

Attachment 1

Report under the NV Act 2003 in relation to the use of more appropriate local data (section 2.4.3 of the Environmental Outcomes Assessment Methodology)

Accreditation number: 30628

PVP/DA reference number: 9067

It is recommended that more appropriate local data be substituted for the data in the PVP Developer in relation to:

- whether threatened animal species are likely to occur on the land in that vegetation type or habitat feature in the sub region.

Description of the proposed clearing:

The property vegetation plan involves the clearing of scattered paddock trees from existing cultivation fields approximately thirty kilometres south-west of Narromine. The subject property is located within the Bogan-Macquarie sub-region of the Central West Catchment Management Authority area.

The trees proposed for removal consist of 56 scattered Western Rosewood (*Alectryon oleifolius*) with an average DBHOB of 35cm, 31 Belah (*Casuarina cristata*), average DBH of 48cm and 58 Weeping Myall (*Acacia pendula*) with average DBH of 27cm.

A sample of twenty five scattered paddock trees was undertaken by the CMA assessing officer with regards to the presence of tree hollows. Five of the trees sampled were Poplar Box (*Eucalyptus populnea*), with three trees having hollows; these species were considered part of a corridor and were removed from the clearing zone.

The remainder of the trees sampled had no obvious hollows

The proposed off-set areas on the property consist mainly of two Belah corridors and a Weeping Myall remnant. These remnants have stem densities of 380 and 330 stems per hectare respectively but are of a smaller DBH class. An approximate total of 3800 stems are in the proposed offset area.

While tree hollow presence in the off-set areas were not looked at specifically, assessing officers considered there was unlikely to be any within the Weeping Myall remnant due to the trees having an average DBH smaller than those scattered within the cultivation field (which also contained no hollows). Some trees within the Belah corridor were of similar DBH to those proposed for removal, however most were slightly smaller diameter and would also not be expected to form numerous hollows. Therefore, the abundance of hollow-bearing trees in the wooded off-set areas can be considered to be similar to that within the scattered paddock trees proposed for removal.

Also a 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*).

One section of the proposed off-set area contains trees of less than woodland density and has been identified as an area that may require tree planting of indigenous species if natural regeneration does not occur within a set time frame. If planting is required, then the species of particular off-set concern for the threatened bats (Rosewood) can be planted as part of the

regeneration program. However, it would be impractical to re-plant only Western Rosewood as this species is not considered critical to the foraging habitat of the two threatened bat species.

The question that is asked is therefore:

Will the Little Pied bat and the Yellow-Bellied Sheath-tail-Bat be affected in their habitat from the removal of the Rosewood trees and will the use of the vegetation currently in the off-set area meet the 'improve or maintain' test?

Will the offset also be suitable for Glossy Black Cockatoo (*Calyptorhynchus lathami*) forage habitat?

Details of the data proposed to be substituted:

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).

	Ability to sustain loss in paddock trees(See Operational Manual for offset > 75% of benchmark)	Special sustain loss and offset requirements
Little Pied Bat (<i>Chalinolobus picatus</i>)	Yes; offset overstorey cover must be <75% of upper benchmark, have minimum 5X the number cleared, be similar dbh class and same spp. Management of offset must include sufficient replanting of overstorey spp. to replace mature canopy cover to within benchmark range.	
Yellow-bellied Sheath-tail Bat (<i>Saccolaimus flaviventris</i>)	Yes; offset overstorey cover must be <75% of upper benchmark, have minimum 5X the number cleared, be similar dbh class and same spp. Management of offset must include sufficient replanting of overstorey spp. to replace mature canopy cover to within benchmark range.	

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 habitat than the scattered trees proposed to be removed. Also, it is considered that mature Western 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 in a cropping paddock compared to areas of intact remnant vegetation nearby.

Reasons for recommending the proposed substitution:

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

- A search of the BioNET and NSW Wildlife Atlas databases on the 14/7/2010 reveal several records near the subject property at Narromine.

Records of this species occur in all directions from 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 areas are mainly two corridors of Belah and a Weeping Myall remnant 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 recorded the species from numerous eucalypt vegetation communities (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, Belah and Weeping Myall. Data obtained by PVP officers show that a representative sample of these trees contained no hollows.
- 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 and a remnant 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 Western Rosewood, Belah and Weeping Myall, 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 Western 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 Belah, small hollows were consistently found in trees above 44cm dbh, medium hollows above 53cm dbh and large hollows above 88cm dbh. No hollows were found in Weeping Myall trees at any diameter. Therefore, it can be considered that limited roosting habitat for the species is present.

2. Little Pied Bat (*Chalinolobus picatus*)

- A search of the BioNET and NSW Wildlife Atlas databases on the 14/7/2010 reveal several records of the species within the Narromine local government area where the subject property is located. Other records of this species occur in all directions from 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. The few Poplar Box trees that were initially in the proposed development area that contained hollows were removed from the clearing zone. Scattered Western Rosewood trees in a cleared paddock are unlikely to contain hollows available for breeding colonies of this species. The mature eucalypts and Belah 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 several woodland habitats. 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). No records were made in cultivated paddocks with scattered trees.
- 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 areas of mainly Belah corridors and a remnant of Myall woodland would thus be considered a more preferred foraging habitat for the species than the scattered paddock trees.

- 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.” The scattered trees proposed to be removed are not 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 Western 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 Belah, small hollows were consistently found in trees above 44cm dbh, medium hollows above 53cm dbh and large hollows above 88cm dbh. No hollows were found in Weeping Myall trees at any diameter.

Therefore, in comparison with the diameters of the trees proposed for clearing, it can be considered that limited roosting habitat for the species is present.

- 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. Western Rosewood and Weeping Myall are small tree species that generally do not have loose bark for potential roost habitat.

3. Glossy Black Cockatoo (*Calyptorhynchus lathami*) considerations.

- Ayres *et al.* (1996) stated that within inland NSW and Queensland the Glossy Black Cockatoo inhabits brigalow scrub, or hilly rocky ridge country where casuarinas occur. Hollows in mature or dead trees, usually on the flatter ground at the base of hills are used for nesting. The diet of Glossy Black Cockatoos consists almost exclusively of she-oak seeds. On the central western slopes of NSW *Allocasuarina luehmannii*, *A. diminuta* and *A. gymnanthera* are known food plants, with *A. verticillata* being taken in the Narrandera Ranges. This suggests that the Glossy Black Cockatoo is unlikely to nest on the riverine plains and its main habitat inland is rocky ranges that support the various she-oak trees for food resources. Extensive surveys within the Darling Riverine Plains Bioregion (of which the subject property is a part) found the Glossy Black Cockatoo almost solely in habitat types containing Belah (NPWS 2002). Throughout all the surveys, the species was only seen eating the cones of Belah. Records of the cockatoo were distributed within the Darling Riverine Plains west to the Macquarie and upper Bogan Rivers, thus putting the subject property within the species known distribution. It was suggested

that conservation of woodland with Belah would appear to be critical for this species in the bioregion. In that context, the proposed offset areas of Belah dominated corridors would be the more preferred foraging habitat for the Glossy Black Cockatoo than that of scattered trees within a cleared paddock.

- Cameron and Cunningham (2006) in a study of Glossy Black Cockatoo foraging behaviour in Goonoo State Forest near Dubbo, found the birds preferred to forage at sites where food was abundant and avoided open sites where the predation risk may be greater.

The findings suggest that the species would prefer to forage in the vegetatively intact Belah corridors of the off-set areas rather than on scattered paddock trees.

- 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 found that Glossy Black Cockatoo's were recorded mainly in Poplar Box woodlands and Baradine Gum / White Cypress Pine woodland. A lesser number of records came from Black Box, Red Stringybark, River Red Gum and Mugga Ironbark associations. It was stated *"In all cases, observations of the cockatoo were directly related to the presence of their preferred feed trees. On the western slopes these were allocasuarina species... On the western plains it is solely the presence of Belah (C. cristata)."*

Therefore, the proposed offset areas of Belah dominated corridors would be the more preferred foraging habitat for the Glossy Black Cockatoo than that of scattered trees within a cleared paddock.

Recommendation:

1. 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. The proposed offset area of Belah dominated tree corridors and a Weeping Myall remnant at a woodland density is the more preferred foraging habitat type for this species.
2. 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 Belah dominated tree corridors and a Weeping Myall remnant at a woodland density is the more preferred foraging habitat type for this species.
3. With regard to the section identified for future tree planting if natural regeneration does not occur within a set time frame, preference should be given to encourage the establishment of those species already in the immediately adjacent offset areas, particularly if they are eucalypts or Belah. A small proportion of the trees to be planted (say 10%) should be Western Rosewood in order to compensate for the loss of that species from the cultivated paddocks.
4. It is my opinion that the off-set corridors dominated by Belah will satisfy the requirements for foraging habitat for the Glossy Black Cockatoo should they occur in the area given the species marked preference for that feed tree in a wooded setting rather than scattered trees in an open field.

References:

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