GOVERNMENT OF
WESTERN AUSTRALIA

CLEARING PERMIT

Granted under section 51E of the Environmental Protection Act 1986

Purpose Permit number:	CPS 8116/3
Permit Holder:	Shire of Capel
Duration of Permit:	From 13 October 2019 to 13 October 2033

The permit holder is authorised to clear *native vegetation* subject to the following *conditions* of this permit.

PART I – CLEARING AUTHORISED

1. Clearing authorised (purpose)

The permit holder is authorised to clear *native vegetation* for the purpose of road widening.

2. Land on which clearing is to be done

Boyanup Road West road reserve (PIN 1328954), Boyanup
Boyanup Road West road reserve (PIN 1328917), Elgin
Boyanup Road West Road reserve (PINs 1323149, 1323148, 1323147, 1323146, 1254316, 1323143, 1253621), Statham

3. Clearing authorised

The permit holder must not clear more than 2.21 hectares of *native vegetation* within the area cross-hatched yellow in Figure 1a, Figure 1b, Figure 1c and Figure 1d of Schedule 1.

4. Application

This permit allows the permit holder to authorise persons, including employees, contractors and agents of the permit holder, to clear *native vegetation* for the purposes of this permit subject to compliance with the *conditions* of this permit and approval from the permit holder.

5. Type of clearing authorised

This permit authorises the permit holder to clear *native vegetation* for the activities described in *condition 1* of this permit to the extent that the permit holder has the power to carry out works involving *clearing* for those activities under the *Local Government Act 1995* or any other written law.

6. Period during which clearing is authorised

The permit holder must not clear any *native vegetation* after 13 October 2024.

PART II – MANAGEMENT CONDITIONS

7. Avoid, minimise, and reduce impacts and extent of clearing

In determining the *native vegetation* authorised to be cleared under this permit, the permit holder must apply the following principles, set out in descending order of preference:

(a) avoid the *clearing* of *native vegetation*;

(b) minimise the amount of *native vegetation* to be cleared; and

(c) reduce the impact of *clearing* on any environmental value.

8. Weed and dieback management

When undertaking any *clearing* authorised under this permit, the permit holder must take the following measures to minimise the risk of introduction and spread of *weeds* and *dieback*:

(a) clean earth-moving machinery of soil and vegetation prior to entering and leaving the area to be cleared;

(b) ensure that no known *dieback* or *weed*-affected soil, *mulch*, *fill*, or other material is brought into the area to be cleared; and

(c) restrict the movement of machines and other vehicles to the limits of the areas to be cleared.

9. Fauna management – Carnaby's cockatoo, forest red-tailed black cockatoo and Baudin's cockatoo

(a) Prior to undertaking any *clearing* within the combined areas cross-hatched yellow in Figure 1a, Figure 1b, Figure 1c and Figure 1d of Schedule 1, the permit holder must engage a *fauna specialist* to conduct a *fauna survey* of the permit area to identify *black cockatoo habitat tree/s* being utilised by *black cockatoo species* listed below:

(i) *Zanda lateriosis* (Carnaby's cockatoo);
(ii) *Calyptorhynchus banksii naso* (forest red-tailed black cockatoo); and
(iii) *Zanda baudinii* (Baudin's cockatoo).

(b) Each *black cockatoo habitat tree* identified under *condition* 9(a) must be inspected by a *fauna specialist* for evidence of current or past breeding use by *black cockatoo species*.

(c) Prior to undertaking any *clearing* authorised under this permit, the permit holder shall provide the results of the *fauna survey* in a report to the *CEO*.

(d) The *fauna survey* report must include the following;

(i) the location of the *black cockatoo habitat tree/s* recorded using a Global Positioning System (GPS) unit set to Geocentric Datum Australia 2020 (GDA2020), expressing the geographical coordinates in Eastings and Northings or decimal degrees;

(ii) the location of any fauna species~~,~~ listed in *condition* 9(a), if identified, recorded using a Global Positioning System (GPS) unit set to Geocentric Datum Australia 2020 (GDA2020), expressing the geographical coordinates in Eastings and Northings or decimal degrees;

(iii) the name and amount of each *black cockatoo species* identified;

(iv) the methodology, used to survey the permit area; and

(v) a description of the *black cockatoo habitat tree/s* identified.

(e) Where *black cockatoo habitat tree/s* are identified within the combined areas cross-hatched yellow in Figure 1a, Figure 1b, Figure 1c and Figure 1d of Schedule 1 and are showing evidence of current or past breeding use by *black cockatoo species* under *condition* 9(b), the permit holder shall ensure that no *clearing* occurs within 10 metres of *black cockatoo habitat tree/s* showing evidence of past or current use of the identified *black cockatoo species*.

10. Fauna management – Red-tailed phascogale

(a) Prior to undertaking any *clearing*:

(i) the area cross-hatched yellow in Figure 1a, Figure 1b, Figure 1c and Figure 1d of Schedule 1 shall be inspected by a *fauna specialist* who shall identify *red-tailed phascogale habitat tree(s)*; and

(ii) each *red-tailed phascogale habitat tree* identified shall be inspected by a *fauna specialist* for evidence of use by red-tailed phascogale (*Phascogale calura*).

(b) Where a *red-tailed phascogale habitat tree(s)* occupied by red-tailed phascogale is identified and cannot be avoided in accordance with *condition* 10(a) of this permit, that tree(s) shall only be cleared:

(i) immediately after a repeat inspection undertaken by a *fauna specialist* if that inspection confirms it is not occupied by red-tailed phascogale.

(c) Where a *red-tailed phascogale habitat tree(s)* with evidence of use (but not occupied) by red- tailed phascogale is identified and cannot be avoided in accordance with *condition* 10(a) of this permit, that tree(s) shall only be cleared:

(ii) immediately after the inspection; or

(iii) immediately after a repeat inspection undertaken by a *fauna specialist* if that inspection confirms it is not occupied by red-tailed phascogale.

(d) For each *red-tailed phascogale habitat tree* that cannot be avoided in accordance with *conditions* 10(b) and 10(c), the permit holder shall install a nest box.

(e) The nest boxes(s) required by *condition* 10(d) of this permit must:

(i) be installed within the area cross-hatched red in Figure 2a, Figure 2b, Figure 2c and Figure 2d of Schedule 1, being the Boyanup Road West Road reserve (PIN 1328954, 1328917, 1323149, 1323148, 1323147, 1323146, 1254316, 1323143 and 125362), Boyanup, Elgin and Stratham; and

(ii) be designed and placed in accordance with the guidelines provided in Schedule 3 to this Permit.

11. Mitigation – Revegetation and rehabilitation within Boyanup West Road reserve

(a) At an *optimal time*, the permit holder must *rehabilitate* 1.6 hectares of *native vegetation* within the area cross-hatched red in Figure 2a, Figure 2b, Figure 2c and Figure 2d of Schedule 1 within Boyanup Road West Road reserve (PINs 1328954, 1328917, 1323149, 1323148, 1323147, 1323146, 1254316, 1323143 and 1253621), Boyanup Elgin and Stratham.

(b) The *rehabilitation* required under condition 11(a) of this permit must be undertaken in accordance with the *Revegetation Plan* prepared by Natural Area (Natural Area, 2020) and the revised completion criteria (Shire of Capel, 2023).

(c) The permit holder must, within 24 months of commencing *rehabilitation* required under condition 11(a) of this permit:

(i) engage an *environmental specialist* to determine the species composition, structure and density of the *vegetation* of area *revegetated*; and

(ii) engage an *environmental specialist* to make a determination as to whether the composition, structure and density determined under condition 11(c)(i) of this permit will, without further *revegetation* and *rehabilitation*, achieve the completion criteria specified in the Completion criteria, outlined in Table 1 of Schedule 2 (Completion criteria).

(d) If the determination made by the *environmental specialist* under condition 11(c)(ii) is that the species composition, structure, and density determined under condition 11(c)(i) will not, achieve the completion criteria specified in Table 1 of Schedule 2, the permit holder must undertake remedial actions for areas *revegetated* and *rehabilitated*, including:

(i) *revegetate*/*rehabilitate* the area by deliberately *planting* and/or *direct seeding native vegetation* that will result in the minimum completion criteria detailed in Table 1 of Schedule 2 and ensuring only *local provenance* seeds and propagating material are used; and

(ii) undertake *weed* control activities prior to *planting* and/or *direct seeding native vegetation.*

(e) Where additional *planting* or *direct seeding* of *native vegetation* is undertaken in accordance with condition 11(d), the permit holder must repeat the activities required by condition 11(c) and 11(d) within 12 months of undertaking the additional *planting* or *direct seeding* of *native vegetation*.

(f) Where a determination is made by an *environmental specialist* under condition 11(c)(ii) that the composition, structure and density within areas *revegetated* and *rehabilitated* will achieve the completion criteria specified in Table 1 of Schedule 2, that determination shall be submitted to the *CEO* within three months of the determination being made by the *environmental specialist*.

12. Offset – Lot 150 on Deposited Plan 29857

(a) Within 12 months of undertaking clearing authorised under this permit, for the area cross-hatched red in Figure 3 of Schedule 1, the permit holder must *revegetate* 3.62 hectares within the area cross-hatched red in Figure 3 of Schedule 1 within Lot 150 on Deposited Plan 29857, Parkfield.

(b) The permit holder must implement and adhere to the *Revegetation Plan* prepared by Natural Area (Natural Area, 2020) and the revised completion criteria (Shire of Capel, 2023), including but not limited to the following actions:

(i) undertake *direct seeding* and tubestock *planting* at an *optimal time*, using species listed in Table 2 of Schedule 2 (target species) and density listed in Table 1 of Schedule 2 (Completion criteria);

(ii) ensure only *local provenance* seeds and propagating material are used to *rehabilitate*;

(iii) commence *revegetation* and *rehabilitation* by deliberately *planting* and/or *direct seeding native vegetation* that will result in species composition, structure and density of *native vegetation* that resembles that within Table 1 of Schedule 2 (Completion criteria);

(iv) establish at least five 5 x 5 meter quadrat monitoring sites within the area cross-hatched red in Figure 3 of Schedule 1;

(v) undertake *weed* control activities bi-annually until the completion criteria as per Table 1 of Schedule 2 (Completion criteria) has been met;

(vi) achieve the Completion criteria specified in Table 1 of Schedule 2 (Completion criteria) has been met and maintained for a minimum of three years;

(vii) undertake remedial actions for areas *revegetated* and *rehabilitated* under condition 12, where monitoring indicates the Completion criteria, outlined in Table 1 of Schedule 2 (Completion criteria), has not been met, including:

i. deliberately *planting* and/or *direct seeding native vegetation* that will result in the minimum targets specified in Table 1 of Schedule 2 (Completion criteria) ensuring only species listed in Table 2 of Schedule 2 (Target species) are used;

ii. undertake further *weed* control activities; and

iii. continue monitoring of the offset area by an *environmental specialist,* until the Completion criteria, outlined in Table 1 Schedule 2 (Completion criteria) has been met.

(viii) be maintained in accordance with the specifications detailed in the *Revegetation Plan*, for a period of at least three years; and

(c) where an *environmental specialist* has determined that the completion criteria, outlined in Table 1 Schedule 2 (completion criteria) has been met, that report is to be provided to the *CEO* within three months of the determination being made by the *environmental specialist*.

PART III - RECORD KEEPING AND REPORTING

13. Records that must be kept

The permit holder must maintain records relating to the listed relevant matters in accordance with the specifications detailed in Table 1.

Table 1: Records that must be kept

No.	Relevant matter	Specifications
1.	In relation to the *clearing* of *native vegetation* pursuant to *condition 3*	(a) the location where the *clearing* occurred, recorded using a Global Positioning System (GPS) unit set to Geocentric Datum Australia 2020 (GDA2020), expressing the geographical coordinates in Eastings and Northings or decimal degrees; (b) the date that the area was cleared; (c) the size of the area cleared (in hectares); (d) actions taken to avoid, minimise, and reduce the impacts and extent of *clearing* in accordance with *condition 7*; (e) actions taken to minimise the risk of the introduction and spread of *weeds* and *dieback* in accordance with *condition 8*; and (f) actions taken in accordance with *conditions 9* and 10.
2.	In relation to the *revegetation* and *rehabilitation* of areas pursuant to *conditions 11* and *12*	(a) the location of any areas *revegetated* and *rehabilitated*, recorded using a Global Positioning System (GPS) unit set to Geocentric Datum Australia 2020 (GDA2020), expressing the geographical coordinates in Eastings and Northings or decimal degrees; (b) a description of the *revegetated* and *rehabilitation* activities undertaken; (c) the size of the area *revegetated* and *rehabilitated* (in hectares); (d) the species composition, structure and density of *revegetation* and *rehabilitation*; (e) a copy of the *environmental specialist's* report; (f) the date the completion criteria have been met

No.	Relevant matter	Specifications
		and *environmental specialist's* report submitted to the *CEO*.

14. Reporting

(a) The permit holder must provide to the *CEO* on or before 30 June of each year, a written report:

(i) of records required under *condition 13*; and

(ii) concerning activities done by the permit holder under this permit between 1 January and 31 December of the preceding calendar year.

(b) If no *clearing* authorised under this permit was undertaken between 1 January to 31 December of the preceding calendar year, a written report confirming that no *clearing* under this permit has been carried out, must be provided to the *CEO* on or before 30 June of each year.

(c) Prior to 13 July 2033 the permit holder must provide to the *CEO* a written report of records required under *condition 9* of this permit where these records have not already been provided under *condition 14(a)*.

DEFINITIONS

In this permit, the terms in Table 2 have the meanings defined.

Table 2: Definitions

Term	Definition
black cockatoo habitat tree/s	means trees that have a diameter, measured at 130 centimetres from the base of the tree, of 50 centimetres or greater (or 30 centimetres or greater for *Eucalyptus salmonophloia* or *Eucalyptus wandoo*) that contain hollows suitable for breeding by black cockatoo species.
black cockatoo species	means one or more of the following species: (a) *Zanda lateriosis* (Carnaby's cockatoo); (b) *Calyptorhynchus baudinii* (Baudin's cockatoo); and/or (c) *Zanda banksii naso* (forest red-tailed black cockatoo).
CEO	Chief Executive Officer of the *department* responsible for the administration of the *clearing* provisions under the *Environmental Protection Act 1986*.
clearing	has the meaning given under section 3(1) of the *EP Act*.
condition	a condition to which this *clearing* permit is subject under section 51H of the *EP Act*.
department	means the department established under section 35 of the *Public Sector Management Act 1994* (WA) and designated as responsible for the administration of the *EP Act*, which includes Part V Division 3.
dieback	means the effect of *Phytophthora* species on *native vegetation*.
direct seeding	means a method of re-establishing vegetation through the establishment of a seed bed and the introduction of seeds of the desired plant species

Term	Definition
EP Act	*Environmental Protection Act 1986* (WA)
fauna specialist	means a person who holds a tertiary qualification specialising in environmental science or equivalent, and has a minimum of 2 years work experience in fauna identification and surveys of fauna native to the region being inspected or surveyed, or who is approved by the *CEO* as a suitable fauna specialist for the bioregion, and who holds a valid fauna licence issued under the *Biodiversity Conservation Act 2016*.
fill	means material used to increase the ground level, or to fill a depression.
local provenance	means native vegetation seeds and propagating material from natural sources within 50 kilometres and the same IBRA subregion of the area cleared.
mulch	means the use of organic matter, wood chips or rocks to slow the movement of water across the soil surface and to reduce evaporation.
native vegetation	has the meaning given under section 3(1) and section 51A of the *EP Act*.
optimal time	means the period from April to June for undertaking *planting* and seeding
planting	means the re-establishment of vegetation by creating favourable soil conditions and planting seedlings of the desired species
red-tailed phascogale habitat tree(s)	means a tree of the *Eucalyptus* genus that contains a hollow(s) suitable to be used by red-tailed phascogale (*Phascogale calura*).
regeneration	means *revegetation* that can be established from in situ seed banks contained either within the topsoil or seed-bearing mulch;
rehabilitate, rehabilitated and rehabilitation	means actively managing an area containing *native vegetation* in order to improve the ecological function of that area
revegetate/ed/ion	means the re-establishment of a cover of local provenance *native vegetation* in an area using methods such as natural *regeneration*, *direct seeding* and/or *planting*, so that the species composition, structure and density is similar to pre-clearing vegetation types in that area
revegetation plan	means a plan developed by the Permit Holder for the *revegetation* and rehabilitation of the *offset site* in accordance with condition 10 of this Permit. "*Shire of Capel – Offset Site Revegetation Plan – Weld Road and Payne Street* " (Natural Area, 2020).
site preparation	means management of existing site topsoil and preparation of the finished soil surface, for example by ripping or tilling the soil surface and respreading site topsoil and chipped *native vegetation*
vegetation establishment period	means a period of at least two summers after the *revegetation* during which time replacement and infill *revegetation* works may be required for areas in which *revegetation* has been unsuccessful, and involves regular inspections of *revegetation* sites to monitor the success of *revegetation*
weed/s	means any plant – (a) that is a declared pest under section 22 of the *Biosecurity and Agriculture Management Act 2007*; or (b) published in a Department of Biodiversity, Conservation and Attractions species-led ecological impact and invasiveness

Term	Definition
	ranking summary, regardless of ranking; or (c) not indigenous to the area concerned.

END OF CONDITIONS

Mathew Gannaway
MANAGER
NATIVE VEGETATION REGULATION

Officer delegated under Section 20
of the Environmental Protection Act 1986

15 December 2023

Schedule 1

The boundary of the areas authorised to be cleared are shown in the maps below (Figure 1a, Figure 1b, Figure 1c and Figure 1d).

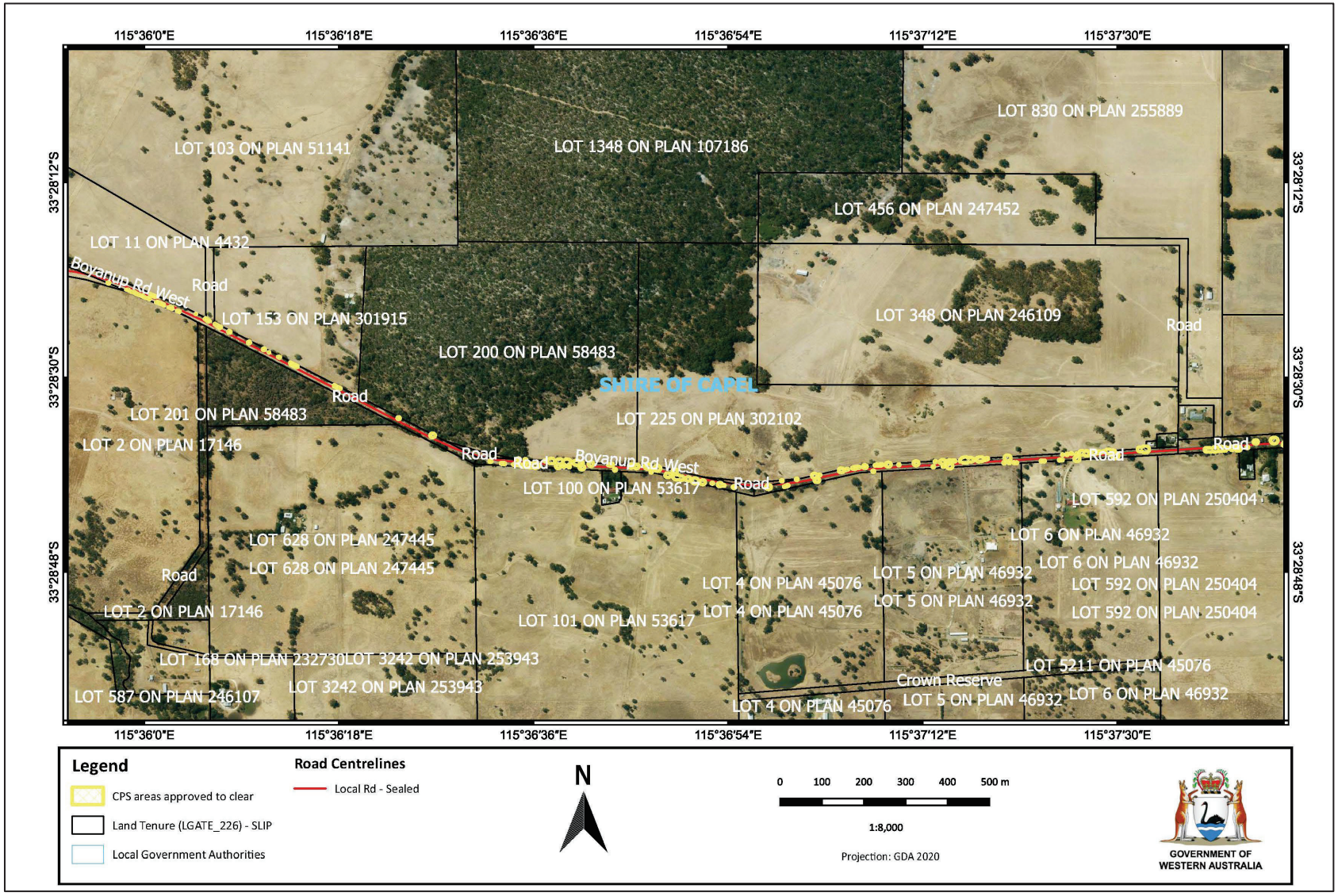

Figure 1a: Map of the boundary of the area within which clearing may occur.

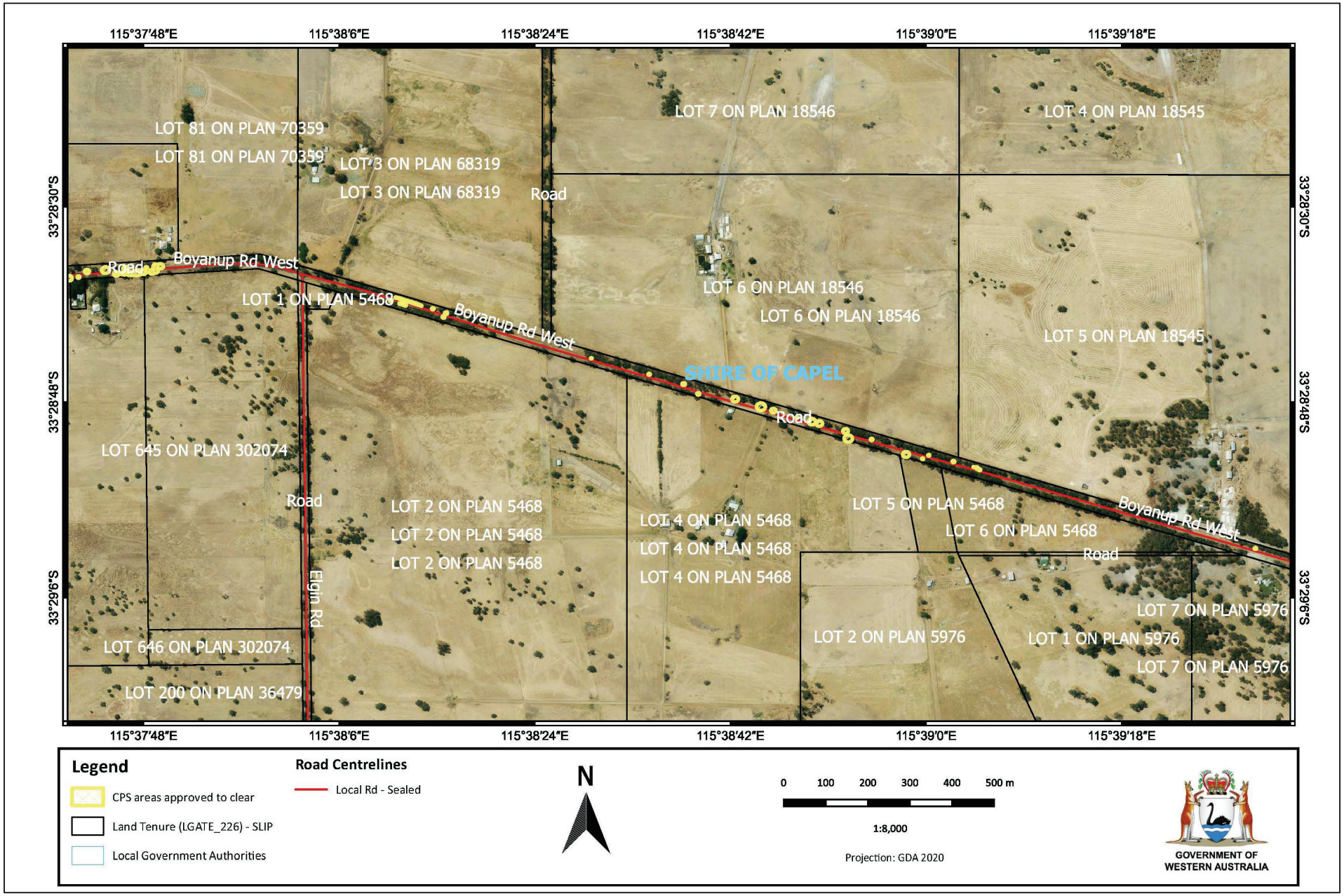

Figure 2b: Map of the boundary of the area within which clearing may occur.

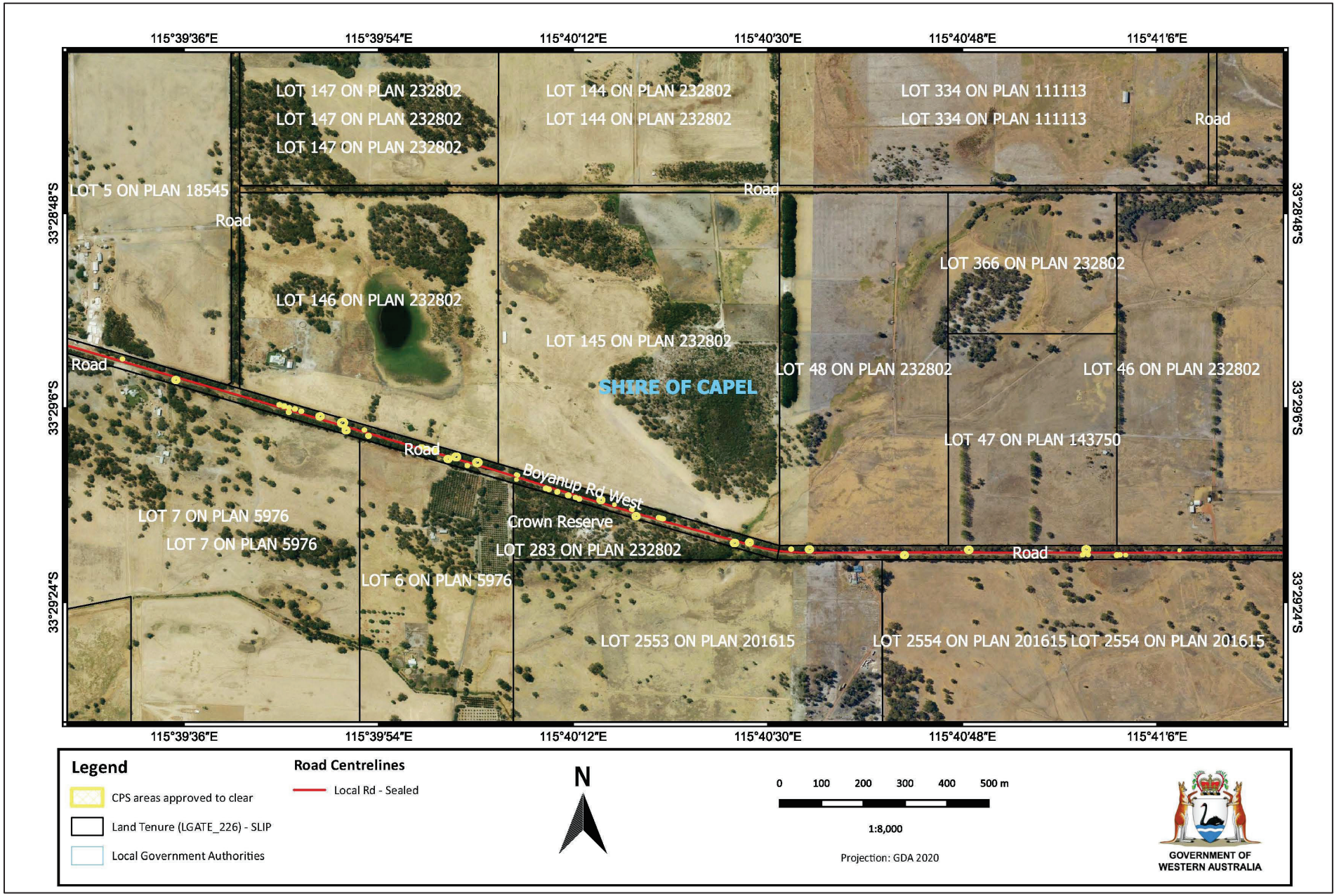

Figure 3c: Map of the boundary of the area within which clearing may occur.

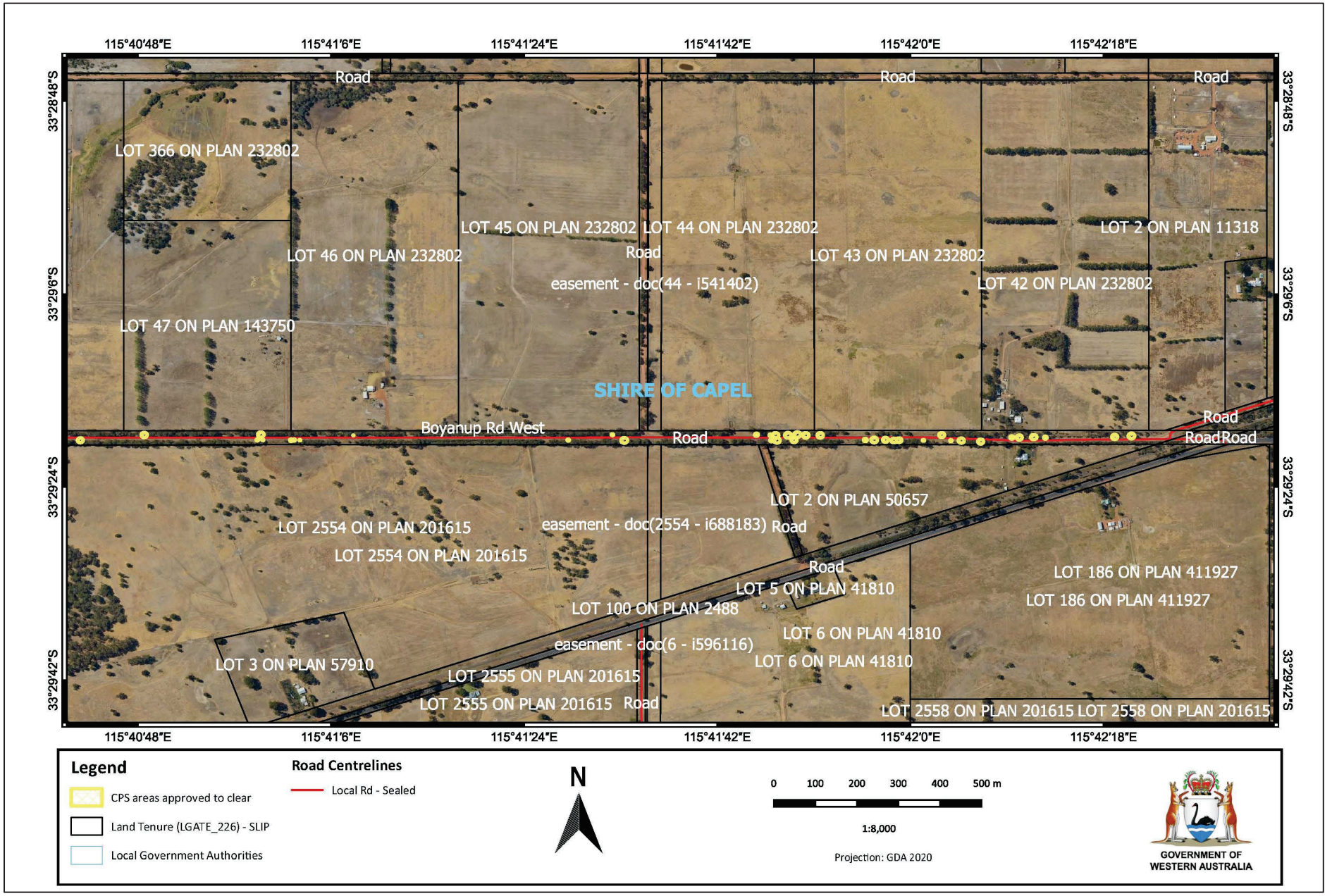

Figure 4d: Map of the boundary of the area within which clearing may occur.

The boundary of areas where fauna and *vegetation* management are required (Figure 2a, Figure 2b, Figure 2c and Figure 2d).

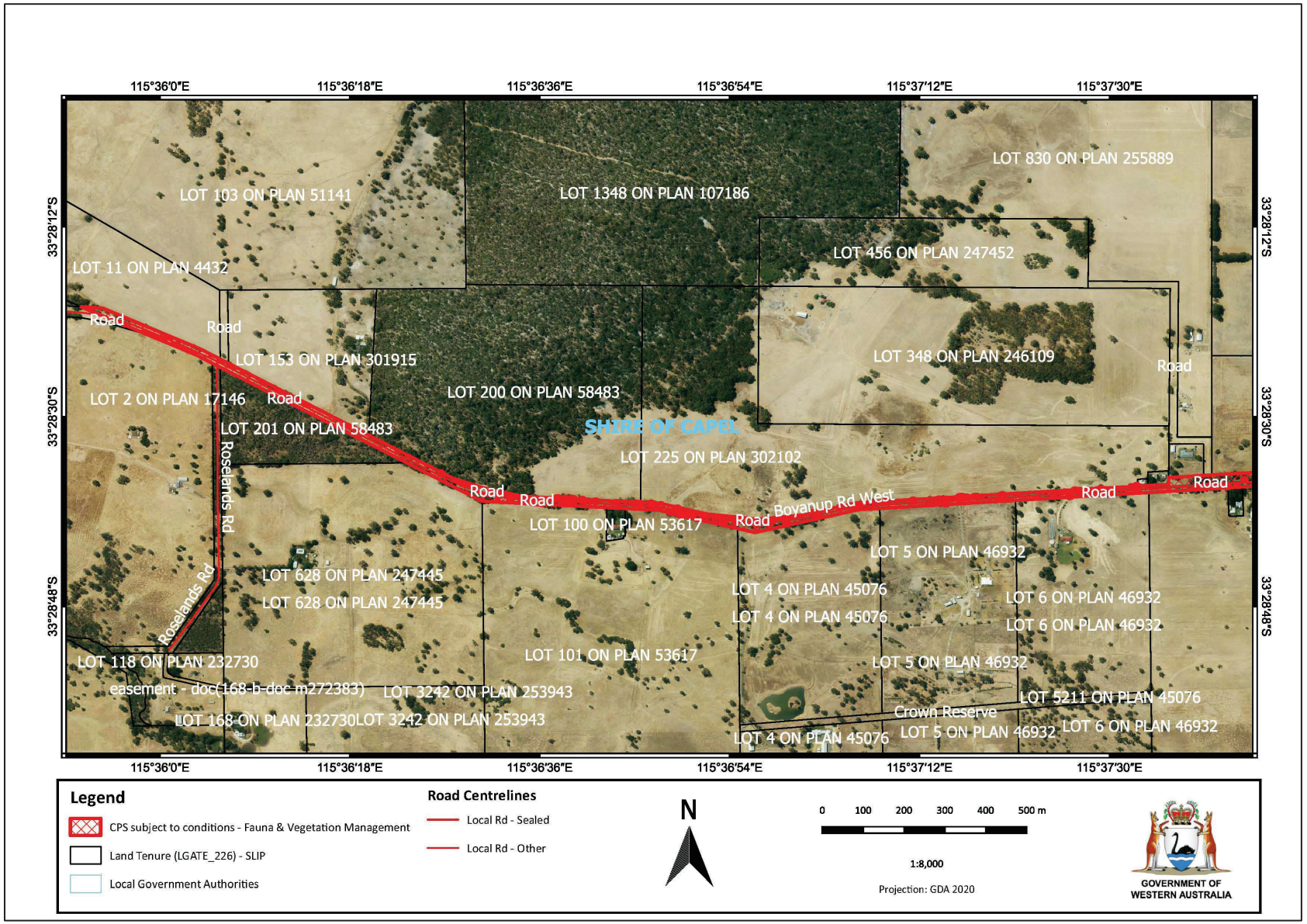

Figure 2a: Map of the boundary of the area within which fauna and vegetation management are required.

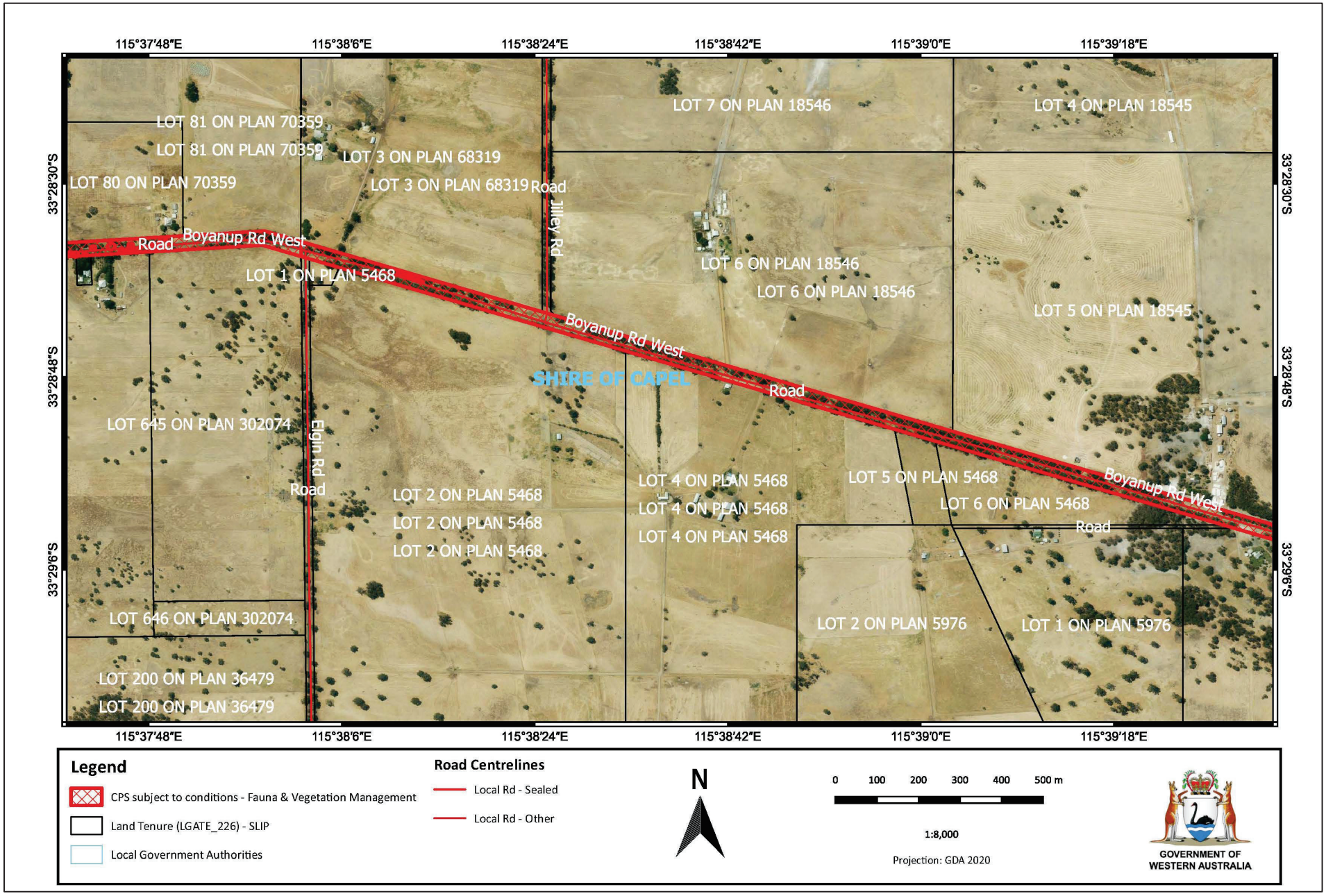

Figure 2b: Map of the boundary of the area within which fauna and vegetation management are required.

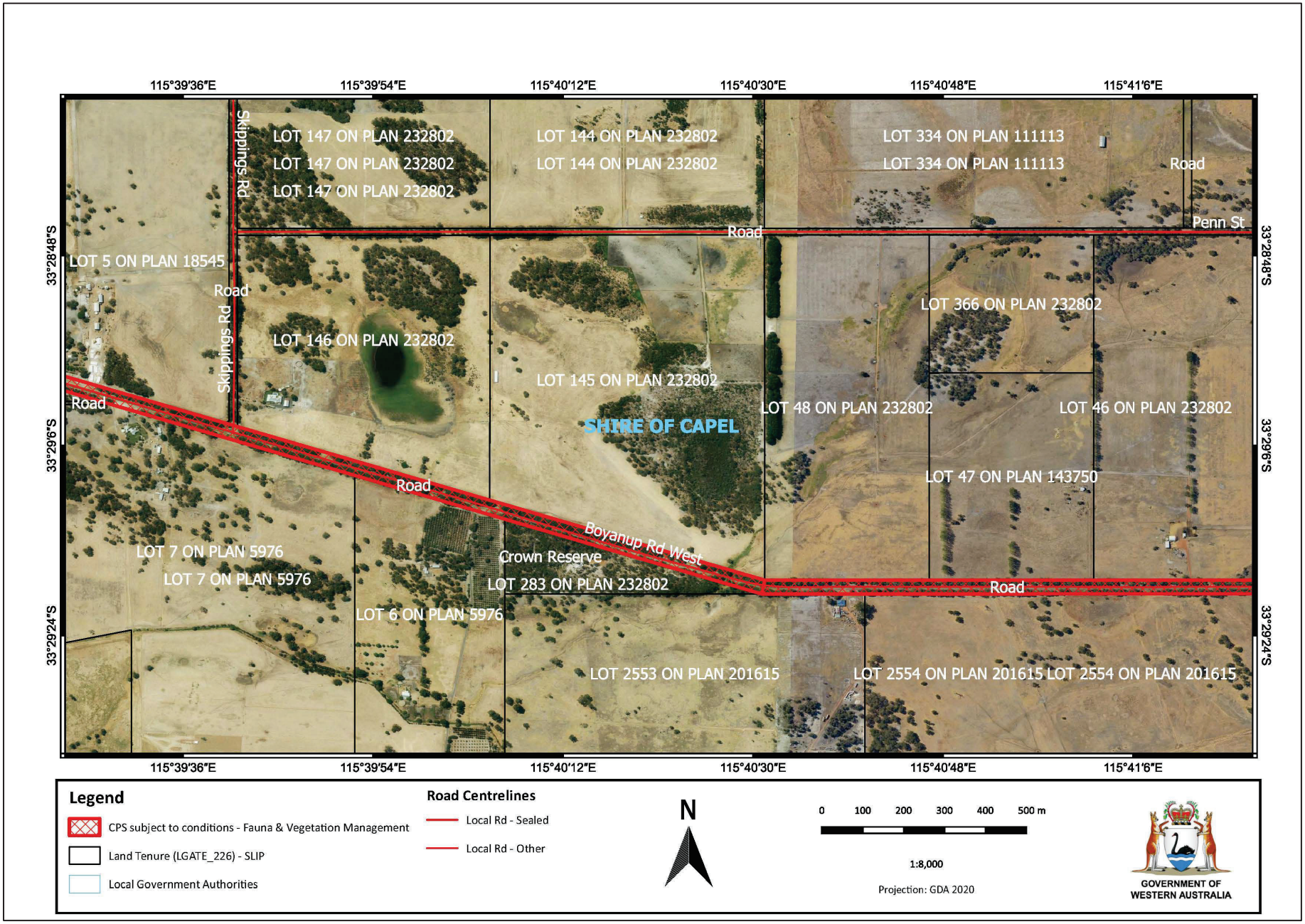

Figure 2c: Map of the boundary of the area within which fauna and vegetation management are required

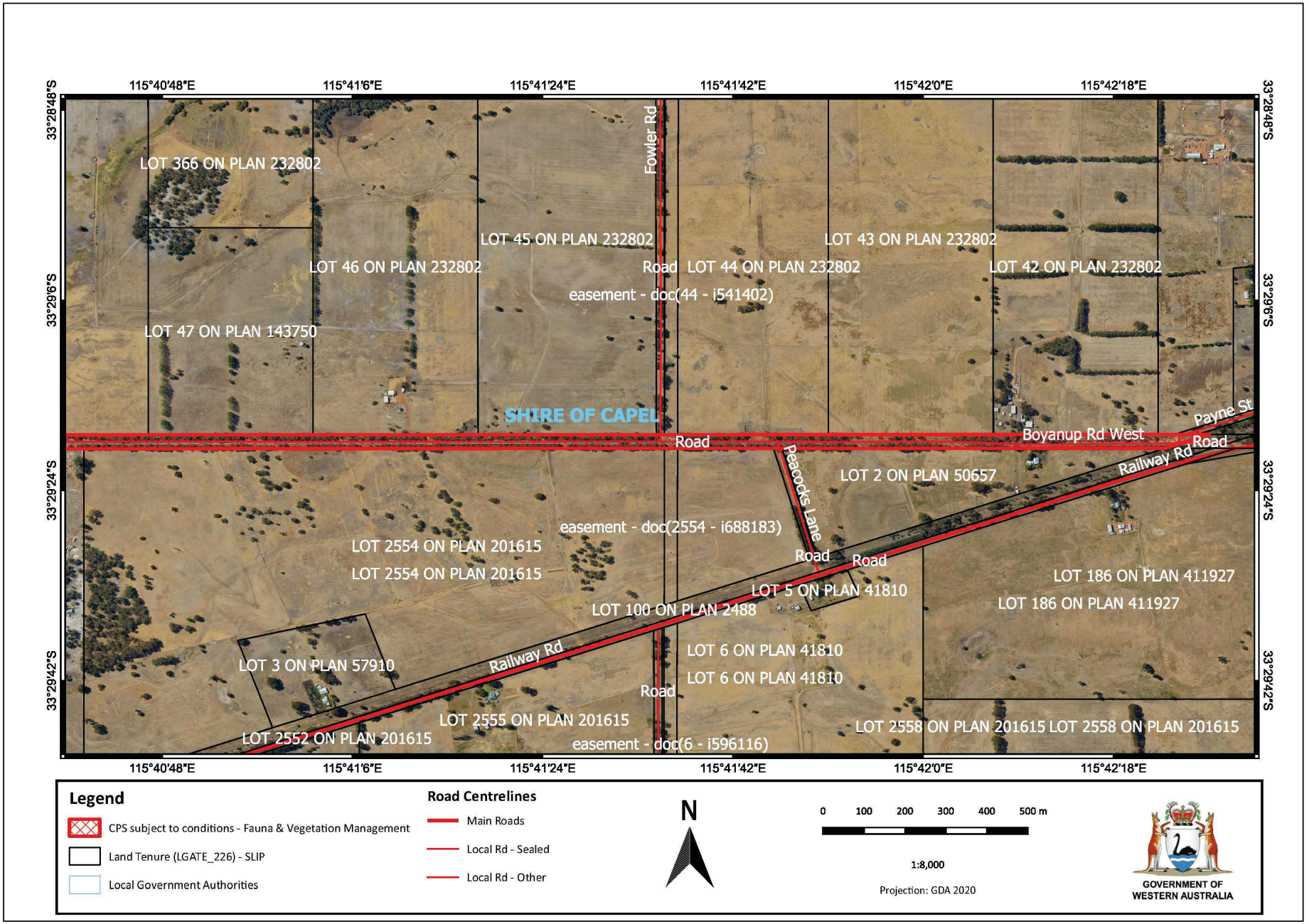

Figure 2d: Map of the boundary of the area within which fauna and vegetation management are required

The boundary of the area where *revegetation* and *rehabilitation* must occur is shown in the map below (Figure 3).

Figure 3: Map of the boundary of the area within which *revegetation* and *rehabilitation* must occur

Schedule 2

Completion Criteria

Table 1: Completion criteria for the *rehabilitation* and *revegetation*.

Aspect	Completion Criteria	Monitoring
Species richness	Species richness is at least 50 per cent of those planted.	The species in the offset site will be counted twice annually by an environmental specialist in spring and autumn for a minimum of three years after the last year plants were established
Vegetation structure - Tuart (Eucalyptus gomphocephala) woodland	Vegetation in the offset site to be broadly representative of Tuart-Jarrah-Marri vegetation structure present in the surrounding area	Structure to be assessed twice annually by an environmental specialist in spring and autumn for a minimum of three years after the last year plants were established
Percentage of weeds present.	1. Reduction of more than 70 per cent of population density of *Ehrharta calycina* (Perennial Veldt Grass), 2. Reduction of 90 per cent of *Trachyandra divaricata* (False Onion Weed) population and *Trachyandra divaricate* (Red Onion Weed) 3. No *Rubus laudatus* (Blackberry) or *Zantedeschia aethiopica* (Arum Lily) within the offset boundary.	Monitor offset site for weeds by quadrats twice annually by an environmental specialist in spring and autumn for a minimum of three years after the last year plants were established.
Survival rate to be achieved.	The offset site needs to ensure a survival rate of at least 70 per cent of the density planted achieved in five years of the planting, including the following; 1. Trees species to have a 70 per cent survival rate, 2. Middle story species (shrubs) to have a 70 per cent survival rate, and 3. Understory species (herbs) to have a 70 per cent survival rate.	The number of surviving plants in the offset site will be monitored twice annually by an environmental specialist in spring and autumn for a minimum of three years after the last year plants were established.
Stem Density/composition	Minimum plant density (p/ha) is: 1. Trees species to be planted at a rate of one tree per 12 m2, 2. Middle story species (shrubs) to be	Stem density to be assessed twice annually by an environmental specialist in spring and autumn for a

Aspect	Completion Criteria	Monitoring
	planted at a rate of two shrubs per 5 m2, and 3. Understory species (herbs) to be planted at a rate of one herb per 2 m2.	minimum of three years after the last year plants were established.
Patch size of bare ground	The offset site has no more than 30 m2 of bare ground	The patch size of bare ground to be assessed twice annually by an environmental specialist in spring and last year plants were established. autumn for a minimum of three years after the
Gates and boundary fence	Gates and boundary fence of the offset site to be in good condition with no obvious damage that will enable the entry of fauna, including rabbits and/or kangaroos into the offset site.	Condition of the gates and fence in the offset site to be assessed twice annually in spring and autumn for a minimum of three years after the last year plants were established.

Government of Western Australia
Department of Water and Environmental Regulation

Clearing Permit Decision Report

1 Application details and outcome

1.1. Permit application details

Permit number:	CPS 8116/3
Permit type:	Purpose permit
Applicant name:	Shire of Capel
Application received:	24 February 2023
Application area:	2.21 hectares of native vegetation
Purpose of clearing:	Road widening
Method of clearing:	Mechanical clearing
Property:	Boyanup Road West road reserve (PIN 1328954), Boyanup Boyanup Road West road reserve (PIN 1328917), Elgin Boyanup Road West road reserve (PINs 1323149, 1323148, 1323147, 1323146, 1254316, 1323143, 1253621), Stratham
Location (LGA area/s):	Shire of Capel
Localities (suburb/s):	Boyanup Elgin Stratham

1.2. Description of clearing activities

This amendment to clearing permit CPS 8116/2 is to alter the completion criteria and recommended species list for the offset required by the permit. The total extent of clearing proposed under this amendment (CPS 8116/3) is unchanged from the previous version of the permit and remains no more than 2.21 hectares of native vegetation within multiple locations along Boyanup Road west road reserve for the purpose of road widening (see figure 1, section 1.5).

1.3. Decision on application

Decision:	Granted
Decision date:	15 December 2023
Decision area:	2.21 hectares of native vegetation, as depicted in Section 1.5, below.

1.4. Reasons for decision

On 26 May 2020, clearing permit CPS 8116/2 was granted to clear up to 2.21 hectares of native vegetation for the purpose of road widening within Boyanup Road West road reserve (PIN: 1328954, Boyanup; PIN: 1328917, Elgin; and PINs: 1323149, 1323148, 1323147, 1323146, 1254316, 1323143 and 1253621, Stratham).

After annual monitoring efforts of the offset area for clearing permit CPS 8116/2 indicated that the offset was failing to comply with the completion criteria, the Shire of Capel, in conjunction with the Department of Biodiversity,

Conservation and Attractions (DBCA), developed a revised set of completion criteria (see Section 2.2) that is better suited to what has been achievable to date whilst also achieving the outcomes of the required offset.

The Delegater Officer amended condition 11 on the permit to reflect the mitigation revegetation plan that had been created and implemented six months after the cleaning was authorised under CPS 8116/2. Condition 12 on the permit was amended to incorporate the changes to the completion criteria and recommended species list for the offset site provided by the DBCA. Minor updates to the clearing permit's definitions and wording within all conditions were also undertaken to align with current department procedures and policies. The permit duration has also been extended to allow for any additional remidial actions to occur as a result of the revised completion criteria.

Based on the revised set of completion criteria and advice from DBCA, the Delegated officer determined to grant an amended clearing permit.

In initiating this amendment, the Delegated Officer reviewed the information available at the time of the amendment and noted that the site characteristics and assessment against the clearing principles, as well as planning and other matters, have remained unchangeded from the Clearing Permit Decision Report CPS 8116/2.

1.5. Site maps

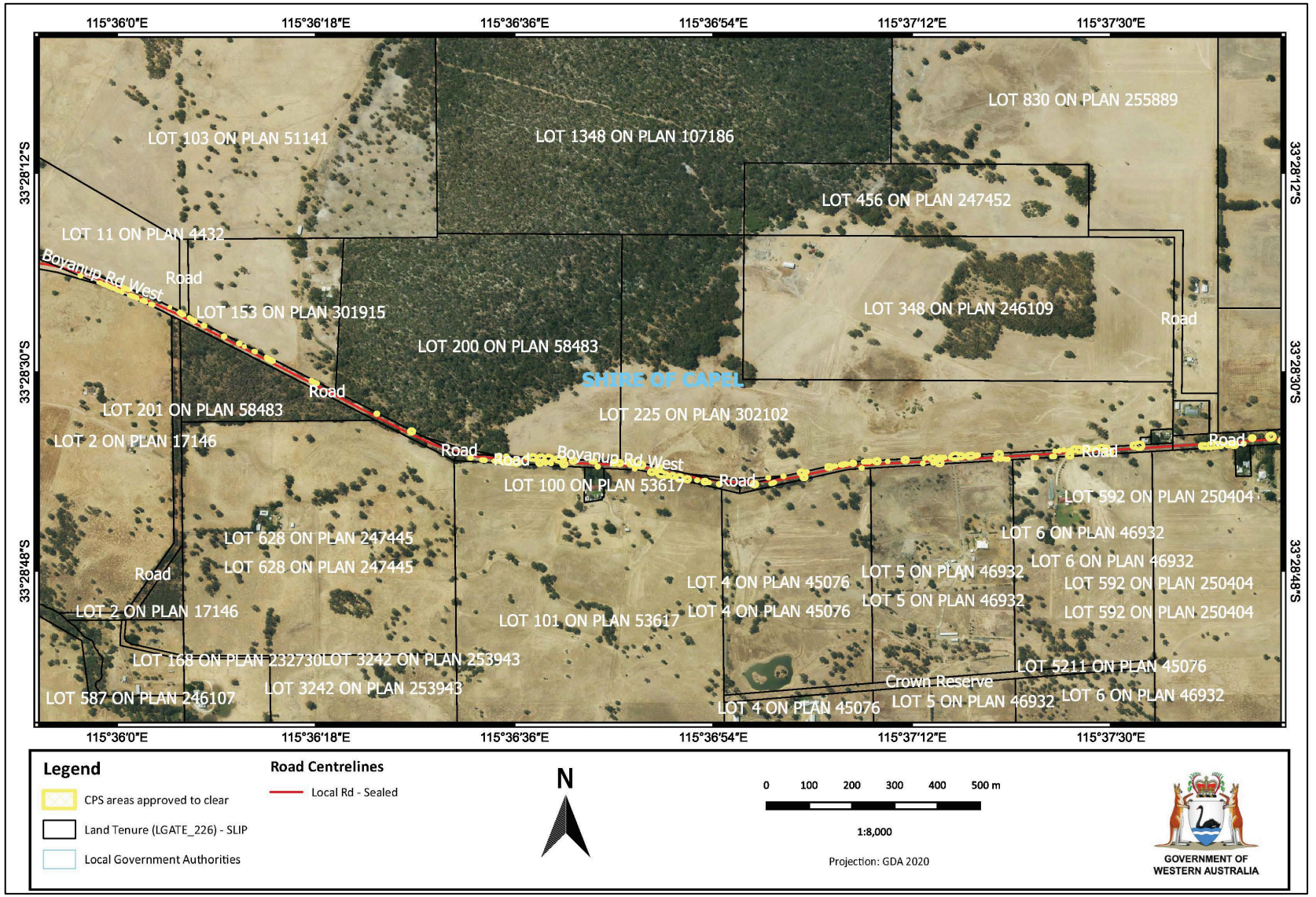

Figure 1a: Map of the application area. The areas crosshatched yellow indicate the areas authorised to be cleared under the granted clearing permit.

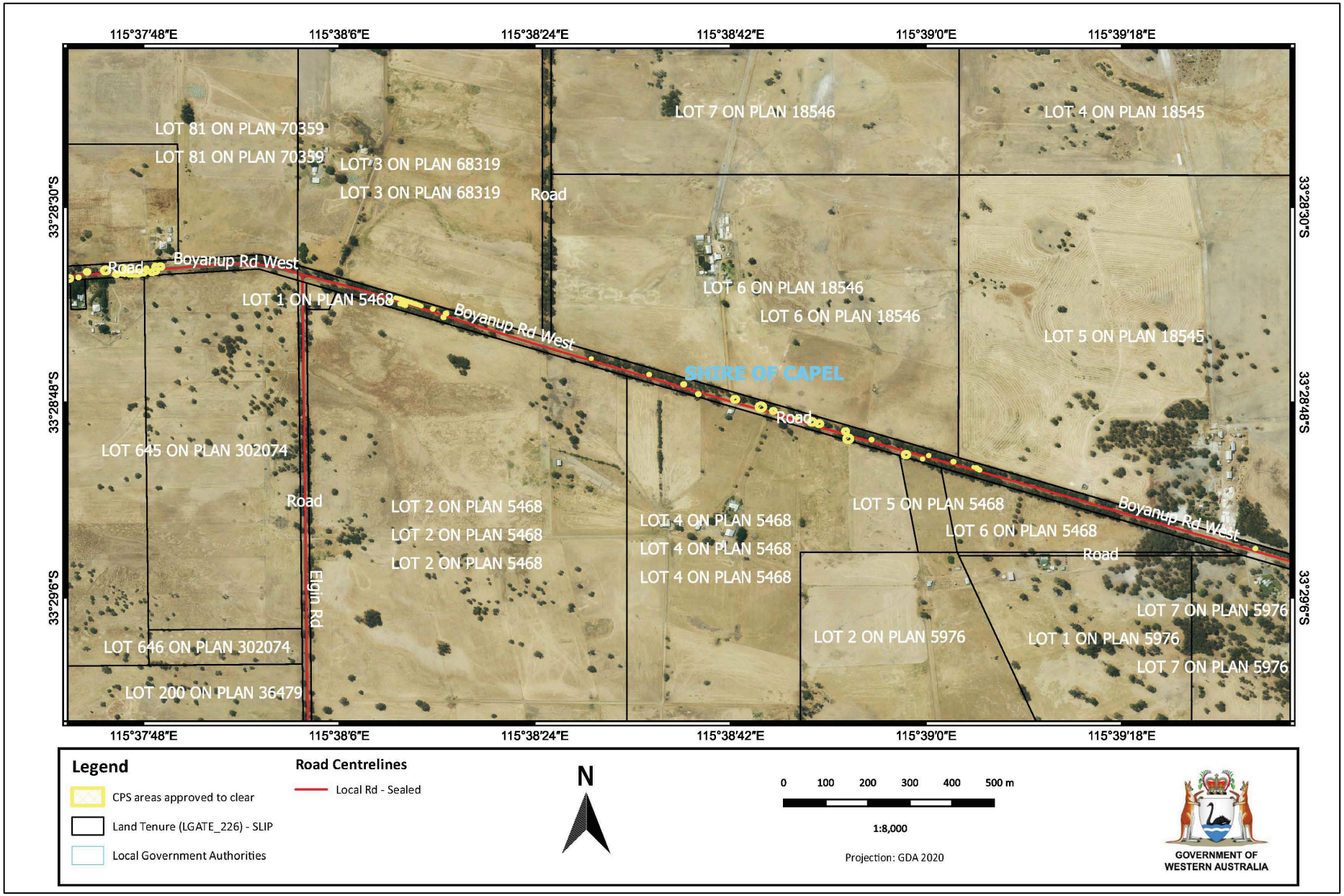

Figure 1b: Map of the application area. The areas crosshatched yellow indicate the areas authorised to be cleared under the granted clearing permit.

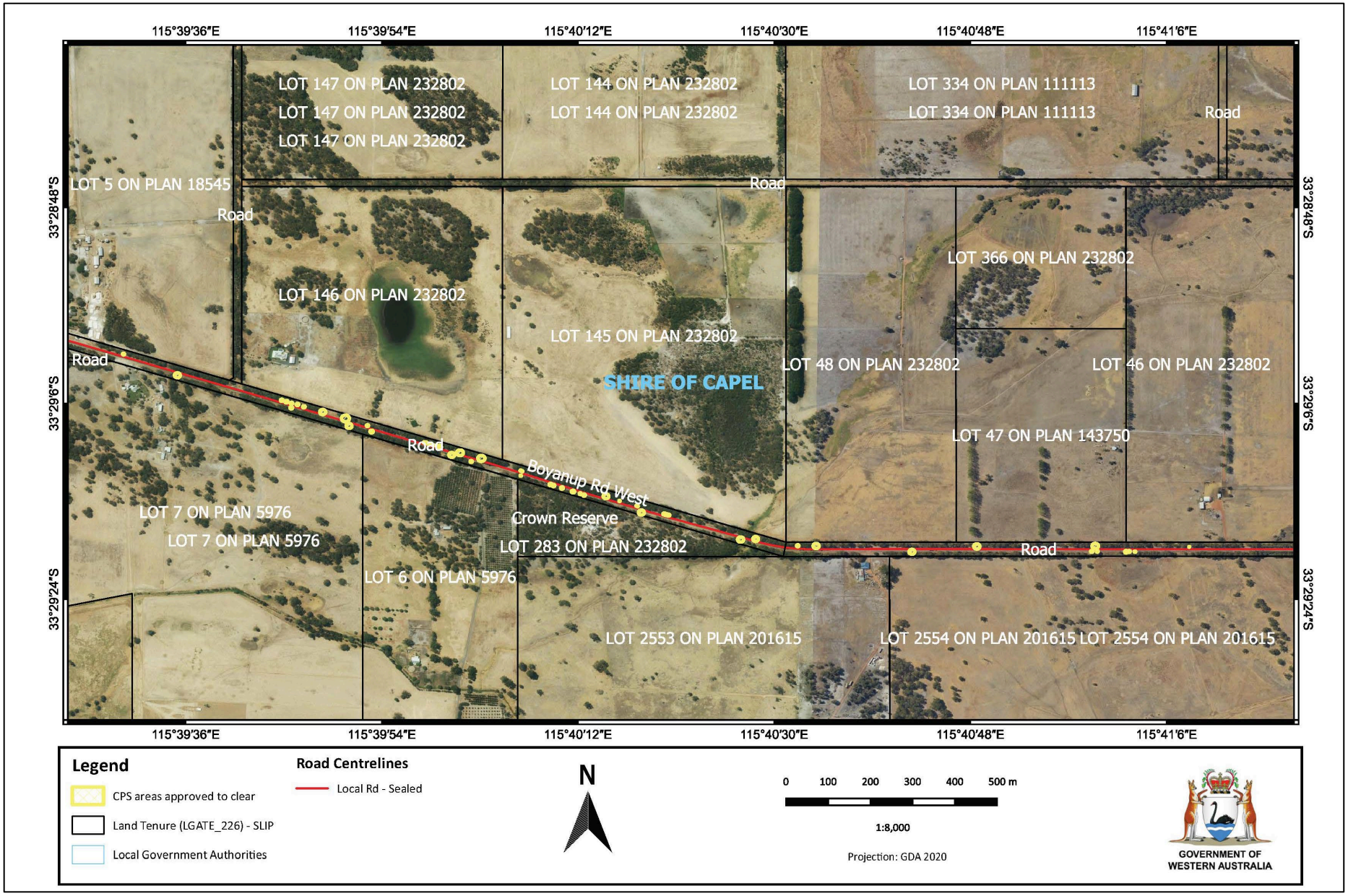

Figure 1c: Map of the application area. The areas crosshatched yellow indicate the areas authorised to be cleared under the granted clearing permit.

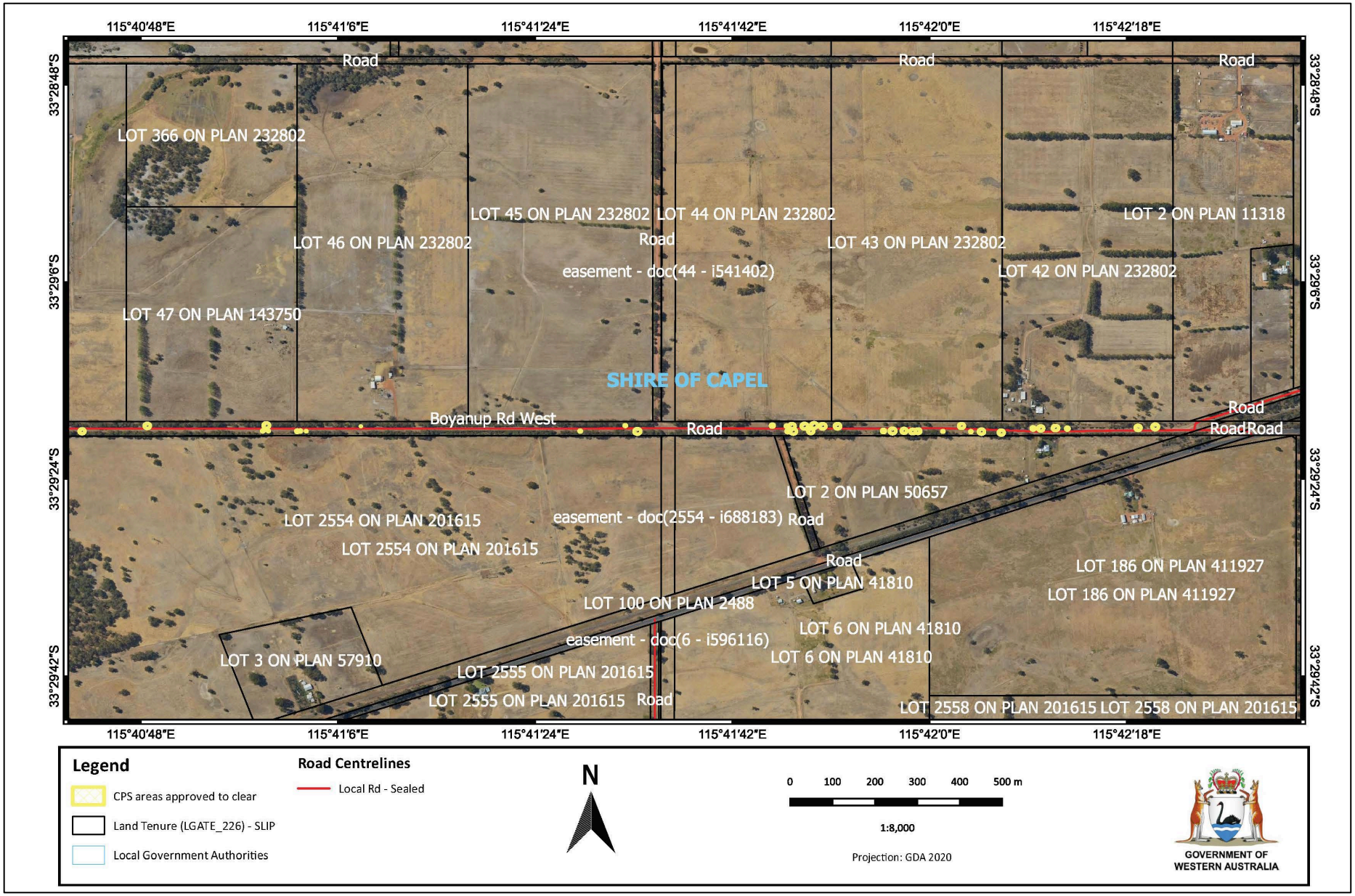

Figure 1d: Map of the application area. The areas crosshatched yellow indicate the areas authorised to be cleared under the granted clearing permit.

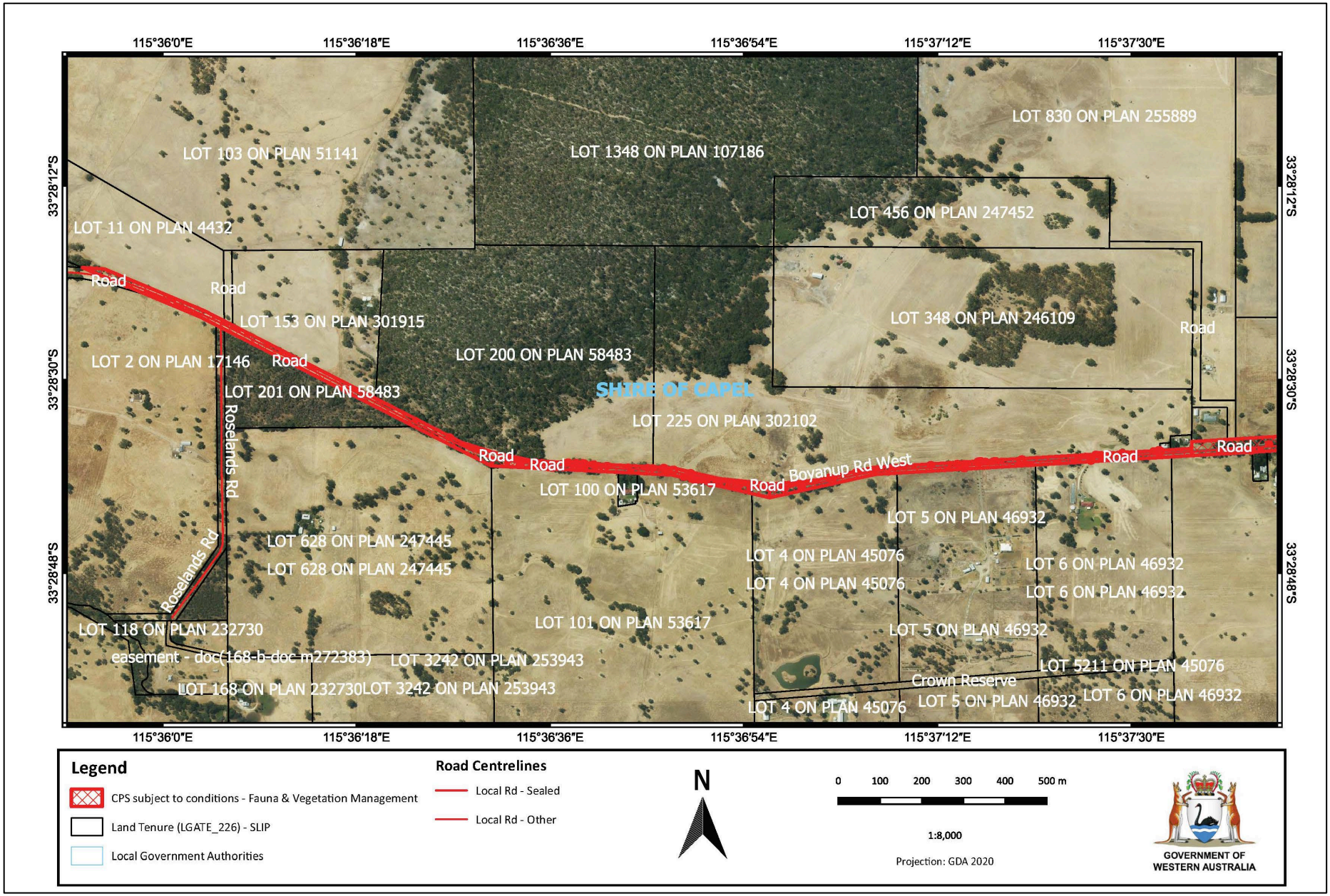

Figure 2a: The areas cross-hatched red indicate areas within which fauna and vegetation management are required.

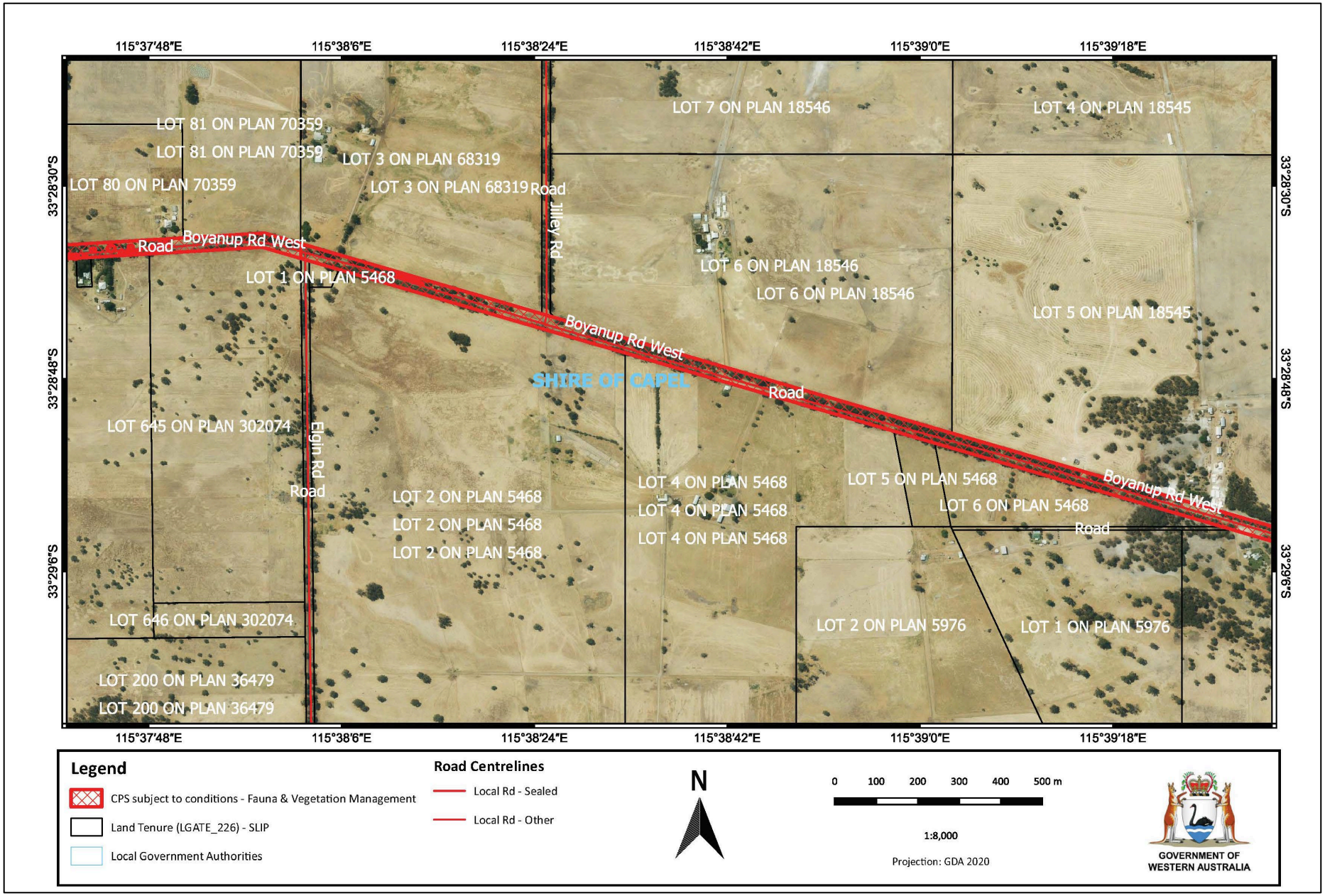

Figure 2b: The areas cross-hatched red indicate areas within which fauna and vegetation management are required.

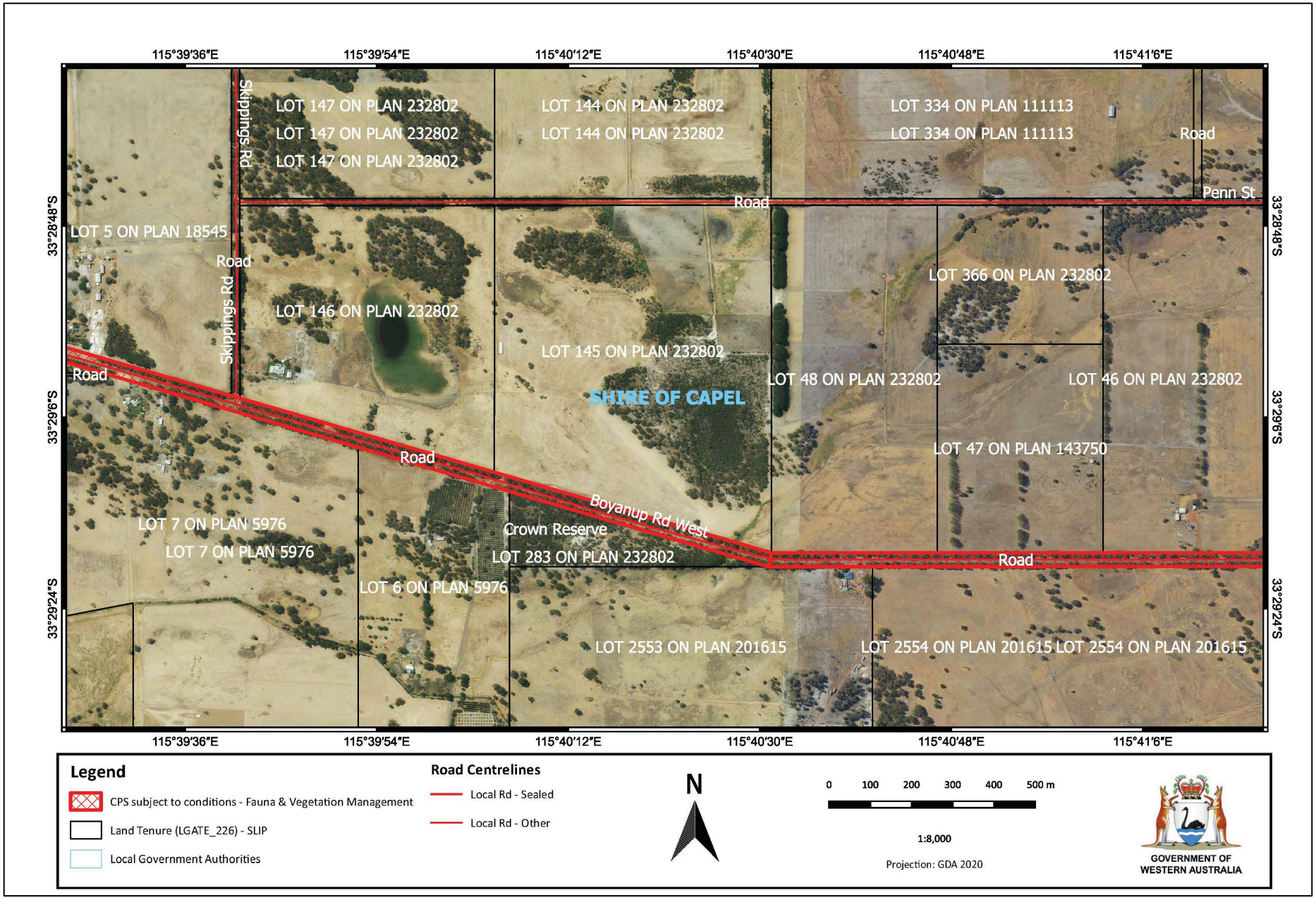

Figure 2c: The areas cross-hatched red indicate areas within which fauna and vegetation management are required.

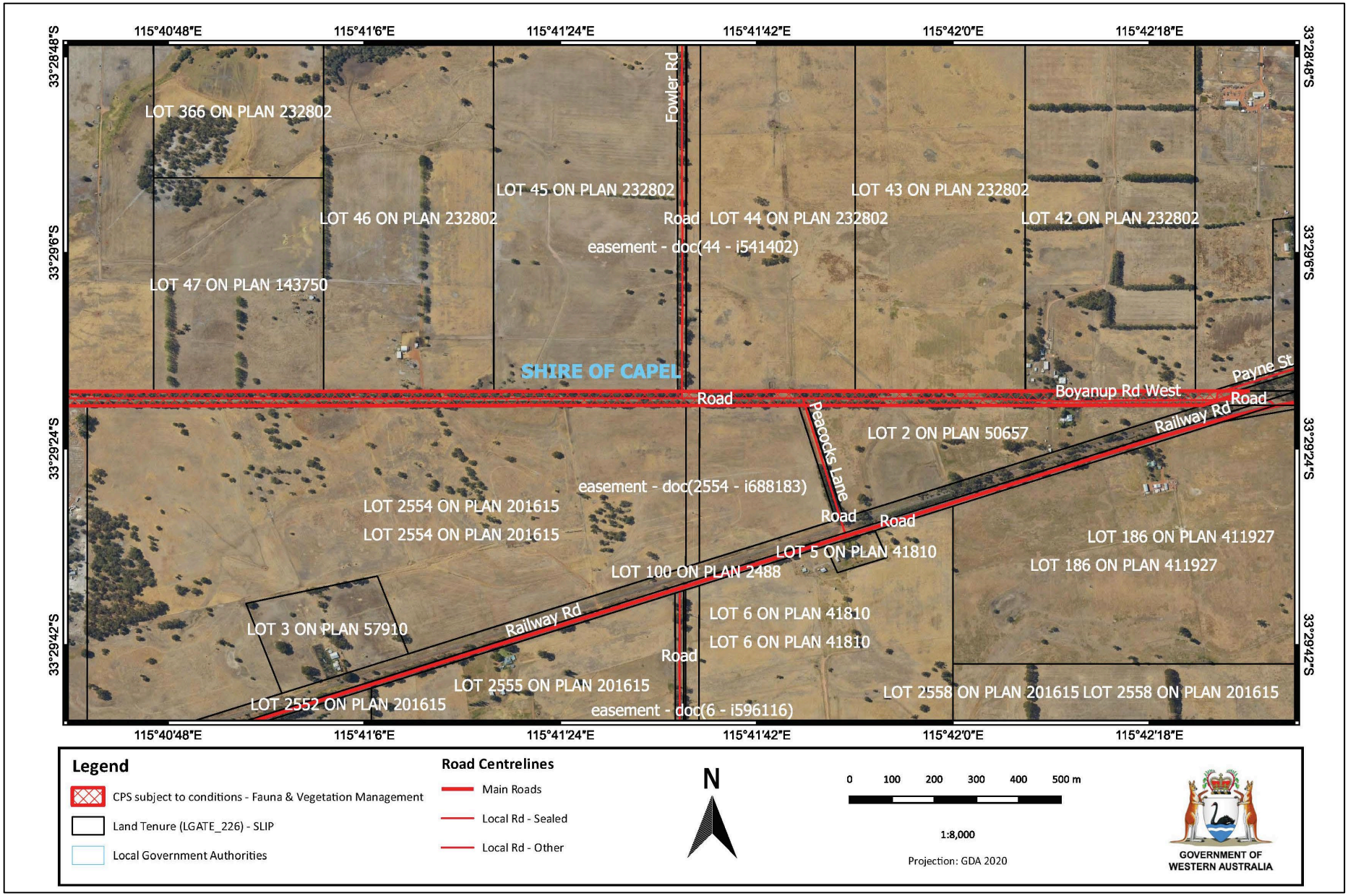

Figure 2d: The areas cross-hatched red indicate areas within which fauna and vegetation management are required.

Figure 3: The area cross-hatched red indicates area within which revegetation and rehabilitation must occur.

2 Detailed assessment of application

2.1. Avoidance and mitigation measures

Given the amendment is a result of remediation actions to the revegetation management plans Completion Criteria and targeted species in order to fulfil the offset requirements of CPS 8116/2, the avoidance and mitigation measures proposed by the permit holder remain unchanged from the previous assessment of the permit and can be found in the Decision Report prepared for Clearing Permit CPS 8116/2.

2.2. Assessment of impacts on environmental values

This amendment is a result of remediation actions determined to be appropriate after monitoring the offset location of CPS 8116/2. Natural Areas carried out the annual monitoring efforts and found that the revegetation was failing the completion criteria milestones set out in the revegetation management plan. These milestones included achieving the required survival rate, stem density/composition, and patch size of bare ground between 2021-2023 (Natural Area, 2022).

The DBCA conducted a site visit on Lot 150 on Plan 29857 and acknowledged the difficulties of fulfilling the offset criteria of CPS 8116/2 within an ex-grazing paddock (Shire of Caple, 2023b). As such, the Shire of Capel, in conjunction with the DBCA, developed a revised set of completion criteria and recommended planting species list to be implemented that would be better able to address the offset requirements of CPS 8116/2. The species chosen are those that have shown to have better success at the site. DWER determined that the revised completion criteria and recommended planting species, endorsed by the DBCA, were adequate to fulfil the offset requirements and would be implemented into the amendment of CPS 8116/3.

The Delegated Officer revised the mitigation conditions (condition 11 of clearing permit CPS 8932/1), updating the permit to better reflect the revegetation plan that was submitted by Natural Area. Revisions were also made to the Target Species list of the revegetation management plan. The revisions to the Completion Criteria include, the need to ensure a survival rate of at least 70 per cent of the density planted achieved in five years following planting, the minimum plant density of tree species to be one tree per 12 meters squared, and a maximum bare ground size within the offset area to be 30 meters squared.

The revised Target Species list includes the following species:

Table 1: Revised target species list for revegetation activities

Species	Common name	Life form	Cockatoo value F (foraging), N (nesting), R (roosting), U (unknown)
Acacia pulchella	Prickly Moses	Shrub	U
Acacia saligna	Orange Wattle	Shrub	F
Acacia stenoptera	Narrow Winged Wattle	Herb	U
Adenanthos meisneri	-	Shrub	U
Agonis flexuosa	Peppermint	Tree	F
Allocasuarina fraseriana	Sheoak	Tree	F
Allocasuarina humilis	Dwarf Sheoak	Shrub	U
Banksia attenuata	Slender Banksia	Tree	F
Banksia grandis	Bull Banksia	Tree	F
Bossiaea eriocarpa	Common Brown Pea	Shrub	U
Corymbia calophylla	Marri	Tree	F,N,R
Eucalyptus marginata	Jarrah	Tree	F,N,R
Eucalyptus gomphocephala	Tuart	Tree	F,N,R
Gompholobium confertum	-	Shrub	U
Gompholobium tomentosum	Hairy Yellow Pea	Shrub	U
Hakea prostrata	Harsh Hakea	Shrub	F
Hakea ruscifolia	Candle Hakea	Shrub	F
Hakea lissocarpha	Honey Bush	Shrub	F
Jacksonia furcellata	Grey Stinkwood	Shrub	F
Kunzea glabrescens	Spearwood	Shrub	U
Melaleuca thymoides	-	Shrub	U

Species	Common name	Life form	Cockatoo value F (foraging), N (nesting), R (roosting), U (unknown)
Patersonia occidentalis	Purple Flag	Herb	U
Phyllanthus calycinus	False Boronia	Shrub	U
Spyridium globulosum	Basket Bush	Shrub	U
Stirlingia latifolia	Blueboy	Shrub	U
Xylomelum occidentale	Woody Pear	Tree	U

Given the above, the Delegated Officer considered that all other criteria outside of the offset changes, remain unchanged from the original assessment and can be found in the clearing permit Decision Report for CPS 8116/2 (DWER, 2020).

2.3. Relevant planning instruments and other matters

The assessment against planning instruments and other matters is unchanged and can be found in Decision Report prepared for Clearing permit CPS 8116/2.

H.1. References

Department of Water and Environmental Regulation (DWER) (2019) *Purpose permit and decision report: CPS 8116/1. Available from* https://ftp.dwer.wa.gov.au/permit/8116/.

Department of Water and Environmental Regulation (DWER) (2020) *Purpose permit and decision report: CPS 8816/2*. Available from: https://ftp.dwer.wa.gov.au/permit/8116/.

Office of the Appeals Convenor (2020) *Appeals Convenor's Report to the Minister for Environment: Appeal against conditions of clearing permit CPS 8116/1 Upgrade of Boyanup Road West, Shire of Capel*. Office of the Appeals Convenor, Western Australia. Available at: https://www.appealsconvenor.wa.gov.au/Appeal?id=31608.

Shire of Capel (2022) s*upporting information for clearing permit application CPS 8116/3, offset monitoring report,* received 24 February 2023 (DWER Ref: DWERDT760796).

Shire of Capel (2023a) *Clearing permit application CPS 8116/3*, received 24 February 2023 (DWER Ref: DWERDT740571).

Shire of Capel (2023b) s*upporting information for clearing permit application CPS 8116/3, Letter from the DBCA*, received 24 February 2023 (DWER Ref: DWERDT760796).

Shire of Capel (2023c) s*upporting information for clearing permit application CPS 8116/3, Letter for clearing permit completion criteria amendment*, received 15 September 2023 (DWER Ref: DWERDT836230).

Shire of Capel (2023d) s*upporting information for clearing permit application CPS 8116/3, offset monitoring report,* received 13 July 2023 (DWER Ref: DWERDT847212).

Target species

Table 2: Updated target species for *rehabilitation* and *revegetation*.

Species	Common name	Life form	Cockatoo value F (foraging), N (nesting), R (roosting), U (unknown)
Acacia pulchella	Prickly Moses	Shrub	U
Acacia saligna	Orange Wattle	Shrub	F
Acacia stenoptera	Narrow Winged Wattle	Herb	U
Adenanthos meisneri	-	Shrub	U
Agonis flexuosa	Peppermint	Tree	F
Allocasuarina fraseriana	Sheoak	Tree	F
Allocasuarina humilis	Dwarf Sheoak	Shrub	U
Banksia attenuata	Slender Banksia	Tree	F
Banksia grandis	Bull Banksia	Tree	F
Bossiaea eriocarpa	Common Brown Pea	Shrub	U
Corymbia calophylla	Marri	Tree	F,N,R
Eucalyptus marginata	Jarrah	Tree	F,N,R
Eucalyptus gomphocephala	Tuart	Tree	F,N,R
Gompholobium confertum	-	Shrub	U
Gompholobium tomentosum	Hairy Yellow Pea	Shrub	U
Hakea prostrata	Harsh Hakea	Shrub	F
Hakea ruscifolia	Candle Hakea	Shrub	F
Hakea lissocarpha	Honey Bush	Shrub	F
Jacksonia furcellata	Grey Stinkwood	Shrub	F
Kunzea glabrescens	Spearwood	Shrub	U
Melaleuca thymoides	-	Shrub	U
Patersonia occidentalis	Purple Flag	Herb	U
Phyllanthus calycinus	False Boronia	Shrub	U
Spyridium globulosum	Basket Bush	Shrub	U
Stirlingia latifolia	Blueboy	Shrub	U
Xylomelum occidentale	Woody Pear	Tree	U

Schedule 3

Nest Boxes for Red-tailed Phascogales

Department of Biodiversity, Conservation and Attractions
GOVERNMENT OF WESTERN AUSTRALIA

FAUNA NOTES

Nest Boxes for Red-tailed Phascogales

The red-tailed phascogale (*Phascogale calura*), also known as Kengoor, is Specially Protected under Western Australia's State legislation as Conservation Dependent. This means that the species requires ongoing conservation intervention to prevent them from becoming a threatened species again.

The species was once known from much of arid and semi-arid Australia but is now only found in remnant vegetation in the southern Wheatbelt. One of the current threats to the species is nest hollow shortages due to habitat loss and degradation from land clearing and fire, and competition with native and pest birds and feral European honey bees.

Nest boxes can be used to help conserve red-tailed phascogales by enabling them to breed in areas where natural hollows are limited. This information sheet provides advice on how to select an appropriate site, broad guidelines on how to design and place a nest box, and general advice on how to maintain and monitor nest boxes.

It is important to remember that the retention of both old and dead trees that have suitable hollows for red-tail phascogales is important for breeding and hence the long-term survival of the species. The installation of nest boxes should not be used to justify the removal of natural hollow-bearing trees.

Photo: Meredith Spencer/Bush Heritage Australia

When to Use Nest Boxes

Nest boxes may be useful at sites where natural hollows are limited, such as where existing hollows are degrading and not being replaced quickly enough due to lack of tree regeneration. However, red-tailed phascogales don't always use nest boxes when provided. There are ways to select sites for nest boxes that will increase the chance that they will be used by red-tailed phascogales.

Where and when do red-tailed phascogales nest?

Red-tailed phascogales are largely found in old-growth woodlands, predominantly dominated by Wandoo and York Gum and associated with Red Sheoak. Red-tailed phascogales have a preference for habitats that contain numerous tree hollows, have semi-continuous canopy and are long unburnt. Red-tailed phascogales are known to nest in hollow logs, tree hollows, and the skirts and stumps of Grass Trees.

Phascogales use nesting hollows all year round for sleeping during the day as they are a nocturnal species that is active during the night. They may use several hollows within their home range. Mating occurs during a three-week period in July, and young are born 28-30 days later. The young remain dependent on the mother from August to October.

Is my site suitable for nest boxes?

It is recommended that nest boxes be used in known nesting areas where there has been a decrease in the availability of natural nesting hollows. To decide if your site is suitable for nest boxes you need to consider the following criteria (Table 1). Protecting habitat, revegetating and controlling competitive pest species are alternative conservation actions that can also be used to complement the placement of artificial hollows.

Table 1: Criteria to determine if a site is suitable for the placement of nest boxes

1.	**The site contains suitable habitat within the known breeding range of the species**	
	Important consideration	Red-tailed phascogales generally nest in woodlands dominated by Wandoo and York Gum and associated with Red Sheoak. The species is currently only known to persist in the southern Wheatbelt.
2.	**The site is in an area where it is suspected or known that there is a lack of available tree hollows preventing breeding that would otherwise occur, due to the loss of suitable hollow-bearing trees (either through clearing or natural die-off).**	
	Important consideration	Indirect evidence that may indicate a lack of available tree hollows includes sightings of red-tailed phascogales within rural buildings.
3.	**The hollows are placed in secure locations and the owner/manager of these areas is supportive and willing to provide the necessary long-term security and annual maintenance for the entire time that the artificial hollow will be in place.**	
	Important consideration	For advice on the monitoring and maintenance requirements, please refer to the section on how to monitor and maintain nest boxes.
4.	**A suitable artificial hollow design is used.**	
	Important consideration	For greatest chance of success, please refer to the section on how to design and place nest boxes

How to Design and Place Nest Boxes

There are various designs for nest boxes available but it best to tailor the design of the nest box to the specific nesting requirements of the red-tailed phascogale. This will encourage red-tailed phascogales to use the nest box while discouraging other species.

It is recommended that multiple nest boxes are placed at 50 m intervals around a site as red-tailed phascogales are known to regularly move between several nesting hollows.

Nest boxes being attached with nails (left), with a rear entrance hole (centre), and with a hinged lid and carpet (right).
Photo: Angela Sanders/Bush Heritage Australia (left), DBCA (centre and right)

Nest box design

With any nest box design for red-tailed phascogales, it is important to ensure that it fits the following general specifications (Table 2). A diagram is also provided of a recommended design by Bush Heritage Australia, which they have successfully used to monitor red-tailed phascogales in Kojonup.

Table 2: General specifications for red-tailed phascogale nest boxes

Component	Specification
Material	Rough-sawn untreated Jarrah or other native Australian hard woods with > 15mm thickness ensures that it is durable enough to last > 5 years and provides adequate thermal insulation. Softwoods, like marine ply, can be used as long as they are not treated with toxic preserving chemicals like copper or arsenic. DO NOT USE: treated timber, chipboard, pine, interior ply, any materials under 15 mm thickness, toxic/smelly paint.
Joinery	Long, galvanised screws or nails. Make sure that there are no projecting nails or screws. Non-toxic waterproof glue can also be used. DO NOT USE: Toxic/smelly glues
Entrance hole	Rear entrance hole with a diameter of 30 - 40 mm
Cavity	Cavity size approximately 20 - 30 mm x 20 - 30 mm x 20 - 30 mm. Weatherproof and dark. Toe holds on inside walls enabling animals to climb out (i.e. walls should be made from rough-sawn timber or notched with a circular saw)
Base	Recessed inside walls. Three small (<10 mm) drainage holes.
Lid	Hinged lid to allow for inspection but well-secured to prevent brush-tailed possums from gaining access. A piece of carpet or perspex glued to the inside of the lid to discourage bees. Sloped from the back and overhanging the front and side by 25 mm for weather protection.
Nesting material	Weathered wood chips, shredded Jarrah bark or Paperbark, and/or untreated sheep's wool. Filled to cover the base of the internal cavity.

Mounting and placement

It is important that nest boxes are placed where they will be accessible for future monitoring and maintenance, but preferably not conspicuous to the general public.

Nest boxes should be mounted on rough-barked trees, preferably Wandoo, York Gum or Red Sheoak, with a diameter of ≥ 30 cm. DO NOT place nest boxes on trees that have existing hollows.

Next boxes should be mounted so that that it is vertical and securely fastened to a tree at a height of 3 - 5 m above ground level. Red-tailed phascogales show no preference for aspect of nest boxes, but they should preferably be positioned to provide shelter from prevailing weather, particularly from sun and rain.

The best way to secure a nest box to a tree is by using two to four long galvanised screws or nails and securing it directly into the tree. One or two of the screws/nails should be through the pre-drilled holes at the back of the box.

Safety

Care needs to be taken when placing next boxes to ensure human safety is considered at all times. Next boxes are heavy and require lifting and manoeuvring into position.

How to Monitor and Maintain Nest Boxes

It is important to monitor and maintain nest boxes after they have been erected to:

- determine if the next box is being used by red-tailed phascogales or other species (native or pest),
- determine the effectiveness of the design and placement of the next box,
- identify any problems with pest species or maintenance requirements, and
- resolve any problems to ensure the next box continues to be useful for nesting by red-tailed phascogale.

It is important to continue a regime of regular maintenance while the nest box is required.

Red-tailed phascogales inside a nest box.
Photo: Angela Sanders/Bush Heritage Australia

How do I monitor nest boxes?

Before undertaking monitoring of nest boxes for red-tailed phascogales, it is recommended that you seek advice from the Department of Biodiversity, Conservation and Attractions. It is also important to contact the Department's Wildlife Licensing Section to determine if a licence to disturb fauna is required (wildlifelicensing@dbca.wa.gov.au).

Monitoring nest boxes requires keen observation and naturalist skills. It is often not possible to observe direct evidence of use and therefore inferences must be made based on other observations. There are a variety of techniques available to monitor next boxes, and a combination of several is likely to achieve the best results (Table 3).

Keep in mind that it is important to limit disturbance to any animals using the nest box, particularly during the breeding season. Animals should not be physically disturbed or handled.

When monitoring a nest box, always ensure that it is done as quickly and quietly as possible to avoid disturbing any animals that may be using it. Phascogales are nocturnal animals and therefore it is best to monitor them near sunrise or sunset. Therefore, if a phascogale is disturbed during the monitoring and leaves the nest box, the sun is not too bright, and it is not too hot.

Next boxes can be left for long-periods of time without checking but ideally should be monitored once a year during the early mating season (July).

The information collected from the monitoring should be written down and reported. There are standard fauna report forms available on the Department's website (https://www.dpaw.wa.gov.au/plants-and-animals/threatened-species-and-communities/threatened-animals) that can be used to record the details of your sighting.

Alternatively, if you are frequently monitoring a larger number of nest boxes, you can put the details into a spreadsheet. Records should be submitted to the Department by emailing fauna@dbca.wa.gov.au. The Department will put the records into the Threatened and Priority Fauna Database and it will be used to inform conservation and management decisions.

Any other opportunistic sightings of Threatened and Priority species are always appreciated and can also be reported via the same email.

Important information to record includes: observer's name and contact details, date and time, location, fauna species, description of the animal or a photo, vegetation description, and observation description (i.e. details about nest box monitoring, signs of use, animal behaviour etc.).

Table 3: Techniques for monitoring nest boxes

Technique	Description of Technique
Observation from the ground – looking for signs of use outside the nest box	Look for signs of recent use from the outside, particularly noting any chew or scratch marks, and any discolouration around the entrance hole(s). Cobwebs covering the entrances will indicate that the nest box has not been used recently. A light piece of string nailed over the entrance hole is a useful way to determine if an animal is inside the nest box because animals entering the box will push the end of the string in with them.
Observation from the ground – observing insect activity outside the nest box	Faecal matter produced by animals attracts insects, especially flies and ants. Blowflies around a nest usually indicates that a death has occurred.
Observation from the ground – stag watching	Stag watching is when you watch the nest box for a certain period of time to see if any animals exit the nest box. The following methodology is recommended: • Choose a place to sit within 2 -5 m of the nest box and within sight of its entrance holes • Sit quietly from at least 10 minutes before dusk until at least 30 minutes after sunset. • When movement is observed, see if you can identify the animal in any natural light available by observing its shape and size. If this is not possible, use a torch to illuminate the animal to see its distinguishing features. • Take notes of the important information (see above).
Observation via a camera – telescopic camera	To avoid disturbing any animals that may be using the next box, look inside the nest via the entrance holes with the aid of a telescopic pole and camera or mirror.
Observation via a camera (long-term monitoring) – remote camera	Cameras can be installed in or nearby a nest box to watch remotely to see if the nest box is used. This technique allows for monitoring/information to be gathered throughout the year, including throughout the breeding season. When installing a camera nearby a nest box, make sure it is in sight of the entrance holes at the rear of the nest box. If you are installing a camera inside the nest box, make sure it is prepared before the nest box is mounted to a tree so that the camera can easily be turned on and off without disturbing any animals inside the nest box. There are various types of nest-box camera kits with infra-red lights that can be used.
Observation via a ladder – looking for signs of use inside the nest box	If the nest box appears to be empty (confirmed by the use of a camera), quietly approach the nest box using a ladder and open the hinged lid slowly. If there is an animal in the nest box, quietly close the lid and leave the area as quietly as possible to reduce any further disturbance. If there are no animals in the nest box, the inside of the nest box can be checked for signs of use, particularly noting any feathers, fresh or old scats, scratch marks, discolouration, and new or disturbed nesting material. DO NOT approach the nest box if there are bees present. Research has found that bees will move out by themselves and so won't have a long-term impact on nest box use, particularly if you have several nest boxes at your site. Watch out for spiders, ants and other insects that may be using the nest box and can inflict stings or bites when disturbed.

How do I maintain nest boxes?

Nest boxes can be left for long periods of time, but they may still require maintenance to ensure they continue to have the greatest chance of being used by red-tailed phascogale. Therefore, it is best to make periodic maintenance checks at least every two years. Maintenance checks can be undertaken while monitoring, but it is preferable that they are undertaken prior to the breeding season so that any problems identified can be addressed before breeding occurs. If breeding is occurring, maintenance should be delayed if it is likely to disturb the animals. Maintenance concerns regarding the security of attachment points or the stability of the tree or pole should be addressed as a priority for safety reasons.

At a minimum, maintenance checks should assess the following:

- Condition of attachment points,
- Stability of tree or pole used to mount the nest box,
- Presence of black rats,
- Presence of feral bees,
- Presence of dead animals,
- Condition of nest box, particularly the base, and
- Condition of nesting material.

Likely maintenance includes:

- Control of black rats using rat traps (weekly if black rats are present);
- Control of feral bees with the help of an apiarist (only if bees become an issue);
- Adjustment of nest box placement (only if rains entering or excessive heat in the summer is an issue);
- Replacement of nest box due to deterioration (rarely for hard woods, occasionally for soft woods); and

Replacement of wet and mouldy nesting material (rarely if using hard woods with holes drilled into the base).

Further Reading

Bush Heritage Australia's species webpage: Red-tailed Phascogales

Acknowledgements

This information sheet was developed with contributions on monitoring methods and nest box design from Bush Heritage Australia.

Citation

Department of Biodiversity, Conservation and Attractions. (2018). *Fauna Notes – Nest Boxes for Red-tailed Phascogales* Retrieved from http://www.dbca.wa.gov.au/

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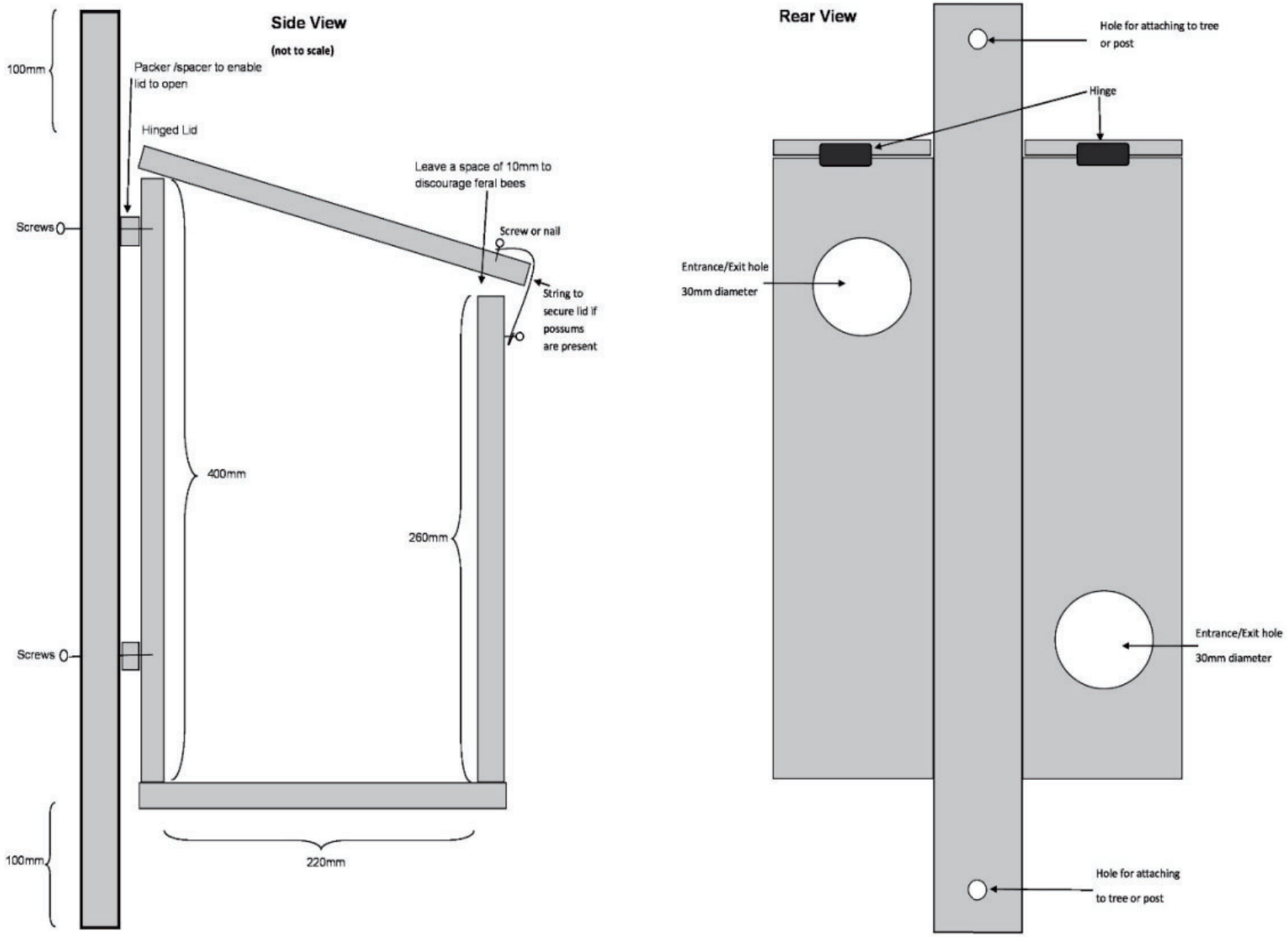

Side view (left) and rear view (right) of a red-tailed phascogale nest box design. Image: Bush Heritage Australia