

FINAL - ATTACHMENT B2

August 2023



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

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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 of Attachment B1). 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 of Attachment B4.

As described in **Section 4.4** of Attachment B1, suitable habitat for these values has been mapped within the Study Area using modelling criteria detailed per value in **Appendix E** of Attachment B4.

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

One threatened flora species is known to the Study Area, confirmed during the field survey program: *Cycas megacarpa*. This species was recorded extensively across the Study Area and was the subject of targeted surveys in 2022 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.

In addition to the one known threatened flora species, three 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** of Attachment B1 which shows the *Cycas megacarpa* field records, **Figure 7.1A** shows modelled habitat within the Development Corridor and **Figure 7.1B** displays estimated densities 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
cossinia	Cossinia australiana	Endangered	Endangered	Moderate
-	Decaspermum struckoilicum	Endangered	Endangered	
quassia	Samadera bidwillii	Vulnerable	Vulnerable	

7.3 Threatened Fauna

Five 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 a further two threatened fauna species have 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 of Attachment B3.

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	
collared delma	Delma torquata	Vulnerable	Vulnerable	Moderate
koala	Phascolarctos cinereus	Endangered	Endangered	Moderate

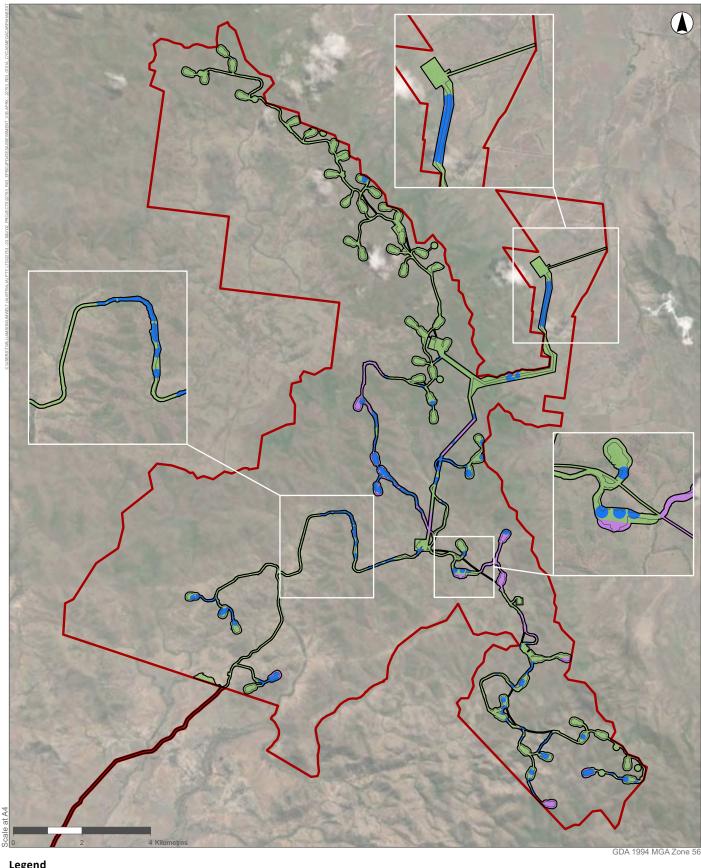
7.4 Migratory Fauna

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 7.20** of Attachment B3.

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	Known
spectacled monarch	Symposiarchus trivirgatus		Concern	
fork-tailed swift	Apus pacificus			High
black-faced monarch	Monarcha melanopsis			Moderate
oriental cuckoo	Cuculus optatus			
satin flycatcher	Myiagra cyanoleuca			



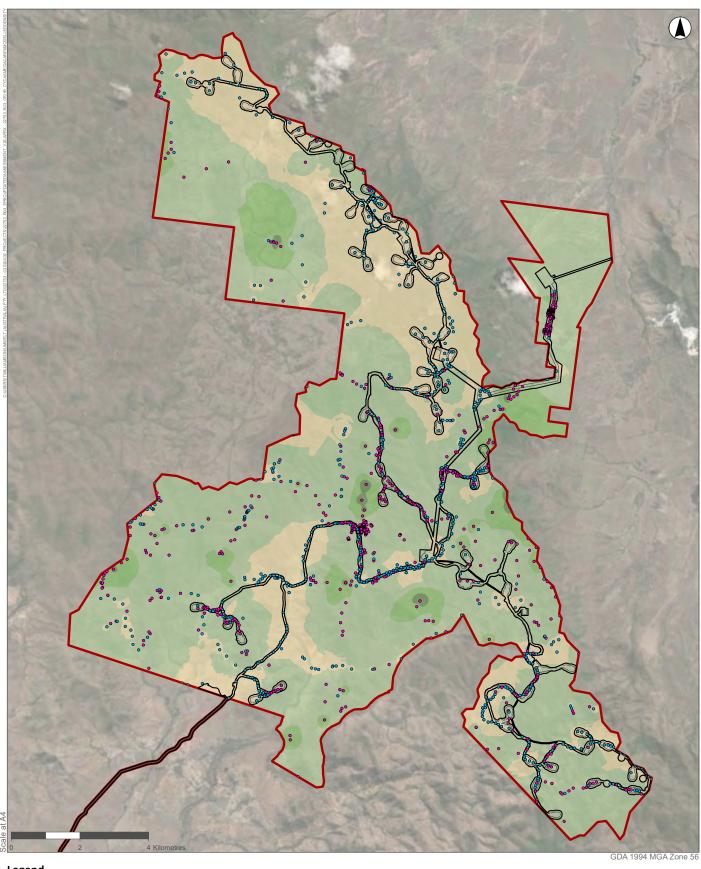




Disturbance Footprint
Development Corridor
Study Area
Cycas megacarpa Habitat Known (confirmed)
Known (suspected)
Nil Recorded

FIGURE 7.1A CYCAS MEGACARPA HABITAT





Disturbance Footprint
Development Corridor
Study Area
Surveyed Locations

Cycas megacarpa Absent
 Cycas megacarpa Present

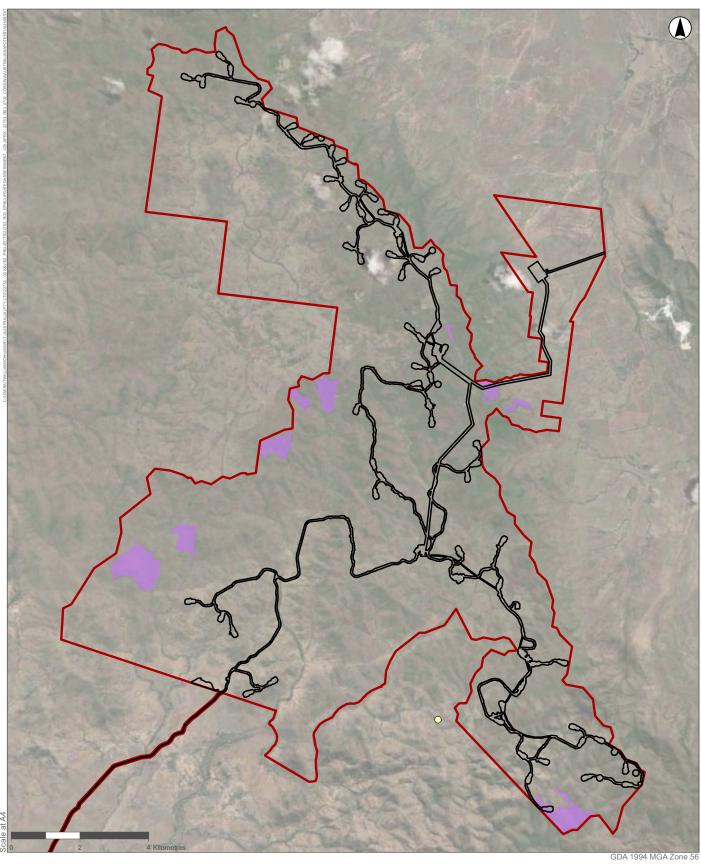
Predicted Distribution Density of Cycas megacarpa

Absent (0 - 1)
Low (1 - 10)
Moderate (10 - 25)
High (25-50)

FIGURE 7.1B

CYCAS MEGACARPA MODELLED DENSITY



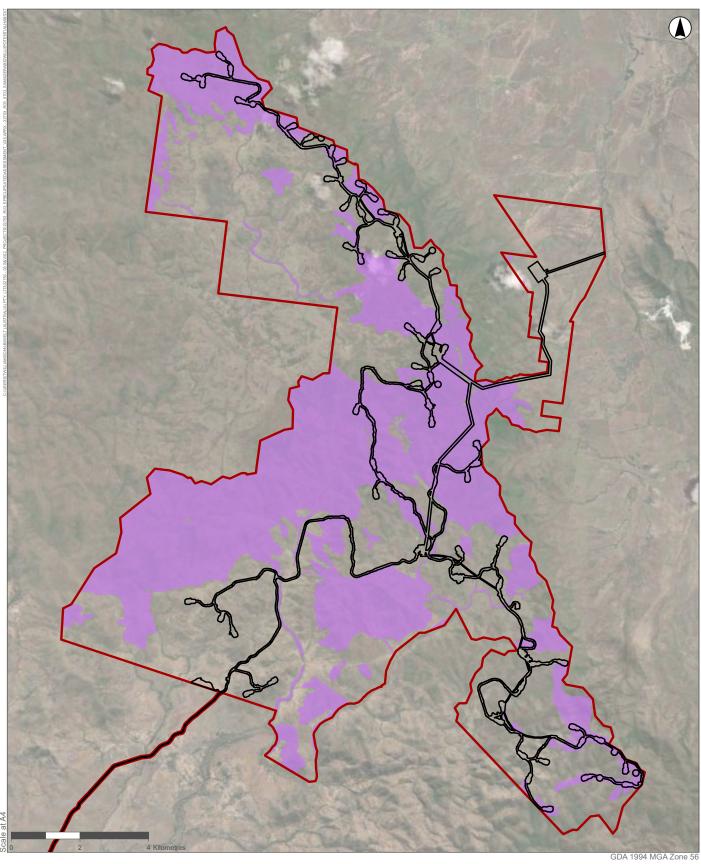


Cossinia australiana Record (ALA)
 Disturbance Footprint
 Study Area
 Cossinia australiana Potential Habitat

FIGURE 7.2

COSSINIA AUSTRALIANA POTENTIAL HABITAT



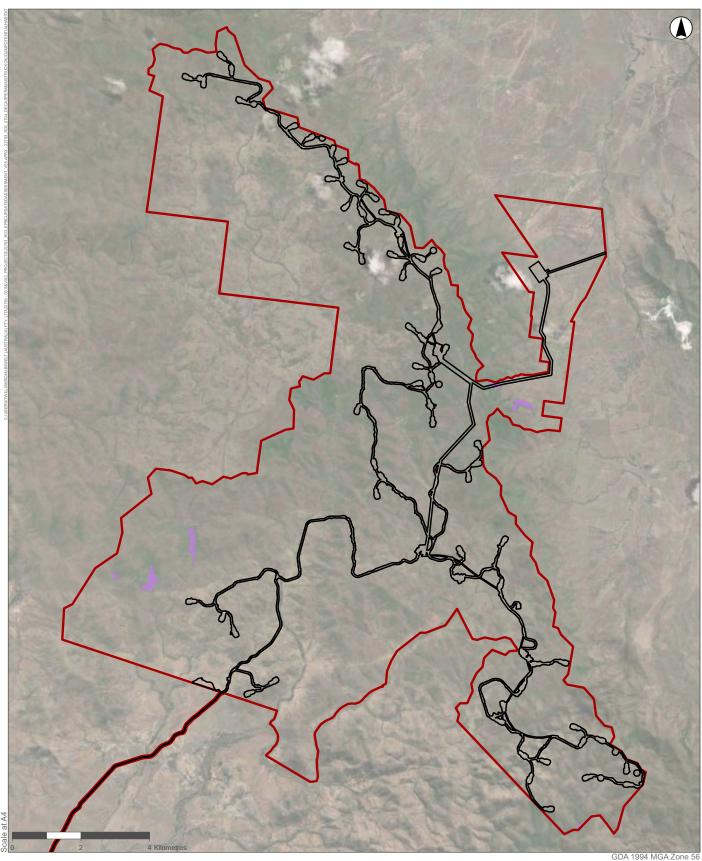


Disturbance Footprint
Study Area
Samadera bidwillii Potential Habitat

FIGURE 7.3

SAMADERA BIDWILLII POTENTIAL HABITAT



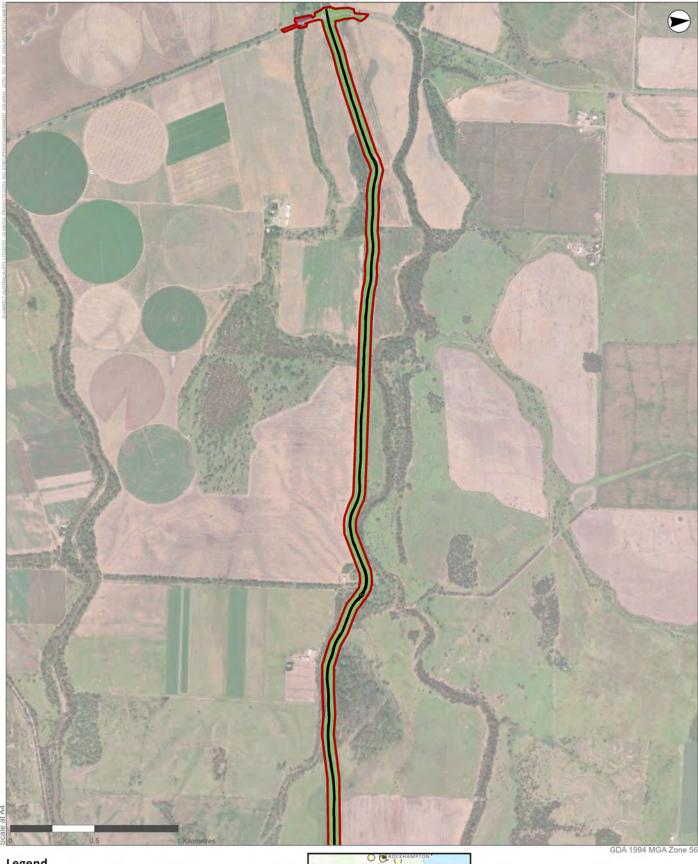


Disturbance Footprint
Study Area
Decaspermum struckoilicum Potential Habitat

FIGURE 7.4

DECASPERMUM STRUCKOILICUM POTENTIAL HABITAT





Koala Record (ALA)
Disturbance Footprint
Study Area
Potential Koala Habitat

Breeding, Foraging and Dispersal
Climate Refugia



FIGURE 7.5A KOALA POTENTIAL HABITAT







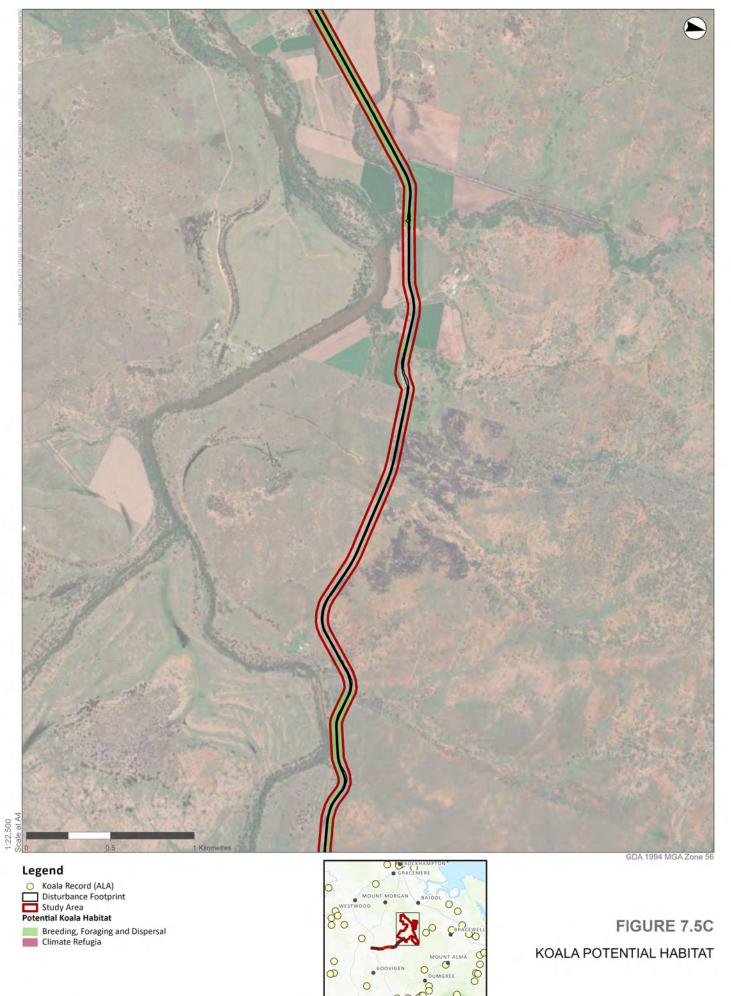
Koala Record (ALA)
Disturbance Footprint
Study Area
Potential Koala Habitat

Breeding, Foraging and Dispersal
Climate Refugia

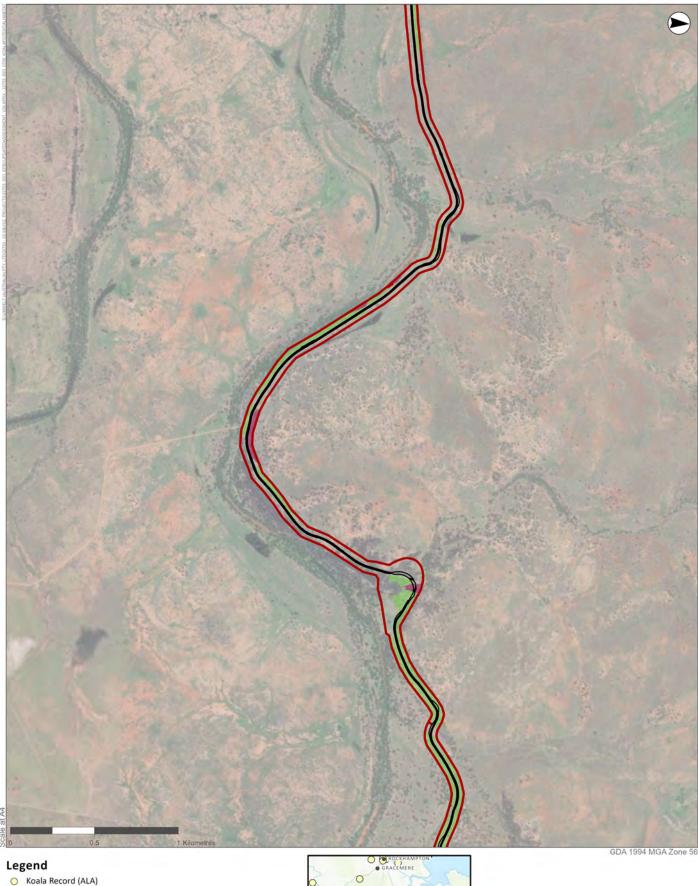


FIGURE 7.5B KOALA POTENTIAL HABITAT









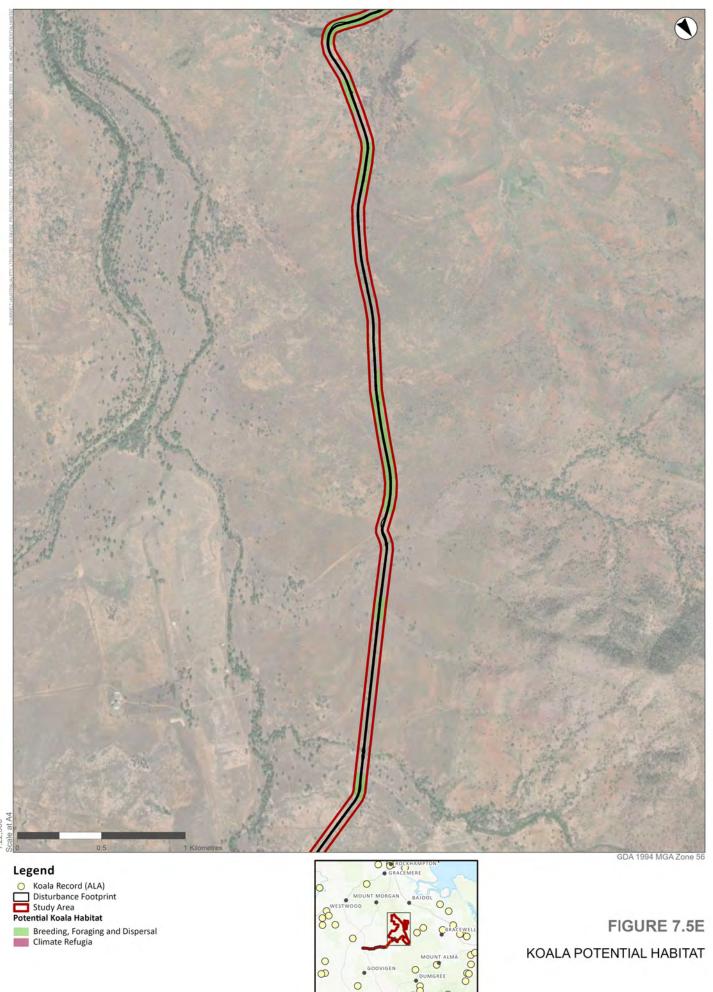
Koala Record (ALA)
Disturbance Footprint
Study Area
Potential Koala Habitat

Breeding, Foraging and Dispersal
Climate Refugia

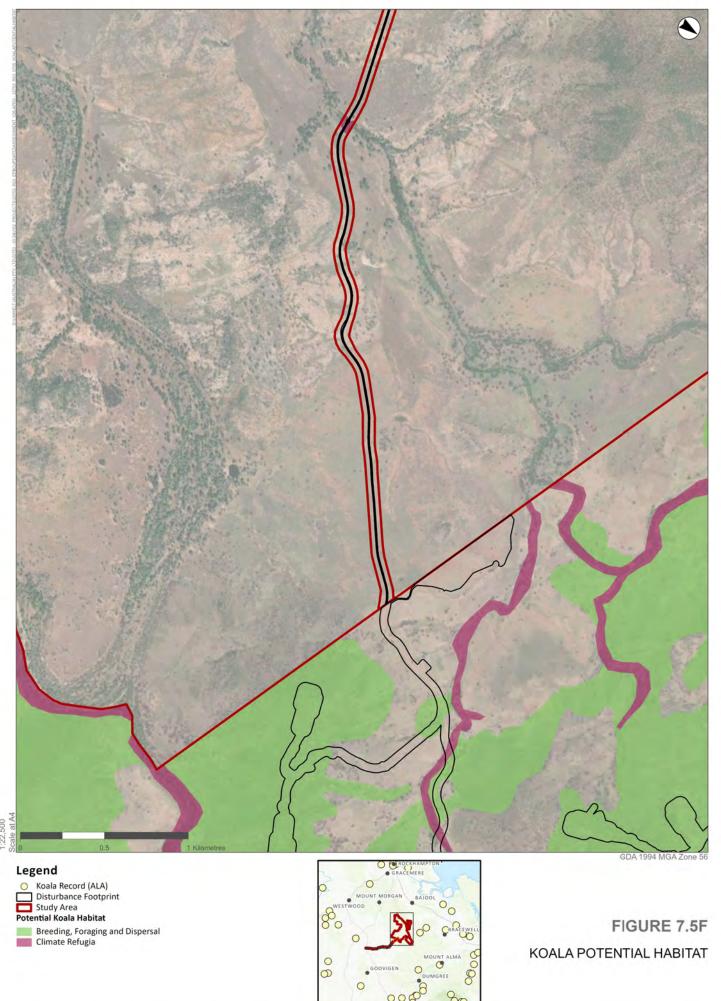


FIGURE 7.5D KOALA POTENTIAL HABITAT

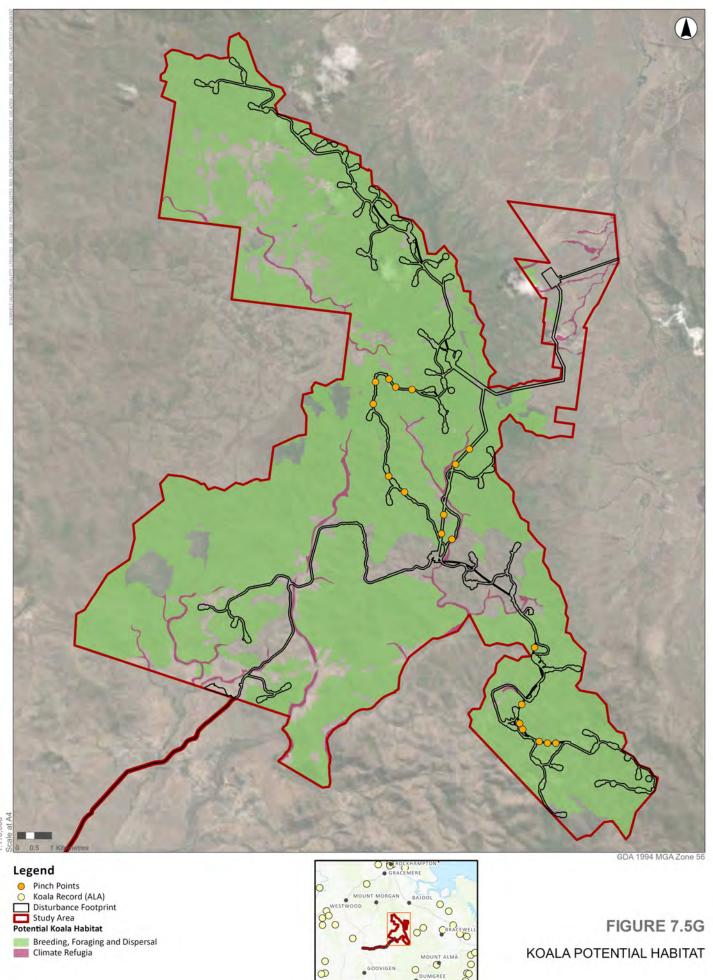




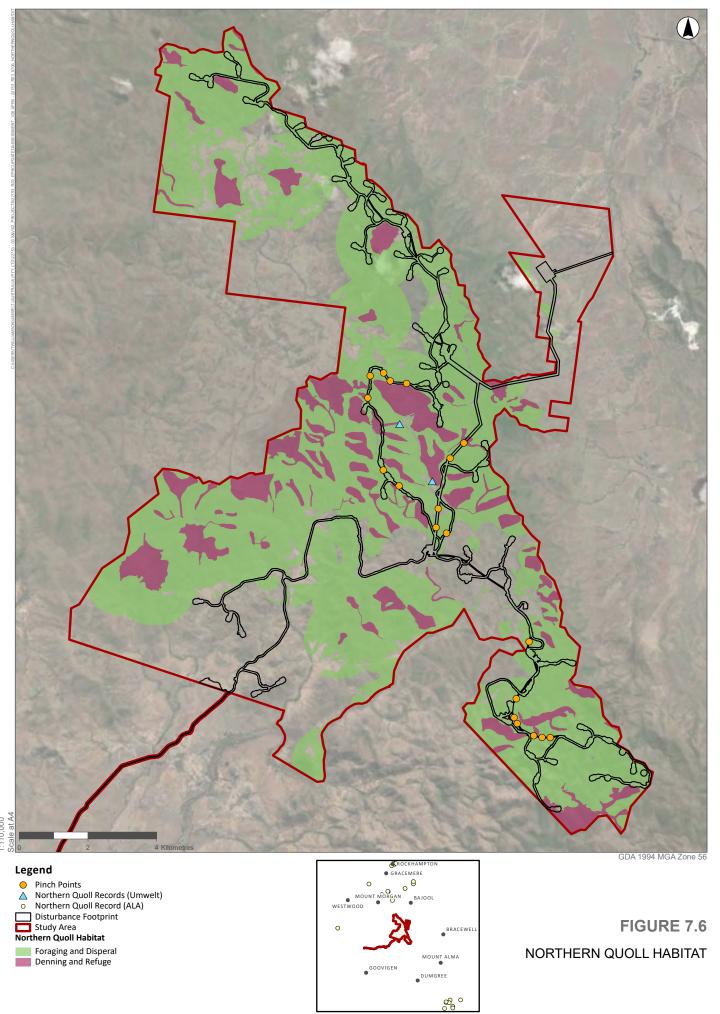




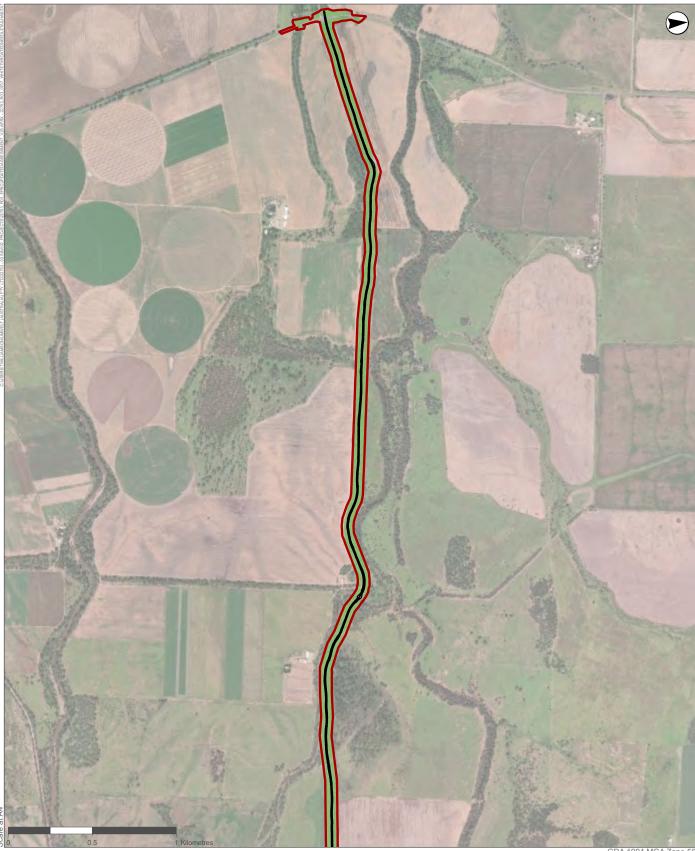












Mountains, Peaks and Capes (DoR)

- Mountains, Peaks and Capes (DoR)

 White-throated Needletail Record (Umwelt)

 White-throated Needletail Record (ALA)

 Vantage Point Sites

 Mountain Range (DoR)

 Disturbance Footprint

 Study Area

 White-throated Needletail Habitat

Foraging and dispersal
Roosting and foraging



FIGURE 7.7A





Mountains, Peaks and Capes (DoR)

- Mountains, Peaks and Capes (DoR)

 White-throated Needletail Record (Umwelt)

 White-throated Needletail Record (ALA)

 Vantage Point Sites

 Mountain Range (DoR)

 Disturbance Footprint

 Study Area

 White-throated Needletail Habitat

Foraging and dispersal
Roosting and foraging

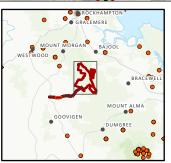


FIGURE 7.7B





- Mountains, Peaks and Capes (DoR)
- Mountains, Peaks and Capes (DoR)

 White-throated Needletail Record (Umwelt)

 White-throated Needletail Record (ALA)

 Vantage Point Sites

 Mountain Range (DoR)

 Disturbance Footprint

 Study Area

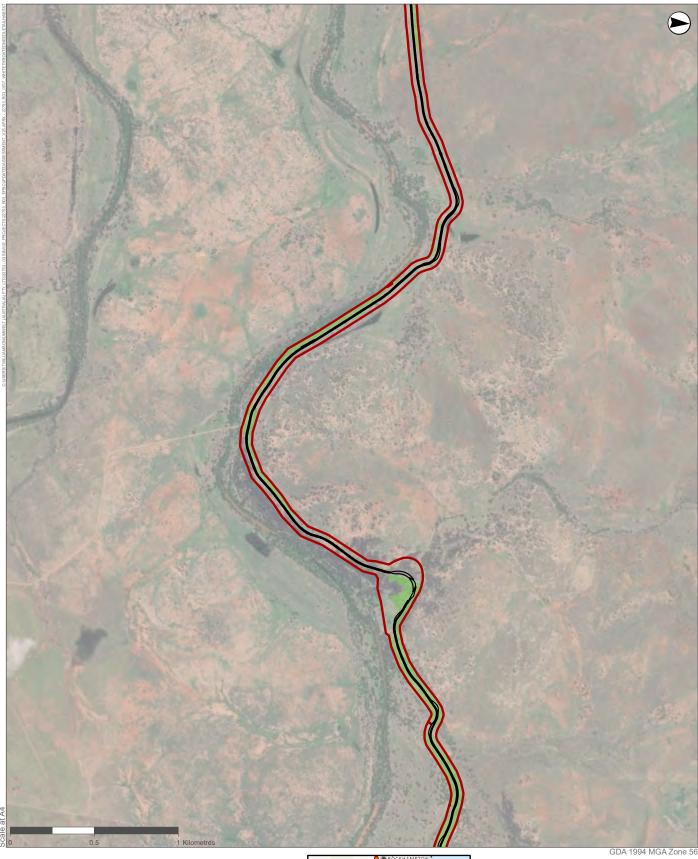
 White-throated Needletail Habitat

Foraging and dispersal
Roosting and foraging



FIGURE 7.7C





Mountains, Peaks and Capes (DoR)

- Mountains, Peaks and Capes (DoR)

 White-throated Needletail Record (Umwelt)

 White-throated Needletail Record (ALA)

 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)

Mountains, Peaks and Capes (DoR)

White-throated Needletail Record (Umwelt)

White-throated Needletail Record (ALA)

Vantage Point Sites

Mountain Range (DoR)

Disturbance Footprint

Study Area

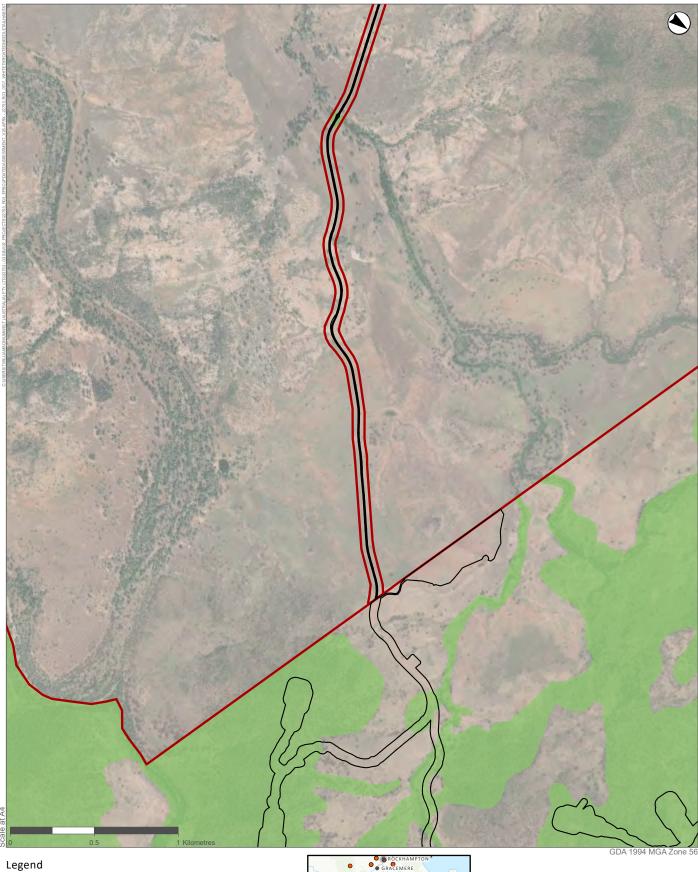
White-throated Needletail Habitat

Foraging and dispersal
Roosting and foraging



FIGURE 7.7E





- Mountains, Peaks and Capes (DoR)
- Mountains, Peaks and Capes (DoR)

 White-throated Needletail Record (Umwelt)

 White-throated Needletail Record (ALA)

 Vantage Point Sites

 Mountain Range (DoR)

 Disturbance Footprint

 Study Area

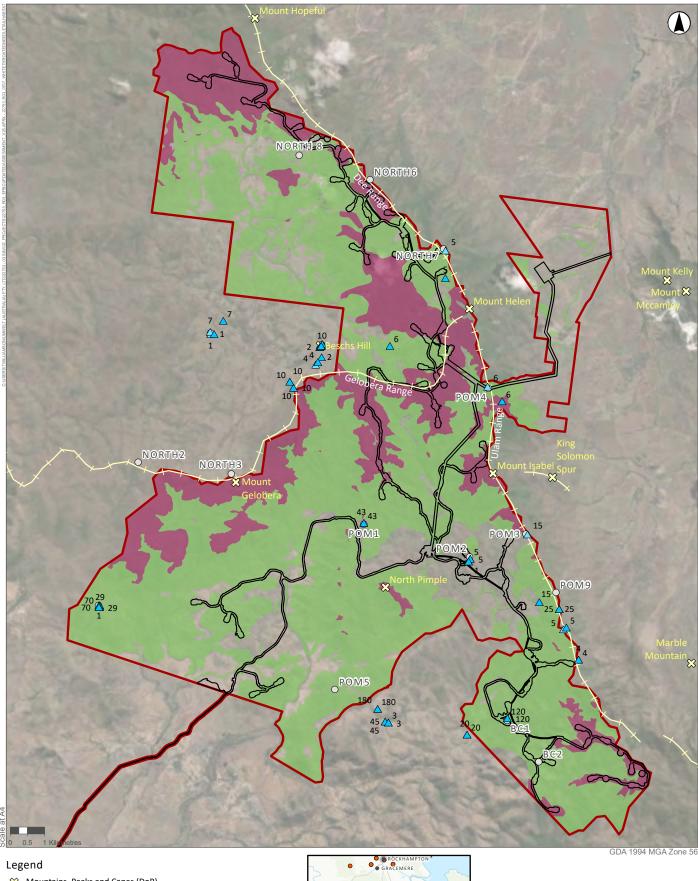
 White-throated Needletail Habitat

Foraging and dispersal
Roosting and foraging



FIGURE 7.7F





- Mountains, Peaks and Capes (DoR)
- White-throated Needletail Record (Umwelt)
 White-throated Needletail Record (Umwelt)
- White-throated Needletail Record (ALA)

Vantage Point Sites

Mountain Range (DoR)

Disturbance Footprint

Study Area

White-throated Needletail Habitat

Foraging and dispersal
Roosting and foraging



FIGURE 7.7G





Classification

Classificat

Seasonal Foraging and Dispersal



FIGURE 7.8A **GHOST BAT POTENTIAL HABITAT**





Ghost Bat Record (ALA)
 Disturbance Footprint
 Study Area

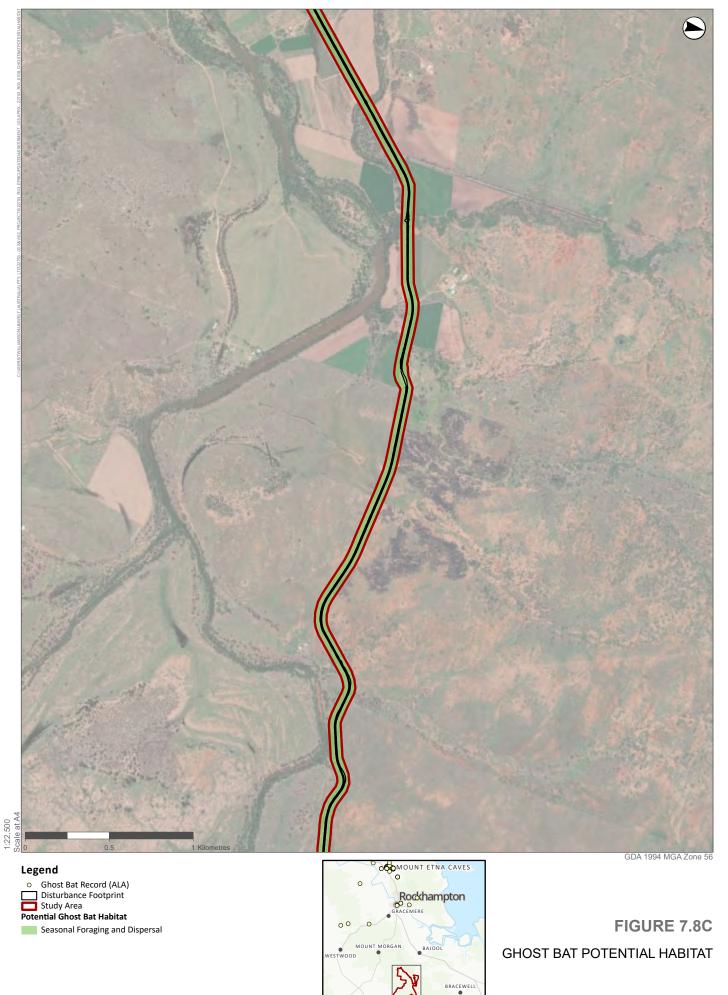
Potential Ghost Bat Habitat

Seasonal Foraging and Dispersal

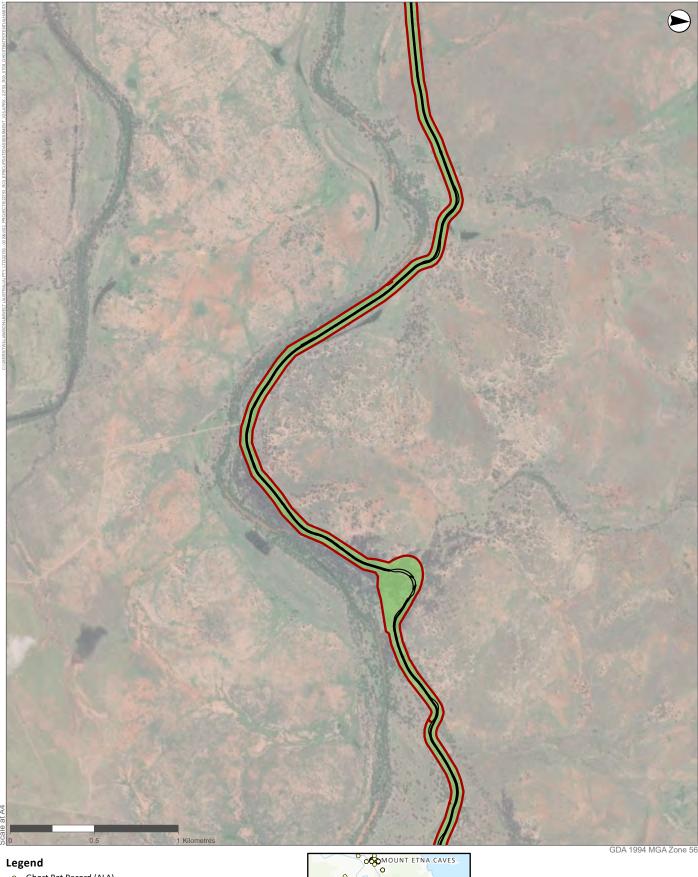


FIGURE 7.8B GHOST BAT POTENTIAL HABITAT









Ghost Bat Record (ALA)
 Disturbance Footprint
 Study Area

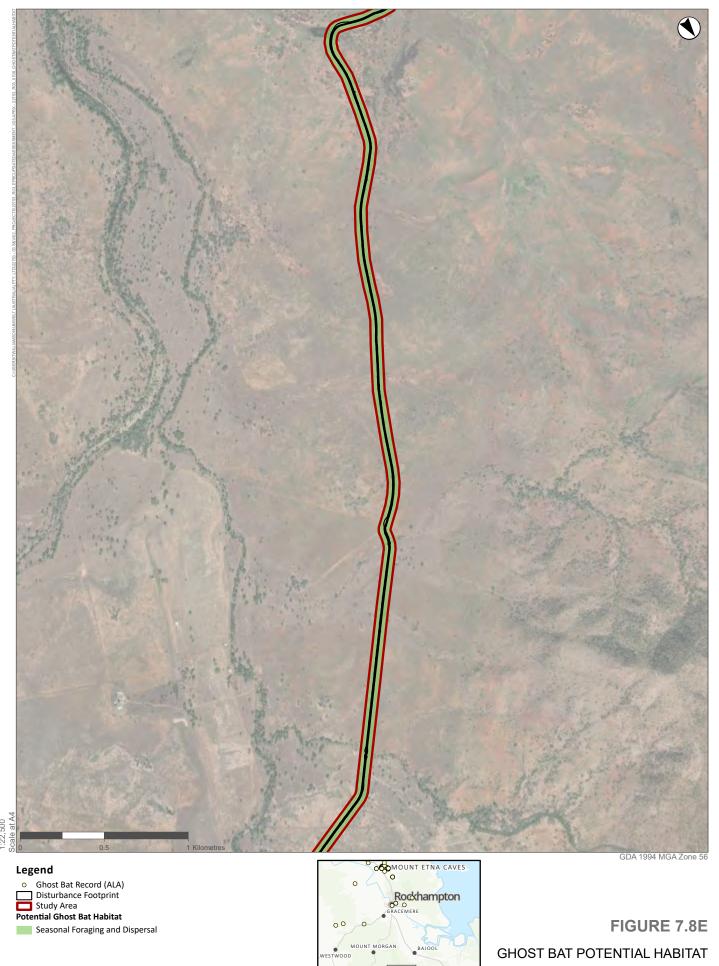
Potential Ghost Bat Habitat

Seasonal Foraging and Dispersal



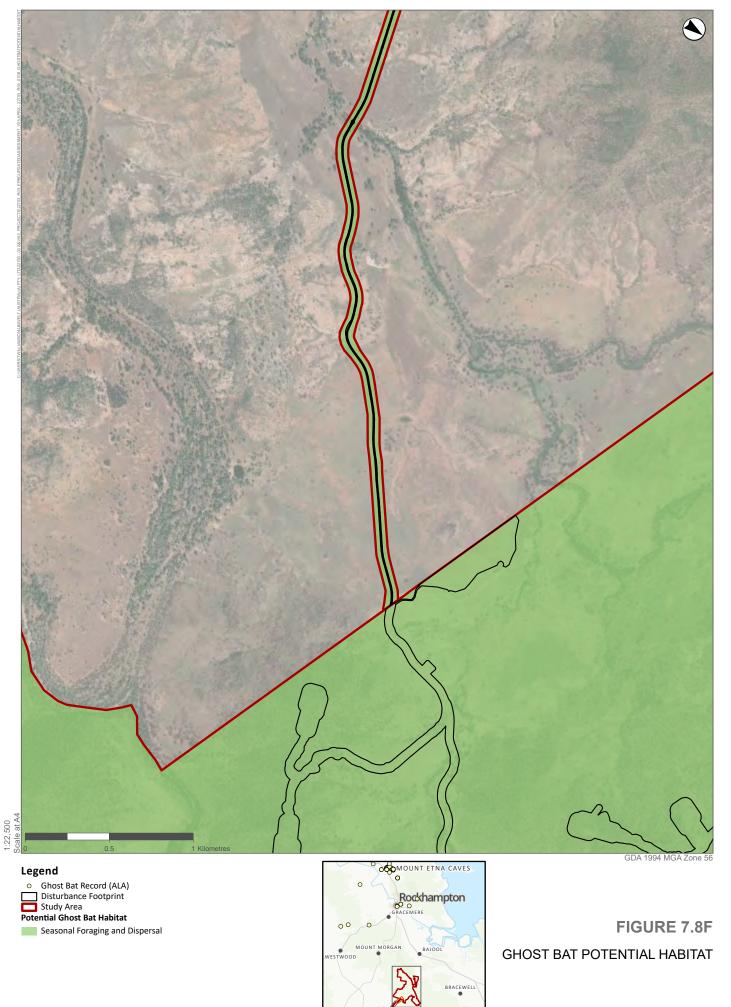
FIGURE 7.8D GHOST BAT POTENTIAL HABITAT



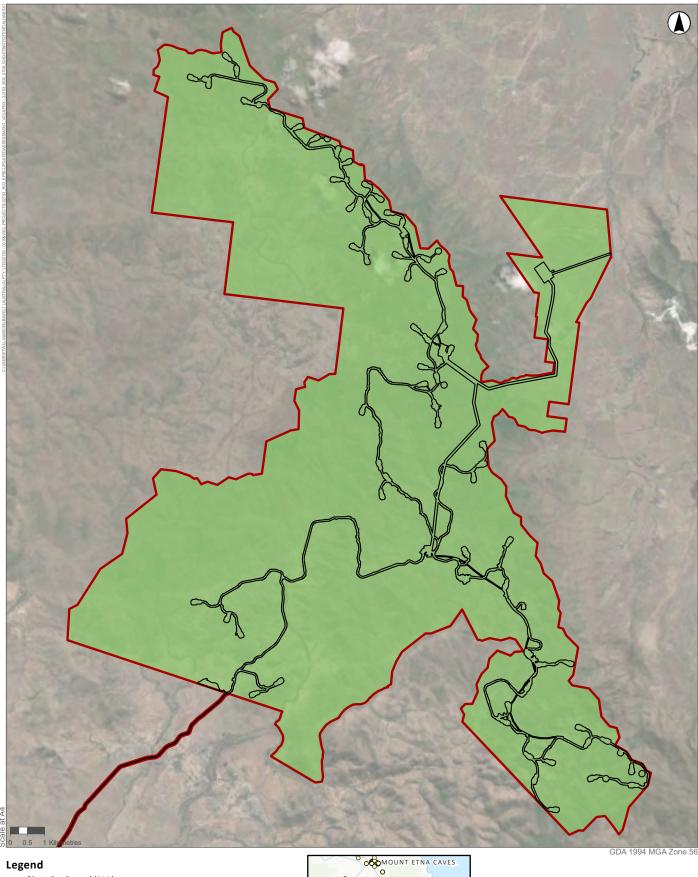


BRACEWELL









Ghost Bat Record (ALA)
 Disturbance Footprint
 Study Area

Potential Ghost Bat Habitat

Seasonal Foraging and Dispersal

MOUNT ETNA CAVES Rockhampton BRACEWELL

FIGURE 7.8G GHOST BAT POTENTIAL HABITAT





Foraging and dispersal
Likely / current denning



FIGURE 7.9A

GREATER GLIDER (SOUTHERN AND CENTRAL) HABITAT





Foraging and dispersal
Likely / current denning



FIGURE 7.9B

GREATER GLIDER (SOUTHERN AND CENTRAL) HABITAT





Foraging and dispersal
Likely / current denning



FIGURE 7.9C

GREATER GLIDER (SOUTHERN AND CENTRAL) HABITAT





Foraging and dispersal
Likely / current denning



FIGURE 7.9D

GREATER GLIDER (SOUTHERN AND CENTRAL) HABITAT





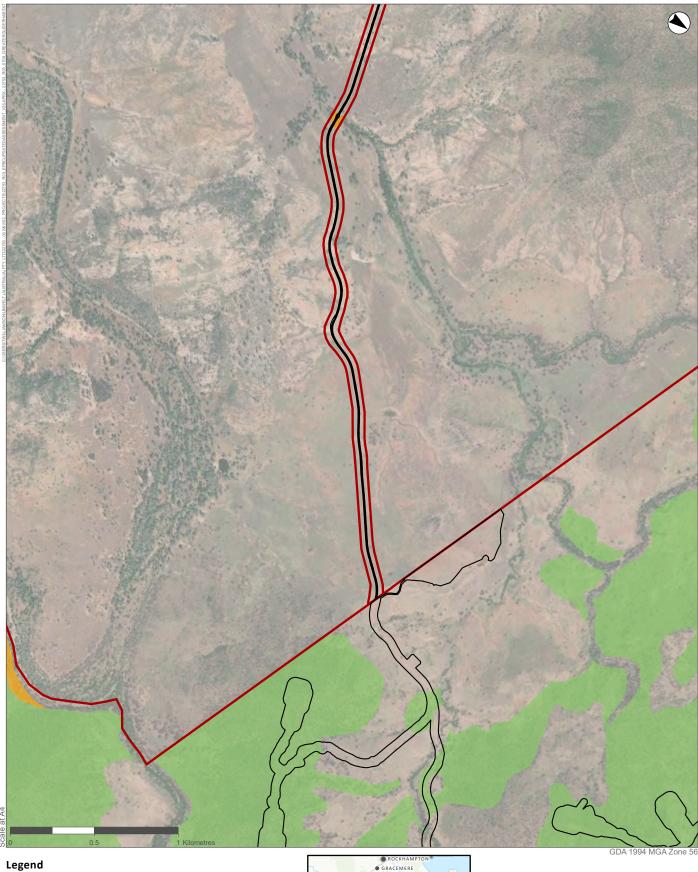
Foraging and dispersal



FIGURE 7.9E

GREATER GLIDER (SOUTHERN AND CENTRAL) HABITAT





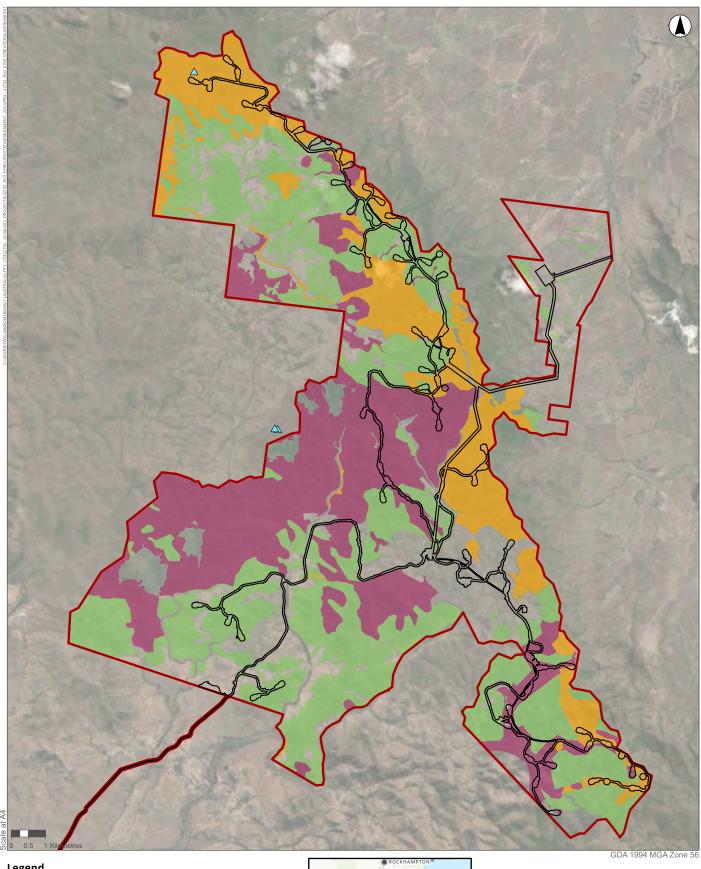
Foraging and dispersal
Likely / current denning



FIGURE 7.9F

GREATER GLIDER (SOUTHERN AND CENTRAL) HABITAT





△ Greater Glider (Southern and Central) Record (Umwelt)
o Greater Glider (Southern and Central) Record (ALA)

Disturbance Footprint
Study Area
Greater Glider (Southern and Central) Habitat

Foraging and dispersal
Likely / current denning
Potential future / denning

• GRACEMERE DUMGREE 00

FIGURE 7.9G

GREATER GLIDER (SOUTHERN AND CENTRAL) HABITAT





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





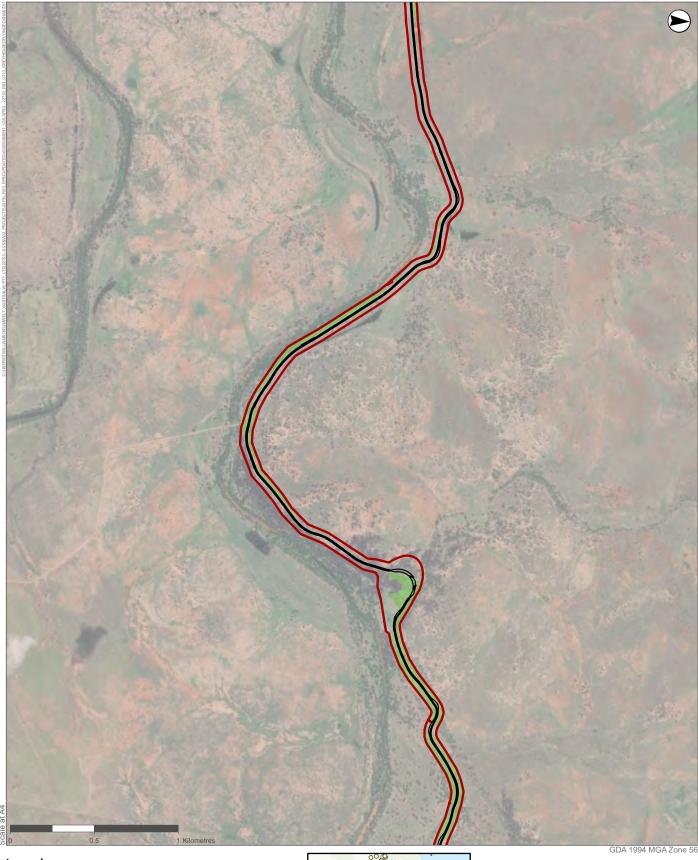
Grey-headed Flying-fox Record (ALA)
 Roost (National Flying-fox Monitoring Program)
 Disturbance Footprint
 Study Area
Potential Grey-headed Flying-fox Habitat

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





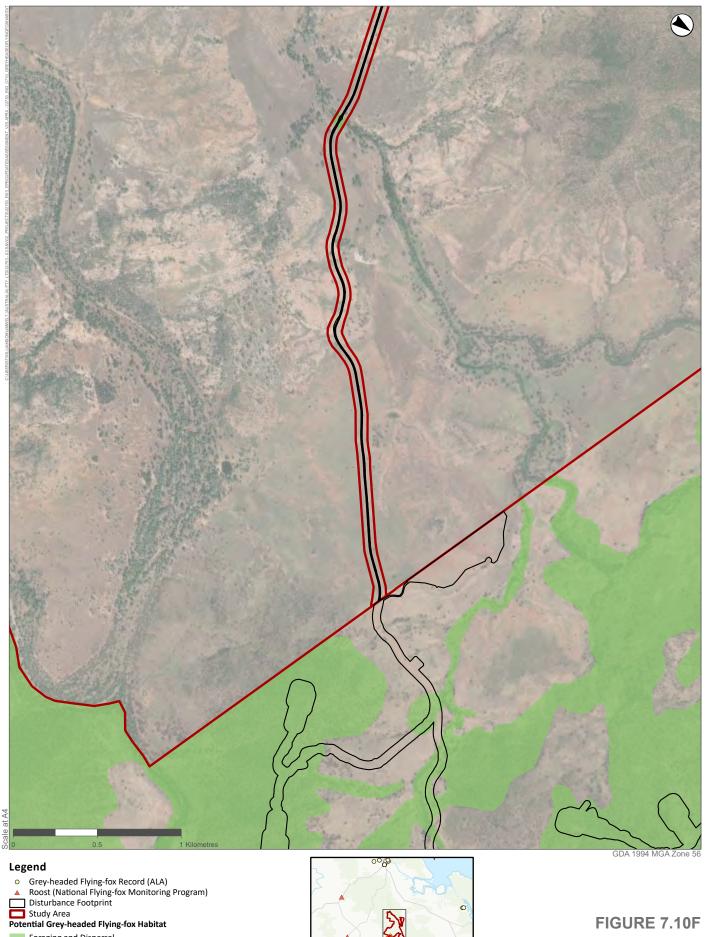
Grey-headed Flying-fox Record (ALA)
 Roost (National Flying-fox Monitoring Program)
 Disturbance Footprint
 Study Area
Potential Grey-headed Flying-fox Habitat

Foraging and Dispersal



FIGURE 7.10E



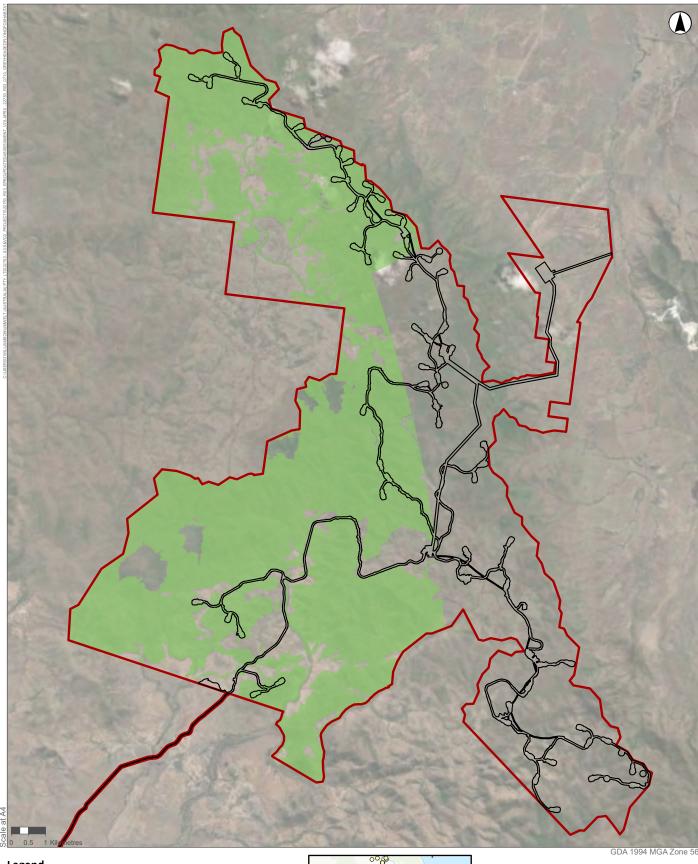


Foraging and Dispersal

FIGURE 7.10F

GREY-HEADED FLYING-FOX
POTENTIAL HABITAT





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

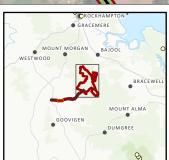


FIGURE 7.11



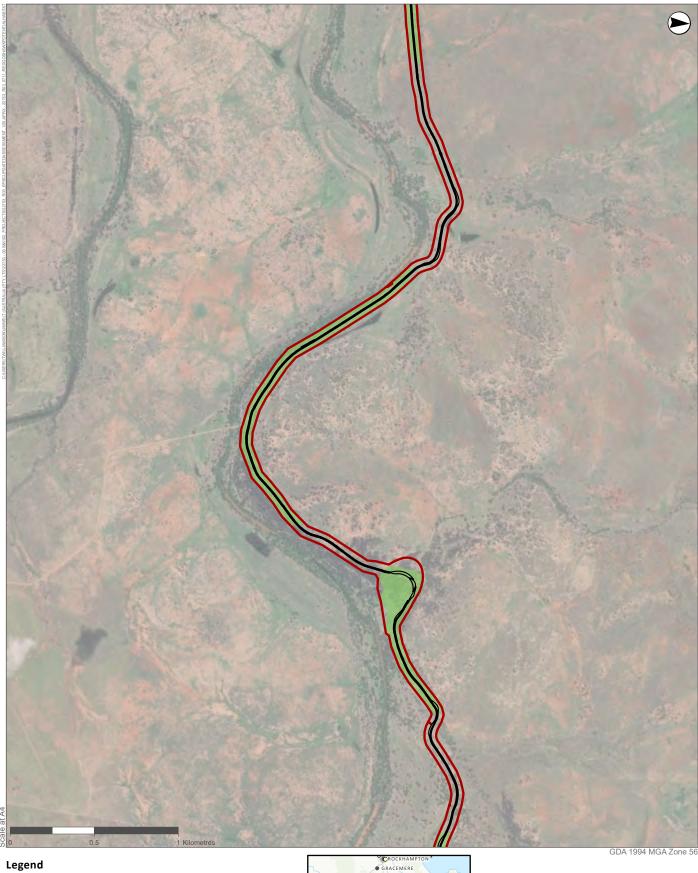


Marginal Foraging and Dispersal



FIGURE 7.11





Marginal Foraging and Dispersal



FIGURE 7.11



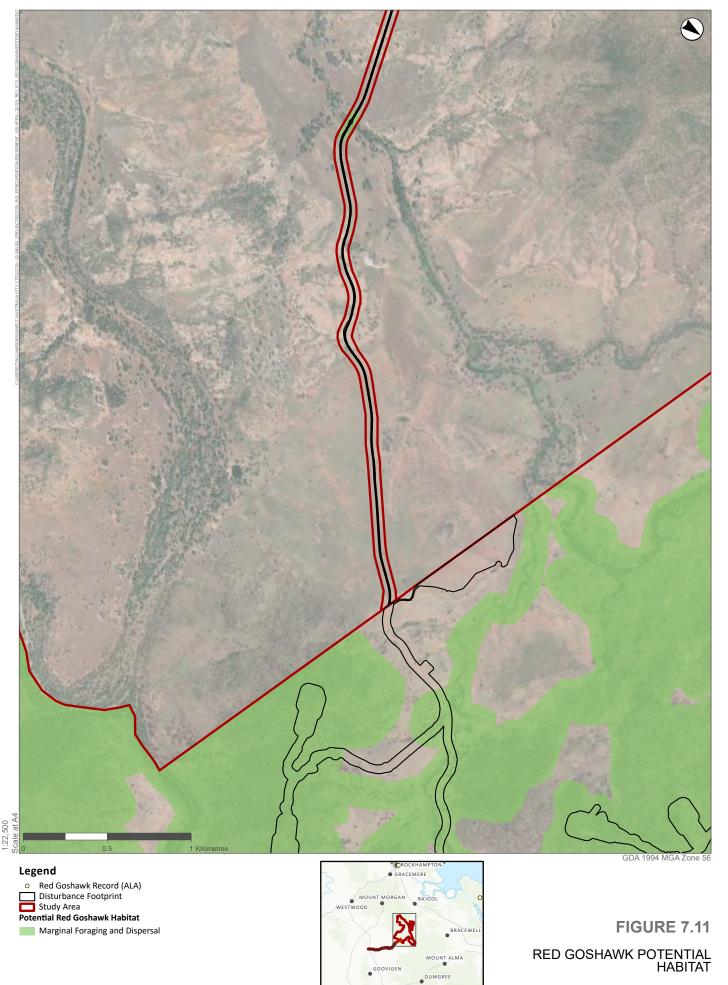


Marginal Foraging and Dispersal

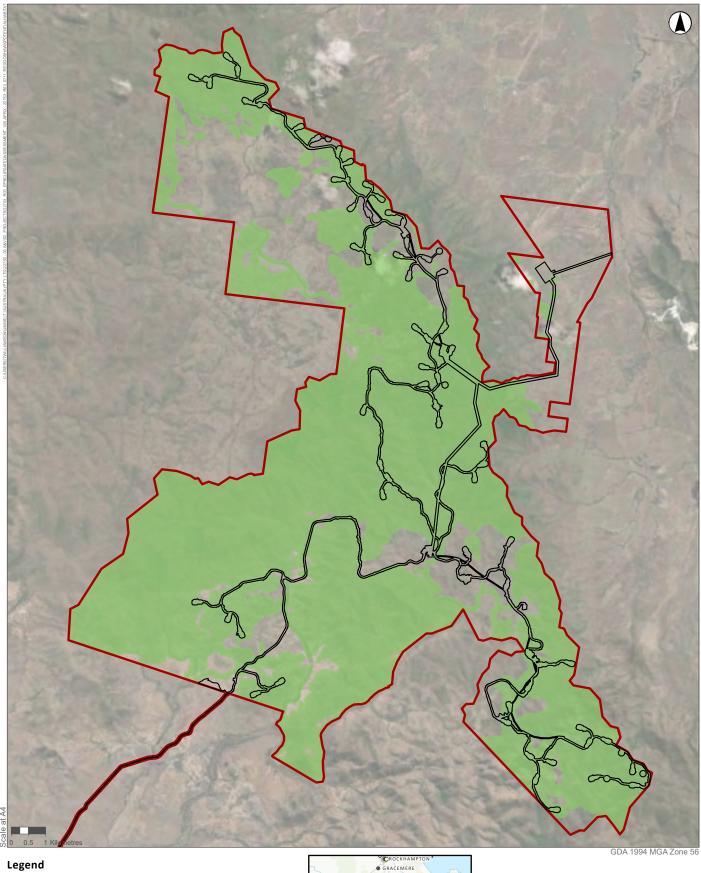


FIGURE 7.11







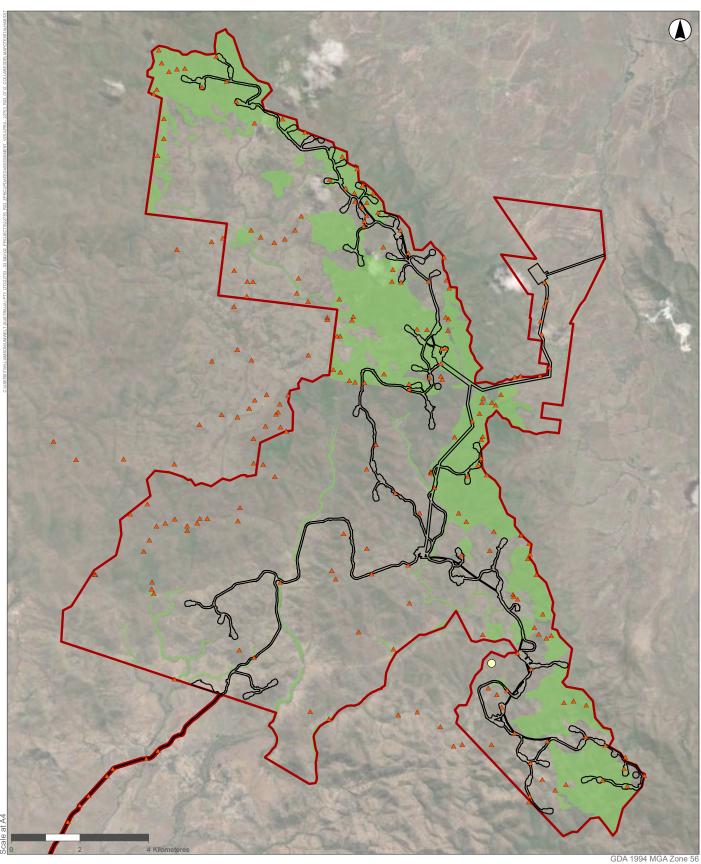


Marginal Foraging and Dispersal



FIGURE 7.11





Collared Delma Record (ALA)
Active Diurnal Search Sites
Disturbance Footprint
Study Area
Potential Collared Delma Habitat

Breeding and foraging

FIGURE 7.12

COLLARED DELMA POTENTIAL HABITAT

