Department of
Environment and Conservation

Our environment, our future

Resource Condition Report for a Significant Western Australian Wetland

Lindsay Gordon Lagoon

2009

Figure 1 – *Eucalyptus camaldulensis* over *Muehlenbeckia florulenta* at Lindsay Gordon Lagoon.

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Contents

1. Introduction

This Resource Condition Report (RCR) was prepared by the Inland Aquatic Integrity Resource Condition Monitoring project (IAI RCM). It describes the ecological character and condition of Lindsay Gordon Lagoon, an inland saline lagoon in the Eastern Murchison. Lindsay Gordon Lagoon is situated on Lorna Glen (Matuwa) reserve, an ex-pastoral lease now managed by the Department of Environment and Conservation (DEC).

Lindsay Gordon Lagoon was selected as a study site in the current project in order to complement an existing comprehensive terrestrial monitoring program. DEC's Operation Rangelands Restoration is an ecologically integrated project aiming to restore natural ecosystem function and biodiversity, including the reintroduction of eleven arid zone mammal species to almost 600,000 ha of rangelands in the northeastern Goldfields. While the project has focused on the station's fauna and vegetation communities, there is still a significant knowledge gap relating to wetland data. This IAI RCM project aimed to rectify this.

The IAI RCM project visited the site in August 2008, when it was dry. As such, no water chemistry, aquatic invertebrates or water bird data were collected.

1.1. Site Code

Inland Aquatic Integrity Resource Condition Monitoring Project (DEC): RCM019.

Transect Codes: RCM019-R1

RCM019-R2

1.2. Purpose of Resource Condition Report

This report provides a summary of all available ecological information relevant to Lindsay Gordon Lagoon. That data is used to determine the key drivers of, and threats to, the system. This provides a current 'snapshot' of ecological character that provides context for future monitoring of the site.

1.3. Relevant International Agreements and Legislation

The following is a summary of the international agreements and legislation that may be relevant to the management of Lindsay Gordon Lagoon.

International

Migratory bird bilateral agreements and conventions

Australia is party to a number of bilateral agreements, initiatives and conventions for the conservation of migratory birds which may be relevant to Lindsay Gordon Lagoon. The bilateral agreements are:

JAMBA - The Agreement between the Government of Australia and the Government of Japan for the Protection of Migratory Birds in Danger of Extinction and their Environment, 1974;

CAMBA - The Agreement between the Government of Australia and the Government of the People's Republic of China for the Protection of Migratory Birds and their Environment, 1986;

ROKAMBA - The Agreement between the Government of Australia and the Republic of Korea for the Protection of Migratory Birds and their Environment, 2006;

The Bonn Convention on Migratory Species (CMS) - The Bonn Convention adopts a framework in which countries with jurisdiction over any part of the range of a particular species co-operate to prevent migratory species becoming endangered. For Australian purposes, many of the species are migratory birds.

National legislation

The Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act)

The EPBC Act is the Australian Government's central piece of environmental legislation. It provides a legal framework to protect and manage nationally and internationally important flora, fauna, ecological communities and heritage places. These are defined in the Act as matters of national environmental significance.

There are seven matters of national environmental significance to which the EPBC Act applies; two of these may be relevant at Lindsay Gordon Lagoon:

- nationally threatened species and ecological communities; and
- migratory species listed under international treaties JAMBA, CAMBA and CMS.

Western Australia legislation

Wildlife Conservation Act 1950

This Act provides for the protection of wildlife. All fauna (animals native to Australia) in Western Australia is protected under section 14 and all flora (plants native to Western Australia) are protected under section 23 of the *Wildlife Conservation Act 1950*. The Act establishes licensing frameworks for the taking and possession of protected fauna, and establishes offences and penalties for interactions with fauna.

Conservation and Land Management Act 1987

This Act is administered by the State Department of Environment and Conservation (DEC) and applies to public lands. It sets the framework for the creation and management of marine and terrestrial parks, reserves and management areas in Western Australia, and deals with the protection of flora and fauna within reserve systems.

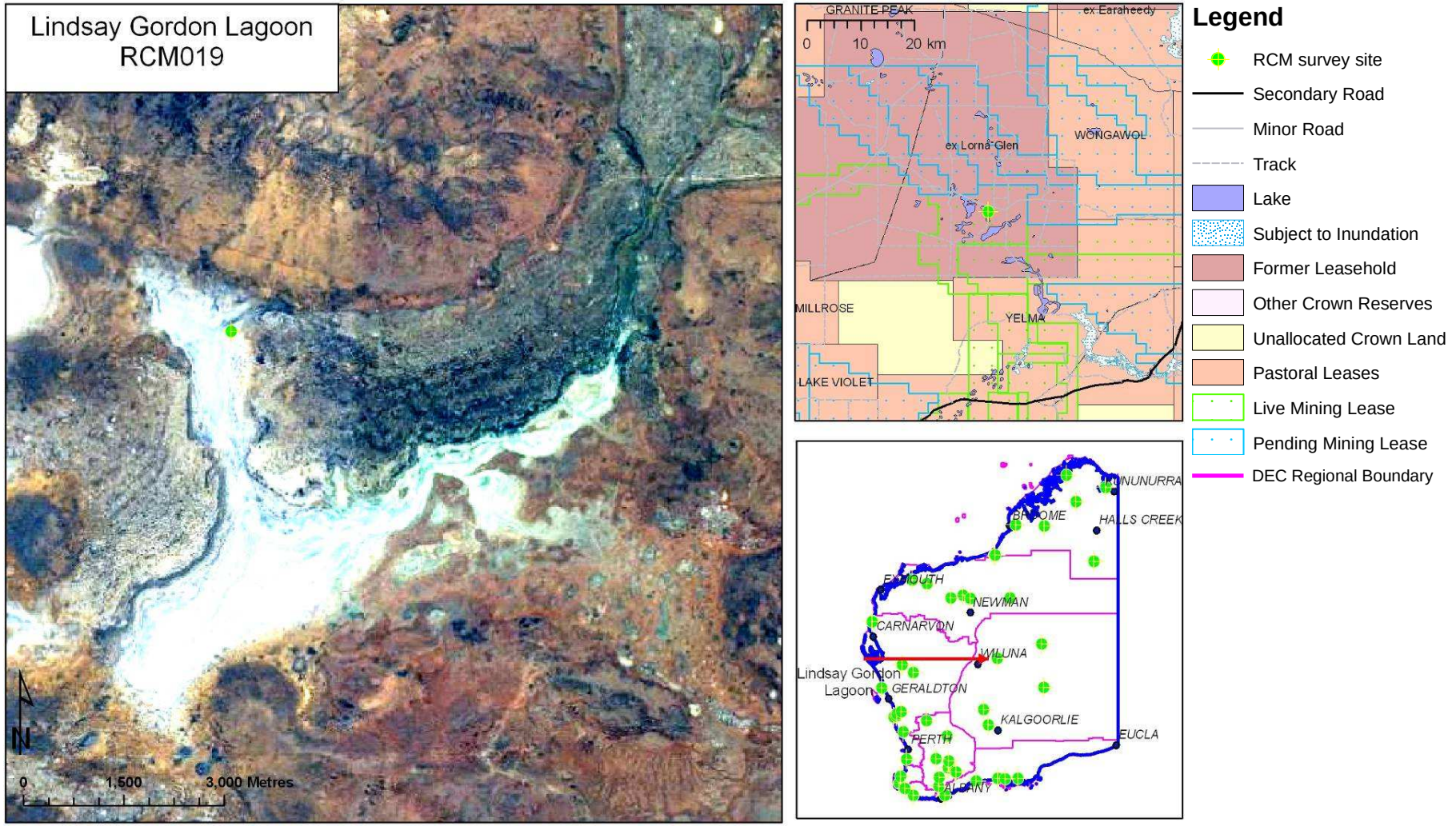

Figure 2 – Aerial photograph showing the location of the sampling site at Lindsay Gordon Lagoon. The upper insert shows the location of the sampling site relative to Lorna Glen. The lower insert shows the location of Lindsay Gordon Lagoon in relation to other IAI RCM sites and its location in the state of Western Australia.

2. Overview of Lindsay Gordon Lagoon

2.1. Location and Cadastral Information

Lindsay Gordon Lagoon is contained within the Lorna Glen (Matuwa) ex-pastoral lease, which covers 244,000 ha in the Eastern Murchison region. Lorna Glen, together with the adjoining ex-pastoral lease, Earaheedy (Kurrara Kurrara), was acquired by the WA Government in 2000 for the conservation reserve system under the auspices of the Gascoyne-Murchison Strategy. The properties have been reverted to Unallocated Crown Land, with the intention they will be eventually made into a conservation park. Lindsay Gordon Lagoon lies 10 km west of Lorna Glen Homestead, about 130 km east-northeast of Wiluna (Figure 2).

2.2. IBRA Region

Lindsay Gordon Lagoon lies within the eastern (MUR1) subregion of the Murchison Interim Biogeographical Regionalisation of Australia (IBRA) region. This subregion comprises the northern parts of the 'Southern Cross' and 'Eastern Goldfields' terrains of the Yilgarn Craton. It is characterised by its internal drainage, and extensive areas of elevated red desert sandplains with minimal dune development. Salt lake systems are associated with the occluded Paleodrainage system. There are broad plains of red-brown soils and breakaway complexes as well as red sandplains.

The vegetation of the East Murchison subregion is dominated by mulga woodlands, often rich in ephemerals, hummock grasslands, saltbush shrublands and *Halosarcia* shrublands (Cowan 2001).

2.3. Climate

The nearest Bureau of Meteorology weather station to Lindsay Gordon Lagoon is at Earaheedy, which is approximately 75 km north of Lindsay Gordon Lagoon (Bureau of Meteorology 2009). However, only limited records were kept at Earaheedy from 1946 until 2001 when the weather station closed. Much more comprehensive records have been kept at Wiluna, approximately 130 km west-southwest of Lindsay Gordon Lagoon. That weather station was opened in 1898 and is still operational. Weather conditions at Lindsay Gordon Lagoon would not differ appreciably from those at Wiluna.

Wiluna experiences an arid climate. It receives a mean annual rainfall of 257.3 mm with approximately half between January and April (Fig. 3). Annual evaporation at Wiluna approximately 2,400 mm. Temperatures peak in January, when the mean minimum/maximum are 22.8 ºC/37.9 ºC, and fall to 5.4 ºC/19.4 ºC in July.

Lindsay Gordon Lagoon was surveyed by the IAI RCM project on the 22nd of August 2008. In the six months preceding the survey, Wiluna received 114.1 mm of rain. The majority of this (82.1 mm) fell in February. Only a further 0.4 mm of rain was received in the first 22 days of August 2008 and the wetland was dry at the time of the survey.

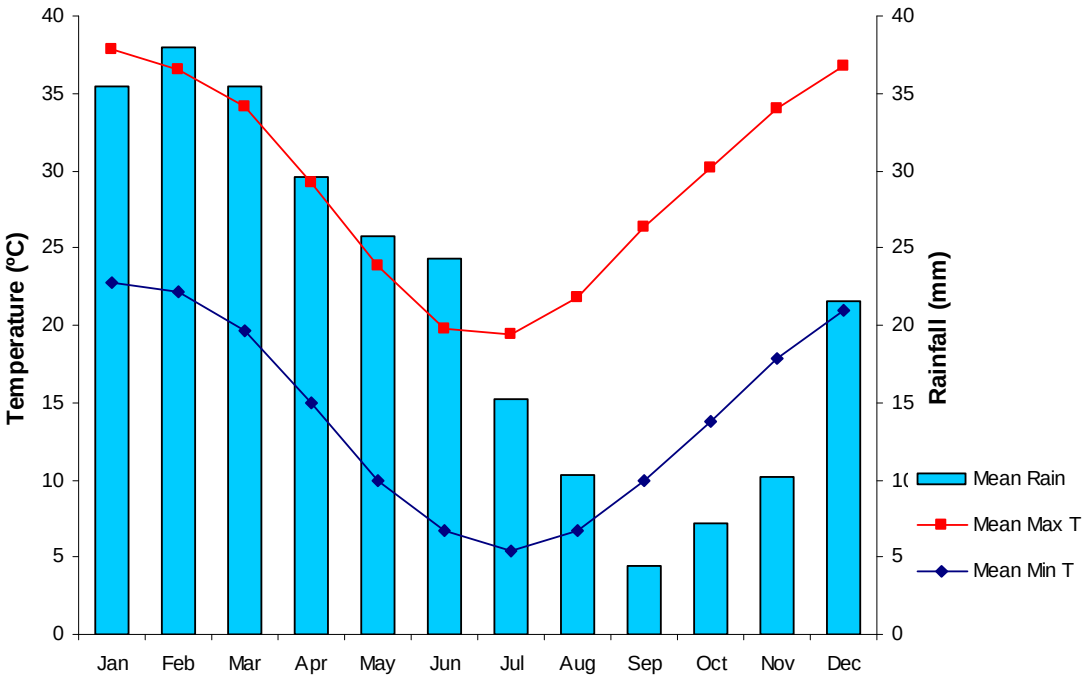

Figure 3 – Climatic averages for Wiluna, approximately 130 km east-southeast of Lindsay Gordon Lagoon.

2.4. Wetland Type

Lindsay Gordon Lagoon is an inland lagoon wetland. It is an ephemeral, saline basin.

2.5. Values of Lindsay Gordon Lagoon

Values are the internal principles that guide the behaviour of an individual or group. Value systems determine the importance people place on the natural environment and how they view their place within it. Divergent values may result in people pursuing different objectives in relation to nature conservation, having different reasons for desiring a commonly agreed outcome, or favouring different mechanisms to achieve that outcome. As such, it is important to be explicit about the values that are driving conservation activities at a wetland.

The Conceptual Framework for Managing Natural Biodiversity in the Western Australian Wheatbelt (Wallace 2003) identified eight reasons that humans value natural biodiversity:

a. Consumptive use

Consumptive use is gaining benefit from products derived from the natural environment, without these products going through a market place, for example, the collection and personal use of firewood or 'bushtucker'. There is currently no known consumptive use made of Lindsay Gordon Lagoon.

b. Productive use

Productive use values are derived from market transactions involving products derived from the natural environment. That same firewood may be exchanged for money, or another commodity. Lindsay Gordon Lagoon is contained within Lorna Glen Station, a former pastoral lease. The lagoon was likely valued by the station owners for its contribution of water and fodder for stock. However, the station is now destocked and managed by DEC, and therefore no longer has any productive use values.

c. Opportunities for future use

Not all uses of the natural environment may be apparent at present. The potential for future benefit from the natural environment is maximised by maintaining the greatest possible biodiversity. Every lost taxa or ecosystem represents lost opportunities. Lindsay Gordon Lagoon may support endemic or rare taxa. Such unique features would increase the potential for future opportunities to present.

d. Ecosystem services

There are many naturally occurring phenomena that bring enormous benefit to mankind. For instance, plants generate oxygen, insects pollinate food crops and wetlands mitigate floods by regulating water flows. The term 'ecosystem services', is used as a broad umbrella to cover the myriad of benefits delivered, directly or indirectly, to humankind by healthy ecosystems. There are two recorded species of Priority 4 bird within approximately 5 km of Lindsay Gordon Lagoon, making it highly valuable for biodiversity.

e. Amenity

Amenity describes features of the natural environment that make life more pleasant for people. For instance, pleasant views and shade or wind shelter from a stand of trees. It is difficult to quantify the amenity value of a site such as Lindsay Gordon Lagoon, but it is certainly valued by visitors to the area for the amenity it provides.

f. Scientific and educational uses

Parts of the natural environment that remain relatively unmodified by human activity represent great educational opportunities. Such sites allow us to learn about the changes that have occurred to the natural world. They may also be considered 'control' sites that allow us to benchmark other, altered habitats. Lindsay Gordon Lagoon is located within Lorna Glen Reserve, which is included in Operation Rangelands Restoration. This is a unique, ecologically integrated project, which intends to restore natural ecosystem function and biodiversity, including the reintroduction of arid zone mammals. Therefore, Lindsay Gordon Lagoon is a component of a project that presents valuable scientific and educational opportunities.

g. Recreation

Many recreational activities rely on the natural environment (bird watching, canoeing, wildflower tourism, etc.) or are greatly enhanced by it (hiking, cycling, horse riding, photography, etc.). Recreation may deliver economic benefit derived from tourism and also delivers spiritual and physical health benefits to the recreator. Lorna Glen is used by the local community as a recreation site. It has a homestead and camping grounds, with planned upgraded facilities for future public use.

h. Spiritual/philosophical values

People's spiritual and philosophical reasons for valuing natural environments are numerous and diverse. One commonly cited is the 'sense of place' that people derive from elements of their environment. This is evident in many Aboriginal and rural Australians, who strongly identify themselves with their natural environment. Many people also believe that nature has inherent value or a right to exist that is independent of any benefit delivered to humans. A sense of spiritual well-being may be derived from the knowledge of healthy environments, even if the individual has no contact with them. Although Lindsay Gordon Lagoon itself is not a known site of Aboriginal significance, several sites exist within Lorna Glen and Aboriginal artefacts have been found on the property. As an ex-pastoral lease and old stockman's' stopover, Lorna Glen is also valued as a European historical site.

The intent of nature conservation is usually to maintain the ecosystem service values, opportunity values and scientific and educational values at a given site. Doing so is likely to have positive effects on the amenity values, recreational values and spiritual/philosophical values to which the site's natural environment contributes. Consumptive and productive uses of the natural

environment are not usually considered, as these are often incompatible with nature conservation.

3. Critical Components and Processes of the Ecology of Lindsay Gordon Lagoon

The objective of the Lindsay Gordon Lagoon Resource Condition Report (RCR) is to identify, describe and quantify the critical components and drivers of the wetland ecosystem. These components and processes determine the site's ecological character and are the variables that should be addressed in any ongoing monitoring.

Climate and geomorphology are the most important drivers of wetland ecosystems. Between them, these factors determine the position of a wetland in the landscape and the type and hydrological regime of that wetland. In turn, a wetland's position, type and hydrology exert a strong influence on its biota and biochemical properties and processes.

A summary of Lindsay Gordon Lagoon's critical ecosystem components is presented in Table 1 followed by a description of the results of the Inland Aquatic Integrity Resource Condition Monitoring (IAI RCM) 2008 survey, as well as of any previous studies conducted on the wetland.

Table 1 – Summary of critical ecosystem components at Lindsay Gordon Lagoon.

Component	Summary description
Geomorphology	Macroscale irregular lagoon situated in the Eastern Murchison IBRA region.
Hydrology	Ephemeral wetland fed by surface water inflow. Probably no groundwater interaction.
Water Quality	Wetlands were dry at the time of IAI RCM survey. No previous water quality data available, but vegetation is suggestive of a saline environment.
Benthic Plants	Dead *Marsilea drummondii* recorded
Littoral Vegetation	Dominated by samphire shrubland; *Muehlenbeckia, Eucalyptus* and *Melaleuca*
Invertebrates	Wetlands were dry at the time of IAI RCM survey and no historical data exist.
Fish	Wetlands were dry at the time of IAI RCM survey and no historical data exist.
Waterbirds	Wetlands were dry at the time of IAI RCM survey and no historical data exist.
Terrestrial Vertebrates	Seventeen species of mammal and sixty species of reptile recorded.

3.1. Geology and Soils

Lindsay Gordon Lagoon is located in the zone of ancient drainage in the Yilgarn Craton. This area comprises Pre-cambrian granites, gneisses and greenstones or erosional remnants, such as breakaways and sandplains of these components. Minor topographical relief is offered by low hills and ranges of Banded Ironstone and Greenstone (Chapman *et al.* 1994).

The soils of the area reflect the geology with brown sandy clay loams over much of the Mulga area (Chapman *et al.* 1994). The soils underlying Lindsay Gordon Lagoon are playa deposits (saline and gypsiferous evaporates, clay, and sand in playa lakes). The lagoon is surrounded by ephemeral lake and dune deposits (clay, silt and sand) and calcrete (Farrell 1999).

3.2. Hydrology

Lindsay Gordon Lagoon is surface water fed, with inflow only following heavy rainfall. Such rainfall events are most commonly the result of tropical low pressure systems. The lagoon takes several months to dry out after filling. Underlying clay sediments isolate the system from groundwater.

3.3. Water Quality

The Lindsay Gordon Lagoon wetlands were dry at the time of sampling by the IAI RCM project. Therefore, no water quality data were collected. No historical water quality data are available.

3.4. Benthic Plants

The Lindsay Gordon Lagoon wetlands were dry at the time of the IAI RCM survey. Dead individuals of the aquatic plant *Marsilea drummondii* were recorded along vegetation transect RCM019-R2.

3.5. Littoral Vegetation

Two vegetation transects were established at Lorna Glen on the 22nd of August 2008 (Table 2). The first was on Lindsay Gordon Lagoon within samphire-dominated vegetation. The second was in vegetation fringing a nearby freshwater claypan.

Table 2 – Site attributes of the Lorna Glen vegetation transects.

Transect			R1	R2
Datum			WGS84	WGS84
Zone			51	51
Easting			347049	340585
Northing			7096166	7099212
Length			30 m	50 m
Bearing			240	210
Wetland state			Dry	Dry
Soil state (%)		Dry	100	100
		Waterlogged	0	0
		Inundated	0	0
Substrate (%)	Observed	Bare	60	30
		Rock	0	0
		Cryptogam	0	0
		Litter	30	30
		Trash	0	0
		Logs	0	0
	Expected	Bare	60	30
		Rock	0	0
		Cryptogam	0	0
		Litter	30	30
		Trash	0	0
		Logs	0	0
Time since last fire			No evidence	No evidence
Community condition			Natural	Natural
Upper Stratum		Cover (%)	-	-
		Height (m)	-	-
Mid Stratum		Cover (%)	-	38.86
		Height (m)	-	1.5
Ground Cover		Cover (%)	27.8	<2
		Height (m)	<0.3	0.3

Transect RCM019-R1

Transect RCM019-R1 was established towards the edge of Lindsay Gordon Lagoon in a samphire-dominated vegetation community that extended across the length of the lake floor (Figure 4). The soil surface was dry at the time of survey. *Tecticornia undulata* and *T. indica*

subsp. *bidens* were the only species recorded along the transect, forming a low open chenopod shrubland (27.8% cover, <0.3 m tall) (Table 3).

Figure 4 – Samphire-dominated vegetation of Lindsay Gordon Lagoon transect RCM019-R1.

There was no evidence of recent samphire recruitment recorded from this survey. Community condition was considered 'natural' (Table 6 in Appendix 1) with no evidence of recent disturbance other than minor rabbit impact.

The vegetation of the dunes adjacent (upslope) of transect RCM019-R1 was dominated by *Frankenia* sp., *Tecticornia indica* subsp. *bidens*, *T. laevigata* low open shrubland over grasses and herbs including *Eragrostis falcata*, *E. dielsii*, *Enneapogon caerulescens* and *Podolepis capillaris* (Figure 5). Toward the top of the surrounding dunes, *Melaleuca xerophylla* forms a dominant stratum to four metres tall (Figure 6).

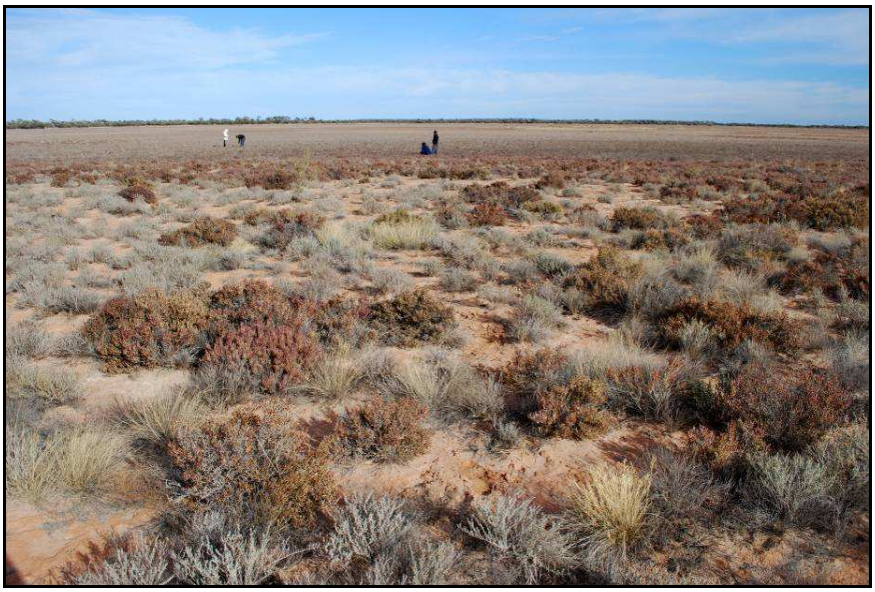

Figure 5 – Looking towards vegetation transect RCM019-R1 from the surrounding dunes dominated by *Frankenia* sp. and *Tecticornia indica* subsp. *bidens*.

Figure 6 – *Melaleuca xerophylla* dominated vegetation at on top of the dunes adjacent to vegetation transect RCM019-R1.

Table 3 – Plant taxa recorded along vegetation transect RCM019-R1.

Genus	Species	Height (m)	Stratum[1]	Form
Tecticornia	*undulata*	0.3	G1	Chenopod
Tecticornia	*indica* subsp. *bidens*	0.3	G1	Chenopod

1 In an NVIS description, 'U' denotes the upper storey, 'M' the mid storey and 'G' the under storey (ground cover). Numerals to denote substrata from tallest (ESCAVI 2003).

According to the National Vegetation Information System (NVIS), the vegetation community may be described as (ESCAVI 2003):

G1+ ^*Tecticornia undulata*, *T. indica* subsp. *bidens*\samphire shrub\1\i.

Transect RCM019-R2

Transect RCM019-R2 was established in a claypan near Lindsay Gordon Lagoon (Figure 7). The claypan was dry at the time of survey. Vegetation was dominated by *Muehlenbeckia florulenta*, *Chenopodium nitrariaceum* tall open shrubland (38.9% cover, 1.5 m tall). Dead, scattered individuals of *Aristida contorta*, *Eragrostis falcata*, *Pterocaulon sphaeranthoides* and *Marsilea drummondii* were recorded in the understorey (Table 4). *Eucalyptus camaldulensis* var. *obtusa* trees to 20 m tall formed an emergent stratum nearby but were not present along transect RCM019-R2. A narrow band of vegetation dominated by *Melaleuca xerophylla* fringed the claypan west of transect RCM019-R2 (Figure 8).

Many *Eucalyptus camaldulensis* var. *obtusa* saplings were observed across the surrounding area, approximately half of which were dead. Young *Muehlenbeckia florulenta* plants were also observed along the transect. There were no weeds recorded and the overall community condition was considered 'natural' at this claypan (Table 6 in Appendix 1).

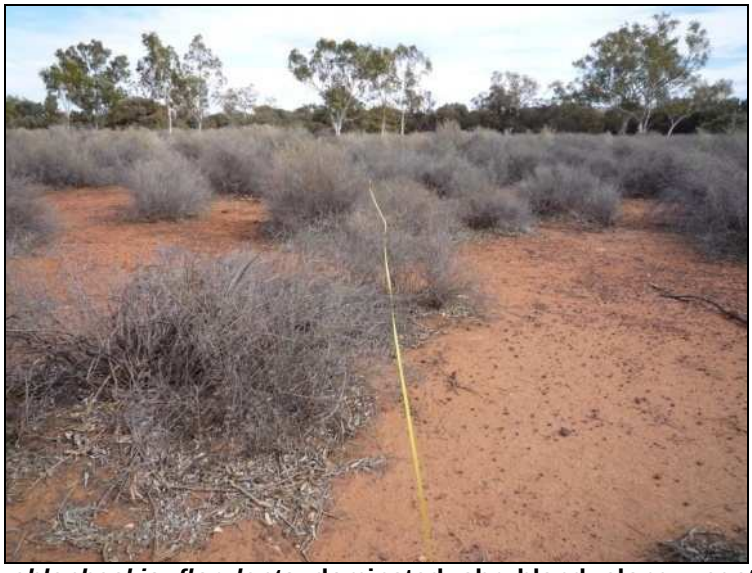

Figure 7 – *Muehlenbeckia florulenta* dominated shrubland along vegetation transect RCM019-R2.

Figure 8 – Emergent *Eucalyptus camaldulensis* trees over *Muehlenbeckia florulenta* and *Chenopodium nitrariaceum*. *Melaleuca xerophylla* dominated vegetation can be seen in the background, fringing the claypan.

Table 4 – Plant taxa recorded along vegetation transect RCM019- R2.

Genus	Species	Height (m)	Stratum[1]	Form
Muehlenbeckia	*florulenta*	1.5	M1	Shrub
Chenopodium	*nitrariaceum*	1.5	M1	Chenopod
Aristida	*contorta*	0.2	G1	Grass
Eragrostis	*?falcata*	0.3	G1	Grass
Pterocaulon	*sphaeranthoides*	0.5	G1	Forb
Marsilea	*?drummondii*	0.1	G1	Forb

1 In an NVIS description, 'U' denotes the upper storey, 'M' the mid storey and 'G' the under storey (ground cover). Numerals to denote substrata from tallest (ESCAVI 2003).

? Limited confidence in identification

According to the National Vegetation Information System (NVIS), the vegetation community may be described as (ESCAVI 2003):

M1+ ^*Muehlenbeckia florulenta*, *Chenopodium nitrariaceum*\^shrub, chenopod shrub\3\i.

3.6. Aquatic Invertebrates

The Lindsay Gordon Lagoon wetlands were dry at the time of sampling by the IAI RCM project. Therefore, no aquatic invertebrates were collected.

Calcrete aquifers in the northern part of the East Murchison subregion are known to support a wide range of subterranean aquatic fauna that are short range endemics. Although an understanding of biogeography for these groups is very limited, work by Humphries and Harvey (2001) suggests that there is significant stygofauna in the Lake Way system, at Jundee, Lorna Glen and Cunyu. It is likely that a number of subterranean aquatic fauna are endemics but currently only the following are identified:

Family Diosaccidae (marine family):

- *Schizopera* sp. nov. 4, known only from Lake Way and Lorna Glen;
- *Schizopera* sp. nov. 5, known only from Jundee and Lorna Glen; and

Family Ameiridae (mostly a marine family):

- *Nitocrella* n. sp. 4 Lorna Glen.

3.7. Fish

No fish were recorded from Lindsay Gordon Lagoon as the wetland was dry at the time of the IAI RCM survey.

3.8. Waterbirds

No waterbirds were present at Lindsay Gordon Lagoon during the IAI RCM survey, as the wetland was dry at the time.

3.9. Terrestrial Vertebrates

Rabbit (*Oryctolagus cuniculus*) droppings were observed at Lindsay Gordon Lagoon during the IAI RCM survey. There was no evidence of other terrestrial vertebrates.

Neobatrachus wilsmorei (Plonking Frog) and *Notaden nichollsi* (Desert Spadefoot) have previously been recorded at the site. Seventeen species of mammal and sixty species of reptile have been recorded on the property.

4. Threats to the Ecology of Lindsay Gordon Lagoon

The ambition for management at Lindsay Gordon Lagoon is to maintain the natural geomorphology and hydrology that allow the persistence of a diverse range of habitat types. Also of importance, are the elements of the system that contribute to its cultural and scientific value.

Threats to Lindsay Gordon Lagoon must be considered in relation to their likelihood of causing failure of the aforementioned management goal for the site. An assessment of each threatening process was conducted to assess the probability that goal failure would result as a consequence of each particular threatening process. The results of this assessment are presented in Table 5.

Few threats to Lindsay Gordon Lagoon's ecological character are apparent. Rabbit faeces and minor evidence of grazing were the only impacts observed during the IAI RCM survey. Currently, not enough is known about Lindsay Gordon Lagoon to provide an accurate and comprehensive assessment of threats. However, many threatening processes have been removed from Lindsay Gordon Lagoon over the last decade since Lorna Glen Station's inclusion in the conservation estate.

Lorna Glen was established as a pastoral lease in 1930s, and stocked at various times with cattle and sheep, until 2000 when it was purchased by the Western Australian Government for addition into the conservation estate. The area is now Unallocated Crown Land, managed by DEC in partnership with the traditional owners (Morris *et al.* 2007). Cattle occasionally wander onto Lorna Glen from a neighbouring active pastoral lease. A cattle proof fence was constructed in 2006 to prevent further cattle access (Morris *et al.* 2007).

The cattle proof fence also acts to prevent larger feral animals such as camels entering Lorna Glen. A control program is currently underway to reduce other introduced fauna, particular cats and foxes and a camel culling program is being implemented. Feral goats are occasionally recorded north of Lorna Glen and their presence within the station is being monitored (Morris *et al.* 2007). Annual feral cat baiting commenced at Lorna Glen in 2004. This practice has been successful in reducing cat abundance by about two thirds (estimated to be 10 cats or less per 100 km). Fox abundance has also been reduced to barely detectable levels. Additional cat trapping has been employed since 2007 (Morris and Dunlop 2008). Rabbits occur only at low densities and so no control has been undertaken (Morris *et al.* 2007).

Climate change should also be considered as a potential threatening process. Temperature has been rising in WA by about 0.1 ˚C per decade since 1910 and this trend is expected to continue. Annual rainfall is also expected to increase in inland Australia, including the Goldfields region. This change is attributed to seasonal rainfall changes. A trend of increase in extreme rainfall events has generally been observed in all areas of the state other than the South West (EPA 2007). It is possible that an increase in heavy rainfall events could result in more frequent and longer periods of inundation. This may cause tree death and overall degradation of the vegetation of Lindsay Gordon Lagoon. However, the impacts of climate change are difficult to predict without a detailed understanding of the lagoon's hydrology.

Table 5 – Threat assessment for Lindsay Gordon Lagoon.

An estimate is provided of the perceived likelihood of goal failure resulting from the impacts of each identified threat category.

Goal: to maintain the geomorphology, hydrology and water quality of Lindsay Gordon Lagoon, thus ensuring it remains a suitable habitat for fauna and retains its cultural and scientific values.

Threat category	Management issue	Probability (%) that threat will cause goal failure with:		Assumptions underlying initial probability assessment and explanatory notes
		Existing management	Extra management	
Altered biogeochemical processes	Hydrological processes, particularly salinity	0	0	There is no evidence of alteration to the hydrology of Lindsay Gordon Lagoon, nor does there appear to be any likelihood of any alteration in the foreseeable future. However, more information is required for an accurate assessment of threat.
	Carbon cycle and climate change	2	10	Temperature and annual rainfall are both expected to increase. Extreme rainfall events are also expected to become more frequent. This may result in longer and more frequent inundation of Lindsay Gordon Lagoon. This could cause tree death and an overall decline in vegetation.
Impacts of introduced plants and animals	Environmental weeds	3	1	Lindsay Gordon Lagoon does not currently appear to be affected by weeds and its state was described as 'natural'. However, there is always potential for future incursions of weeds and this should be monitored.
	Herbivory, wallowing and trampling by introduced species	5	1	Stock was removed form Lorna Glen Station almost a decade ago. Camels and goats are present in the area. Evidence of rabbit grazing and scats was observed during the survey (Ward *et al.* 2005). The impacts of introduced herbivores on the vegetation of Lindsay Gordon Lagoon appear to be negligible.
Impacts of problem native species	Overgrazing by native species	0	0	No impacts evident.
Impacts of disease	Plant pathogens	0	0	No impacts evident.

Threat category	Management issue	Probability (%) that threat will cause goal failure with:		Assumptions underlying initial probability assessment and explanatory notes
		Existing management	Extra management	
Detrimental regimes of physical disturbance events	Fire regimes	1	1	The Mulga area of the Goldfields region, where Lindsay Lagoon is found, is not as prone to fire as other areas, due sparse ground fuels. However, major fires may occur following a proliferation of native grasses following above average rainfall years (Chapman *et al.* 1994). Fire may become a greater issue if climate change trends continue. A fire management program has been completed for Lorna Glen and Earaheedy utilising small patch burns (Morris *et al.* 2007).
	Drought	0	0	This system is ephemeral and adapted to periods of aridity. Climate change projections for inland Australia show an increase in rainfall. Therefore, drought is unlikely to affect Lindsay Gordon Lagoon.
	Flood	1	1	There is no evidence that flooding is an issue at Lindsay Gordon Lagoon, however little is known about its water regime. Too frequent and prolonged inundation could cause tree death and limit recruitment.
Impacts of pollution	Herbicide, pesticide or fertiliser use and direct impacts	0	0	Pastoral activities at Lorna Glen ceased almost a decade ago. There is no farming occurring in the area surrounding Lindsay Gordon Lagoon.
Impacts of competing land uses	Recreation management	1	0	Recreational usage of Lindsay Gordon Lagoon is low impact and unlikely to have any deleterious impacts.
	Nutrient enrichment of water body	0	0	No evidence of nutrient enrichment.
	Urban and industrial development	0	0	Lorna Glen is part of the DEC Conservation estate and, as such, development is highly unlikely here.
	Consumptive uses	0	0	There are no known consumptive uses of Lindsay Gordon Lagoon.
	Illegal activities	0	0	No evidence of any threat.
	Mines and quarries	?	?	The entire property is covered by mining leases. The likelihood of these being developed is not known. There is a major goldmine on a neighbouring property and amateur prospectors frequently visit Lorna Glen.
Insufficient ecological resources to maintain viable populations	Habitat, genetic exchange	1	1	Lindsay Gordon Lagoon is connected to areas of natural or near-natural environment. Populations are likely to self-supporting in this setting.

5. Knowledge Gaps and Recommendations for Future Monitoring

Lorna Glen has been the site of extensive biological surveys and mammal reintroduction work conducted by DEC over the last decade. A major gap in the knowledge of ecosystems occurring within former pastoral lease is an understanding of the ecology of Lindsay Gordon Lagoon. It was the intention of this IAI RCM survey to fill this gap. However, the Lagoon was dry at the time of the survey and so only a vegetation survey was undertaken. Information on the water quality and aquatic invertebrate and waterbird composition of the lagoon remains unknown. Therefore, it is highly recommended Lindsay Gordon Lagoon be surveyed for these parameters at a time when the wetland contains water.

Although much is known about the biota and landforms of Lorna Glen Station, there is a definite lack of knowledge of wetland hydrology. No detailed studies have been conducted on the hydrology of the area. There are also no quantitative data on the water regime (e.g. water depth, frequency of inundation) of Lindsay Gordon Lagoon. This is a significant knowledge gap that could be addressed with a future monitoring program.

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Appendix 1 – Vegetation Condition

Table 6 – Overall Vegetation Community Condition Rating as adapted from Thackway and Lesslie (2005). Shading indicates the condition of Lindsay Gordon Lagoon.

Overall Community Condition Rating					
	0	1	2	3	4
	RESIDUAL BARE	**NATURAL**	**IMPACTED**	**DEGRADED**	**REMOVED/REPLACED**
Community Condition Class	Areas where native vegetation does not naturally persist	Native vegetation community structure, composition and regenerative capacity intact - no significant perturbation from land management practices	Native vegetation community structure, composition and regenerative capacity intact but perturbed by land management practices	Native vegetation community structure, composition and regenerative capacity significantly altered by land management practices	Species present are alien to the locality and either spontaneous in occurrence or cultivated. Alternatively, vegetation may have been removed entirely
Regenerative Capacity	Natural regenerative capacity unmodified - ephemerals and lower plants	Regenerative capacity intact. All species expected to show regeneration are doing so	Natural regenerative capacity somewhat reduced, but endures under current/past land management practices	Natural regenerative capacity limited and at risk due to land management practices. Rehabilitation and restoration possible through removal of threats	Regenerative potential of native vegetation has been suppressed by ongoing disturbances. There is little potential for restoration
Vegetation Structure	Nil or minimal	Structural integrity of native vegetation is very high. All expected strata, growth forms and age classes are present	Structure is altered but persists, i.e. some elements of a stratum are missing	Structure of native vegetation is significantly altered, i.e. one or more strata are missing entirely	All structural elements of native vegetation are missing or highly degraded
Vegetation Composition	Nil or minimal	Compositional integrity of native vegetation is very high. All species expected at the site are present	Composition of native vegetation is altered. All major species are present, although proportions may have changed. Some minor species may be missing	Significant species are missing from the site and may have been replaced by opportunistic species. Loss of species affects structure of vegetation	Native vegetation removed entirely +/- replaced with introduced species

Appendix 2 – Herbarium Plant Records

Table 7 – Herbarium Records for Lindsay Gordon Lagoon.

Search Coordinates: NW corner 25°14'33"S, 120°38'3 4"E; SE corner 26°30'19"S, 122°23'16"E

Family	Genus	Species	Rank	Infraspecies	Alien	Cons. Status
Acanthaceae	*Harnieria*	*kempeana*	subsp.	*muelleri*		
Acarosporaceae	*Acarospora*	*citrina*				
Adiantaceae	*Cheilanthes*	*lasiophylla*				
		sieberi				
Aizoaceae	*Gunniopsis*	*propinqua*				P3
		quadrifida				
		sp.				
	Trianthema	sp.				
		triquetra				
Amaranthaceae	*Alternanthera*	*angustifolia*				
		denticulata				
		nana				
	Amaranthus	*mitchellii*				
	Hemichroa	*diandra*				
	Ptilotus	*aervoides*				
		albidus				
		chamaecladus				
		chrysocomus				P1
		divaricatus				
			var.	*divaricatus*		
		exaltatus				
			var.	*exaltatus*		
		gaudichaudii				
		gomphrenoides	var.	*conglomeratus*		
		helipteroides				
		latifolius				
		macrocephalus				
		obovatus	var.	*lancifolius*		
				obovatus		
		polystachyus				
			var.	*polystachyus*		
		roei				
		schwartzii				
		sessilifolius				
			var.	*sessilifolius*		
		sp. Carnarvon Range (D.J. Edinger Nats 58)				

Family	Genus	Species	Rank	Infraspecies	Alien	Cons. Status
Anthericaceae	*Laxmannia*	*arida*				
	Thysanotus	*exiliflorus*				
		manglesianus				
		patersonii				
		sp.				
		sp. Lorna Glen (R.J. Cranfield 21743)				
Apiaceae	*Neosciadium*	*glochidiatum*				
	Trachymene	*bialata*				
		glaucifolia				
Asclepiadaceae	*Rhyncharrhena*	*linearis*				
	Sarcostemma	*viminale*				
			subsp.	*australe*		
Asteraceae	*Angianthus*	*milnei*				
		sp.				
	Brachyscome	*cheilocarpa*				
		ciliaris				
			var.	*lanuginosa*		
		ciliocarpa				
		sp.				
	Calocephalus	*beardii*				
		francisii				
	Calotis	*erinacea*				
		multicaulis				
		plumulifera				
		porphyroglossa				
	Centipeda	*crateriformis*				
		sp.				
	Chrysocephalum	*eremaeum*				
		puteale				
	Chthonocephalus	*viscosus*				
	Erymophyllum	*compactum*				
		ramosum	subsp.	*ramosum*		
	Genus	*sp.*				
	Gnephosis	*arachnoidea*				
		tenuissima				
	Helichrysum	*gilesii*				
		luteoalbum				
	Helipterum	*craspedioides*				
	Ixiochlamys	*cuneifolia*				
	Lawrencella	*davenportii*				
	Leiocarpa	*semicalva*				

Family	Genus	Species	Rank	Infraspecies	Alien	Cons. Status
Asteraceae	*Leiocarpa*	sp.				
	Leucochrysum	*fitzgibbonii*				
		stipitatum				
	Minuria	*cunninghamii*				
		leptophylla				
	Myriocephalus	*oldfieldii*				
		rudallii				
	Olearia	*decurrens*				
		subspicata				
	Pluchea	*dentex*				
		rubelliflora				
	Podolepis	*canescens*				
		capillaris				
		gardneri				
		kendallii				
		sp. Carnarvon Range (D.J. Edinger Nats 33)				
		sp. Great Victoria Desert (A.S. George 8219)				
	Pogonolepis	sp.				
		stricta				
	Pterocaulon	*sphacelatum*				
		sphaeranthoides				
	Rhodanthe	*charsleyae*				
		propinqua				
		sterilescens				
		stricta				
	Rutidosis	*helichrysoides*				
			subsp.	*helichrysoides*		
	Schoenia	*ayersii*				
		cassiniana				
	Senecio	*lacustrinus*				
		magnificus				
		pinnatifolius				
			var.	*latilobus*		
		sp.				
	Sonchus	*oleraceus*			Y	
	Streptoglossa	*cylindriceps*				
		liatroides				
	Taplinia	*saxatilis*				
	Thiseltonia	*gracillima*				
	Tietkensia	*corrickiae*				

Family	Genus	Species	Rank	Infraspecies	Alien	Cons. Status
Asteraceae	*Vittadinia*	*eremaea*				
		sp. Earaheedy (D.J. Edinger 3106)				
	Waitzia	*acuminata*				
Aytoniaceae	*Asterella*	*drummondii*				
Boraginaceae	*Halgania*	*anagalloides*				
		cyanea	var.	Allambi Stn (B.W. Strong 676)		
		erecta				
		solanacea	var.	Mt Doreen (G.M. Chippendale 4206)		
	Heliotropium	*chrysocarpum*				
		curassavicum				
		heteranthum				
		inexplicitum				
		moorei				
		tanythrix				
	Trichodesma	*zeylanicum*				
			var.	*zeylanicum*		
Brassicaceae	*Lepidium*	*africanum*			Y	
		echinatum				
		muelleri-ferdinandii				
		oxytrichum				
		platypetalum				
	Menkea	*sphaerocarpa*				
	Sisymbrium	*orientale*			Y	
	Stenopetalum	*anfractum*				
		pedicellare				
		sp.				
Caesalpiniaceae	*Petalostylis*	*cassioides*				
	Senna	*artemisioides*				
			subsp.	*filifolia*		
				helmsii		
				oligophylla		
				x artemisioides		
				x sturtii		
		glutinosa				
			subsp.	*chatelainiana*		
				pruinosa		
				x luerssenii		
		sp.				

Family	Genus	Species	Rank	Infraspecies	Alien	Cons. Status
Caesalpiniaceae	*Senna*	sp. Austin (A. Strid 20210)				
		sp. Billabong (J.D. Alonzo 721)				
		sp. Meekatharra (E. Bailey 1-26)				
Campanulaceae	*Wahlenbergia*	*tumidifructa*				
Candelariaceae	*Candelariella*	sp.				
Capparaceae	*Cleome*	*oxalidea*				
		viscosa				
Caryophyllaceae	*Polycarpaea*	*corymbosa*				
		involucrata				
Casuarinaceae	*Casuarina*	*obesa*				
		obesa x pauper				
		pauper				
Centrolepidaceae	*Centrolepis*	*eremica*				
Chenopodiaceae	*Atriplex*	*amnicola*				
		codonocarpa				
		paludosa	subsp.	*baudinii*		
		semilunaris				
		vesicaria				
	Chenopodium	*curvispicatum*				
		gaudichaudianum				
		melanocarpum				
		murale			Y	
		nitrariaceum				
	Dissocarpus	*paradoxus*				
	Dysphania	*glomulifera*	subsp.	*eremaea*		
		rhadinostachya				
			subsp.	*rhadinostachya*		
	Einadia	*nutans*				
			subsp.	*eremaea*		
	Enchylaena	*tomentosa*				
			var.	*tomentosa*		
	Eremophea	*spinosa*				
	Halosarcia	*cymbiformis*				P3
		indica	subsp.	*bidens*		
		sp.				
	Maireana	*amoena*				
		carnosa				
		convexa				
		erioclada				

Family	Genus	Species	Rank	Infraspecies	Alien	Cons. Status
Chenopodiaceae	*Maireana*	*eriosphaera*				
		georgei				
		glomerifolia				
		melanocoma				
		planifolia x villosa				
		platycarpa				
		thesioides				
		tomentosa				
		triptera				
		villosa				
	Osteocarpum	*acropterum*	var.	*acropterum*		
	Rhagodia	*drummondii*				
		eremaea				
	Roycea	*divaricata*				
	Sclerolaena	*alata*				
		burbidgeae				
		convexula				
		cornishiana				
		cuneata				
		densiflora				
		deserticola				
		eriacantha				
		fimbriolata				
		lanicuspis				
	Tecticornia	*arborea*				
		chartacea				
		disarticulata				
		laevigata				
		pruinosa				
		sp. Blue Hill (D.J. Edinger Nats 61)				P1
		sp. Yoothapina Station (A.A. Mitchell 883)				
Cladoniaceae	*Heterodea*	*beaugleholei*				
Clusiaceae	*Hypericum*	*japonicum*				
Colchicaceae	*Wurmbea*	*deserticola*				
Collemataceae	*Collema*	*coccophorum*				
Convolvulaceae	*Bonamia*	*rosea*				
	Convolvulus	*angustissimus*				
	Evolvulus	*alsinoides*	var.	*villosicalyx*		
	Porana	*commixta*				
Cucurbitaceae	*Mukia*	*maderaspatana*				

Family	Genus	Species	Rank	Infraspecies	Alien	Cons. Status
Cupressaceae	*Callitris*	*columellaris*				
Cuscutaceae	*Cuscuta*	*planiflora*			Y	
Cyperaceae	*Bulbostylis*	*barbata*				
	Cyperus	*bulbosus*				
		centralis				
		concinnus				
		difformis				
		gymnocaulos/vaginatus				
		iria				
		rigidellus				
		rigidellus (western form)				
		sp.				
		squarrosus				
		vaginatus				
	Eleocharis	*pallens*				
	Fimbristylis	*dichotoma*				
		microcarya				
	Isolepis	*congrua*				
	Lipocarpha	*microcephala*				
	Schoenoplectus	*dissachanthus*				
		laevis				
		subulatus				
Dasypogonaceae	*Lomandra*	*leucocephala*	subsp.	*robusta*		
Ditrichaceae	*Ceratodon*	*purpureus*	subsp.	*convolutus*		
Droseraceae	*Drosera*	*burmanni*				
		indica				
Elatinaceae	*Bergia*	*perennis*	subsp.	*exigua*		
Euphorbiaceae	*Euphorbia*	*australis*				
		biconvexa				
		boophthona				
		drummondii				
			subsp.	*drummondii*		
		sp.				
		tannensis	subsp.	*eremophila*		
	Monotaxis	*luteiflora*				
	Phyllanthus	*erwinii*				
Fossombroniaceae	*Fossombronia*	sp.				
Frankeniaceae	*Frankenia*	*fecunda*				
		georgei				P3
		glomerata				P3
		irregularis				

Family	Genus	Species	Rank	Infraspecies	Alien	Cons. Status
Frankeniaceae	*Frankenia*	*laxiflora*				
		magnifica				
		pauciflora				
		punctata				
		sessilis				
		setosa				
		sp.				
Fungi	*Genus*	sp.				
Gentianaceae	*Centaurium*	*erythraea*			Y	
		spicatum				
Geraniaceae	*Erodium*	*cygnorum*				
Gigaspermaceae	*Gigaspermum*	*repens*				
Goodeniaceae	*Brunonia*	*australis*				
		suffruticosa				
	Dampiera	*cinerea*				
		dentata				
	Goodenia	*azurea*				
		centralis				
		gibbosa				
		havilandii				
		heterochila				
		lamprosperma				
		macroplectra				
		maideniana				
		mueckeana				
		occidentalis				
		peacockiana				
		quasilibera				
		schwerinensis				
		sp.				
		sp. Carnarvon Range (D.J. Edinger Nats 30)				
		sp. Lorna Glen (R.J. Cranfield 21717)				
		sp. Sandy Creek (R.D. Royce 1653)				
		stellata				
		tenuiloba				
		triodiophila				
		virgata				P2
		wilunensis				
	Scaevola	*basedowii*				

Family	Genus	Species	Rank	Infraspecies	Alien	Cons. Status
Goodeniaceae	*Scaevola*	*browniana*	subsp.	*browniana*		
		collaris				
		parvifolia				
			subsp.	*acuminata*		
				parvifolia		
	Velleia	*connata*				
		glabrata				
		hispida				
		rosea				
		sp.				
Graphidaceae	*Graphis*	sp.				
Grimmiaceae	*Grimmia*	*laevigata*				
Gyrostemonaceae	*Codonocarpus*	*cotinifolius*				
	Gyrostemon	*ramulosus*				
		tepperi				
Haloragaceae	*Glischrocaryon*	*aureum*				
	Gonocarpus	*ephemerus*				P2
		eremophilus				
		nodulosus				
	Haloragis	*odontocarpa*				
			forma	*pterocarpa*		
				rugosa		
		trigonocarpa				
		uncatipila				
Hymeneliaceae	*Aspicilia*	*calcarea*				
Juncaginaceae	*Triglochin*	*hexagona*				
Lamiaceae	*Dicrastylis*	*brunnea*				
		cordifolia				
		doranii				
		exsuccosa				
		sessilifolia				
	Newcastelia	*cephalantha*				
	Prostanthera	*wilkieana*				
	Spartothamnella	*teucriiflora*				
Lichinaceae	*Pyrenopsis*	sp.				
Lobeliaceae	*Isotoma*	*petraea*				
Loranthaceae	*Amyema*	*fitzgeraldii*				
		gibberula	var.	*gibberula*		
				tatei		
		hilliana				
		microphylla				

Family	Genus	Species	Rank	Infraspecies	Alien	Cons. Status
Loranthaceae	*Amyema*	*miquelii*				
		miraculosa	subsp.	*boormanii*		
		preissii				
		quandang				
			var.	*quandang*		
	Lysiana	*casuarinae*				
		exocarpi	subsp.	*exocarpi*		
		murrayi				
		spathulata				
Malvaceae	*Abutilon*	*amplum*				
		cryptopetalum				
		fraseri				
		leucopetalum				
		macrum				
		otocarpum				
	Alyogyne	*pinoniana*				
	Hibiscus	*burtonii*				
		coatesii				
		sturtii	var.	*platychlamys*		
				truncatus		
	Lawrencia	*densiflora*				
		glomerata				
		helmsii				
		sp.				
		squamata				
	Sida	*ammophila*				
		calyxhymenia				
		cardiophylla				
		excedentifolia				
		fibulifera				
		intricata				
		sp.				
		sp. Dark green fruits (S. van Leeuwen 2260)				
		sp. Golden calyces glabrous (H.N. Foote 32)				
		sp. spiciform panicles (E. Leyland s.n. 14/8/90)				
		sp. tiny glabrous fruit (A.A. Mitchell PRP1152)				
		spodochroma				
Marsileaceae	*Marsilea*	*angustifolia*				

Family	Genus	Species	Rank	Infraspecies	Alien	Cons. Status
Marsileaceae	*Marsilea*	*drummondii*				
		exarata				
		sp.				
Mimosaceae	*Acacia*	*abrupta*				
		aneura				
			var.	*alata* (narrow phyllode variant)		
				aneura		
				aneura (south)		
				argentea		
				argentea (short phyllode variant)		
				conifera		
				intermedia		
				intermedia (resinous)		
				major		
				microcarpa		
				tenuis		
				tenuis (flat)		
		ayersiana				
		ayersiana sens.lat.				
		ayersiana x minyura				
		burkittii				
		burrowsiana				P1
		citrinoviridis				
		clelandii				
		craspedocarpa (hybrid)				
		cuthbertsonii	subsp.	*cuthbertsonii*		
				linearis		
		cyperophylla	var.	*cyperophylla*		
		daviesioides				
		dictyophleba				
		estrophiolata				
		grasbyi				
		hamersleyensis				
		helmsiana				
		intorta				
		jamesiana				
		kempeana				
		ligulata				
		maitlandii				
		masliniana				

Family	Genus	Species	Rank	Infraspecies	Alien	Cons. Status
Mimosaceae	*Acacia*	*melleodora*				
		minyura				
		murrayana				
		oswaldii				
		pachyacra				
		papyrocarpa				
		paraneura				
		prainii				
		pruinocarpa				
		quadrimarginea				
		ramulosa	var.	*linophylla*		
				ramulosa		
		resinimarginea				
		rhodophloia				
		sclerosperma	subsp.	*sclerosperma*		
		sibilans				
		sibirica				
		sp.				
		sp. Earaheedy (I. Kealley IEK 019)				
		sp. Peak Hill (R. Gibson 0003)				
		sp. Weld Range (A. Markey & S. Dillon 2994)				
		sp. Wongawol (I. Kealley IEK 015)				
		sp.Juliflorae - terete Eremaean Region				
		sp.Juliflorae-flat, Eremaean region				
		steedmanii	subsp.	*borealis*		
		subcontorta				
		tetragonophylla				
		xanthocarpa				
	Vachellia	*farnesiana*			Y	
Moraceae	*Ficus*	*brachypoda*				
Myoporaceae	*Eremophila*	*alternifolia*				
		citrina				
		clarkei				
		cuneifolia				
		decipiens	subsp.	*decipiens*		
		enata				
		eriocalyx				

Family	Genus	Species	Rank	Infraspecies	Alien	Cons. Status
Myoporaceae	*Eremophila*	*exilifolia*				
		foliosissima				
		forrestii				
			subsp.	*forrestii*		
				hastieana		
		fraseri				
		galeata				
		georgei				
		gilesii	subsp.	*gilesii*		
				variabilis		
		glabra	subsp.	*glabra*		
				tomentosa		
		glutinosa				
		granitica				
		hughesii				
			subsp.	*hughesii*		
		hygrophana				
		jucunda	subsp.	*jucunda*		
		lachnocalyx				
		latrobei				
			subsp.	*filiformis*		
				glabra		
				latrobei		
		linearis				
		longifolia				
		maculata	subsp.	*brevifolia*		
		malacoides				
		margarethae				
		micrantha				P1
		miniata				
		oppositifolia				
			subsp.	*angustifolia*		
		pendulina				
		petrophila	subsp.	*densa*		
		platycalyx				
			subsp.	*platycalyx*		
		platythamnos				
			subsp.	*exotrachys*		
				platythamnos		
		pterocarpa	subsp.	*acicularis*		
		punctata				

Family	Genus	Species	Rank	Infraspecies	Alien	Cons. Status
Myoporaceae	*Eremophila*	*pungens*				
						P4
		serrulata				
		shonae	subsp.	*diffusa*		
		sp. Carnarvon Range (D.J. Edinger Nats 24)				
		sp. Lorna Glen (R.J. Cranfield 21741)				
		sp. Princess Ranges (M. Greeve 38)				
		spectabilis	subsp.	*brevis*		
		spinescens				
		spuria				
		youngii				
			subsp.	*youngii*		
Myrtaceae	*Aluta*	*maisonneuvei*	subsp.	*auriculata*		
				maisonneuvei		
	Calothamnus	*aridus*				
	Calytrix	*carinata*				
	Corymbia	*chippendalei*				
		deserticola				
			subsp.	*deserticola*		
		lenziana				
		opaca				
	Eucalyptus	*camaldulensis*				
			var.	*obtusa*		
		carnei				
		concinna				
		eremicola				
			subsp.	*peeneri*		
		gamophylla				
		gongylocarpa				
		gypsophila				
		kingsmillii	subsp.	*kingsmillii*		
		kingsmillii/sp. Little Sandy Desert (D. Nicolle & M. French DN 4304)	subsp.	*kingsmillii*		
		lucasii				
		mannensis				
			subsp.	*mannensis*		
		oldfieldii				
		pachyphylla				
		sp.				

Family	Genus	Species	Rank	Infraspecies	Alien	Cons. Status
Myrtaceae	*Eucalyptus*	sp. Little Sandy Desert (D. Nicolle & M. French DN 4304)				
		striaticalyx				
			subsp.	*striaticalyx*		
		trivalva				
	Homalocalyx	*echinulatus*				P3
	Lamarchea	*sulcata*				
	Melaleuca	*hamata*				
		interioris				
		lasiandra				
		sheathiana				
		sp.				
		xerophila				
	Micromyrtus	*flaviflora*				
Nyctaginaceae	*Boerhavia*	*coccinea*				
		repleta				
Opegraphaceae	*Dictyographa*	sp.				
Papilionaceae	*Crotalaria*	*eremaea*	subsp.	*strehlowii*		
	Gastrolobium	*grandiflorum*				
	Glycine	*canescens*				
	Indigofera	*colutea*				
		georgei				
		linifolia				
		linnaei				
	Kennedia	*prorepens*				
	Lotus	*cruentus*				
	Mirbelia	*rhagodioides*				
	Muelleranthus	*trifoliolatus*				
	Otion	*simplicifolium*				
	Phyllota	*humilis*				
	Swainsona	*affinis*				
		canescens				
		formosa				
		halophila				
		incei				
		kingii				
		laciniata				
		microphylla				
		oroboides				
		phacoides				
		pterostylis				

Family	Genus	Species	Rank	Infraspecies	Alien	Cons. Status
Papilionaceae	*Swainsona*	*purpurea*				
		sp.				
		tanamiensis				
	Templetonia	*egena*				
Parmeliaceae	*Xanthoparmelia*	*antleriformis*				
		centralis				
		cravenii				
		dayiana				P3
		isidiosa				
		mougeotina				
		nashii				P1
		oleosa				
		parvoincerta				
		verrucella				
Pedaliaceae	*Josephinia*	*eugeniae*				
Peltulaceae	*Peltula*	*bolanderi*				
		cylindrica				
		obscurans				
			var.	*deserticola*		
				hassei		
		sp.				
Pittosporaceae	*Pittosporum*	*angustifolium*				
Poaceae	*Amphipogon*	*caricinus*				
	Aristida	*anthoxanthoides*				
		contorta				
		holathera	var.	*holathera*		
		pruinosa				
		strigosa				
	Astrebla	*pectinata*				
	Austrostipa	*elegantissima*				
	Bothriochloa	*ewartiana*				
	Chloris	*pectinata*				
		pumilio				
		virgata			Y	
	Chrysopogon	*fallax*				
	Cymbopogon	*obtectus*				
	Cynodon	*dactylon*			Y	
	Dactyloctenium	*radulans*				
	Dichanthium	*sericeum*	subsp.	*humilius*		
				sericeum		
	Digitaria	*brownii*				

Family	Genus	Species	Rank	Infraspecies	Alien	Cons. Status
Poaceae	*Digitaria*	*coenicola*				
	Elytrophorus	*spicatus*				
	Enneapogon	*avenaceus*				
		caerulescens				
		polyphyllus				
	Enteropogon	*ramosus*				
	Eragrostis	*cilianensis*			Y	
		cumingii				
		dielsii				
		elongata				
		eriopoda				
		falcata				
		kennedyae				
		lacunaria				
		lanipes				
		leptocarpa				
		pergracilis				
		setifolia				
		sp.				
		xerophila				
	Eriachne	*aristidea*				
		benthamii				
		flaccida				
		helmsii				
	Eulalia	*aurea*				
	Iseilema	*eremaeum*				
		membranaceum				
	Leptochloa	*fusca*	subsp.	*muelleri*		
	Monachather	*paradoxus*				
	Neurachne	*minor*				
	Panicum	*decompositum*				
	Paractaenum	*novae-hollandiae*				
			subsp.	*reversum*		
		refractum				
	Paraneurachne	*muelleri*				
	Paspalidium	*basicladum*				
		clementii				
		constrictum				
		gracile				
		rarum				
		reflexum				

Family	Genus	Species	Rank	Infraspecies	Alien	Cons. Status
Poaceae	*Polypogon*	*monspeliensis*			Y	
	Setaria	*dielsii*				
		verticillata			Y	
	Sporobolus	*blakei*				
		caroli				
	Themeda	*avenacea*				
	Thyridolepis	*mitchelliana*				
		multiculmis				
	Triodia	*basedowii*				
		melvillei				
		spicata				
	Triraphis	*mollis*				
	Urochloa	sp.				
	Yakirra	*australiensis*	var.	*intermedia*		
Polygalaceae	*Comesperma*	*viscidulum*				P4
	Polygala	*isingii*				
Polygonaceae	*Muehlenbeckia*	*florulenta*				
Portulacaceae	*Calandrinia*	*balonensis*				
		eremaea				
		pleiopetala				
		ptychosperma				
		pumila				
		schistorhiza				
		stagnensis				
	Portulaca	*oleracea*			Y	
Potamogetonaceae	*Ruppia*	*polycarpa*				
Primulaceae	*Samolus*	*repens*				
		sp.				
Proteaceae	*Grevillea*	*berryana*				
		deflexa				
		juncifolia	subsp.	*juncifolia*		
		sarissa	subsp.	*succincta*		
		spinosa				
		stenobotrya				
		striata				
		wickhamii	subsp.	*hispidula*		
	Hakea	*leucoptera*	subsp.	*sericipes*		
		minyma				
		preissii				
		rhombales				
Psoraceae	*Psora*	*crenata*				

Family	Genus	Species	Rank	Infraspecies	Alien	Cons. Status
Psoraceae	*Psora*	*decipiens*				
Rhizocarpaceae	*Rhizocarpon*	sp.				
Ricciaceae	*Riccia*	*albida*				
		crinita				
Rubiaceae	*Dentella*	*pulvinata*				
	Pomax	*rupestris*				
		sp. desert (A.S. George 11968)				
	Psydrax	*rigidula*				
		suaveolens				
	Synaptantha	*tillaeacea*	var.	*tillaeacea*		
Santalaceae	*Anthobolus*	*leptomerioides*				
	Exocarpos	*sparteus*				
	Santalum	*lanceolatum*				
		spicatum				
Sapindaceae	*Alectryon*	*oleifolius*				
	Diplopeltis	*stuartii*				
			var.	*stuartii*		
	Dodonaea	*petiolaris*				
		rigida				
		viscosa				
			subsp.	*angustissima*		
				spatulata		
Scrophulariaceae	*Mimulus*	*repens*				P3
	Peplidium	*muelleri*				
		sp.				
		sp. C Evol. Fl. Fauna Arid Aust. (N.T. Burbidge & A. Kanis 8158)				
	Stemodia	*florulenta*				
		viscosa				
Solanaceae	*Anthotroche*	*pannosa*				
	Cyphanthera	*miersiana*				
	Duboisia	*hopwoodii*				
	Lycium	*australe*				
	Nicotiana	*benthamiana*				
		occidentalis	subsp.	*obliqua*		
		rosulata	subsp.	*rosulata*		
	Solanum	*ashbyae*				
		centrale				
		coactiliferum				
		ellipticum				

Family	Genus	Species	Rank	Infraspecies	Alien	Cons. Status
Solanaceae	*Solanum*	*lasiophyllum*				
		orbiculatum				
		sturtianum				
Stackhousiaceae	*Macgregoria*	*racemigera*				
	Stackhousia	*megaloptera*				
		muricata				
		sp.				
Sterculiaceae	*Brachychiton*	*gregorii*				
	Keraudrenia	*velutina*	subsp.	*elliptica*		
	Rulingia	*loxophylla*				
Stylidiaceae	*Levenhookia*	*chippendalei*				
	Stylidium	*humphreysii*				
		inaequipetalum				
		induratum				
		sp.				
Surianaceae	*Stylobasium*	*spathulatum*				
Teloschistaceae	*Caloplaca*	sp.				
Thymelaeaceae	*Pimelea*	*ammocharis*				
		microcephala	subsp.	*microcephala*		
		trichostachya				
Tremandraceae	*Tetratheca*	*chapmanii*				P1
Verrucariaceae	*Endocarpon*	*aridum*				
		pusillum				
		sp.				
	Verrucaria	*baldensis*				
		sp.				
Zygophyllaceae	*Tribulus*	*hirsutus*				
		sp.				
		suberosus				
	Zygophyllum	*iodocarpum*				
		kochii				
		lobulatum				
		simile				