

**Survey to determine the presence/absence of *Lissotes menalcas* (Mt Mangana stag beetle) at the proposed Integrated Timber Processing Site (Southwood), Lonnvale**

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**Summary**

The survey was a requirement of the Planning Permit for the development of an Integrated Timber Processing Site at Lonnvale (ID #10009) granted by the RPDC in accordance with Section 43A of the Land Use Planning and Approvals Act 1993. Only marginal habitat for *Lissotes menalcas* was present on the boundaries of the proposed development site. Log searches within three areas of potential habitat failed to find the species. On the basis of the search result and the low quality of the habitat present it is highly unlikely that the species occurs within the site. Therefore no recommendations for mitigation of adverse impact on the species are made for this site.

**Introduction**

*Lissotes menalcas* (Mt Mangana stag beetle) is listed as a vulnerable taxon under the schedules of the Tasmanian *Threatened Species Protection Act* 1995. It is a flightless, black beetle and is found in the full range of wet forest types in southern Tasmania, with mature wet eucalypt forest constituting optimal habitat for the species (Meggs & Taylor 1999). The proposed Southwood development site is within the known range of the species. *Lissotes menalcas* is an obligate log-dwelling species and appears to exhibit a preference for eucalypt logs containing moist red/brown clayey-rot (Meggs & Taylor 1999). Given its dependence on decaying logs for all parts of its life-cycle, any land-use activity that will impact on existing habitat or interrupt the future supply of decaying logs will threaten the viability of local populations.

Barnes (2001) identified three vegetation communities within the Southwood development site boundary including *Leptospermum* heathland, *Eucalyptus amygdalina* dry forest, and *E. obliqua* dry and wet forest. The latter community corresponds to potential habitat for the stag beetle (Meggs & Taylor 1999). Therefore, a survey of the site to determine the presence or absence of *L. menalcas* was requested by the RPDC as a requirement of the Planning Permit for the development.

**Methods**

Three sampling sites were selected within potential wet forest habitat, damp *E. obliqua* wet forest, in areas likely to be disturbed by the planned development (Fig. 1). Sampling sites were located as far as practicable from one another to ensure a range of local environments were sampled. At each site the sampling method used was as per Meggs & Taylor (1999). Because *L. menalcas* is an obligate log-dwelling beetle, the sampling method used to locate the species was destructive and involved breaking open logs and searching the interior for adults. The species appears to inhabit logs in an intermediate stage of decay and may have a preference for eucalypt logs containing a particular moist-red rot type (Meggs & Taylor 1999). Only logs

where the exterior of the log exhibited signs of decay were searched. Intensive searching within the log was only conducted if it was found to contain moist red rot. If other rot types were encountered only the section of the log that was initially broken was searched. Each site was searched for a minimum of two people-searching hours or until an adult *L. menalcas* was found. Sampling of the proposed development site was to cease immediately if *L. menalcas* was found. If a specimen was found it was to be lodged with the Forestry Tasmania Insect Collection in Hobart.

These methods were reviewed and endorsed by the Threatened Species Unit, DPIWE prior to conducting the survey. The survey was undertaken under the conditions of Permit No. TFA 02011.

### Results

Log searches were conducted on 16<sup>th</sup> August, 2002. Each of the three sites within or on the boundary of the proposed development was sampled for two hours. No adult *Lissotes menalcas* was found. Three lucanid larvae were found inside a rotting log at site 1, on the north-west boundary of the proposed development site (Fig. 1). There are currently no larval identification keys available to determine what species these specimens represent. Lawrence (1981) has published a brief key to some of the primitive genera of Lucanidae, as well as to some of the more well defined tribes of Lucaninae, but this does not enable the identification of larval *Lissotes* spp. There are a number of log-dwelling species of lucanid beetle that inhabit the southern forests of Tasmania, and the larva found could belong to any of these species.

### Conclusions

On the basis of the search result and the low quality of the habitat present it is highly unlikely that *Lissotes menalcas* occurs within the site. Therefore no recommendations for mitigation of adverse impact on the species are made for this site.

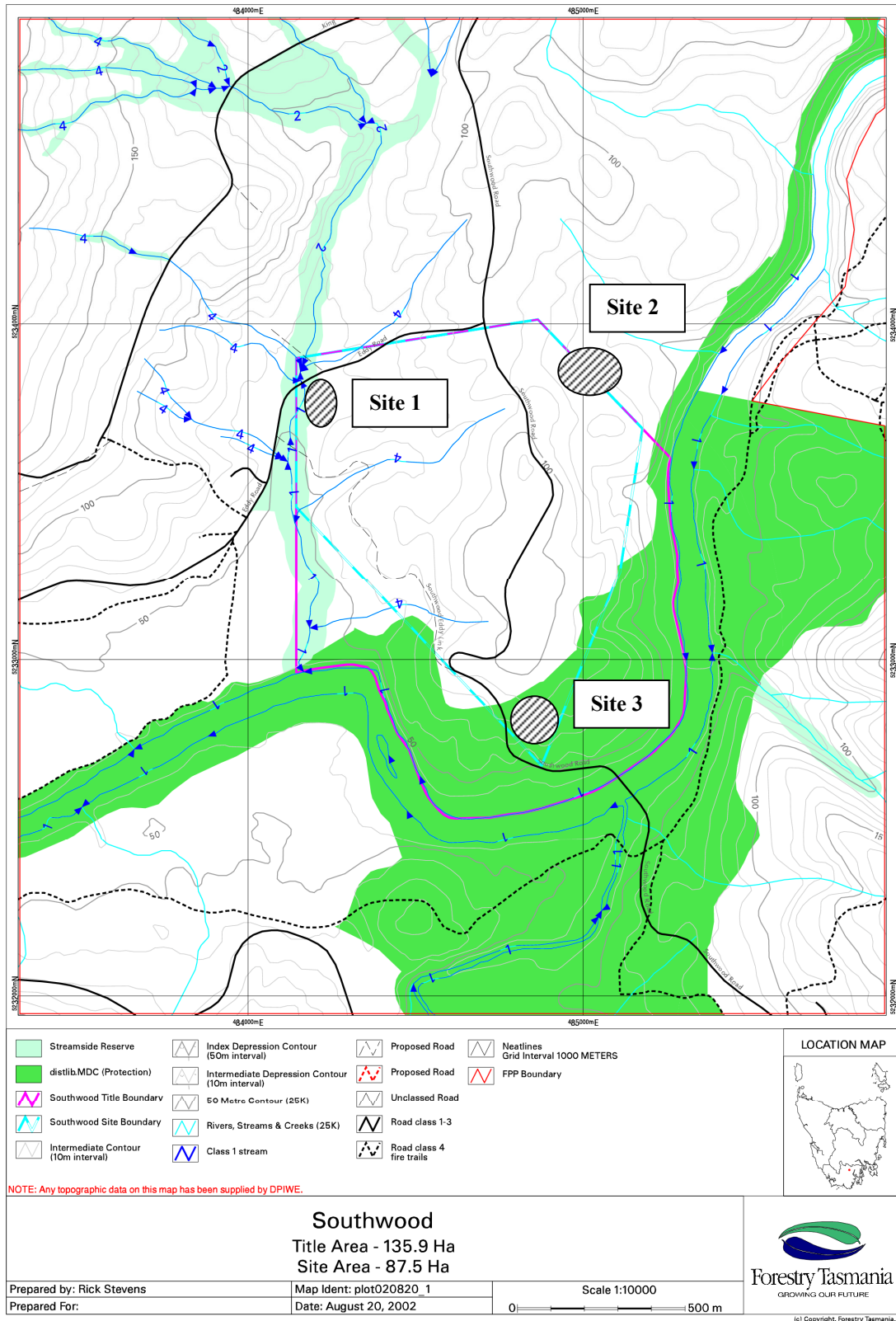
### References

Barnes, R.W. (2001) *Revised botanical resources survey of the site proposed for the Huon Integrated Timber Processing Yard, Glen Huon, southern Tasmania*. Unpublished report to SEMF Holdings Pty. Ltd., Hobart.

Lawrence, J.F. (1981) Notes on larval Lucanidae (Coleoptera). *J. Aust. Ent. Soc.* **20**: 213-219.

Meggs, J.M. and Taylor, R.J. (1999) Distribution and conservation status of the Mt Mangana stag beetle, *Lissotes menalcas* (Coleoptera: Lucanidae). *Pap. Proc. Roy. Soc. Tas.* **133**(1): 23-28.

Copies to: RPDC, TSU, Huon District, FPB.



**Figure 1.** Location of the three areas sampled for the Mt Mangana stag beetle (hatched shapes) at the proposed Integrated Timber Processing Site (Southwood) at Lonnvale.