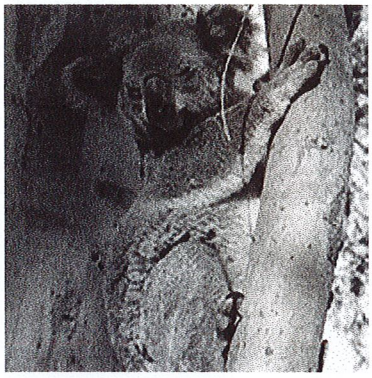
Comprehensive Koala Plan of Management

for

Eastern Portion of Kempsey Shire LGA





Volume I – Resource Study

March 2009

biolink pty ltd
ecological consultants
PO Box 196 Uki NSW 2484
Tel 02 6672 6966
Fax 02 6672 6077
www.biolink.com.au

KEMPSEY
Shire Council

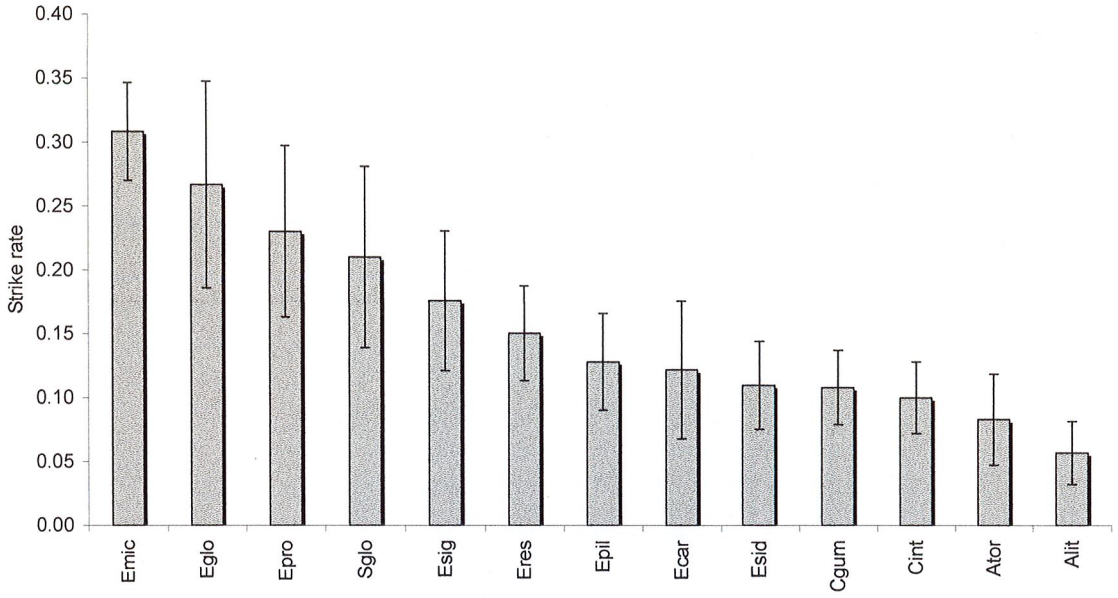


Figure 4.2 Summary of tree species utilisation at active SAT sites on erosional and residual soils within the study area. Strike rates are presented as the proportion of each species recorded with faecal pellets, error bars represent standard error.

Table 4.4 The two homogenous data sets arising from the unplanned test for homogeneity using simultaneous test procedures (erosional & residual soil landscape data set only).

Emic	*Eglo*	*Epro*	*Sglo*	*Esig*	*Epil*	*Eres*	*Ecar*	*Cint*	*Esid*	*Cgum*	*Ator*	*Alit*

Despite isolation as the most preferred tree species, on erosional and residual soil landscapes *E. microcorys* exhibited a strike rate that was significantly lower than that on alluvial, transferral and estuarine soil landscapes (G_{adj} = 4.250, 1_{df}, $P < 0.05$). This outcome mandated a more detailed investigation of the use of this species by koalas. Accordingly, the relationship between 50mm size class increments of *E. microcorys* (independent variable) and the associated strike rate for that size class (dependent variable) was examined using logistic regression. The resulting maximum-likelihood model revealed a significant positive association between size class and utilisation of *E. microcorys* ($z = 2.154$, 1_{df}, $P < 0.05$), with larger size classes showing higher

proportional rates of utilisation than would otherwise be expected by chance (Fig 4.3).

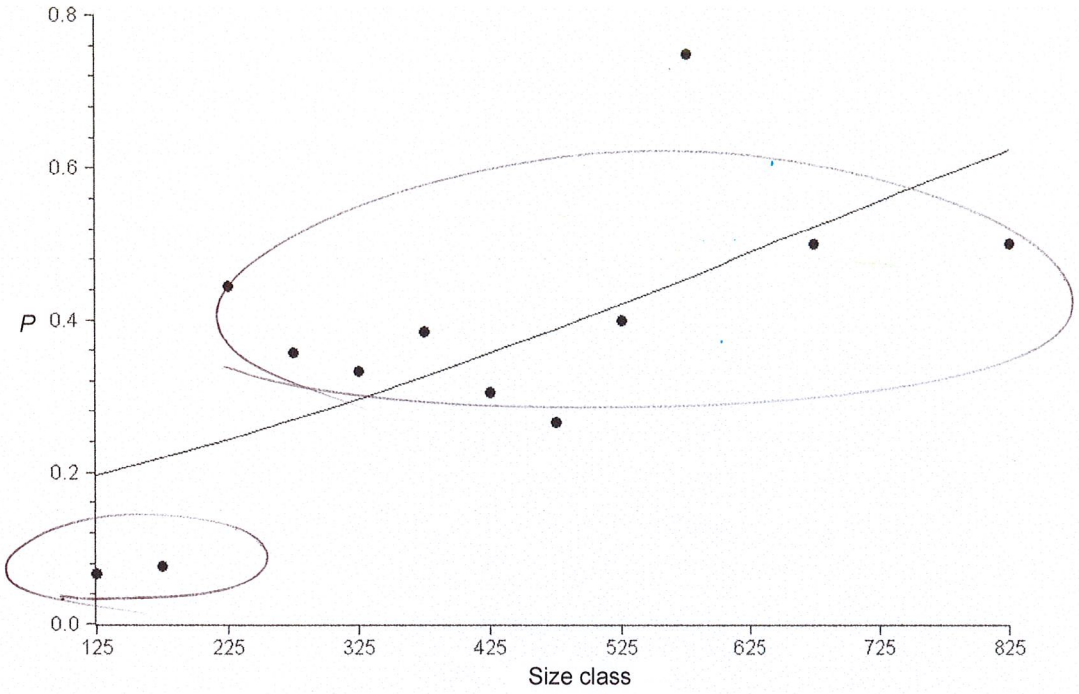


Figure 4.3 Complex logit model illustrating the relationship between *E. microcorys* size class and associated proportional levels of use by koalas on erosional and residual soil landscapes.

b) Secondary data set

Despite pooled strike rates within the secondary data set that ranged from 0.31 for *E. tereticornis* to 0.1 for *E. seeana*, no significant variation was evident (H = 2.554, 4df, P > 0.05), nor was the data set robust enough to allow any comparison between soil types. Inferentially, and in addition to that already established for *E. microcorys* through analysis of the primary data set, arguably predictable trends towards higher levels of use for *E. tereticornis* and *E. tindaliae* were apparent, as was the potential for *E. tereticornis* to be less preferred on erosional and residual soil landscapes (U = 6.0, P < 0.05).