

# **Russell Vale Colliery Underground Expansion Project - Planning Assessment Commission Review by Dr Martin Denny, January 2015**

---

## **Executive Summary**

- The numerous reports and assessments associated with the Russell Vale Project have been reviewed, focusing on the aquatic and terrestrial fauna.
- Despite the abundance of information derived from many years of surveys and investigations, it is disappointing that the approach to the surveys, particularly the terrestrial fauna, has been less rigorous than would be expected from such a major project.
- Survey methodology recommended by both the New South Wales and Federal conservation agencies has not been followed and consequently, several Threatened species have not been adequately investigated and assessed.
- As no Elliott, cage and pit trapping were undertaken, a range of small to medium mammals (e.g. New Holland Mouse, Spotted-tailed Quoll, Southern Brown Bandicoot) that could occur in the area were not adequately surveyed nor adequately assessed.
- Call broadcasting was inadequate with no calls broadcast for a wide range of species including Sooty Owl, Squirrel Glider and Yellow-bellied Glider.
- No harp trapping for bats was undertaken even though there are several species that are known to be inadequately sampled with call analysis (Anabat). In addition, some of the cave-roosting bat species should have been radio-tracked to locate any roosts in the cliff line habitats.
- Overall, it can be said that the amount of survey methodology and degree of survey effort was inadequate for such an important development and the approach goes against that recommended by NSW OEH and Federal Department of Environment. One can say that the terrestrial fauna surveys at Russell Vale were only half done.
- Assessment of impacts upon several Threatened species was inadequate with some aspects of habitat preferences ignored. Greater emphasis should have been placed on the swamps containing banksia as these are important for the Eastern Pygmy-possum. Similarly, the potential for shelter sites within the cliff line habitats can be important for the Spotted-tailed Quoll and the Sooty Owl.
- The most important aspect of impact assessments from mine-induced subsidence is that once the surface effects of subsidence are discovered it is too late to reverse the process i.e. the indicator of subsidence is usually the disturbance of surface features.
- Inadequate information about the ecological characteristics of some of the Threatened species and their behaviour and habitat preferences in the Project area has resulted in some assessments being less than correct and it is recommended that these should be re-assessed after further investigations have been undertaken.

## **Background**

In a letter dated 19<sup>th</sup> January 2015, EDO NSW requested an independent expert review of the environmental assessment documentation for the Russell Vale Colliery Underground Expansion Project (Russell Vale Project). Specifically, to:

1. prepare a written review of the relevant sections of the Environmental Impact Statement, Preferred Project Report and Response to Submission, Residual Matters Report, relevant Peer Reviews, DPE Secretary's Preliminary Environmental Assessment Report and Recommended Conditions of Consent; and
2. subject to your findings, assist the community to prepare a presentation of the results of your review to a Planning Assessment Commission public hearing on this project.

EDO NSW requested that the expert report consider the following issues in relation to fauna:

1. Has the environmental assessment used the appropriate methods of identifying any environmental impacts that may occur as a result of the project?
2. Has the environmental assessment accurately predicted any environmental impacts that may arise from the project?
3. Is the project likely to result in any significant environmental impacts?
4. Are the proposed management strategies (including any strategies suggested through the recommended conditions of consent) likely to adequately manage any environmental impacts?
5. Are there any additional issues that should be put before the PAC?

As author of the following expert report I acknowledge that I have read the Code of Conduct under the UPCR and I agree to be bound by it.

## **Methodology**

### **a. Literature Consulted**

The relevant sections of the environmental assessment referred to me by EDO NSW were read and assessed to provide an overall picture of the project and the assessment process. The following publications were read:

#### *Environmental Impact Statement*

- EIS Main Report Part A - Executive Summary and Background Information
- EIS Main Report Part C - Aquatic Ecology, Terrestrial Ecology
- EIS Main Report Annexures P-R – Annex R NRE No.1 Colliery Assessment of Mine Subsidence Impacts on Aquatic Habitat and Biota
- EIS Main Report Annexures S-V – Annex S NRE No.1 Colliery Stage 2 Terrestrial Flora and Fauna Assessment

#### *Submissions to EIS*

- IRRM Submission to EIS
- OEH Submission to EIS

#### *Preferred Project Report*

- Preferred Project Report – Biodiversity
- Response to Submissions – Biodiversity of Pit Top, Biodiversity of Mine Area, Biodiversity Appendix

#### *Residuals Matter Report*

- Residuals Matter Report – Summary of Agency Issues on the PPF, Appendix G Russell Vale Colliery – Underground Expansion Project Preferred Project Report – Biodiversity

#### *Department of Planning and Environment Recommendation*

- Secretary's Preliminary Environmental Assessment Report:
- Recommended Instrument of Approval:

#### *EPBC Act Referral*

- Biodiversity Assessment Report Parts 1 to 5

In addition, the Independent Expert Scientific Committee on Coal Seam Gas and Large Coal Mining Development provided advice to the Australian Government Department of the Environment and the NSW Department of Planning and Environment on the Wollongong Coal Ltd Russell Vale Colliery Underground Expansion Project (the Russell Vale Expansion)

## **Russell Vale Colliery Underground Expansion Project - Planning Assessment Commission Review**

in New South Wales (*Advice to decision maker on coal mining project IESC 2014-057: Russell Vale Colliery Underground Expansion Project (MP 09\_0013; EPBC 2014/7268)*). This report was also read.

### **b. Investigation of Fauna Distribution and Fauna Survey Methodology**

To provide information about the distribution of Threatened Species (both State-based and Federally) NSW BioNet, the website for the Atlas of NSW Wildlife (<http://www.bionet.nsw.gov.au/>), was interrogated on the 27<sup>th</sup> January 2015.

Both the NSW OEH and the Federal Department of Environment provide guidelines for methodology for surveys of Threatened Species. The following guidelines were consulted:

*Threatened Biodiversity Survey and Assessment Guidelines for Developments and Activities Working Draft November 2004 Department of Environment and Conservation (DEC).*

Although not mandatory, these Guidelines, as stated by the DEC, “have been prepared for use by decision makers when considering a proposed development, activity or action pursuant to Parts 4 and 5 of the *Environmental Planning and Assessment Act 1979* (EP&A Act), and Part 6 of the *Threatened Species Conservation Act 1995* (TSC Act). The Guidelines also provide information and assistance to any other individuals or organisations that may be required to consider the effect of a proposal on threatened biodiversity or critical habitat”.

*Survey guidelines for Australia’s threatened birds: Guidelines for detecting birds listed as threatened under the Environment Protection and Biodiversity Conservation Act 1999* (SEWPaC, 2010a);

*Survey guidelines for Australia’s threatened bats: Guidelines for detecting bats listed as threatened under the Environment Protection and Biodiversity Conservation Act 1999* (SEWPaC, 2010b);

*Survey guidelines for Australia’s threatened frogs: Guidelines for detecting frogs listed as threatened under the Environment Protection and Biodiversity Conservation Act 1999* (SEWPaC, 2010c);

*Survey Guidelines for Australia’s Threatened Mammals* (SEWPaC, 2011a); and

*Survey Guidelines for Australia’s Threatened Reptiles* (SEWPaC, 2011b).

These five guidelines have been issued by the Federal Department of Environment (then called SEWPaC) and, although not mandatory, do state the following in their introduction:

“Failing to survey appropriately for threatened species that may be present at a site could result in the department applying the precautionary principle with regard to significant impact determinations. That is, if no supporting evidence (such as survey results) is presented to support the claim of species absence, then the department may assume that the species is in fact present. The department will not accept claimed species absence without effective validation such as through these survey guidelines, other survey techniques (for example, a state guideline or an accepted industry guideline), or relevant expertise.

Where a claim of absence is made, proposals should provide a robust evaluation of species absence”.

## **Review of Project**

Although there is considerable information about the aquatic and terrestrial fauna associated with the Russell Vale Project what stands out in the reading of the numerous reports are items and methods that appear to be missing. In summary, there are several survey techniques that should have been used but are missing, the degree of survey effort is not as high as expected for such a project, several Threatened terrestrial fauna species have not been surveyed or adequately assessed, and impact assessment has not been correctly undertaken for some Threatened terrestrial fauna species. These aspects are discussed below.

## **Survey Methodology**

Despite detailed surveys of many of the fauna groups, particularly herpetofauna, some recommended survey techniques have been ignored. Although the guidelines issued by the State and Federal departments, and listed above, are not considered mandatory, they set the standard for any surveys for native fauna. Perhaps the most important techniques that are missing from the surveys associated with the Russell Vale Project are the use of Elliott trapping, cage trapping and pit trapping. These do require a certain degree of expenditure of time and resources, but are essential if endeavouring to determine the presence/absence of certain Threatened species as well as other Protected species. In particular, trapping techniques assist in finding such mammals as the Eastern Pygmy-possum, Squirrel Glider, South Brown Bandicoot and New Holland Mouse as well as a range of amphibians and reptiles.

Table 5.8 (Suggested survey methods and effort for non-flying mammals) from the “*Threatened Biodiversity Survey and Assessment Guidelines for Developments and Activities Working Draft November 2004 Department of Environment and Conservation*” lists the following techniques:

- Small Elliott traps 100 trap nights over 3-4 consecutive nights for small mammals
- Large Elliott traps 100 trap nights over 3-4 consecutive nights for Medium to large mammals
- Arboreal Elliott traps 24 trap nights over 3-4 consecutive nights for Arboreal mammals
- Wire cage traps 24 trap nights over 3-4 consecutive nights for Medium to large mammals
- Pitfall traps with drift nets 24 trap nights over 3-4 consecutive nights for small mammals

Unfortunately none of these recommended techniques have been utilized in the surveys at Russell Vale. In addition, the SEWPaC guidelines recommend the use of nest boxes as a

method to locate small arboreal marsupials similar to the Eastern Pygmy-possum. Such a technique is used widely to survey for this species.

Although the use of the Anabat recorder is the most successful method for detecting bat species, several Threatened bat species are difficult to record with ultrasonic detectors, especially gleaning species that have low intensity calls, e.g. *Nyctophilus* species which are difficult to identify to species level by call alone. Therefore, direct capture methods must be used to identify these species. The use of harp trapping is recommended to ensure a complete coverage of bat fauna. Unfortunately, no harp trapping was utilized at Russell Vale.

Another aspect of the surveys for Threatened bat species that was not considered was the determination of roosting sites within the cliff lines and rocky overhangs. Although visual inspection was undertaken this is inadequate to always locate roost sites. For the Russell Vale Project it would have been important to capture any cliff-roosting Threatened species and radio-track their movements.

Call broadcasting for birds and mammals was undertaken but the range of species included in such calls was limited to Ground Parrot, Eastern Bristlebird, Powerful Owl and Sugar Glider. Consequently, the calls of a number of important Threatened species potentially present in the area were not broadcast. Species ignored were the Sooty Owl, Masked Owl, Koala, Yellow-bellied Glider and Squirrel Glider.

In the case of the aquatic fauna surveys, the range of techniques used was adequate for the water courses sampled.

### **Survey Effort**

An inspection of the map showing the locations of the terrestrial fauna survey sites (Figure 3.5 Annexure S, EIS) shows that only one spotlighting transect was undertaken and only one set of hair tubes was within the proposed mine area. Call broadcasting only occurred at two locations both within the A1 area, and nothing in the larger A2 area. It is difficult to determine the extent of the survey effort for terrestrial fauna as any figures given are for Wonga East and West. However, it seems likely that the actual survey effort at Wonga East may not be adequate as recommended by the DECC guidelines. Although herpetofauna has been extensively surveyed it is enlightening to read in Annex B of Annexure S, Section 2.3 Limitations in the Biosis report the following:

- Due to the large size of Wonga West and Wonga East study area and the amount of field time (5 days and 3 nights), it was not possible to carry out all surveys or meet the required effort (e.g. second replicates);
- It was not possible to safely utilize all daytime or night time hours due to the concurrent running of diurnal and nocturnal surveys;

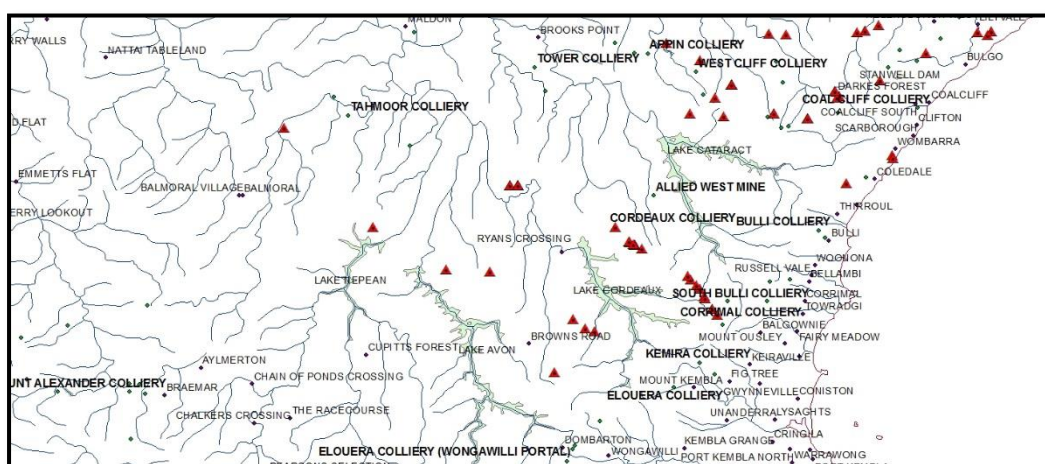
## Russell Vale Colliery Underground Expansion Project - Planning Assessment Commission Review

Regarding the Aquatic fauna surveys, it would appear that there were only four aquatic fauna sampling sites within the Wonga East area and these appear to ignore upstream areas.

### Threatened Species

Although there are listings of Threatened species for an area of 10 km diameter surrounding the Russell Vale Project, several species have not been considered in the survey and assessment. Because a species is not recorded close to the project area this does not mean that it could not be present. Dependence on a listing from the OEH database is limiting as such lists are developed from actual sightings. In many cases inadequate coverage of an area may result in few records in the database. This appears to be the case with the Russell Vale area in that several Threatened species not listed as occurring within 10 km of the Project do occur in a slightly wider area and there is preferred habitats within the Project area. Consequently, these species have been missed in the Project assessment. Of those either missed or given limited attention the following are considered important:

**Eastern Pygmy-possum** Although the Eastern Pygmy-possum has been recorded from in the Russell Vale area and from the region, there were no targeted surveys undertaken of this species. Spotlighting and hair funnels alone are not sufficient to locate this small marsupial and usually they are captured in pit traps and occasionally in tree-mounted Elliott traps. Recently, the use of nest boxes have had a high success rate. The importance of this species at Russell Vale is that “Banksias and myrtaceous shrubs are favoured as food sources and nesting sites...” (Ward, S.J. and Turner, V. *Eastern Pygmy-possum* in Van Dyke, S. and Strahan, R. 2008 *The Mammals of Australia* Reed New Holland). Consequently, the presence of swamps supporting banksia etc indicate high probability of its presence within the Project area. However, survey methodology was limited and may have resulted in a false negative.

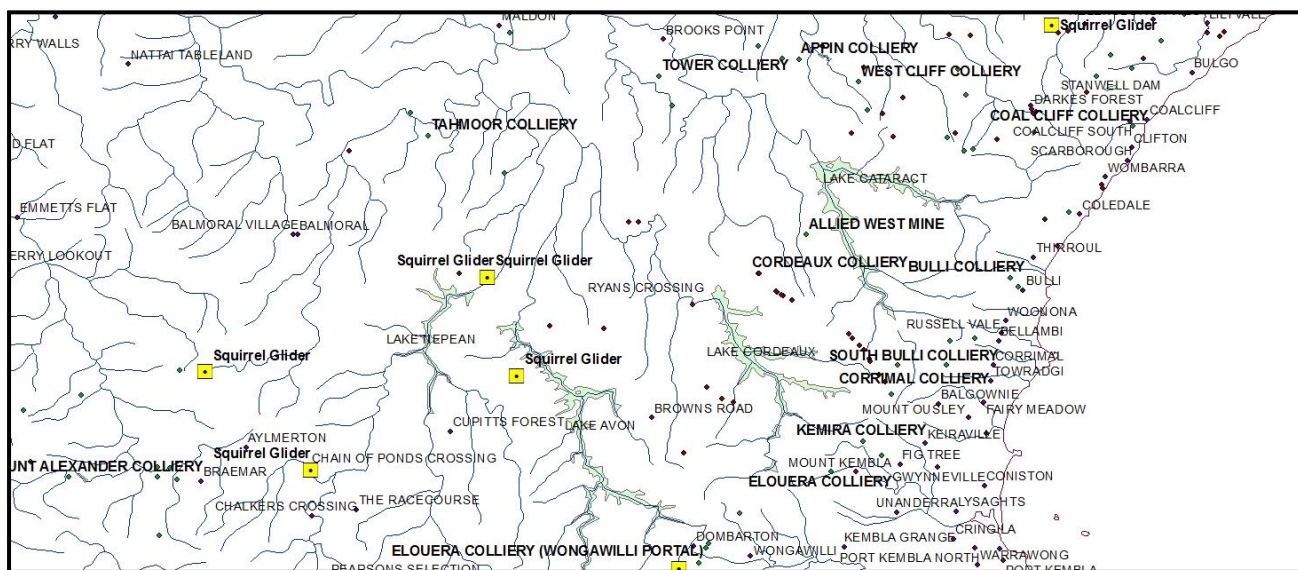


### Known Distribution of Eastern Pygmy-possum in the Vicinity of Russell Vale

**Squirrel Glider** This species appears to be dismissed from any surveys at Russell Vale. Although there are no records from the OEH database within 10 km of the Project it is

## **Russell Vale Colliery Underground Expansion Project - Planning Assessment Commission Review**

known from a wider area surrounding Russell Vale and could be expected to occur in the study area. However, apart from the hair funnels and spotlighting no other survey method has been used to locate this Threatened species. Tree-mounted traps will capture this species and they will respond to call broadcasting. However no calls of the Squirrel Glider were broadcast and, strangely, calls of the Sugar Glider were used instead. In addition, glider traps have been successful in capturing Squirrel Gliders (Winning, G. and King, J. 2008 A new trap design for capturing squirrel gliders and sugar gliders. *Australian Mammalogy* 29: 245-249)



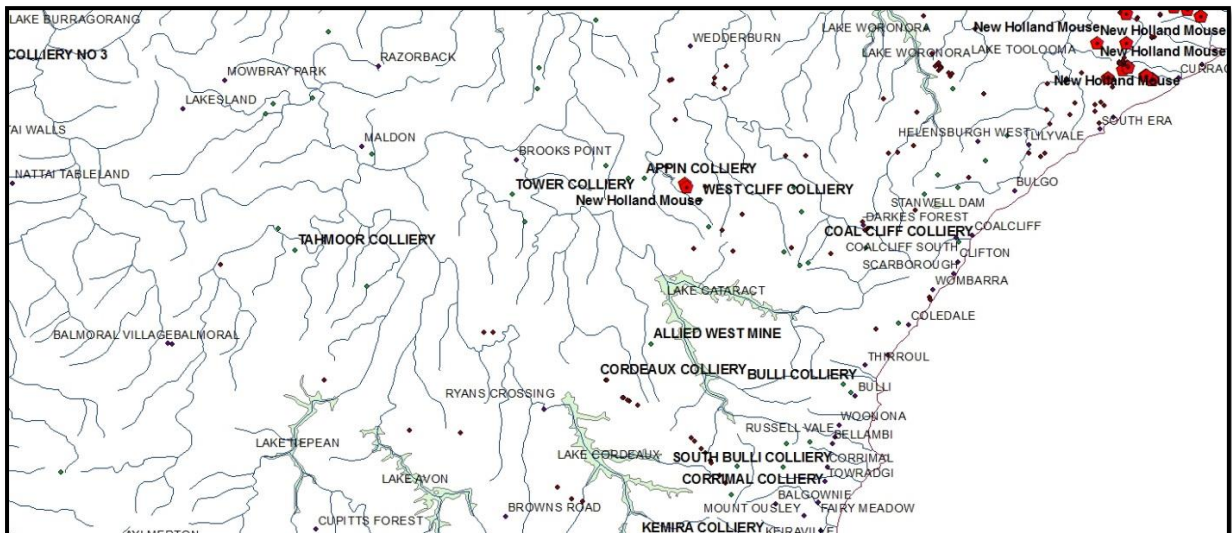
### **Known Distribution of Squirrel Glider in the Vicinity of Russell Vale**

#### **New Holland Mouse**

This species is listed as Vulnerable Federally, but not listed in NSW. The New Holland Mouse appears to have limited consideration in the Russell Vale Project assessment – it is listed in the EPBC referral as ‘not recorded’, but has the potential to be in the area. However, apart from using hair funnels there has been no targeted surveys for this species at Russell Vale. The New Holland Mouse can be trapped with Elliott traps as well as pit traps and considering its importance Federally such methods should have been used to determine its presence.

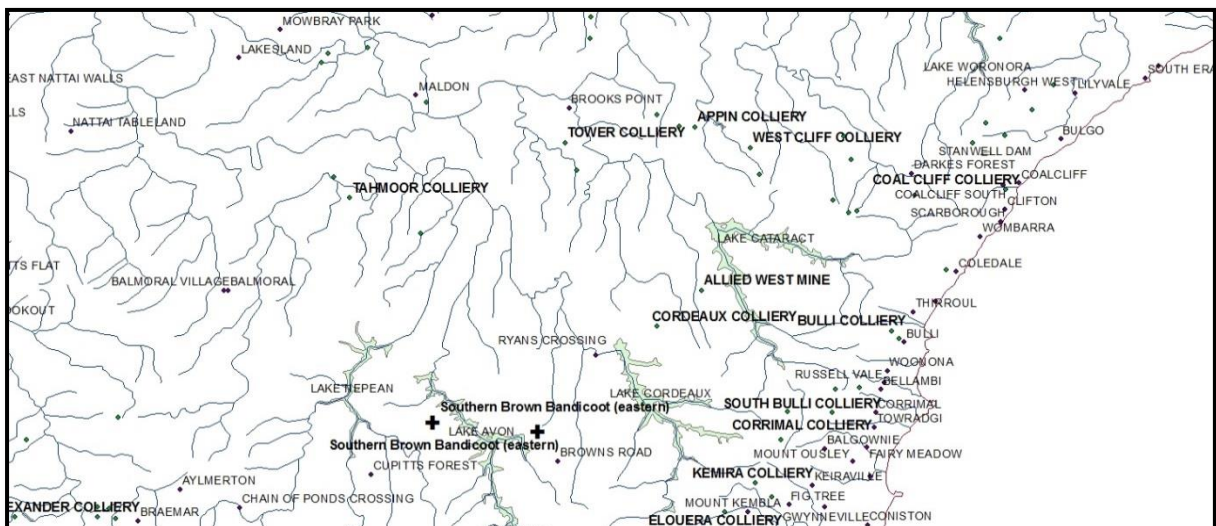


## **Russell Vale Colliery Underground Expansion Project - Planning Assessment Commission Review**



### **Known Distribution of New Holland Mouse in the Vicinity of Russell Vale**

**Southern Brown Bandicoot** This species is listed as Endangered Federally and in NSW. The Southern Brown Bandicoot appears to have limited consideration in the Russell Vale project assessment – it was listed in the EPBC referral as ‘not recorded’, but has the potential to be in the area. However, apart from using hair funnels there has been no targeted surveys for this species at Russell Vale. The Southern Brown Bandicoot can be trapped with cage traps and considering its importance such a method should have been used to determine its presence.

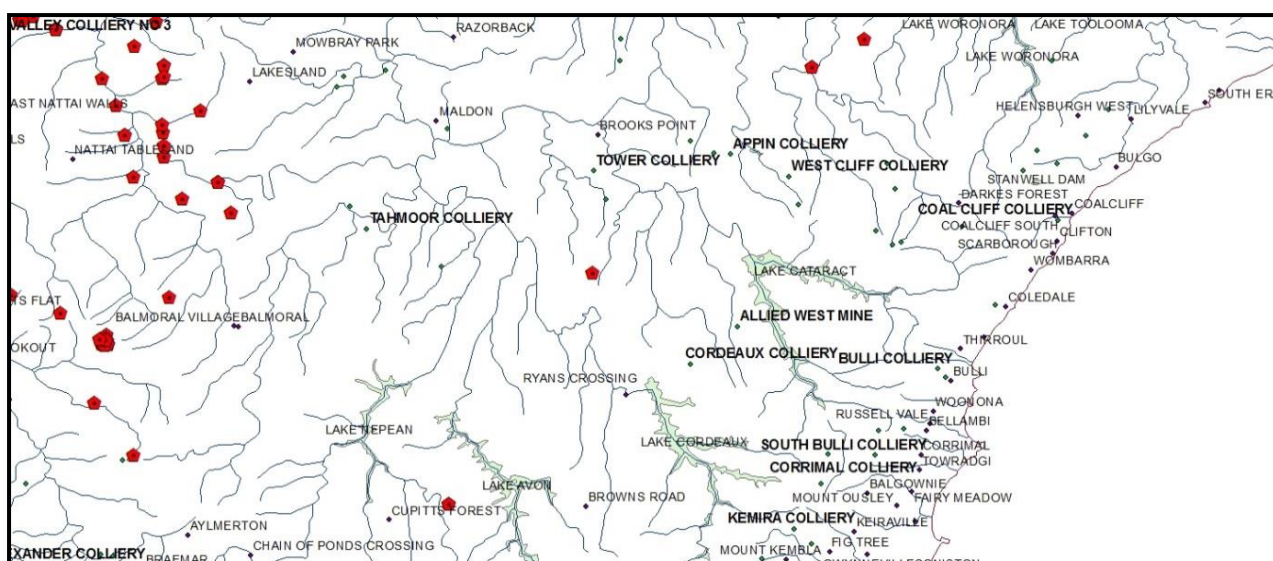


### **Known Distribution of Southern Brown Bandicoot in the Vicinity of Russell Vale**

## Russell Vale Colliery Underground Expansion Project - Planning Assessment Commission Review

### **Yellow-bellied Glider**

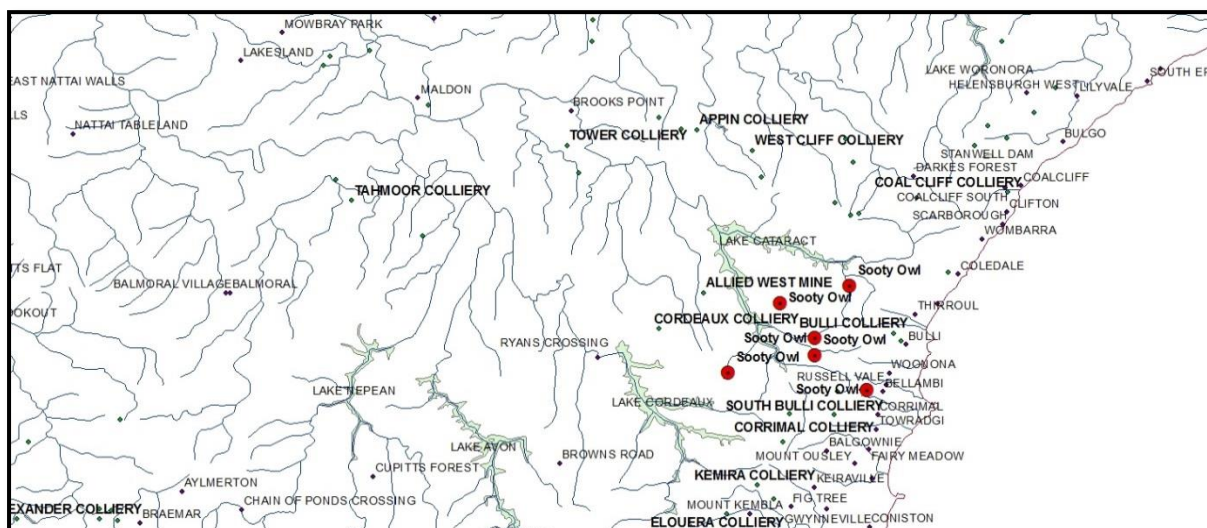
The Yellow-bellied Glider is listed as Vulnerable in NSW and is known from the region surrounding Russell Vale. This species appears to be missing from any survey methodology and assessments, yet has the potential of occurring in the area. This species is surveyed by spotlighting and from responses to call broadcasting. Also, the presence of large tree hollows are an indicator of use by various arboreal marsupials and nocturnal birds. No call broadcasting was undertaken during the surveys at Russell Vale and I could not find any discussion of the density of tree hollows in any of the reports.



### **Known Distribution of Yellow-bellied Glider in the Vicinity of Russell Vale**

**Sooty Owl** The Sooty Owl has been located close to the Project area and is known from the region. Although it is considered in the assessment it is strange that no calls of this species were broadcast during the surveys. Apart from roosting in tree hollows, there is evidence that the Sooty Owl will roost 'in caves, under rock overhangs, on ledges or in crevices of cliffs' (Higgins, P.J. 1999 *Handbook of Australian, New Zealand and Antarctic Birds. Volume 4: Parrots to Dollarbird*. Oxford University Press, Melbourne). With such a relationship it would seem important that greater effort should have been made to determine its presence and whether any cliff-line is used for roosting.

## **Russell Vale Colliery Underground Expansion Project - Planning Assessment Commission Review**



### **Known Distribution of Sooty Owl in the Vicinity of Russell Vale**

### **Impact Assessment**

The modification of the aquatic environment must be considered as an impact that can, in some circumstances, be significant. This is acknowledged in the assessment and whether society believes that such losses are compensated by economic rewards form part of the planning and environment process. Once subsidence effects are translated to the surface it is difficult to reverse such actions and changes to the above ground and underground water budgets occur. This can reflect onto the existing vegetation and possibly associated terrestrial fauna that are dependent upon such vegetation. It is in this context that an impact assessment upon the Eastern Pygmy-possum, Giant Dragonfly and several amphibians needs to carefully undertaken. At present, impact assessment on Threatened amphibian species appears to be thorough, but it is not as apparent regarding the Eastern Pygmy-possum and Giant Dragonfly.

Also, subsidence effects on cliff lines and rocky overhangs can affect some terrestrial fauna, such as some threatened bats as well as the Broad-headed Snake, Spotted-tailed Quoll and Sooty Owl. The last two species can be dependent upon rocky overhangs etc for roosting and shelter and greater emphasis should have been put into their impact assessment.

Although the effects from subsidence on forest and woodland habitats can be dismissed, the sideways movements associated with subsidence can result in tree falls which results in a loss of feed and shelter resources for a range of fauna. This aspect appears to be missed in the assessment.

Perhaps the most important aspect of impact assessments from mine-induced subsidence is that once the surface effects of subsidence are discovered it is too late to reverse the

process i.e. the indicator of subsidence is usually the disturbance of surface features. Various remedial methods are available but, as the reports associated with the Russell Vale Project state, the results have not been satisfactory to date.

## **Conclusion**

The assessment process for the Russell Vale Project has been long and modifications to the development have occurred along the way. However, the process of underground mining will potentially result in mining-induced subsidence and the effects will be felt on the swamps and water courses in the Project area. This report looks at the processes undertaken to provide information for an assessment of potential impacts to the aquatic and terrestrial fauna. Although there is an abundance of information derived from many years of surveys and investigations, it is disappointing that the approach to the surveys, particularly the terrestrial fauna, has been less rigorous than would be expected from such a major project.

In particular, survey methodology recommended by both the New South Wales and Federal conservation agencies has not been followed and several Threatened species have not been adequately investigated and assessed. Consequently, it is difficult to fully assess the area in terms of its biodiversity and the extent of the impacts predicted on Threatened species. Although the assessment process is driven by Threatened species legislation a clearer picture of the biodiversity values would have assisted in assessing different habitats in the Project area. This picture could have been derived from the additional data obtained from the surveys i.e. a quantitative examination of the records of Protected species located during the several surveys.

Inadequate information about the ecological characteristics of some of the Threatened species and their behaviour and habitat preferences in the Project area has resulted in some assessments being less than correct and these should be re-assessed after further investigations have been undertaken.

Dr Martin Denny BSc (Hons) PhD FRZS MECA

29<sup>th</sup> January 2015

## APPENDIX: CV FOR MARTIN DENNY

### MARTIN J.S. DENNY - CURRICULUM VITAE

**NAME:** Martin Jon Shaw Denny

[REDACTED]

Mobile: [REDACTED] e-mail: [REDACTED]

**DATE OF BIRTH:** [REDACTED]

**PLACE OF BIRTH:** [REDACTED]

**QUALIFICATIONS:** BSc (Honours 1st Class) PhD University of NSW  
Fellow of the Royal Zoological Society of NSW

#### EMPLOYMENT:

1963-64	N.S.W. Department of Education, Science Teacher
1967-68	University of N.S.W. Technical Assistant
1971-72	University of N.S.W. Demonstrator in Zoology
1973-74	University of N.S.W. Post-Doctoral Research Fellow
1974-75	University of N.S.W. Professional Officer
1975-76	University of New England, Research Fellow
1977-78	Queensland National Parks and Wildlife Service, Zoologist
1980	Applied Ecology Pty Ltd, Senior Scientist
1980-81	Nexus Environmental Studies, Ecologist
1981-08	Mount King Ecological Surveys, Partner
2008-	Biodiversity Monitoring Services, Zoologist

#### MEMBERSHIP OF PROFESSIONAL SOCIETIES:

1968-	Australian Mammal Society
1970-	Royal Zoological Society of N.S.W.
1974-	Australian Ecological Society
1978-	Royal Australian Ornithological Union
1983-	N.S.W. Field Ornithologists Club
1983-	Australian Bird Study Association
1999-	Ecological Consultants Association of NSW Inc

**Russell Vale Colliery Underground Expansion Project - Planning Assessment Commission Review**

- 2014- Linnean Society of NSW  
2014- Australian Wildlife Management Society

**OTHER ACTIVITIES:**

- 1979-80 Director, Tibooburra District Hospital  
1981-85 Council Member, Royal Zoological Society of N.S.W.  
1982-85 Executive Member, Nature Conservation Council of N.S.W.  
1983-85 Member, Conservation and Research Committee, Zoological Parks Board of N.S.W.  
1985-91, 94-97 Member, Australasian Marsupial Specialist Group,  
Species Survival Commission, International Union for the  
Conservation of Nature.  
1985-2000 Member, Natural Environment Panel, National Estate Register,  
Australian Heritage Commission.  
1985 Member, Kangaroo Advisory Committee, Australian National  
Parks and Wildlife Service.  
1987- Member, R.S.P.C.A. Australia Technical Advisory Committee.  
1988-91 Chairman, Australasian Marsupial Specialist Group, Species Survival Commission,  
International Union for the Conservation of Nature.  
1990-95 Member, Total Catchment Management Committee, Central West.  
1992 Streamwatch Patron, Kelso High School  
1992-1995 Member, Macquarie River Advisory Committee  
1992- Member, Applied Science Advisory Board, University of Western Sydney  
1997-2000 Joint Chair, Natural Environment Panel, National Estate Register  
1999- Committee Member, Ecological Consultants Association of NSW  
2000-2002 Vice President, Ecological Consultants Association of NSW Inc  
2001- Australasian Marsupial Specialist Group, Species Survival Commission, International  
Union for the Conservation of Nature.  
2002-2005 President, Ecological Consultants Association of NSW Inc  
2006-2012 Committee Member, Ecological Consultants Association of NSW  
2007-2008 Independent Chair, Review of the Biodiversity Assessment of  
Clearing under the *Native Vegetation Act 2003*  
2007-2008 Chair, Scientific Sub-committee for Review of the Biodiversity  
Assessment of Clearing under the *Native Vegetation Act 2003*  
2009 - Member, Biobanking Assessor Accreditation Panel  
2011 Invited Lecturer, The Ecology Centre, School Biological Science,  
University of Queensland

## **Russell Vale Colliery Underground Expansion Project - Planning Assessment Commission Review**

- 2012 Member, Biodiversity Sub-committee, NSW Environmental Trust
- 2014- Member, Data User Reference Group, Eco-Informatics, University of Adelaide
- 2014- President, Ecological Consultants Association of NSW Inc

### **CONTRIBUTIONS TO MEETINGS:**

- Australian Mammal Society [1968, 1971, 1972, 1973, 1975, 1979, 1980, 2009]
- A.N.Z.A.A.S. [1973]
- Australian Arid Zone Research Conference [1970]
- Workshop on Agriculture, Forestry and Wildlife [1975]
- Workshop on Aerial Surveys of Faunal Populations [1977]
- Australian Rangelands Society [1977]
- Australian Ecological Society [1979]
- Symposium Evolution of Flora and Fauna in the Arid Zone [1980]
- Symposium Carnivorous Marsupials [1980]
- Congress Wildlife Management in the 80's [1981]
- CONCOM, Harvesting of Australian Animals [1981]
- Australian Conservation Foundation, Focus on Australian Arid Lands [1982]
- CSIRO Workshop, Survey Methods for Nature Conservation [1983]
- Woollahra Municipal Council, Local History Seminar [1985]
- Orange Agricultural College, Problem Based Learning Workshop [1986]
- Royal Zoological Society of N.S.W. The Future of Native Fauna in Western N.S.W. [1991]
- Royal Zoological Society of N.S.W. Monotreme Symposium [1991]
- Centre for Conservation Biology Conservation Biology in Australia and Oceania [1991]
- National Trust New South Wales "Things we want to keep" Environmental Heritage Management under the new Local Government Act [1994]
- Environmental Institute of Australia, Fauna Impact Assessment Seminar [1995]
- Royal Zoological Society, "Ethics, Money & Politics" [1995]
- Cooper Creek Protection Group, "An Ecological Perspective on Cooper Creek; Windorah Workshop" [1996]
- Australian Wildlife Protection Council, "Self-regulation and the Kangaroo Industry - Is the Code of Practice an Appropriate Mechanism" [1996]
- Paroo River Association, "Paroo River Scientific Workshop" [1997]
- Delegate to "National Parks: Visions for the New Millennium Symposium" [1998]
- Delegate to "National Heritage Convention" [1998]
- National Parks Association of NSW "How the west should be won." Lecture Series [1998]

**Russell Vale Colliery Underground Expansion Project - Planning Assessment Commission Review**

FATE Workshop “Kangaroos, Commence, Cruelty and Common Sense” [2001]

Flinders Island Workshop (Environment Australia) “Review of Tasmanian Possums and Flinders Island Wallabies Management Programs” [2002]

Department of Environment and Conservation Workshop on the accreditation system for consultants preparing SISs [2003]

Struggling with the Act – some observations by ecological consultants RZS Conference “Biodiversity Conservation: is it just an Act?” [2003]

SOPA Biodiversity Seminar – Mammal Studies at Sydney Olympic Park [2005]

IUCN Global Mammal Workshop Re-listing of Australian mammal species to the Red Book [2005]

Dept Environment & Conservation – Expert Panel Assessing Survey Guidelines for Threatened Species [2006]

Dept Environment & Conservation - Central West and Lachlan Catchments Fauna Classification Workshop [2006]

Dept Environment & Conservation – Working Group for Bio-Banking Methodology [2006]

Ecological Consultants Association of NSW [2006] – Wildlife Corridors: Their Evaluation, Restoration and Protection

Then and Now: fauna monitoring within the Sydney Basin RZS Conference “The Natural History of Sydney “ [2007]

Australian Mammal Society [2009] Skin and Bones – Problems with Identification in the Field 2009 Meeting, Perth

Ecological Society of Australia [2011] Conference presentation “Desert Caves an unrecognised resource”

Ecological Consultants Association of NSW [2013] Conference Presentation “A Practical Discourse on Offsetting”



## **Russell Vale Colliery Underground Expansion Project - Planning Assessment Commission Review**

### **CONTRACTED WORK:**

1971-74

1. Participant in A.R.G.C. project "The Biology of Arid-zone Marsupials."

1975

2. Participant in Federal Department of Environment project "The Effects of Flooding upon Wildlife."

3. The Pipeline Authority - Mammal Survey of Natural Gas Pipeline.

1975-78

4. Australian National Parks and Wildlife Service - Project, "Migratory Movements of the Red Kangaroo."

1979

5. Australian National Parks and Wildlife Service - Advisor to Federal Government on management of kangaroos.

1980

6. Coalex Pty Ltd - Survey for North Hermitage Colliery, Lithgow.

1981

7. Water Resources Commission - Faunal survey of proposed Kerrabee Dam, Goulburn River.

8. Coalex Pty Ltd - Faunal survey for Baal Bone Colliery, Lithgow

9. Hooker Sands Pty Ltd - Faunal survey of sand extraction site at Kurnell.

10. Ulan Coal Mines - Flora and fauna survey of Gulgong-Ulan Railway.

11. Ulan Coal Mines - Flora and fauna survey of Ulan Mine expansion.

12. B.M.I. Pty Ltd - Fauna survey of two coal mine sites, Gloucester.

13. K.C.C. Pty Ltd - Fauna survey of coal mine site, Boggabri.

14. Water Resources Commission - Ecological survey of Lachlan River.

15. Water Resources Commission - Ecological survey of Castlereagh River.

1982

16. N.S.W. National Parks and Wildlife Service - Assessment of impact of drought upon kangaroos and vegetation in Sturt National Park.

17. N.S.W. National Parks and Wildlife Service - Mammal survey of Hastings River Catchment area.

18. Electricity Commission of N.S.W. - Faunal survey of Mount Piper transmission Line.

19. Queensland National Parks and Wildlife Service - Advisor to Service on publications, education and wildlife management.

20. British Broadcasting Commission - Advisor on Australian locations for television series "Planet Earth."

21. Southern Pacific Petroleum N.L. - Advice on flora and fauna studies for Condor Oil Shale Project, Queensland.

22. Electricity Commission of N.S.W. - Faunal survey of development areas associated with Mount Piper Power Station.

23. Southern Pacific Petroleum N.L. - Advice on flora and fauna studies for Stuart Oil Shale Deposits, Qld

24. North Flinders Mines Ltd - Environmental aspects of agreement between N.F.M. and Central Land Council re Granites Goldfields, Northern Territory.

1983

25. National Trust of N.S.W. - Survey of the natural environment of Megalong, Kanimbla and Hartley Valleys.

26. Queensland Mines Ltd - Environmental aspects in review of exploitative phase for exploration licence areas in Northern Territory.

27. Department of Defence - Faunal survey of Tindale-Katherine area, Northern Territory.

28. Esso Exploration - Vegetation mapping of Koolatong Project, Arnhem Land.

29. Sinclair Knight and Partners - Natural environment evaluation of Tathra River Estate development.

30. N.S.W. NPWS - Natural environmental aspects of plan of management for Munmorah SRA.

31. Condor Oil Shale Project - Advanced ecology studies.

32. Planning Workshop Pty Ltd - Natural environmental aspects of Mulgoa Valley.

33. Golden Dolphin Film Productions - Research for the film "Drought."

34. Meekathera Minerals - Preliminary fauna survey of coal mine sites, Oodnadatta, South Australia.

35. Wyong Shire Council - Advice on route for proposed road at Munmorah.

36. Department of Defence - Faunal survey of bombing range near Victoria River Downs, Northern Territory.

1984

37. Department of Main Roads - Faunal survey of East Charlestown By-Pass.

38. Don Fox Planning - Flora and fauna survey of residential land at Glenfield.

39. State Rail Authority - Flora/fauna survey of East Hills-Campbelltown Rail.

40. Sutherland Shire Council - Fauna survey of alternative roads at Woronora.

41. Don Fox Planning - Flora and fauna survey of Buttaba Hills Estate.

42. Public Works Department - Flora and fauna survey of dam site at Merimbula.

43. Wellings, Smith and Byrnes - Environmental assessment of nursing home site.

44. Department of Main Roads - Fauna survey of South-Western Freeway, Bankstown.

45. N.S.W. National Parks and Wildlife Service - Survey for the Hastings River Rat at Barrington Tops.

1985

46. Electricity Commission of N.S.W. - Flora and fauna survey of transmission line between Wagga Wagga and Darlington Point.

47. Department of Main Roads - Fauna survey of proposed State Highway 23 at Rankin Park, Newcastle.

48. Wellings, Smith and Byrnes - Ecological assessment of residential land at Nambucca Heads.

49. Department of Main Roads - Flora and fauna survey of Goulburn By-Pass.

50. North Flinders Mine - Flora and fauna survey of Granites Goldfield, Tanami Desert.

51. N.S.W. NPWS - Fauna survey of Quarantine Station, North Head, for plan of management.

52. Travis Partners - Fauna survey of Kelly's Bush.

53. Electricity Commission of N.S.W. - Fauna survey of water pipeline, Hartley.

54. Public Works Department - Flora and fauna survey of Wyong Water Scheme.

55. Gutteridge, Haskins and Davey Pty Ltd - Ecological assessment of proposed marina at Shellharbour.

## **Russell Vale Colliery Underground Expansion Project - Planning Assessment Commission Review**

56. Department of Aviation - Fauna survey of sites for Second Sydney Airport.
  57. Fighters for Survival - Natural environment of the Cobar region.
  58. Newcastle City Council - Advice on faunal use for Shortland Wetlands plan of management.
  59. Fund for Animals - Assessment of Queensland Kangaroo Management Program.
  60. Water Resources Commission - Fauna survey of weir site at Goondawindi.
  61. Department of Arts, Heritage and Environment - Preparation of "Small Native Animals - Unpaid Farmhands."
  62. Electricity Commission of N.S.W. - Fauna survey of Angus Place Colliery.
  63. Metropolitan Water Sewerage and Drainage Board - Fauna survey of Maianbar Watermain through Royal NP.
  64. RSPCA (Australia) - Survey of the incidence of cruelty to kangaroos during culling.
  65. Coff's Harbour Council - Ecological assessment of residential development at Coff's Harbour Jetty.
  66. N.S.W. NPWS - Ecological and historical aspects of Mootwingee plan of management.
  67. Hirst Consulting Services Pty Ltd - Evaluation of flora and fauna survey at Byron Bay.
  68. State Electricity Commission of Victoria - Assessment of compensation claims for damage from Portland Transmission Lines, Victoria.
  69. Electricity Commission of N.S.W. - Flora and fauna survey of the Mount Piper to Marulan Transmission Line.
  70. Central Tablelands No Base - Natural environment of the Orange-Bathurst region.
  71. Jonathon Falk Planning Consultants Pty Ltd - Natural environment assessment of planned land development at Bonville, Coff's Harbour.
- 1986
72. Electricity Commission of N.S.W. - Flora survey of Wagga Wagga power line.
  73. Longworth and McKenzie - Fauna survey of Wallarah Colliery at Munmorah.
  74. Department of Public Works - Evaluation of impact upon marine environment of Walsh Bay.
  75. Electricity Commission of N.S.W. - Flora and fauna survey of Mount Piper-Marulan transmission line.
  76. Australian Gas Light Co. - Flora and fauna survey of gas storage site at Kurnell.
  77. Department of Main Roads - Fauna survey of Newcastle By-Pass at Wallsend.
  78. Electricity Commission of N.S.W. - Flora and fauna survey of Armidale-Lismore transmission line.
  79. Department of Main Roads - Flora and fauna survey of Gore Hill Freeway.
  80. Electricity Commission of N.S.W. - Flora and fauna survey of Regentville-Penrith transmission line.
  81. Kiama Council - Ecological evaluation of upgrading of Foxground Road.
  82. RSPCA (Australia) - Survey of the incidence of cruelty during the culling of wallabies in Tasmania.
  83. Buchanan Borehole Collieries Pty Ltd - Flora survey of Woodlands Hill Coal Mine.
  84. Orange Agricultural College - Development of Environmental Management Associate Diploma course.
  85. Taylor, Thompson, Whitting Pty Ltd - Vegetation survey, Londonderry.
  86. Department of Defence - Fauna survey of land in Jervis Bay region.
  87. Department of Main Roads - Fauna survey of link road between the F3 and Newcastle.
  88. Government of the Republic of Botswana, Ministry of Agriculture - Re-establishment of range assessment and monitoring system including wildlife census.
  89. Lucknow Investments - Evaluation of wetland area at Tweed Heads.
  90. Gutteridge, Haskins and Davey - Evaluation of marine and wetland habitats at Tweed Heads.
- 1987
91. Taylor, Thompson, Whitting Pty Ltd - Fauna survey, Londonderry.
  92. Public Works Department - Flora and fauna survey of sewerage works, Port Stephens.
  93. Department of Defence - Ecological assessment of proposed armament depot and fleet base at Jervis Bay.
  94. Department of Main Roads - Flora and fauna survey of Yass By-Pass.
  95. Electricity Commission - Detailed flora and fauna surveys of Armidale to Lismore Transmission Line.
  96. Byron Bay Shire Council - Evaluation of environmental data on planning submission.
  97. Fund for Animals - Review of 1987 Queensland Kangaroo Plan of Management.
  98. Gutteridge, Haskins and Davey - Flora and fauna survey of munition factory at Mulwala.
  99. Hornsby Shire Council - Fauna survey of proposed waste disposal site at Mt Kuringai.
  100. Willing and Partners - Assessment of wetlands at Settlement Point, Port Macquarie.
  101. Public Works Department - Assessment of vehicle-wildlife impact in Royal National Park.
  102. Wyong Shire Council - Platypus habitat studies, Ourimbah.
  103. Planning Workshop - Flora and fauna studies for gravel extraction, Nepean River, Menangle.
  104. Alonbar Pastoral Company - Wetland assessment, Manning River.
  105. N.S.W. National Parks and Wildlife Service - Habitat preferences of rare species at Barrington Tops.
  106. Byron Shire Council - Wetland assessment and creation of artificial wetland.
  107. N.S.W. Department of Tourism - Fauna component of Jenolan Caves plan of management.
  108. Department of Main Roads - Flora and fauna survey of Barton Highway link.
  109. Department of Main Roads - Flora and fauna studies of Mount Ousley Road.
  110. Orange Agricultural College - Lecture notes for Land Management Course. Units - Biological Sciences, Survey Techniques, Environmental Systems, Environmental Impact Assessment, Ecology - Impacts and Issues, Flora and Fauna Management.
- 1988
111. Goldfields Exploration Pty Ltd - Flora and fauna survey of land at Burruga.
  112. Department of Main Roads - Alternative route evaluation, Caloola Pass.
  113. Electricity Commission of N.S.W. - Evaluation of impact from transmission line at Grafton.
  114. Masterplan Consultants - Flora and fauna survey of surplus government land at Pennant Hills.
  115. Mitchell McCotter and Associates - Flora and fauna survey of Warragamba Dam.
  116. Orange Agricultural College - Lecturing in Land Management Course.
  117. Electricity Commission of N.S.W. - Flora and fauna survey of water reservoir and ash disposal sites at Mount Piper.
  118. Land Systems Pty Ltd - Management of natural areas at Mill Ponds.
  119. R.W. Corkery and Associates - Flora and fauna survey of limestone quarry at Cow Flat.
  120. Water Board - Flora and fauna survey of the Wingecarribee River.
  121. Bournebridge Pty Ltd - Evaluation of impacts on Parramatta River by development at Camellia.

## **Russell Vale Colliery Underground Expansion Project - Planning Assessment Commission Review**

122. Sinclair, Knight and Partners - Preparation of flora and fauna sections of E.I.S. on Jervis Bay Navy relocation.
  123. Department of Defence - Evaluation of seabird use of Jervis Bay.
  124. Design Collaborative Pty Ltd - Evaluation of impacts on flora and fauna by a helicopter landing area.
  125. Rockdale Council - Evaluation of wetland damage at North Scarborough Park.
- 1989
126. Electricity Commission of N.S.W. - Flora and fauna survey at north Katoomba.
  127. Hastings Shire Council - Koala and fauna survey of land at Lake Cathie.
  128. Department of Main Roads - Flora and fauna survey of Castlereagh Freeway.
  129. Water Board - Management strategy plan for Pond No. 6, Mill Ponds.
  130. Electricity Commission of N.S.W. - Flora and fauna evaluation of transmission line routes at Winmallee.
  131. Sinclair Knight and Partners - Fauna survey of Wallis Island and Wallis Lake.
  132. Department of Main Roads - Flora and fauna survey of Phillip Parkway.
  133. Kinhill Engineers Pty Ltd - Flora and fauna survey of South-western Freeway.
  134. Water Board - Detailed flora and fauna surveys of Warragamba Dam.
  135. Design Collaborative Pty Ltd - Evaluation of land at Church Point.
  136. Water Board - Flora and fauna survey of land at Liverpool Sewage Works.
  137. Bardwell Valley Golf Club - Evaluation of bushland areas at Bardwell Park.
  138. Land Systems Pty Ltd - Plan of management for Rockdale Wetlands Corridor.
  139. Danford Constructions - Review of environmental factors from construction of overpass in Kuring-gai NP.
  140. ACI Minerals - Evaluation of sand extraction area at Tanilba.
  141. Boral Quarries - Evaluation of flying-fox colony at Jamberoo.
  142. Perumal Murphy Pty Ltd - Flora and fauna aspects of North Coast.
  143. Department of Planning - North Coast Natural Heritage Discussion Paper.
  144. Manidis Roberts Consultants - Flora and fauna studies Rouse Hill Sewage Treatment Plant.
  145. Barry Rush and Associates - Evaluation of wetland at Randwick.
  146. Greenpeace Australia - Evaluation of Queensland kangaroo harvesting plan of management.
  147. Land Systems Pty Ltd - Plan of management for Rankin and Jesmond Parks, Newcastle.
  148. Liverpool City Council - Evaluation of land at Hoxton Park.
  149. ACI Minerals - Fauna survey of northern dune area, Tanilba.
- 1990
150. Road and Traffic Authority - Flora and fauna survey of Wilton By-Pass.
  151. Hastings Municipal Council - Plan of management for koalas in Hastings Municipality.
  152. Coalex Pty Ltd - Evaluation of mining subsidence on the flora and fauna at Baal Bone.
  153. Landscan Pty Ltd - Evaluation of changes to East Hills Golf Course on the natural environment.
  154. Road and Traffic Authority - Expert witness at Commission of Enquiry into Castlereagh Tollway.
  155. Design Collaborative - Evaluation of natural aspects of land at St Ives.
  156. Kinhill Engineers - Flora and fauna survey at Bundabah, Port Stevens.
  157. E.S. Turnbull - Assessment of land at Helensburg as a wildlife corridor.
  158. Australian National Parks and Wildlife Service - Plan of management of Platypus.
  159. Waste Management Authority of N.S.W. - Fauna survey of waste depot at Londonderry.
  160. Kinhill Engineers - Flora and fauna evaluation of 3rd Runway.
  161. Kinhill Engineers - Bird usage of the northern part of Botany Bay.
  162. Capital Resorts Group - Assessment of bird strike risk at Cairns Airport.
  163. VFT Project - Flora and fauna surveys of the Canberra to Sydney VFT route.
  164. Willings and Partners - Flora and fauna assessment of Second Creek Catchment area.
  165. Gutteridge, Haskins and Davey - Fauna survey of land division site at Dudley, Newcastle.
  166. Water Board - Evaluation of preliminary studies of Welcome Reef Project.
  167. Manidis Roberts Consultants - Flora and fauna surveys of Castlereagh Tollway west of Pennant Hills Road.
  168. Australian National Parks and Wildlife Service - Impacts from introduced aquatic and terrestrial animals on native flora and fauna.
  169. Gumble Landcare Group - Advice on native plants and animals.
  170. Sinclair Knight and Partners - Fauna survey of Mt Airlie Mine.
  171. Roads and Traffic Authority - Barton Highway Link flora and fauna assessment.
  172. Comrealty Ltd - Fauna study Richmond Grove, Rothbury.
  173. N.S.W. Department of Planning - Survey of heathlands in western slopes of N.S.W.
  174. N.S.W. Department of Planning - Fauna use of woody weeds.
  175. Comrealty Ltd - Fauna survey of Richmond Grove Estate, Hunter Valley
  176. Public Works Department - Flora and fauna assessment of proposed University site at Ourimbah
  177. Lawson Golf Club - Assessment of fauna at proposed golf course site at Lawson
  178. ACI Minerals - Assessment of impact from truck movements on Koala population at Anna Bay
- 1991
179. Snowy Mountains Engineering Corporation - Evaluation of options for fauna under/overpasses for North Gosford By-pass
  180. Forsite-EDAW Pty Ltd - Evaluation of wildlife habitat at ADI site, St Marys
  181. Landscan Pty Ltd - Site assessment of area of land at North Richmond
  182. Department of Water Resources - Pindari Dam Enlargement - assessment of impacts upon Severn River NR
  183. Port Stephens Shire Council - Flora and fauna survey of land at Salamander Bay
  184. Water Board - Survey for bats associated with Shoalhaven and Mongarlowe Rivers, Welcome Reef
  185. Water Board - Survey of Platypus in Shoalhaven and Mongarlowe Rivers, Welcome Reef
  186. Forestry Commission of N.S.W. - Flora and fauna studies for Dorrigo Management Area E.I.S.
  187. ACI Industrial Minerals Division - Fauna survey of sand extraction area at Salt Ash
  188. Penrith City Council - Fauna survey of land at South Erskine Park
  189. Forestry Commission of N.S.W. - Flora and fauna studies for Wingham Management Area E.I.S.
  190. Geomarine Pty Ltd - Fauna survey of sand extraction site at Georges River, Moorebank
  191. Camp Scott & Furphy - Fauna survey at Maroota for residential development

## **Russell Vale Colliery Underground Expansion Project - Planning Assessment Commission Review**

192. Water Board - Platypus habitat survey on the Wingecarribee River for water release impact studies.
193. Clutha Coal Pty Ltd - Fauna survey of proposed coal mine and conveyor at Springvale, Lithgow
- 1992
194. Planning Workshop - Fauna evaluation of land at Wollombi
195. Hartcorp Management P.L. - Assessment of impacts on fauna from Jenolan Caves Grand Arch precinct development.
196. Luke Hopkins Pty Ltd - Evaluation of two areas at Port Macquarie for Fauna Impact Statements
197. Pottsville Development Corporation - Evaluation of Koala use of land at Pottsville
198. Mackay Port Authority Assessment of bird-strike risk from resort development near Mackay Airport
199. Sinclair Knight - Fingal Bay Road EIS fauna studies
200. Forestry Commission of NSW - Fauna surveys of the Kempsey/Wauchope Management Areas.
201. Boral Resources (NSW) Pty Ltd - Assessment of need for Fauna Impact Statement for quarry at Sodwalls
202. Road and Traffic Authority - Fauna Impact Statement for North West Transport Corridor
203. Australian National Parks & Wildlife Service - Review of the impacts from introduced aquatic and terrestrial animals upon native flora and fauna and the legal controls on introduced animals.
204. Pinnaroo Charolas Canowindra - Determination of need for Fauna Impact Statement re stream clearing.
205. Readymix Group - Fauna survey of sand extraction site, Agnes Banks
206. Church & Grace - Assessment of Fauna Impact Statement for proposed quarry at East Kurrajong, evidence to Land & Environment Court
207. Novacoal Australia Pty Ltd - Assessment of fauna value of land proposed for open cut mining at Wallarawang
208. Forestry Commission of NSW - Preparation of Fauna Impact Statement for forestry operations in Wingham
210. Ulan Coal Mines Ltd - Flora and fauna survey of Stage 3 development of Ulan Coal Mine
211. Church and Grace - Assessment of fauna section of EIS East Kurrajong Sandstone Quarry
212. State Projects, Public Works Department - Assessment of fauna, Mullaway Public School, Coffs Harbour
213. Water Board - Evaluation of spillway area at Warragamba Dam
214. Manaldo Pty Ltd - Fauna survey of sand extraction site at Maroota
215. Great Lakes Shire Council - Fauna survey of land at Tea Gardens
216. Joint Committee of Necropolis Trustees - Fauna survey of west Rookwood Cemetery
217. Stanbroke Pastoral Holdings - Establishment of rangeland monitoring system at "Bulloo Downs", Qld
218. Upper Parramatta River Trust - Fauna survey of Darling Mills Creek
219. Forestry Commission of NSW - Fauna surveys of the Walcha Forest Management Area
220. Roads & Traffic Authority - Additional fauna surveys along the North-west Transport Links corridor
221. Newcastle Council - Fauna evaluation of West Wallsend Tip site for Commission of Inquiry
222. Water Board - Platypus studies along Glenquarry-Nepean River system
223. Water Board - Habitat evaluation of Stonequarry Creek and Nepean River for the Picton STP
224. Coffs Harbour City Council/Dept Public Works - Bellinger River Water Supply Scheme - Aquatic Study
225. Design Collaborative - Fauna evaluation of Katoomba Golf Course development
- 1993
226. Sydney Waste Utility - Flora and fauna assessment of Ardlethan Tin Mine rehabilitation
227. Pacific Waste Management - Assessment of bird strike risk from Elizabeth Drive landfill
228. Forestry Commission of NSW - Preparation of fauna sections of Tenterfield Management Area EIS
229. Roads & Traffic Authority - Additional fauna surveys for F5 [Alexandra to Beverly Hills]
230. Wyong Shire Council - Warnervale Airport upgrade, flora and fauna evaluation
231. Rockdale Council - North Barton Park development - flora and fauna evaluation
232. Tweed Shire Council - Black Rocks Estate, planning for residential development and Koala management
233. Roads & Traffic Authority - F3 extension to New England Highway, flora and fauna assessment
234. Roads & Traffic Authority - Pacific Highway upgrade between Billinudgel and Chinderah
235. Prospect Electricity - Transmission line between Springwood, Warrimoo and Winmalee
236. Jimneva Properties P.L. - Dunbogan Canal Estate - evaluation of Koala use and management
237. Water Board - Fauna aspects in Warragamba Dam Flood Mitigation EIS
238. Caltex Oil P.L. - Flora and fauna assessment of oil depot at Mulgrave
239. Pacific Waste Management - Evaluation of Bird Management Manual for Elizabeth Drive Landfill
240. Department of Defence - Orchard Hills Captive Kangaroo Management Plan
241. Department of Planning - Chipping Norton Environmental Study
- 1994
242. Ulan Coal Mines - Fauna monitoring programme at Ulan Mines
243. Water Board - Detailed surveys for endangered fauna at Lake Burragorang
244. Clyde Agriculture - Fauna evaluation of property near Bourke
245. Cable Water Ski Australia - Evaluation of bird strike potential from water ski park at Adelaide
246. Rust PPK - Fauna assessment of National Highway, Prestons to Cecil Park
247. Hassal & Associates - Fauna evaluation of clearing licence at Bourke
248. Maclean Shire Council - Fauna and flora study of Maclean Shire
249. NSW NPWS - Fauna Impact Statement for transmission lines in Mootwingee and Sturt National Parks
250. Pasmenco - Fauna Impact Statement for open cut mine near Broken Hill
- 1995
251. Clyde Agriculture - Fauna Impact Statement for water storage area at Bourke
252. TransGrid - Habitat evaluation of easement management activities along 15 transmission lines in Crown Land
253. National Parks Association - Conservation survey of south-eastern NSW (Australian Heritage Grant Project)
254. MSB Sydney Ports Authority - Evaluation of existing information on the flora and fauna at Port Botany
255. Ulan Coal Mines - Fauna monitoring programme at Ulan Mines
256. Alaston Pty Ltd - Evaluation of need for FIS at Cullendulla, Batemans Bay
257. CSR Readymix - Fauna assessment for Londonderry quarry
258. Narrabri Shire Council - Ecological Assessment for Narrabri Sewerage Augmentation EIS
259. Shoalhaven City Council - Ecological Assessment of Culburra Urban Expansion
260. Roads and Traffic Authority - Fauna impact assessment of changes to M5 East Motorway

## **Russell Vale Colliery Underground Expansion Project - Planning Assessment Commission Review**

261. CSR - Review of Environmental Factors, Flora and Fauna, Tarana-Oberon Rail Line
262. RTA - Fauna assessment of M5 East - Supplementary studies
263. Ulan Coal Mines - Fauna surveys for Second Longwall Project EIS at Ulan
264. NSW Public Works and Services - Fauna assessment of sewage disposal site at Baradine  
1996
265. Wollongong City Council - Evaluation of fauna report on development site at Balgownie
266. Jenolan Caves Trust - Assessment of impact of cave development on Sooty Owl roost
267. Maunsell Pty Ltd - Assessment of bird strike potential from lake development at Cootamundra
268. Shoalhaven City Council - Evaluation of sewage treatment sites at Currarong, Jervis Bay
269. Ulan Coal Mines - Preparation of Fauna Impact Statement for Second Longwall Project, Ulan
270. Ulan Coal Mines - Annual fauna monitoring at Ulan Coal Mines
271. RZM Pty Ltd - Fauna survey of 12 Mile Project at Pooncarie
272. Peak Gold Mines - Fauna Survey of Fort Bourke Hill area, Cobar
273. Cable Water Ski Australia - Preparation of evidence for Supreme Court case involving bird strike at Adelaide Airport
274. National Parks Association - Conservation survey of coastal lands of central and northern NSW (Australian Heritage Grant Project)
275. RZM Pty Ltd - Pit Trap Survey of Mallee Lands near Pooncarie
276. Department of Urban Affairs and Planning Flora and fauna assessment of land at Flirtation Hill, Mudgee
277. Orange City Council - Flora and fauna evaluation of Ploughman's Valley urban release area, Orange  
1997
278. Australian Water Technologies Targeted survey for Common Planigale at Warragamba Dam Wall
279. Ulan Coal Mines Species Impact Statement for Longwall development at Ulan
280. Ulan Coal Mines Assessment of flora and fauna at proposed ventilation shaft site
281. Ulan Coal Mines Assessment of flora and fauna of proposed mine wall expansion
282. Ulan Coal Mines Annual fauna monitoring surveys during summer at Ulan Coal Mine
283. Humane Society International Inc. Assessment of Management Program for culling Brush-tail Possums in Tasmania
284. NSW Aboriginal Land Council Forster and Gumma Peninsulas land claims – nature conservation aspects
285. SJPH Design Partnership Wetland design features for M5 East – tender with Transfield to RTA
286. RTA 8-part test of significance for revised M5 route
287. Sydney Ports SIS for Port Botany expansion
288. NSW Heritage Council/NPA Bioregionalisation of Eastern NSW  
1998
289. Sydney Water Surveys for the Common Planigale at Warragamba Dam
290. Ulan Coal Mines Flora and fauna input to SEPP34 Application
291. Environment Australia Identification of Places of Natural History Significance in CRA Regions of NSW
292. T.G.Perram Flora and fauna assessment of mushroom composting facility at East Kurrajong
293. Ulan Coal Mines Annual fauna monitoring surveys at Ulan Coal Mines
294. AGL Fauna surveys along proposed routes for Central Ranges gas pipeline (Dubbo-Tamworth)
295. North Ltd Temora to Lake Cowal Gold Mine Transmission Line Fauna surveys and assessment of wildlife habitat
296. Waste Service NSW Tempe Tip Remediation Project
297. Penrith Poultry Emu Plains Poultry Processing Plant – Flora and Fauna Assessment
298. T&S D'Arcy PL 8-Part Test and SEPP44 Evaluation of land at Tarraganda, near Bega
299. Rydal & Sodwalls Heritage Association Assessment of impacts from hard rock quarry at Rydal
300. TransGrid Flora and fauna evaluation of installation of new earth cable on transmission lines between western Sydney and Mount Piper  
1999
301. Department of Defence Fauna surveys of Defence land at Marrangaroo, near Lithgow
302. Black Range Minerals Fauna survey of proposed Syerston Nickel-Cobalt Project area, near Tullamore
303. Abigroup-SMEC Fauna Management Plans for Warragamba Auxiliary Spillway
304. Greek Orthodox Church Holy Threatened Species survey of proposed Mother of God Monastery, Mangrove Creek
305. Ulan Coal Mines Assessment of ventilation shaft site at Ulan
306. Kolback Environmental Services Contribution to Commission of Inquiry into Ardlethan Mine Rehabilitation Project
307. NSW Waste Services Rehabilitation Strategy for Wilson Park, Silverwater
308. Sydney Water Assessment of Flora and Fauna Survey Report for South Katoomba Sewage Scheme
309. RSPCA Australia/Environment Australia Survey of compliance with the requirements of the Code of Practice for the Humane Shooting of Kangaroos
310. Duke Energy International Assessment of route alternatives for Eastern Gas Pipeline Project at Cataract River
311. Australian Heritage Commission Natural Values of the Paroo River Catchment in NSW and Queensland
312. Black Range Minerals Fauna survey of proposed infrastructure areas in the Syerston Nickel-Cobalt Project area, near Tullamore
313. Australian Heritage Commission Development of the natural aspects of a nomination of the Paroo River Catchment to the Register of the National Estate
314. Trans-Grid Assessment of fauna habitat along transmission lines between Sydney and Victoria for the OPGW Project
315. RZM Pty Ltd Fauna surveys and preparation of Species Impact Statement for Birthday Gift Project, near Pooncarie
316. Ulan Coal Mines Annual fauna monitoring at Ulan Coal Mine
317. Ulan Coal Mines Flora and fauna management plan for ventilation shaft and associated infrastructure
318. Ulan Coal Mines Ecological assessment of Highwall expansion area at Ulan
319. Peak Gold Mines Fauna survey of New Occidental Mine area at Cobar  
2000
320. Environmental Protection Authority NSW Preparation of Biodiversity chapter of State of Environment 2000 report
321. Murray Basin Titanium Preparation of 8-part test for sand mining near Pooncarie
322. Blaxland Park P.L. Fauna survey and assessment of land development at Blaxland
323. Murray Basin Titanium Fauna surveys of additional areas at Pooncarie
324. TWV Perram & Partners Fauna assessment of Blacktown-Rooty Hill transmission line
325. Black Range Minerals Preparation of 8-part test for nickel-cobalt mine at Fifield

## **Russell Vale Colliery Underground Expansion Project - Planning Assessment Commission Review**

326. CIM Resources P.L. Fauna survey of Bowens Road North Open Cut near Gloucester
327. Australian Water Technologies P.L. Fauna assessment of Greeves Creek Water Supply System, Medlow Bath
328. Bemax Resources NL Fauna survey of Gingko Project, west of Pooncarie
329. Humane Society International Inc. Assessment of Management Programs for culling Brush-tail Possums and Flinders Island Wallabies in Tasmania
330. TransGrid Evaluation of fauna habitat along transmission lines between Munmorah and Western Sydney
331. Ulan Coal Mines Ltd Preparation of EPBC assessments of development sites at Ulan
332. Murray Basin Titanium Preparation of EPBC assessments for 12 Mile Project, Pooncarie
- 2001
333. Ulan Coal Mines Ltd Preparation of Flora and Management Plan for Underground Mine No.2, Ulan
334. NSR Environmental Consultants Preparation and attendance at Planning Focus Meeting at Pooncarie for 12 Mile Project
335. Ulan Coal Mines Ltd Annual fauna monitoring surveys at Ulan Coal Mine
336. Murray Basin Titanium Assessment of infrastructure developments for 12 Mile Project, Pooncarie
337. Olympic Co-ordination Authority Fauna survey of Newington Woodland and surrounding areas, Silverwater
338. TransGrid Evaluation of fauna habitat along transmission lines at Wagga Wagga and Jinderah
339. BeMax Resources NL Preparation of 8-part test for mineral sand mining at Gingko Project, Pooncarie
340. Murray Basin Titanium Preparation of Species Impact Statement for 12 Mile Project, Pooncarie
341. Humane Society International Assessment of impacts from 1080 use on non-target animals
342. Humane Society International Investigation into the status of the dingo as a threatened species
343. Sydney Olympic Parklands Authority Assessment of problem birds at the Olympic Parklands
344. BeMax Resources NL Preparation of fauna reports for Gingko Project EIS
345. SOPA Summer sampling of fauna at Newington Nature Reserve
- 2002
346. NPWS Expert witness in legal proceedings at Jervis Bay
347. Fathom Consulting Expert review of Statements of Significance for Millennium Parklands Precincts
348. Sydney Water Fauna study for Greaves Creek Water Supply System upgrade
349. Integral Energy Flora and fauna assessment of transmission line upgrade, Blacktown
350. Blaxland Parks Fauna assessment of residential development at Blaxland
351. Ulan Coal Mines Flora and fauna assessment of SEPP34 consents
352. Humane Society International Review of Tasmanian Possum and Flinders Island Wallabies Management Programs
353. Humane Society International/Tasmanian Conservation Society Development of management programs for Tasmanian Brushtail Possum and Flinders Island wallabies
354. Greek Orthodox Archdiocese of Australia Preparation of revised 8-part test for proposed Mangrove Creek Monastery
355. NPWS Review of report on fauna surveys of the Brigalow Belt South IBRA Region
356. Sydney Olympic Park Authority Survey for Water Rat within the Parklands
357. Wambo Coal Mines Fauna survey of extension areas for Wambo Coal Mine, Singleton
358. CSIRO Kangaroo population study at ATNF- Paul Wild Observatory, Narrabri
359. Integral Energy Flora and fauna assessment of transmission line route at Eastern Creek
360. Murray Basin Titanium PL Targeted surveys for threatened species on land adjacent to 12 Mile project area, Pooncarie
- 2003
361. Integral Energy Flora and fauna assessment of transmission line route at Erskine Park
362. Ulan Coal Mines Natural environment information for Wilpinjong coal deposit tender bid
363. Integral Energy Fauna assessment of transmission line upgrade at Leets Vale
364. Little River Landcare Group Pest Species survey of Little River catchment, Cumnock
365. Xstrata Coal Flora and fauna evaluation of land for potential development at Ulan
366. Sydney Olympic Park Authority 8-part test for upgrading at Newington Armory
367. Integral Energy 8-part test for proposed sub-station at Erskine Park
368. Sydney Olympic Park Authority 8-part test for Badu Mangroves Pathway
369. Perram & Partners Flora and fauna assessment of land at Colo
370. Ulan Coal Mines Annual terrestrial and aquatic fauna monitoring surveys of mining leases at Ulan
- 2004
371. Sydney Olympic Park Authority Development of monitoring protocols for rail and walking tracks at Newington
372. Centennial Coal Company Ltd Fauna monitoring programmes for Angus Place, Springvale and Clarence Collieries at Lithgow
373. Excel Coal Ltd Fauna surveys of the Wilpinjong area, near Wollar
374. Centennial Coal Company Ltd Fauna monitoring surveys in subsidence management areas at Angus Place, Springvale and Clarence Collieries, Lithgow
375. Sydney Olympic Park Authority Ecological Review of Brickpit Ring Project
376. Integral Energy 8-part test for transmission line development at St Marys
377. Karima Group Ecological Review for redevelopment of Wisteria Café, Bicentennial Park
378. Ulan Coal Mine Annual terrestrial and aquatic fauna monitoring surveys of mining leases at Ulan
- 2005
379. Umwelt P.L. Flora and fauna assessment of longwall extension, Ulan Coal Mine
380. Xstrata Coal Biodiversity monitoring of grazed land at Ulan
381. Ulan Coal Mine Development of protocols for monitoring aquatic fauna post-release, Goulburn River
382. Centennial Coal Co. Ltd 8-part tests for potential subsidence effects from underground mining at Lithgow
383. Centennial Coal Company Ltd Fauna monitoring surveys in subsidence management areas at Angus Place, Springvale and Clarence Collieries, Lithgow
384. Xstrata Coal Assessment of a potential development area near Ulan
385. Department of Infrastructure, Planning and Natural Resources Expert advice for two Land and Environment Court cases concerning land clearing near Walgett
386. Oakbridge Pty Ltd Fauna surveys of Baal Bone Colliery, Lithgow
387. Excel Coal Ltd Review of 8-part tests and EPBC referral for Wilpinjong Project, Wollar
388. Ulan Coal Mine Fauna input to Subsidence Management Plan for Ulan Coal Mine
389. Ulan Coal Mine Annual terrestrial and aquatic fauna monitoring surveys of mining leases at Ulan

## **Russell Vale Colliery Underground Expansion Project - Planning Assessment Commission Review**

390. Ulan Coal Mine Monitoring of aquatic fauna along Ulan Creek during mine-water release
391. Integral Energy Fauna assessment of transmission line upgrade at Medlow Bath
392. Land & Environment Court Court appointed expert assessing lands at Kurnell
- 2006
393. Centennial Coal Company Ltd Seasonal fauna monitoring surveys in subsidence management areas at Angus Place, Springvale and Clarence Collieries, Lithgow
394. Ulan Coal Mine Annual terrestrial and aquatic fauna monitoring surveys of mining leases at Ulan
395. Ulan Coal Mine Monitoring of aquatic fauna along Ulan Creek during mine-water release
396. Ulan Coal Mine Preliminary ecological assessment of Mona Creek and Talbragar River
397. Sydney Olympic Park Authority Survey for introduced rodents in wetlands at Olympic Park
398. Wambo Power Ventures Ltd Fauna assessment of Wagga Wagga – Uranquinty transmission line upgrade
399. Glennies Creek Coal Mine Evaluation of Biodiversity Offset Areas
400. Xstrata Coal Preparation of Assessment of Significance for mine-water discharge into Ulan Creek
401. Cumnock No. 1 Colliery Biodiversity Monitoring of Woodland Remnants
402. Clarence Colliery Fauna monitoring surveys of Western SMP Area I
403. Angus Place Coal Mine Fauna monitoring at Kangaroo Creek area
404. Xstrata Coal Annual terrestrial and aquatic fauna monitoring surveys of mining leases at Ulan Coal Mine
405. Baal Bone Coal Mine Fauna survey and assessment of Longwall 29-31 SMP Area
406. Integral Energy Fauna assessment of proposed electricity line route at Sackville
407. Ravensworth Operations Biodiversity monitoring surveys of Ravensworth West and Narama Mines
408. Xstrata Coal Risk Assessment for Longwall W2/W3 SMP Area Ulan Coal Mine
- 2007
409. Integral Energy Fauna assessment of access tracks for transmission lines at Wisemans Ferry and Lower Portland
410. Centennial Coal Company Ltd Seasonal (autumn, spring, summer) fauna monitoring surveys in subsidence management areas at Angus Place, Springvale and Clarence Collieries, Lithgow
411. Sydney Olympic Park Authority Assessment of Significance for development of Bird Centre at Newington Armory
412. Ulan Coal Mine Fauna input to Subsidence Management Plan for Longwalls W2 W3
413. Xstrata Coal EPBC assessment for Longwalls 29-31 at Baal Bone Colliery
414. Integral Energy Fauna assessment of proposed transmission line upgrades at Eastern Creek, Oran Park, Mt Annan, Ebenezer and Sackville
415. Boral Resources Evaluation of fauna habitat values of land at Tea Gardens for bush fire management plan
416. Riley Gray-Spencer Assessment of impacts on fauna from herbicide spray drift in Goulburn River National Park
417. Xstrata Coal Input to 2007 Flora and Fauna Management Plan for Ulan Coal Mine
418. Sydney Olympic Park Authority Input to Biodiversity Management Plan for Sydney Olympic Park
419. Environmental Defenders Office Assessment of Biodiversity Aspects of limestone quarry EIS at Cowra
420. Ravensworth Operations Biodiversity monitoring surveys of Ravensworth West, Cumnock No.1 and Narama Coal Mines
421. Xstrata Coal Annual fauna monitoring of Longwalls 29-31 SMP Area at Baal Bone Colliery
422. Xstrata Coal Annual monitoring of terrestrial and aquatic fauna at Ulan Coal Mine
423. Xstrata Coal Annual monitoring of effects from mine release water upon the aquatic ecosystem at Ulan Creek
424. Xstrata Coal Upgrade of Cumnock No.1 Colliery Flora and Fauna Management Plan
425. Sydney Olympic Park Authority Ecological Review of redevelopment of Building 35 in Newington Armory
426. Umwelt (Australia) PL Review of monitoring data from Ulan Coal Mine
- 2008
427. Centennial Coal Company Ltd Autumn, spring and summer fauna monitoring surveys in subsidence management areas at Angus Place, Springvale and Clarence Collieries, Lithgow
428. Wallerawang Collieries Ltd Seasonal (autumn, spring, summer) fauna monitoring surveys in subsidence management areas at Baal Bone Mine, Lithgow
429. Sydney Olympic Park Authority Ecological Review of Armory Wharf Café Re-Building Project
430. Clarence Colliery Review of fauna data in proposed Outbye SMP Area
431. Clarence Colliery Seasonal fauna survey of proposed Outbye SMP Area
432. Dept Environment and Climate Change Assessment of Aquatic Ecosystems Impacted by Waste Discharge at Ilford
433. Dept Environment and Climate Change Independent Chair of Review of the Biodiversity Assessment of Clearing under the *Native Vegetation Act 2003* and Chair of Scientific Sub-Group Advising the Review
434. Integral Energy Fauna Assessment of development areas at Mt Annan, Wilton, Narellan and Ebenezer
435. Xstrata Coal Update Flora and Fauna Management Plan for Cumnock No.1 Colliery
436. Xstrata Coal Fauna surveys of biodiversity offset areas at Ulan Coal Mine
- 2009
433. Ravensworth West Colliery Pre-clearing habitat assessment
434. Integral Energy Fauna survey of proposed transmission line route at Hill Top
435. Centennial Coal Company Ltd Autumn, spring and summer fauna monitoring surveys in subsidence management areas at Angus Place, Springvale and Clarence Collieries, Lithgow
436. Xstrata Coal Seasonal (autumn, spring, summer) fauna monitoring surveys in subsidence management areas at Baal Bone Mine, Lithgow
437. ensar Assessment of northern area for potential coal extraction at Baal Bone Colliery
438. Centennial Coal Co. Ltd Baseline fauna survey of SMP Area 800 at Clarence Colliery
439. Xstrata Coal Annual monitoring surveys of terrestrial and aquatic fauna at Ulan Coal Mine
440. Sultan Mining Preliminary fauna assessment of proposed mine at Peelwood
441. Agent Minerals Fauna survey and assessment of silver mine at Kempfield
442. CSR Assessment of habitat quality at Kings Stockyard Creek, Oberon

## **Russell Vale Colliery Underground Expansion Project - Planning Assessment Commission Review**

2010

- 443. Mudgee Quarry Fauna assessment for Oberon White Granite Quarry
- 444. RW Corkery PL Search for Bathurst Copper Butterfly at Marrangaroo Quarry
- 445. Centennial Coal Seasonal fauna monitoring surveys at Angus Place, Springvale and Clarence Collieries
- 446. Xstrata Coal Seasonal fauna monitoring survey at Baal Bone Quarry
- 446. Xstrata Coal Development of Preliminary Closure Criteria for Ulan Coal Mine
- 447. Centennial Coal Fauna surveys of new sites at Springvale and Angus Place Collieries
- 448. Xstrata Coal Annual terrestrial and aquatic fauna monitoring surveys at Ulan Coal Mine

2011

- 449. Pine Dale Colliery Bathurst Copper Butterfly site assessment at Lithgow
- 450. Centennial Coal Seasonal fauna monitoring surveys at Angus Place, Springvale and Clarence Collieries
- 451. Xstrata Coal Seasonal fauna monitoring survey at Baal Bone Quarry
- 452. Centennial Coal Response to requests from SEWPAC concerning expansion of Springvale Colliery
- 453. Xstrata Coal Annual terrestrial and aquatic fauna monitoring surveys at Ulan Coal Mine
- 454. tanner Architects Input to Newington Armament Depot and Nature Reserve Conservation Plan of Management
- 455. Kingsgate Consolidated Limited Bowdens Silver Project Fauna surveys and assessment
- 456. BEMAX PL Fauna survey and assessment at Crayfish Project, Pooncarie

2012

- 457. EMC Metals Corp Fauna assessment of Nyngan Scandium Project
- 458. Centennial Coal Summer surveys of Angus Place, Springvale and Clarence Collieries
- 459. Xstrata Coal Autumn Monitoring Surveys at Ulan Coal Mine
- 460. Kingsgate Consolidated Limited Winter Birds Surveys for Bowdens Silver Project
- 461. Sultan Mining Fauna surveys of extended areas at Peelwood Project
- 462. BEMAX PL Fauna survey of proposed biodiversity offset area at Crayfish Project Pooncarie
- 463. Xstrata Coal Assessment of access tracks to crack rehabilitation at Baal Bone Colliery
- 464. Centennial Coal Pre-clearing inspection of dump area at Clarence Colliery
- 465. Centennial Coal Development of monitoring procedures for new areas at Springvale Colliery

2013 – 2014

- Centennial Coal Autumn, Spring and Summer fauna monitoring surveys of Angus Place, Springvale and Clarence Collieries
- Glencore PL Annual Terrestrial and Aquatic Fauna Monitoring Surveys at Ulan Coal Mine
- Peabody Energy Fauna Surveys of New Areas and Offset Areas at Wilpinjong Coal Mine
- BEMAX PL Fauna survey of proposed expansion area at Crayfish Project Pooncarie
- Argent (Kempfield) Pty Ltd Fauna Assessment of Offset Areas Kempfield Silver Project
- Bush Heritage PL Fauna Surveys at Naree Conservation Reserve



## **Russell Vale Colliery Underground Expansion Project - Planning Assessment Commission Review**

### **PUBLICATION LIST:**

1. Influence of the spleen on blood volume and haematocrit in the brush-tailed possum. Aust. J. Zool. 16: 60 (1968).
2. A bioclimatological comparison of the summer day micro-environments of two species of arid zone kangaroo. Ecology 50: 328 (1969).
3. Seasonal variation in the plasma and urine electrolyte concentration of the arid zone kangaroo Megaleia rufa and Macropus robustus. Aust. J. Zool. 17: 777 (1969).
4. Thermal balance of the macropodid marsupial Macropus eugenii. Comp. Biochem. Physiol. 218: 1233 (1969).
5. Water metabolism of kangaroos. Aust. Mammal. 1: 66 (1972).
6. The use of Ketamine hydrochloride as a safe short duration anaesthetic in kangaroos. British Vet. J. 129: 362 (1973).
7. The kidney function of two species of arid zone kangaroos and its relationship to their distribution. Paper given at 45th ANZAAS Conference, Perth (1973).
8. Anaesthetics in marsupials. Aust. Mammal. 1(3): 294 (1974).
9. A field technique for studying water metabolism in large marsupials. J. Wildl. Manage. 37: 374 (1974).
10. Effects of dehydration upon the body water distribution of kangaroos. Aust. Mammal. 1: 409 (1975).
11. Comparative metabolism of tritiated water by macropodid marsupials. Am. J. Physiol. 228: 1974 (1975).
12. The relationship between water turnover, electrolyte balance and diet preference of the red kangaroos, euros, sheep and feral goats in the Australian Arid Zone during summer. J. Zool. (Lond.) 177: 1-23 (1975).
13. Dehydration and heat stress: effects on the body water distribution in three species of arid zone kangaroos. Am. J. Physiol. 229: 251 (1975).
14. The occurrence of the Eastern Grey Kangaroo west of the Darling River. Search 6: 89-90 (1975).
15. Reply. Search 6: 343-4 (1975).
16. Mammals of Sturt National Park, Tibooburra, New South Wales. Aust. Zool. 18: 179-195 (1975).
17. Contribution to Arid Zone Newsletter since 1968.
18. Kidney structure and function in desert kangaroos. J. Appl. Physiol. 42: 636-642 (1977).
19. Mammals of the Milparinka area, in Lands of the North-west Corner of NSW. Technical Report No. 12 Soil Conservation Service of NSW, Sydney (1991)
20. The distribution of red kangaroos between Sturt National Park and the Cooper Creek. Aust. Mammal. Soc. Bull. 3: 42 (1976).
21. Red kangaroos and land use along the N.S.W., Qld and S.A. borders. Proc. Workshop on Agriculture, Forestry and Wildlife. Armidale (1975).
22. Ground versus aerial count, in "Aerial Surveys of Faunal Populations." Spec. Publ. No. 1, Aust. Nat. Wildl. Serv. (1977).
23. The Mulga - Land of the Bulloo, in "Exploration North." Richmond Hill Press, Melbourne (1978).
24. Some techniques used in the investigation of habitat utilization by red kangaroos in north-western N.S.W. Contribution to 2nd Annual Meeting of Aust. Rangeland Soc. (1979).
25. Adaptation of arid zone kangaroos, in "Evolution of Flora and Fauna of Arid Australia." Peacock Publ. (1982).
26. Review of Planigale Ecology, in "Carnivorous Marsupials." Royal Zoological Society of N.S.W., Sydney (1982).

## **Russell Vale Colliery Underground Expansion Project - Planning Assessment Commission Review**

27. Distribution of kangaroos in the 18th and 19th centuries. Aust. Mammal Soc. Bull. 6: 32 (1980)
28. Historical basis for development of kangaroo management policies, in "Harvesting of Australian Animals." CONCOM Meeting, Melbourne (1981).
29. Management programs for macropods, in "Wildlife Management in the 80's." proceedings of Conference organized by Field and Game Federation of Australia and Graduate School of Environmental Science, Monash Uni. (1982).
30. Kangaroos - an historical perspective, in "Kangaroos and Wallabies of N.S.W." N.S.W.N.P.W.S. (1982).
31. Animals - native and feral, in "What Future for Australia's Arid Lands?" Australian Conservation Foundation (1982).
32. Submission to the Joint Parliamentary Committee to Enquire into the Western Division of N.S.W. (1982).
33. The Nature Conservation Council of N.S.W. Koolewong 12: 5 (1983).
34. Habitat preferences and diets of sympatric Sminthopsis crassicaudata and S. macroura. Aust. Mamm. 6: 29-34 (1983).
35. The red kangaroo and the arid environment, in "The Kangaroo Keepers." Uni. Qld. Press (1985).
36. Capture-related aspects of the ecology of Antechinus flavipes. Aust. Mamm. 9: 131-134
37. Treesful of Homes - trees for small native animals. Trees and Natural Resources 28: 18-21 (1986).
38. Incidence of Cruelty to Kangaroos. Report to Australian National Parks and Wildlife Service. RSPCA Australia (1985).
39. Incidence of Cruelty to Wallabies. Report to Australian National Parks and Wildlife Service. RSPCA Australia (1987).
40. Halting the Decline: An Action Plan for Australian marsupials and Monotremes. IVth International Theriological Congress.(1994)
41. Changes in the fauna of the Western Division of N.S.W. since the first explorers. in Future of the Fauna of Western New South Wales. Transactions of the RZS of NSW (1994)
42. Land care - a bright future for the west? in Future of the Fauna of Western New South Wales. Transactions of the RZS of NSW (1994)
43. A proposed National Plan of Management for the Platypus. RZS of NSW Monotreme Symposium (1995)
44. Important Wildlife & Habitat Corridors in "Things we want to keep" National Trust of NSW (1994)
45. Changes in the fauna of the Western Division of N.S.W. since the first explorers. in Future of the Fauna of Western New South Wales. Transactions of the RZS of NSW (1994)
46. Historical and Ecological Study of the Effects of European Settlement on Inland NSW Nature Conservation Council of NSW, Sydney (1992)
47. The responses of arid-zone fauna to flooding in inland Australia, with particular reference to Cooper Creek. in An Ecological Perspective on Cooper's Creek Australian Conservation Foundation (1997)
48. Culling, Cruelty and the Code. in Self-regulation and the Kangaroo Industry Conference Proceedings, Australian Wildlife Protection Council (1997)
49. Natural heritage values of Paroo River and Paroo Overflow. in The future of the Paroo River: Community and Scientific values and potential impacts. Conference Proceedings (1998)
50. Contributor to "Australians and the Environment" Australian Bureau of Statistics (1996)
51. Contributor to "Measuring and Monitoring Biological Diversity Standard Methods for Mammals" Smithsonian Institution Press (1996)
52. Contributor to "New South Wales State of Environment Report 2000" for NSW EPA (2000)
53. Where do Antechinuses hide? ECA Newsletter 9 (2004)
54. Struggling with the Act – some observations by ecological consultants Australian Zoologist (2004)

**Russell Vale Colliery Underground Expansion Project - Planning Assessment Commission Review**

55. Reptile Funnels – A Road Test ECA Newsletter 11 (2005)
56. Concluding Remarks Wildlife Corridors: their Evaluation, Restoration and Protection (2006)
57. Then and Now: fauna monitoring within the Sydney Basin Australian Zoologist (2009)