

# **Preliminary Vegetation Map and Floristics of Killarney Wilderness Retreat**



**Dr John T. Hunter**

**June 2014**

**23 Kendall Rd, Invergowrie NSW, 2350**

**Ph. & Fax: (02) 6775 2452**

**Email: [jhunter8@bigpond.com](mailto:jhunter8@bigpond.com)**

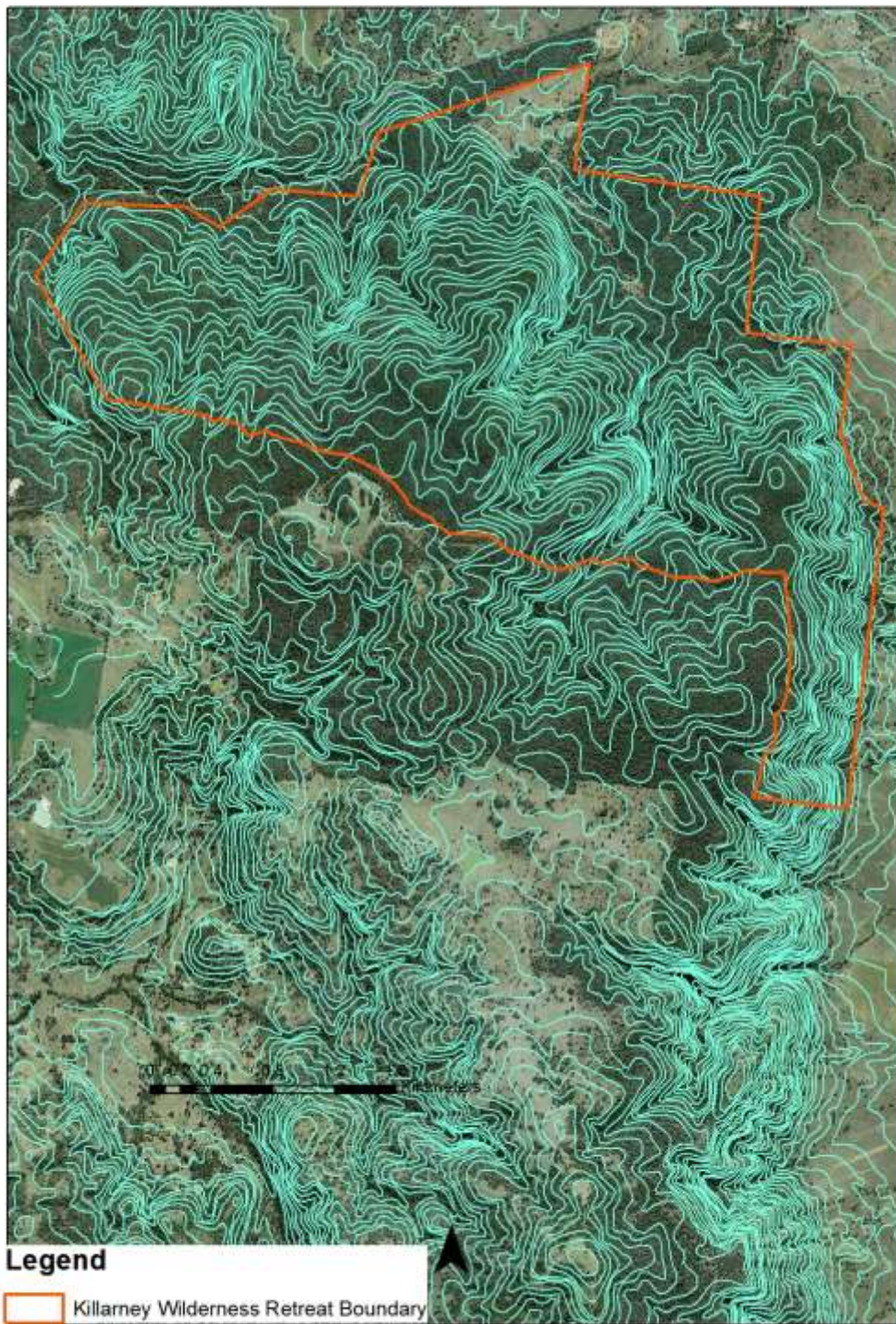
**Summary**

The vegetation of Killarney Wilderness Retreat is described and mapped based on ADS40 Imagery (2012). The property is of national significance as it contains a significant and intact example of the federal and state listed endangered community Semi-evergreen Vine Thicket that occurs across 91% of the property as in good condition across more than 60% of occurrence.

# **Introduction**

## **1.1 Objectives**

Dr John T. Hunter prepared this report of the vegetation of Killarney Wilderness Retreat Nature Conservation Trust Conservation Area. This report represents the findings of a rapid floristic survey and preliminary mapping program within the Study Area. The collated information is to be used as a guide for management purposes.



**Figure 1:** Topography of Killarney Wilderness Retreat.

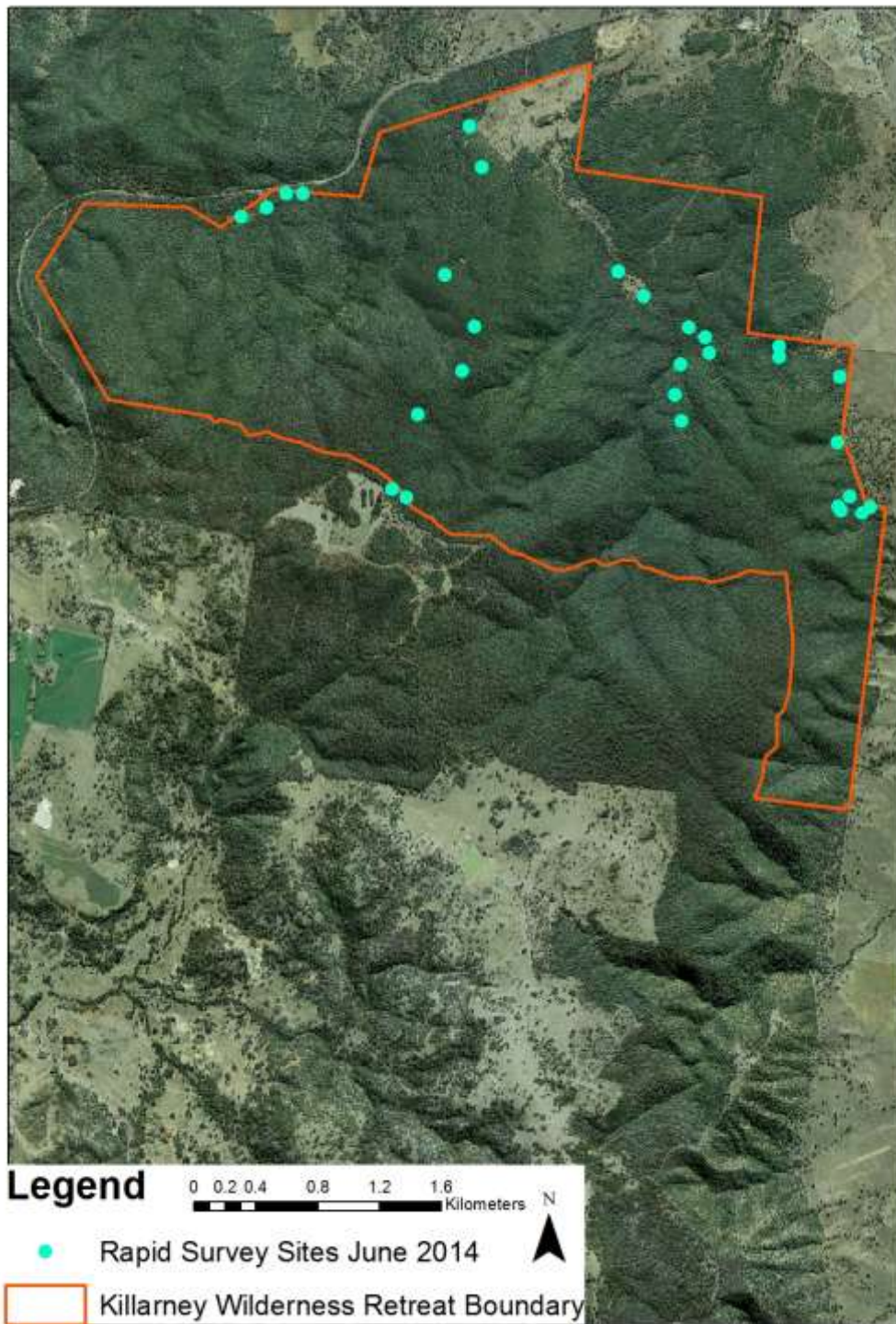
# **Methodology**

## **2.1 Survey design**

The survey was carried out via the placement of 30 Rapid Survey Sites. Rapid sites record dominant species only in each of the major strata found at each locality. Opportunistic notes were made of species found between sites and of the changes in vegetation. Condition at and between sites was also noted.

## **2.2 Mapping**

The locations of the identified communities and their condition score were then re-projected onto aerial images within ArcGIS 10.1. These sites, notes taken on traverses and structural characteristics seen on aerial images along with projected topographical information was used to assist in delineation of vegetation communities for mapping. Community types are based on the statewide NVIS database which describes Plant Community Types recognised within NSW.

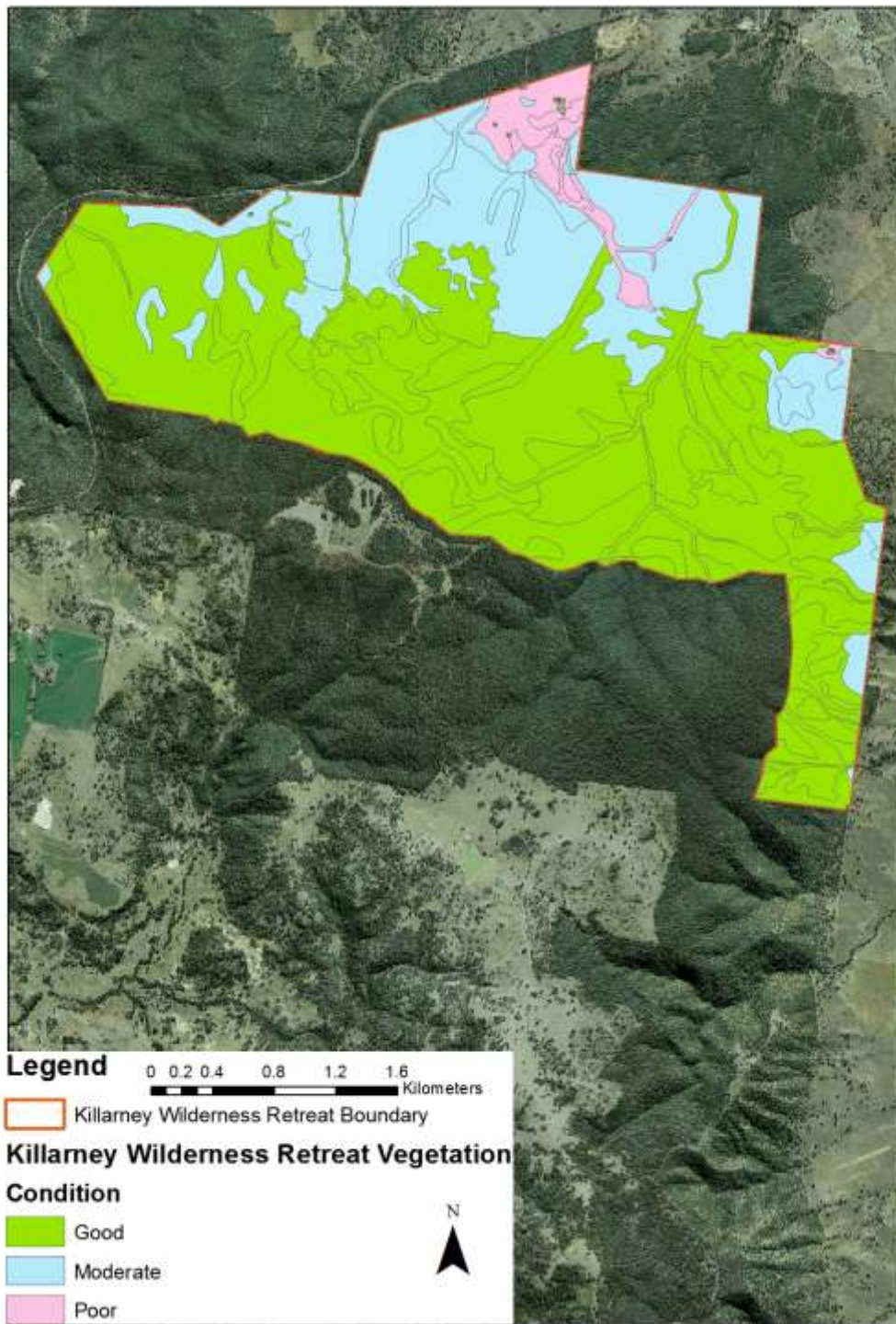


**Figure 2:** Location of Rapid Floristic Survey Sites.

## **Results**

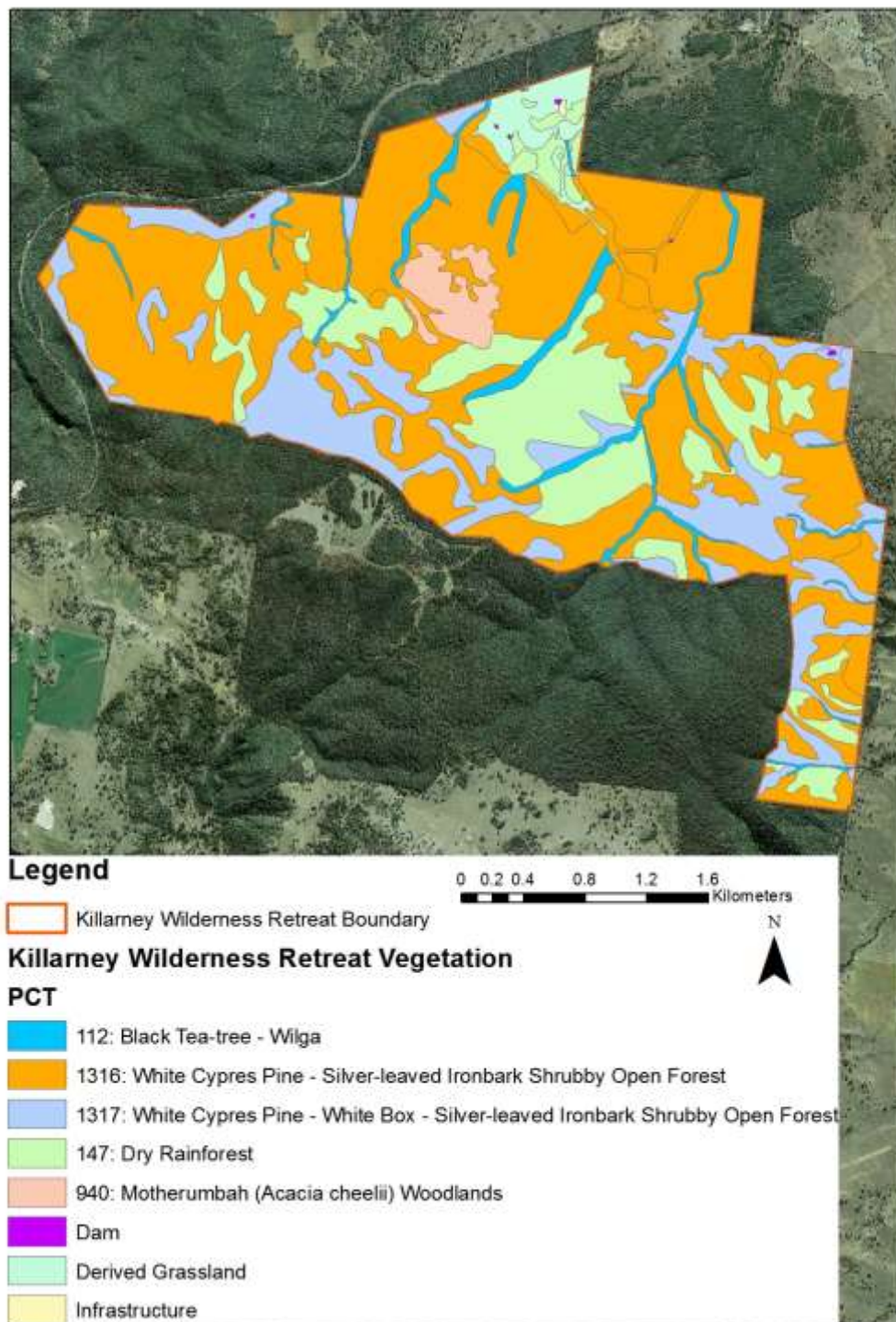
### **3.1 Floristics**

A total of 141 vascular plant taxa were found however it should be noted that this survey was undertaken over a single day during winter. It is highly likely that this species list does not include a substantial number of additional species that may appear during different seasons and years.



**Figure 3:** Condition of native vegetation within Killarney Wilderness Retreat.





**Figure 4:** Preliminary vegetation map of the Killarney Wilderness Retreat.

### 3.3 Plant Community Types

#### 147: Dry Rainforest

**Environmental relationships:** found often on northerly slopes and talus slopes

**Structure:** a layered woodland or a shrubland.

**Common natives:**

**Trees:** *Psydrax oleifolium*, *Notelaea microcarpa*, *Alphitonia excelsa*, *Alectryon subdentatus*, *Ficus rubiginosa*, *Brachychiton populneus*, *Geijera parviflorum*, *Callitris glaucophylla*.

**Shrubs:** *Beyeria viscosa*, *Carissa ovata*, *Dodonaea viscosa*, *Correa glabra*, *Acacia leiocalyx*, *Breynia cernua*, *Pimelea neo-anglica*.

**Climbers & trailers:** *Pandorea pandorana*, *Clematis glycinoides*, *Eustrephus latifolius*.

**Ground cover:** *Cymbopogon refractus*, *Austrostipa verticillata*, *Gahnia aspera*, *Desmodium brachypodium*, *Bothriochloa decipiens*, *Poa sieberiana*, *Einadia hastata*, *Breynia cernua*, *Austrodanthonia fulva*, *Arthropodium milleflorum*, *Aristida caput-medusae*, *Scleria mackaviensis*, *Aristida acuta*.

**Notes & conservation status:** this grouping occurs predominantly within the North Western Slopes of New South Wales. Semi-evergreen vine thicket (SEVT) is a type of rainforest that occurs on the North West Slopes of New South Wales, extending north from the Liverpool Range through southern and central Queensland to areas inland of Townsville. Outliers also occur in the upper Hunter Valley of NSW, near Scone.

#### 112: Black Tea-tree - Wilga

**Distribution:** found along major creek lines.

**Structure:** highly variable but predominantly a layered shrubby woodland, woodland, closed scrub or closed shrubland or dry rainforest.

**Common natives:**

**Trees:** *Eucalyptus melanophloia*, *Callitris glaucophylla*, *Angophora floribunda*, *Eucalyptus dealbata*.

**Tall shrubs:** *Melaleuca bracteata*, *Alectryon subdentatus*, *Geijera parviflora*, *Alstonia constricta*, *Acacia leiocalyx*

**Shrubs:** *Notelaea microcarpa*, *Phyllanthus subcrenulatus*, *Nyssanthes diffusa*, *Cryptandra amara* var. *floribunda*, *Bursaria spinosa*, *Abutilon oxycarpum*, *Solanum parvifolium*, *Pimelea neo-anglica*, *Olearia elliptica*, *Hibbertia obtusifolia*, *Dodonaea viscosa*, *Carissa ovata*.

**Climbers & trailers:** *Eustrephus latifolius*, *Pandorea pandorana*, *Glycine tabacina*, *Glycine microphylla*, *Desmodium varians*.

**Ground cover:** *Microlaena stipoides*, *Adiantum atroviride*, *Scleranthus biflorus*, *Daucus glochidiatus*, *Poa sieberiana*, *Geranium solanderi*, *Wahlenbergia communis*, *Urtica incisa*, *Dichondra repens*, *Austrostipa verticillata*, *Swainsona galegifolia*, *Rumex brownii*, *Stellaria flaccida*, *Rorippa eustylis*, *Pratia purpurascens*, *Pellaea calidirupium*, *Juncus aridicola*, *Desmodium brachypodium*, *Cyperus gracilis*, *Cheilanthes sieberi*, *Asplenium flavellifolium*, *Ajuga australis*.

**Notes & conservation status:** this community often occurs in protected gullies with an increase in moisture availability, it often has an understorey of mesic taxa including *Alectryon subdentatus* and *Notelaea microcarpa* and in some instances these can form dense Dry Rainforest stands on protected slopes immediately adjacent to the stream edge. *Melaleuca bracteata* is the most widely distributed species of *Melaleuca* and occurs from the central western slopes of NSW up to Cape York in Queensland with some occurrences within central Australia and in the Kimberley. It is generally restricted to altitudes between 50 to 550 m and rainfalls between 250-1150 mm but has no particular preference to soils. This species is one the most common and conspicuous co-dominants in this community. It is slow growing and generally is as tall as 10 m though may grow to 20 m. In broad terms this assemblage type occurs though out the north western slopes and into western south east Queensland. What is known in reserves is a very small percentage of the total coverage and is in most situations highly disturbed or invaded by exotic species. This community should be considered as poorly reserved across its range and much that is reserved being of poor quality.

940: *Motherumbah (Acacia cheelii) Shrublands*

**Environmental relationships:** found on upper slopes and crests. Soils are well drained to moist, and primarily shallow. Soil texture varies from loam, loamy sand to sandy

**Structure:** usually a low forest or woodland.

**Most common natives:**

**Trees:** *Acacia cheelii*, *Callitris glaucophylla*, *Eucalyptus melanophloia*, *Brachychiton populneus*, *Eucalyptus albens*.

**Shrubs:** *Notelaea microcarpa* var. *microcarpa*, *Beyeria viscosa*, *Olearia elliptica*, *Melichrus urceolatus*, *Psydrax odoratum*, *Pimelea neo-anglica*.

**Climbers & trailers:** *Jasminum suavissimum*, *Desmodium varians*.

**Ground cover:** *Cheilanthes sieberi*, *Lepidosperma laterale*, *Geranium solanderi*, *Austrodanthonia racemosa* var. *racemosa*, *Poa sieberiana*, *Aristida vagans*, *Vittadinia cuneata* var. *hirsuta*,.

**Notes & conservation status:** broadly similar assemblages also are likely to occur in parts of Mt Kaputar and in the Bingara area such as in the Gwydir River NP (pers. obs.). Currently this Plant Community Type is supposed to be restricted to sandstone substrates and a mapped unit such as this is not currently defined within the state Plant Community Types and is highly unusual.

#### *1316: White Cypress Pine - Silver-leaved Ironbark Shrubby Open Forest*

**Structure:** a woodland or closed forest with eucalypt emergents.

**Common natives:**

**Trees:** *Eucalyptus melanophloia*, *Callitris glaucophylla*, *Acacia cheelii*, *Eucalyptus albens*, *Brachychiton populneus*, *Alstonia constricta*, *Atalaya hemiglauca*, *Angophora floribunda*, *Alphitonia excelsa*.

**Shrubs:** *Pimelea neo-anglica*, *Notelaea microcarpa*, *Cassine australis*, *Carissa ovata*, *Olearia elliptica*, *Geijera parviflora*, *Beyeria viscosa*, *Psydrax oleifolium*, *Phyllanthus subcrenulatus*, *Indigofera adesmiifolia*, *Correa glabra*, *Spartothamnella juncea*, *Solanum parvifolium*, *Alectryon subdentatus*, *Acacia deanei*, *Solanum semiarmatum*, *Dodonaea viscosa* var. *angustifolia*, *Cassinia laevis*, *Capparis mitchellii*, *Breynia cernua*, *Acacia implexa*, *Acacia decora*.

**Climbers & trailers:** *Parsonsia eucalyptophylla*, *Pandorea pandorana*, *Commelina cyanea*, *Parsonsia pleiandenia*, *Eustrephus latifolius*, *Ehretia membranifolia*, *Clematis glycinoides*.

**Ground cover:** *Aristida personata*, *Dichondra repens*, *Cheilanthes sieberi*, *Poa sieberiana*, *Boerhavia dominii*, *Lomandra multiflora*, *Gahnia aspera*, *Dianella revoluta*, *Desmodium brachypodum*, *Cymbopogon refractus*, *Chloris truncata*, *Cheilanthes distans*, *Carex breviculmis*, *Vittadinia cuneata*, *Pellaea falcata*, *Euchiton sphaericus*, *Einadia hastata*, *Chamaesyce drummondii*, *Carex inversa*, *Brunoniella australis*.

**Notes & conservation status:** this grouping occurs predominantly within the North Western Slopes of New South Wales. Semi-evergreen vine thicket (SEVT) is a type of rainforest that occurs on the North West Slopes of New South Wales, extending north from the Liverpool Range through southern and central Queensland to areas inland of Townsville. Outliers also occur in the upper Hunter Valley of NSW, near Scone.

*1317: White Cypress Pine – White Box – Silver-leaved Ironbark Shrubby Open Forest*

**Environmental relationships:** on all topographic positions.

**Structure:** generally a shrubby woodland but at times a layered woodland, open woodland or grassy woodland.

**Common natives:**

**Trees:** *Callitris glaucophylla*, *Eucalyptus albens*, *Eucalyptus melanophloia*, *Brachychiton populneus*, *Eucalyptus dealbata*, *Angophora floribunda*.

**Tall shrubs:** *Acacia leiocalyx*, *Alphitonia excelsa*, *Geijera parviflora*.

**Shrubs:** *Notelaea microcarpa*, *Carissa ovata*, *Olearia elliptica*, *Hibbertia obtusifolia*, *Pimelea neo-anglica*, *Solanum parvifolium*, *Hibiscus sturtii*, *Cassinia laevis*, *Capparis mitchellii*, *Breynia cernua*, *Acacia deanei*, *Hibbertia riparia*, *Dodonaea sinuolata*, *Bursaria spinosa*.

**Climbers & trailers:** *Desmodium varians*, *Pandorea pandorana*, *Glycine tabacina*, *Clematis microphylla*, *Parsonsia eucalyptophylla*, *Marsdenia viridiflora*, *Jasminum lineare*.

**Ground cover:** *Aristida personata*, *Cymbopogon refractus*, *Dichondra* sp. A, *Desmodium brachypodum*, *Austrostipa scabra*, *Wahlenbergia communis*, *Brunoniella*

*australis*, *Cheilanthes sieberi*, *Swainsona galegifolia*, *Microlaena stipoides*, *Eragrostis parviflora*, *Calotis lappulacea*, *Scleria mackaviensis*, *Lomandra multiflora*, *Vittadinia dissecta*, *Vittadinia cuneata*, *Panicum simile*, *Geranium solanderi*, *Aristida calycina*, *Chloris truncata*, *Cheilanthes distans*, *Sigesbeckia australiensis*, *Rostellularia adscendens*, *Hypericum gramineum*, *Cyperus gracilis*, *Bothriochloa decipiens*.

**Notes & conservation status:** *Eucalyptus melanophloia*, *Eucalyptus albens* and *Callitris glaucophylla* and its type probably restricted to The Peel and Gwydir Valleys (Prober 1996). It is very common within the local region and is one of the most common community types within the Bingara State Conservation Areas (Derra Derra and Molroy) and the Gwydir River National Park (Mehi, Noonga, Murchison, Salmon, Munro) and within *Euroka* Nature Conservation Trust property. *E. albens* is being particularly common on soils with a high base status particularly in calcium and generally of high fertility.

**Table 1:** The number of ha within each of three condition classes for each community and the percentage of the total area of the property this accounts for.

<i>Mapped Entity</i>	<i>Good</i>	<i>Moderate</i>	<i>Poor</i>	<i>NA</i>	<i>Total</i>
112: Black Tea-tree - Wilga	34.8	10.6	0.0	0.0	45.4
1316: White Cypress Pine - Silver-leaved Ironbark Shrubby Open Forest	351.8	274.5	9.8	0.0	636.1
1317: White Cypress Pine - White Box - Silver-leaved Ironbark Shrubby Open Forest	172.1	28.8	1.3	0.0	202.2
147: Dry Rainforest	157.6	23.4	10.2	0.0	191.3
940: Motherumbah ( <i>Acacia cheelii</i> ) Woodlands	27.7	0.0	0.0	0.0	27.7
Dam	0.0	0.0	0.0	0.6	0.6
Derived Grassland	0.0	0.0	24.8	0.0	24.8
Infrastructure	0.0	0.0	0.0	0.4	0.4
<b>Total</b>	<b>744.0</b>	<b>337.3</b>	<b>46.1</b>	<b>1.0</b>	<b>1128.4</b>

### **3.5 Communities of conservation significance**

One endangered systems was found within Killarney Wilderness Retreat that is listed on both the Fenderal *EPBC* Act and the State *TSC* Act. Semi-evergreen Vine Thickets are considered to encompass all of the major community types found within the property including Plant Community Type 147, 1316 and 1317 (Table 1). In total this endangered system covers 91% of the property of which 67% is mapped as in good condition. Furthermore much of the community that is mapped in moderate condition is in recovery from a severe wildfire from 30 years previous and not due to significant clearing.

It should be noted that this is one of the largest intact stands of this community type on the North Western Slopes of NSW and is a much larger stand that what is known from the nearby Derra Derra Ridge State Conservation Area which only includes 412 ha of such lands. This property contains an area of very important vegetation of such size it should be considered of National significance.

Semi-evergreen Vine Thicket in the Brigalow Belt South and Nandewar Bioregions - Determination to make a minor amendment to Part 3 of Schedule 1 of the Threatened Species Conservation Act

<http://www.environment.nsw.gov.au/determinations/semievergreen36a.htm>

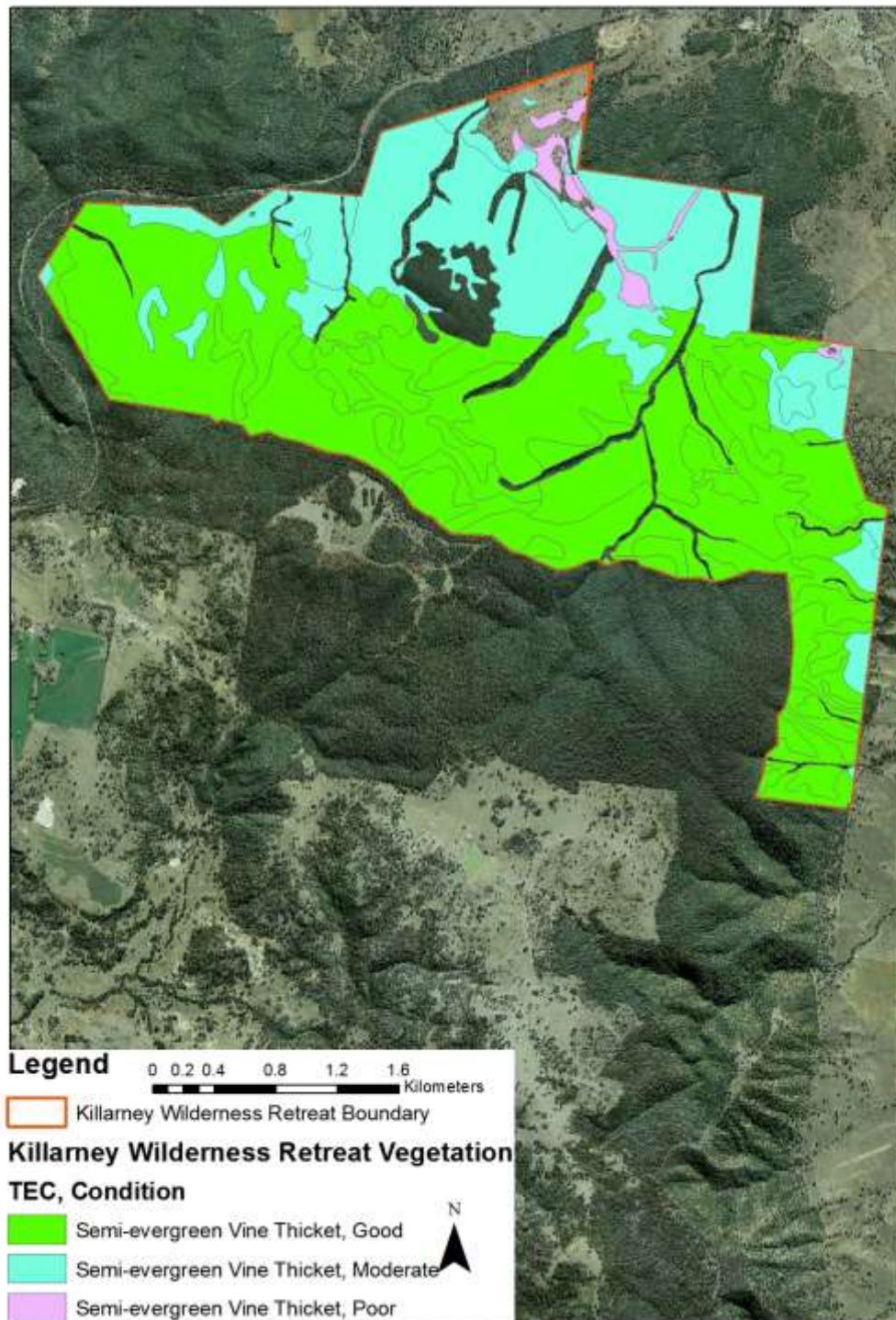
*EPBC Act*: part Semi-evergreen vine thickets of the Brigalow Belt (North and South) and Nandewar Bioregions

<http://www.environment.gov.au/biodiversity/threatened/communities/sevt.html>

**Table 2:** Condition and area of threatened communities in hectares.

<i>Entity</i>	<i>Good</i>	<i>Moderate</i>	<i>Poor</i>	<i>Total</i>
Semi-evergreen Vine Thicket	681.5229	326.7185	21.27	1029.5





**Figure 5:** Mapped Threatened Ecological Communities (TEC) within Killarney Wilderness Retreat and the condition of the stands.

**Appendix A:** Taxon list with recognised authorities and common names.

<i>Family</i>	<i>Species</i>	<i>Common Name</i>	<i>Status</i>
Acanthaceae	<i>Brunoniella australis</i>	Blue Trumpet	Native
Acanthaceae	<i>Rostellularia adscendens</i>	Pink Justicia	Native
Adiantaceae	<i>Adiantum atroviride</i>	Maidenhair Fern	Native
Adiantaceae	<i>Cheilanthes distans</i>	Hairy Rock Fern	Native
Adiantaceae	<i>Cheilanthes sieberi</i>	Narrow Rock Fern	Native
Adiantaceae	<i>Pellaea falcata</i>	Sickle Fern	Native
Amaranthaceae	<i>Nyssanthus diffusa</i>	Barb-wire Weed	Native
Anthericaceae	<i>Arthropodium milleflorum</i>	Vanilla Lily	Native
Apiaceae	<i>Ciclospermum leptophyllum</i>	Slender Celery	Introduced
Apiaceae	<i>Daucus glochidiatus</i>	Native Carrot	Native
Apiaceae	<i>Hydrocotyle laxiflora</i>	Stinking Pennywort	Native
Apocynaceae	<i>Alstonia constricta</i>	Quinine Bush	Native
Apocynaceae	<i>Carissa ovata</i>	Currant bush	Native
Apocynaceae	<i>Parsonsia eucalyptophylla</i>	Gargaloo	Native
Asclepiadaceae	<i>Gomphocarpus fruticosus</i>	Narrow-leaved Cotton Bush	Introduced
Asclepiadaceae	<i>Marsdenia pleiandenia</i>	Large-flowered Milk Vine	Native
Asclepiadaceae	<i>Marsdenia viridiflora</i>	Native Pear	Native
Aspleniaceae	<i>Asplenium flavellifolium</i>	Necklace Fern	Native
Asteraceae	<i>Bidens subalternans</i>	Greater Beggar's Ticks	Introduced
Asteraceae	<i>Calotis lappulacea</i>	Yellow Burr-daisy	Native
Asteraceae	<i>Cassinia laevis</i>	Cough Bush	Native
Asteraceae	<i>Cymbonotus lawsonianus</i>	Bears Ears	Native
Asteraceae	<i>Euchiton sphaericus</i>	Cudweed	Native
Asteraceae	<i>Glossocardia bidens</i>	Cobbler's Tack	Native
Asteraceae	<i>Hypochaeris radicata</i>	Catsear, Flatweed	Introduced
Asteraceae	<i>Olearia elliptica</i>	Daisy Bush	Native
Asteraceae	<i>Senecio prenanthoides</i>	Fireweed	Native
Asteraceae	<i>Sigesbeckia australiensis</i>	Sigesbeckia	Native
Asteraceae	<i>Vittadinia cuneata</i>	Fuzzweed	Native
Asteraceae	<i>Vittadinia muelleri</i>	Fuzzweed	Native
Bignoniaceae	<i>Pandorea pandorana</i>	Wonga Wonga Vine	Native
Boraginaceae	<i>Ehretia membranifolia</i>	Peach Bush	Native
Cactaceae	<i>Opuntia aurantiaca</i>	Tiger Pear	Introduced
Cactaceae	<i>Opuntia stricta</i>	Common Prickly Pear	Introduced
Campanulaceae	<i>Wahlenbergia communis</i>	Tufted Bluebell	Native
Campanulaceae	<i>Wahlenbergia planiflora</i>	Bluebell	Native
Capparaceae	<i>Capparis mitchellii</i>	Wild Orange	Native
Caryophyllaceae	<i>Stellaria media</i>	Common Chickweed	Introduced
Celastraceae	<i>Cassine australis</i>	Red Olive Plum	Native
Chenopodiaceae	<i>Einadia hastata</i>	Berry Saltbush	Native
Chenopodiaceae	<i>Einadia nutans</i>	Climbing Saltbush	Native
Chenopodiaceae	<i>Maireana microphylla</i>	Eastern Cottonbush	Native

<i>Family</i>	<i>Species</i>	<i>Common Name</i>	<i>Status</i>
Chenopodiaceae	<i>Sclerolaena birchii</i>	Galvanized Burr	Native
Chloanthaceae	<i>Spartothamnella juncea</i>	Bead Bush	Native
Commelinaceae	<i>Commelina cyanea</i>	Scurvy Weed	Native
Convolvulaceae	<i>Dichondra repens</i>	Kidney Weed	Native
Crassulaceae	<i>Crassula sieberiana</i>	Australian Stonecrop	Native
Cupressaceae	<i>Callitris glaucophylla</i>	White Cypress Pine	Native
Cyperaceae	<i>Carex breviculmis</i>	Sedge	Native
Cyperaceae	<i>Carex inversa</i>	Knob Sedge	Native
Cyperaceae	<i>Cyperus gracilis</i>	Sedge	Native
Cyperaceae	<i>Fimbristylis dichotoma</i>	Common Fringe Rush	Native
Cyperaceae	<i>Gahnia aspera</i>	Rough Saw Sedge	Native
Cyperaceae	<i>Lepidosperma laterale</i>	Variable Saw Sedge	Native
Cyperaceae	<i>Scleria mackaviensis</i>	White Head Sedge	Native
Dilleniaceae	<i>Hibbertia obtusifolia</i>	Grey Guinea Flower	Native
Euphorbiaceae	<i>Beyeria viscosa</i>	Sticky Spurge	Native
Euphorbiaceae	<i>Breynia cernua</i>	Coffee Bush	Native
Euphorbiaceae	<i>Chamaesyce dallachyana</i>	Caustic Weed	Native
Euphorbiaceae	<i>Phyllanthus subcrenulatus</i>	Creek Spurge	Native
Fabaceae	<i>Acacia cheelii</i>	Motherumbah	Native
Fabaceae	<i>Acacia conferta</i>	Crowded-leaved Wattle	Native
Fabaceae	<i>Acacia deanei</i>	Green Wattle, Deane's Wattle	Native
Fabaceae	<i>Acacia leiocalyx</i>	Curracabah	Native
Fabaceae	<i>Desmodium brachypodium</i>	Large Tick Trefoil	Native
Fabaceae	<i>Desmodium varians</i>	Slender Tick Trefoil	Native
Fabaceae	<i>Glycine tabacina</i>	Variable Glycine	Native
Fabaceae	<i>Indigofera adesmiifolia</i>	Indigo	Native
Fabaceae	<i>Senna barclayana</i>	Smooth Senna	Native
Fabaceae	<i>Swainsona galegifolia</i>	Smooth Darling Pea	Native
Geraniaceae	<i>Geranium solanderi</i>	Native Geranium	Native
Juncaceae	<i>Juncus aridicola</i>	Tussock Rush	Native
Lobeliaceae	<i>Pratia purpurascens</i>	Whiteroot	Native
Lomandraceae	<i>Lomandra filiformis</i>	Wattle Mat-rush	Native
Lomandraceae	<i>Lomandra longifolia</i>	Spiny-headed Mat-rush	Native
Lomandraceae	<i>Lomandra multiflora</i>	Many-flowered Mat-rush	Native
Loranthaceae	<i>Amyema maidenii</i>	Pale-leaf Mistletoe	Native
Loranthaceae	<i>Amyema miquelii</i>	Drooping Mistletoe	Native
Loranthaceae	<i>Amyema pendulum</i>	Drooping Mistletoe	Native
Loranthaceae	<i>Dendrophthoe glabrescens</i>		Native
Luzuriagaceae	<i>Eustrephus latifolius</i>	Wombat Berry	Native
Malvaceae	<i>Abutilon oxycarpum</i>	Straggly Lantern Bush	Native
Malvaceae	<i>Hibiscus sturtii</i>	Hill Hibiscus	Native
Malvaceae	<i>Malvastrum americanum</i>	Spiked Malvastrum	Introduced
Malvaceae	<i>Malvastrum coromandelianum</i>	Prickly Malvestrum	Native
Malvaceae	<i>Sida corrugata</i>	Corrugated Sida	Native
Moraceae	<i>Ficus rubiginosa</i>	Port Jackson Fig	Native

<i>Family</i>	<i>Species</i>	<i>Common Name</i>	<i>Status</i>
Myrtaceae	<i>Angophora floribunda</i>	Rough-barked Apple	Native
Myrtaceae	<i>Eucalyptus albens</i>	White Box	Native
Myrtaceae	<i>Eucalyptus dealbata</i>	Tumbledown Red Gum	Native
Myrtaceae	<i>Eucalyptus melanophloia</i>	Silver-leaved Ironbark	Native
Myrtaceae	<i>Melaleuca bracteata</i>	Black Tea-tree	Native
Nyctaginaceae	<i>Boerhavia dominii</i>	Tarvine	Native
Oleaceae	<i>Jasminum lineare</i>	Desert Jasmine	Native
Oleaceae	<i>Notelaea microcarpa</i>	Native Olive	Native
Orchidaceae	<i>Cymbidium canaliculatum</i>	Tiger Orchid	Native
Oxalidaceae	<i>Oxalis perennans</i>	Wood Sorrel	Native
Phormiaceae	<i>Dianella revoluta</i>	Spreading Flax Lily	Native
Poaceae	<i>Aristida acuta</i>	Kerosene Grass	Native
Poaceae	<i>Aristida calycina</i>	Kerosene Grass	Native
Poaceae	<i>Aristida caput-medusae</i>	Many-headed Wiregrass	Native
Poaceae	<i>Aristida personata</i>	Purple Wiregrass	Native
Poaceae	<i>Aristida vagans</i>	Threawn Speargrass	Native
Poaceae	<i>Austrostipa scabra</i>	Rough Speargrass	Native
Poaceae	<i>Austrostipa verticillata</i>	Slender Bamboo Grass	Native
Poaceae	<i>Bothriochloa decipiens</i>	Pitted Bluegrass	Native
Poaceae	<i>Bothriochloa macra</i>	Red Grass	Native
Poaceae	<i>Chloris truncata</i>	Windmill Grass	Native
Poaceae	<i>Digitaria brownii</i>	Cotton Panic Grass	Native
Poaceae	<i>Digitaria ramularis</i>	Finger Panic Grass	Native
Poaceae	<i>Echinopogon caespitosus</i>	Tufted Hedgehog Grass	Native
Poaceae	<i>Enneapogon nigricans</i>	Niggerheads	Native
Poaceae	<i>Microlaena stipoides</i>	Weeping Meadow Grass	Native
Poaceae	<i>Panicum simile</i>	Two Colour Panic	Native
Poaceae	<i>Paspalidium gracile</i>	Slender Panic	Native
Poaceae	<i>Poa sieberiana</i>	Snow Grass	Native
Poaceae	<i>Rytidosperma racemosum</i>	Wallaby Grass	Native
Poaceae	<i>Sporobolus creber</i>	Slender Rat's Tail Grass	Native
Poaceae	<i>Thellungia advena</i>	Coolibah Grass	Native
Poaceae	<i>Tripogon loliiformis</i>	Five Minute Grass	Native
Poaceae	<i>Urochloa gilesii</i>	Hairy-edged Grass	Native
Polygonaceae	<i>Rumex brownii</i>	Swamp Dock	Native
Primulaceae	<i>Anagallis arvensis</i>	Scarlet or Blue Pimpernel	Introduced
Ranunculaceae	<i>Clematis microphylla</i>	Small-leaved Clematis	Native
Rhamnaceae	<i>Alphitonia excelsa</i>	Red Ash	Native
Rubiaceae	<i>Asperula conferta</i>	Common Woodruff	Native
Rubiaceae	<i>Galium leptogonium</i>	Bedstraw	Native
Rubiaceae	<i>Psydrax odoratum</i>	Shiny-leaved Canthium, lamboto	Native
Rubiaceae	<i>Psydrax oleifolium</i>	Wild Lemon	Native
Rutaceae	<i>Correa glabra</i>	Rock Correa	Native
Rutaceae	<i>Geijera parviflora</i>	Wilga	Native
Santalaceae	<i>Santalum lanceolatum</i>	Northern Sandalwood	Native

<i>Family</i>	<i>Species</i>	<i>Common Name</i>	<i>Status</i>
Sapindaceae	<i>Alectryon subdentatus</i>		Native
Sapindaceae	<i>Atalaya hemiglauca</i>	Whitewood	Native
Sapindaceae	<i>Dodonaea sinuolata</i>	Hop Bush	Native
Sapindaceae	<i>Dodonaea viscosa</i>	Hop Bush	Native
Solanaceae	<i>Solanum parvifolium</i>		Native
Solanaceae	<i>Solanum semiarmatum</i>		Native
Sterculiaceae	<i>Brachychiton populneus</i>	Kurrajong	Native
Thymelaeaceae	<i>Pimelea neo-anglica</i>	New England Rice Flower	Native
Urticaceae	<i>Parietaria debilis</i>	Native Pellitory	Native
Urticaceae	<i>Urtica incisa</i>	Stinging Nettle	Native

**Appendix B:** Locality and site information.

<i>Site</i>	<i>Date</i>	<i>Zone</i>	<i>Datum</i>	<i>Easting</i>	<i>Northing</i>	<i>Altitude</i>
1	15/06/2014	56	94	264,015.00	6,689,777.00	424
2	15/06/2014	56	94	263,963.00	6,689,740.00	417
3	15/06/2014	56	94	263,826.00	6,689,757.00	467
4	15/06/2014	56	94	263,811.00	6,689,783.00	466
5	15/06/2014	56	94	263,884.00	6,689,849.00	453
6	15/06/2014	56	94	263,802.00	6,690,197.00	433
7	15/06/2014	56	94	263,819.00	6,690,625.00	413
8	15/06/2014	56	94	263,426.00	6,690,751.00	422
9	15/06/2014	56	94	263,424.00	6,690,821.00	426
10	15/06/2014	56	94	262,946.00	6,690,878.00	413
11	15/06/2014	56	94	262,976.00	6,690,782.00	417
12	15/06/2014	56	94	262,795.00	6,690,339.00	475
13	15/06/2014	56	94	262,752.00	6,690,508.00	456
14	15/06/2014	56	94	262,786.00	6,690,704.00	412
15	15/06/2014	56	94	262,546.00	6,691,149.00	402
16	15/06/2014	56	94	262,843.00	6,690,944.00	418
17	15/06/2014	56	94	262,383.00	6,691,305.00	412
18	15/06/2014	56	94	260,922.00	6,689,899.00	636
19	15/06/2014	56	94	261,011.00	6,689,845.00	643
20	15/06/2014	56	94	261,088.00	6,690,378.00	628
21	15/06/2014	56	94	261,372.00	6,690,662.00	619
22	15/06/2014	56	94	261,512.00	6,690,862.00	591
23	15/06/2014	56	94	261,453.00	6,690,952.00	584
24	15/06/2014	56	94	261,262.00	6,691,284.00	518
25	15/06/2014	56	94	261,498.00	6,691,980.00	419
26	15/06/2014	56	94	261,423.00	6,692,248.00	370
27	15/06/2014	56	94	260,341.00	6,691,813.00	404
28	15/06/2014	56	94	260,232.00	6,691,812.00	388
29	15/06/2014	56	94	260,106.00	6,691,723.00	415
30	15/06/2014	56	94	259,944.00	6,691,660.00	417

**Appendix C: Aboriginal and Early Settler plant use.**

<i>Species</i>	<i>Aboriginal Use</i>	<i>Toxicity</i>	<i>General Use</i>	<i>Physiology</i>	<i>Notes</i>
Acacia cheelii		Poison?			
Acacia deanei		Poison?	Fodder.		
Acacia leiocalyx			Honey.		
Alphitonia excelsa	Timber, poison, medicinal, honey, miscellaneous. Leaves used to wrap meat. May be used to create red-brown or yellow-orange dyes.		Fodder. Used for cabinet work, fencing & house stumps. When exposed the wood turns a orange to red colour.		Food plant for several butterfly larvae, fruit eaten by various birds and fruit bat. Pollination by honeybee and native bees.
Alstonia constricta		Poison.	Fodder.		Medicinal.
Amyema maidenii	Fruits eaten.		Readily grazed if lopped.		Weed.
Amyema miquelii	Fruits eaten.		Readily grazed if lopped.		Weed.
Amyema pendulum	Fruits eaten.		Fodder.		Food, weed.
Anagallis arvensis		Poison.	Fodder.		Weed, poisonous to horses, cattle, sheep, birds, dogs, rabbits and guinea pigs.
Angophora floribunda			Fodder. Important pollen source.	C3. Drought tolerant. Intolerant of wind, waterlogging and salinity.	Tertiary sand coloniser, by seed propagation. Garden & shade plant. Bee attractant. Firewood, timber.
Aristida personata					Host plant of common army worm.
Aristida vagans			Useful drought fodder.		Seed eaten by finches.
Arthropodium milleflorum	Roots eaten raw or roasted.		Fodder, moderate forage.		
Asperula conferta			Fodder. Drought resistant forage plant providing green fodder rapidly		Palatable to rabbits.

<i>Species</i>	<i>Aboriginal Use</i>	<i>Toxicity</i>	<i>General Use</i>	<i>Physiology</i>	<i>Notes</i>
			after summer rains.		
<i>Asplenium flavellifolium</i>			Contains HCN, but unlikely to cause stock poisoning.		
<i>Atalaya hemiglauca</i>	Timber.	Poison.	Fodder.		Gum, honey (pollen).
<i>Austrostipa verticillata</i>			Rarely observed to be grazed.		
<i>Beyeria viscosa</i>		Poison?			Reputedly poisonous to livestock.
<i>Bidens subalternans</i>					Weed.
<i>Boerhavia dominii</i>	Outer flesh of the roots edible.				Weed.
<i>Bothriochloa decipiens</i>			Not readily eaten by stock.		Shelter. Drought resistant, colonises scalded soils.
<i>Bothriochloa macra</i>			Fodder.		Valuable coloniser of disturbed and degenerated areas. Seeding stems avoided by stock, widespread in overgrazed paddocks.
<i>Brachychiton populneus</i>	Young roots can be boiled & taste like turnips. Seeds are edible & can make a beverage. Leaves also edible. Inner bark pulled off in strips used for dilly bags, nets etc.				
<i>Breynia cernua</i>				C3. Wind tolerant, drought intolerant, intolerant of waterlogging and salinity.	Tertiary sand coloniser. Cosmopolitan species, on the back dune. Shelter.



<i>Species</i>	<i>Aboriginal Use</i>	<i>Toxicity</i>	<i>General Use</i>	<i>Physiology</i>	<i>Notes</i>
<i>Brunoniella australis</i>			Fodder.		Reported good sheep herbage.
<i>Callitris glaucophylla</i>	Used as splints, moulded when wet and then dries in place holding limb in place. Because so flammable was used by Aborigines for torches by which to spear fish at night.		Used for building construction, fencing posts & telegraph poles.		Resistant to termite attack.
<i>Capparis mitchellii</i>	Pulp of fruit eaten by aborigines.		Excellent fodder tree, in situ and when lopped.		Wood used for carving, engraving, smokers' pipes. Gums, shelter.
<i>Carex inversa</i>			Supplies limited amount of fair quality forage.		Weed.
<i>Carissa ovata</i>		Poison?	Fodder.		Weed.
<i>Cassinia laevis</i>		Poison?	Fodder.		Weed. Suspected cause of coughing and eye irritation of people in close proximity.
<i>Cheilanthes distans</i>		Poison?			
<i>Cheilanthes sieberi</i>		Poison?			
<i>Chloris truncata</i>		Poison?	Widespread, valuable, warm-season grass.		Shelter. Useful for grassing waterways. Seed eaten by Stubble Quail. Resilient in mowed areas.
<i>Ciclospermum leptophyllum</i>			Fodder.		Weed. Reported to taint milk.
<i>Commelina cyanea</i>				C3.	Used as a cooked green vegetable by early settlers to combat scurvy.
<i>Crassula sieberiana</i>			Fodder, palatable to stock but limited in value due to its small size or inaccessible habitats.		
<i>Cymbidium</i>	Stems eaten cooked or raw,				Ornamental.

<i>Species</i>	<i>Aboriginal Use</i>	<i>Toxicity</i>	<i>General Use</i>	<i>Physiology</i>	<i>Notes</i>
canaliculatum	grated, powdered, starch washed out & allowed to settle. Sap from stems fixes ochre to bark in paint. Starch fed to 'delicate children. Fibre.				
Cymbonotus lawsonianus					Weed, medicinal.
Cyperus gracilis				C3	Weed.
Daucus glochidiatus	Tuber edible.		Fodder.		Weed.
Dendrophthoe glabrescens	Fruits were probably utilised by aborigines.		Readily grazed if lopped.		Weed, food.
Desmodium brachypodium		Poison?			
Desmodium varians			Fodder.		
Dianella revoluta	Fruits & roots edible. Stems can be pounded to make a fibre.				Pollinated by native bees.
Dichondra repens			Fodder.	C3. Wind intolerant, drought intolerant, tolerant of waterlogging, intolerant of salinity.	Tertiary sand coloniser. Gums, weed.
Digitaria brownii			Readily eaten by stock, valuable fodder.		

<i>Species</i>	<i>Aboriginal Use</i>	<i>Toxicity</i>	<i>General Use</i>	<i>Physiology</i>	<i>Notes</i>
<i>Echinopogon caespitosus</i>			Grazed by stock.		Food plant for butterfly larvae.
<i>Ehretia membranifolia</i>		Poison?	Fodder.		
<i>Einadia hastata</i>	Edible fruit.				
<i>Einadia nutans</i>	Edible fruit.		Fodder.		
<i>Enneapogon nigricans</i>			Fodder. Susceptible to overgrazing.		
<i>Eucalyptus albens</i>			Fodder, Timber, Honey, Fuel.		Seed eaten by Gang-gangs. Nectar eaten by Little Lorikeet. Blossoms by Grey-headed & Little Red Flying Foxes. Browsed by Koala and cattle.
<i>Eucalyptus dealbata</i>			Valued for Honey and Pollen.		Blossoms eaten by Grey-headed Flying Fox.
<i>Eucalyptus melanophloia</i>			Gum, Timber, Honey.		
<i>Eustrephus latifolius</i>	Tubers are sweet and edible.				Pollinated by honeybees, small beetles.
<i>Ficus rubiginosa</i>	Fruit can be eaten raw or made into a jelly.				
<i>Gahnia aspera</i>	Red-brown seeds were pounded by the aborigines to produce a flour. The roots are also edible.		Fodder, of little forage value.		
<i>Geijera parviflora</i>	Seeds can be ground into a flour. The husks can make you ill though. Timber used for boomerangs.		Fodder, Gum, Honey.		Ornamental.
<i>Geranium solanderi</i>	Roots can be roasted & eaten.				

<i>Species</i>	<i>Aboriginal Use</i>	<i>Toxicity</i>	<i>General Use</i>	<i>Physiology</i>	<i>Notes</i>
<i>Glycine tabacina</i>	Taproot has liquorice flavour and was chewed by Aborigines.	Poison?	Fodder.		
<i>Gomphocarpus fruticosus</i>		Poison.			Ornamental.
<i>Hibbertia obtusifolia</i>		Poison?	Fodder.		
<i>Hypochaeris radicata</i>			Fodder.	C3. Wind tolerant, drought tolerant, intolerant of waterlogging, intolerant of salinity.	Secondary & tertiary sand coloniser. Cosmopolitan species, on the backdune. Honey, weed.
<i>Indigofera adesmiifolia</i>					
<i>Jasminum lineare</i>			Fodder, readily browsed by sheep and goats.		Ornamental.
<i>Lepidosperma laterale</i>				C3. Wind intolerant, drought intolerant, intolerant of salinity and waterlogging.	Tertiary sand coloniser, propagation by transplants and seed.
<i>Lomandra filiformis</i>					
<i>Lomandra longifolia</i>	Leaf bases edible & taste like peas. Leaves used for baskets. Flowers edible.	Poison?	Not observed to be grazed by stock, but suspected of causing a type of paralysis in stock.	C3. Tolerant of wind, drought and	Secondary & tertiary sand coloniser. Wind barrier. Propagation by transplants and seed. Bee & mammal attractant.

<i>Species</i>	<i>Aboriginal Use</i>	<i>Toxicity</i>	<i>General Use</i>	<i>Physiology</i>	<i>Notes</i>
				salinity. Intolerant of waterlogging.	
<i>Lomandra multiflora</i>		Poison?	Suspected of poisoning sheep.		Food for butterflies.
<i>Malvastrum americanum</i>		Poison?			
<i>Melaleuca bracteata</i>			Honey. Oil can be used in insecticides such as pyrethrum sprays to increase potency.		Ornamental.
<i>Microlaena stipoides</i>					One of the few Australian native grasses that provide forage during the critical winter early spring period. Valuable for stock in dry times. Food plant for butterfly larvae. Finches eat seeds.
<i>Nyssanthes diffusa</i>					Minor weed of usually wet wastelands.
<i>Oxalis perennans</i>					Ornamental.
<i>Pandorea pandorana</i>	Long wiry branches used as spear shafts by Aborigines.		Moderately palatable fodder.	C3. Wind intolerant, drought intolerant, intolerant of waterlogging and salinity.	Tertiary sand coloniser, propagation by seed, garden plant, floral display. Cosmopolitan species, on the backdune.
<i>Panicum simile</i>			Fodder.		
<i>Parietaria debilis</i>			Possibly grazed by stock. Minor forage plant, widespread in damp and shady sites.		
<i>Parsonsia</i>		Poison?	Often eaten by sheep and cattle as		

<i>Species</i>	<i>Aboriginal Use</i>	<i>Toxicity</i>	<i>General Use</i>	<i>Physiology</i>	<i>Notes</i>
eucalyptophylla			drought fodder. Suspected sheep poison at certain times.		
Paspalidium gracile	Seeds are edible.		Hardy and readily grazed.		
Pimelea neo-anglica		Poison.			
Poa sieberiana			Fodder.		
Pratia purpurascens				C3. Intolerant of wind, drought and salinity. Tolerant of waterlogging.	Tertiary sand coloniser, propagation by transplants. Garden plant. Cosmopolitan species, on the backdune. Weed.
Psydrax odoratum	Food.	Poison?	Fodder.		
Psydrax oleifolium			Fodder.		
Rostellularia adscendens			Moderately palatable fodder.		Ornamental.
Rumex brownii	Leaves and midrib can be steamed or boiled & used as a substitute for silverbeet. Thick yellow taproot can be ground, roasted & used as a coffee substitute.	Poison.			Weed.
Santalum lanceolatum	Timber. Leaves burnt to repel mosquitoes.		Foliage palatable and useful fodder.		Fruits edible and sweet. Gums.
Sclerolaena birchii			Leaves may be nibbled by sheep at times.		Weed, shelter.
Sida corrugata		Poison?	Valuable forage plant. Suspected cause of paralysis in sheep.		

<i>Species</i>	<i>Aboriginal Use</i>	<i>Toxicity</i>	<i>General Use</i>	<i>Physiology</i>	<i>Notes</i>
Stellaria media			Food.		Edible as a vegetable, either cooked or raw.
Swainsona galegifolia	Seeds are edible.	Poison.	Fodder, Honey.		Ornamental.