

**REPORT UNDER THE NATIVE VEGETATION ACT 2003 IN RELATION TO USE OF MORE APPROPRIATE LOCAL DATA UNDER SECTION 2.4.3 OF THE ENVIRONMENTAL OUTCOMES ASSESSMENT METHODOLOGY FOR PVP REFERENCE NUMBER 8324**

Report prepared by: Accredited Expert 30628

PVP reference number: 8324

**1. SUMMARY**

This Accredited Expert report relates to the assessment of the clearing proposed by PVP number 8324.

Under s. 29(2) of the *Native Vegetation Act 2003* a PVP cannot be approved unless the clearing concerned will improve or maintain environmental outcomes.

Clause 26 of the *Native Vegetation Regulation 2005* prescribes the circumstances in which approval of a PVP that proposes clearing of scattered trees can be granted. In most cases an assessment and determination of whether the clearing will improve or maintain environmental outcomes is conducted in accordance with the environmental outcomes assessment methodology (EOAM).

In some circumstances the data in the approved databases do not accurately reflect local environmental conditions. In these circumstances the assessment can use More Appropriate Local Data (Section 2.4.3 of the EOAM).

In this assessment More Appropriate Local Data has been used to request a minor variation in this PVP to replace some Western Rosewood (*Alectryon oleifolius*) with other tree species which have a tree diameter  $\geq 40\text{cm}$  (ie. 80% of the average DBH of Rosewoods to be cleared – as required in the threatened species tool) as the relative lack of Rosewood in the off-set area means the threatened species tool shows inadequate foraging habitat for two bat species, the Little Pied Bat (*Chalinolobus picatus*) and the Yellow-bellied Sheath-tail Bat (*Saccolaimus flaviventris*).

**Figure 1: A conceptual outline of the assessment process for PVP 8324**

	Land Capability	Salinity	Water Quality	Threatened Species (TS)	BioMetric
Assessment using EOAM and default data	PASS	PASS	PASS	FAIL	FAIL
Assessment using EOAM and More Appropriate Local Data in TS Assessment				PASS	PASS

This reports details the accredited expert’s opinions formed in relation to section 2.4.3 of the EOAM when assessing PVP reference number 8324.

Local data that more accurately reflects local conditions is available in relation to habitat utilisation by the Little Pied Bat and the Yellow-bellied Sheathtail Bat.

The accredited expert therefore certifies that data is available that more accurately reflects local environmental conditions (compared to the data in the approved database).

## **2. INTRODUCTION**

### **Legislative background**

Property vegetation plan (PVP), reference number 8324 proposes broadscale clearing within the definition of the *Native Vegetation Act 2003*.

Under s. 29(2) of the *Native Vegetation Act 2003*, the Minister is not to approve a PVP that proposes broadscale clearing unless the clearing concerned will improve or maintain environmental outcomes.

Clause 26 of the *Native Vegetation Regulation 2005* prescribes the circumstances in which approval of a PVP that proposes clearing of scattered trees can be granted. Normally such a PVP can only be granted where there has been an assessment and determination in accordance with the environmental outcomes assessment methodology (EOAM) that the proposed clearing will improve or maintain environmental outcomes. However, a PVP can also be granted where an accredited expert has assessed and certified in accordance with clause 27 of the *Native Vegetation Regulation 2005* that the accredited expert is of the opinion that the proposed clearing will improve or maintain environmental outcomes.

The EOAM assesses proposed broadscale clearing using data in approved databases. Section 2.4.3 of the EOAM allows for the utilisation of more appropriate data (instead of data in the approved databases) in certain circumstances in the assessment of proposed broadscale clearing if an accredited expert certifies that the data more accurately reflects local environmental conditions.

This reports details the accredited expert's opinions formed in relation to section 2.4.3 of the EOAM when assessing PVP reference number 8324.

#### **Initial assessment of broadscale clearing proposed by PVP 8324**

When the broadscale clearing proposed by this PVP was initially assessed in accordance with the EOAM using the data in the approved databases, it did not result in a determination that clearing improved or maintained environmental outcomes.

#### **Subsequent assessment of broadscale clearing proposed by PVP 8324 using more appropriate local data**

After the initial assessment, the broadscale clearing was subsequently assessed in accordance with the EOAM, using more appropriate local data under section 2.4.3 of the EOAM. If a PVP is approved on the basis of the use of more appropriate local data in the assessment, then clause 29 of the *Native Vegetation Regulation 2005* must be complied with.

**The next section** of this document provides information on the use of more appropriate local data under section 2.4.3 of the EOAM in assessing broadscale clearing proposed by this PVP in accordance with clause 29 of the *Native Vegetation Regulation 2005*.

### **3. USE OF MORE APPROPRIATE LOCAL DATA**

#### **1.1 Legal provision for the use of more appropriate local data**

The legal provision for using more appropriate local data is EOAM section 2.4.3 Using more appropriate local data. It states:

*"Where an assessment of proposed broadscale clearing using the approved databases indicates that the proposal does not improve or maintain environmental outcomes, it may be possible to utilise more appropriate local data.*

*If an accredited expert certifies that data is available that more accurately reflects local environmental conditions (compared to the data in the approved databases) in relation to:*

- vegetation benchmarks;*
- whether threatened animal species are likely to occur on the land in that vegetation type or habitat feature in the sub region; or*
- the estimated percentage increase in population that can be expected in response to a proposed management action, as measured by either an increase in the number of individuals, or habitat amount or key habitat feature.*

*The Catchment Management Authority Board or General Manager (exercising power delegated by the Minister) may authorise the replacement of the approved data with data that the accredited expert advises is more appropriate".*

After the data is varied the proposal may be reassessed in accordance with clause 26(1)(a) of the Native Vegetation Regulation 2005.

Note that there are additional provisions for using more appropriate local data in the revised EOAM, to be gazetted in late 2010.

#### **1.2 Description of clearing**

The property vegetation plan involves the clearing of scattered paddock trees from existing cultivation fields near Gulargambone. The subject property is located within the Castlereagh-Barwon sub-region of the Central West Catchment Management Authority area.

A total of 1306 trees are located within the clearing zone. Of these, the landholder has proposed to retain all Kurrajong (*Brachychiton populneus*) trees (over 200). Therefore, the total number of trees proposed to be cleared is approximately 1100.

Of the trees proposed for removal, about 550 (50%) are Western Rosewood (*Alectryon oleifolius*) with an average DBH of 50cm. The approximate composition of the other tree species to be cleared is Poplar Box (*Eucalyptus populnea*) (20%), Wilga (*Geijera parviflora*) (15%), White Cypress Pine (*Callitris glaucophylla*) (5%) and other species 10%.

A sample of twenty-four scattered paddock trees was undertaken by the CMA assessing officer with regards to the presence of tree hollows. Only one hollow of <5cm diameter was recorded.

The proposed off-set area on the property contains 5850 trees and consists mainly of Poplar Box (40% of trees), Western Rosewood (25%) and Wilga (15%) with the remaining species being White Cypress Pine, Budda (*Eremophila mitchellii*), Pilliga Box (*Eucalyptus pilligaensis*) and Buloke (*Allocasuarina luehmannii*).

Apart from Rosewood, all other species have been adequately off-set. While Rosewood is represented within the off-set area, there are not enough to ensure the required 5 to 1 ratio of offset trees of similar diameter to those being cleared. The relative lack of Rosewood in the off-set area means the threatened species tool shows inadequate foraging habitat for two bat species, the Little Pied Bat (*Chalinolobus picatus*) and the Yellow-bellied Sheathtail Bat (*Saccolaimus flaviventris*).

### **1.3 Assessment with default data did not improve or maintain environmental outcomes**

The assessment of this broadscale clearing in accordance with the EOAM using data in the approved databases (default data) did not result in a determination that the clearing improved or maintained environmental outcomes.

The Threatened Species Tool of the PVP Developer indicates that offsets required for the Little Pied Bat and the Yellow-bellied Sheath-tail Bat be vegetation of the same species as that proposed to be cleared (see table below).

	<b>Ability to sustain loss in paddock trees(See Operational Manual for offset &gt; 75% of benchmark)</b>	<b>Special sustain loss and offset requirements</b>
Little Pied Bat ( <i>Chalinolobus picatus</i> )	Yes; offset must include 5x the number of equivalent habitat trees for each tree cleared. Each required equivalent tree must be a species known to provide similar habitat attributes and must have a dbh that is > = 80% of the dbh of the tree cleared.	
Yellow-bellied Sheath-tail Bat ( <i>Saccolaimus flaviventris</i> )	Yes; offset must include 5x the number of equivalent habitat trees for each tree cleared. Each required equivalent tree must be a species known to provide similar habitat attributes and must have a dbh that is > = 80% of the dbh of the tree cleared.	

It is proposed in relation to the use of more appropriate local data (section 2.4.3 of the Environmental Outcomes Assessment Methodology) that the requirement for the same vegetation species to be offsets as that being removed should be modified in the case of the Little Pied Bat and the Yellow-bellied Sheath-tail Bat. The reasoning is that in this case the proposed offset vegetation should be considered to be higher quality foraging (and roosting) habitat than the scattered trees proposed to be removed. Also, it is considered that mature Rosewood trees do not provide tree hollows of suitable size for the roosting of the Yellow-bellied Sheath-tail Bat and that the Little Pied Bat is highly unlikely to utilise hollows in scattered trees within a cropping paddock compared to areas of intact remnant vegetation nearby.

### **1.4 Description of the use of more appropriate local data**

Local data that more accurately reflects local environmental conditions compared with data in the approved databases (default data) is available in relation to the habitats used by the Little Pied Bat and Yellow-bellied Sheath-tail Bat for roosting and foraging.

## **1.5 Reason for the use of more appropriate local data**

The more appropriate local data that more accurately reflects local environmental conditions in relation to habitat utilisation by the Yellow-bellied Sheath-tail Bat and the Little Pied Bat is given below.

Prior to this use of more appropriate local data, the determination was that the proposed clearing did not improve or maintain environmental outcomes. This result was because the proposed off-set area did not contain the appropriate number of Rosewood trees (2750) to offset the 550 trees proposed to be cleared.

More appropriate local data from several surveys and database information indicate that the use of Rosewood by the threatened bat species is minimal in a scattered paddock tree scenario and that intact woodland with Eucalypt and other tree species (as present in the proposed offset area) would be a more preferred habitat by these species.

### **1. Yellow-bellied Sheath-tail Bat (*Saccolaimus flaviventris*)**

- A search of the NSW Wildlife Atlas database on the 8/9/2011 reveal no records near the subject property at Gulargambone. Records of this species occur both east and west of the subject property, thus this species does have the potential to occur in the proposed development area.
- Ayers *et al.* (1996) stated the species occurs in most wooded habitats, and during the day roosts in large tree hollows. The bat feeds by foraging for flying insects above the tree canopy. The proposed development site is not a wooded habitat preferred by the species, however foraging over the scattered paddock trees can still take place. The proposed offset area is a corridor at woodland density and thus would be a more preferred foraging habitat by this species over the scattered paddock trees.
- NPWS (2002) in an extensive survey of the Darling Riverine Plains Bioregion (of which the subject property is a part), recorded the species at a wide range of habitat types ranging from *Eucalyptus* and *Casuarina cristata* (Belah) woodlands to open *Acacia pendula* (Myall) woodland and low chenopod / grass plains. It was noted that several sites at which this species was detected were in isolated woodland fragments or in cleared land near woodland fragments. It was suggested the species had at least some ability to persist in environments with reduced roost availability. No records were made from scattered paddock tree habitats. The proposed offset area would therefore represent more preferred foraging habitat than the scattered trees in a cleared paddock.
- A biodiversity survey of the Brigalow Belt South Bioregion (east of the subject property) recorded the species from numerous eucalypt vegetation communities plus Bloodwood, Smooth-barked Apple and Brigalow (RACD 2002). All sites were woodland / forest patches and not scattered paddock trees. Therefore, the proposed offset area would represent more preferred foraging habitat than the scattered trees in a cleared paddock.
- Shelly (2006) reported on the results of 40 week-long fauna surveys conducted over several years from throughout the Central West Catchment. The Yellow-bellied Sheath-tail Bat was not detected from any sites within cultivation or grassland paddocks (with or without scattered trees). The vegetation types with the highest detections per site (an indication of foraging habitat preferences) were Rough-barked Angophora / Blakely's Red Gum open woodland, Lignum shrubland and Inland Red Box / White Cypress Pine woodland. Eucalypt woodland areas provided the majority of known species detections and would seem to be preferred habitats compared to more open vegetation types.

- Rhodes and Hall (1997) reported on the finding of a colony of 29 bats found in a dead eucalypt tree in Queensland. This stag tree was estimated to be 20m tall and was located in a cleared paddock. The stag was at least 25m from any other trees. The colony was the largest recorded at that time. It was suggested that the colony required a large tree hollow to hold so many bats as the species is one of the largest of the micro-bats. Thus, large hollow-bearing scattered paddock trees, dead or alive, can be utilised by this species. The proposed development area consists mainly of scattered mature trees of Western Rosewood and Poplar Box. Data obtained by PVP officers show that a representative sample of these trees contained very few hollows of small size.
- Richards (2000) recommended two important management priorities for the Yellow-bellied Sheath-tail Bat as being the retention of large tracts of woodland and forest foraging habitat, and the conservation of tree hollow roosts. The proposed development area is scattered to isolated paddock trees and not tracts of woodland, with the majority of trees unlikely to provide suitable hollows for roosting. The offset areas, however, are woodland corridors that are preferred foraging habitat for this species.
- The Yellow-bellied Sheath-tail Bat requires large tree hollows for nesting and roosting (Ayers *et al.* 1996). The trees proposed for removal in this application are noted as being mainly Rosewood, and as such, are unlikely to contain large tree hollows suitable for roosting should the species occur in the local district.

A survey of tree hollow presence according to tree diameter and height was conducted by Shelly (2005) for most of the tree species in the Central West Catchment of NSW. In the case of Rosewood it was found that small hollows (<5cm entrance diameter) were consistently found in trees above 30cm dbh and medium hollows (5-15cm) consistently occur in trees above 38cm dbh. No large tree hollows (>15cm) were recorded for Rosewood at any tree diameter or height. For Poplar Box, small hollows were consistently found in trees above 30cm dbh, and medium hollows in trees above 41cm dbh. Large hollows were recorded in Poplar Box over 54cm dbh. Of the other main species to be cleared, small hollows were recorded in Wilga over 28cm diameter, but no medium or large hollows were recorded in Wilga at any size. Similarly, no tree hollows were recorded in White Cypress Pine at any size, with potential bat roost sites being restricted to cracks in trunks or loose bark on dead trees.

Therefore, it can be considered that limited roosting habitat for the species is present within the area proposed to be cleared.

## 2. Little Pied Bat (*Chalinolobus picatus*)

- A search of the NSW Wildlife Atlas database on the 8/9/2011 reveal no records of the species within the Gilgandra local government area where the subject property is located. Other records of this species occur both east and west of the subject property outside of the LGA, thus this species does have the potential to occur in the proposed development area.
- Ayers *et al.* (1996) stated the Little Pied Bat is known from Brigalow, riparian and Bimble (Poplar) Box woodlands as well as mallee areas. The bat can roost solitarily or in small breeding colonies. Therefore, breeding colonies would require larger tree hollows than that for a single bat. Scattered Rosewood and Poplar Box trees in a cleared paddock are

unlikely to contain hollows available for breeding colonies of this species. The mature eucalypts in the proposed offset areas are more likely to provide roosting habitat.

- Extensive surveys within the Brigalow Belt South Bioregion have recorded the species from the Pilliga Outwash province (closest to the subject property location). Habitats where the species was recorded were mainly ironbark, Brigalow (*Acacia harpophylla*), White Box (*Eucalyptus albens*), Pilliga Box (*E. pilligaensis*) and Grey Box (*E. microcarpa*) (RACD 2002).
- Extensive surveys within the Darling Riverine Plains Bioregion found the Little Pied Bat in a wide range of habitat types (NPWS 2002). These were all woodlands with the exception of open shrublands of Myall. The surveys indicated a marked preference for Belah habitat types, whether it was the dominant or sub-dominant species. PATN analysis showed the species occurred in all habitat assemblages except for grasslands and shrublands. The report concluded that the species can persist in highly fragmented landscapes at very low densities, however, the emphasis was on woodland remnants as habitat and not scattered paddock trees. The proposed offset area of eucalypt woodland would thus be considered a more preferred foraging habitat for the species than the scattered paddock trees proposed for removal.
- Duncan *et al.* (1999) in the Action Plan for Australian Bats, described one of the main threatening processes to Little Pied Bat ecology as being “*the loss of mature roost trees in inland areas, particularly in riverine environments and the removal of old buildings or damage to them.*” Neither the scattered trees proposed to be removed or the proposed offset areas are located on riparian environments.
- Shelly (2006) reported on the results of 40 week-long fauna surveys conducted over several years from throughout the Central West Catchment. In a comparison of habitat types utilised by the species it was concluded that the Little Pied Bat “*occurs at significantly lower frequency over open vegetation such as grassland and/or cultivation and Lignum shrubland compared to woodland or forest types. This would indicate that while the bats preference is for utilising structured habitats it can also feed on flying insects that are not reliant on the presence of a tree canopy.*” Therefore, the proposed offset area would be the more preferred foraging habitat for the Little Pied Bat than that of scattered trees within a cleared paddock.
- A survey of tree hollow presence according to tree diameter and height was conducted by Shelly (2005) for most of the tree species in the Central West Catchment of NSW. In the case of Rosewood it was found that small hollows (<5cm entrance diameter) were consistently found in trees above 30cm dbh and medium hollows (5-15cm) consistently occur in trees above 38cm dbh. No large tree hollows (>15cm) were recorded for Rosewood at any tree diameter or height. For Poplar Box, small hollows were consistently found in trees above 30cm dbh, and medium hollows in trees above 41cm dbh. Large hollows were recorded in Poplar Box over 54cm dbh. Of the other main species to be cleared, small hollows were recorded in Wilga over 28cm diameter, but no medium or large hollows were recorded in Wilga at any size. Similarly, no tree hollows were recorded in White Cypress Pine at any size, with potential bat roost sites being restricted to cracks in trunks or loose bark on dead trees.

Therefore, it can be considered that limited roosting habitat for the species is present within the area proposed to be cleared.



- Personal observations made from many surveys in the central west catchment indicate the Little Pied Bat can be found in small colonies as well as pairs and individuals. The species can also utilise loose bark on trees for roosts in addition to tree hollows, buildings and caves. Rosewood and Wilga are both small tree species that generally do not have loose bark for potential roost habitat.

### References:

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NPWS., 2002. *Darling Riverine Plains Biodiversity Survey Technical Report*. NSW National Parks and Wildlife Service, Western Regional Assessments Unit, Dubbo.

RACD., 2002. *Brigalow Belt South Bioregion (Stage 2) Vertebrate fauna survey, analysis and modelling projects*. Planning NSW, Sydney.

Rhodes, M.P. and Hall, L.S., 1997. Observations on Yellow-bellied Sheath-tailed Bats *Saccolaimus flaviventris* (Peters 1867) (*Chiroptera: Emballon uridae*). *Australian Zoologist* **30** (3) p. 351-357.

Richards, G.C., 2000. *A report on the Preparation of Threatened Species Profiles and Environmental Impact Assessment Guidelines for the bat fauna of NSW*. Report prepared for NSW National Parks and Wildlife Service, Hurstville.

Shelly, D., 2005. *Hollow occurrence in selected tree species in the Central West Catchment of New South Wales*. Department of Infrastructure, Planning and Natural Resources, Dubbo.

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Smith, J., Ellis, M., Ayers, D., Mazzer, T., Wallace, G., Langdon, A. and Cooper M., 1998. *The Fauna of Western NSW: The Northern Floodplains Region*. New South Wales National Parks and Wildlife Service, Hurstville, Sydney.

### **1.6 Certification by the accredited expert**

As the accredited expert I certify that data is available that more accurately reflects local environmental conditions (compared to the data in the approved database, in this case the Threatened Species Profile Database).

Signature: *Daran Shelly*

Date: 9/9/11

### **1.7 Assessment of proposed clearing using more appropriate local data**

The use of more appropriate local data resulted in a determination that the proposed clearing now improves or maintains environmental outcomes for the two threatened bat species as there is now sufficient available offset on the property to balance the impact of the clearing.

It is my opinion that the Yellow-bellied Sheath-tail Bat would only have potential foraging habitat over the scattered paddock trees of the proposed development area. Little to no roost habitat is available based on the tree hollow information provided. The proposed offset area of tree corridors at a woodland density is a more preferred foraging habitat type for this species. The request to replace some of the required offset numbers of Rosewood with other tree

species such as Poplar Box, Pilliga Box or White Cypress Pine will actually provide improved habitat due to increased hollow availability for roosting.

It is my opinion that the Little Pied Bat would only have potential foraging habitat around the scattered paddock trees of the proposed development area. Little to no roost habitat is available. The proposed offset area of tree corridors at a woodland density is a more preferred foraging habitat type for this species.