

FINAL – ATTACHMENT B2

March 2024



# ASSESSMENT OF MATTERS OF NATIONAL ENVIRONMENTAL SIGNIFICANCE – PRELIMINARY DOCUMENTATION (2021/9137)

Mount Hopeful Wind Farm

# **FINAL – ATTACHMENT B2**

Prepared by
Umwelt (Australia) Pty Limited
on behalf of
Neoen Australia Pty Ltd

Report No. 22753/R03 Date: March 2024







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# **Table of Contents**

7.0	Likel	Likelihood of Occurrence Assessment			
	7.1	Threatened Ecological Communities	1		
	7.2	Threatened Flora	1		
	7.3	Threatened Fauna	2		
	7.4	Migratory Fauna	2		
Fig	ures				
Figure	7.1A	Cycas megacarpa Habitat	3		
Figure	7.2	Cossinia australiana Potential Habitat	5		
Figure	7.3	Samadera bidwillii Habitat	6		
Figure	7.4	Decaspermum struckoilicum Potential Habitat	7		
Figure	7.5	Koala Habitat	8		
Figure	7.6	Northern Quoll Habitat	15		
Figure	7.7	White-throated Needletail Habitat	16		
Figure	7.8	Ghost bat Potential Habitat	23		
Figure	7.9	Greater glider (southern and central) Habitat	30		
Figure		Grey-headed Flying-fox Potential Habitat	37		
Figure		Red Goshawk Potential Habitat	44		
Figure	7.12	Collared Delma Potential Habitat	51		
Tak	oles				
Table 7		Likelihood of Occurrence Assessment Results: Threatened Flora	1		
Table 7	7.2	Likelihood of Occurrence Assessment Results: Threatened Fauna	2		
Table 7	7.3	Likelihood of Occurrence Assessment Results: Migratory Fauna	2		



# 7.0 Likelihood of Occurrence Assessment

The likelihood of occurrence was evaluated for TECs, threatened species and migratory species identified in the PMST (Section 5.0). Key results of the likelihood of occurrence assessment are presented below in Section 7.1 to Section 7.4. The full likelihood of occurrence assessment is available in Appendix C.

As described in **Section 4.4**, suitable habitat for these values has been mapped within the Study Area using modelling criteria detailed per value in **Appendix E**.

# 7.1 Threatened Ecological Communities

Regional ecosystems analogous with three TECs were recorded within the Study Area however, these did not satisfy the condition thresholds and/or diagnostic criteria of the relevant TEC. Therefore, no TECs are considered likely to occur within the Study Area.

### 7.2 Threatened Flora

Two threatened flora species are known to the Study Area, confirmed during the field survey program: *Cycas megacarpa* and *Samadera bidwillii*. *Cycas megacarpa* was recorded extensively across the Study Area and was the subject of targeted surveys in 2022 and 2023 to ensure population estimates were robust. The number of *Cycas megacarpa* individuals within the Study Area based on data interpolation is 141,392 across an area of 16,975.8 ha. The count of *Cycas megacarpa* individuals within the Disturbance Footprint, captured during 2023 pre-clearance surveys, totals 10,179 individuals. While 10,179 individuals are known to occur within the Disturbance Footprint, the final impact to individuals is still to be confirmed, with detailed design ongoing. Avoidance and mitigation measures, such as micrositing of Project infrastructure will contribute to a reduction in the number of *Cycas megacarpa* individuals impacted, as well as the final Project design, which is yet to be confirmed.

In addition, two species were determined to have a moderate likelihood of occurring based on the presence of suitable habitat and recent and/or nearby records (**Table 7.1**).

Threatened flora habitat mapping is shown in **Figure 7.1** to **Figure 7.4**. In addition to **Figure 6.2** which shows the *Cycas megacarpa* and *Samadera bidwillii* field records, **Figure 7.1A** shows *Cycas megacarpa* known habitat (confirmed and suspected) within the Development Corridor and Disturbance Footprint, and **Figure 7.1B** displays estimated densities of *Cycas megacarpa* across the Study Area based on the data interpolation.

Table 7.1 Likelihood of Occurrence Assessment Results: Threatened Flora

Common Name	Scientific Name	EPBC Act Status	NC Act Status	Likelihood of Occurrence Outcome
-	Cycas megacarpa	Endangered	Endangered	Known
Quassia bidwillii	Samadera bidwillii	Vulnerable	Vulnerable	
cossinia	Cossinia australiana	Endangered	Endangered	Moderate
-	Decaspermum struckoilicum	Endangered	Endangered	



### 7.3 Threatened Fauna

Six threatened fauna species are known from the Study Area, confirmed during the field survey program (**Table 7.2**).

The likelihood of occurrence assessment determined that one further threatened fauna species has a moderate likelihood of occurrence within the Study Area (**Table 7.2**). No species were identified as having a high likelihood of occurrence.

Threatened fauna habitat mapping is shown in **Figure 7.5** to **Figure 7.13**.

Table 7.2 Likelihood of Occurrence Assessment Results: Threatened Fauna

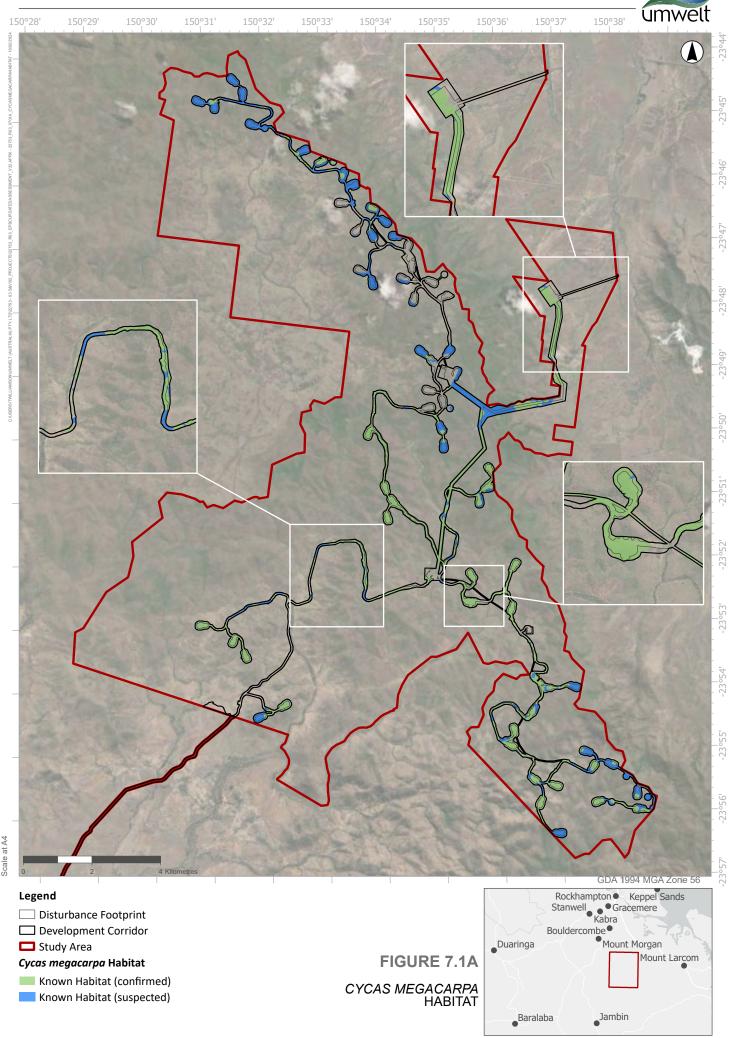
Common Name	Scientific Name	EPBC Act Status	NC Act Status	Likelihood of Occurrence Outcome
greater glider (southern and central)	Petauroides volans	Vulnerable	Vulnerable	Known
yellow-bellied glider (south- eastern)	Petaurus australis australis	Vulnerable	Vulnerable	
northern quoll	Dasyurus hallucatus	Endangered	Least Concern	
squatter pigeon (southern)	Geophaps scripta scripta	Vulnerable	Vulnerable	
white-throated needletail	Hirundapus caudacutus	Vulnerable, Migratory	Vulnerable	
koala	Phascolarctos cinereus	Endangered	Endangered	
collared delma	Delma torquata	Vulnerable	Vulnerable	Moderate

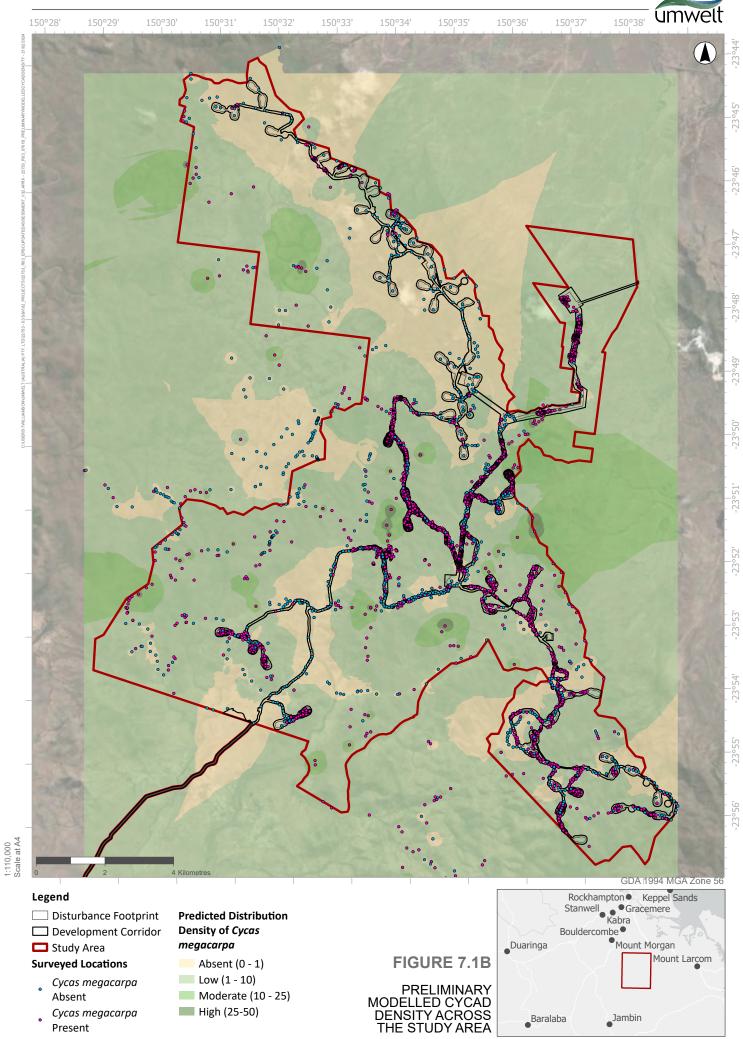
# 7.4 Migratory Fauna

Excluding the white-throated needletail (*Hirundapus caudacutus*) which is also listed threatened, two migratory fauna species are known from the Study Area, confirmed during field surveys. The likelihood of occurrence assessment determined that one species has a high likelihood of occurrence, and three species have a moderate likelihood of occurrence (**Table 7.3**). Migratory fauna habitat mapping is shown in **Figure 7.15** to **Figure 7.20**.

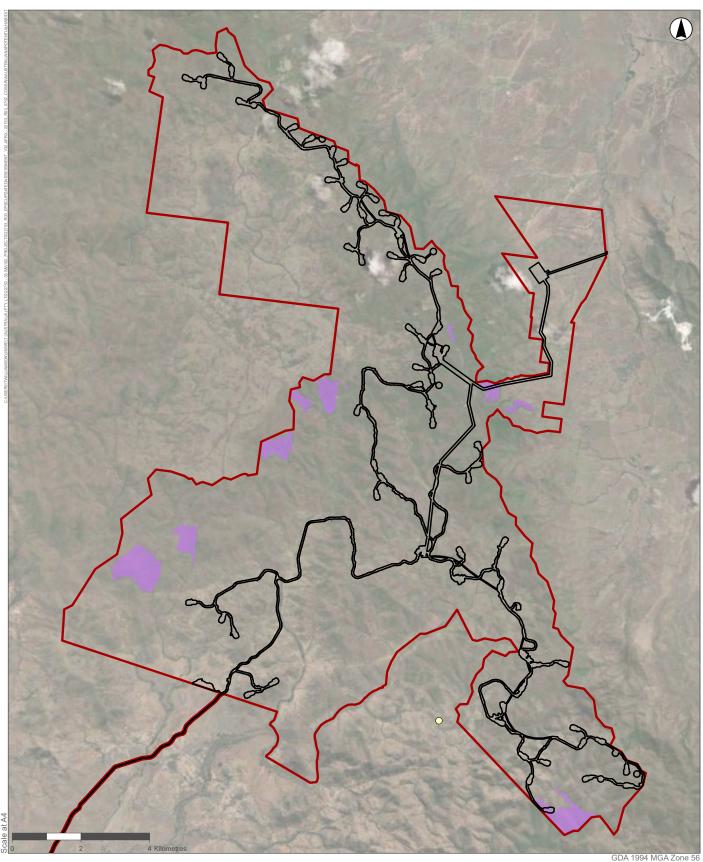
Table 7.3 Likelihood of Occurrence Assessment Results: Migratory Fauna

Common Name	Scientific Name	EPBC Act Status	NC Act Status	Likelihood of Occurrence Outcome
rufous fantail	Rhipidura rufifrons	Migratory	Special Least Concern	Known
spectacled monarch	Symposiarchus trivirgatus			
fork-tailed swift	Apus pacificus			High
black-faced monarch	Monarcha melanopsis			Moderate
oriental cuckoo	Cuculus optatus			
satin flycatcher	Myiagra cyanoleuca			









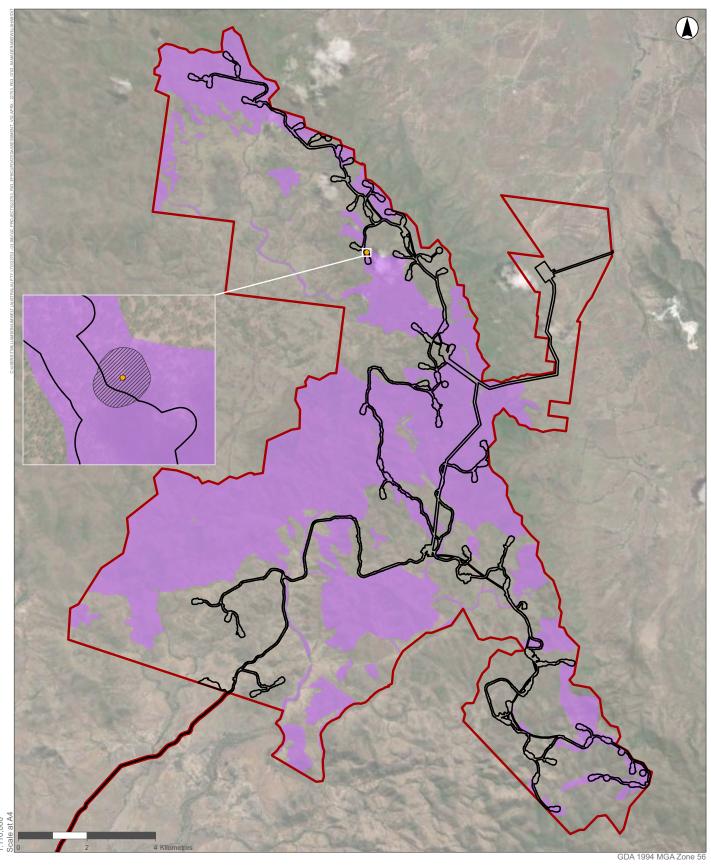
Cossinia australiana Record (ALA)
 Disturbance Footprint
 Study Area

Cossinia australiana Potential Habitat

FIGURE 7.2

COSSINIA AUSTRALIANA POTENTIAL HABITAT





Disturbance Footprint
Study Area

Samadera bidwillii (Vulnerable EPBC Act and NC Act) Record

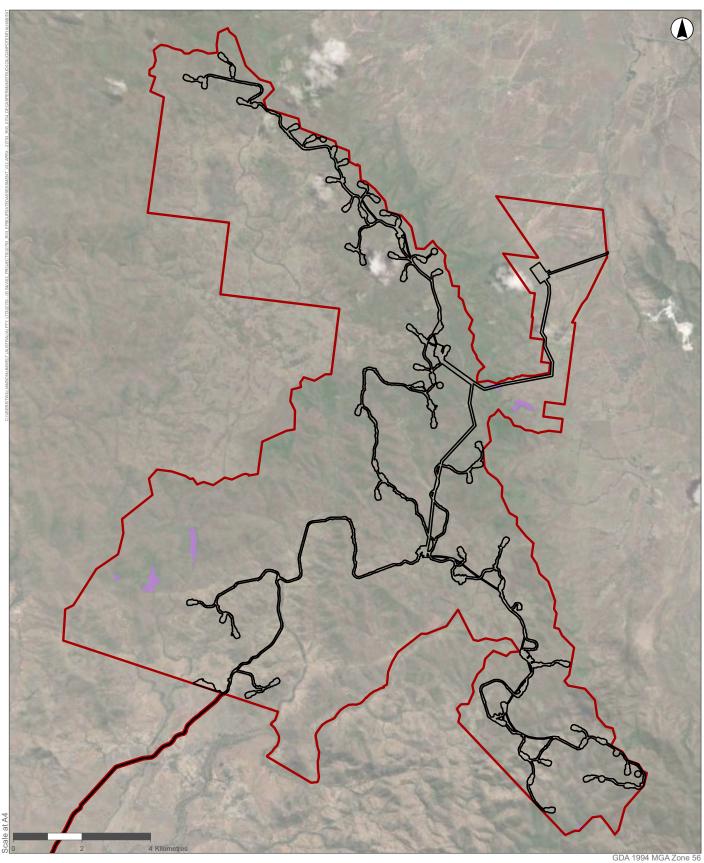
Habitat Critical to the Survival of Samadera bidwillii (no impact, complete avoidance)

Samadera bidwillii Habitat

FIGURE 7.3

SAMADERA BIDWILLII HABITAT





Disturbance Footprint
Study Area

Decaspermum struckoilicum Potential Habitat

FIGURE 7.4

DECASPERMUM STRUCKOILICUM POTENTIAL HABITAT

-23°57'40" -23°57'30" -23°57'20" -23°59'10" -23°58'50" -23°58'40" -23°58'30" -23°58'20" -23°58'10" -23°58' 150°16'30" 150°16'50" 150°16'40 150°17' 150°17'50" 150°17'40" 150°17'30" 150°17'20" 150°17'10" 150°18'50" 150°18'40" 150°18'30" 150°18'20" 150°18'10" 150°19' 150°19'30" 150°19'20" 150°19'10"

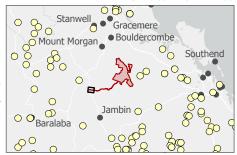
### Legend

- Koala Record (ALA)
- Disturbance Footprint
- Study Area

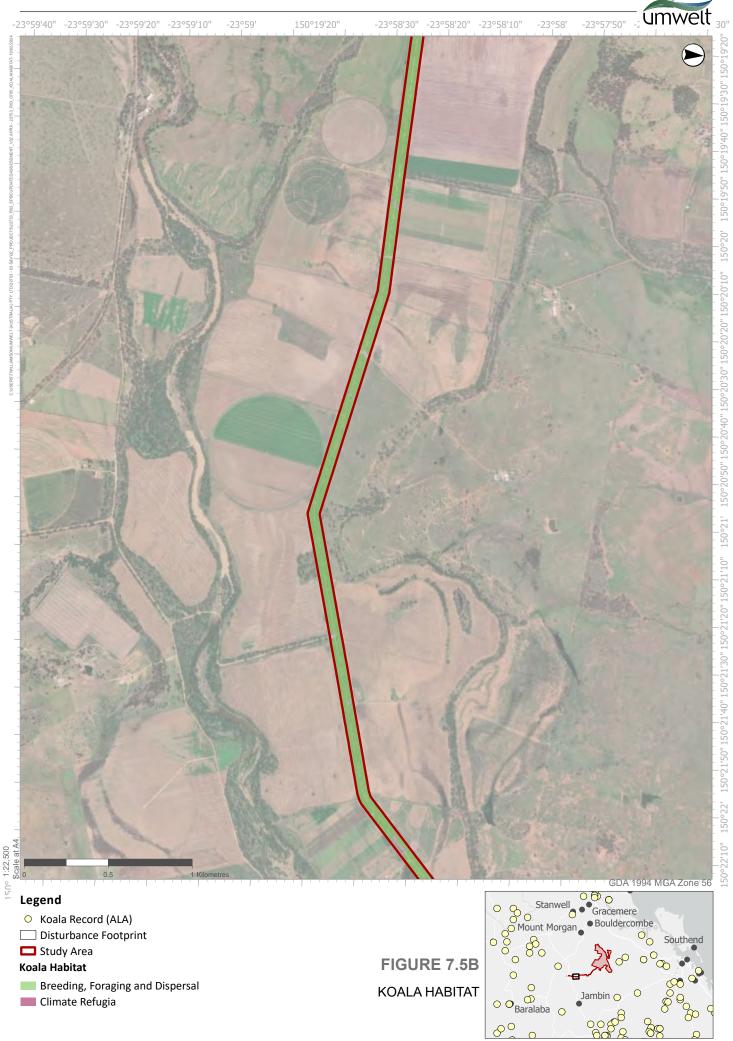
### **Koala Habitat**

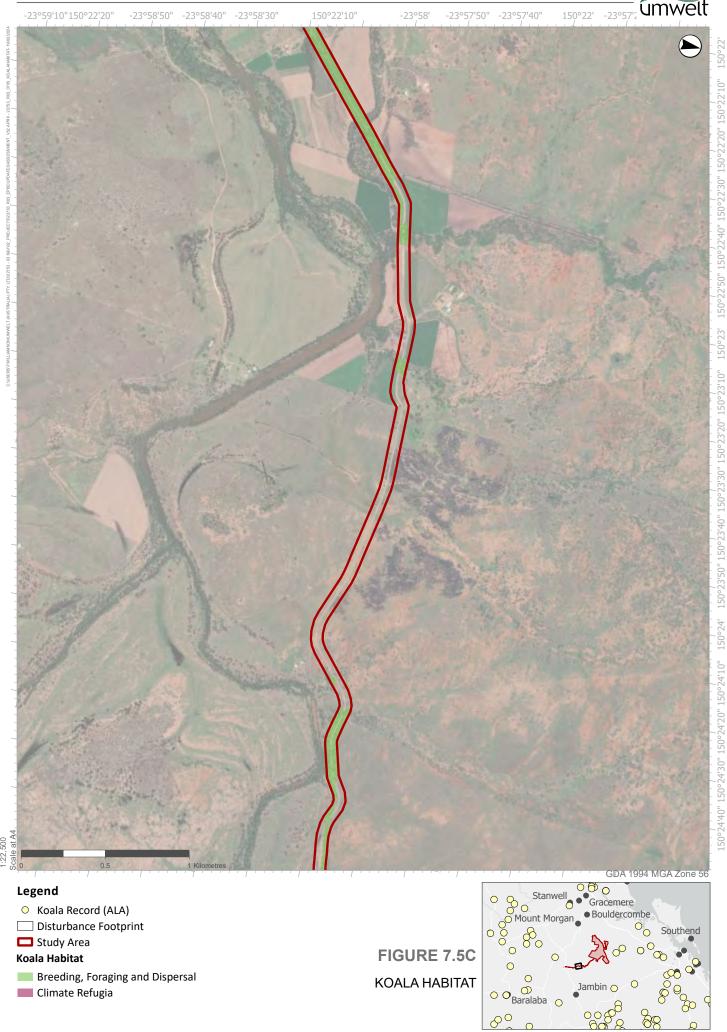
- Breeding, Foraging and Dispersal
- Climate Refugia

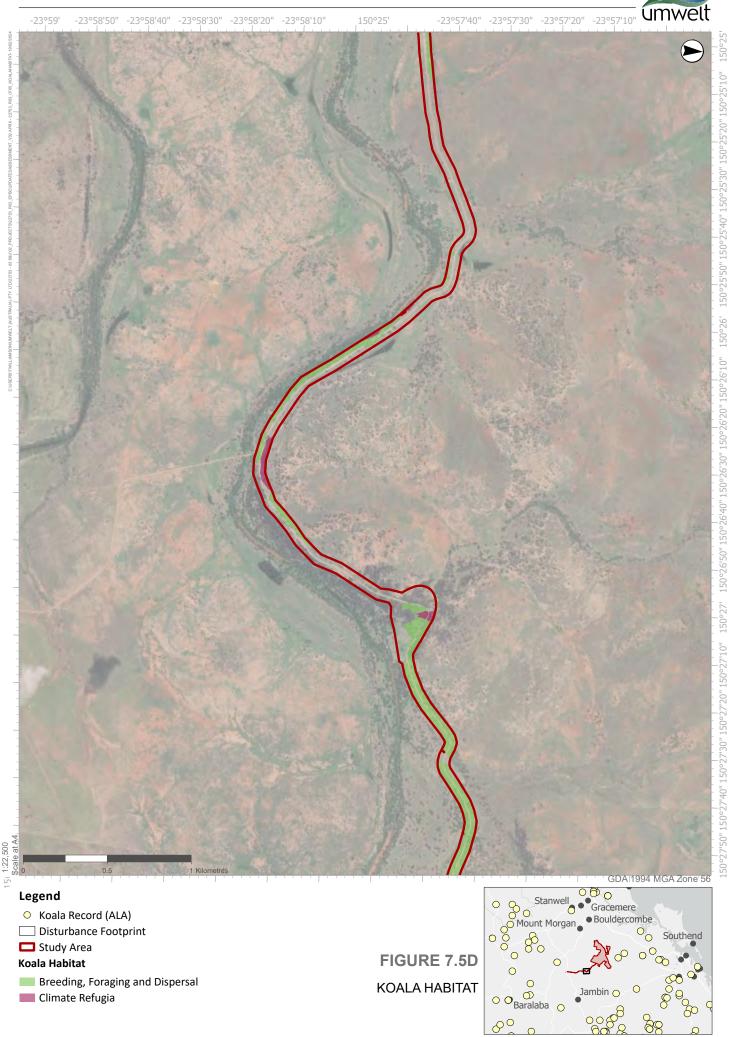
FIGURE 7.5A **KOALA HABITAT** 

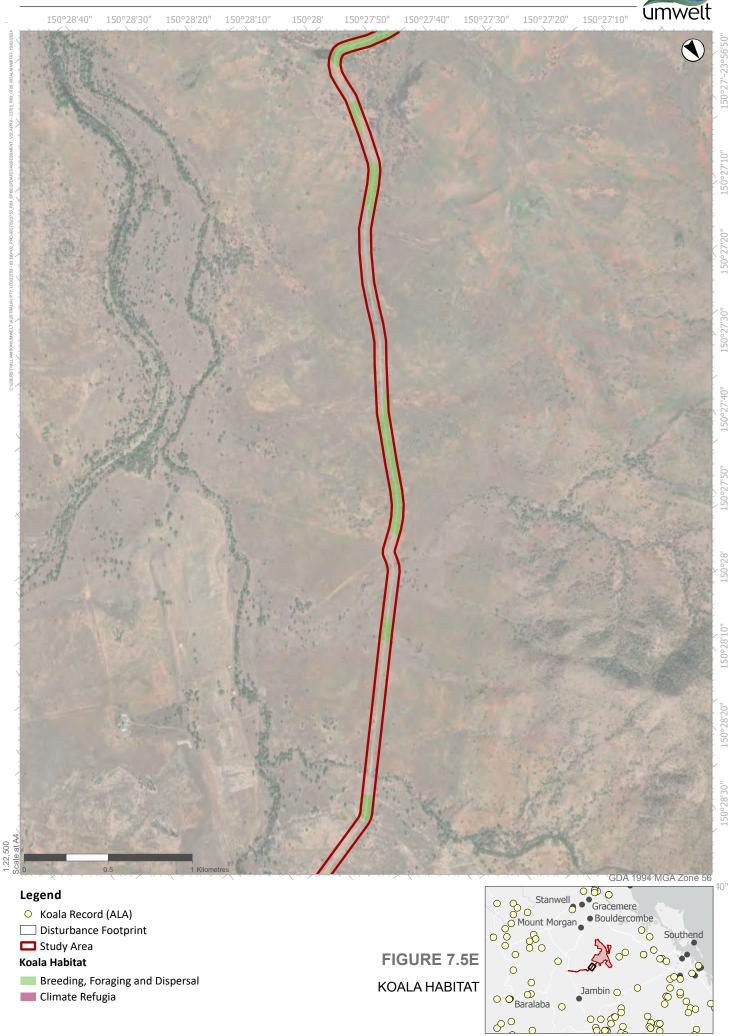


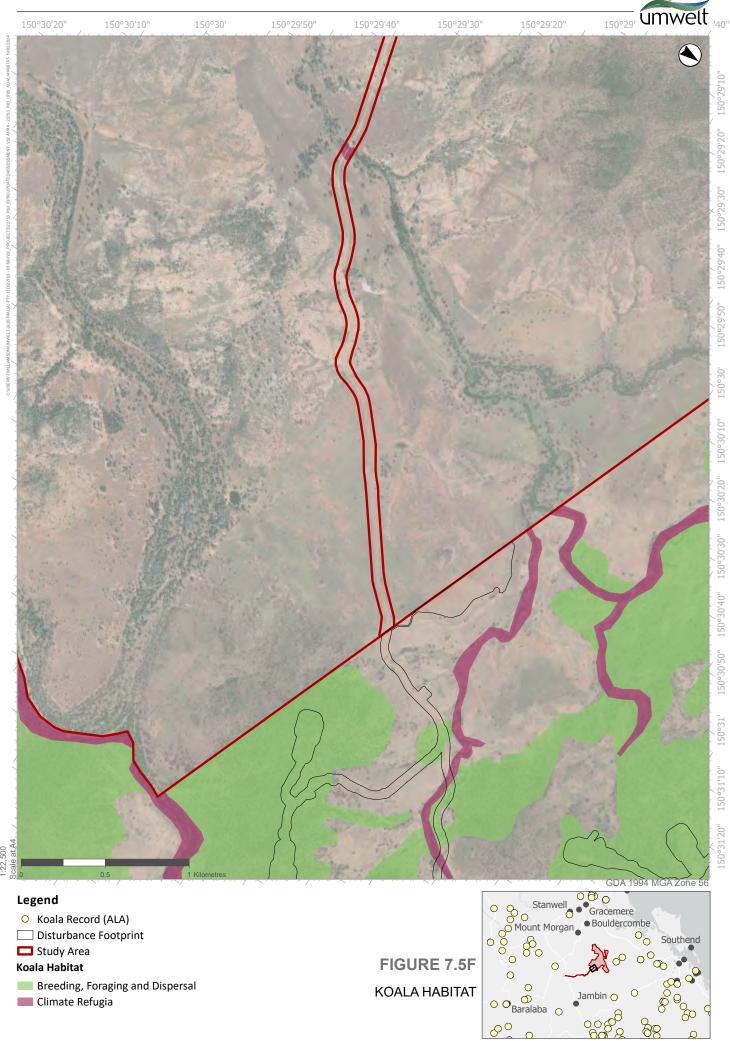
GDA 1994 MGA Zone 56

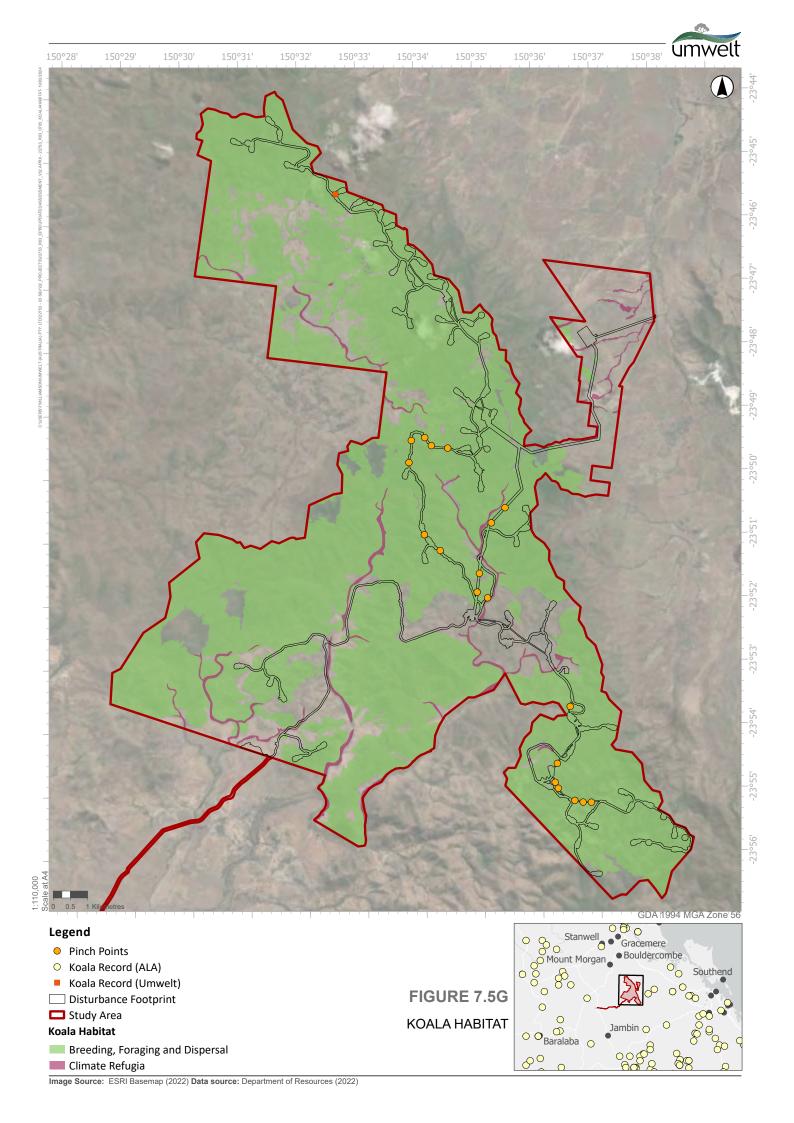


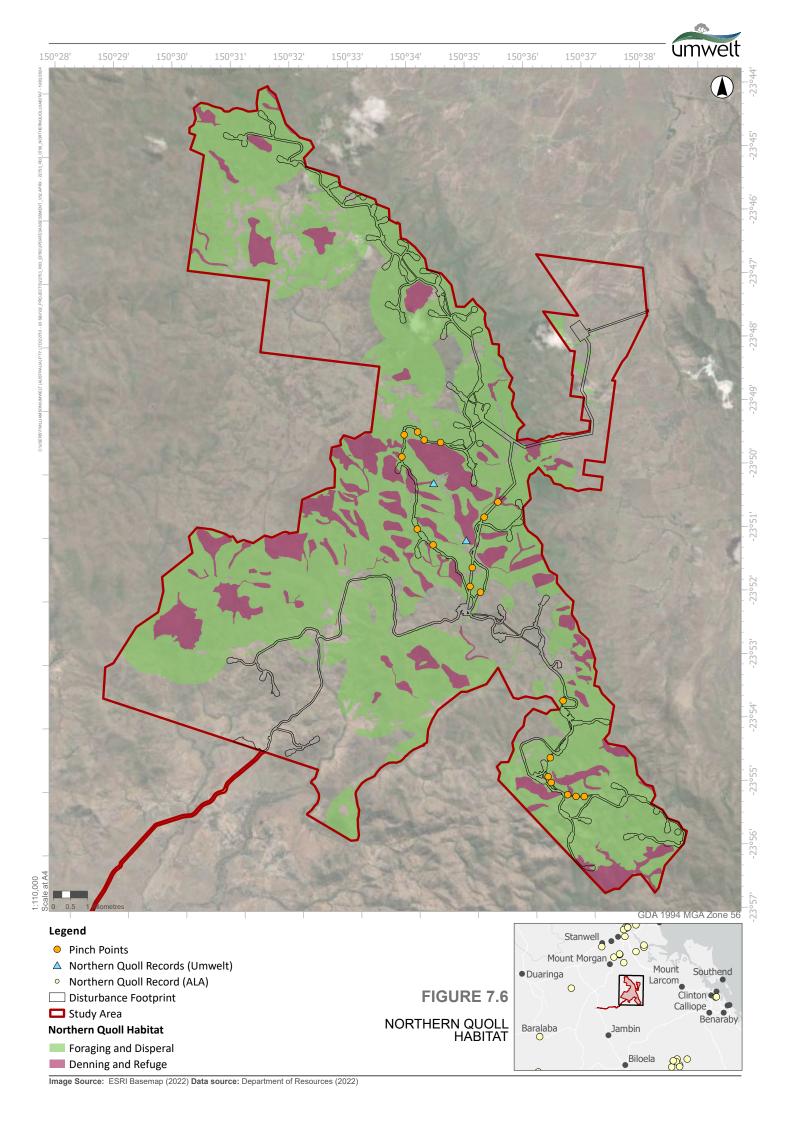
















💢 Mountains, Peaks and Capes (DoR)

△ White-throated Needletail Record (Umwelt)

• White-throated Needletail Record (ALA)

O Vantage Point Sites

→ Mountain Range (DoR)

☐ Disturbance Footprint

Study Area

White-throated Needletail Habitat

Foraging and dispersal
Roosting and foraging

Image Source: ESRI Basemap (2022) Data source: Department of Resources (2022)

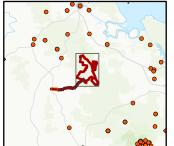


FIGURE 7.7A





💢 Mountains, Peaks and Capes (DoR)

- △ White-throated Needletail Record (Umwelt)
- White-throated Needletail Record (ALA)
- O Vantage Point Sites

Mountain Range (DoR)

☐ Disturbance Footprint

Study Area

#### White-throated Needletail Habitat

Foraging and dispersal

Roosting and foraging



FIGURE 7.7B





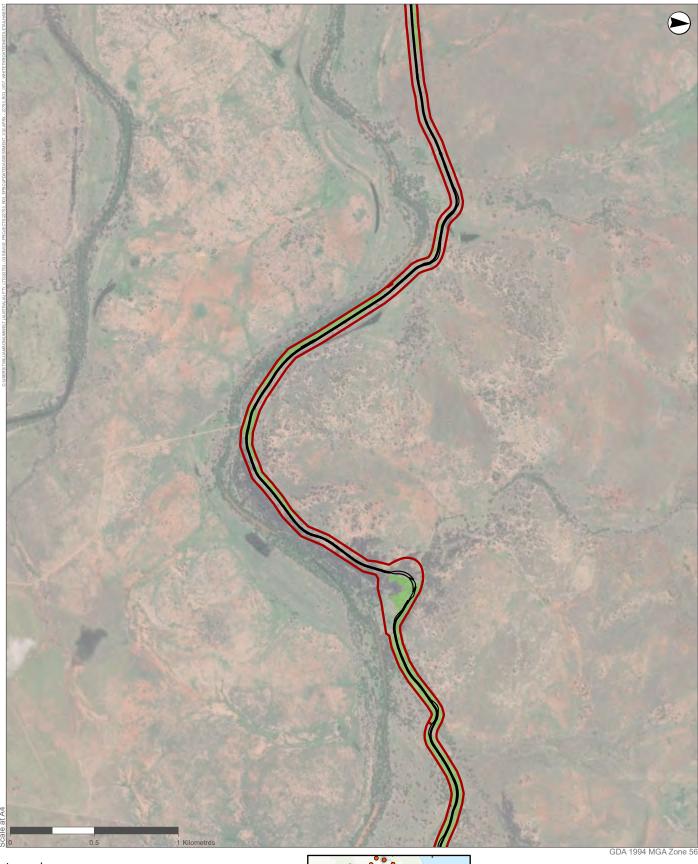
- Mountains, Peaks and Capes (DoR)
- ▲ White-throated Needletail Record (Umwelt)
- White-throated Needletail Record (ALA)
- O Vantage Point Sites
- Mountain Range (DoR)
- ☐ Disturbance Footprint
- Study Area

#### White-throated Needletail Habitat

Foraging and dispersal Roosting and foraging

FIGURE 7.7C





💢 Mountains, Peaks and Capes (DoR)

- △ White-throated Needletail Record (Umwelt)
- White-throated Needletail Record (ALA)
- O Vantage Point Sites

Mountain Range (DoR)

☐ Disturbance Footprint

Study Area

#### White-throated Needletail Habitat

Foraging and dispersal Roosting and foraging



FIGURE 7.7D





💢 Mountains, Peaks and Capes (DoR)

△ White-throated Needletail Record (Umwelt)

- White-throated Needletail Record (ALA)
- O Vantage Point Sites

Mountain Range (DoR)

☐ Disturbance Footprint

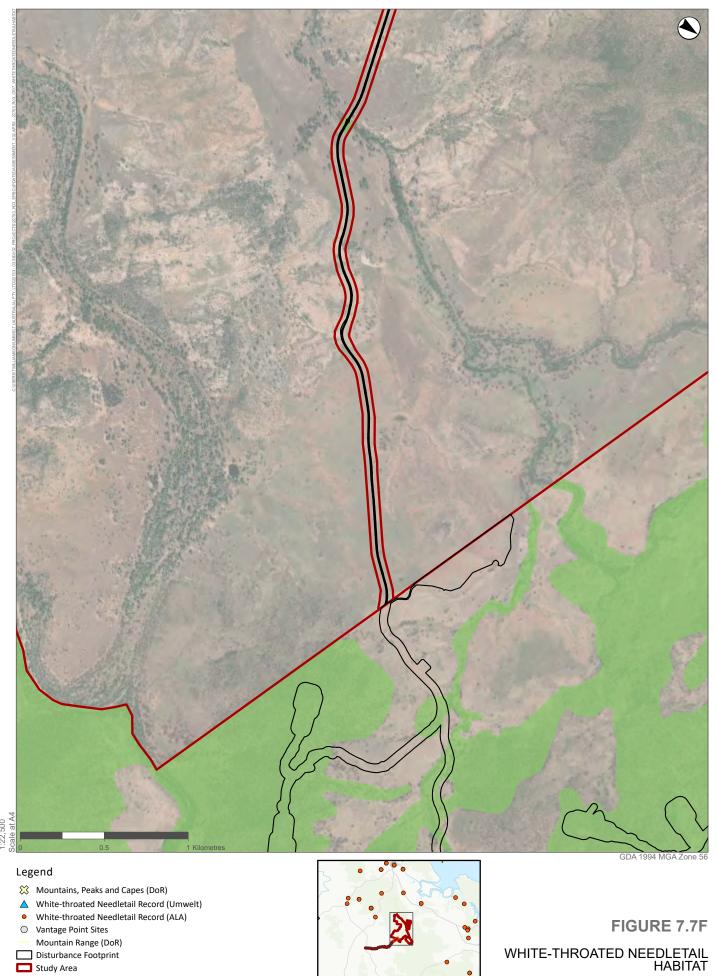
Study Area

#### White-throated Needletail Habitat

Foraging and dispersal Roosting and foraging

FIGURE 7.7E

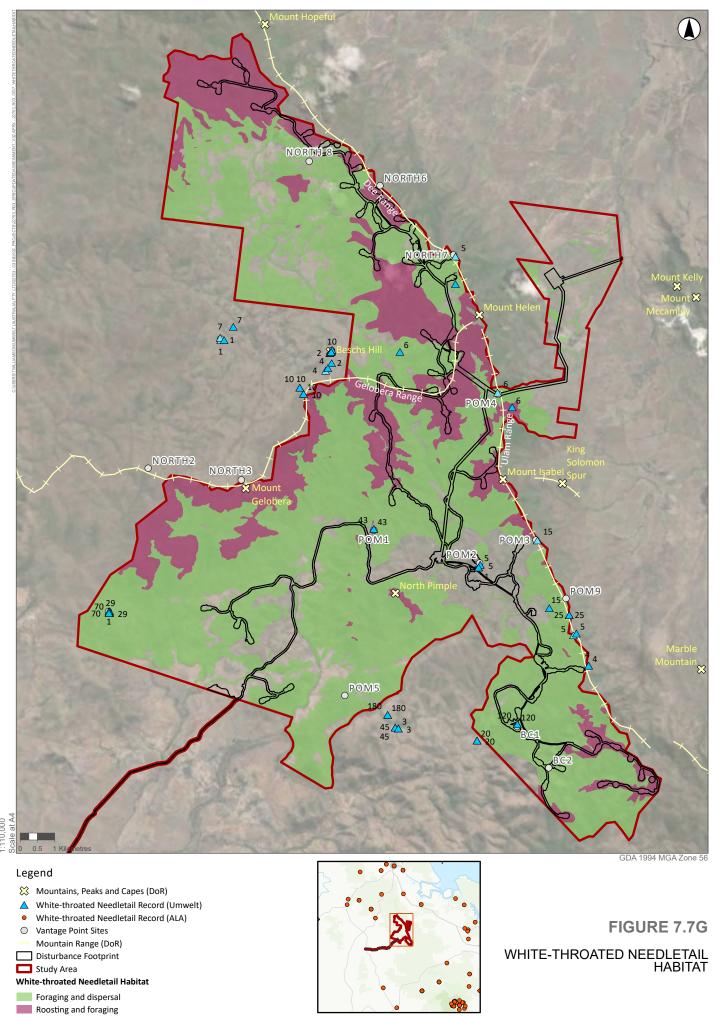




White-throated Needletail Habitat

Foraging and dispersal









Ghost Bat Record (ALA)
 Disturbance Footprint
 Study Area

Potential Ghost Bat Habitat

Seasonal Foraging and Dispersal



FIGURE 7.8A **GHOST BAT POTENTIAL HABITAT** 





Ghost Bat Record (ALA)
 Disturbance Footprint
 Study Area

Potential Ghost Bat Habitat

Seasonal Foraging and Dispersal

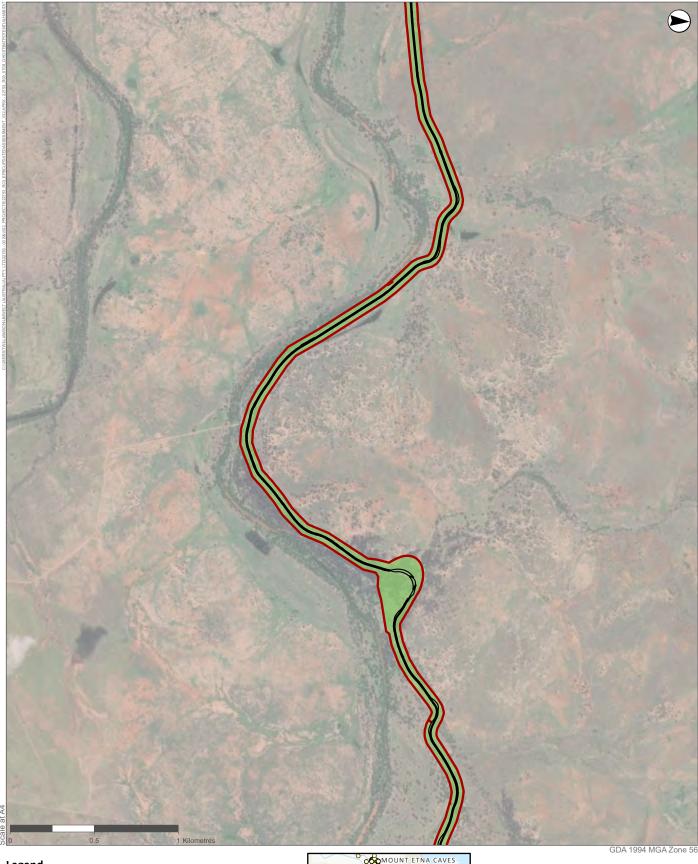


FIGURE 7.8B **GHOST BAT POTENTIAL HABITAT** 









Ghost Bat Record (ALA)
 Disturbance Footprint
 Study Area

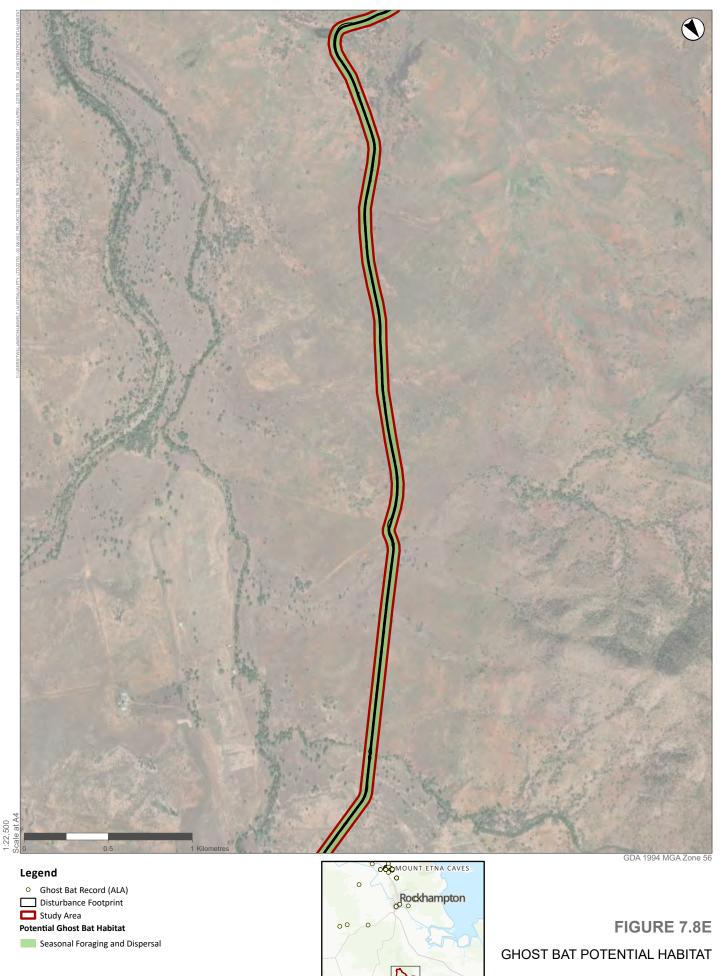
Potential Ghost Bat Habitat

Seasonal Foraging and Dispersal

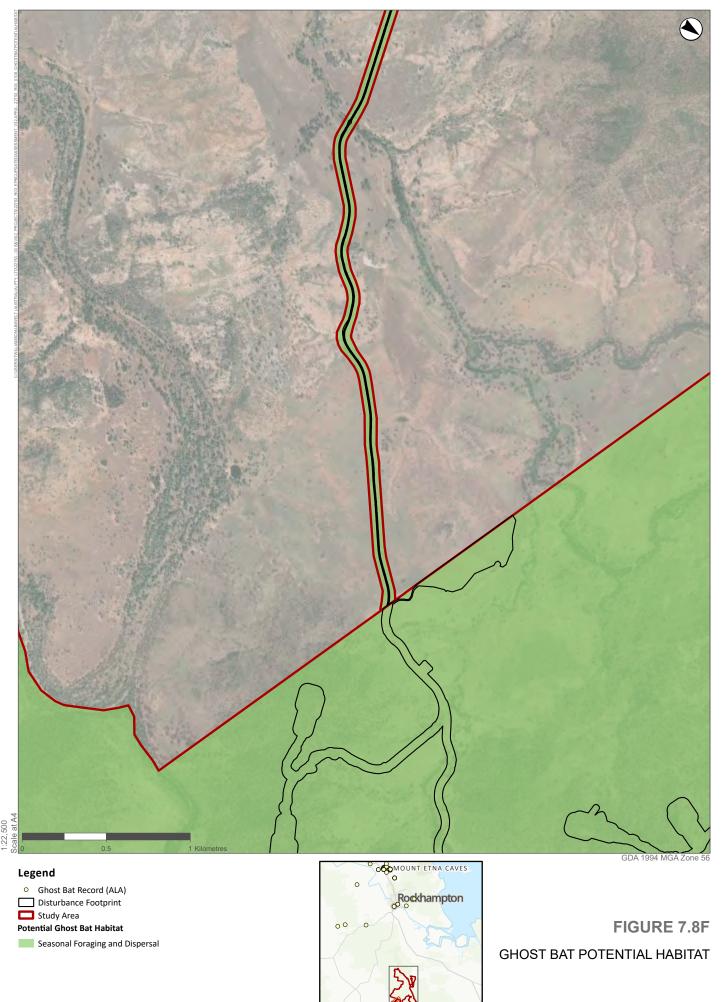


FIGURE 7.8D **GHOST BAT POTENTIAL HABITAT** 

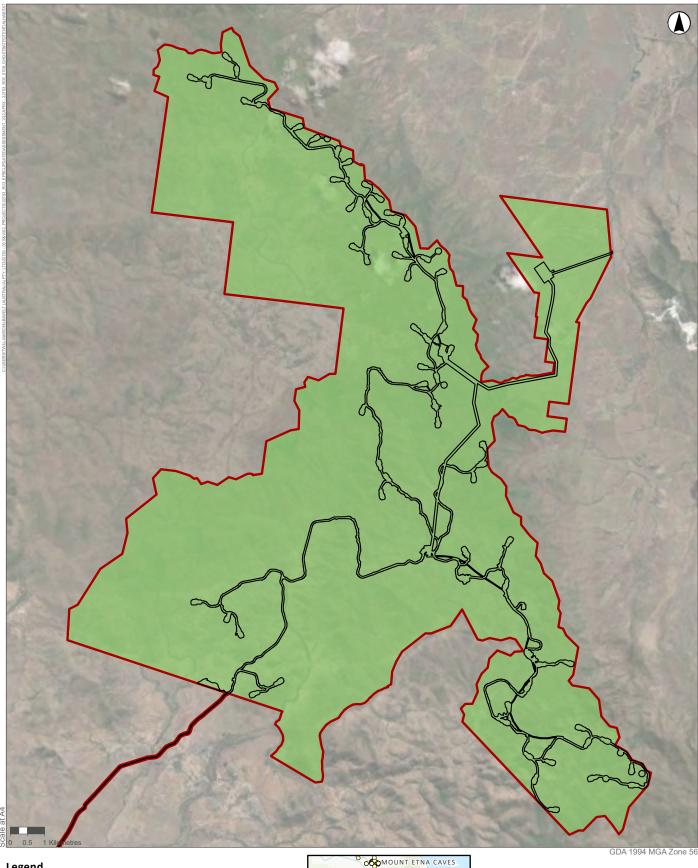












Ghost Bat Record (ALA)
 Disturbance Footprint
 Study Area

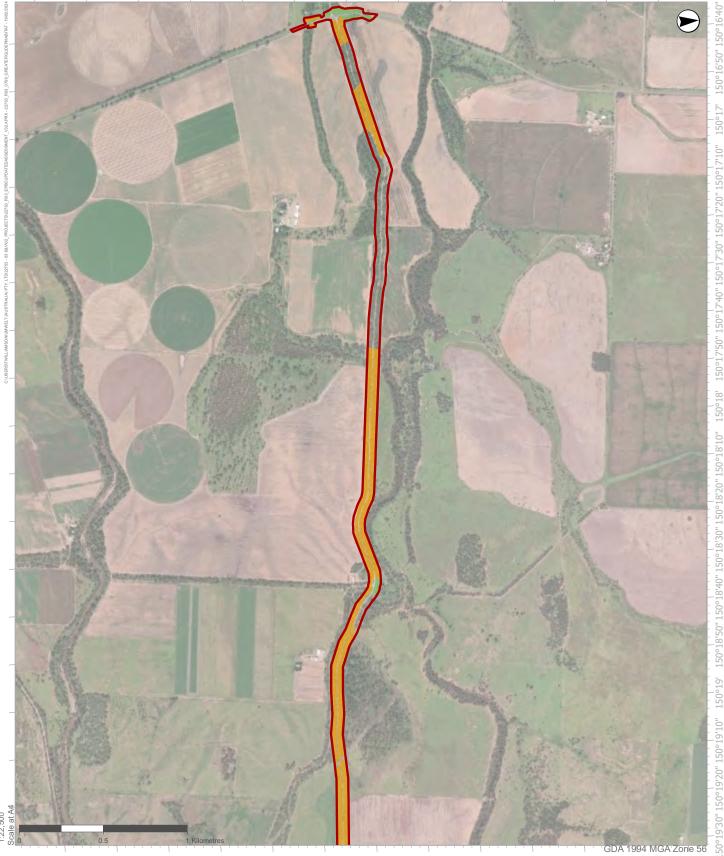
Potential Ghost Bat Habitat

Seasonal Foraging and Dispersal



FIGURE 7.8G **GHOST BAT POTENTIAL HABITAT**  -23°59'10" -23°59' -23°58'50" -23°58'40" -23°58'30" -23°58'20" -23°58'10" -23°58' 150°16'30" -23°57'40" -23°57'30" -23°57'20"





# Legend

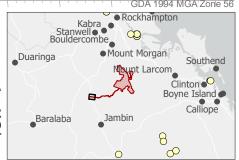
- △ Greater Glider (Southern and Central) Record (Umwelt)
- Greater Glider (Southern and Central) Record (ALA)
- Disturbance Footprint
- Study Area

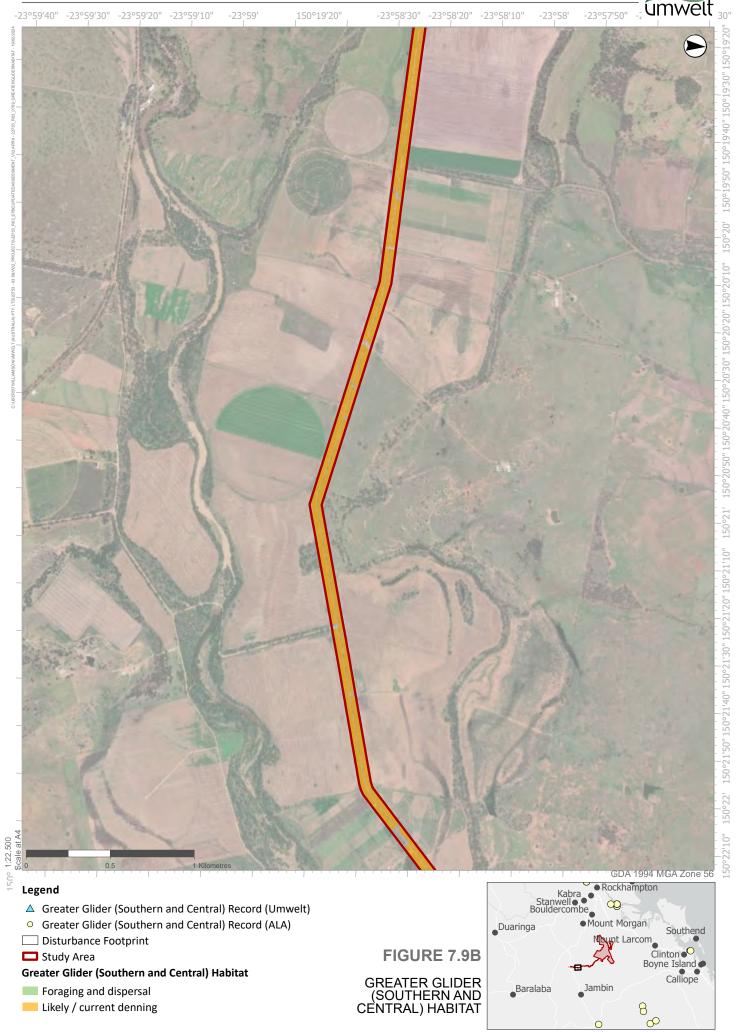
#### **Greater Glider (Southern and Central) Habitat**

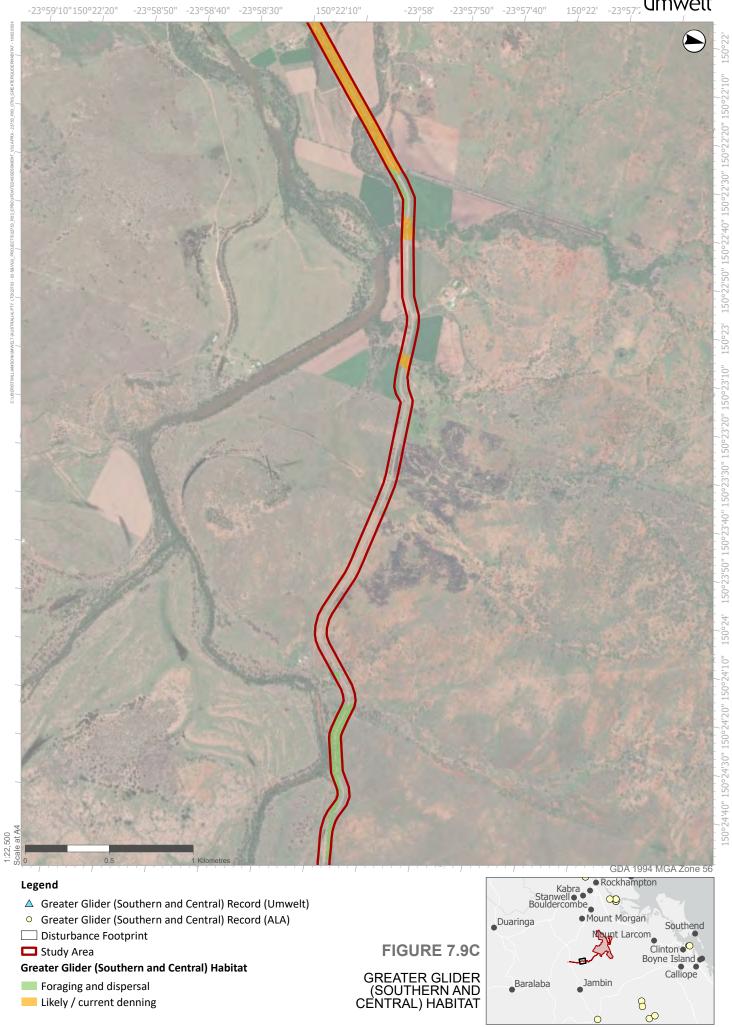
- Foraging and dispersal
- Likely / current denning

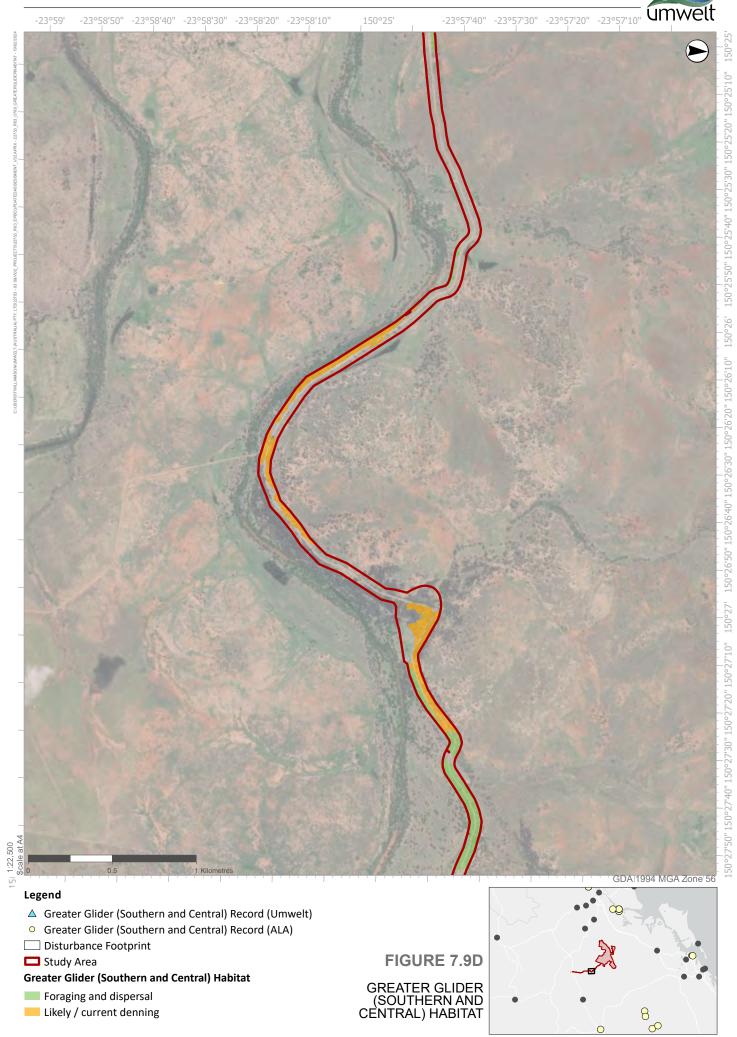
FIGURE 7.9A

GREATER GLIDER (SOUTHERN AND CENTRAL) HABITAT

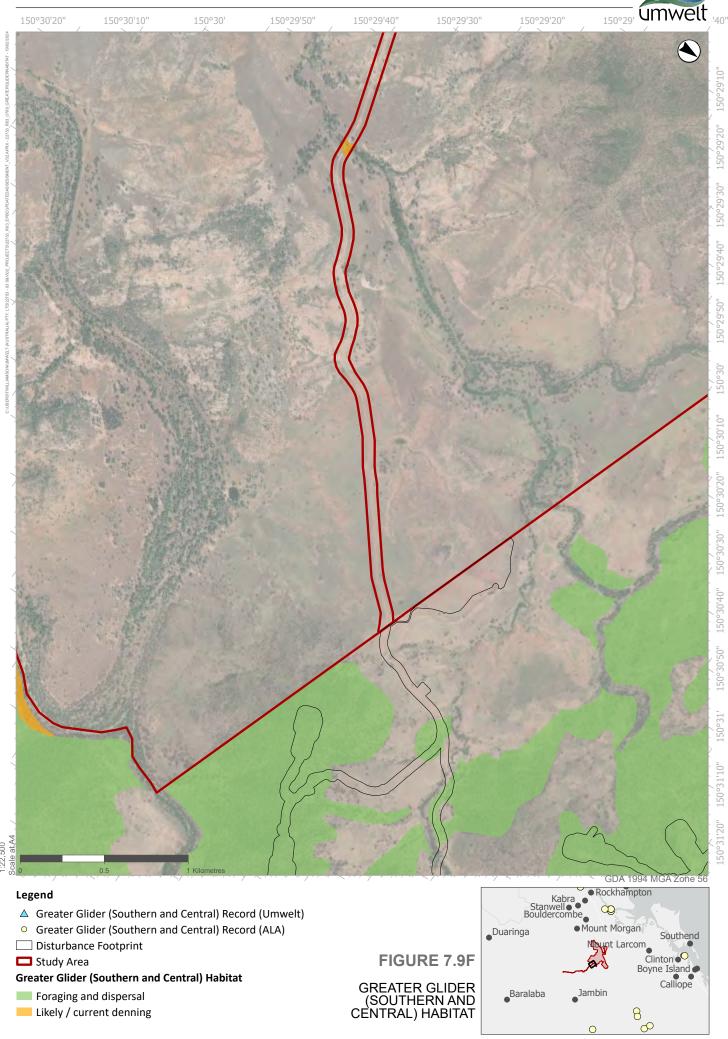


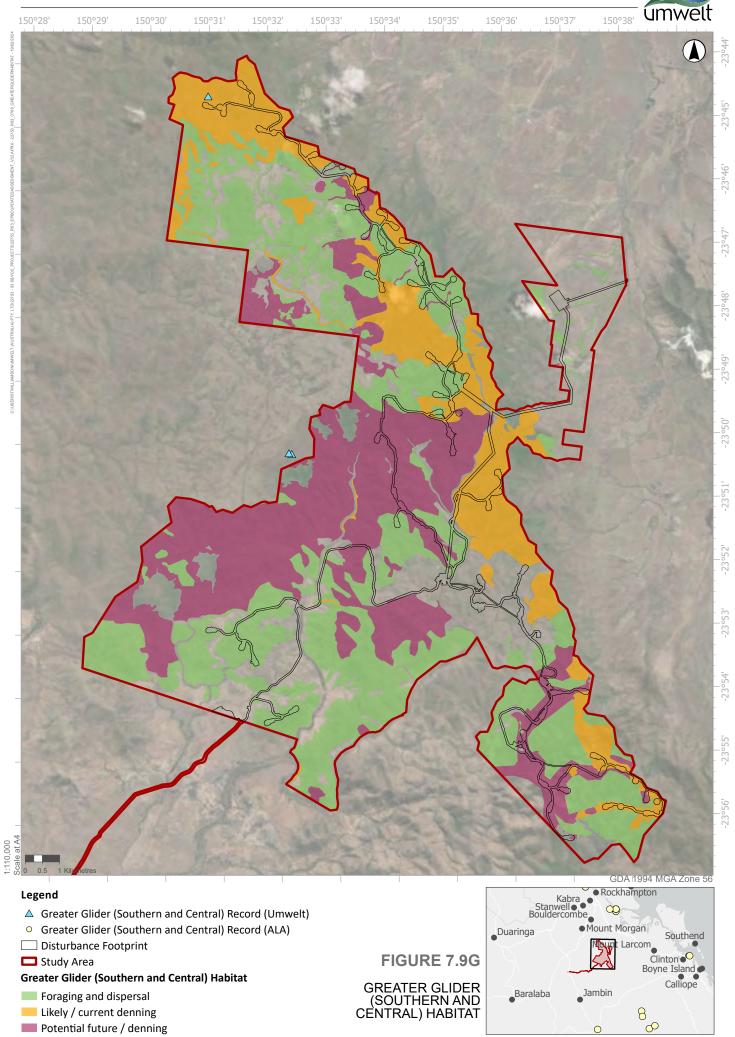






150°28'40" 150°28'30" 150°28'20" 150°28'10" 150°28' 150°27'40" 150°27'30" GDA 1994 MGA Zone 56 10" Rockhampton Legend Kabra Stanwell Bouldercombe △ Greater Glider (Southern and Central) Record (Umwelt) • Mount Morgan Greater Glider (Southern and Central) Record (ALA) Duaringa Disturbance Footprint Clinton FIGURE 7.9E Study Area Boyne Island Calliope **Greater Glider (Southern and Central) Habitat** GREATER GLIDER (SOUTHERN AND CENTRAL) HABITAT Baralaba Foraging and dispersal 8









○ Grey-headed Flying-fox Record (ALA)

▲ Roost (National Flying-fox Monitoring Program)

Disturbance Footprint
Study Area

Potential Grey-headed Flying-fox Habitat

Foraging and Dispersal



FIGURE 7.10A





- Grey-headed Flying-fox Record (ALA)

  ▲ Roost (National Flying-fox Monitoring Program)
- ☐ Disturbance Footprint
- Study Area

Potential Grey-headed Flying-fox Habitat

Foraging and Dispersal



FIGURE 7.10B





- Grey-headed Flying-fox Record (ALA)

  ▲ Roost (National Flying-fox Monitoring Program)
- ☐ Disturbance Footprint

Study Area

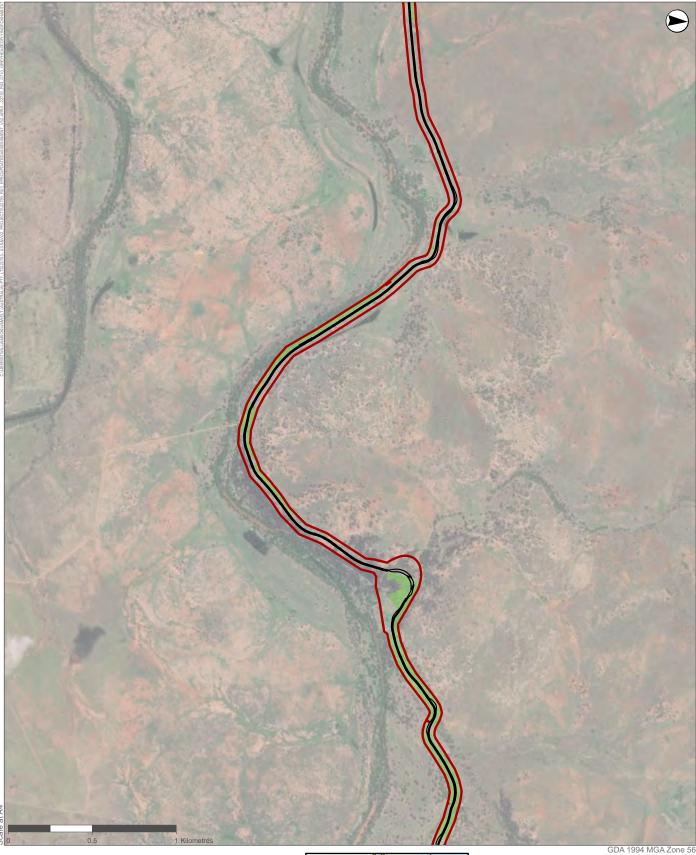
Potential Grey-headed Flying-fox Habitat

Foraging and Dispersal



**FIGURE 7.10C** 





○ Grey-headed Flying-fox Record (ALA)

▲ Roost (National Flying-fox Monitoring Program)

☐ Disturbance Footprint

Study Area

Potential Grey-headed Flying-fox Habitat

Foraging and Dispersal



FIGURE 7.10D





○ Grey-headed Flying-fox Record (ALA)

▲ Roost (National Flying-fox Monitoring Program)

☐ Disturbance Footprint

Study Area

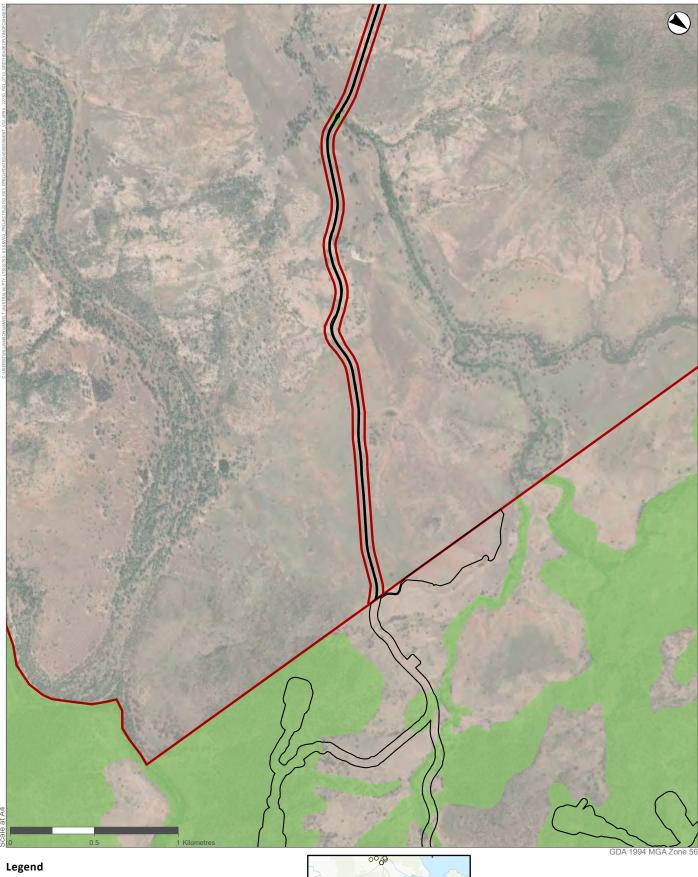
Potential Grey-headed Flying-fox Habitat

Foraging and Dispersal



FIGURE 7.10E





- Grey-headed Flying-fox Record (ALA)

  ▲ Roost (National Flying-fox Monitoring Program)
- Disturbance Footprint
  Study Area

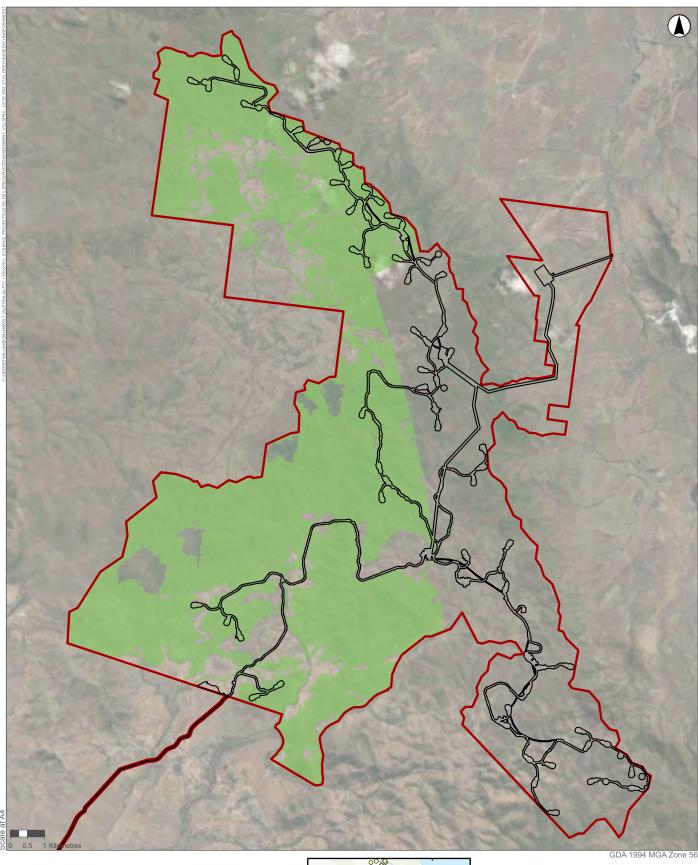
Potential Grey-headed Flying-fox Habitat

Foraging and Dispersal



FIGURE 7.10F





- Grey-headed Flying-fox Record (ALA)

  ▲ Roost (National Flying-fox Monitoring Program)

☐ Disturbance Footprint

Study Area

Potential Grey-headed Flying-fox Habitat

Foraging and Dispersal



FIGURE 7.10G





Red Goshawk Record (ALA)
 Disturbance Footprint
 Study Area

Potential Red Goshawk Habitat

Marginal Foraging and Dispersal



**FIGURE 7.11** 





Red Goshawk Record (ALA)
 Disturbance Footprint
 Study Area

Potential Red Goshawk Habitat

Marginal Foraging and Dispersal



**FIGURE 7.11** 





Red Goshawk Record (ALA)
 Disturbance Footprint
 Study Area

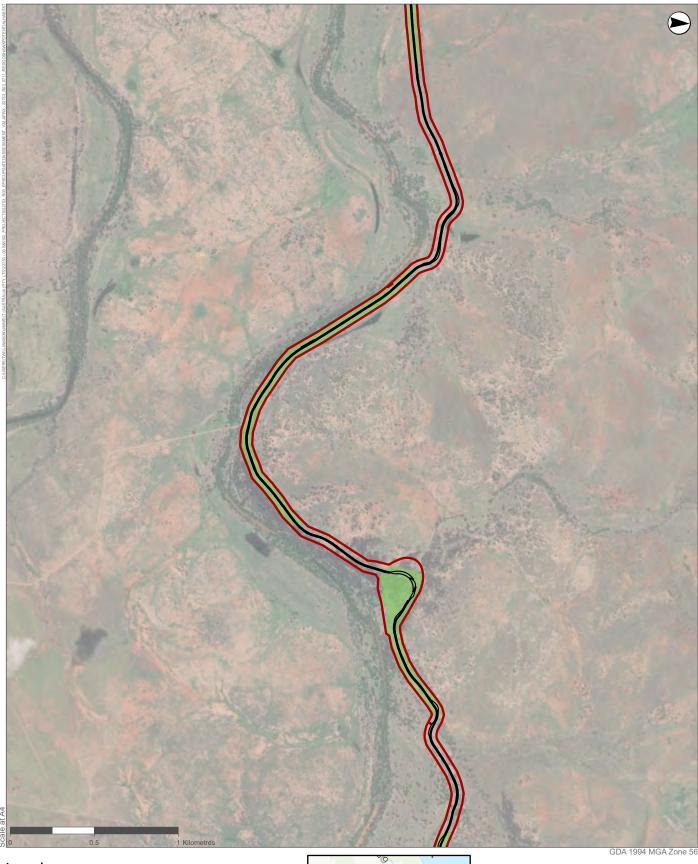
Potential Red Goshawk Habitat

Marginal Foraging and Dispersal



**FIGURE 7.11** 





Red Goshawk Record (ALA)
 Disturbance Footprint
 Study Area

Potential Red Goshawk Habitat

Marginal Foraging and Dispersal



**FIGURE 7.11** 





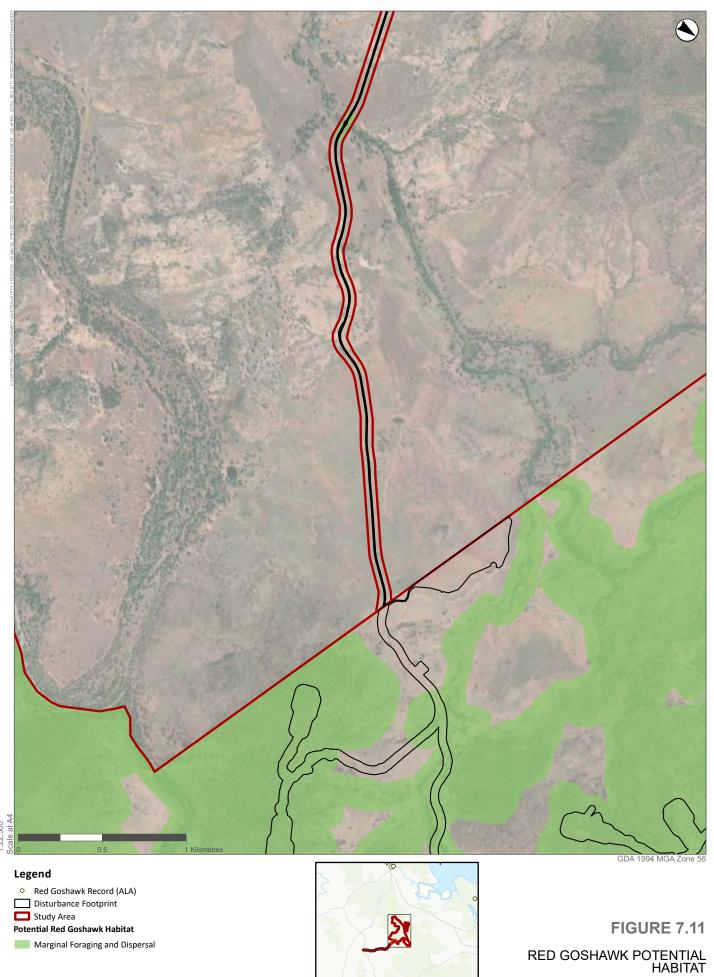
Potential Red Goshawk Habitat

Marginal Foraging and Dispersal

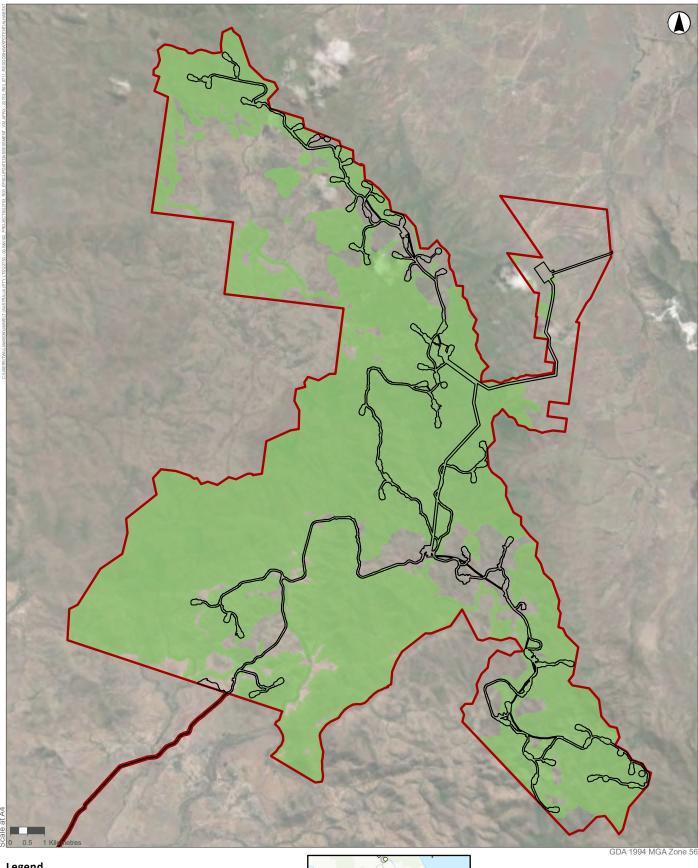


**FIGURE 7.11** 









Red Goshawk Record (ALA)
 Disturbance Footprint
 Study Area

Potential Red Goshawk Habitat

Marginal Foraging and Dispersal



**FIGURE 7.11** 

