

HABITAT ASSESSMENT FOR 1 ha SEARCH AREA

PROJECT ARP - GLADSTONE DATE 14/8/07

SITE NO FA01 LOCATION GPS 001 NAME D. FLEMING

AMG 56 EASTING 0306601 NORTHING 7353864

DISTANCE and DIRECTION from TOWN: SITE IS km (s) (N. S. E. W.) OF IN (state)

WAS GPS USED? ☒ YES ☐ NO IF YES, WHICH DATUM WAS USED? ☐ Aust (84/66) ☒ WGS 84 or GDA ALTITUDE

GENERAL

- ☒ Remnant trees ☐ Regrowth ☐ Plantation
- ☐ Native grasses (trees / shrubs may be present)
- ☒ Non-native grasses (trees / shrubs may be present)
- ☐ Improved pasture ☐ Other

Habitat type Ironbark WoodlandRE 11-11-15 VEG OD LANDFORM HSSOIL Sandy clay

LANDSCAPE

Shape of patch?

- ☐ Circular / square ☒ Irregular ☐ Strip <50 m
- ☐ Strip >50 m

Strip details: ☐ Creek / river ☐ Roadside☐ Windbreak ☐ Other Width

Area of full patch that contains 1 ha area:

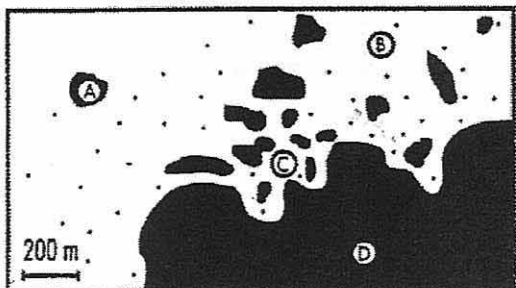
- ☐ <3 ha ☐ 3-10 ha ☒ 11-30 ha
- ☐ 31-100 ha ☐ 101-400 ha ☐ >400 ha

Is the 1 ha patch connected to other similar sized or larger patches of vegetation?

- ☒ YES ☐ NO

Position of this 1 ha search area relative to the surrounding tree / shrub cover?

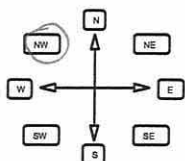
- ☐ A-Isolated ☐ B-Semi isolated
- ☒ C-Not isolated ☐ D-Continuous tree / shrub
- ☒ Continuous tree/shrub cover ☐ Scattered trees ☐ Grassland



Is this 1 ha area on a:

- ☐ Flat ☐ Ridge ☐ Gully ☒ Slope

If slope, give aspect over 20 m



Degrees of slope over 20 m:

10%

VEGETATION STRUCTURE : OVERSTORY

Tree canopy cover (trees taller than 3 m):

- ☐ Absent ☒ Sparse ☐ Open ☐ Dense

If trees present:

- ☐ single tree species
- ☒ two or three species
- ☐ more than three species
- Are trees mostly? ☒ native ☐ exotic

Species: E. crebra, C. citriodora

Average height of overstory?

- ☐ 3-5 m ☐ 5-10 m ☒ 10-15 m ☐ >15 m

Are the trees?

- ☐ Even-aged (Trees mostly the same age or size)
- ☒ Multi-aged (Trees of varying size or age)

Are there obvious signs of dieback in the tree canopy?

- ☐ None ☐ Some dieback ☒ Extensive dieback

VEGETATION STRUCTURE : UNDERSTORY

Tall understory shrub cover (>2 m):

- ☐ Absent ☒ Scattered ☐ Common ☐ Abundant

If shrubs present:

- ☐ single shrub species
- ☒ two or three species
- ☐ more than three species
- Are shrubs mostly? ☒ native ☐ exotic

Species: juvenile eucys, Alphitonia excelsa

Low shrub cover (0.5 m - 2 m):

- ☐ Absent ☒ Scattered ☐ Common ☐ Abundant

If shrubs present:

- ☐ single shrub species
- ☒ two or three species
- ☐ more than three species
- Are shrubs mostly? ☒ native ☐ exotic

Species: As above, sparse Lantana camara

Dominant ground cover within this 1 ha area:

- ☒ Tussocks ☐ Hummocks ☐ Continuous grass / herbs
- ☐ Low Heath ☐ Weeds ☐ Bare dirt / rocks / litter

LAND USE

Used for?

- ☐ Mixed grazing ☐ Sheep ☐ Cattle
- ☐ Crops
- ☒ Other
- Crop type
- Other road reserve

HABITAT ASSESSMENT (cont.)

KEY HABITAT FEATURES

HOLLOWS and LOGS

No. of hollows within 1 ha patch?

☐ Absent (0) ☒ Scattered (1-5) ☐ Common (6-10) ☐ Abundant (>10)
If present, are they mostly? ☐ dead ☒ living

Fallen trees or branches present 10-50 cm diameter?

☐ Absent (0) ☐ Scattered (1-10) ☒ Common (10-20) ☐ Abundant (>20)

Fallen trees or branches present >50 cm diameter?

☒ Absent (0) ☐ Scattered (1-5) ☐ Common (6-10) ☐ Abundant (>10)

Leaf litter?

☐ Absent ☒ Sparse ☐ Patchy ☐ Dense

Mistletoe within this 1 ha area?

☒ Absent ☐ Scattered ☐ Common ☐ Abundant

ROCKS

Outcrops within this 1 ha area?

☒ Absent ☐ Scattered ☐ Common ☐ Abundant

Surface rocks of 10-30 cm diameter?

☒ Absent ☐ Scattered ☐ Common ☐ Abundant

Surface rocks of > 30 cm diameter?

☒ Absent ☐ Scattered ☐ Common ☐ Abundant

Cliffs and overhangs within this 1 ha area?

☒ Absent ☐ Scattered ☐ Common ☐ Abundant

If present, are they mostly?

☐ Sandstone ☐ Granite

☐ Basalt ☐ Karst

☐ Other

CRACKING CLAY SOILS

☐ YES ☒ NO

HABITAT QUALITY FOR:

Hollow dependent fauna

☐ Absent ☐ Poor ☒ Average ☐ Good ☐ Excellent

Rock dependent fauna

☒ Absent ☐ Poor ☐ Average ☐ Good ☐ Excellent

Log dependent fauna

☐ Absent ☐ Poor ☒ Average ☐ Good ☐ Excellent

Small birds

☐ Absent ☒ Poor ☐ Average ☐ Good ☐ Excellent

OTHER HABITAT QUALITY ASPECTS:

Vegetated road reserve adjacent to woodland
Adjacent gully has dense vegetation; good
for small birds.

WETLANDS

Wetlands present?

☐ YES ☒ NO

TYPE OF WETLAND:

MARINE:

☐ Coral reef ☐ Rocky shore ☐ Beach (all)
☐ Estuarine ☐ Tidal mudflat ☐ Tidal marsh
☐ Tidal forest (e.g. mangrove) ☐ Lagoon
☐ Saline / brackish lake / swamp

INLAND WETLAND:

☐ Creek ☒ Dry ☐ Flowing
☐ River ☐ Floodplain, river flat
☐ Small billabong, pools (<8 ha) ☐ Freshwater lake (>8 ha)
☐ Shrubby swamp ☐ Wooded swamp
☐ Gilgai ☐ Claypan
☐ Ephemeral Marsh / swamp with emergent veg

ARTIFICIAL WETLANDS:

☐ Large dam, reservoir (>8 ha) ☐ Small dam, pond, tank
☐ Irrigation channel, rice field ☐ Wastewater treatment
☐ Canal, drainage channel, ditch ☐ Salt pond / field

AREA OF WETLAND:

☐ < 2 ha ☐ 2-8 ha ☐ 8-100 ha ☐ >100 ha
☒ Water mostly
☐ Fresh ☐ Brackish / saline ☐ Salty

FEATURES PRESENT

☐ Broad, shallow, swampy areas for birds to feed
☐ Islands for birds to roost and nest
☐ Dead or living trees in the water (partly submerged) for roosting and nesting habitat
☐ Fencing to exclude grazing stock from direct access to the waters edge
☐ Dense tree and / or shrub cover close to the edge of the water

ADDITIONAL NOTES:

Noisy Friarbird
Rainbow lorikeet
Rainbow bee-eater
brown honeyeater
Noisy Miner
Shiraz Pardalote
Scarlet Honeyeater
Whiptail Wallaby
Pale-headed Rosella

SITE NO.

FA01

HABITAT ASSESSMENT FOR 1 ha SEARCH AREA

PROJECT ARP - GPN DATE 14/8/2007

SITE NO FA02 LOCATION GPS 003 NAME D. Fleming

AMG 56 EASTING 370379 NORTHING 7354234

DISTANCE and DIRECTION from TOWN: SITE IS km (s) (N. S. E. W.) OF IN (state)

WAS GPS USED? ☒ YES ☐ NO IF YES, WHICH DATUM WAS USED? ☐ Aust (84/66) ☒ WGS 84 or GDA ALTITUDE

GENERAL

- ☒ Remnant trees ☐ Regrowth ☐ Plantation
- ☒ Native grasses (trees / shrubs may be present)
- ☐ Non-native grasses (trees / shrubs may be present)
- ☐ Improved pasture ☐ Other

Habitat type woodlandRE 11-3-26 VEG ML LANDFORM GULSOIL

LANDSCAPE

- Shape of patch?
- ☐ Circular / square ☐ Irregular ☒ Strip <50 m
- ☐ Strip >50 m

- Strip details: ☐ Creek / river ☐ Roadside
- ☐ Windbreak ☒ Other Gully

Width 50m

Area of full patch that contains 1 ha area:

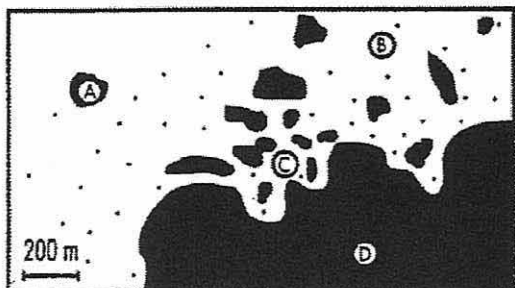
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- ☐ 31-100 ha ☐ 101-400 ha ☐ > 400 ha

Is the 1 ha patch connected to other similar sized or larger patches of vegetation?

- ☒ YES ☐ NO

Position of this 1 ha search area relative to the surrounding tree / shrub cover?

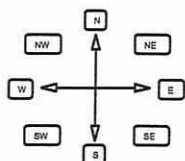
- ☐ A- Isolated ☒ B-Semi isolated
- ☐ C-Not isolated ☐ D-Continuous tree / shrub
- ☒ Continuous tree/shrub cover ☐ Scattered trees ☐ Grassland



Is this 1 ha area on a:

- ☐ Flat ☐ Ridge ☒ Gully ☐ Slope

If slope, give aspect over 20 m

Degrees of slope over 20 m:

VEGETATION STRUCTURE : OVERSTORY

Tree canopy cover (trees taller than 3 m):

- ☐ Absent ☒ Sparse ☐ Open ☐ Dense

If trees present:

- ☐ single tree species
- ☐ two or three species
- ☒ more than three species
- Are trees mostly? ☒ native ☐ exotic

Species: E. leucicornis, C. citriodora, E. crebra

Average height of overstory?

- ☐ 3-5 m ☐ 5-10 m ☐ 10-15 m ☒ > 15 m

Are the trees?

- ☐ Even-aged (Trees mostly the same age or size)
- ☒ Multi-aged (Trees of varying size or age)

Are there obvious signs of dieback in the tree canopy?

- ☐ None ☐ Some dieback ☒ Extensive dieback

VEGETATION STRUCTURE : UNDERSTORY

Tall understory shrub cover (>2 m):

- ☐ Absent ☐ Scattered ☒ Common ☐ Abundant

If shrubs present:

- ☐ single shrub species
- ☒ two or three species
- ☐ more than three species
- Are shrubs mostly? ☐ native ☒ exotic

Species: Geijera sp. Currant bush.Lophodermium sp. Lantana camara

Low shrub cover (0.5 m - 2 m):

- ☐ Absent ☐ Scattered ☒ Common ☐ Abundant

If shrubs present:

- ☐ single shrub species
- ☐ two or three species
- ☒ more than three species
- Are shrubs mostly? ☐ native ☒ exotic

Species: As above.

Dominant ground cover within this 1 ha area:

- ☐ Tussocks ☐ Hummocks ☒ Continuous grass / herbs
- ☐ Low Heath ☐ Weeds ☐ Bare dirt / rocks / litter

LAND USE

Used for?

- ☐ Mixed grazing ☐ Sheep ☐ Cattle

☐ CropsCrop type ☒ OtherOther road reserve

HABITAT ASSESSMENT (cont.)

KEY HABITAT FEATURES

HOLLOWES and LOGS

No. of hollows within 1 ha patch?

☐ Absent (0)
 ☒ Scattered (1-5)
 ☐ Common (6-10)
 ☐ Abundant (>10)
If present, are they mostly? ☐ dead ☒ living

Fallen trees or branches present 10-50 cm diameter?

☐ Absent (0)
 ☐ Scattered (1-10)
 ☒ Common (10-20)
 ☐ Abundant (>20)

Fallen trees or branches present >50 cm diameter?

☒ Absent (0)
 ☐ Scattered (1-5)
 ☐ Common (6-10)
 ☐ Abundant (>10)

Leaf litter?

☐ Absent
 ☒ Sparse
 ☐ Patchy
 ☐ Dense

Mistletoe within this 1 ha area?

☐ Absent
 ☒ Scattered
 ☐ Common
 ☐ Abundant

ROCKS

Outcrops within this 1 ha area?

☒ Absent
 ☐ Scattered
 ☐ Common
 ☐ Abundant

Surface rocks of 10-30 cm diameter?

☒ Absent
 ☐ Scattered
 ☐ Common
 ☐ Abundant

Surface rocks of > 30 cm diameter?

☒ Absent
 ☐ Scattered
 ☐ Common
 ☐ Abundant

Cliffs and overhangs within this 1 ha area?

☒ Absent
 ☐ Scattered
 ☐ Common
 ☐ Abundant

If present, are they mostly?

☐ Sandstone
 ☐ Granite

☐ Basalt
 ☐ Karst

☐ Other

CRACKING CLAY SOILS

☐ YES
 ☒ NO

HABITAT QUALITY FOR:

Hollow dependent fauna

☐ Absent
 ☐ Poor
 ☒ Average
 ☐ Good
 ☐ Excellent

Rock dependent fauna

☒ Absent
 ☐ Poor
 ☐ Average
 ☐ Good
 ☐ Excellent

Log dependent fauna

☐ Absent
 ☒ Poor
 ☐ Average
 ☐ Good
 ☐ Excellent

Small birds

☐ Absent
 ☐ Poor
 ☐ Average
 ☒ Good
 ☐ Excellent

OTHER HABITAT QUALITY ASPECTS:

Gully running through road reserve. Some dense vegetation patches

WETLANDS

Wetlands present?

☐ YES
 ☒ NO

TYPE OF WETLAND:

MARINE:

☐ Coral reef
 ☐ Rocky shore
 ☐ Beach (all)
 ☐ Estuarine
 ☐ Tidal mudflat
 ☐ Tidal marsh
 ☐ Tidal forest (e.g. mangrove)
 ☐ Lagoon
 ☐ Saline / brackish lake / swamp

INLAND WETLAND:

☐ Creek
 ☒ Dry
 ☐ Flowing
 ☐ River
 ☐ Floodplain, river flat
 ☐ Small billabong, pools (<8 ha)
 ☐ Freshwater lake (>8 ha)
 ☐ Shrubby swamp
 ☐ Wooded swamp
 ☐ Gilgai
 ☐ Claypan
 ☐ Ephemeral Marsh / swamp with emergent veg

ARTIFICIAL WETLANDS:

☐ Large dam, reservoir (>8 ha)
 ☐ Small dam, pond, tank
 ☐ Irrigation channel, rice field
 ☐ Wastewater treatment
 ☐ Canal, drainage channel, ditch
 ☐ Salt pond / field

AREA OF WETLAND:

☐ < 2 ha
 ☐ 2-8 ha
 ☐ 8-100 ha
 ☐ >100 ha
 ☒ Water mostly
 ☐ Fresh
 ☐ Brackish / saline
 ☐ Salty

FEATURES PRESENT

☐ Broad, shallow, swampy areas for birds to feed
 ☐ Islands for birds to roost and nest
 ☐ Dead or living trees in the water (partly submerged) for roosting and nesting habitat
 ☐ Fencing to exclude grazing stock from direct access to the waters edge
 ☐ Dense tree and / or shrub cover close to the edge of the water

ADDITIONAL NOTES:

Grey Shrike-thrush

Rufous Whistler

Rainbow Lorikeet

Rainbow Bee-eater

Brown Honeyeater

Keokabura

Little Frigatebird

Shiated Pardalote

Little Lorikeet

Lewin's honeyeater

518-519

520-100 m up road
typical road reserve

SITE NO.

FA02

HABITAT ASSESSMENT FOR 1 ha SEARCH AREA

PROJECT ARP-GPN DATE 14/8/07

SITE NO FA03 LOCATION LPS 007 NAME D. Fleming

AMG 56 EASTING 307720 NORTHING 7354246

DISTANCE and DIRECTION from TOWN: SITE IS km (s) (N. S. E. W.) OF IN (state)

WAS GPS USED? ☒ YES ☐ NO IF YES, WHICH DATUM WAS USED? ☐ Aust (84/66) ☒ WGS 84 or GDA ALTITUDE

GENERAL

- ☒ Remnant trees ☐ Regrowth ☐ Plantation
- ☒ Native grasses (trees / shrubs may be present)
- ☐ Non-native grasses (trees / shrubs may be present)
- ☐ Improved pasture ☐ Other

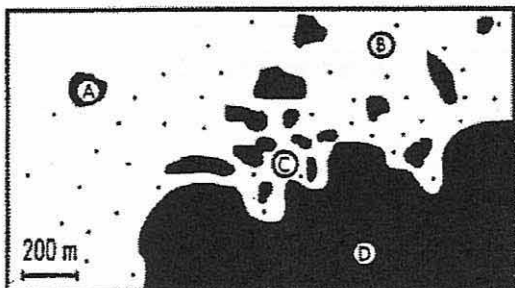
Habitat type Riparian Woodland

RE 11-13/11-14-51 VEG MK LANDFORM GUL

SOIL Sandy clay

LANDSCAPE

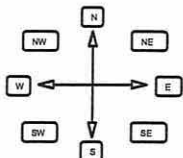
- Shape of patch?
- ☐ Circular / square ☒ Irregular ☐ Strip <50 m
- ☐ Strip >50 m
- Strip details: ☐ Creek / river ☐ Roadside
- ☐ Windbreak ☐ Other
- Width
- Area of full patch that contains 1 ha area:
- ☐ < 3 ha ☐ 3-10 ha ☒ 11-30 ha
- ☐ 31-100 ha ☐ 101-400 ha ☐ > 400 ha
- Is the 1 ha patch connected to other similar sized or larger patches of vegetation?
- ☒ YES ☐ NO
- Position of this 1 ha search area relative to the surrounding tree / shrub cover?
- ☐ A- Isolated ☐ B-Semi isolated
- ☒ C-Not isolated ☐ D-Continuous tree / shrub
- ☒ Continuous tree/shrub cover ☐ Scattered trees ☐ Grassland



Is this 1 ha area on a:

☐ Flat ☐ Ridge ☒ Gully ☐ Slope

If slope, give aspect over 20 m



Degrees of slope over 20 m:

VEGETATION STRUCTURE : OVERSTORY

Tree canopy cover (trees taller than 3 m):

- ☐ Absent ☒ Sparse ☐ Open ☐ Dense

If trees present:

- ☐ single tree species
- ☐ two or three species
- ☒ more than three species
- Are trees mostly?
- ☐ native ☐ exotic

Species: E. tereticornis, Corymbia sp. E. crebra
Jagera pseudocorymba

Average height of overstory?

- ☐ 3-5 m ☐ 5-10 m ☒ 10-15 m ☐ > 15 m

Are the trees?

- ☒ Even-aged (Trees mostly the same age or size)
- ☐ Multi-aged (Trees of varying size or age)

Are there obvious signs of dieback in the tree canopy?

- ☐ None ☐ Some dieback ☐ Extensive dieback

VEGETATION STRUCTURE : UNDERSTORY

Tall understory shrub cover (>2 m):

- ☐ Absent ☒ Scattered ☐ Common ☐ Abundant

If shrubs present:

- ☐ single shrub species
- ☒ two or three species
- ☐ more than three species
- Are shrubs mostly?
- ☐ native ☐ exotic

Species:

Low shrub cover (0.5 m - 2 m):

- ☐ Absent ☐ Scattered ☒ Common ☐ Abundant

If shrubs present:

- ☐ single shrub species
- ☒ two or three species
- ☐ more than three species
- Are shrubs mostly?
- ☐ native ☒ exotic

Species: Lantana canara

Dominant ground cover within this 1 ha area:

- ☒ Tussocks ☐ Hummocks ☐ Continuous grass / herbs
- ☐ Low Heath ☐ Weeds ☐ Bare dirt / rocks / litter

LAND USE

Used for?

- ☐ Mixed grazing ☐ Sheep ☐ Cattle

☐ Crops

Crop type

☒ Other

Other Road Reserve

HABITAT ASSESSMENT (cont.)

KEY HABITAT FEATURES

HOLLOWS and LOGS

No. of hollows within 1 ha patch?

☐ Absent (0)
 ☒ Scattered (1-5)
 ☐ Common (6-10)
 ☐ Abundant (>10)
If present, are they mostly? ☐ dead ☒ living

Fallen trees or branches present 10-50 cm diameter?

☐ Absent (0)
 ☒ Scattered (1-10)
 ☐ Common (10-20)
 ☐ Abundant (>20)

Fallen trees or branches present >50 cm diameter?

☒ Absent (0)
 ☐ Scattered (1-5)
 ☐ Common (6-10)
 ☐ Abundant (>10)

Leaf litter?

☐ Absent
 ☒ Sparse
 ☐ Patchy
 ☐ Dense

Mistletoe within this 1 ha area?

☒ Absent
 ☐ Scattered
 ☐ Common
 ☐ Abundant

ROCKS

Outcrops within this 1 ha area?

☒ Absent
 ☐ Scattered
 ☐ Common
 ☐ Abundant

Surface rocks of 10-30 cm diameter?

☒ Absent
 ☐ Scattered
 ☐ Common
 ☐ Abundant

Surface rocks of > 30 cm diameter?

☒ Absent
 ☐ Scattered
 ☐ Common
 ☐ Abundant

Cliffs and overhangs within this 1 ha area?

☐ Absent
 ☒ Scattered
 ☐ Common
 ☐ Abundant
creekside

If present, are they mostly?

☒ Sandstone
 ☐ Granite

☐ Basalt
 ☐ Karst

☐ Other

CRACKING CLAY SOILS

☐ YES
 ☒ NO

HABITAT QUALITY FOR:

Hollow dependent fauna

☐ Absent
 ☒ Poor
 ☐ Average
 ☐ Good
 ☐ Excellent

Rock dependent fauna

☒ Absent
 ☐ Poor
 ☐ Average
 ☐ Good
 ☐ Excellent

Log dependent fauna

☐ Absent
 ☐ Poor
 ☒ Average
 ☐ Good
 ☐ Excellent

Small birds

☐ Absent
 ☐ Poor
 ☐ Average
 ☒ Good
 ☐ Excellent

OTHER HABITAT QUALITY ASPECTS:

Very disturbed gully vegetation. Nests in creekside. Heavy infestation with Lantana.

WETLANDS

Wetlands present?

☐ YES
 ☒ NO

TYPE OF WETLAND:

MARINE:

☐ Coral reef
 ☐ Rocky shore
 ☐ Beach (all)
 ☐ Estuarine
 ☐ Tidal mudflat
 ☐ Tidal marsh
 ☐ Tidal forest (e.g. mangrove)
 ☐ Lagoon
 ☐ Saline / brackish lake / swamp

INLAND WETLAND:

☐ Creek
 ☒ Dry
 ☐ Flowing
 ☐ River
 ☐ Floodplain, river flat
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ARTIFICIAL WETLANDS:

☐ Large dam, reservoir (>8 ha)
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AREA OF WETLAND:

☐ < 2 ha
 ☐ 2-8 ha
 ☐ 8-100 ha
 ☐ >100 ha
 ☒ Water mostly
 ☐ Fresh
 ☐ Brackish / saline
 ☐ Salty

FEATURES PRESENT

☐ Broad, shallow, swampy areas for birds to feed
 ☐ Islands for birds to roost and nest
 ☐ Dead or living trees in the water (partly submerged) for roosting and nesting habitat
 ☐ Fencing to exclude grazing stock from direct access to the waters edge
 ☐ Dense tree and / or shrub cover close to the edge of the water

ADDITIONAL NOTES:

Brown honeyeater 521-525
Kevin's honeyeater
Shiated pardalote nesting in creekside

SITE NO.

1A03

HABITAT ASSESSMENT FOR 1 ha SEARCH AREA

PROJECT ARP - GPN DATE 14/8/07

SITE NO FA04 LOCATION GPS 014 - NAME D. Fleming

AMG 56 EASTING 308635 NORTHING 7355463

DISTANCE and DIRECTION from TOWN: SITE IS km (s) (N. S. E. W.) OF IN (state)

WAS GPS USED? ☒ YES ☐ NO IF YES, WHICH DATUM WAS USED? ☐ Aust (84/66) ☒ WGS 84 or GDA ALTITUDE

GENERAL

- ☒ Remnant trees ☐ Regrowth ☐ Plantation
- ☒ Native grasses (trees / shrubs may be present)
- ☐ Non-native grasses (trees / shrubs may be present)
- ☐ Improved pasture ☐ Other

Habitat type Melucan woodland with SEVT understoryRE 11-3-26 VEG DS+SEVT LANDFORM GULSOIL Sandy clay

LANDSCAPE

- Shape of patch?
- ☐ Circular / square ☒ Irregular ☐ Strip <50 m
- ☐ Strip >50 m

Strip details: ☐ Creek / river ☐ Roadside☐ Windbreak ☐ Other Width

Area of full patch that contains 1 ha area:

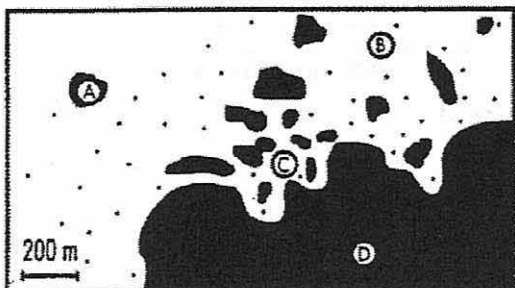
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- ☐ 31-100 ha ☐ 101-400 ha ☐ > 400 ha

Is the 1 ha patch connected to other similar sized or larger patches of vegetation?

☒ YES ☐ NO

Position of this 1 ha search area relative to the surrounding tree / shrub cover?

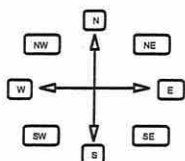
- ☐ A- Isolated ☐ B-Semi isolated
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Is this 1 ha area on a:

- ☐ Flat ☐ Ridge ☒ Gully ☐ Slope

If slope, give aspect over 20 m

Degrees of slope over 20 m:

VEGETATION STRUCTURE : OVERSTORY

Tree canopy cover (trees taller than 3 m):

- ☐ Absent ☒ Sparse ☐ Open ☐ Dense

If trees present:

- ☒ single tree species Are trees mostly?
- ☐ two or three species ☐ native
- ☐ more than three species ☐ exotic

Species: E. moluccana

Average height of overstory?

- ☐ 3-5 m ☐ 5-10 m ☐ 10-15 m ☒ > 15 m

Are the trees?

- ☐ Even-aged (Trees mostly the same age or size)
- ☒ Multi-aged (Trees of varying size or age)

Are there obvious signs of dieback in the tree canopy?

- ☐ None ☒ Some dieback ☐ Extensive dieback

VEGETATION STRUCTURE : UNDERSTORY

Tall understory shrub cover (>2 m):

- ☐ Absent ☐ Scattered ☒ Common ☐ Abundant

If shrubs present:

- ☐ single shrub species Are shrubs mostly?
- ☐ two or three species ☒ native
- ☒ more than three species ☐ exotic

Species: Melaleuca sp. SEVT species.

Low shrub cover (0.5 m - 2 m):

- ☐ Absent ☐ Scattered ☒ Common ☐ Abundant

If shrubs present:

- ☐ single shrub species Are shrubs mostly?
- ☐ two or three species ☒ native
- ☒ more than three species ☐ exotic

Species: SEVT species, Lantana camara.

Dominant ground cover within this 1 ha area:

- ☐ Tussocks ☐ Hummocks ☐ Continuous grass / herbs
- ☐ Low Heath ☐ Weeds ☒ Bare dirt / rocks / litter

LAND USE

Used for?

- ☐ Mixed grazing ☐ Sheep ☐ Cattle

☐ CropsCrop type ☒ OtherOther Food reserve adjacent to SF

HABITAT ASSESSMENT (cont.)

KEY HABITAT FEATURES

HOLLOWS and LOGS

No. of hollows within 1 ha patch?

☒ Absent (0)
 ☐ Scattered (1-5)
 ☐ Common (6-10)
 ☐ Abundant (>10)
If present, are they mostly? ☐ dead ☐ living

Fallen trees or branches present 10-50 cm diameter?

☐ Absent (0)
 ☐ Scattered (1-10)
 ☒ Common (10-20)
 ☐ Abundant (>20)

Fallen trees or branches present >50 cm diameter?

☐ Absent (0)
 ☒ Scattered (1-5)
 ☐ Common (6-10)
 ☐ Abundant (>10)

Leaf litter?

☐ Absent
 ☐ Sparse
 ☒ Patchy
 ☐ Dense

Mistletoe within this 1 ha area?

☐ Absent
 ☒ Scattered
 ☐ Common
 ☐ Abundant

ROCKS

Outcrops within this 1 ha area?

☒ Absent
 ☐ Scattered
 ☐ Common
 ☐ Abundant

Surface rocks of 10-30 cm diameter?

☒ Absent
 ☐ Scattered
 ☐ Common
 ☐ Abundant

Surface rocks of > 30 cm diameter?

☒ Absent
 ☐ Scattered
 ☐ Common
 ☐ Abundant

Cliffs and overhangs within this 1 ha area?

☒ Absent
 ☐ Scattered
 ☐ Common
 ☐ Abundant

If present, are they mostly?

☐ Sandstone
 ☐ Granite

☐ Basalt
 ☐ Karst

☐ Other

CRACKING CLAY SOILS

☐ YES
 ☒ NO

HABITAT QUALITY FOR:

Hollow dependent fauna

☐ Absent
 ☒ Poor
 ☐ Average
 ☐ Good
 ☐ Excellent

Rock dependent fauna

☒ Absent
 ☐ Poor
 ☐ Average
 ☐ Good
 ☐ Excellent

Log dependent fauna

☐ Absent
 ☐ Poor
 ☐ Average
 ☒ Good
 ☐ Excellent

Small birds

☐ Absent
 ☐ Poor
 ☐ Average
 ☒ Good
 ☐ Excellent

OTHER HABITAT QUALITY ASPECTS:

WETLANDS

Wetlands present?

☒ YES
 ☐ NO

TYPE OF WETLAND:

MARINE:

☐ Coral reef
 ☐ Rocky shore
 ☐ Beach (all)
 ☐ Estuarine
 ☐ Tidal mudflat
 ☐ Tidal marsh
 ☐ Tidal forest (e.g. mangrove)
 ☐ Lagoon
 ☐ Saline / brackish lake / swamp

INLAND WETLAND:

☒ Creek
 ☒ Dry
 ☐ Flowing
 ☐ River
 ☐ Floodplain, river flat
 ☐ Small billabong, pools (<8 ha)
 ☐ Freshwater lake (>8 ha)
 ☐ Shrubby swamp
 ☐ Wooded swamp
 ☐ Gilgai
 ☐ Claypan
 ☐ Ephemeral Marsh / swamp with emergent veg

ARTIFICIAL WETLANDS:

☐ Large dam, reservoir (>8 ha)
 ☐ Small dam, pond, tank
 ☐ Irrigation channel, rice field
 ☐ Wastewater treatment
 ☐ Canal, drainage channel, ditch
 ☐ Salt pond / field

AREA OF WETLAND:

☒ < 2 ha
 ☐ 2-8 ha
 ☐ 8-100 ha
 ☐ >100 ha
 ☒ Water mostly
 ☒ Fresh
 ☐ Brackish / saline
 ☐ Salty

FEATURES PRESENT

☐ Broad, shallow, swampy areas for birds to feed
 ☐ Islands for birds to roost and nest
 ☐ Dead or living trees in the water (partly submerged) for roosting and nesting habitat
 ☐ Fencing to exclude grazing stock from direct access to the waters edge
 ☐ Dense tree and / or shrub cover close to the edge of the water

ADDITIONAL NOTES:

Boobing owl 533-534
 Echidna diggings.
 Red-backed fairy wren.
 Kookaburra.
 White-winged Chough in adjacent SP
 Alaphyromorphus punctulatus.

SITE NO.

FA04

HABITAT ASSESSMENT FOR 1 ha SEARCH AREA

PROJECT ARP - CPN DATE 14/8/07

SITE NO FA05 LOCATION GPS 918 Sth side of electricity easement NAME D. Fleming

AMG 5 6 EASTING 3 0 5 8 5 5 NORTHING 7 3 5 2 5 0 5

DISTANCE and DIRECTION from TOWN: SITE IS km (s) (N. S. E. W.) OF IN (state)

WAS GPS USED? ☒ YES ☐ NO IF YES, WHICH DATUM WAS USED? ☐ Aust (84/66) ☒ WGS 84 or GDA ALTITUDE

GENERAL

- ☒ Remnant trees ☐ Regrowth ☐ Plantation
- ☒ Native grasses (trees / shrubs may be present)
- ☐ Non-native grasses (trees / shrubs may be present)
- ☐ Improved pasture ☐ Other

Habitat type Ironbark WoodlandRE 11-11-4 11-11-5 VEG DX LANDFORM HSkSOIL Clayey sand

LANDSCAPE

Shape of patch?

- ☐ Circular / square ☒ Irregular ☐ Strip <50 m
- ☐ Strip >50 m

Strip details:

- ☐ Creek / river ☐ Roadside

- ☐ Windbreak ☐ Other

Width

Area of full patch that contains 1 ha area:

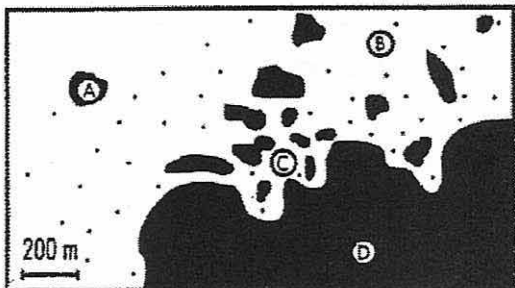
- ☐ < 3 ha ☐ 3-10 ha ☒ 11-30 ha
- ☐ 31-100 ha ☐ 101-400 ha ☐ > 400 ha

Is the 1 ha patch connected to other similar sized or larger patches of vegetation?

- ☒ YES ☐ NO

Position of this 1 ha search area relative to the surrounding tree / shrub cover?

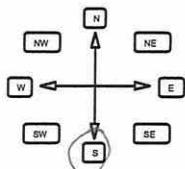
- ☐ A- Isolated ☐ B-Semi isolated
- ☒ C-Not isolated ☐ D-Continuous tree / shrub
- ☒ Continuous tree/shrub cover ☐ Scattered trees ☐ Grassland



Is this 1 ha area on a:

- ☐ Flat ☐ Ridge ☐ Gully ☒ Slope

If slope, give aspect over 20 m



Degrees of slope over 20 m:

5-10

VEGETATION STRUCTURE : OVERSTORY

Tree canopy cover (trees taller than 3 m):

- ☐ Absent ☒ Sparse ☐ Open ☐ Dense

If trees present:

- ☐ single tree species
- ☒ two or three species
- ☐ more than three species
- Are trees mostly? ☒ native ☐ exotic

Species: E. webba, C. ciliadara

Average height of overstory?

- ☐ 3-5 m ☐ 5-10 m ☒ 10-15 m ☐ > 15 m

Are the trees?

- ☒ Even-aged (Trees mostly the same age or size)
- ☐ Multi-aged (Trees of varying size or age)

Are there obvious signs of dieback in the tree canopy?

- ☐ None ☒ Some dieback ☐ Extensive dieback

VEGETATION STRUCTURE : UNDERSTORY

Tall understory shrub cover (>2 m):

- ☐ Absent ☒ Scattered ☐ Common ☐ Abundant

If shrubs present:

- ☐ single shrub species
- ☒ two or three species
- ☐ more than three species
- Are shrubs mostly? ☒ native ☐ exotic

Species: Lophosolen swardensis, Acacia spp.

Low shrub cover (0.5 m - 2 m):

- ☒ Absent ☐ Scattered ☐ Common ☐ Abundant

If shrubs present:

- ☐ single shrub species
- ☐ two or three species
- ☐ more than three species
- Are shrubs mostly? ☐ native ☐ exotic

Species:

Dominant ground cover within this 1 ha area:

- ☐ Tussocks ☐ Hummocks ☒ Continuous grass / herbs
- ☐ Low Heath ☐ Weeds ☐ Bare dirt / rocks / litter

LAND USE

Used for?

- ☐ Mixed grazing ☐ Sheep ☒ Cattle

☐ CropsCrop type ☐ OtherOther

HABITAT ASSESSMENT (cont.)

KEY HABITAT FEATURES

HOLLOWS and LOGS

No. of hollows within 1 ha patch?

☒ Absent (0) ☐ Scattered (1-5) ☐ Common (6-10) ☐ Abundant (>10)
If present, are they mostly? ☐ dead ☐ living

Fallen trees or branches present 10-50 cm diameter?

☐ Absent (0) ☐ Scattered (1-10) ☐ Common (10-20) ☒ Abundant (>20)

Fallen trees or branches present >50 cm diameter?

☒ Absent (0) ☐ Scattered (1-5) ☐ Common (6-10) ☐ Abundant (>10)

Leaf litter?

☐ Absent ☒ Sparse ☐ Patchy ☐ Dense

Mistletoe within this 1 ha area?

☒ Absent ☐ Scattered ☐ Common ☐ Abundant

ROCKS

Outcrops within this 1 ha area?

☒ Absent ☐ Scattered ☐ Common ☐ Abundant

Surface rocks of 10-30 cm diameter?

☒ Absent ☐ Scattered ☐ Common ☐ Abundant

Surface rocks of > 30 cm diameter?

☒ Absent ☐ Scattered ☐ Common ☐ Abundant

Cliffs and overhangs within this 1 ha area?

☒ Absent ☐ Scattered ☐ Common ☐ Abundant

If present, are they mostly?

☐ Sandstone ☐ Granite

☐ Basalt ☐ Karst

☐ Other

CRACKING CLAY SOILS

☐ YES ☒ NO

HABITAT QUALITY FOR:

Hollow dependent fauna

☒ Absent ☐ Poor ☐ Average ☐ Good ☐ Excellent

Rock dependent fauna

☒ Absent ☐ Poor ☐ Average ☐ Good ☐ Excellent

Log dependent fauna

☐ Absent ☐ Poor ☒ Average ☐ Good ☐ Excellent

Small birds

☐ Absent ☒ Poor ☐ Average ☐ Good ☐ Excellent

OTHER HABITAT QUALITY ASPECTS:

Relatively young woodland, absence of large old trees

WETLANDS

Wetlands present?

☐ YES ☒ NO

TYPE OF WETLAND:

MARINE:

☐ Coral reef ☐ Rocky shore ☐ Beach (all)
☐ Estuarine ☐ Tidal mudflat ☐ Tidal marsh
☐ Tidal forest (e.g. mangrove) ☐ Lagoon
☐ Saline / brackish lake / swamp

INLAND WETLAND:

☐ Creek ☒ Dry ☐ Flowing
☐ River ☐ Floodplain, river flat
☐ Small billabong, pools (<8 ha) ☐ Freshwater lake (>8 ha)
☐ Shrubby swamp ☐ Wooded swamp
☐ Gilgai ☐ Claypan
☐ Ephemeral Marsh / swamp with emergent veg

ARTIFICIAL WETLANDS:

☐ Large dam, reservoir (>8 ha) ☐ Small dam, pond, tank
☐ Irrigation channel, rice field ☐ Wastewater treatment
☐ Canal, drainage channel, ditch ☐ Salt pond / field

AREA OF WETLAND:

☐ < 2 ha ☐ 2-8 ha ☐ 8-100 ha ☐ >100 ha
☒ Water mostly
☐ Fresh ☐ Brackish / saline ☐ Salty

FEATURES PRESENT

☐ Broad, shallow, swampy areas for birds to feed
☐ Islands for birds to roost and nest
☐ Dead or living trees in the water (partly submerged) for roosting and nesting habitat
☐ Fencing to exclude grazing stock from direct access to the waters edge
☐ Dense tree and / or shrub cover close to the edge of the water

ADDITIONAL NOTES:

Pied butcherbird
Noisy Friarbird
Rainbow bee-eater

0529

SITE NO.

FA05

HABITAT ASSESSMENT FOR 1 ha SEARCH AREA

PROJECT ARP - GPN DATE 14/8/07

SITE NO. FA06 LOCATION GPS 019 - gully at easement NAME D. Flaming

AMG 5 6 EASTING 5 0 6 3 8 8 NORTHING 7 3 5 2 5 3 2

DISTANCE and DIRECTION from TOWN: SITE IS km (s) (N. S. E. W.) OF IN (state)

WAS GPS USED? ☒ YES ☐ NO IF YES, WHICH DATUM WAS USED? ☐ Aust (84/66) ☒ WGS 84 or GDA ALTITUDE

GENERAL

- ☒ Remnant trees ☐ Regrowth ☐ Plantation
- ☒ Native grasses (trees / shrubs may be present)
- ☐ Non-native grasses (trees / shrubs may be present)
- ☐ Improved pasture ☐ Other

Habitat type Fringing Riparian Forest

RE 11-3-26 VEG OD LANDFORM GUL

SOIL Sandy clay

LANDSCAPE

- Shape of patch?
- ☒ Circular / square ☐ Irregular ☐ Strip <50 m
- ☐ Strip >50 m

- Strip details: ☐ Creek / river ☐ Roadside
- ☐ Windbreak ☐ Other

Width

Area of full patch that contains 1 ha area:

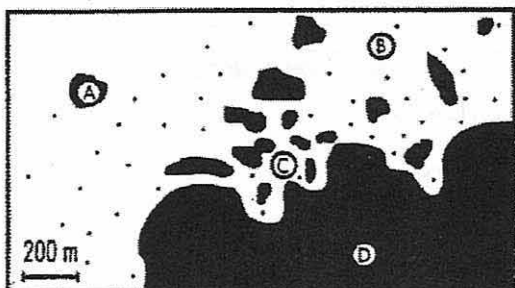
- ☐ < 3 ha ☐ 3-10 ha ☐ 11-30 ha
- ☒ 31-100 ha ☐ 101-400 ha ☐ > 400 ha

Is the 1 ha patch connected to other similar sized or larger patches of vegetation?

- ☒ YES ☐ NO

Position of this 1 ha search area relative to the surrounding tree / shrub cover?

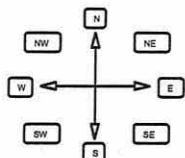
- ☐ A- Isolated ☐ B-Semi isolated
- ☐ C-Not isolated ☒ D-Continuous tree / shrub
- ☒ Continuous tree/shrub cover ☐ Scattered trees ☐ Grassland



Is this 1 ha area on a:

- ☐ Flat ☐ Ridge ☒ Gully ☐ Slope

If slope, give aspect over 20 m



Degrees of slope over 20 m:

VEGETATION STRUCTURE : OVERSTORY

Tree canopy cover (trees taller than 3 m):

- ☐ Absent ☒ Sparse ☐ Open ☐ Dense

If trees present:

- ☐ single tree species
- ☒ two or three species
- ☐ more than three species
- Are trees mostly? ☒ native ☐ exotic

Species: E. moluccana, E. tereticornis
Lophostemon scariosus

Average height of overstory?

- ☐ 3-5 m ☐ 5-10 m ☐ 10-15 m ☒ > 15 m

Are the trees?

- ☐ Even-aged (Trees mostly the same age or size)
- ☒ Multi-aged (Trees of varying size or age)

Are there obvious signs of dieback in the tree canopy?

- ☐ None ☒ Some dieback ☐ Extensive dieback

VEGETATION STRUCTURE : UNDERSTORY

Tall understory shrub cover (>2 m):

- ☐ Absent ☐ Scattered ☒ Common ☐ Abundant

If shrubs present:

- ☐ single shrub species
- ☐ two or three species
- ☒ more than three species
- Are shrubs mostly? ☒ native ☐ exotic

Species: Bursaria sp, Melaleuca

Low shrub cover (0.5 m - 2 m):

- ☐ Absent ☐ Scattered ☒ Common ☐ Abundant

If shrubs present:

- ☐ single shrub species
- ☒ two or three species
- ☐ more than three species
- Are shrubs mostly? ☐ native ☒ exotic

Species: Lantana camara, Bursaria

Dominant ground cover within this 1 ha area:

- ☒ Tussocks ☐ Hummocks ☐ Continuous grass / herbs
- ☐ Low Heath ☐ Weeds ☐ Bare dirt / rocks / litter

LAND USE

Used for?

- ☐ Mixed grazing ☐ Sheep ☒ Cattle

☐ Crops

Crop type

☐ Other

Other

HABITAT ASSESSMENT (cont.)

KEY HABITAT FEATURES

HOLLOWS and LOGS

No. of hollows within 1 ha patch?

☐ Absent (0)
 ☐ Scattered (1-5)
 ☒ Common (6-10)
 ☐ Abundant (>10)
If present, are they mostly? ☐ dead ☒ living

Fallen trees or branches present 10-50 cm diameter?

☐ Absent (0)
 ☐ Scattered (1-10)
 ☒ Common (10-20)
 ☐ Abundant (>20)

Fallen trees or branches present >50 cm diameter?

☒ Absent (0)
 ☐ Scattered (1-5)
 ☐ Common (6-10)
 ☐ Abundant (>10)

Leaf litter?

☐ Absent
 ☐ Sparse
 ☒ Patchy
 ☐ Dense

Mistletoe within this 1 ha area?

☒ Absent
 ☐ Scattered
 ☐ Common
 ☐ Abundant

ROCKS

Outcrops within this 1 ha area?

☒ Absent
 ☐ Scattered
 ☐ Common
 ☐ Abundant

Surface rocks of 10-30 cm diameter?

☒ Absent
 ☐ Scattered
 ☐ Common
 ☐ Abundant

Surface rocks of > 30 cm diameter?

☒ Absent
 ☐ Scattered
 ☐ Common
 ☐ Abundant

Cliffs and overhangs within this 1 ha area?

☒ Absent
 ☐ Scattered
 ☐ Common
 ☐ Abundant

If present, are they mostly?

☐ Sandstone
 ☐ Granite

☐ Basalt
 ☐ Karst

☐ Other

CRACKING CLAY SOILS

☐ YES
 ☒ NO

HABITAT QUALITY FOR:

Hollow dependent fauna

☐ Absent
 ☐ Poor
 ☐ Average
 ☒ Good
 ☐ Excellent

Rock dependent fauna

☒ Absent
 ☐ Poor
 ☐ Average
 ☐ Good
 ☐ Excellent

Log dependent fauna

☐ Absent
 ☐ Poor
 ☒ Average
 ☐ Good
 ☐ Excellent

Small birds

☐ Absent
 ☐ Poor
 ☐ Average
 ☒ Good
 ☐ Excellent

OTHER HABITAT QUALITY ASPECTS: Degraded, dry creek. Cattle damage and weed invasion. Lantana provides good habitat for small birds, but not extensive enough for quail habitat. Large moluccanias with hollows.

WETLANDS

Wetlands present?

☒ YES
 ☐ NO

TYPE OF WETLAND:

MARINE:

☐ Coral reef
 ☐ Rocky shore
 ☐ Beach (all)
 ☐ Estuarine
 ☐ Tidal mudflat
 ☐ Tidal marsh
 ☐ Tidal forest (e.g. mangrove)
 ☐ Lagoon
 ☐ Saline / brackish lake / swamp

INLAND WETLAND:

☒ Creek
 ☒ Dry
 ☐ Flowing
 ☐ River
 ☐ Floodplain, river flat
 ☐ Small billabong, pools (<8 ha)
 ☐ Freshwater lake (>8 ha)
 ☐ Shrubby swamp
 ☐ Wooded swamp
 ☐ Gilgai
 ☐ Claypan
 ☐ Ephemeral Marsh / swamp with emergent veg

ARTIFICIAL WETLANDS:

☐ Large dam, reservoir (>8 ha)
 ☐ Small dam, pond, tank
 ☐ Irrigation channel, rice field
 ☐ Wastewater treatment
 ☐ Canal, drainage channel, ditch
 ☐ Salt pond / field

AREA OF WETLAND:

☒ < 2 ha
 ☐ 2-8 ha
 ☐ 8-100 ha
 ☐ >100 ha
 ☒ Water mostly
 ☒ Fresh
 ☐ Brackish / saline
 ☐ Salty

FEATURES PRESENT

☐ Broad, shallow, swampy areas for birds to feed
 ☐ Islands for birds to roost and nest
 ☐ Dead or living trees in the water (partly submerged) for roosting and nesting habitat
 ☐ Fencing to exclude grazing stock from direct access to the waters edge
 ☐ Dense tree and / or shrub cover close to the edge of the water

ADDITIONAL NOTES:

Bardicoot diggings 530-531
 532
 Noisy Friarbird
 Brown honeyeater
~~Cinnamon Woodswallow~~
 Scarlet Honeyeater
 Rainbow Lorikeet.

SITE NO.

FA06

HABITAT ASSESSMENT FOR 1 ha SEARCH AREA

PROJECT ARP - GPN DATE 15/8/2007

SITE NO PA07 LOCATION GPS 046 NAME D. Fleming

AMG 56 EASTING 309283 NORTHING 7355978

DISTANCE and DIRECTION from TOWN: SITE IS km (s) (N. S. E. W.) OF IN (state)

WAS GPS USED? ☒ YES ☐ NO IF YES, WHICH DATUM WAS USED? ☐ Aust (84/66) ☒ WGS 84 or GDA ALTITUDE

GENERAL

- ☒ Remnant trees ☐ Regrowth ☐ Plantation
- ☒ Native grasses (trees / shrubs may be present)
- ☐ Non-native grasses (trees / shrubs may be present)
- ☐ Improved pasture ☐ Other

Habitat type Fringing RiparianRE 11-11-11-18 VEG MK LANDFORM GOLSOIL Sandy clay

LANDSCAPE

- Shape of patch?
- ☐ Circular / square ☒ Irregular ☐ Strip <50 m
- ☐ Strip >50 m

- Strip details: ☐ Creek / river ☐ Roadside
- ☐ Windbreak ☐ Other

Width

Area of full patch that contains 1 ha area:

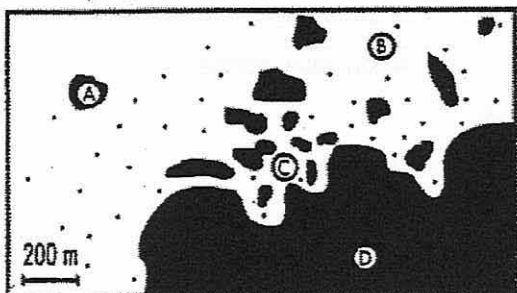
- ☐ < 3 ha ☐ 3-10 ha ☐ 11-30 ha
- ☐ 31-100 ha ☒ 101-400 ha ☐ > 400 ha

Is the 1 ha patch connected to other similar sized or larger patches of vegetation?

- ☒ YES ☐ NO

Position of this 1 ha search area relative to the surrounding tree / shrub cover?

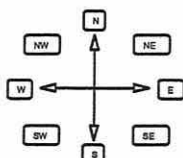
- ☐ A- Isolated ☐ B-Semi isolated
- ☐ C-Not isolated ☒ D-Continuous tree / shrub
- ☒ Continuous tree/shrub cover ☐ Scattered trees ☐ Grassland



Is this 1 ha area on a:

- ☐ Flat ☐ Ridge ☒ Gully ☐ Slope

If slope, give aspect over 20 m

Degrees of slope over 20 m:

VEGETATION STRUCTURE : OVERSTORY

Tree canopy cover (trees taller than 3 m):

- ☐ Absent ☒ Sparse ☐ Open ☐ Dense

If trees present:

- ☐ single tree species ☒ two or three species ☐ more than three species
- Are trees mostly? ☒ native ☐ exotic

Species: C. citrodora, E. crebra

Average height of overstory?

- ☐ 3-5 m ☐ 5-10 m ☐ 10-15 m ☒ > 15 m

Are the trees?

- ☐ Even-aged (Trees mostly the same age or size)
- ☒ Multi-aged (Trees of varying size or age)

Are there obvious signs of dieback in the tree canopy?

- ☐ None ☒ Some dieback ☐ Extensive dieback

VEGETATION STRUCTURE : UNDERSTORY

Tall understory shrub cover (> 2 m):

- ☐ Absent ☐ Scattered ☒ Common ☐ Abundant

If shrubs present:

- ☐ single shrub species ☒ two or three species ☐ more than three species
- Are shrubs mostly? ☒ native ☐ exotic

Species: Casuarina cunninghamiana, Melaleuca
aviabilis, juvenile eucys

Low shrub cover (0.5 m - 2 m):

- ☐ Absent ☐ Scattered ☒ Common ☐ Abundant

If shrubs present:

- ☒ single shrub species ☐ two or three species ☐ more than three species
- Are shrubs mostly? ☐ native ☒ exotic

Species: Lantana camara

Dominant ground cover within this 1 ha area:

- ☐ Tussocks ☐ Hummocks ☐ Continuous grass / herbs
- ☐ Low Heath ☐ Weeds ☐ Bare dirt / rocks / litter

LAND USE

Used for?

- ☐ Mixed grazing ☐ Sheep ☐ Cattle

☐ CropsCrop type ☒ OtherOther State Forest

HABITAT ASSESSMENT (cont.)

KEY HABITAT FEATURES

HOLLOWS and LOGS

No. of hollows within 1 ha patch?

☒ Absent (0)
 ☐ Scattered (1-5)
 ☐ Common (6-10)
 ☐ Abundant (>10)
If present, are they mostly? ☐ dead ☐ living

Fallen trees or branches present 10-50 cm diameter?

☐ Absent (0)
 ☐ Scattered (1-10)
 ☒ Common (10-20)
 ☐ Abundant (>20)

Fallen trees or branches present >50 cm diameter?

☒ Absent (0)
 ☐ Scattered (1-5)
 ☐ Common (6-10)
 ☐ Abundant (>10)

Leaf litter?

☐ Absent
 ☐ Sparse
 ☒ Patchy
 ☐ Dense

Mistletoe within this 1 ha area?

☒ Absent
 ☐ Scattered
 ☐ Common
 ☐ Abundant

ROCKS

Outcrops within this 1 ha area?

☒ Absent
 ☐ Scattered
 ☐ Common
 ☐ Abundant

Surface rocks of 10-30 cm diameter?

☐ Absent
 ☒ Scattered
 ☐ Common
 ☐ Abundant

Surface rocks of >30 cm diameter?

☐ Absent
 ☒ Scattered
 ☐ Common
 ☐ Abundant

Cliffs and overhangs within this 1 ha area?

☒ Absent
 ☐ Scattered
 ☐ Common
 ☐ Abundant

If present, are they mostly?

☐ Sandstone
 ☐ Granite

☐ Basalt
 ☐ Karst

☐ Other

CRACKING CLAY SOILS

☐ YES
 ☒ NO

HABITAT QUALITY FOR:

Hollow dependent fauna

☒ Absent
 ☐ Poor
 ☐ Average
 ☐ Good
 ☐ Excellent

Rock dependent fauna

☐ Absent
 ☐ Poor
 ☒ Average
 ☐ Good
 ☐ Excellent

Log dependent fauna

☐ Absent
 ☐ Poor
 ☒ Average
 ☐ Good
 ☐ Excellent

Small birds

☐ Absent
 ☐ Poor
 ☐ Average
 ☒ Good
 ☐ Excellent

OTHER HABITAT QUALITY ASPECTS: Small dry creek crossing Bayles Rd. Understorey predominantly Lantana. Some erosion of side gullies.

WETLANDS

Wetlands present?

☒ YES
 ☐ NO

TYPE OF WETLAND:

MARINE:

☐ Coral reef
 ☐ Rocky shore
 ☐ Beach (all)
 ☐ Estuarine
 ☐ Tidal mudflat
 ☐ Tidal marsh
 ☐ Tidal forest (e.g. mangrove)
 ☐ Lagoon
 ☐ Saline / brackish lake / swamp

INLAND WETLAND:

☒ Creek
 ☒ Dry
 ☐ Flowing
 ☐ River
 ☐ Floodplain, river flat
 ☐ Small billabong, pools (<8 ha)
 ☐ Freshwater lake (>8 ha)
 ☐ Shrubby swamp
 ☐ Wooded swamp
 ☐ Gilgai
 ☐ Claypan
 ☐ Ephemeral Marsh / swamp with emergent veg

ARTIFICIAL WETLANDS:

☐ Large dam, reservoir (>8 ha)
 ☐ Small dam, pond, tank
 ☐ Irrigation channel, rice field
 ☐ Wastewater treatment
 ☐ Canal, drainage channel, ditch
 ☐ Salt pond / field

AREA OF WETLAND:

☒ <2 ha
 ☐ 2-8 ha
 ☐ 8-100 ha
 ☐ >100 ha
 ☒ Water mostly
 ☒ Fresh
 ☐ Brackish / saline
 ☐ Salty

FEATURES PRESENT

☐ Broad, shallow, swampy areas for birds to feed
 ☐ Islands for birds to roost and nest
 ☐ Dead or living trees in the water (partly submerged) for roosting and nesting habitat
 ☐ Fencing to exclude grazing stock from direct access to the waters edge
 ☒ Dense tree and / or shrub cover close to the edge of the water

ADDITIONAL NOTES:

Shirred Pardalote

0542.

Rainbow lorikeet

Brown Honeyeater

Galah

Noisy Friarbird

Pseudophryne raveni

Lewin's Honeyeater

Magpie

Sallybreasted lorikeet

Eastern Grey Kangaroo further north

SITE NO.

FA07

HABITAT ASSESSMENT FOR 1 ha SEARCH AREA

PROJECT ARP-GPN DATE 15/8/07

SITE NO. FA08 LOCATION GPS 050 NAME D. Fleming

AMG 56 EASTING 309915 NORTHING 7358296

DISTANCE and DIRECTION from TOWN: SITE IS km (s) (N. S. E. W.) OF IN (state)

WAS GPS USED? ☒ YES ☐ NO IF YES, WHICH DATUM WAS USED? ☐ Aust (84/66) ☒ WGS 84 or GDA ALTITUDE

GENERAL

- ☒ Remnant trees ☐ Regrowth ☐ Plantation
- ☒ Native grasses (trees / shrubs may be present)
- ☐ Non-native grasses (trees / shrubs may be present)
- ☐ Improved pasture ☐ Other

Habitat type Spotted Gum Woodland

RE 11/11/14/11/18 VEG DS LANDFORM PLA

SOIL Clayey sand

LANDSCAPE

- Shape of patch?
- ☐ Circular / square ☒ Irregular ☐ Strip <50 m
- ☐ Strip >50 m
- Strip details: ☐ Creek / river ☐ Roadside
- ☐ Windbreak ☐ Other

Width

Area of full patch that contains 1 ha area:

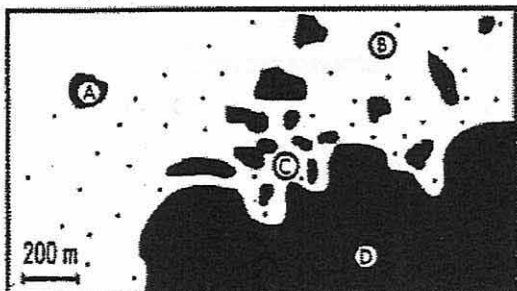
- ☐ < 3 ha ☐ 3-10 ha ☐ 11-30 ha
- ☐ 31-100 ha ☒ 101-400 ha ☐ > 400 ha

Is the 1 ha patch connected to other similar sized or larger patches of vegetation?

- ☒ YES ☐ NO

Position of this 1 ha search area relative to the surrounding tree / shrub cover?

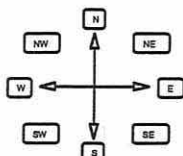
- ☐ A- Isolated ☐ B-Semi isolated
- ☐ C-Not isolated ☒ D-Continuous tree / shrub
- ☒ Continuous tree/shrub cover ☐ Scattered trees ☐ Grassland



Is this 1 ha area on a:

- ☒ Flat ☐ Ridge ☐ Gully ☐ Slope

If slope, give aspect over 20 m

Degrees of slope over 20 m:

VEGETATION STRUCTURE : OVERSTORY

Tree canopy cover (trees taller than 3 m):

- ☐ Absent ☒ Sparse ☐ Open ☐ Dense

If trees present:

- ☐ single tree species tending towards open forest
- ☒ two or three species Are trees mostly? ☒ native
- ☐ more than three species ☐ exotic

Species: C. citrodora, E. crebra

Average height of overstory?

- ☐ 3-5 m ☐ 5-10 m ☐ 10-15 m ☒ > 15 m

Are the trees?

- ☐ Even-aged (Trees mostly the same age or size)
- ☐ Multi-aged (Trees of varying size or age)

Are there obvious signs of dieback in the tree canopy?

- ☐ None ☐ Some dieback ☐ Extensive dieback

VEGETATION STRUCTURE : UNDERSTORY

Tall understory shrub cover (>2 m):

- ☐ Absent ☒ Scattered ☐ Common ☐ Abundant

If shrubs present:

- ☐ single shrub species Are shrubs mostly?
- ☒ two or three species ☒ native
- ☐ more than three species ☐ exotic

Species: Lophospermum saccidens, A. phytolacca

Low shrub cover (0.5 m - 2 m):

- ☐ Absent ☒ Scattered ☐ Common ☐ Abundant

If shrubs present:

- ☐ single shrub species Are shrubs mostly?
- ☒ two or three species ☒ native
- ☐ more than three species ☐ exotic

Species: As above

Dominant ground cover within this 1 ha area:

- ☒ Tussocks ☐ Hummocks ☐ Continuous grass / herbs
- ☐ Low Heath ☐ Weeds ☐ Bare dirt / rocks / litter

LAND USE

Used for?

- ☐ Mixed grazing ☐ Sheep ☐ Cattle

☐ CropsCrop type ☒ OtherOther State forest

HABITAT ASSESSMENT (cont.)

KEY HABITAT FEATURES

HOLLOWS and LOGS

No. of hollows within 1 ha patch?

- ☒ Absent (0) ☐ Scattered (1-5) ☐ Common (6-10) ☐ Abundant (>10)

If present, are they mostly?

- ☐ dead ☐ living

Fallen trees or branches present 10-50 cm diameter?

- ☐ Absent (0) ☐ Scattered (1-10) ☐ Common (10-20) ☒ Abundant (>20)

Fallen trees or branches present >50 cm diameter?

- ☐ Absent (0) ☒ Scattered (1-5) ☐ Common (6-10) ☐ Abundant (>10)

Leaf litter?

- ☐ Absent ☐ Sparse ☒ Patchy ☐ Dense

Mistletoe within this 1 ha area?

- ☐ Absent ☐ Scattered ☒ Common ☐ Abundant

ROCKS

Outcrops within this 1 ha area?

- ☒ Absent ☐ Scattered ☐ Common ☐ Abundant

Surface rocks of 10-30 cm diameter?

- ☒ Absent ☐ Scattered ☐ Common ☐ Abundant

Surface rocks of > 30 cm diameter?

- ☒ Absent ☐ Scattered ☐ Common ☐ Abundant

Cliffs and overhangs within this 1 ha area?

- ☒ Absent ☐ Scattered ☐ Common ☐ Abundant

If present, are they mostly?

- ☐ Sandstone ☐ Granite

- ☐ Basalt ☐ Karst

Other

CRACKING CLAY SOILS

- ☐ YES ☒ NO

HABITAT QUALITY FOR:

Hollow dependent fauna

- ☒ Absent ☐ Poor ☐ Average ☐ Good ☐ Excellent

Rock dependent fauna

- ☒ Absent ☐ Poor ☐ Average ☐ Good ☐ Excellent

Log dependent fauna

- ☐ Absent ☐ Poor ☐ Average ☒ Good ☐ Excellent

Small birds

- ☐ Absent ☐ Poor ☒ Average ☐ Good ☐ Excellent

OTHER HABITAT QUALITY ASPECTS:

Intact woodland
road reserve adjacent to State Forest.

WETLANDS

Wetlands present?

- ☐ YES ☐ NO

TYPE OF WETLAND:

MARINE:

- ☐ Coral reef ☐ Rocky shore ☐ Beach (all)
☐ Estuarine ☐ Tidal mudflat ☐ Tidal marsh
☐ Tidal forest (e.g. mangrove) ☐ Lagoon
☐ Saline / brackish lake / swamp

INLAND WETLAND:

- ☐ Creek ☒ Dry ☐ Flowing
☐ River ☐ Floodplain, river flat
☐ Small billabong, pools (<8 ha) ☐ Freshwater lake (>8 ha)
☐ Shrubby swamp ☐ Wooded swamp
☐ Gilgai ☐ Claypan
☐ Ephemeral Marsh / swamp with emergent veg

ARTIFICIAL WETLANDS:

- ☐ Large dam, reservoir (>8 ha) ☐ Small dam, pond, tank
☐ Irrigation channel, rice field ☐ Wastewater treatment
☐ Canal, drainage channel, ditch ☐ Salt pond / field

AREA OF WETLAND:

- ☐ < 2 ha ☐ 2-8 ha ☐ 8-100 ha ☐ >100 ha
☒ Water mostly
☐ Fresh ☐ Brackish / saline ☐ Salty

FEATURES PRESENT

- ☐ Broad, shallow, swampy areas for birds to feed
☐ Islands for birds to roost and nest
☐ Dead or living trees in the water (partly submerged) for roosting and nesting habitat
☐ Fencing to exclude grazing stock from direct access to the waters edge
☐ Dense tree and / or shrub cover close to the edge of the water

ADDITIONAL NOTES:

Rufous whistler 0548-544
 Grey Fantail
 Striped Pardalote
 Grey Shrike-thrush
 Double-barred Finch
 Red-backed Fairy-wren

SITE NO.

FA08

HABITAT ASSESSMENT FOR 1 ha SEARCH AREA

PROJECT ARP - GPN DATE 15/8/2007

SITE NO FA09 LOCATION GPS 65 Woodland adjacent to railway easement NAME D. Fleming

AMG 56 EASTING 313190 NORTHING 7380699

DISTANCE and DIRECTION from TOWN: SITE IS km (s) (N. S. E. W.) OF IN (state)

WAS GPS USED? ☒ YES ☐ NO IF YES, WHICH DATUM WAS USED? ☐ Aust (84/66) ☒ WGS 84 or GDA ALTITUDE

GENERAL

- ☒ Remnant trees ☐ Regrowth ☐ Plantation
- ☒ Native grasses (trees / shrubs may be present)
- ☐ Non-native grasses (trees / shrubs may be present)
- ☐ Improved pasture ☐ Other

Habitat type Ironbark WoodlandRE 12-11-6 / 12-11-14 VEG DX LANDFORM HLSOIL Clayey sand

LANDSCAPE

Shape of patch?

- ☒ Circular / square ☐ Irregular ☐ Strip <50 m
- ☐ Strip >50 m

Strip details: ☐ Creek / river ☐ Roadside☐ Windbreak ☐ Other Width

Area of full patch that contains 1 ha area:

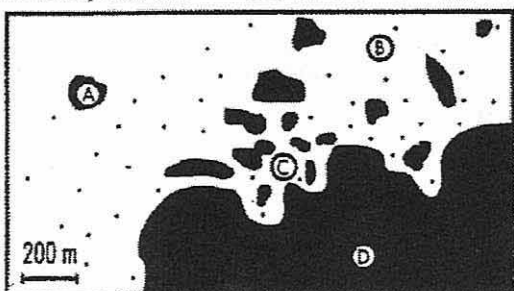
- ☐ <3 ha ☐ 3-10 ha ☐ 11-30 ha
- ☐ 31-100 ha ☐ 101-400 ha ☒ >400 ha

Is the 1 ha patch connected to other similar sized or larger patches of vegetation?

- ☒ YES ☐ NO

Position of this 1 ha search area relative to the surrounding tree / shrub cover?

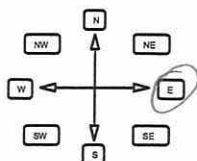
- ☐ A- Isolated ☐ B-Semi isolated
- ☐ C-Not isolated ☒ D-Continuous tree / shrub
- ☒ Continuous tree/shrub cover ☐ Scattered trees ☐ Grassland



Is this 1 ha area on a:

- ☐ Flat ☐ Ridge ☐ Gully ☒ Slope

If slope, give aspect over 20 m



Degrees of slope over 20 m:

10

VEGETATION STRUCTURE : OVERSTORY

Tree canopy cover (trees taller than 3 m):

- ☐ Absent ☒ Sparse ☐ Open ☐ Dense

If trees present:

- ☐ single tree species
- ☒ two or three species
- ☐ more than three species
- Are trees mostly? ☒ native ☐ exotic

Species: E. crebra, C. citrindora, E. tereticornis

Average height of overstory?

- ☐ 3-5 m ☐ 5-10 m ☐ 10-15 m ☒ >15 m

Are the trees?

- ☐ Even-aged (Trees mostly the same age or size)
- ☒ Multi-aged (Trees of varying size or age)

Are there obvious signs of dieback in the tree canopy?

- ☐ None ☒ Some dieback ☐ Extensive dieback

VEGETATION STRUCTURE : UNDERSTORY

Tall understory shrub cover (>2 m):

- ☐ Absent ☒ Scattered ☐ Common ☐ Abundant

If shrubs present:

- ☐ single shrub species
- ☒ two or three species
- ☐ more than three species
- Are shrubs mostly? ☒ native ☐ exotic

Species: Acacia sp., Alphitonia excelsa

Low shrub cover (0.5 m - 2 m):

- ☐ Absent ☒ Scattered ☐ Common ☐ Abundant

If shrubs present:

- ☐ single shrub species
- ☐ two or three species
- ☒ more than three species
- Are shrubs mostly? ☒ native ☐ exotic

Species: Xanthorrhoea sp., Diorella sp., Cryptostegia sp.

Dominant ground cover within this 1 ha area:

- ☒ Tussocks ☐ Hummocks ☐ Continuous grass / herbs
- ☐ Low Heath ☐ Weeds ☐ Bare dirt / rocks / litter

LAND USE

Used for?

- ☐ Mixed grazing ☐ Sheep ☐ Cattle
- ☐ Crops
- ☒ Other
- Crop type
- Other Forest Reserve

HABITAT ASSESSMENT (cont.)

KEY HABITAT FEATURES

HOLLOWS and LOGS

No. of hollows within 1 ha patch?

☐ Absent (0)
 ☒ Scattered (1-5)
 ☐ Common (6-10)
 ☐ Abundant (>10)
If present, are they mostly? ☐ dead ☒ living

Fallen trees or branches present 10-50 cm diameter?

☐ Absent (0)
 ☐ Scattered (1-10)
 ☐ Common (10-20)
 ☒ Abundant (>20)

Fallen trees or branches present >50 cm diameter?

☐ Absent (0)
 ☒ Scattered (1-5)
 ☐ Common (6-10)
 ☐ Abundant (>10)

Leaf litter?

☐ Absent
 ☐ Sparse
 ☒ Patchy
 ☐ Dense

Mistletoe within this 1 ha area?

☒ Absent
 ☐ Scattered
 ☐ Common
 ☐ Abundant

ROCKS

Outcrops within this 1 ha area?

☒ Absent
 ☐ Scattered
 ☐ Common
 ☐ Abundant

Surface rocks of 10-30 cm diameter?

☐ Absent
 ☒ Scattered
 ☐ Common
 ☐ Abundant

Surface rocks of > 30 cm diameter?

☒ Absent
 ☐ Scattered
 ☐ Common
 ☐ Abundant

Cliffs and overhangs within this 1 ha area?

☒ Absent
 ☐ Scattered
 ☐ Common
 ☐ Abundant

If present, are they mostly?

☐ Sandstone
 ☐ Granite

☐ Basalt
 ☐ Karst

☐ Other

CRACKING CLAY SOILS

☐ YES
 ☒ NO

HABITAT QUALITY FOR:

Hollow dependent fauna

☐ Absent
 ☐ Poor
 ☒ Average
 ☐ Good
 ☐ Excellent

Rock dependent fauna

☐ Absent
 ☒ Poor
 ☐ Average
 ☐ Good
 ☐ Excellent

Log dependent fauna

☐ Absent
 ☐ Poor
 ☐ Average
 ☒ Good
 ☐ Excellent

Small birds

☐ Absent
 ☐ Poor
 ☒ Average
 ☐ Good
 ☐ Excellent

OTHER HABITAT QUALITY ASPECTS: Evidence of past logging ∴ fewer than normal large old trees. Infestation of rubber vine & Lantana on lower slopes.

WETLANDS

Wetlands present?

☐ YES
 ☒ NO

TYPE OF WETLAND:

MARINE:

☐ Coral reef
 ☐ Rocky shore
 ☐ Beach (all)
 ☐ Estuarine
 ☐ Tidal mudflat
 ☐ Tidal marsh
 ☐ Tidal forest (e.g. mangrove)
 ☐ Lagoon
 ☐ Saline / brackish lake / swamp

INLAND WETLAND:

☐ Creek
 ☒ Dry
 ☐ Flowing
 ☐ River
 ☐ Floodplain, river flat
 ☐ Small billabong, pools (<8 ha)
 ☐ Freshwater lake (>8 ha)
 ☐ Shrubby swamp
 ☐ Wooded swamp
 ☐ Gilgai
 ☐ Claypan
 ☐ Ephemeral Marsh / swamp with emergent veg

ARTIFICIAL WETLANDS:

☐ Large dam, reservoir (>8 ha)
 ☐ Small dam, pond, tank
 ☐ Irrigation channel, rice field
 ☐ Wastewater treatment
 ☐ Canal, drainage channel, ditch
 ☐ Salt pond / field

AREA OF WETLAND:

☐ < 2 ha
 ☐ 2-8 ha
 ☐ 8-100 ha
 ☐ >100 ha
 ☒ Water mostly
 ☐ Fresh
 ☐ Brackish / saline
 ☐ Salty

FEATURES PRESENT

☐ Broad, shallow, swampy areas for birds to feed
 ☐ Islands for birds to roost and nest
 ☐ Dead or living trees in the water (partly submerged) for roosting and nesting habitat
 ☐ Fencing to exclude grazing stock from direct access to the waters edge
 ☐ Dense tree and / or shrub cover close to the edge of the water

ADDITIONAL NOTES:

Red-backed Fairy wren 550-552
 Blue-faced Honeyeater.
 Rabbit activity in easement.
 - burrows
 - scratchings.
 Gyrogonia lecher.

SITE NO.

FA09



Appendix D: Significant Fauna Species Dossiers



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D.1 EVR Species Potentially Impacted by the Pipeline

D.1.1 Brigalow Scaly-foot (*Paradelma orientalis*)

The Brigalow Scaly-foot inhabits eucalypt woodland and Brigalow scrub and is usually found under logs, rocks and debris, particularly in areas with cracking clay soils (Cogger 2000, Wilson 2005a). It has been observed to climb, in the early morning or evening, to perch well off the ground on the bark of rough Acacia trees. Potential habitat for the Brigalow Scaly-foot occurs along the proposed alignment in Ironbark woodland, therefore has the potential to impact this species. To minimise potential impacts on this species, the proposed alignment should minimise the amount of vegetation to be cleared. Therefore, from KP 0-9.3, Alignment 3 is the preferred option (depending upon assessment of the proposed entry / exit points) and Alignment 1 is the preferred option for the remainder of the route. Brigalow Scaly-foot individuals may also fall into the open trench and become trapped during construction. Implementing fauna retrieval methods during construction will help reduce any potential impact upon this species.

D.1.2 Yakka Skink (*Egernia rugosa*)

Yakka Skinks occur in a wide variety of habitats including Poplar Box, alluvial soils, low ridges, cypress on sands, belah, mulga and eucalypt woodland, log piles and rabbit warrens. Most of Australia's Yakka Skink population is distributed in south eastern Queensland, in both coastal and inland areas, while there are also satellite populations ranging north to the base of the Cape York Peninsula. The species is therefore widely distributed, although rare. The proposed pipeline traverses potential Yakka Skink habitat in Ironbark woodland and fringing riparian woodland, therefore, has the potential to impact this lizard. To minimise potential impacts on this species, the proposed alignment should minimise the amount of vegetation to be cleared. From KP 0-9.3, Alignment 2 is the preferred option (depending upon assessment of the proposed entry / exit points) and Alignment 1 is the preferred option for the remainder of the route. Yakka Skink individuals may also fall into the open trench and become trapped during construction. Implementing fauna retrieval methods during construction will help reduce any potential impact upon this species.

D.1.3 Black-breasted Button-quail (*Turnix melanogaster*)

The Black-Breasted Button-quail is a small cryptic bird that is restricted to dry rainforest, vine thicket and shrubby scrub with deep leaf litter in south eastern Queensland (Garnett and Crowley 2002). It forages by scratching in the leaf litter for insects. Adults appear to be sedentary, and form small groups typically composed of a female and several males (DOE 1997). The major threat to the Black-breasted Button-quail is land clearing, with over 90% of its habitat having been cleared, leading to local extinction and population fragmentation (Garnett and Crowley 2002). As a result, the species is comprised of small, localised sub-populations in suitable habitat (DOE 1997). Other threats include habitat degradation by grazing and, as a ground-dwelling bird that reacts to danger by becoming immobile, feral predators. This species is listed in the IUCN Red List because its total world population is thought to contain fewer than 2,500 mature individuals and this continues to decline in response to severe fragmentation of its habitat such that no single population is thought to exceed 250 mature individuals (Smyth and Young 1996).

No individuals of the Black-breasted Button-quail were recorded during this assessment. The preferred habitat of this species (vine thicket) is traversed by the proposed alignment at KP 8.2

and KP 12.8. As long as the alignment remains within the road reserve at these points, then no clearing of potential habitat is likely.

D.1.4 Large-eared Pied Bat (*Chalinolobus dwyeri*)

The Large-eared Pied Bat occurs in eucalypt forest and rainforest from central Queensland to south eastern NSW (Menkhorst and Knight 2004). Habitat requirements are poorly understood for this species, but most records are from drier sclerophyll forests and woodlands (DOE 1997). The Large-eared Pied Bat roosts in small groups in mine shafts, caves and the abandoned conical mud nests of Fairy Martins (Strahan 1995) and it has been suggested that natural roosts of this species may depend heavily on sandstone outcrops (Duncan *et al.* 1999). Currently, no maternity sites are known. This species appears to be sparsely distributed within its range, with localised distributions. Destruction of roost sites is a known threat to the Large-eared Pied Bat, and other possible threats include clearing of habitat for agriculture and urban development, and predation by feral animals (Duncan *et al.* 1999).

The Large-eared Pied Bat may utilise remnant and non-remnant woodland habitats with hollow-bearing trees along the entire alignment and particularly within areas adjacent to State Forest. No potential roost sites for this species were observed along the alignment. Given the relatively small amount of vegetation to be cleared, it is unlikely that the project will significantly impact upon this species. Consideration should be given to an alignment which minimises the clearing of preferred habitat.

D.1.5 Northern Quoll (*Dasyurus hallucatus*)

The Northern Quoll occurs in a variety of habitats including *Eucalyptus* open forest, monsoon rainforest and savanna woodland, but is most abundant in rocky eucalypt woodlands several disjunct populations across coastal northern Australia (Strahan 1995, Maxwell *et al.* 1996). This carnivorous marsupial dens in tree hollows and rock crevices, often near creeklines. The Northern Quoll was formerly distributed across northern Australia from Brisbane to the Kimberley region and the Pilbara, but has seriously declined in range and numbers (Strahan 1995, Menkhorst and Knight 2004), and now occurs in six main disjunct populations. The reasons for this decline are unclear, but Cane Toads are known to be seriously affecting populations in the Top End of the Northern Territory.

The Northern Quoll was not recorded during the present assessment. No preferred habitat of rocky eucalypt woodland will be traversed by the proposed alignment; however, this species may utilise riparian forest and woodland along some of the creeks and gullies. Given the relatively small amount of vegetation to be cleared, the pipeline is not expected to significantly impact upon the Northern Quoll; however, minimising removal of hollow trees and logs will reduce any potential impact.