ACHM
AUSTRALIAN CULTURAL HERITAGE MANAGEMENT

Report of an ethnobotanical survey of Mulga Downs Iron Ore Mine & Hub and Rail Spur

MDM-85000-EN-SOW-0006 and MDM-85000-EN-SOW-0007

By: Justin Beal

Date: 26 August 2024

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Spatial data captured by Australian Cultural Heritage Management (Victoria) Pty Ltd in this document for any newly recorded sites has been obtained by using hand held or differential GPS units using the GDA94 co-ordinate system.

Abbreviations

Term	Meaning
ACHM	Australian Cultural Heritage Management
AHA	Aboriginal Heritage Act 1972 (WA)
BNTAC	Banjima Native Title Aboriginal Corporation
DBCA	WA State Government's Department of Biodiversity, Conservation, and Attractions
Florabase	online database of WA plants maintained by the WA Herbarium
GIS	Geographic Information System
GPS	Global Positioning System
HPPL	Hancock Prospecting Pty Ltd
Hub and Rail Spur	Mulga Downs Hub and Rail Spur
KD	Karijini Development Pty Ltd
MDIOM	Mulga Downs Iron Ore Mine
RHI	Roy Hill Infrastructure Pty Ltd
SOW	Scope of Works
TEK	Traditional Ecological Knowledge

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- Caroline Parker
- Coreen Parker
- Preston Luke Parker
- Trevor Parker

Executive Summary

Australian Cultural Heritage Management (ACHM) are the heritage services provider for the Banjima Native Title holders. On 29 February 2024, HanRoy issued two Ethnobiological Survey requests to the Banjima Native Title holders via their heritage manager, Karijini Development Pty Ltd.

The Survey requests proposed that an Ethnobiological (ethnobotanical & ethnozoological) Survey be conducted over the locations of the proposed Mulga Downs Iron Ore Mine (MDIOM) and the associated Mulga Downs Hub and Rail Spur (Hub and Rail Spur) projects; these two Ethnobiological survey requests were presented in Scopes of Work (SOW) MDM-85000-EN-SOW-006 and MDM-85000-EN-SOW-007, respectively.

These project areas are located approximately 180 km northwest of Newman and 210 km south of Port Hedland in the Pilbara region of Western Australia and occur in between, or overlapping with, at least two areas of cultural significance to the Banjima People; namely, the Fortescue Marsh and Floodplain, and the Chichester Ranges.

This report only details the conduct of an *ethnobotanical* survey conducted with representatives of the Banjima People Native Title holders in relation to SOW-0006 and SOW-0007. In actuality, the short field work period meant that the methodology of the survey became more of a "rapid appraisal" to compile an "initial ethnobotanical inventory" of plants that have cultural uses, with a view to informing a Social and Cultural Heritage Management Plan (SCHMP), rather than focussing on what plants might be located at any particular given location within the MDIOM or the Hub and Rail Spur project areas (that information is contained in botany reports held by HanRoy; see, for example, Maia Environmental Consultancy 2022).

This report documents the results of the ethnobotanical survey conducted from July 30 – August 1, 2024.

The survey resulted in the documentation of some 20 plants for which the Banjima People have food, medicine, tool making and other uses, and they stated that there were more plants with cultural uses that have yet to be recorded.

Banjima comments and recommendations

On the last day of the survey the anthropologist asked the Banjima People representatives what comments and recommendations they might like to make in relation to the SCHMP and their traditional use of plant resources within the proposed project areas. They made the following comments and observations:

- There are more plants and trees with traditional cultural uses that were not recorded on the present survey and so additional surveys of this type would be useful to continue the plant inventory process
- Rehabilitation of the landscapes altered and disturbed by exploration, mining, and associated infrastructure should be an ongoing project during the entire life-of-mine process rather than being something that might be commenced at the end of a mining project
- Mining proponents should consider establishment of plant nurseries, employing Traditional Owners, to propagate endemic species that can be used in the land rehabilitation process during the life-of-mine
- Bush medicine and bush food plants seem rarer than tree resources (such as "mulga" (*Acacia* sp.) that are used for their wood. The medicine plants seem to be slow to grow to maturity.
- The Banjima People representatives stated that they felt it was hard to access the plant resources on their Native Title lands because the mining operations of multiple companies meant that there are many fences, rail lines, gates and other associated restrictions to them accessing their traditional lands.
- The machinery noise created by exploration and mining operations creates a disturbance that scares animals away from those areas. For example, the author has had several previous conversations with Banjima People on surveys in the Fortescue Marsh area and surrounds where the Banjima People representatives have commented on their being fewer kangaroos and emus in the area – which they attribute to the animals having been scared away by the noise of the mining activities of multiple companies operating in the region. The Banjima People representatives on this ethnobotanical survey stated that they had observed the same thing and that this is a concern because animals are involved in the spreading of plant seeds (via eating the fruits and then defecating the seeds to new locations), but if the animals are scared away from inhabiting a region due to loud noise disturbance there is less natural regeneration of plants in that region.
- Is it possible that dust from mining operations, that comes down to coat the leaves of trees and shrubs in the surrounding area, is inhibiting plant growth? A Bush Orange (*Gudjawari* - likely *Capparis umbonata*) was observed by the side of a track to the Mulga Downs exploration camp and was covered in dust and the Banjima representatives had thought it looked somewhat unhealthy.

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1 Introduction

Australian Cultural Heritage Management (ACHM) are the heritage services provider for the Banjima Native Title holders. On 29 February 2024, HanRoy issued two Ethnobiological Survey requests to the Banjima Native Title holders via their heritage manager, Karijini Development Pty Ltd.

1.1 Scopes of Work

The Survey requests proposed that an Ethnobiological Survey be conducted over the locations of the proposed Mulga Downs Iron Ore Mine (MDIOM) and the associated Mulga Downs Hub and Rail Spur (Hub and Rail Spur) projects; these two Ethnobiological survey requests were presented in Scope of Works (SOW) **MDM-85000-EN-SOW-006** and **MDM-85000-EN-SOW-007**, respectively.

These project areas are located approximately 180 km northwest of Newman and 210 km south of Port Hedland in the Pilbara region of Western Australia (see Map 1–1).. **SOW-006**, **pertaining to the MDIOM**, informs that the MDIOM is proposed to be constructed and operated by Hancock Prospecting Pty Ltd (HPPL) and notes that, at the time of its writing, the MDIOM Proposal was currently being assessed by the Environmental Protection Authority (EPA) via a Public Environmental Review (PER) process under Part IV of the *Environmental Protection Act 1986* (EP Act). **SOW-007**, **pertaining to the Hub and Rail Spur**, informs that it is proposed to be developed by Roy Hill Infrastructure Pty Ltd (RHI) and is described as a proposed *"new asset which will support the supply of iron ore product through the port facilities located at Port Hedland by providing access to ore blending and rail haulage facilities for third party mining operations. The Proposal will also service the proposed future Hancock Prospecting Pty Ltd (HPPL) Mulga Downs Iron Ore Mine (MDIOM)".*

Both the MDIOM and Hub and Rail Spur project areas lie within the Banjima Native Title determination area (Federal Court File No.WAD6096/1998; Tribunal File No. WCD2014/001).

SOW-006 and SOW-007 each make a request for an "ethnobiological (ethnobotanical & ethnozoological) survey" in consultation with the Banjima People for those parts of the projects that occur in the Banjima Native Title Determination Area. The survey results are proposed to be used within Social Cultural Heritage Management Plans (SCHMPs) to be codeveloped by Banjima and HPPL and RHI, respectively, for each separate proposal.

This report only details the conduct of an *ethnobotanical* survey conducted with representatives of the Banjima People Native Title holders.

1.2 Ethnobotanical component of Scopes of Work

Below is an extract from SOW-0006, pertaining to the MDIOM, describing the "Ethnobiological Survey Scope" but including only those components of the SOW-0006 that refer to the *ethnobotanical* component of the proposed ethnobiological study. The same wording was also used in SOW-0007, but with reference to the Hub and Rail Spur project:

> *"The scope is to document the traditional ecological knowledge (TEK) of Banjima people as provided by the relevant personnel who can speak for country:*
>
> *. . .The survey will focus on the use of native flora . . . for bush tucker, medicine, clothing, ceremony, artefacts and other general use in daily activities by the Banjima people, and will also include any other TEK and stories that may be shared during the survey*
>
> *. . . Undertake research and/or consultation that may be required to manage the ongoing use of ethnobiological values by Banjima people.*
>
> *Provide a report outlining recommendations regarding the management of ethnobiological values including any further research and/or consultation that may be required."*

Map 1–1: Map showing proposed location of MDIOM and Hub & Rail Spur

1.3 Survey Dates

The ethnobotanical survey discussed in this report was undertaken between 29 July – August 2, 2024, inclusive of travel. The survey fieldwork occurred from 30 July – August 1, 2024.

1.4 Survey Team

The following people participated in the ethnobotanical survey:

Banjima People representatives

Caroline Parker

Coreen Parker

Doris Parker (travelled with Trevor Parker but did not attend field survey)

Preston Luke Parker

Trevor Parker

HanRoy

Savita Goldsworthy – Environmental and Approvals Advisor (available for questions during morning briefings 30 July – August 1, 2024, but did not attend survey)

Matthew Jamieson – Field Supervisor

ACHM

Justin Beal -Anthropologist

Fortescue Helicopters

Ian (?) - Pilot

1.5 Ethnographic Significance of the MDIOM and Hub and Rail Spur Project Area

As can be seen in Map 1–1 above, the proposed MDIOM and associated Hub and Rail Spur project areas lie immediately north of the highly culturally significant Fortescue Marsh and are proposed to occur further north onto the southern slopes of the also culturally significant Chichester Ranges. The ranges are known to the Banjima People as *Birdilya Marnda*. These places are discussed below.

1.5.1 *Mungurdu* (Fortescue Marsh and Floodplain)

Located immediately to the south of the proposed MDIOM, the Fortescue Marsh and associated floodplains have been a recurrent talking point in numerous ethnographic surveys with Banjima People's representatives at mining operations and proposed exploration activities immediately to the south and southwest of the proposed MDIOM and Hub and Rail Spur project areas. The Fortescue Marsh and floodplain are collectively called *Mungurdu* in the Banjima language. Sivak and Butler (2012) noted that water features and water sources in Banjima country are culturally significant owing to associations with the *Warlu*. The Fortescue Marsh and floodplain carry that same mythological connection. *Mungurdu,* to Banjima people, also refers to the 'floods', when annual rains dramatically change the country and provide life to a landscape that has become dry and barren throughout the winter months. Several aspects of the *Mungurdu* are celebrated in the *Wardilba* (Banjima law and custom) - from these mythological connections to more fundamental social elements that teach participants survival skills and ceremonial rites. Furthermore, the Banjima people identify themselves according to the *Mungurdu*. Often called 'Bottom End Banjima' because of traditionally occupying the lowland areas around the Fortescue Marsh, Banjima Elder G. Parker told ACHM anthropologist Nick Butler that Banjima were also known as the *Mungurdu* people for the same reason (pers. comm. 25 August 2011).

An ACHM ethnographic survey with the Banjima People as recently as June 2023 (Beal, 2023) resulted in the expansion of an ethnographic boundary previously recorded (Sutherland, 2023) around the Fortescue Marsh.

1.5.2 *Birdilya Marnda* (Chichester Range)

Located to the north of the Fortescue Marsh and overlapped by the proposed MDIOM and Hub and Rail Spur footprints, the Chichester Range is known to the Banjima People as *Birdilya Marnda* – a named place that is mentioned in the ceremonial songs celebrated in the *Wardilba* (Banjima law and custom).

2 Methodology

2.1 Desktop Research

HanRoy provided copies of reports relating to botanical science studies that had been conducted for the MDIOM project area. Reference was made by the author to the report by Maia Environmental Consultancy (Maia) (2022). This report is a "Detailed Flora and Vegetation Assessment" that collates species data from all botanical studies conducted over the "[Mulga Downs Iron Ore] Mine and Bore field Study Area" (MBSA) between 2019 – 2022, some by Maia as well as previous studies by other botanists. The report provides a comprehensive list of plants species located in the area as well as descriptions and maps of Vegetation Types occurring across the MBSA project area.

The Maia report (2022) was used to aid plant identification upon return from the field, as cross-reference was made between it and the Banjima-provided language names recorded in the field, together with information about Aboriginal language names for Pilbara plants (and their scientific names) contained in an unpublished document by Taylor and van Leeuwen (2011).

2.2 Ethnobotanical Survey and Recording Methods

Given the short fieldwork period (three days) to conduct the ethnobotanical study, the methodology used for this "rapid ethnobotanical appraisal" (Martin, 2004:3) was what that author refers to as an "initial ethnobotanical inventory" (ibid. 2004: 3). Essentially, the anthropologist went to the field with the selected Banjima People representatives and commenced recording the Banjima language names and traditional and cultural uses of plants that the Banjima representatives identified in the landscape, aiming to record as many different plants as possible.

As Martin (ibid.) notes, ethnobotany is "a multidisciplinary endeavour" and any systematic study of the cultural uses of plants in a given region would ideally see long-term studies drawing on techniques from fields such as anthropology, botany, ecology, economics, ethnopharmacology and linguistics. This present study uses knowledge from at least three of those fields, namely: anthropology, botany, and linguistics.

Prior to the survey, HanRoy had initially supplied GIS shapefiles and maps showing the proposed location and 'footprint' of the MDIOM, and adjoining Hub and Rail Spur projects, as well as a digital copy of a report (Maia Environmental Consultancy, 2022) summarising flora studies that had occurred across the MDIOM project area between 2019-2022. Owing to factors such as wet weather conditions in the days preceding the survey, and distance from the survey team's accommodation at Munjina Roadhouse to the land proposed for the MDIOM, HanRoy hired a helicopter to transport the survey team to the field study area.

At the commencement of the fieldwork, HanRoy staff provided updated data files, for use by the anthropologist on handheld GPS, that reflected modifications to the size of the footprint of the MDIOM (it was made smaller), and also included adjustments to the location of proposed infrastructure or such things as mining pits, mining waste dump locations, and proposed airstrips. The survey team then initially selected locations within the proposed MDIOM footprint, such as the proposed airstrip in the northwest of the MDIOM project area, to be transported to so they could inspect the types of plants that were present at this proposed infrastructure location. The survey team also later chose to land and inspect the plants located at a particular waste dump location; however, rather than attempt to land at every different proposed land use area within the MDIOM and Hub and Rail Spur project areas (a mammoth task not physically possible in the time given), this methodology was changed in favour of simply creating an inventory and recording whatever plants were identified at a few landing locations.

It is surmised that for plants identified as having traditional and/or cultural uses, once identified to their binomial name (i.e. *Genus* and *species*), reference could be made to the supplied flora study report (Maia, 2022) and its Vegetation Type maps to gain an understanding and scientific description of where those particular plants could be expected to occur across the MDIOM and Hub and Rail Spur project areas based on that report's descriptions of which species could be found in which Vegetation Type.

For each plant discussed, the anthropologist recorded notes in a field notebook. Information recorded included the Banjima language name, any common name the plant was known by, how it was used by Banjima people, and any other ethnographic information that came to light. Photographs of the plants were also taken and have been included in this report.

On the final day of the survey, the anthropologist discussed with the Banjima People representatives whether they had any recommendations in relation to the management of plant resources on the land proposed to be impacted by the MDIOM and Hub and Rail Spur projects. Their comments and observations are presented as the final chapter of this Report.

3 Survey Results

3.1 Notes on Identification of plant species

During field work, the Banjima representatives gave their recollections of the Banjima language names for the various plants and trees recorded, and sometimes also provided a common name in English for a given plant. The plants discussed during the field work will be presented here firstly by their Banjima language name, in order that the plants were recorded, and then by the binomial name if this has been able to be determined. The Banjima language spellings for the plant names are derived from the author's best approximations at spelling Banjima language words as heard by the author in the field. The author has kept spellings created in the field and, when referring to other source material (such as Taylor and van Leeuwen, 2011, described below) has compared plant name spellings to aid with identification, while keeping the spellings used in that source material. Spelling variations also include various spellings of "Banjima", such as *Banyjima, Panjima, Panyjima* and others. These spellings have also been included as presented in their source material.

Important to note is that identification of the correct binomial name of a plant (i.e. to *Genus* and *species* level, for example, *Eucalyptus victrix*) is the surest way to be sure that all parties may be talking about the same plant or tree species.

Given the time of year of the field work and the fact that several of the plants encountered were not in flower or fruit, and that variations in flowers and fruits are helpful in narrowing down plant identifications particularly for plants of the same *Genus*, not all plants indicated by the Banjima representatives during the field work have been able to be identified to their full binomial names. A second field work period timed for when many species might be in flower and fruit, from October onwards, perhaps, will aid in better identification of plants recorded.

To assist with narrowing down the identification of the plants discussed in the field, cross-reference has been made to several documents, particularly:

- Maia Environmental Consultancy. 2022. *Strategen - JBS&G: Mulga Downs Iron Ore Project, Mine and Borefield Study Area Detailed Flora and Vegetation Assessment 2019 – 2022.* Unpublished report.
- Taylor, D. and S. van Leeuwen. 2011. Aboriginal Names for Pilbara Plants (Including Traditional Uses); compiled May 2011. Unpublished. – An unpublished PDF document found on the WWW.

A PDF copy of the "Maia" report (2022), named above, was provided to the author in the days prior to the ethnobotanical survey.

The 2011 document by Taylor and van Leeuwen is an unpublished PDF that compiles in a table WA Aboriginal language name for plants from multiple sources, along with some ethnographic comment of their traditional uses. An internet search for additional information about the authors determined that S. van Leeuwen (PhD) is a botanical ecologist who is currently a Professor in Biodiversity and Environmental Science at Curtin University.

Description of traditional uses presented in this report are taken direct from the Banjima representatives present for the July-August 2024 field work that informs this report.

3.2 Notes on TEK contributed

Information provided by the Banjima representatives is attributed (where noted) below using the following abbreviations:

- Caroline Parker (CaP),
- Coreen Parker (CoP),
- Preston Luke Parker (LP),
- Trevor Parker (TP)

3.3 The Plants

Gawarra

Common Name given by Banjima: None given.

Scientific name: Not determined.

Figure 3–1: *Gawarra* tree

Identification for this species is uncertain; however, reference to a previous study of Aboriginal language plant names (Taylor and van Leeuwen, 2011) saw listed a plant named "*Gawara*/*Kawarra*" and identified as *Eremophila longifolia* and with the same uses as described for *Gawarra* by Traditional Owners on the present survey. However, comparison of images of *Eremophila longifolia* from various Australian botanical websites with field photographs of the *Garawarra* identified by the survey participants did not provide conclusive identification.

Description and Banjima Observations: Tree to approximately 3m high. Leaves deep green with visible venation on top and underside of leaf. Leaves have slight curl to them. Banjima representatives stated that the trees usually occur in small groups of one or two trees together and usually occur far apart from one another and that because of their importance for ritual use, people often remember locations that contain these trees, so they can return to obtain the leaves.

Uses: The green leaves (see Figure 3–2) of this plant are burnt to create smoke (*burrgun*) used for cleansing rituals. It was said that one kneels down and puts their head in the smoke. Ritual use examples include:

- at ritual ceremonies where boys are initiated to manhood, they will be cleansed with the smoke from these green leaves (TP, LP)
- sisters, mothers and aunties of the initiands will also be cleansed
- the smoke is also used to cleanse the belongings of the recently deceased, which are then redistributed throughout the kinship network of the deceased
- the cleansing effect of the smoke may also be used at a house or place where it is thought that "bad" energy or "bad" spirits may have been encountered
- smoke from *Gawarra* can also be used to keep flies and insects away from raw meat while it is being butchered

Figure 3–2: *Gawarra* leaves

Windarrmurrha

Common Name given by Banjima: Mulga

Scientific name: Acacia sp., possibly *Acacia aneura*

Identification for this species is uncertain; however, reference to a previous study of Aboriginal language plant names (Taylor and van Leeuwen, 2011) saw listed a plant named as "*Wintamarra*" and variously identified possibly as *Acacia paraneura*, *Acacia minyura*, or *Acacia aneura* (for plant name and species discussed in a previous Panyjima study).

Figure 3–3: *Windarrmurrha*, possibly *Acacia aneura*

Uses:

- Used to make various wooden tools such as punishment spears (*muggurndurr*), men's fighting sticks (*djuna*), and a type of spear called a *bungidee* (TP, LP).
- The tree also provides edible fruit that is greyish-green in colour when ripe to eat and found after the tree has flowered (TP). Banjima representatives described the fruit as "crispy or crunchy" and containing "a little bit of juice" and observed that if the fruit doesn't develop properly due to a dry season, the fruit will be small and dry (TP) (see Figure 3–4).

Figure 3–4: Underdeveloped (small and dry) edible fruit of *Windarrmurrha*

Garrangba

Common Name given by Banjima: Cork Tree

Scientific name: likely *Hakea lorea*

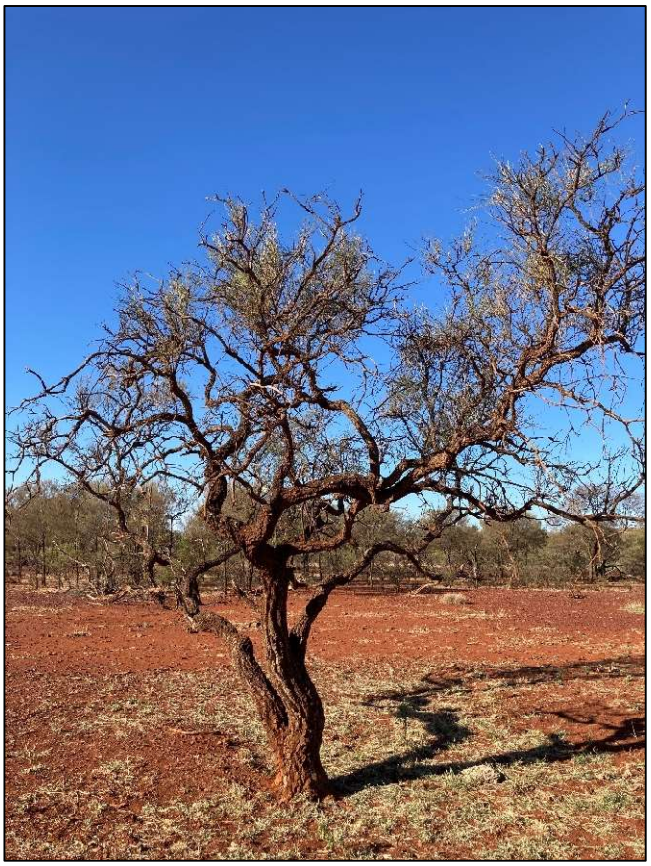

Figure 3–5: *Garrangba*, likely *Hakea lorea*

Identification for this species was made with reference to a previous study of Aboriginal language plant names (Taylor and van Leeuwen, 2011) that saw listed a plant named variously as "*gadanyba*" or "*Gardanyba*" in Panyjima language and variously identified as *Hakea lorea* or *Hakea suberea* (which name is no longer current at time of writing, according to the WA Government's DBCA *Florabase* database website, DBCA 2024a), respectively.

Description and Banjima Observations: DBCA's *Florabase* (2024b) describes the plant thusly:

> *Tree or shrub, 1-10 m high, with epicormic buds. Fl. cream-yellow-green-white-orange, Apr to Sep. Red sand, alluvium, clayey soils, sandstone, ironstone, granite, basalt. Plains, ranges, drainage lines, claypans. [A. Spooner, Descriptive Catalogue, 23 June 2003].*

The Banjima representatives described that when they observe the flowers of this small tree ripening, they know that it will soon be time for emu chickens to hatch (they are usually growing in their eggs around August and September and the eggs should not be eaten). Emu chicks and adult birds will eat the dried remains of *Hakea lorea* flowers (see Figure 3–6) from the ground (TP).

Figure 3–6: Dried remains of *Hakea lorea* flowers will be eaten by emu chicks and their parents

Uses:

- The flower contains nectar which is sucked from the flowers for sweetness/taste (TP).
- The cork-like bark is burnt to produce black coals/charcoal which has several uses including: being rubbed on babies from head to toe to cool them down (CaP); and being used in men's ceremonies (TP).
- The coal/charcoal can be mixed with animal fat such as emu or kangaroo fat to help the black, cooling barrier adhere to the skin for longer

Figure 3–7: Cork-like bark of *Hakea lorea*

Figure 3–8: *Hakea lorea* flower

Marruwa

Common Name given by Banjima: Snakewood

Scientific name: likely *Acacia xiphophylla*

Figure 3–9: *Marruwa*, likely *Acacia xiphophylla*

Identification for this species was made with reference to a previous study of Aboriginal language plant names (Taylor and van Leeuwen, 2011) that saw listed a plant named as "*Marruwa*" in the Panyjima language and identified as "Snakewood", *Acacia xiphophylla*.

Description: DBCA's *Florabase* (2024c) describes the plant thusly:

"Often gnarled, bushy shrub or tree, 1.5-7 m high. Fl. yellow. Stony clay flats or plains, near rocky creeks.

[A. Spooner, Descriptive Catalogue, 18 August 1997]."

Uses:

- The wood is used for making boomerangs – the snaking shape of the wood means that many limbs of this tree are already in the correct shape for a boomerang (LP)
- The wood is also good firewood (LP) that burns for a long time and provides good coals (CaP) [in which large meat food items can be cooked]
- Sap or "gum" from the tree is also dissolved in the mouth as a food and medicine and is said to be good for treating constipation. The gum is usually available from the tree from August-October but the Banjima informants have observed that if they want to obtain the gum out of season they can cut the bark from the tree with a knife or axe and "come back in a week" to obtain the gum from where they removed the bark.
- Dried leaves (see XX) still on the tree are collected and burnt to ash, which is collected and is called *jurnpa*, and this ash is added to chewing tobacco

Figure 3–10: Dried leaves of *Acacia xiphophylla* are burnt to make *jurnpa*

- The younger, smaller trees are said to make a good windbreak, as they have a thicker, more dense, canopy that reduces the wind.

Ngurrungnum

Common Name given by Banjima: None given.

Scientific name: possibly *Acacia victoriae*

Figure 3–11: *Ngurrungnum*, possibly *Acacia victoriae*

Identification for this species was made with reference to a previous study of Aboriginal language plant names (Taylor and van Leeuwen, 2011) that saw listed a plant named as "*Nourawin/Nurungan*" and identified as *Acacia victoriae*.

Description: DBCA's *Florabase* (2024d) describes the plant thusly:

"Prickly shrub or tree, 2-5(-8) m high. Fl. cream-white/yellow-green, Jun or Aug to Oct. Variety of soils. Often along rivers & stony creek beds, saline flats. [A. Spooner, Descriptive Catalogue, 23 July 1997]".

Uses:

- Seeds (*dorrndu*) can be eaten straight from tree when green and in pod. The seed pod can also be cooked lightly on coals, or on some burning spinifex (TP, CaP).
- The sap or "gum" (*gnarlgarla*) is referred to also as "bush lolly" and can be picked straight from the tree and dissolved in the mouth, usually from around September onwards. It is also collected and taken home where it can be soaked in water to soften it before eating. People also "keep it in the freezer for the off season" [when it is not available].

Figure 3–12: Edible gum of *Ngurrungnum*

- Bardi grubs are also found underground in and around the roots of this plant. The grubs usually leave an observable hole near the base of the stem and their frass, a type of sawdust-like substance, can be seen outside the entry hole at the base of the stem where the grub has chewed its way in (LP), excreting material as it goes. To find the edible grub, dig the dirt out from around the roots of a tree that shows the signs of the grub. Grubs can be eaten raw after first biting off the head and spitting that out, then eating the rest (TP). The informants stated they preferred to roast the grub on hot coals until it is a "golden colour" and that if you heat the grub too fast, it will burst (TP).

Nyirrilyi (possibly)

Common name given by Banjima: None given. Elsewhere referred to as "Barrier Saltbush" (DBCA, 2024e).

Scientific name: likely *Enchylaena tomentosa* or *Enchylaena tomentosa* var. *tomentosa*

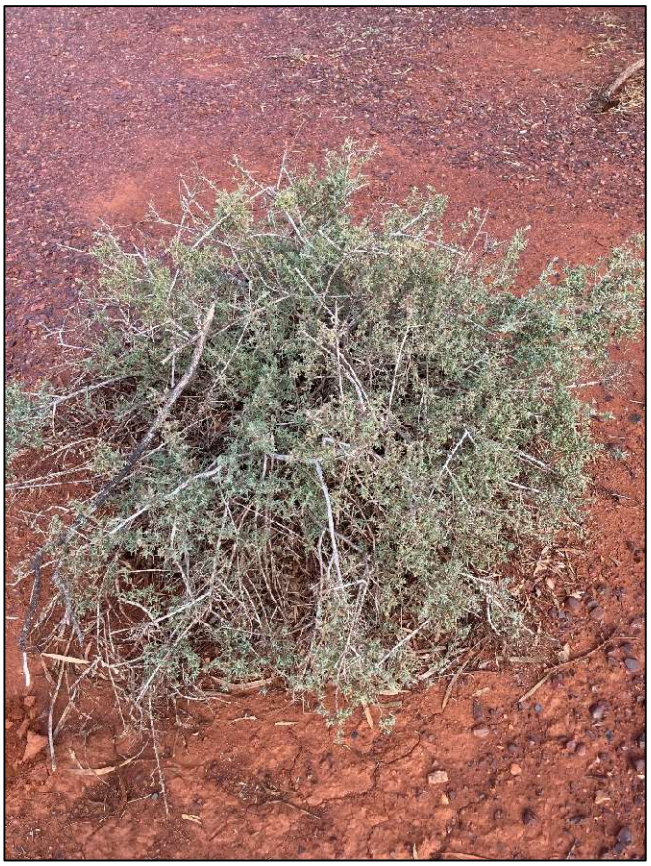

Figure 3–13: Small fruit-bearing shrub, Banjima name possibly *Nyirrilyi*, an *Enchylaena* sp.

Identification for this species is uncertain; however, identification assistance provided to the author by a friend in the horticultural industry suggested this plant may belong to the Genus *Enchylaena*, based on the author's photographs. A search of the Maia Environmental Consultancy (2022) botany report, contained reference to one *Enchylaena* species, namely, *Enchylaena tomentosa* var. *tomentosa*. Additional reference to a previous study of Aboriginal language plant names (Taylor and van Leeuwen, 2011) located *Enchylaena tomentosa* among the list and with the Banyjima language name "*Nyirrilyi*" attributed to it, as well as the common name "Ruby Saltbush"; however, the DBCA's *Florabase* attributes to both *Enchylaena tomentosa* and *Enchylaena tomentosa var. tomentosa* the common name "Barrier Saltbush" (2024e).

The Banjima representatives could not recall the Banjima language name for this plant while in the field, so it has been named here by cross-reference to the earlier work by Taylor and van Leeuwen (2011), where it is called *Nyirrilyi*. This naming should be checked with Banjima representatives in the second planned ethnobotanical field work at the MDIOM and Hub and Rail Spur project areas.

Description and Banjima Observations: This was a small shrub to approximately 50cm high and other specimens were observed with diameters between 20-100cm. the succulent looking leaves are approximately 5mm long and only 1-2mm wide, are smooth and a sage green colour. The Banjima representatives noticed several of these plants and suggested that Mulga Downs must have the right conditions for them to be plentiful.

Uses: the plant bears a small red edible fruit (TP). Sometimes the fruits are yellow or white near where you pull the fruit from the plant (CaP).

Figure 3–14: *Enchylaena tomentosa* (var. *tomentosa*?), *Nyirrilyi*

Gurrarda

Common Name given by Banjima: None given.

Scientific name: likely *Acacia tetragonophylla*

Figure 3–15: *Gurrarda*, likely *Acacia tetragonophylla*

Identification for this species was made with reference to a previous study of Aboriginal language plant names (Taylor and van Leeuwen, 2011) that saw listed a plant named as "*Gurarra*" in Banyjima language and with the common and scientific names "Kurara" and *Acacia tetragonophylla* attributed, respectively.

Uses:

- The wood is used to make tools such as boomerangs ("*if you can find the right tree"*) and fighting sticks (TP). The wood is prized for the pinkish-red colour (see) it has that imparts a particular look to tools made from it.
- The seeds are edible. They can be eaten as is or can be crushed to make a kind of flour/seedcake (TP)
- TP has seen the bark used as a leather dye (field notes do not indicate conclusively whether he himself has used the process but the author's recollection of TP telling stories about the leather curing and dyeing process, and the leather being used to make reins for horses and such, suggest that TP has first hand experience in this process). The bark is added to cold water and the leather soaked in there for several days.

Figure 3–16: The prized pink-coloured wood of *Gurrarda*

Bugurlda

Common Name given by Banjima: Wattle.

Scientific name: possibly *Acacia sclerosperma* subsp. *sclerosperma*

Figure 3–17: *Bugurlda*, possibly *Acacia sclerosperma* subsp. *sclerosperma*

Identification for this species is uncertain; however, reference to a previous study of Aboriginal language plant names (Taylor and van Leeuwen, 2011) saw listed a plant named as "*Pakurta*" and "*Bugguda*/*Bagurda*" and attributed to Panyjima and Banyjima language, respectively, and having the common name of "rattle tree" or "limestone wattle" and identified as *Acacia sclerosperma*; however, a search for this species (DBCA, 2024f) on DBCA's *Florabase*, and a comparison with photographs of *Acacia sclerosperma* subsp. *sclerosperma* on that database (DBCA, 2024g) show that this latter definitely more closely resembles the species photographed during the fieldwork.

Uses:

The seeds are eaten by both people and emus but the seeds of the *Ngurrungnum* (possibly *Acacia victoriae*) are preferred by the Banjima informants (TP)

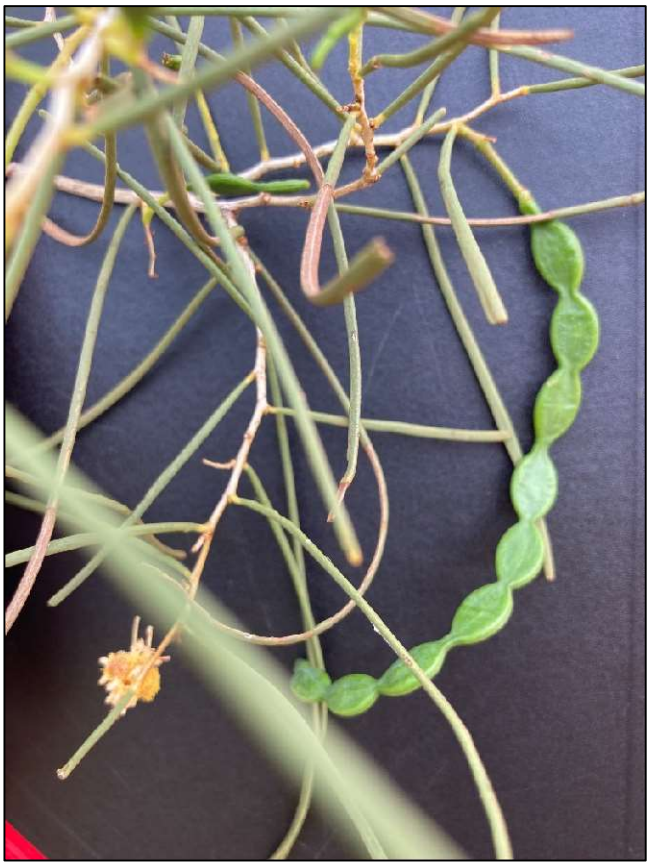

Figure 3–18: Unripe seed pod of *Bugurlda*, (*Acacia sclerosperma* subsp. *sclerosperma*?)

Galarangba

Common Name given by Banjima: None given

Scientific name: possibly *Acacia coriacea* subsp. *pendens* ?

Figure 3–19: *Galarangba* on the banks of small creek/watercourse

Description: DBCA's *Florabase* (2024h) describes the plant thusly:

"Weeping shrub or tree, (1-)3-6(-8) m high. Fl. yellow/cream, Mar to Aug. Sandy soils. Along rivers & creeks, stable sand dunes. [A. Spooner, Descriptive Catalogue, 17 July 1997]"; while an online resource about *Acacia* species in particular describes *Acacia coriacea* subsp. *pendens* in the following way:

> *Tree, rarely a shrub, 3–10 m high, with gracefully pendulous branchlets and foliage. Phyllodes* [leaf-type particular to *Acacia* sp.] *linear, shallowly to strongly recurved or sometimes shallowly serpentinous, (13–) 15–23 (–30) cm long, 1–4 mm wide, green, grey-green or silvery green . . .* [and describes it "habit" i.e. where it can be found growing, as] *. . . along inland water-courses in fringing woodland.* Lucid Central 2024.

Both descriptions of the tree's habit, above, match where this particular field specimen was located, while the latter description of the leaves generally matches with this author's own observations and photographs. This tree was noted in the field as "approximately 6-8m tall, [medium density] canopy, leaves silver-green/light silver-green approx. 20cm long with hook on end. Flowers – none visible".

Uses:

- The wood can be used to make tools such as fighting sticks, but is best taken from younger specimens of this tree when the wood quality is deemed similar to "Mulga" (a reference to the previously described *Windarrmurrha*, likely *Acacia aneura*). The older wood is not great for making tools. Wood from this tree is not the first choice of wood for making tools (TP).

Figure 3–20: *Galarangba*, possibly *Acacia coriacea* subsp. *pendens*

Wirlu

Common Name given by Banjima: None given.

Scientific name: likely *Eucalyptus victrix*

Figure 3–21: *Wirlu*

Identification for this species was made with reference to a previous study of Aboriginal language plant names (Taylor and van Leeuwen, 2011) that saw listed a plant named variously as "*wirlu*" or "*wiilu*" in Banyjima language and identified with the common name "Coolibah" and binomial name of *Eucalyptus victrix*. The same study indicated that at least two other Aboriginal language groups (Thalanyji and Martuthunira) use the name "Wirlu" to refer to a tree that the authors identified as *Eucalyptus camaldulensis*. In the case of at least four language groups making reference to *Wirlu* in the Taylor and van Leeuwen document (Banyjima included), the identified species was *E. victrix*.

Description and Banjima Observations: DBCA's *Florabase* (2024i) describes *E.victrix* thusly:

"Spreading tree, 1-12(-22) m high, bark smooth, sometimes with box-type stocking to 1 m. Fl. white-cream, Nov or Jan to Mar. Red loamy or sandy soils, clay loam. Floodplains, flats.[G. Paczkowska, Descriptive Catalogue, 5 December 1995]".

TP commented that the tree usually grows away from main permanent water sources and that where permanent waters are found in gorges of Karijini and elsewhere, there is a different type of "gum tree" (*Eucalyptus* sp.). He notes that for this other type of *Eucalyptus* that the bark of its trunk is not as white as that of *Wirlu*. He said that examples of this other type of gum tree could be found planted on the grounds of the Munjina (aka Auski) Roadhouse on the Great Northern Highway.

Uses:

- Tree is used for shade from the sun
- Branches of leaves are used for a surface on the ground on which to place cooked meat
- Honey (jundaru) can be found in mature hollow branches of this tree, made by native bees

Gulyu (Murru) AND/OR Nyirrinyi

Common Name given by Banjima: None given, but the author had been asking about tuberous plants that might be called a "yam", or like a sweet potato

Scientific name: possibly *Ipomoea* sp., OR possibly *Vigna lanceolata* subsp. *lanceolata*

The *Gulyu* and *Nyirrinyi* plants were not encountered in the field but the anthropologist had enquired as to whether the Banjima representatives had a food stuff that grew underground like a potato, and that might be

referred to as a "yam" or a "sweet potato" or something similar. TP and LP responded with information about the plant they refer to as *Gulyu*. When this plant name was searched in the Taylor and van Leeuwen (2011) document, *Gulyu* was presented there as a Ngarluma language word, and the Banyjima language word for the same plant was given as *Murru*. The common name of this plant was listed as "bush potato" and the attributed binomial was *Ipomoea* sp., with the authors noting that the name could refer to any species of that *Genus*.

Five *Ipomoea* species are listed in the Maia Environmental Consultancy botany report (2022:219); namely *I. coptica, I. diamantinensis, I. lonchophylla, I. muelleri,* and *I. ploymorpha*.

Searching the Taylor and van Leeuwen (2011) document for the term "yam" gives the Banyjima language word "*Nyirrinyi*", which is listed as the species *Vigna lancelota* [sic], which is likely a typographical error for *V. lanceolata*. The Maia Environmental Consultancy report (2022:224) records the presence of *V. lanceolata* subsp. *lanceolata* within its [MDIOM] study area, so this is also a possible contender for a tuberous food.

Description and Banjima Observations: DBCA's *Florabase* (2024j) describes one of the abovenamed *Ipomoea* species, *I. muelleri*, thusly:

"Prostrate, trailing or climbing perennial, herb, 0.05-0.3(-1) m high, to 2.6 m wide. Fl. pink/red-purple, Mar to Oct or Dec. Sand, clay. Along watercourses. [A. Spooner, Descriptive Catalogue, 8 September 1999]".

TP said that *Gulyu* grows near "mulga" (*A. aneura*?) trees and that its vine can be seen climbing and winding over the mulga trees.

Uses:

- To find the edible tuberous portion underground, people look for "where the ground is cracked" and using a crowbar, or digging stick, can tap the ground and tell by the sound the ground makes whether there is an edible tuber below or not (TP). The tuber is said to be an "orangey, dirty colour" (TP). The tuber is cooked by making a fire and then burying the tuber in hot sand already heated by the fire and also (perhaps) with some hot ashes and coals in the immediate vicinity.

Figure 3–22: Example of Ipomoea species, photo from *Florabase* (DBCA, 2024j).

Figure 3–23: Possible identity of one form of tuberous-root food plant on MDIOM (photo from DBCA, 2024k)

Gudjawari

Common Name given by Banjima: Bush Orange

Scientific name: likely *Capparis umbonata*

Figure 3–24: Gudjawari

Identification for this species was made with reference to a previous study of Aboriginal language plant names (Taylor and van Leeuwen, 2011) and searching for both "orange" and variations on the spelling of "Gudjawari". The 2011 document includes one reference to "*Gujawari/gularndi*" in the Banyjima language being the name for

a plant with the common name "wild orange or bush orange" and identified as *Capparis mitchelli*. The 2011 document also includes references to "*Kajawarri/kajuwarri*" and "*Gajawari*" attributed to previous Panyjima and Banyjima language studies, respectively. The plant in question from those studies was referred to as Wild Orange and identified as *Capparis umbonata*. Comparison of photographs of *C. mitchelli* and *C.umbonata* on DBCA's *Florabase* website show that *C.umbonata* is the species photographed by the author in the field.

Two *Capparis* species are listed in the Maia Environmental Consultancy botany report (2022:215) as occurring within the MDIOM project area; namely *C.lasiantha* and *C.umbonata*.

Description and Banjima Observations: Discussion regarding this plant was interrupted by rain before any ethnographic details were recorded.

Uses:

- Edible fruit.

Djirrbilin

Common Name given by Banjima: None given.

Scientific name: possibly *Capparis lasiantha*

Figure 3–25: Djirrbilin

Identification for this species is uncertain; however, reference was made to a previous study of Aboriginal language plant names (Taylor and van Leeuwen, 2011) by searching for similar spelling or sounding to the name recorded in the field by the author as *Djirrbilin*. The word "yellow" was also searched in the 2011 document as the Banjima informants stated that the plant had a fruit that was yellow when ripe. The two search terms together were found in reference to the following language names: *Jirrwirliny/ jidawaleen/ cheewareling*; *Jirrpirliny*; *Jilbulgarri*, attributed to the Ngarluma, Putijarra and Banyjima languages respectively, with these spellings plausibly referring to the same plant recorded by this author as *Djirrbilin*; although, note that the *jilbulgarri* attributed to Banyjima is a different sounding word than that given by the Banjima informants in the recent fieldwork.

The common name attributed to the plant variously named as *Jirrwirliny/ jidawaleen/ cheewareling; Jirrpirliny; Jilbulgarri* in Taylor and van Leeuwen (2011) is "Split Jack or wild passionfruit" and identified as *Capparis lasiantha.*

C. lasiantha is one of two *Capparis* sp. described as present in the Maia (2022) study of the MDIOM project area, with the other, *C.umbonata*, having been discussed for the *Gudjawari* plant, above.

Description and Banjima Observations: DBCA's *Florabase* (2024k) describes *C.lasiantha* thusly:

"Spiny, twining shrub or climber, 0.5-4 m high. Fl. white, Jun to Sep. Sandy & clayey soils. [G.Paczkowska, Descriptive Catalogue, 16 April 1996]".

The author noted this plant in the field as "small shrub 40-50cm tall and in diameter, small thorns at each node".

TP described the fruit on this plant as being approximately 5cm long, with lots of seed inside. The fruit will be yellowish when ripe and the skin of the fruit will start cracking. Aboriginal descriptions in the Taylor and van Leeuwen (2011) document include that "the fruit is yellow when ripe", and "fruit 3-5cm long and 2cm wide. The inside of the fruit is grey in colour", and ". . . the seeds must be removed before eating".

Uses:

- Edible fruit. The fruit pulp can be squeezed from the fruit and into the mouth but the seed is spat out after sucking the pulp from it (TP)
- The leaves are used as medicine. They are boiled in water and the brew is drunk. People also make creams with this plant in current times and mix it with beeswax and oil (TP)

Figure 3–26: Djirrbilin

Mirrgun (Malygun)

(author noted he heard it pronounced as "mire-gun")

Common Name given by Banjima: Snappy Gum

Scientific name: likely *Eucalyptus leucophloia* subsp. *leucophloia*

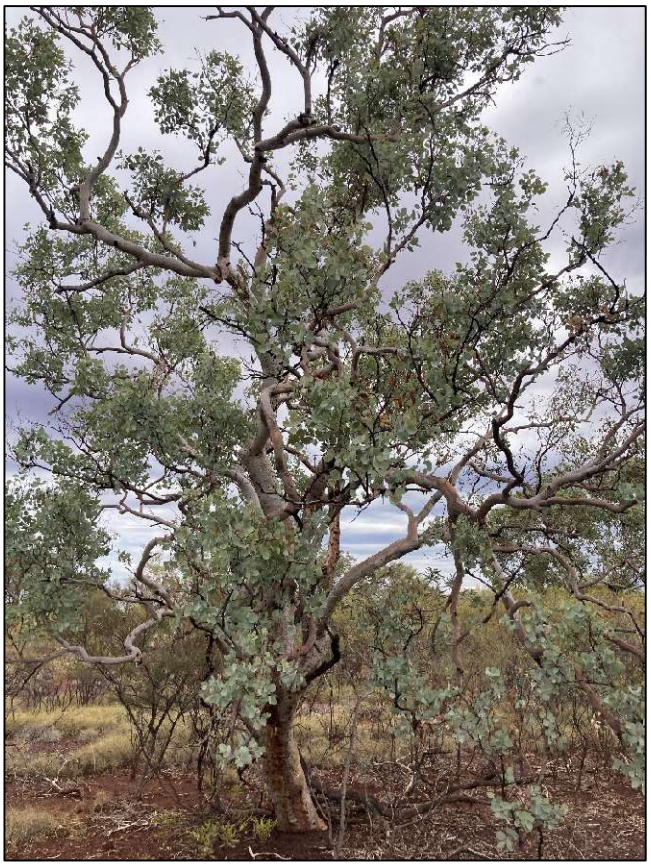

Figure 3–27: *Mirrgun* (*Malygun*)

Identification for this species was made with reference to a previous study of Aboriginal language plant names (Taylor and van Leeuwen, 2011) that saw listed a plant named variously as *majgan*, *malygun*, and *malygany/malganyba* in the Yindjibarni, Ngarluma and Banyjima languages respectively, with the common name of "Snappy Gum" and identified as *Eucalyptus leucophloia.*

The "Maia" report (2022) only records the presence *of Eucalyptus leucophloia* subsp. *leucophloia* in the MDIOM study area, so it is possible that that is the more accurate identification of this "Snappy Gum" discussed in the field.

Description and Banjima Observations: DBCA's *Florabase* (2024l) describes the plant thusly:

"(Mallee) or tree, 2.5-6 m high, white or white and pink powder bark with black spots. Fl. white-cream, Apr or Aug. Rocky slopes, gullies, plains.[A.Spooner, Descriptive Catalogue, 27 November 2007]"

Uses:

- The wood is cut from the trunk of the tree to make a carrying bowl (*yandi*) (TP, LP). The *yandi* is used "to carry heavy food like meat". A *yandi* can also be used to carry a baby and to cradle the baby off the ground when the group are stationary at camp (TP)
- Honey (*jundaru*) is obtained from hollows in old, mature limbs of the tree. The honey is made by native bees (*warnbi* – pronounced, roughly, as "worn-bye"). The honey may be carried on a piece of bark cut from the tree

Jilarn

Common Name given by Banjima: None given

Scientific name: likely *Eremophila cuneifolia*

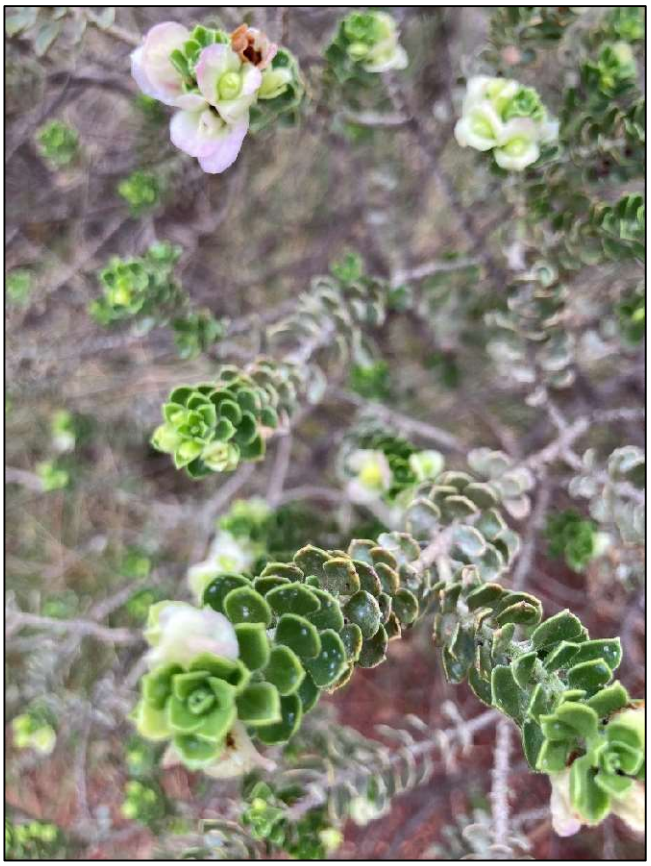

Figure 3–28: *Jilarn*

Identification for this species was made with reference to a previous study of Aboriginal language plant names (Taylor and van Leeuwen, 2011) that narrowed the identification down to either *Eremophila fraseri* or *Eremophila cuneifolia*. Comparison of photographs of these species on DBCA's *Florabase* website confirmed that *E. cuneifolia* was the species photographed in the field.

Six Eremophila species recorded in the Maia report (2022:217), including *E. cuneifolia* were also investigated on *Florabase* and confirmed that *E. cuneifolia* is the most highly likely identification of the plant the Banjima informants referred to as *Djilarn*.

Description and Banjima Observations: DBCA's *Florabase* (2024m) describes the plant thusly:

"Spreading, viscid shrub, 0.5-1.8 m high. Fl. blue-purple-pink, Jun to Oct. Red sandy or clayey soils. Stony rises, hillsides & plains, saline plains. [A. Spooner, Descriptive Catalogue, 5 March 1997]"

Uses:

- Used as a medicine. The leaves are boiled in water and the liquid is drunk. The liquid can be applied to "school sores", cuts, wounds

Figure 3–29: *Djilarn*

Balarra

Common Name given by Banjima: None given

Scientific name: uncertain

Figure 3–30: *Balarra*

Description and Banjima Observations: The author made the following observations: dense shrub to approx. 190cm tall, approx 150cm wide. Single specimen with another approx. 10m away and another approx. 8m away. Dry feeling leaf.

Banjima commented that the shrub had a white flower that might be 5-6cm wide; however, no flowers were present. They also observed that this plant and surrounding vegetation seemed rather more dry than usual.

Uses:

- Has an edible fruit that is eaten by people and emus, usually available end of August/beginning of September. The fruit is round and is a black colour when it is ripe. All the fruit is eaten except the seed. The fruit contains one small seed, according to the Banjima informants.

Wirralu

Common Name given by Banjima: Beefwood

Scientific name: likely *Grevillea striata*

Figure 3–31: *Wirralu*

Identification for this species was made with reference to a previous study of Aboriginal language plant names (Taylor and van Leeuwen, 2011) that saw listed a plant named as "*Wiralu*" in the Kurrama and Panyjima languages, with the common name "Beefwood" and identified as *Grevillea striata*.

Description and Banjima Observations: DBCA's *Florabase* (2024n) describes *G. striata* thusly:

"Tree or shrub, 3-12(-15) m high. Fl. white-cream/yellow-green, Jul or Oct to Dec or Jan or Mar. Red sand, loam, clay. Near watercourses, plains. [G.Paczkowska, Descriptive Catalogue, 17 August 1995]."

Uses:

- The wood is used to make shields as well as artefacts used in men's ceremonies (TP). This information seems corroborated by the uses attributed to *G.striata* in the Taylor and van Leeuwen (2011) document, where various informants stated that the wood was "used to make shields" and that "in the old days men would put a mark on the tree and no one else could use it". This also somewhat reinforces that the identification as likely to be *G.striata*.

Bunurra

Common Name given by Banjima: Bloodwood

Scientific name: likely *Corymbia* sp., possibly *C. hamersleyana*

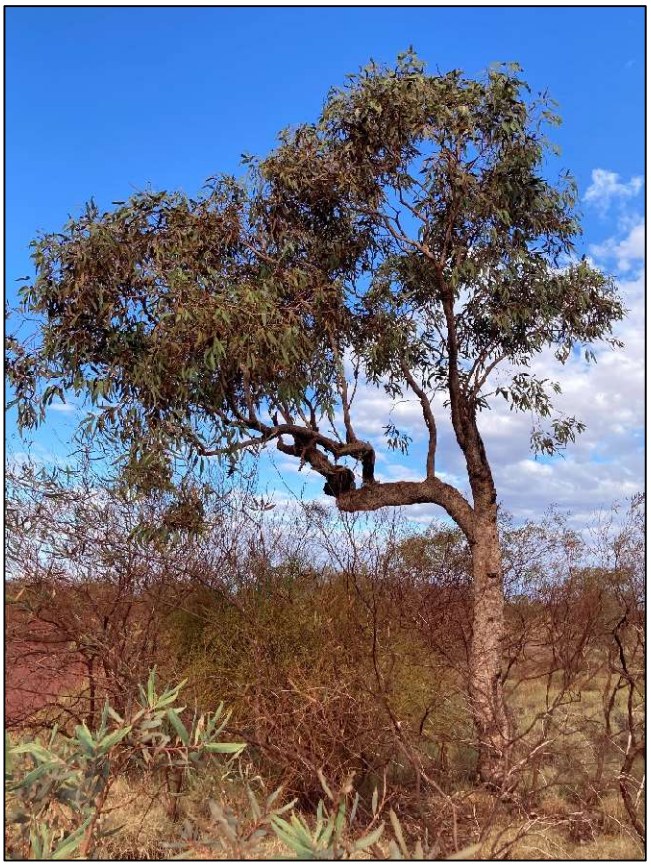

Figure 3–32: *Bunurra* (*Corymbia* sp.?)

Identification for this species is uncertain but was made with reference to a previous study of Aboriginal language plant names (Taylor and van Leeuwen, 2011) that saw listed a plant named as "*Bunara*" in the Banyjima language, with the common name "Bloodwood" and identified as *Eucalyptus affterminalis*. However, a search of *Florabase* did not locate a species by this name, which possibly contains a typographical error. There was formerly a species called *Eucalyptus terminalis* (Inland Bloodwood) but this name is no longer current. Several trees previously identified as *Eucalyptus* species have been reclassified as belonging in the Genus *Corymbia*, which is a genus in the same family as *Eucalyptus*, the MYRTACEAE family.

Five Corymbia species were identified in the Maia (2022) report for the MDIOM project area.

Uses:

- The sap from the tree is collected and dissolved in hot water and is drunk as a medicine (LP) to "cleanse the blood" (CaP)
- Honey is sometimes gathered from old, hollow limbs (TP)
- "Bush Coconut" - A round cricket-ball sized gall (*galu galu*) occurs on these trees and is eaten (TP, LP). It is described as usually being the same colour as the bark on the trunk of the tree and having an "eye" on the underside from which one can dig in one's fingers and pull it apart. The young from whatever insect caused the gall is inside the "coconut" in the form of an edible grub that is "a little bit sweet" (TP). The inside of the gall contains firm, fibrous flesh that can be eaten and is said to taste a bit like coconut, which is why some people call the gall "bush coconut" (CaP). However, "the bug is the main delicacy" (CaP).

Figure 3–33: Trevor Parker holds dried-out “bush coconut”

Barderri

Common Name given by Banjima: a type of “cork wood”

Scientific name: very likely *Acacia inaequilatera*

Figure 3–34: *Barderri*

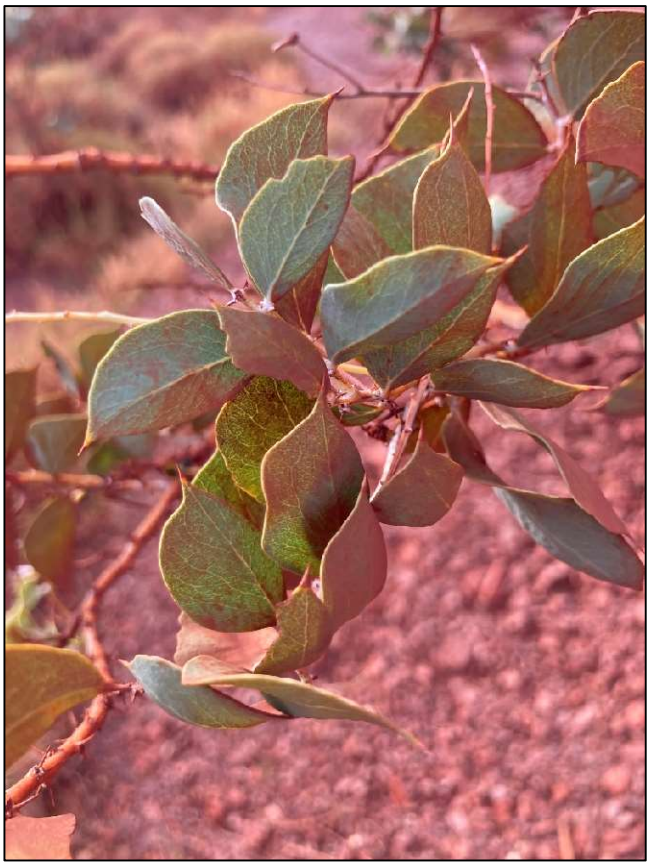

Figure 3–35: *Barderri*

Identification for this species was made with reference to a previous study of Aboriginal language plant names (Taylor and van Leeuwen, 2011) that saw listed a plant named variously as *bardirri*, *partirri/bardirri*, and *partirri*, in the Yindjibarndi, Kurrama & /Panyjima, and Nyamal and Nyangumarta languages respectively, with the common name "Camel Bush", and identified as *Acacia inaequilatera*.

Its very distinctive flower assisted in its identification (see below).

Figure 3–36: Flower of *Barderri* (likely *A. inaequilatera*)

Uses:

- The bark from this small tree is used in the same way as that of the "Corkwood" known as *Garrangba* (likely *Hakea lorea*) (TP) – i.e. the bark is turned to charcoal for rubbing on children's bodies to keep them cool or it may be used in men's ceremonies.

Budardu (Burdardu)

Common Name given by Banjima: Sandalwood

Scientific name: *Santalum* sp.

No photo was taken as this tree was discussed in general conversation, rather than after locating a specimen. The Maia study (2022:221) notes the presence of *S.lanceolatum* and *S.spicatum* at the MDIOM study area.

Identification for this species is uncertain; however, reference to a previous study of Aboriginal language plant names (Taylor and van Leeuwen, 2011) saw listed a plant named "*putatu*/*pudadu*" in the Kurrama & /Panyjima languages respectively and identified as "Sandalwood" *Santalum spicatum*.

The same reference also saw the name *burdardu* (amongst other names) used by both Ngarluma and Banyjima also for a plant that was identified as the "Northern Sandalwood" and identified as *S. lanceolatum* - sufficing to say, that all *Santalum* species on the MDIOM and Hub and Rail Spur project areas are known to and used by the Banjima people.

Banjima Observations: The plant is **very scarce** – you don't find that many of them!

Uses:

- Can eat the seed, or heat in fire and rub the seed onto the skin, for its oil, which was said to perhaps partly act as an insect repellent to keep away flies and mosquitoes (TP).

4 Banjima People's Comments and Recommendations

During the survey the Banjima People representatives were informed that the information they provided about their cultural uses of plants could potentially be used to inform a Social Cultural Heritage Management Plan (SCHMP) that, HanRoy proposed in their Scopes (SOW-0006 and SOW-0007), would be codeveloped by Banjima and HPPL (in the case of the MDIOM) as well as RHI (in the case of the Hub and Rail Spur).

On the last day of the survey the anthropologist asked the Banjima People representatives what comments and recommendations they might like to make in relation to the SCHMP and their traditional use of plant resources within the proposed project areas. They made the following comments and observations:

- There are more plants and trees with traditional cultural uses that were not recorded on the present survey and so additional surveys of this type would be useful to continue the plant inventory process
- Rehabilitation of the landscapes altered and disturbed by exploration, mining, and associated infrastructure should be an ongoing project during the entire life-of-mine process rather than being something that might be commenced at the end of a mining project
- Mining proponents should consider establishment of plant nurseries, employing Traditional Owners, to propagate endemic species that can be used in the land rehabilitation process during the life-of-mine
- Bush medicine and bush food plants seem rarer than tree resources (such as "mulga" (*Acacia* sp.) that are used for their wood. The medicine plants seem to be slow to grow to maturity.
- The Banjima People representatives stated that they felt it was hard to access the plant resources on their Native Title lands because the mining operations of multiple companies meant that there are many fences, rail lines, gates and other associated restrictions to them accessing their traditional lands.
- The machinery noise created by exploration and mining operations creates a disturbance that scares animals away from those areas. For example, the author has had several previous conversations with Banjima People on surveys in the Fortescue Marsh area and surrounds where the Banjima People representatives have commented on their being fewer kangaroos and emus in the area – which they attribute to the animals having been scared away by the noise of the mining activities of multiple companies operating in the region. The Banjima People representatives on this ethnobotanical survey stated that they had observed the same thing and that this is a concern because animals are involved in the spreading of plant seeds (via eating the fruits and then defecating the seeds to new locations), but if the animals are scared away from inhabiting a region due to loud noise disturbance there is less natural regeneration of plants in that region.
- Is it possible that dust from mining operations, that comes down to coat the leaves of trees and shrubs in the surrounding area, is inhibiting plant growth? A Bush Orange (*Gudjawari* - likely *Capparis umbonata*) was observed by the side of a track to the Mulga Downs exploration camp and was covered in dust and the Banjima representatives had thought it looked somewhat unhealthy.

5 Bibliography

Beal, J. 2023. Martidja Banyjima Ethnographic Cultural Heritage Survey for parts of the Nyidinghu Project 2023_BAN_Trip5.

DBCA, 2024a. https://florabase.dbca.wa.gov.au/search/quick?q=Hakea+suberea. Accessed 23 August 2024.

DBCA, 2024b. *Hakea lorea.* https://florabase.dbca.wa.gov.au/browse/profile/2177. Accessed 23 August 2024.

DBCA, 2024c. *Acacia xiphophylla*. https://florabase.dbca.wa.gov.au/browse/profile/3606. Accessed August 23, 2024.

DBCA, 2024d. *Acacia victoriae*. https://florabase.dbca.wa.gov.au/browse/profile/3595. Accessed August 23 2024.

DBCA, 2024e. https://florabase.dbca.wa.gov.au/search/quick?q=enchylaena+tomentosa. Accessed 23 August 2024.

DBCA, 2024f. *Acacia sclerosperma*. https://florabase.dbca.wa.gov.au/browse/profile/3534. Accessed 24 August 2024.

DBCA, 2024g. *Acacia scleosperma* subsp. *sclerosperma*.https://florabase.dbca.wa.gov.au/browse/profile/13078. Accessed 24 August 2024.

DBCA, 2024h. *Acacia coriacea* subsp*. pendens.* https://florabase.dbca.wa.gov.au/browse/profile/13502. Accessed 24 August 2024.

DBCA, 2024i. *Eucalyptus victrix*. https://florabase.dbca.wa.gov.au/browse/profile/14548. Accessed 24 August 2024.

DBCA, 2024j. *Ipomoea muelleri*. https://florabase.dbca.wa.gov.au/browse/profile/6633. Accessed 24 August 2024.

DBCA, 2024k. *Vigna lanceolata* var. *lanceolata*. https://florabase.dbca.wa.gov.au/browse/profile/11576 . Accessed 24 August 2024.

DBCA, 2024l. *Eucalyptus leucophloia* subsp. *leucophloia*.https://florabase.dbca.wa.gov.au/browse/profile/18088. Accessed August 25, 2024.

DBCA, 2024m. *Eremophila cuneifolia*. https://florabase.dbca.wa.gov.au/browse/profile/7192. Accessed August 25, 2024.

DBCA, 2024n. *Grevillea striata*. https://florabase.dbca.wa.gov.au/browse/profile/2099. Accessed August 25, 2024.

Lucid Central. 2024. *Acacia coriacea* subsp. *pendens*. https://apps.lucidcentral.org/wattle/text/entities/acacia_coriacea_subsp._pendens.htm

Maia Environmental Consultancy. 2022. Strategen - JBS&G: Mulga Downs Iron Ore Project, Mine and Borefield Study Area Detailed Flora and Vegetation Assessment 2019 – 2022. Unpublished.

Martin, G.J. 2004. Ethnobotany: A Methods Manual. London, Earthscan. (Originally published by Chapman & Hall in 1995).

Sivak, L. and N. Butler. 2012. MIB Ethnographic Heritage Survey for the RTIO Koodaideri Project. A report to RTIO and Martidja Banjima.

Sutherland, F. 2023. 2023_BAN_Trip1- Banjima Ethnographic Survey, HFN2143(BAN).

Taylor, D. and S. van Leeuwen. 2011. Aboriginal Names for Pilbara Plants (Including Traditional Uses); compiled May 2011. Unpublished.