium radulans** [1] | Nearest population c.3 km E | native |
| *Dicrastylis cordifolia* | Nearest population c. 40 km NE | native |
| *Dipteracanthus australasicus subsp. australasicus* | **Fill gap in distribution**, nearest population 200 km | native |
| *Dissocarpus paradoxus** [1] | Nearest population c.70 km N | native |
| *Dodonaea coriacea* | Nearest population c. 50 km NE. W limit of range. | native |

| Taxon | Comment | Naturalised/native |
|---|---|---|
| *Dodonaea petiolaris** | Nearest population c.15 km S. NW limit of range. | native |
| *Dysphania melanocarpa forma leucocarpa** | Nearest population c.60 km NNW. | native |
| *Echinochloa colona* | **Fill gap in distribution** , nearest population c.100 km W. | introduced |
| *Enteropogon ramosus* | Nearest population c.100 km SW. | native |
| *Eremophila forrestii subsp. viridis** | Nearest population c.64km N. | native |
| *Eulalia aurea** | Nearest population c.20 km SW. | native |
| *Euphorbia alsiniflora*[1, 2] | Nearest population 92 km NW | native |
| *Flaveria trinervia** | Nearest population c.50 km W | introduced |
| *Gomphrena affinis subsp. pilbarensis** | Nearest population 3 km E | native |
| *Goodenia stobbsiana** | Nearest population c.15 km S | native |
| *Hakea stenophylla subsp. stenophylla***** | Nearest population c.20 km NW | native |
| *Hannafordia quadrivalvis subsp. recurva* | Nearest population c.90 km N. Eastern limit of range and relatively inland occurrence. | native |
| *Heliotropium chrysocarpum* | Nearest population c.40 km SE limit of range. | native |
| *Heliotropium diversifolium* | **Range Extension**, nearest population c. 450 km SW. New record for western Pilbara. | native |
| *Heliotropium glanduliferum* | **Fill gap in distribution ,** nearest population c.90 km SW | native |
| *Indigofera colutea** | Nearest population c.20 km SE | native |
| *Indigofera linifolia** | Nearest population c.80 km N | native |
| *Indigofera petraea** | Nearest population c.6 km S. | native |
| *Ipomoea coptica* | **Range extension,** nearest population c.150 km NE | native |
| *Iseilema dolichotrichum** | Nearest population c.30 km NNW | native |
| *Jasminum didymum subsp. lineare* | **Fill gap in distribution,** nearest population c.100 km S | native |
| *Keraudrenia velutina subsp. elliptica* | **Fill gap in distribution**, nearest population c.140 km SW | native |
| *Lawrencia densiflora* | **Range Extension** , nearest population c.105 km S. N limit of range. | native |
| *Leptochloa fusca subsp. muelleri* | **Range Extension** , nearest population c.100 km SW. NW limit of range. | native |
| *Melaleuca glomerata** | Nearest population c.30 km S. | native |
| *Mimulus gracilis** | Nearest population c.32 km SW | native |
| *Peripleura obovata* | **Range Extension**, nearest population c.130 km N. | |
| *Perotis rara* | Nearest population c.70 km SW. W limit of range | native |
| *Pimelea ammocharis* | **Fill gap in distribution**, nearest population c.60 km NW | native |
| *Pluchea ferdinandi-muelleri** | Nearest population c.40 km NW | native |
| *Polycarpaea longiflora* | **Fill gap in distribution,** nearest population c. 40 km | native |
| *Polygala isingii* | **Fill gap in distribution**, nearest population c. 210 km W. | native |
| *Polygala linariifolia* | **Range Extension** , nearest population c.340 km E | native |
| *Polygala* sp. Prostrate (P.K. Latz 4900) | Fill gap in distribution, nearest population c. 105 km W | native |
| *Polymeria calycina** | Nearest population c.43 km S | native |
| *Portulaca conspicua* | Nearest population 70 km SE. | native |
| *Psydrax latifolia* | Nearest population c.55 km E | native |

| Taxon | Comment | Naturalised/native |
|---|---|---|
| *Ptilotus appendiculatus var. appendiculatus** | Nearest population c.18 km SW | native |
| *Ptilotus gomphrenoides* | Nearest population c.105 km SE | native |
| *Ptilotus mollis* | **Range Extension** , nearest population c.250 km E. W limit of range. | native |
| *Rhagodia eremaea** | Nearest population c.20 km S | native |
| *Santalum lanceolatum* | **Fill gap in distribution**, nearest population c. 150 km SE | native |
| *Sesbania cannabina** | Nearest population c.50 km S | native |
| *Setaria dielsii* | Nearest population c.60 km W | native |
| *Setaria verticillata* | Nearest population c 65 km NW | introduced |
| *Sida cardiophylla* | nearest population c. 40km NNE | native |
| *Solanum ashbyae* | **Range Extension**, nearest population c.120 km N | native |
| *Solanum nigrum* | **Range Extension** , nearest population c.180 km W | introduced |
| *Stackhousia muricata* | **Fill gap in distribution,** nearest population c. 160 km S | native |
| *Streptoglossa bubakii* | **Fill gap in distribution**, nearest population c. 140 km NE | native |
| *Striga squamigera* | Nearest population c.70 km W | native |
| *Stylobasium spathulatum* | Nearest population c.50 km SW, closer population with dubious location (c. 25 km N). | Native |
| *Tecticornia indica* subsp. *leiostachya* | Nearest population c.50 km W | native |
| *Tephrosia supina* | Nearest population c.70 km S | native |
| *Trianthema turgidifolia** | Nearest population c.25 km NE | native |
| *Vigna lanceolata* var. *lanceolata* | Nearest population c.70km NE | native |
| *Zornia albiflora* | **Range Extension** , nearest population c.240 km NE | native |

1: Present on ABRS list as being in reserve, but no current herbarium record herbarium for taxon in Cane River Conservation Park
2: Noted on Landscope Expedition list, but collection not located in WAH

## 3.3 Un-named taxa

No collections were determined to be putative new entities which could be phrase named or informally named. This was, in part, due to the very restricted access to the main collections at the WAH.

However, an entity of *Corchorus* was collected which doesn't fit taxa known from the Pilbara. It has some similarity to *C. elachocarpus* and *C. tectus*, but its status as a new distinct taxon cannot be verified until all the herbarium material is examined. It is noted that the circumscription of *Corchorus* in the Pilbara requires further work, and recognition of this particular entity will follow as that work proceeds.

Two non-flowering collections of *Abutilon* could not be matched to known species using leaf morphology, although only reference herbarium material was available at the time. These specimens were not lodged, and there are not plans to lodge these unless future work determines that they are worth keeping as vouchers. Flowering and fruiting material is required for a positive identification. *Abutilon pritzelianum* is a species complex currently under review, and this Cane River collection has been

tentatively identified as *Abutilon* aff. *pritzelianum.* The main collections in WAH of *Abutilon* (especially *A. pritzelianum*) from similar habitats near Onslow will be examined to determine if they match the Cane River collections.

The genus *Abutilon* and *Sida* are both problematic genera currently under review by Robyn Barker (South Australian Herbarium), and it is likely that collections from the Cane River Conservation Park (such as within the *Sida fibulifera* complex and *Abutilon lepidum* complex) will be assigned to new taxa when these revisions are completed or have progressed.

## 3.4 New species to be described

No new species to be described were identified from material for the Cane River survey. Further examination of herbarium is required to determine if new species may be present among *Corchorus* and *Abutilon*, but these are taxonomically problematic groups requiring considerable revision.

## 3.5 Weed or pest species

Twelve non-native species were located in the Cane River Conservation Park (Table 4), most of which are considered environmental weeds (DEC 2009). It is noted that this was not an exhaustive weed survey, and that the locality records probably underestimate the distribution of these species in the reserve.

*Portulaca oleracea* (Purslane) was included here as a non-native (Bean 2007), although it was considered by Hussey *et al* (1997) to be a native species in the arid zone. *Flaveria trinervia* (formerly known as *F. australasica*) was included as a non-native species (Bean 2009), although it had been formerly treated as a native species. *Flaveria trinervia* appears to have been introduced prior to European colonisation (Bean 2009). Both species are established in the Pilbara and widely occurring in the state. Eradication or control would be not feasible, but both species appear to invade disturbed areas (e.g. burnt, graded) and do not appear to displace native vegetation in the Cane River Conservation Park.

Buffel grass (*Cenchrus ciliaris*) was the most widespread and commonly encountered weed in the Cane River Conservation Park, second to *Vachellia farnsiana* and *Aerva javanica*. Introduced for grazing and erosion control and sown widely in northern Australia, it is now widespread in the state (Hussey *et al.* 1997, Moore *et al* 2006, van Vreeswyk 2004). In the reserve, *C. ciliaris* was most evident in riparian vegetation communities along both permanent and ephemeral creeklines and riverbanks, in sand dune communities, roadsides and in disturbed areas (graded or grazed). When abundant, buffel grass displaced other native species. Examples of infested sites included many of the creekbeds in the southern Parry Range (Figure 5a), along sections of the Cane River (Figure 5c) and sand dunes in the north-west of the reserve (Figure 5b). According to weed assessment by DEC (2009), *C. ciliaris* is widespread from the Midwest to around the Pilbara region, forms large and dense infestations, has a high ecological impact, invades rapidly, and is increasing in

abundance and range (DEC 2009, Hussey *et al.* 1997, van Vreeswyk 2004). It rates highly as a serious environmental weed with low feasibility for eradication (DEC 2009, van Vreeswyk 2004). Buffel grass can create a fire hazard and alter fire regimes (Butler & Fairfax 2003). Given the amount of growth following the recent rains, this would provide significant amounts of fuel during a bushfire.

Kapok bush (*Aerva javanica*) was observed around the Mt Minnie homestead, along the North West Coastal highway, notably in areas of disturbance and with a preference for calcareous soils. *Aerva javanica* is a woody shrub which is widely distributed in northern Western Australia as it was initially planted for revegetation (Hussy *et al*. 1997; van Vreeswyk 2004). It is established in the Pilbara and forms large and dense infestations, has a high ecological impact, rapidly invades, is increasing and is moderately-highly feasibly eradicated/controlled (DEC 2009). It has the potential to increase in the reserve because of its ability for prolific seed production.

Mimosa bush (*Vachellia farnesiana*) is considered an alien species in Australia and introduced prior to European colonisation (Bean 2007, Hussey *et al.* 1997). *Vachellia farnesiana* was located at several sites in the reserve (Table 4), in shrublands on alluvial plains and in riparian vegetation. *Vachellia farnesiana* has established widely in north-west Western Australia and Kimberley along roadsides, creeks, rivers and alluvial plains (Hussey *et al.* 1997). This tall shrub is common in the Pilbara bioregion, is a high ecological impact species, rapidly invades and has low feasibility for eradication. Its distribution and abundance appears to be stable (DEC 2009).

Coral cactus (*Cylindropuntia* sp. (*? fulgida*)) was found at the old Cane River homestead, where one plant was removed. A second plant was sighted by another team at the Cane River homestead and will require removal. This cactus was tentatively identified as *C. fulgida*, and it is hoped that a cutting from the removed plant may flower and provide material for a positive identification. Species of *Cylindropuntia*, including C. *fulgida*, have the potential to become serious weeds, as they can spread via seed and vegetatively. Previously listed on the alert list for the Pilbara region (DEC 2009) (not currently in the region but with potential to occur there), the Cane River homestead plants confirm the presence of the genus in the Pilbara region. Potential for invasion through the Pilbara bioregion is considered high, with high ecological impact, rapid invasiveness, and trending to increasing in the region and is considered as an emerging species. This species will form stands of light – scattered individual plants (DEC 2009).

Ulcardo Melon (*Cucumis melo* subsp*. agrestis*) was collected for the first time in the reserve, which is a considerable range extension. It is possible that this cucurbit has been overlooked by previous collectors, and may occur in more locations in the area. *Cucumis melo* subsp*. agrestis* was located as isolated plants in a single location.

Spiked Malvastrum (*Malvastrum americanum*) was located in two sites, on granite and dolomite rocky outcrops. It was frequent in a drainage line below a massive granite outcrop and on the outcrop in soil pockets, and around a rocky dolomite hill in teh southern Parry Range. This species is widespread in northern and central Western Australia in riparian and disturbed vegetation (Hussey *et al.* 1997, Western

Australian Herbarium 1998-), is established in the Pilbara bioregion, occurs in dense stands, has a high ecological impact, rapid invasiveness, a low feasibility for eradication when present and it is increasing in the region (DEC 2009).

*Setaria verticillata* (Whorled Pigeon Grass) is widespread in disturbed areas, river edges and shrublands northern Western Australia (Hussey *et al*. 1997, Western Australian Herbarium 1998-). It is established in the Pilbara, forms dense stands, is a high ecological impact species with rapid invasiveness, a low feasibility for eradication when present and is increasing in the region (DEC 2009). It was located at two locations in the reserve, and has the potential to become a major weed on alluvial plains and riparian vegetation in the reserve.

Scattered plants of common sowthistle (*Sonchus oleraceus*) and Purpletop Chloris (*Chloris barbata*) were found around the Mt Minnie homestead, particularly in the watered lawn sections. *Sonchus oleraceus* is an annual-short lived perennial herb, is widespread in Western Australia, established in the Pilbara, spreads rapidly but is considered to be a low ecological impact species (DEC 2009). *Chloris barbata* is an annual-short lived perennial grass scattered in riparian vegetation and disturbed areas throughout the Pilbara and Kimberley (Western Australian Herbarium 1998- , Hussey *et al.* 1997). Species of the *Chloris* are common when present, have a high ecological impact, rapidly invade, and are established and increasing in the Pilbara (DEC 2009). *Chloris barbata* itself has the potential to invade creekline vegetation in the reserve, if it isn't present already along parts of the Cane River.

*Echinochloa colona* was another annual grass which was located as isolated plants in heavily grazed vegetation along the banks of the Cane River. It is widespread in the north of the state (Hussey *et al.* 1997, Western Australian Herbarium 1998). It is established in Pilbara, can be abundant when present, is ranked as high ecological impact species, capable of rapid invasion, a low feasibility for eradication and is increasing (DEC 2009). In the reserve, it would be expected to spread along disturbed river banks and creeklines.

*Solanum nigrum* was located as poorly-growing individual plants at one site on an alluvial plain. This species has been recorded throughout Western Australian (Western Australian Herbarium 1998-), particularly in the south-west of the state but only occasionally in the Pilbara and Carnarvon regions. This may reflect under-collection rather than actual distribution. It has the potential to move into sites in the reserve with richer, wetter soils but it may not pose a high risk.

Mesquite (*Prosopis* spp) and parkinsonia (*Parkinsonia aculeata)* are weeds of national significance which occur in the wider Pilbara and Carnarvon regions (DEC 2009, Longbottom 2004, Western Australian Herbarium 1998-), but were not found in the Cane River Conservation Park during this survey. These are both serious weed species, and both are known from nearby locations. There is a need for vigilance to ensure these two species don't become established within the reserve.

**Table 4. State or National weed species recorded in Cane River**

| Pest/weed species | Location sighted/observed | Indication of abundance |
|---|---|---|
| *Cenchrus ciliaris*<br><br>(Buffel grass) | Roadside on Mt Stuart Road<br>-22.15723028° S 115.54643548° E<br><br>Claypan, 27.7 km S of Onslow<br>-21.885212° S 115.142228° E<br><br>Base of dune of red sanddunes, 20 km S of Onslow.<br>-21.875188° S 115.172216° E<br><br>Base and tops of granite outrcrop<br>-22.4328105° S 115.28904207° E<br><br>Southern Parry Range<br>-22.434719°S 115.583133°E<br><br>Cane River Homestead<br>-22.09274679° S 115.61978392° E<br><br>Cane River at eastern boundary of reserve.<br>-22.188167°S 115.859523°E<br><br>Paddy's Pool<br>-22.14504065° S 115.78796312° E<br><br>NW coastal highway<br>-22.180227° S 115.530307° E | Very abundant where present. Widespread throughout Cane River Conservation Area<br><br>Heavy infestation around claypan margins<br><br>Heavy infestation on troughs and crests of red sand dunes S of Onslow. Widespread.<br><br>Heavy infestation eucalypts in drainage line and pockets of vegetation on outcrop<br><br>Extensive, desnse infestation in creeklines. Widespread<br><br>In holding yards and around buildings<br><br>Heavy infestation in grazed riparian vegetation<br><br>Heavy infestation in grazed riparian vegetation<br><br>Roadside growth following disturbance. |
| *Aerva javanica* (kapok bush) | Mt Minnie homestead<br>-21.971422°S 115.432214°E<br><br>North West Coastal Highway roadsides. | Locally abundant in patches. |
| *Cucumis melo* subsp*. agrestis* | Granite outcrop in southwest edge of reserve<br>-22.4328105° S 115.28904207° E | Isolated plants. |
| *Vachellia farnesiana*<br><br>(Mimosa Bush, Cassie, Farnese Wattle, Thorny Acacia) | PBS survey plot WYW13<br>- 21.99867° S 115.59119° E<br><br>Cane River homestead<br>-22.09274679° S 115.61978392° E<br><br>Cane River at eastern boundary of reserve.<br>-22.188167°S 115.859523°E | Locally abundant in patches, usually disturbed and/or grazed areas and near watercourses.<br><br>Common under *Eucalyptus camaldulensis* subsp. *refulgens* |
| *Cylindropuntia* sp. (? *fulgida*) coral cactus / chola cactus | Cane River Homestead<br>-22.09274679° S 115.61978392° E | Isolated plants around buildings |

| | | |
|---|---|---|
| *Malvastrum americanum*<br>*spiked Malvastrum* | Base and tops of granite outrcrop<br>-22.4328105°S 115.28904207° E<br><br>Southern Parry Range, on low rocky hill slope<br>-22.431028°S 115.575686° E | Isolated plants under eucalypts in drainage line and pockets of vegetation on outcrop<br><br>Isolated plants in mesic soil pockets on rock crevices – located at several spots on southern Parry Range |
| Setaria verticillata<br>(Whorled Pigeon Grass),<br>bristle pidgeon grass,<br>burr bristle grass, rough<br>bristle grass, sticky grass) | PBS survey plot WYW13<br>- 21.99867°S 115.59119°E<br><br>Cane River<br>-22.09274679°S 115.61978392°E | Isolated plants on alluvial plain<br><br>Isolated plants on river banks |
| *Sonchus oleraceus*<br>(common sowthistle) | Mt Minnie Homestead<br>-21.971422°S 115.432214°E | Isolated plants in watered lawn |
| *Chloris barbata*<br>(Purpletop Chloris / Swollen fingergrass) | Mt Minnie Homestead<br>-21.971422°S 115.432214°E | Isolated plants in watered lawn |
| *Echinochloa colona*<br>(Awnless Barnyard Grass) | Cane River at eastern boundary of reserve<br>-22.188167°S 115.859523°E | Isolated plants |
| *Solanum nigrum*<br>(Black Berry Nightshade) | PBS plot WYW13<br>- 21.99867°S 115.59119°E | Isolated plants |




**Figure 5 (a): A major ephermal creekline which has been completely dominated by buffel grass (*Cenchrus ciliaris*), at the southern edge of Parry Range (b): sand dune 27 km south of Onslow which is infested with buffel grass and which has been recently grazed by locusts (c). Heavily grazed understory of buffel and *Triodia* under *Eucalyptus camaldulensis* subsp. *refulgens*, *Acacia trachycarpa* and *Vachellia farnesiana,* Cane River at the eastern boundary of the reserve.**

Cattle were observed in park at various locations throughout the reserve along the northern boundary, eastern and southern boundaries, and along the NW Coastal highway near the Onslow Road turnoff (Figure 6). Fences were found pushed down along the north-eastern and eastern boundaries. It would seem that animals will continue to move into the park and vigilance is required to deal to locate these incursions.

**Figure 6: Cattle in the Cane River Conservation Park. These had come in from an adjacent property through a downed fence.**

## 3.6 Vulnerable, threatened or endangered species

Two species of conservation significance were located in the Cane River Conservation Park (Table 5, Figure 7). These collections were from new (previously unrecorded) populations. Both are currently listed as priority taxa under the Department of Environment and Conservation codes (Smith 2010). No taxa listed as threatened under the Environment Protection and Biodiversity Conservation Act (1999), nor any taxon gazetted as Declared Rare Flora (subsection (2) of section 23F of the Wildlife Conservation Act (1950), were located, which is not unexpected since only two plant taxa in the Pilbara bioregion are listed under this act.

In addition to the Cane River survey, *Eremophila forrestii* subsp. *viridis* is currently known from two widely disjunct locations in Western Australia (Western Australian Herbarium 1998-), and four more populations around the NT-SA-WA border in central Australia (SAH records). The nearest known location on record is c. 10 km south of Onslow, which is 64 km NW of this newly located population. There were very few plants (c. 5 – 10) in the Cane River Conservation Park population, and all found growing in dry gullies in the scree slopes of a weathered lateritic mesa (Figure 7).

It is noted that some specimens collected during the bushblitz appeared to be intergrades with *Eremophila forrestii* subsp. *forrestii* (which is itself a variable subspecies), and the two subspecies were co-occurring. This subspecies was identified according to Chinnock (2007). Other collections in WA previously identified as *E. forrestii* subsp. *viridis* have been re-identified as *E. forrestii* subsp. *forrestii, so* there may be some issues with distinguishing this taxon from the more common subspecies. The status of this as a subspecies may be worth investigating further.

**Figure 7: *Ptilotus mollis* (left) and *Eremophila forrestii* subsp. *viridis (right)***

**Table 5. Vulnerable, threatened or endangered species from Cane River Conservation Park. Priority listings in accordance with WA DEC Threatened flora categories (**

| Species | Listing status and level (EBPC,State/Territory)\ | Location sighted | Indication of abundance |
|---|---|---|---|
| *Eremophila forrestii* subsp. *viridis* | P3 (WA listing) | 22.244498° S 115.481545° E | Infrequent, possibly intergrading with *E. forrestii* subsp. *forrestii.* |
| *Ptilotus mollis* | P4 (WA listing) | -22.006963° S 115.857076° E | Infrequent (c. < 50 plants). Occasional shrubs on sparse mesa slope. |

*Ptilotus mollis* is currently known from nine locations widely placed across the Pilbara, and this new population in the Cane River Conservation Park is a considerable range extension c. 200km west of the nearest known population (Western Australian Herbarium 1998-). It was located on the stony scree slopes of a weathered lateritic mesa in the far north east edge of the reserve (Figure 7). It is possible that it occurs in similar habitats on other mesas around the eastern margins of the reserve.

# 4. General comment on species lists

There are a number of taxa listed in the Landscope Expedition report (Kendrick *et al*. 1999) which have been determined to be incorrect or unlikely based on taxonomic updates, name changes, herbarium locality information and species distributions. Only those taxa without adequate evidence to confirm their occurrence in the reserve are listed in Table 6a. In the case of valid names, this means either the species known range is well outside the Cane River Conservation Park, or that there are no reliable herbarium records located in or near the survey area. For the Landscope species list (Kendrick *et al*. 1999), there is a need to update records because of outdated nomenclature, questionable sighting records (unvouchered observations) or specimens have been re-identified since the report was produced.

**Table 6a: Incorrect or Unreliable Species Records on the Landscope Expedition list (Kendrick *et al.* 1999). Only unreliable names or taxa not considered to occur in the Cane River Conservation Park are listed. "Out of of range" indicates that survey area is well outside of range of species according to herbarium records.**

| **Taxon listed in Kendrick *et al.* (1999)** | **Reason for omission** |
|---|---|
| *Amaranthus* aff *paladifolius* | Misidentification, vouchers updated to *A. cuspidifolius* |
| *Amaranthus mitchellii* | Misidentification, vouchers updated to *A. cuspidifolius* |
| *Ficus platypoda* | Sighting record, out of range, probably *Ficus brachypoda* |
| *Acacia ramulosa* var. *linophylla* | Sighting record, out of range, probably *Acacia sclerosperma* ssp *sclerosperma* |
| *Acacia victoriae* | Sighting record, out of range, suspect *Acacia synchronicia* |
| *Alternanthera angustifolia* | No herbarium record, either misidentified or has been re-identified |
| *Brachychiton gregorii* | Sighting record, out of range, suspect *Gossypium robinsonii* |
| *Corchorus walcottii* | No herbarium record, out of range, vouchers could have been updated to *Corchorus parviflorus* |
| *Corchorus elachocarpus* | No herbarium record, possibly misidentified and could have been updated *Corchorus tectus.* |
| *Pterocaulon serrulatum* | No herbarium record, out of range, probably re-identified as *Pterocaulon sphaeranthoides* |
| *Sclerolaena* aff *diacantha* | Re-identified as *Sclerolaena gardneri. Sclerolaena diacantha* occurs in wider region |
| *Sida clementii* | No herbarium record, probably misidentified, possibly as *Sida arsinata*. |
| *Solanum ferocissimum* | Sighting record, out of range |
| *Tephrosia gardneri* | No herbarium record, out of range, vouchers have been re-identified as *Tephrosia* sp. Pilbara and *Tephrosia* sp. Onslow |
| *Tribulus platypterus* | No herbarium record, possibly misidentified and could have been updated to *Tribulus suberosus* |
| *Velleia panduriformis* | Sighting record, considerably out of range |
| *Sida spodochroma* | No herbarium record, out of range, vouchers either misidentified or has been re-identified |
| *Sida trichopoda* | No herbarium record, not in region, either misidentified or has been re-identified |
| *Sida* aff *brachypoda* (DJE 1657) | Voucher re-identified as *Sida* sp. Articulation below (A.A. Mitchell PRP 1605) |
| *Eremophila* sp. (DJE 1711) | Voucher re-identified as *Stemodia* sp. Onslow (A.A. Mitchell 76/148) |
| *Eucalyptus* aff *terminalis* | Misidentified, *Eucalyptus terminalis* not current name for Western Australia |

**Table 6b: Dubious or incorrect names or records on ABRS provided species lists for the Cane River Conservation Park. Distribution records are from AVH. Species marked with an asterisk could possibly occur in reserve.**

| Species in ABRS lists | Comments |
|---|---|
| *Corymbia terminalis* | Name not current for Western Australia |
| *Acacia aneura* | Name not current for Western Australia |
| *Euphorbia coghlanii* | Name not current for Western Australia |
| *Pterocaulon serrulatum* | Not in reserve area. Out of species range. |
| *Rhodanthe frenchii* | Not in reserve area. Out of species range. |
| *Tribulus platypterus** | Not in reserve area |
| *Grevillea berryana** | Current record in reserve area is dubious location. |

Table 6b lists seven taxa which appeared on the Australian Biological Resources Study (ABRS)-provided species lists which are considered to not occur in the Cane River Conservation Park because of outdated nomenclature or based on the ranges of the species according to herbarium records and previous survey results. There are two species on the ABRS list which cannot be confirmed as occurring in the Cane River Conservation Park (Table 6b), but which could be reasonably expected to occur in the reserve (based on general species distributions). The WAH record for *Grevillea berryana* within the survey area has a suspect location, and the closest confirmed location is c. 10 km south of Nanutarra Roadhouse / Nanutarra bridge. There are no herbarium records around the Cane River Conservation Park for *Tribulus platypterus*, but finding this species within the Cane River Conservation Park would fill a gap in its current distribution.

The general quality of the provided species lists from ABRS appeared to be of lower quality than those obtained from a combination of the Landscope Expedition report (Kendrick *et al.* 1999), searching for herbarium records specifically within and near to the survey area and from the PBS records. This is because it was not known from which sources the ABRS provided lists were produced, and there was no locality or voucher information available with species records (as opposed to the online records and two surveys). It is assumed that these ABRS lists were taken from wider area around the reserve, and therefore did not necessarily reflect species occurrences within the reserve. There were also some older synonyms which had not been updated to reflect current taxonomy, and the ABRS lists had not been updated to incorporate recent herbarium records.

There were also issues encountered with the online herbarium databases, namely problems with unconfirmed species identifications, dubious locality information (especially with old records) and delays in updating name changes or accession re-identifications. In particular, it was noticed that Australia's Virtual Herbarium records for WAH accessions had not been updated to reflect re-identifications, name changes or new accessions.

# 5. Conclusions

This survey provided an opportunity to confirm and clarify records from the Landscope Survey (Kendrick *et al*. 1999), and to cover a part of the Cane River Conservation Park (Mt Minnie Station) not previously surveyed. A total 318 taxa are recorded from the Cane River Conservation Park, of which 88 were new records, which is a moderate increase in the number of recorded taxa from the previous surveys. Access to the northwest sandplains, granite outcrops and surveying after recent fires may have contributed to this increase in recorded taxa.

No new taxa were found, but collections of *Abutilon* and *Corchorus* raise the prospect that there are two putatively new taxa in the reserve which may be described with better, fertile collections and during the revision of these two genera.

Despite the low number of introduced species and extensive cover of relatively intact native vegetation, there is a need to be vigilant for invasive weeds. Among the weed species identified in the reserve, Buffel grass (*Cenchrus ciliaris*) is the most widespread and abundant invasive weed currently present. Buffel grass appears to be a significant problem for some vegetation communities in the reserve because of its invasiveness and ability to alter fire regimes. However, control or eradication of this species would be difficult or unfeasible. There are also other species which are currently restricted in their distribution but which may pose a future issue for the reserve. These smaller infestations would be more feasible to control.

There are a wide range of habitats and geological features within the Cane River Conservation Park which support a relatively high number of plant species for an arid region. The next step would be to describe and assess vegetation communities in the reserve more systematically and in greater detail. This would identify both any unusual and restricted vegetation communities and their associated habitats (such as those on granite outcrops), and threats and threatening processes (e.g. development, weeds, feral animals, fire regimes, climate change) to these communities and the flora of the reserve.

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# Appendices

## Appendix 1: Summary of Site Descriptions

Summary of vegetation communities encountered at general survey locations in the Cane River Conservation Park. Land surface and system type is according to Payne (2004a, b).

| **Survey location and vegetation communities encountered** | **Land type and land system** |
|---|---|
| *Parry Range*<br><br>Slopes and tops - open shrubland of *Acacia bivenosa, Acacia inaequilatera, Senna* over *Triodia wiseana* hummock grassland.<br><br>- Hummock grassland of *Triodia wiseana* and *Triodia basedownii*<br><br>- Sparse shrubs of *Acacia pyrifolia var. pyrifolia, Senna glutinosa subsp pruinosa*, *Senna glutinosa subsp. glutinosa* over *Triodia* sp. hummock grassland.<br><br>- Occasional *Acacia pruinocarpa* and *Acacia synchronicia* over *Petalostylis & Acacia bivenosa*, over *Triodia* sp.<br><br>Small, dry creeklines dominated by *Acacia trachycarpa* and *Petalostylis labicheoides*.<br><br>Gullies dominated by occasional *Corchorus laniflorus, Senna glutinosa subsp. glutinosa and Petalostylis labichioides over Themeda triandra and Cymbopogon ambiguous tussock grassland.* | Land type 2: Hills and Ranges with acacia shrublands.<br><br>Augustus landsystem: rugged ranges, hills, ridges and plateaux (including Parry Range). |

| **Survey location and vegetation communities encountered** | **Land type and land system** |
|---|---|
| *Northwest corner - Onslow Road*<br><br>Sandy flats – clay flats:<br><br>- Tree-steppe of *Eucalyptus xerothermica* over *Triodia* sp. hummock grassland<br><br>- *Acacia ancistrocarpa* , *Acacia inaequilatera* and *Acacia bivenosa* shrubland over *Triodia basedowii/lanigera* hummock grassland<br><br>- Very sparse trees and shrubland of *Corymbia hamersleyana, Acacia sericophylla*, *Grevillea eriostachys, Acacia stellaticeps* and *Acacia ancistrocarpa* over *Triodia basedowii/lanigera* hummock grassland<br><br>- Sparse shrubland of *Santalum lanceolatum* and *Grevillea stenobotrya* over *Hakea stenophylla subsp. stenophylla, Acacia stellaticeps, Triumfetta* sp. and *Triodia pungens/epatica* hummock grassland<br><br>- *Acacia stellaticeps* and *Acacia wiseana* isolated shrubs over *Triodia sp.* hummock grassland and chenopod low shrubland *(Trianthema turgidifolia, Tecticornia)* .<br><br>- *Eucalyptus victrix* mallee over *Acacia tetragonophylla* shrubs over *Aristida holathera* var. *holathera, Eulalia aurea* and *Triodia pungens/epatica* grassland<br><br>Surrounding dune troughs and deep swales - Isolated *Corymbia zygophylla* over *Acacia trachycarpa* over *Triodia schinzii* hummock grassland<br><br>Dunes slopes and crests - Very sparse trees and shrubland of *Corymbia hamersleyana* and *Grevillea stenobotrya* over sparse mixed shrubland / hummock grassland of *Acacia stellaticeps, Scaevola sericophylla, Adriana tomentosa* var. *tomentosa, Tephrosia rosea* var. *clementii*, *Verticordia forrestii, Tephrosia* sp. Onslow (K.R. Newbey 10571 shrubs, and *Triodia schinzii* | Land type 11: Sandplains with Spinifex grasslands<br><br>Uaroo landsystem: Broad sandy plains.<br><br>Giralia landsystem: linear dunes and broad sandy plains |
| *Mt Minnie Station tracks*<br><br>Isolated low rock hillocks with *Acacia ancistrocarpa, Acacia inaequilatera* and *Eremophila fraseri subsp. fraseri* over *Triodia basedowii* hummock grassland.<br><br>Minor drainage lines - *Acacia trachycarpa and Acacia tumida* shrubland | Land type 8: Stony plains with Spinifex grasslands<br><br>Peedamulla landsystem: gravelly plains. |

| **Survey location and vegetation communities encountered** | **Land type and land system** |
|---|---|
| *Mt Stuart Road – Cane River Station tracks*<br><br>Undulating low outcrops of schist - Isolated shrubs of *Senna glutinosa subsp. pruinosa* over *Sida echinocarpa* and *Corchorus laniflorus* over *Trioda wiseana* hummock grassland<br><br>Stony hills of sandstone / dolomite<br><br>– Very sparse shrubland of *Acacia bivenosa* over *Triodia epactia* and *Triodia wiseana*.<br><br>- *Acacia inaequilatera* and *Acacia bivenosa* very sparse shrubland over *Triodia epactia* hummock grassland.<br><br>Stony plains - *Triodia epactia* and *Triodia wiseana* hummock grassland.<br><br>Calcareous flats / deposits in surrounding flats. *Acacia bivenosa* (occasional), *Acacia trachycarpa* (in drainage lines) over *Triodia wiseana* hummock grassland and isolated shrubs of *Sida echinocarpa ,Sida arsiniata* and *Sclerolaena densiflora.*<br>**********<br>*Acacia inaequilatera* and *Acacia bivenosa* very sparse shrubland over *Triodia epactia* hummock grassland.<br><br>*Triodia wiseana* hummock grasslands<br><br>*Acacia xiphophylla* very sparse open shrublands over *Triodia* sp. | Land type 1: Hills and ranges with Spinifex grasslands.<br><br>Houndstooth landsystem: rough shale hills, stony plains and broad drainage floors.<br><br>Capricorn landsystem: hills and ridges of sandstone and dolomite.<br><br>**********<br><br>Land type 8: Stony plains with Spinifex grasslands<br><br>Sturt landsystem: gently undulating stony plains |
| *Sand dunes around Parry Range*<br><br>Dune crests and slopes - High open shrubland of *Grevillea stenobotrya* over low shrubland of *Pityrodia loxocarpa* and *Acacia stellaticeps* over *Triodia schinzii* hummock grassland<br><br>Sandy flats - *Corymbia* sp., *Acacia ancistrocarpa, Acacia trachycarpa* and *Acacia bivenosa* sparse open mallee-shrubland over sparse layer of mixed shrubs (*Ptilotus lanatus, Bonamia rosea, Tephrosia uniovulata*) and *Triodia schinzei - Triodia epactia* hummock grassland. | Land type 11: Giralia landsystem: linear dunes and broad sandy plains |
| *North East track*<br><br>Stony plains - *Acacia bivenosa / Acacia ancistrocarpa* sparse open shrubland over *Triodia* ssp.<br><br>- Very sparse low shrubland of *Corchorus tectus, Sidda arsinata and Sida echinocarpa* over *Paraneurachne muelleri* tussock grassland on clay loams<br><br>- *Acacia bivenosa, Acacia synchronicia* over *Triodia* hummocks.<br><br>*Triodia* sp hummock grassland, with occasional *Acacia xiphophylla*, *Senna notabilis, Acacia synchronicia, Cullen* sp, *Sida arsiniata, Sida echinocarpa*.<br><br>Drainage line – Sparse open trees and shrubland of *Corymbia hamersleyana* and *Acacia tumida* var. *pilbarensis*, *Acacia atkinsiana* and *Grevillea wickhamii* subsp. *macrodonta* over *Triodia epactia* hummock grassland. | Land type 8: Stony plains with Spinifex grasslands<br><br>Sturt landsystem: gently undulating stony plains |

| **Survey location and vegetation communities encountered** | **Land type and land system** |
|---|---|
| *BIF outcrop, near Cane River Homestead*<br><br>Crests - *Eremophila longifolia, Ficus brachypoda, Acacia tumida over Triodia pungens/epactia* and dense stands of *Tephrosia densa*.<br><br>Flanks and stony outwash - Isolated shrubs of *Acacia bivenosa* over *Triodia epactia* hummock grassland.<br><br>Significant drainage lines on plain around ridge - *Corymbia* sp. over *Acacia trachycarpa, Acacia in aequilatera* over *Triodia* sp. hummock grassland. Minor lines dominated by *Acacia bivenosa* and *Acacia ancistrocarpa* shrubs. | Land type 1: Hills and ranges with Spinifex grasslands.<br><br>Houndstooth landsystem: rough shale hills, stony plains and broad drainage floors. |
| *Cane River, Paradise Creek, Cattle Pool, alluvial plains*<br><br>Riparian vegetation - *Corymbia victrix, Eucalyptus camaldulensis subsp. refulgens* and *Melaleuca argentea* woodlands over *Acacia trachycarpa* and *Acacia tumida* sparse open shrubland over *tall Triodia pungens/epactia* hummock grassland<br><br>Creeklines - *Eucalyptus victrix* woodlands over *Acacia trachycarpa* and *Acacia tumida* over *Triodia* sp. hummock grassland<br><br>Alluvial plain - Scattered trees of *Corymbia candida* over scattered tall shrubs of *Acacia ancistrocarpa* over open shrubland of *Acacia bivenosa* over hummock grassland of *Triodia epactia* and *Triodia lanigera*. | Land type 17: River plains with grassy woodlands and shrublands and tussock grasslands.<br><br>Cane landsystem: alluvial plains and flood plains. |
| *Southwest Mesas and buttes- SW corner of Cane River Station*<br><br>Top and slope shrublands – Very sparse shrubland of *Acacia bivenosa*, *Acacia ancistrocarpa*, *Acacia synchronicia*, *Hakea lorea , Senna glutinosa* subsp. *glutinosa, Senna artemesioides* subsp. *oligophylla* and/or *Eremophila cuneifolia* over *Triodia epactia* hummock grassland.<br><br>Lower colluvial slopes and flats - Sparse open shrubland of *Acacia xiphophylla*, over sparse shrubs of *Eremophila cuneifolia and Senna artmeisioides* subsp. *oligophylla* over *Triodia epactia* hummock grassland<br><br>Steep, rocky cliff faces with isolated trees of *Ficus brachypoda*, and sparse layerof lithophilic geophytes, grasses and herbs of *Cheilanthes contigua, vines (Ipomoea muelleri), Boerhavia burbidgeana, Cyperus cunninghamii subsp. cunninghamii, Eriachne helmsii*, *Nicotiana benthamii* and *Paspalidium clementii*. | Land type 3: Plateaux, mesa and breakaways with Spinifex grasslands.<br>Nanutarra landsystem: low mesas and hills of sedimentary rocks. |
| *Northeast Mesas*<br><br>Tops and slopes of mesas - Isolated shrubs of *Senna glutinosa* subsp. *pruinosa* and *Acacia bivenosa* over *Triodia wiseana* hummock grassland.<br><br>Lower slopes - Very sparse - isolated *Acacia bivenosa* and *A. synchronicia* shrubs over *Triodia wiseana* hummock grassland.<br><br>Drainage lines - Sparse shrubland and trees of Acacia citrinoviridis *, Acacia inaequilaterifolia, Corymbia candida* , Grevillea wickhamii subsp. macrodonta *, Acacia bivenosa*, *Acacia tumida* var. *pilbarensis*, and *Acacia synchronicia* over *Triodia* hummock grasslands. | Land type 3: Plateaux, mesa and breakaways with Spinifex grasslands.<br>Nanutarra landsystem: low mesas and hills of sedimentary rocks. |

| **Survey location and vegetation communities encountered** | **Land type and land system** |
|---|---|
| *Southwestern granite outcrop and boulder fields*<br><br>Boulder fields - Very sparse shrubs of *Acacia ancistrocarpa, Grevillea wickhamii* and *Corymbia hamersleyana* over *Triodia pungens/epactia*.<br><br>Small rock crevices and dome tops - Isolated plants of *Eriachne mucronata*, *Sida rohlenae, Cymbopogon ambiguous* in very sparse cover of *Triodia* sp.<br><br>Granite outcrops - Isolated trees of *Corymbia hamersleyana* and isolated shrubs of *Acacia citrinoviridis*, *Eremophila fraseri subsp. fraseri, Senna glutinosa* subsp. *glutinosa* and *Acacia trachycarpa* over *Triodia* sp. hummock grassland.<br><br>Base of outcrops in seeps - Woodland of *Corymbia hamersleyana, Eucalyptus victrix* and *Acacia citrinoviridis,* over *Cenchrus ciliaris* and and *Triodia* so. grassland<br><br>Crevices **-** Isolated shrubs of *Ficus* brachypoda and *Psydrax latifolia,over herbs and grasses of Lobelia heterophylla subsp. pilbarensis*., *Paspalidium clementii* and *Triodia sp.* | Land type 2: Hills and Ranges with acacia shrublands.<br><br>Boolaloo Land system: granite hills, domes and tor fields and restricted sandy plains |

## *Appendix 2. List of vascular flora occurring on Cane River Conservation Park* (Reserve 46122)

Reserve Name: *Cane River Conservation Park*

Number of taxa: 318 (including subspecies and varieties but without double counting).

**Appendix 1, Table 1. Full species list for Cane River Conservation Park.**

| Family | Species | Common name | New record | Putative new species | EPBC Listed | State or Territory Listed | Weed |
|---|---|---|---|---|---|---|---|
| **Acanthaceae** | *Dipteracanthus australasicus* subsp. *australasicus* | Purple mouth / Desert Petunia | ✓ | | | | |
| **Aizoaceae** | *Trianthema oxycalyptra* var. *oxycalyptra* | Star Pigweed | | | | | |
| **Aizoaceae** | *Trianthema pilosa* | Hairy Pigweed | | | | | |
| **Aizoaceae** | *Trianthema triquetra* | | | | | | |
| **Aizoaceae** | *Trianthema turgidifolia* | Samphire Pigweed | ✓ | | | | |
| **Amaranthaceae** | *Achyranthes aspera* | | | | | | |
| **Amaranthaceae** | *Aerva javanica* | Kapok Bush | | | | | ✓ |
| **Amaranthaceae** | *Alternanthera nana* | Hairy Joyweed | | | | | |
| **Amaranthaceae** | *Alternanthera nodiflora* | Common Joyweed | | | | | |
| **Amaranthaceae** | *Amaranthus cuspidifolius* | Boggabri Weed | | | | | |
| **Amaranthaceae** | *Amaranthus undulatus* | | | | | | |
| **Amaranthaceae** | *Gomphrena affinis* subsp. *pilbarensis* | Woolly Batchelors Buttons | ✓ | | | | |
| **Amaranthaceae** | *Gomphrena cunninghamii* | Silky Batchelors Buttons | | | | | |
| **Amaranthaceae** | *Ptilotus aervoides* | | | | | | |
| **Amaranthaceae** | *Ptilotus appendiculatus* var. *appendiculatus* | Spoon-tipped Mulla Mulla | ✓ | | | | |

| Family | Species | Common name | New record | Putative new species | EPBC Listed | State or Territory Listed | Weed |
|---|---|---|---|---|---|---|---|
| **Amaranthaceae** | *Ptilotus arthrolasius* | | | | | | |
| **Amaranthaceae** | *Ptilotus astrolasius* | | | | | | |
| **Amaranthaceae** | *Ptilotus auriculifolius* | Nodding Mulla Mulla | | | | | |
| **Amaranthaceae** | *Ptilotus axillaris* | Mat Mulla Mulla | | | | | |
| **Amaranthaceae** | *Ptilotus calostachyus* | Weeping Mulla Mulla | | | | | |
| **Amaranthaceae** | *Ptilotus clementii* | Tassel top | | | | | |
| **Amaranthaceae** | *Ptilotus exaltatus* | Tall Mulla Mulla | | | | | |
| **Amaranthaceae** | *Ptilotus fusiformis* | Spindle Mulla Mulla | | | | | |
| **Amaranthaceae** | *Ptilotus gomphrenoides* | Popcorn Mulla Mulla | ✓ | | | | |
| | *Ptilotus helipteroides* | Hairy Mulla Mulla | | | | | |
| **Amaranthaceae** | *Ptilotus incanus* | | | | | | |
| **Amaranthaceae** | *Ptilotus latifolius* | Tangled Mulla Mulla | | | | | |
| **Amaranthaceae** | *Ptilotus mollis* | | ✓ | | | **P4** | |
| **Amaranthaceae** | *Ptilotus obovatus* | Cotton Bush | | | | | |
| **Amaranthaceae** | *Ptilotus polystachyus* | Prince of Wales Feather | | | | | |
| **Apocynaceae** | *Sarcostemma viminale subsp. australe* | Caustic Vine / Caustic Bush | | | | | |
| **Araliaceae** | *Trachymene oleracea* subsp. *oleracea* | Fan-leaved Lace Flower | | | | | |
| **Araliaceae** | *Trachymene pilbarensis* | Pilbara Lace Flower | | | | | |

| Family | Species | Common name | New record | Putative new species | EPBC Listed | State or Territory Listed | Weed |
|---|---|---|---|---|---|---|---|
| **Asteraceae** | *Calotis plumulifera* | | | | | | |
| **Asteraceae** | *Centipeda minima* subsp. *macrocephala* | | | | | | |
| **Asteraceae** | *Flaveria trinervia* | Speedy Weed | ✓ | | | | ✓ |
| **Asteraceae** | *Peripleura obovata* | | ✓ | | | | |
| **Asteraceae** | *Pluchea dunlopii* | | | | | | |
| **Asteraceae** | *Pluchea ferdinandi-muelleri* | | ✓ | | | | |
| **Asteraceae** | *Pluchea rubelliflora* | | | | | | |
| **Asteraceae** | *Pterocaulon sphacelatum* | Apple Bush | | | | | |
| **Asteraceae** | *Rhodanthe margarethae* | Margaret's Sunray | | | | | |
| **Asteraceae** | *Sonchus oleraceus* | Common Sowthistle | | | | | ✓ |
| **Asteraceae** | *Streptoglossa bubakii* | | ✓ | | | | |
| **Asteraceae** | *Streptoglossa decurrens* | Winged-leaf Streptoglossa | | | | | |
| **Asteraceae** | *Streptoglossa macrocephala* | | | | | | |
| **Asteraceae** | *Streptoglossa odora* | | | | | | |
| **Boraginaceae** | *Heliotropium chrysocarpum* | | ✓ | | | | |

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|---|---|---|---|---|---|---|---|
| **Boraginaceae** | *Heliotropium crispatum* | Crinkled Heliotrope | | | | | |
| **Boraginaceae** | *Heliotropium diversifolium* | | ✓ | | | | |
| **Boraginaceae** | *Heliotropium glanduliferum* | | ✓ | | | | |
| **Boraginaceae** | *Heliotropium heteranthum* | Mat Heliotrope | | | | | |
| **Boraginaceae** | *Heliotropium pachyphyllum* | | | | | | |
| **Boraginaceae** | *Trichodesma zeylanicum* | Camel Bush / Rough Bluebell | | | | | |
| **Brassicaceae** | *Lepidium pholidogynum* | | | | | | |
| **Brassicaceae** | *Lepidium platypetalum* | Slender Peppercress | | | | | |
| **Cactaceae** | *Cylindropuntia* sp. *(? fulgida)* | | ✓ | | | | ✓ |
| **Campanulaceae** | *Lobelia heterophylla* subsp. *pilbarensis* | Wing-seeded Lobelia | | | | | |
| **Campanulaceae** | *Wahlenbergia tumidifructa* | Native Bluebell | | | | | |
| **Capparaceae** | *Capparis spinosa* var. *nummularia* | Coastal Caper | ✓ | | | | |
| **Caryophyllaceae** | *Polycarpaea corymbosa* | | | | | | |
| **Caryophyllaceae** | *Polycarpaea holtzei* | Snowflakes | | | | | |
| **Caryophyllaceae** | *Polycarpaea longiflora* | Pink Paintbrushes | ✓ | | | | |
| **Celastraceae** | *Stackhousia muricata* | Candles / Umbrella Stackhousia | ✓ | | | | |

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|---|---|---|---|---|---|---|---|
| **Chenopodiaceae** | *Dissocarpus paradoxus* | Curious Saltbush | ✓ | | | | |
| **Chenopodiaceae** | *Dysphania melanocarpa* forma *leucocarpa* | Black Crumbweed | ✓ | | | | |
| **Chenopodiaceae** | *Dysphania rhadinostachya* subsp. *rhadinostachya* | Mouse-tail Crumbweed / Green Crumbweed | | | | | |
| **Chenopodiaceae** | *Dysphania sphaerosperma* | | | | | | |
| **Chenopodiaceae** | *Enchylaena tomentosa* var. *tomentosa* | Barrier Saltbush / Ruby Saltbush | | | | | |
| **Chenopodiaceae** | *Maireana georgei* | Satiny Bluebush | | | | | |
| **Chenopodiaceae** | *Maireana melanocoma* | Pussy Bluebush | | | | | |
| **Chenopodiaceae** | *Maireana planifolia* | Low Bluebush | | | | | |
| **Chenopodiaceae** | *Rhagodia eremaea* | Thorny Saltbush / Tall Saltbush | ✓ | | | | |
| **Chenopodiaceae** | *Salsola australis* | Tumbleweed | | | | | |
| **Chenopodiaceae** | *Sclerolaena costata* | | | | | | |
| **Chenopodiaceae** | *Sclerolaena densiflora* | | | | | | |
| **Chenopodiaceae** | *Sclerolaena eriacantha* | Tall Bindii | | | | | |
| **Chenopodiaceae** | *Tecticornia indica* subsp. *leiostachya* | Samphire | ✓ | | | | |
| **Cleomaceae** | *Cleome uncifera* subsp. *uncifera* | Red Flame Cleome | | | | | |
| **Cleomaceae** | *Cleome viscosa* | Tickweed | | | | | |

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|---|---|---|---|---|---|---|---|
| **Commelinaceae** | *Commelina ensifolia* | Scurvy Grass / Wandering Jew | ✓ | | | | |
| **Convolvulaceae** | *Bonamia alatisemina* | | | | | | |
| **Convolvulaceae** | *Bonamia media* var. *villosa* | | | | | | |
| **Convolvulaceae** | *Bonamia rosea* | Felty Bellflower | | | | | |
| **Convolvulaceae** | *Evolvulus alsinoides* var. *villosicalyx* | Tropical Speedwell | | | | | |
| **Convolvulaceae** | *Ipomoea coptica* | | ✓ | | | | |
| **Convolvulaceae** | *Ipomoea muelleri* | Poison Morning Glory | | | | | |
| **Convolvulaceae** | *Polymeria ambigua* | Morning Glory | | | | | |
| **Convolvulaceae** | *Polymeria calycina* | Slender Bindweed | ✓ | | | | |
| **Cucurbitaceae** | *Cucumis maderaspatanus* | Indian Vine | | | | | |
| **Cucurbitaceae** | *Cucumis melo* subsp. *agrestis* | Ulcardo Melon | ✓ | | | | ✓ |
| **Cyperaceae** | *Bulbostylis barbata* | Watergrass | | | | | |
| **Cyperaceae** | *Cyperus cunninghamii* subsp. *cunninghamii* | | | | | | |
| **Cyperaceae** | *Cyperus rigidellus* | Curly Flat-Sedge | | | | | |
| **Cyperaceae** | *Cyperus vaginatus* | Native Umbrella Rush / Stiffleaf Sedge | ✓ | | | | |
| **Elatinaceae** | *Bergia pedicellaris* | | ✓ | | | | |

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|---|---|---|---|---|---|---|---|
| **Elatinaceae** | *Bergia perennis* | | ✓ | | | | |
| **Euphorbiaceae** | *Adriana tomentosa* var. *tomentosa* | Woolly Bitterbush | | | | | |
| **Euphorbiaceae** | *Euphorbia alsiniflora* | Namana | ✓ | | | | |
| **Euphorbiaceae** | *Euphorbia australis* (informally recognised variant in Pilbara) | Namana | | | | | |
| **Euphorbiaceae** | *Euphorbia australis* (formerly *Euphorbia australis* var. *australis*) | Namana | | | | | |
| **Euphorbiaceae** | *Euphorbia boophthona* | Gascoyne Spurge | | | | | |
| **Euphorbiaceae** | *Euphorbia myrtoides* | | | | | | |
| **Euphorbiaceae** | *Euphorbia tannensis* subsp. *eremophila* | Desert Spurge | | | | | |
| **Fabaceae** | *Acacia acradenia* | | ✓ | | | | |
| **Fabaceae** | *Acacia ancistrocarpa* | Fitzroy Wattle | | | | | |
| **Fabaceae** | *Acacia atkinsiana* | | | | | | |
| **Fabaceae** | *Acacia bivenosa* | Two-nerved wattle | | | | | |
| **Fabaceae** | *Acacia citrinoviridis* | | | | | | |
| **Fabaceae** | *Acacia coriacea* subsp. *coriacea* | Wirewood | ✓ | | | | |
| **Fabaceae** | *Acacia coriacea* subsp. *pendens* | Wirewood | ✓ | | | | |
| **Fabaceae** | *Acacia inaequilatera* | Baderi | | | | | |

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|---|---|---|---|---|---|---|---|
| **Fabaceae** | *Acacia murrayana* | Sandplain Wattle | ✓ | | | | |
| **Fabaceae** | *Acacia pyrifolia* var. *pyrifolia* | Ranji Bush / Kanji Bush | | | | | |
| **Fabaceae** | *Acacia sclerosperma* subsp. *sclerosperma* | Limestone Wattle | ✓ | | | | |
| **Fabaceae** | *Acacia sericophylla* | | | | | | |
| **Fabaceae** | *Acacia stellaticeps* | Poverty Bush | | | | | |
| **Fabaceae** | *Acacia synchronicia* | | | | | | |
| **Fabaceae** | *Acacia tetragonophylla* | Kurara / Dead Finish | | | | | |
| **Fabaceae** | *Acacia trachycarpa* | Minni Ritchi | | | | | |
| **Fabaceae** | *Acacia tumida* var. *pilbarensis* | Pindan Wattle | | | | | |
| **Fabaceae** | *Acacia wanyu* | | | | | | |
| **Fabaceae** | *Acacia wiseana* | | ✓ | | | | |
| **Fabaceae** | *Acacia xiphophylla* | Snakewood | | | | | |
| **Fabaceae** | *Crotalaria cunninghamii* subsp. *sturtii* | Regal Birdflower / Green Birdflower | ✓ | | | | |
| **Fabaceae** | *Crotalaria medicaginea* var. *neglecta* | Trefoil Rattlepod | | | | | |
| **Fabaceae** | *Cullen leucanthum* | White Scurf-pea | | | | | |
| **Fabaceae** | *Cullen leucochaites* | Silver-haired Scurf-Pea | | | | | |

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|---|---|---|---|---|---|---|---|
| **Fabaceae** | *Cullen martinii* | Velvet Scurf-Pea | | | | | |
| **Fabaceae** | *Indigofera boviperda* subsp. *boviperda* | | | | | | |
| **Fabaceae** | *Indigofera colutea* | | ✓ | | | | |
| **Fabaceae** | *Indigofera linifolia* | | ✓ | | | | |
| **Fabaceae** | *Indigofera monophylla* | Single-leaf Indigo | | | | | |
| **Fabaceae** | *Indigofera petraea* | Rock Indigo | ✓ | | | | |
| **Fabaceae** | *Petalostylis cassioides* | Many-leaved Petalostylis | | | | | |
| **Fabaceae** | *Petalostylis labicheoides* | Slender Petalostylis | | | | | |
| **Fabaceae** | *Rhynchosia australis* | Rhynchosia | | | | | |
| **Fabaceae** | *Rhynchosia minima* | Rhynchosia / Mardie clover | | | | | |
| **Fabaceae** | *Senna artemisioides* subsp. *oligophylla* | Blunt-leaved Cassia / Limestone Senna / Bloodbush | | | | | |
| **Fabaceae** | *Senna glutinosa* subsp. *glutinosa* | Sticky Senna | | | | | |
| **Fabaceae** | *Senna glutinosa* subsp. *pruinosa* | Silver Senna / White Cassia | | | | | |
| **Fabaceae** | *Senna glutinosa* subsp. x *luerssenii* | | | | | | |
| **Fabaceae** | *Senna notabilis* | Cockroach Bush | | | | | |

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|---|---|---|---|---|---|---|---|
| **Fabaceae** | *Senna venusta* | Graceful Senna / Candlestick Senna | | | | | |
| **Fabaceae** | *Sesbania cannabina* | Sesbania Pea | ✓ | | | | |
| **Fabaceae** | *Swainsona complanata* | | | | | | |
| **Fabaceae** | *Swainsona formosa* | Sturt's Desert Pea | | | | | |
| **Fabaceae** | *Swainsona forrestii* | | | | | | |
| **Fabaceae** | *Tephrosia clementii* | | | | | | |
| **Fabaceae** | *Tephrosia densa* | | | | | | |
| **Fabaceae** | *Tephrosia rosea* var. *clementii* | Flinders River Poison | | | | | |
| **Fabaceae** | *Tephrosia* sp. B Kimberley Flora (C.A. Gardner 7300) | | | | | | |
| **Fabaceae** | *Tephrosia* sp. Onslow (K.R. Newbey 10571) | | | | | | |
| **Fabaceae** | *Tephrosia* sp. Pilbara (A.L. Payne PRP 1393) | | | | | | |
| **Fabaceae** | *Tephrosia supina* | | ✓ | | | | |
| **Fabaceae** | *Tephrosia uniovulata* | Silvery-leaved Tephrosia | | | | | |
| **Fabaceae** | *Vachellia farnesiana* | Mimosa Bush, Cassie, Farnese Wattle, Thorny Acacia | | | | | ✓ |
| **Fabaceae** | *Vigna lanceolata* var. *lanceolata* | | ✓ | | | | |

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|---|---|---|---|---|---|---|---|
| **Fabaceae** | *Zornia albiflora* | | ✓ | | | | |
| **Goodeniaceae** | *Dampiera candicans* | Smokebush Dampiera | | | | | |
| **Goodeniaceae** | *Goodenia forrestii* | | | | | | |
| **Goodeniaceae** | *Goodenia lamprosperma* | | | | | | |
| **Goodeniaceae** | *Goodenia microptera* | Narrow-winged Goodenia | | | | | |
| **Goodeniaceae** | *Goodenia stobbsiana* | Stobbs Goodenia | ✓ | | | | |
| **Goodeniaceae** | *Goodenia tenuiloba* | Butterfly Goodenia | | | | | |
| **Goodeniaceae** | *Scaevola parvifolia* subsp. *pilbarae* | Camel Weed | | | | | |
| **Goodeniaceae** | *Scaevola pulchella* | Beautiful Fanflower | | | | | |
| **Goodeniaceae** | *Scaevola sericophylla* | | | | | | |
| **Goodeniaceae** | *Scaevola spinescens* | Currant Bush | | | | | |
| **Gyrostemonaceae** | *Codonocarpus cotinifolius* | Native Poplar | | | | | |
| **Gyrostemonaceae** | *Gyrostemon ramulosus* | Corkybark | | | | | |
| **Haloragaceae** | *Haloragis gossei* | | | | | | |
| **Lamiaceae** | *Clerodendrum floribundum* var. *angustifolium* | Lollybush | | | | | |
| **Lamiaceae** | *Dicrastylis cordifolia* | Pink Fuzz Ball | ✓ | | | | |

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|---|---|---|---|---|---|---|---|
| **Lamiaceae** | *Pityrodia loxocarpa* | Fairy Floss Bush | | | | | |
| **Lamiaceae** | *Pityrodia paniculata* | Purple Haze | | | | | |
| **Lauraceae** | *Cassytha capillaris* | Dodder Laurel | ✓ | | | | |
| **Lythraceae** | *Ammannia multiflora* | | ✓ | | | | |
| **Malvaceae** | *Abutilon dioicum* | Tall Lantern Flower | ✓ | | | | |
| **Malvaceae** | *Abutilon fraseri* | Lantern Bush | ✓ | | | | |
| **Malvaceae** | *Abutilon lepidum* | Sticky Lantern Flower | | | | | |
| **Malvaceae** | *Abutilon otocarpum* | Desert Chinese Lantern | ✓ | | | | |
| **Malvaceae** | *Abutilon* sp. | | | | | | |
| **Malvaceae** | *Abutilon* aff. *pritzelianum* | | | | | | |
| **Malvaceae** | *Alyogyne pinoniana* var. *pinoniana* | Sand Hibiscus | ✓ | | | | |
| **Malvaceae** | *Corchorus crozophorifolius* | Felty Corchorus | | | | | |
| **Malvaceae** | *Corchorus laniflorus* | Downy Corchorus | | | | | |
| **Malvaceae** | *Corchorus parviflorus* | | | | | | |
| **Malvaceae** | *Corchorus sidoides* subsp. *vermicularis* | Flannel Weed | | | | | |
| **Malvaceae** | *Corchorus tectus* | | | | | | |

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|---|---|---|---|---|---|---|---|
| **Malvaceae** | *Gossypium australe* | Native Cotton | | | | | |
| **Malvaceae** | *Gossypium robinsonii* | Wild Cotton | | | | | |
| **Malvaceae** | *Hannafordia quadrivalvis* subsp. *recurva* | Oak-leaved Felt Bush | ✓ | | | | |
| **Malvaceae** | *Hibiscus brachychlaenus* | Cup Hibiscus | | | | | |
| **Malvaceae** | *Hibiscus coatesii* | Coates' Hibiscus | | | | | |
| **Malvaceae** | *Hibiscus goldsworthii* | Prickly Hibiscus | | | | | |
| **Malvaceae** | *Hibiscus sturtii* | Sturt's Hibiscus | | | | | |
| **Malvaceae** | *Keraudrenia nephrosperma* | | | | | | |
| **Malvaceae** | *Keraudrenia velutina* subsp. *elliptica* | Desert Velvet Firebush | ✓ | | | | |
| **Malvaceae** | *Lawrencia densiflora* | | ✓ | | | | |
| **Malvaceae** | *Malvastrum americanum* | Spiked Malvastrum | | | | | ✓ |
| **Malvaceae** | *Sida arsiniata* | | | | | | |
| **Malvaceae** | *Sida cardiophylla* | | ✓ | | | | |
| **Malvaceae** | *Sida echinocarpa* | Hook-seeded Sida | | | | | |
| **Malvaceae** | *Sida fibulifera* | Silver Sida / Creeping Sida | | | | | |
| **Malvaceae** | *Sida platycalyx* | Lifesaver Burr | | | | | |

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|---|---|---|---|---|---|---|---|
| **Malvaceae** | *Sida rohlenae* subsp. *rohlenae* | Barb-seeded Sida | | | | | |
| **Malvaceae** | *Sida* sp. Pilbara (A.A. Mitchell PRP 1543) | | | | | | |
| **Malvaceae** | *Sida* sp. verrucose glands (F.H. Mollemans 2423) | | | | | | |
| **Malvaceae** | *Triumfetta chaetocarpa* | Urchins | | | | | |
| **Malvaceae** | *Triumfetta clementii Triumfetta clementii* | | | | | | |
| **Malvaceae** | *Triumfetta johnstonii* | | | | | | |
| **Malvaceae** | *Triumfetta maconochieana* | | | | | | |
| **Malvaceae** | *Triumfetta ramosa* | | | | | | |
| **Malvaceae** | *Waltheria indica* | | | | | | |
| **Malvaceae** | *Waltheria virgata* | Pink Eyes | | | | | |
| **Marsileaceae** | *Marsilea hirsuta* | | | | | | |
| **Molluginaceae** | *Mollugo molluginea* | Mollugo | | | | | |
| **Moraceae** | *Ficus brachypoda* | | | | | | |
| **Myrtaceae** | *Corymbia candida* | | | | | | |
| **Myrtaceae** | *Corymbia hamersleyana* | Hamersley Bloodwood | | | | | |
| **Myrtaceae** | *Corymbia zygophylla* | Western Coolabah | | | | | |

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|---|---|---|---|---|---|---|---|
| **Myrtaceae** | *Eucalyptus camaldulensis* subsp. *refulgens* | River Gum | | | | | |
| **Myrtaceae** | *Eucalyptus victrix* | Coolabah | | | | | |
| **Myrtaceae** | *Eucalyptus xerothermica* | | | | | | |
| **Myrtaceae** | *Melaleuca argentea* | Silver Cadjeput | | | | | |
| **Myrtaceae** | *Melaleuca glomerata* | Desert Honey Myrtle | ✓ | | | | |
| **Myrtaceae** | *Verticordia forrestii* | Forrest's Feather Flower | | | | | |
| **Nyctaginaceae** | *Boerhavia burbidgeana* | Tar Vine | | | | | |
| **Nyctaginaceae** | *Boerhavia coccinea* | Tar Vine | | | | | |
| **Oleaceae** | *Jasminum didymum* subsp. *lineare* | Desert Jasmine | ✓ | | | | |
| **Orobanchaceae** | *Striga squamigera* | Witchweed | ✓ | | | | |
| **Phrymaceae** | *Mimulus gracilis* | Slender Monkey Flower | ✓ | | | | |
| **Phrymaceae** | *Peplidium aithocheilum* | | | | | | |
| **Phrymaceae** | *Peplidium* sp. C Evol. Fl. Fauna Arid Aust. (N.T. Burbidge & A. Kanis 8158) | | | | | | |
| **Phyllanthaceae** | *Notoleptopus decaisnei* | | | | | | |
| **Phyllanthaceae** | *Phyllanthus erwinii* | | | | | | |

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|---|---|---|---|---|---|---|---|
| **Phyllanthaceae** | *Phyllanthus maderaspatensis* | | | | | | |
| **Plantaginaceae** | *Stemodia grossa* | Marsh Stemodia | | | | | |
| **Plantaginaceae** | *Stemodia* sp. Onslow (A.A. Mitchell 76/148) | | | | | | |
| **Poaceae** | *Aristida contorta* | Bunched Kerosene Grass | | | | | |
| **Poaceae** | *Aristida holathera* var. *holathera* | | | | | | |
| **Poaceae** | *Aristida pruinosa* | Gulf Feathertop Wiregrass | | | | | |
| **Poaceae** | *Brachyachne prostrata* | | | | | | |
| **Poaceae** | *Cenchrus ciliaris* | Buffel Grass | | | | | ✓ |
| **Poaceae** | *Chloris barbata* | Purpletop Chloris / Swollen fingergrass | ✓ | | | | ✓ |
| **Poaceae** | *Chloris pectinata* | Comb Chloris | ✓ | | | | |
| **Poaceae** | *Chrysopogon fallax* | Golden Beard Grass / Ribbon grass | | | | | |
| **Poaceae** | *Cymbopogon ambiguus* | Scentgrass / Lemongrass | | | | | |
| **Poaceae** | *Cymbopogon obtectus* | Silkyheads | | | | | |
| **Poaceae** | *Dactyloctenium radulans* | Button Grass | | ✓ | | | |
| **Poaceae** | *Echinochloa colona* | Awnless Barnyard Grass | ✓ | | | | ✓ |
| **Poaceae** | *Enneapogon caerulescens* | Limestone Grass | | | | | |

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|---|---|---|---|---|---|---|---|
| **Poaceae** | *Enteropogon ramosus* | Windmill Grass | ✓ | | | | |
| **Poaceae** | *Eragrostis cumingii* | Cuming's Love Grass | | | | | |
| **Poaceae** | *Eragrostis dielsii* | Mallee Lovegrass | | | | | |
| **Poaceae** | *Eragrostis leptocarpa* | Drooping Lovegrass | | | | | |
| **Poaceae** | *Eriachne aristidea* | False Wanderrie Grass | | | | | |
| **Poaceae** | *Eriachne mucronata* | Mountain Wanderrie Grass | | | | | |
| **Poaceae** | *Eriachne pulchella* subsp. *dominii* | Pretty Wanderrie | | | | | |
| **Poaceae** | *Eulalia aurea* | Silky Browntop | ✓ | | | | |
| **Poaceae** | *Iseilema dolichotrichum* | | ✓ | | | | |
| **Poaceae** | *Leptochloa fusca* subsp. *muelleri* | | ✓ | | | | |
| **Poaceae** | *Paraneurachne muelleri* | Northern Mulga Grass | | | | | |
| **Poaceae** | *Paspalidium clementii* | Clements Paspalidium | | | | | |
| **Poaceae** | *Perotis rara* | Comet Grass | ✓ | | | | |
| **Poaceae** | *Setaria dielsii* | Diels' Pigeon Grass | ✓ | | | | |
| **Poaceae** | *Setaria verticillata* | Whorled Pigeon Grass | ✓ | | | | ✓ |
| **Poaceae** | *Sporobolus australasicus* | Fairy Grass | | | | | |

| Family | Species | Common name | New record | Putative new species | EPBC Listed | State or Territory Listed | Weed |
|---|---|---|---|---|---|---|---|
| **Poaceae** | *Themeda triandra* | Kangaroo Grass | | | | | |
| **Poaceae** | *Tragus australianus* | Small Burrgrass | | | | | |
| **Poaceae** | *Triodia basedowii* (sterile material was refered to as *T. basedowii/lanigera*) | Lobed Spinifex | | | | | |
| **Poaceae** | *Triodia epactia* (sterile material was refered to as *Triodia epactia/pungens*) | Soft spinifex | | | | | |
| **Poaceae** | *Triodia longiceps* | Giant Grey Spinifex | | | | | |
| **Poaceae** | *Triodia schinzii* | | | | | | |
| **Poaceae** | *Triodia wiseana* | Limestone Spinifex | | | | | |
| **Poaceae** | *Yakirra australiensis* var. *australiensis* | | | | | | |
| **Polygalaceae** | *Polygala isingii* | | ✓ | | | | |
| **Polygalaceae** | *Polygala linariifolia* | | ✓ | | | | |
| **Polygalaceae** | *Polygala* sp. Prostrate (P.K. Latz 4900) | | ✓ | | | | |
| **Portulacaceae** | *Portulaca conspicua* | Many-flowered Purslane | ✓ | | | | |
| **Portulacaceae** | *Portulaca oleracea* | Purslane | | | | | ✓ |
| **Proteaceae** | *Grevillea eriostachya* | Flame Grevillea | | | | | |
| **Proteaceae** | *Grevillea stenobotrya* | Sandhill Spider Flower | | | | | |
| **Proteaceae** | *Grevillea wickhamii* subsp. *macrodonta* | Wickham's Grevillea | | | | | |

| Family | Species | Common name | New record | Putative new species | EPBC Listed | State or Territory Listed | Weed |
|---|---|---|---|---|---|---|---|
| **Proteaceae** | *Hakea lorea* | Witinti / Corkwood | | | | | |
| **Proteaceae** | *Hakea stenophylla* subsp. *stenophylla* | Narrow-leaved Hakea | ✓ | | | | |
| **Pteridaceae** | *Cheilanthes brownii* | Woolly Cloak-fern | ✓ | | | | |
| **Pteridaceae** | *Cheilanthes contigua* | Cloak-fern | | | | | |
| **Pteridaceae** | *Cheilanthes sieberi* subsp. *sieberi* | Mulga Fern | | | | | |
| **Rubiaceae** | *Oldenlandia crouchiana* | Pilbara Oldenlandia | | | | | |
| **Rubiaceae** | *Psydrax latifolia* | | ✓ | | | | |
| **Rubiaceae** | *Synaptantha tillaeacea* var. *tillaeacea* | Native Madder | | | | | |
| **Santalaceae** | *Santalum lanceolatum* | Northern Sandalwood | ✓ | | | | |
| **Sapindaceae** | *Dodonaea coriacea* | | ✓ | | | | |
| **Sapindaceae** | *Dodonaea petiolaris* | | ✓ | | | | |
| **Scrophulariaceae** | *Eremophila cuneifolia* | Pinyuru / Wedge-leaved Eremophila | | | | | |
| **Scrophulariaceae** | *Eremophila forrestii* subsp. *forrestii* | Wilcox Bush | | | | | |
| **Scrophulariaceae** | *Eremophila forrestii* subsp. *viridis* | Wilcox Bush | ✓ | | | **P3** | |
| **Scrophulariaceae** | *Eremophila fraseri* subsp. *fraseri* | Burra | | | | | |
| **Scrophulariaceae** | *Eremophila latrobei* subsp. *latrobei* | Warty Fuchsia Bush / Crimson Turkey Bush | | | | | |

| Family | Species | Common name | New record | Putative new species | EPBC Listed | State or Territory Listed | Weed |
|---|---|---|---|---|---|---|---|
| **Scrophulariaceae** | *Eremophila longifolia* | Berrigan | | | | | |
| **Solanaceae** | *Nicotiana benthamiana* | Tjuntiwari | | | | | |
| **Solanaceae** | *Solanum ashbyae* | | ✓ | | | | |
| **Solanaceae** | *Solanum diversiflorum* | Bush Tomato | | | | | |
| **Solanaceae** | *Solanum ellipticum (=Solanum cleistogamum)* | Potato Bush | | | | | |
| **Solanaceae** | *Solanum horridum* | | | | | | |
| **Solanaceae** | *Solanum lasiophyllum* | Flannel Bush | | | | | |
| **Solanaceae** | *Solanum nigrum* | Black Berry Nightshade | ✓ | | | | ✓ |
| **Solanaceae** | *Solanum sturtianum* | Thargomindah Nightshade / Sturt's Nightshade | | | | | |
| **Surianaceae** | *Stylobasium spathulatum* | Pebble Bush | ✓ | | | | |
| **Thymelaeaceae** | *Pimelea ammocharis* | Silky Banjine | ✓ | | | | |
| **Violaceae** | *Hybanthus aurantiacus* | Orange Spade Flower | | | | | |
| **Zygophyllaceae** | *Tribulus astrocarpus* | Star-fruit Caltrop / Star Caltrop | | | | | |
| **Zygophyllaceae** | *Tribulus hirsutus* | Bindi Eye / Hairy Caltrop | | | | | |
| **Zygophyllaceae** | *Tribulus macrocarpus* | Winged-fruit Caltrop | | | | | |
| **Zygophyllaceae** | *Tribulus occidentalis* | Perennial Caltrop | | | | | |

| Family | Species | Common name | New record | Putative new species | EPBC Listed | State or Territory Listed | Weed |
|---|---|---|---|---|---|---|---|
| **Zygophyllaceae** | *Tribulus suberosus* | Corky Bark Caltrop / Corky Hopbush | | | | | |

## *Appendix 3. Financial Statement*

I hereby certify that all funds for this project have been spent in the manner

and for the purposes specified by the contract.

Name: Adrienne Markey

Signed:

Date: 23/1/2012