

7 May 2014  
NSW Department of Planning & Infrastructure

Submission - EIS Exhibition, Springvale Mine Extension Project, Newnes Plateau, Springvale Coal Pty Ltd

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**A scientific submission in response to the “Springvale Mine Extension Project EIS Appendix H Flora and Fauna Impact Assessment.pdf”**

We wish to contribute scientific information relevant to the proposed extension of the Newnes Plateau longwall coal mine by Springvale Coal Pty Ltd. We are aware that the Newnes Plateau Shrub Swamps are listed as an Endangered Ecological Community (EEC) and that longwall mining has been listed as a Key Threatening Process under NSW *Threatened Species Conservation Act* 1995. Our submission is in response to the above mentioned EIS regarding Flora and Fauna Impacts (Appendix H), and focuses on one particular threatened faunal species, the Blue Mountains Water Skink, *Eulamprus leuraensis*. Our current research project on this endangered species commenced in 2012, with previous studies beginning as early as 2008 (Dubey and Shine 2010a, 2010b and 2011; Dubey et al. 2011, 2013a and 2013b): our data being grounded in a herpetological research team with over 30 years of experience.

Distribution

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*3.3.4 Herpetofauna. Targeted and opportunistic herpetofauna searches in suitable habitat for the Blue Mountains Water Skink (Eulamprus leuraensis) failed to detect this species within the Study Area. However, it has been recorded within the Study Area in previous studies (BMS 2011d).*

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*This species has been recorded in the Study Area at the northern end of Gang Gang Swamp East during annual monitoring (BMS 2011d)*

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*Carne West Swamp is centrally located within the Study Area and occurs above the proposed LW417 -LW419. Blue Mountains Water Skink and Giant Dragonfly have been recorded within this swamp (BMS 2011d; Benson and Baird 2012)*

From Appendix H, the study conducted by BMS (2011d) reported the presence of the Blue Mountains Water Skink in two swamps, Carne West Swamp and Gang Gang East Swamp. From our comprehensive, annual, targeted surveys we have documented populations of the Blue Mountains Water Skink within the following swamps of the Study Area:

Swamp	Scientific code	Geographic Coordinates		Further records
		Latitude	Longitude	
Carne West	PNP9	-33.378754°	150.197937°	BMS 2011d
Gang Gang South West	PNP8	-33.380838°	150.205437°	
Gang Gang East	NP5	-33.386348°	150.207730°	LeBreton 1996; BMS 2011d; Benson and Baird 2012
Carne Central	NP6	-33.385948°	150.218362°	LeBreton 1996; Benson and Baird 2012
Barrier/Broad	NP4	-33.383041°	150.226051°	LeBreton 1996; Benson and Baird 2012

We have also evidenced a rare dispersal event of the Blue Mountains Water Skink from Barrier/Broad Swamp approximately 2km west to Carne West Swamp. Dispersal is crucial to alleviating inbreeding/genetic bottlenecks in populations, and therefore maintaining habitat corridors between swamps is essential to the skinks long-term survival.

Other swamps associated with the Blue Mountains Water Skink within the Study Area not currently undermined which we have experience with include Sunny Side East Swamp and Barrier/Broad Swamp. Although we have not trapped for the Blue Mountains Water Skink in Sunny Side East Swamp, from a recent opportunistic survey, it is probable habitat. Although, Barrier/Broad Swamp has not been discussed in Appendix H, a portion of it lies within the Study Area. We find it a pristine swamp that supports a large population of the Blue Mountains Water Skink.

### Habitat

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*Occurs in high elevated habitats generally in shrub or hanging swamps but can also occur in open forest, open scrub or heath.*

We find that the Blue Mountains Water Skink occurs exclusively within shrub and hanging swamps, with no records in open forest and open scrub, and very few records in heath. It is

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a species dependent on water, found close to drainage lines, and its population is restricted to swamp proper.

The Newnes Plateau Swamps proposed to be undermined support a population stronghold of the Blue Mountains Water Skink in this region, and a significant alteration in hydrology of the swamps, such as a loss of groundwater through subsidence, would negatively affect the suitability of the habitat. This in turn may cause a substantial reduction in abundances within swamps, and an overall reduction in populations of skinks throughout that region. The ability of individuals and populations of the Blue Mountains Water Skink to recover from such an event is unknown.

## References

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