ASSESSMENT | PLANNING | MANAGEMENT

Mr John Owens
Northern Hume Alliance
Murray Street
**Wagga Wagga NSW 2650**

30 July 2007

Dear John,

On the 25th July 2007, Eco Logical Australia, along with yourself and other representatives of the Northern Hume Alliance, undertook an inspection of the following three sites:

1. Prospective Quarry Site, Blythe Property, Tarcutta
2. Tumbarumba Rd (east) Site, east of the intersection with Hume Highway
3. Prospective Borrow Site, Conway Property, Kyeamba

The purpose of the inspection was to identify the vegetation communities and fauna habitat on the sites, and identify any ecological constraints through use of the site as a quarry for the upgrade of the Hume Highway. The purpose of this letter is to document the findings of the inspection and provide insight into potential issues. It is not intended to be a comprehensive impact assessment.

**Prospective Quarry Site, Blythe Property, Tarcutta**

This site is located on the south west slopes in Gundagai Shire, south of the Hume Highway and a few kilometres west of the intersection between the Hume Highway and the Snowy Mountains Highway. The area surrounding the site is rural and comprises low hills with scattered vegetation. A larger vegetated remnant is located further south of the site; however, the condition of this remnant was not inspected during this survey.

The site is located on the mid to upper slope of a hill with a generally easterly aspect. A drainage line is located south of the proposal site which directs flows into a dam downslope of the site. The drainage line was ephemeral and grassy and lacked any substantial riparian or aquatic vegetation other than scattered juncus. Another dam, likely to have been the sediment pond from the original quarrying operations, is located south east of the quarry floor. Some terracing,



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excavation and earth embankments had been constructed to direct runoff from the quarry to the sediment pond.

The proposal site is currently grazed by sheep and cattle. Previous quarrying activities (estimated to have occurred 15 years ago) appear to have scraped a considerable amount of top soil off the proposal site, and hence the vegetative cover at the site was poor. A combination of grazing, prolonged drought conditions and a disturbed soil profile is likely to have contributed to low vegetative growth across the site.

The vegetation across the site and surrounds comprises exotic species, with only small areas of native ground cover. Common species in the ground layer included Paterson's curse (*Echium plantagineum*), capeweed (*Arctotheca calendula*), *Erodium cicutarium* and *Bothriochloa macra*. No shrub layer existed on or in the area immediately surrounding the site. Tree cover was scattered on the proposal site and included Blakely's red gum (*Eucalyptus blakelyi*), white box (*E. albens*) and red stringybark (*E. macrorhyncha*). Apple box (*E. bridgesiana*) and yellow box (*E. melliodora*) were located close to the likely impact area. No trees were hollow bearing on the site.

No threatened or regionally significant flora species were observed on site, though the site is likely to have formerly comprised the endangered ecological community box-gum woodland. Due to the degraded nature of the understorey, dominance of exotic ground cover species, and doubts that the community could regenerate naturally, the site was not considered to be box-gum woodland as described in either the NSW *Threatened Species Conservation Act 1995* or the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999*.

The resource contained on the site was massive granite. Previous quarry operations left piles of excavated rock on the original quarry floor. At ground level, outcropping granite boulders and a few loose surface rocks occurred. Some of the loose surface rocks appear consistent with the size and shaped preferred by the threatened reptiles *Aprasia parapulchella* and *Delma impar*. However, the density of rocks was well below that typically required by these species. It is estimated that less than one potential habitat rock was located per 500 $m^2$ on the site and surrounds. Most of the rocks on site were massive and deeply imbedded into the earth.

No targeted fauna habitat searches were undertaken. However, rocks were rolled to locate reptiles and incidental observations of fauna were also made. Only one threatened species, the brown treecreeper (*Climacteris picumnus*) was recorded during the survey. This species was heard calling from vegetation

south of the proposal site. Other threatened species potentially occurring on site include:

- Swift parrot (*Lathamus discolor*)
- Superb parrot (*Polytelis swainsonii*)
- Turquoise Parrot (*Neophema pulchella*)
- Diamond Firetail (*Stagonopleura guttata*)

Their occurrence on site is likely to be infrequent, if at all. Potential foraging habitat for these species exists on site, but similar resources in better condition are found elsewhere.

Other species recorded were common in the region. It is unlikely that the site contains critical resources for fauna known or likely to occur in the region.

Quarrying at the site poses few risks to biodiversity in the area. A list of likely issues and an estimation of risk to biodiversity is briefly presented below.

| **Issue** | **Risk to Biodiversity** |
|---|---|
| Loss of trees | |
| • Loss of foraging habitat for brown treecreeper | • Low |
| • Loss of seed source | • Low |
| • Loss of foraging source | • Low |
| Loss of rock habitat | |
| • Potential reptile habitat | • Low |
| Noise and dust | |
| • Potential disturbance to fauna | • Low |
| Sedimentation of creek | |
| • Runoff from quarry to creek and dam | • Low |

Measures to mitigate or reduce the potential impact of the proposal are listed below.

- Stockpile topsoil for distribution across the site at completion of the project.
- Encourage the natural regeneration of trees on the site to compensate for the removal of trees for the proposal by fencing existing trees in the area immediately surrounding the proposal. Fencing will exclude stock and this often results in the recruitment and establishment of trees. Fencing should extend beyond the drip line of the tree.
- Adopt an appropriate sediment and erosion control plan for the proposal.

- Reduce dust by utilising a water truck along the haul road and within the quarry to limit the potential impact of dust.

**Tumbarumba Rd (east) Site**

*(It is assumed that the reader has an understanding of squirrel glider ecology, some of which was outlined in the Environmental Assessment by SKM and ELA).*

The alignment of Tumbarumba Rd will change when the Hume Highway is duplicated in the Kyeamba Hill section, with Tumbarumba Rd turning into a flyover in the vicinity of the existing intersection with the Hume Highway and Kyeamba TSR. The majority of the realignment was assessed in the Environmental Assessment (EA) by SKM and ELA (2006). However, a slight adjustment was required and the proposal will now extend further east than suggested in the original alignment.

The main issues with the alignment are the need to elevate the road pavement, the deposition of fill, the impact fill may have on tree health, and the need to remove trees.

The EA highlighted the importance of Kyeamba TSR and the presence of squirrel glider (*Petaurus norfolcensis* – an endangered population in the Wagga Wagga LGA) in the remnant. Squirrel gliders were also identified north of the Kyeamba TSR in the Hume Highway road reserve.

Currently Tumbarumba Rd (east) is lined with large trees in the road reserve. Many of these trees are very close to the road pavement; however, they are likely to perform an important function as a corridor and habitat for threatened fauna, such as the squirrel glider. Corridors are vitally important for fauna as they act as highways for dispersal and facilitate variation in the gene pool.

The principle concerns with the proposal are the effect that the road realignment will have on squirrel glider habitat, and whether it will sever an existing corridor and create a gene sink. The Hume Highway project is already affecting squirrel gliders and their habitat. Corridors and habitat are being removed or isolated. Key threshold distances between trees that still facilitate the movement of squirrel gliders have been exceeded. It is the cumulative affect of these impacts and the proximity of the road reserve to a key habitat area (Kyeamba TSR) in the locality that brings cause for concern.

Tree removal in the road reserve should be avoided to ensure that Tumbarumba Rd retains squirrel glider habitat and remains a corridor for squirrel glider movement in the region. It is vital that all work be restricted to the road

pavement and shoulder, and that the road shoulder is reduced to protect the corridor.

**Prospective Borrow Site, Conway Property, Kyeamba**

Borrow is required to construct the duplication of the Hume Highway. As with the quarry sites, it is advantageous to position borrow sites as close to the road as possible.

A site has been identified on the Conway property in the Kyeamba Hill section. This property is located in the northern parts of the route on the eastern side of the Hume Highway.

The proposed borrow is located in a grazed paddock. The ground cover predominantly comprises exotic annual species including *Erodium botrys*, capeweed, Paterson's curse and *Romulea rosea*. The native grass *Aristida* sp. and *Bothriochloa* sp. are also located on the site. Two trees, a white box and a red stringybark, are located close to the borrow site, but it is unlikely that these will require removal. An urn heath (*Melichrus urceolatus*) is located at the base of one of the trees.

The presence of native grasses on site elevates the status of the community to the endangered ecological community box-gum woodland. Descriptions of the EEC box-gum woodland (under TSC) require the presence of native ground cover while the Commonwealth description requires greater than 50% perennial ground cover. The site conforms to the description of the EEC under the TSC Act but not the EPBC Act.

Nevertheless, if the tree species were retained and the topsoil held for reapplication across the site, it is like that the site could withstand the proposal and regenerate to its former self.

The haul road passes through known squirrel glider and diamond firetail habitat. Dust and noise has the potential to affect the habitat of these species and affect breeding success in squirrel glider.

No threatened flora or fauna were recorded on the site although squirrel glider and diamond firetail have been observed previously.

Recommendations pertaining to this site include:

- Retention of existing trees on the borrow site
- Top soil stockpiling
- Protection of trees along the haul road
- Fencing remnant trees post extraction to facilitate natural regeneration
- Control dust on the pit and along the haul road with a water truck.

Yours sincerely,

**Bruce Mullins**
**Manager, Ecology and Assessment**