

APPENDIX 6

CURRICULUM VITAE

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Matthew B.G. Richardson

Position:

Senior Botanist, Biosis Research Pty. Ltd.

Professional Affiliations and Memberships:

Ecological Society of Australia
Australian Network for Plant Conservation

Qualifications:

Bachelor of Science (Hons I) (Plant Ecology/Population Genetics) University of Wollongong

Employment Profile:

1998- Botanist, Biosis Research Pty. Ltd.
1998 Research Assistant, Australian Museum Business Services (AMBS)
1997-98 Field Botanist, Gary Leonard and Associates Botanical and Horticultural Consultants
1997-98 Research Assistant, Ecological Genetics Laboratory; University of Wollongong

Fields of Competence:

- ✓ flora survey and identification
- ✓ native vegetation classification and mapping
- ✓ habitat and biodiversity assessment
- ✓ rare or threatened species assessment
- ✓ environmental impact statement – natural environment
- ✓ impact minimisation (mitigation) guidelines
- ✓ project management and report preparation
- ✓ expert evidence
- ✓ plant mating system research
- ✓ plant population genetics and gene flow research
- ✓ field and laboratory experimental techniques

Professional Experience:

Matthew has over seven years experience in applied conservation biology and consulting. A sample of key professional experience is presented below.

Project Manager/Botanist, ecological monitoring for Area 2 of the Dendrobium Coal Mine within the Lake Cordeaux Catchment (*In preparation for BHP Billiton*)

Project Manager, provision of advice regarding route selection for a water supply pipeline between Cataract Dam and West Cliff Colliery Natural and Cultural Advice), Appin (*Current for BHP Billiton*)

Project Manager, Bellambi Street, Justine Avenue and Cheryl Place Flood Mitigation Works, Wollongong (*2005 for Forbes Rigby*)

Project Manager, Flora and Fauna Assessment and advice regarding site revegetation works following site rehabilitation works (*2004 for Forbes Rigby*)

Project Manager, Flora and Fauna Impact Assessment for Bellambi Street, Justine Avenue and Cheryl Place Flood Mitigation Works, Wollongong (*2004 for Forbes Rigby*)

Project Manager, Flora and Fauna Assessment and advice regarding site revegetation works following site rehabilitation works (*2004 for Forbes Rigby*)

- Project Manager/Botanist**, Terrestrial flora and fauna assessment and advice regarding revegetation works required for various decommissioned ventilation shaft associated with Nebo and Wongawilli Collieries (2004-current for BHP Billiton)
- Project Manager/Botanist**, Terrestrial flora and fauna and Archaeological assessment of the proposed road upgrading activities and site assessment of the Dendrobium Colliery Area 2 and 3 ventilation shaft site (2004-current for BHP Billiton)
- Project Manager/Botanist**, Tahmoor Colliery terrestrial flora and fauna assessment of potential subsidence impacts associated with new mining at Tahmoor Colliery (2004-current for Austral Coal)
- Project Manager/Botanist**, Preliminary inspection for terrestrial flora and fauna and archaeological issues at proposed northern borehole sites and general advice regarding the 3D Seismic Survey, Wilton Park (2004 for BHP Billiton)
- Project Manager/Botanist**, Various REF's and impact assessments for the ongoing surface exploration projects within the Cordeaux Catchment (south of Picton Road) (2004 – current for BHPB Billiton)
- Project Manager/Botanist**, Elouera Long Wall 11 terrestrial flora and fauna and archaeological assessment of potential subsidence impacts associated with Longwall 11 of the Elouera Colliery (2004-present for BHPB Billiton).
- Project Manager**, Mary's Mount Flora and Fauna Assessment, Goulbourn. (2004 for Dickinson Developments Pty Ltd)
- Botanist**, Darling Anabranch Pipeline and Environmental Flows Environmental Impact Statement- Terrestrial and Aquatic Flora and Fauna Report (in prep), between Mildura Vic and Menindee NSW (2004 for DIPNR)
- Project Manager**, Entrance Road Duplication terrestrial and aquatic ecological impact assessment (2003 for the RTA)
- Project Manager/Botanist**, ecological monitoring for Stage 1, Longwalls 1 and 2 of the Dendrobium Coal Mine (2003 – current for BHP Billiton)
- Project Manager/Botanist**, development of the proposed ecological monitoring program for Stage 1, Longwalls 1 and 2 of the Dendrobium Coal Mine (2002 – 2003 for BHP Billiton)
- Project Manager/Botanist**, assessment of potential impacts of subsidence on terrestrial ecological values above workings of the Appin and West Cliff Collieries (2002 for BHP Billiton)
- Botanist**, Assessment of instream and riparian vegetation of the Woronora River for management purposes through environmental flows (2002 for Patterson Britton)
- Project Manager/Botanist**, targeted surveys for *Acacia baueri* ssp. *aspera* on the proposed Stage Three Coal Wash Emplacement at West Cliff Colliery (2002 for BHP Billiton)
- Project Manager/Botanist**, identification of areas of ecological significance and development constraints and opportunities for the proposed stages 14 and 15 of the Rouse Hill residential development area (2001-2002 for Rouse Hill Infrastructure Pty Ltd)
- Project Manager/Botanist**, targeted surveys for threatened flora and fauna species with the site of the proposed Two-Fold Bay Naval Ammunitioning Facility, Eden (2001-2003 for GHD)
- Project Manager/Botanist**, identification of ecological values occurring on private lands for potential inclusion in public the Gosford City Council reserve system, Gosford, (2002 Gosford City Council)
- Botanist**, preparation of vegetation mapping for the Menindee Lakes, Ecological Sustainable Development Project (2001 for DLWC)
- Project Manager/Botanist**, presentation of expert evidence at the Dendrobium Coal Project Commission of Inquiry (2001 for BHP Illawarra Coal)
- Project Manager/Botanist**, targeted threatened species impact assessment for the proposed Dendrobium Coal Mine Project (2001 for BHP Illawarra Coal)
- Project Manager/Botanist**, habitat level assessment for the proposed Dendrobium Coal Mine Project in the Illawarra (2000 for BHP Illawarra Coal)
- Botanist**, assessment of the potential impact of a proposed industrial development on *Wilsonia backhousei*, a threatened species saltmarsh species, and preparation of expert evidence for the Land and Environment Court (2000 for Trafalgar Corporate)
- Project Manager/Ecologist**, terrestrial and aquatic flora and fauna survey and significance assessment, proposed road upgrading, Young (2000 for Young Shire Council)

- Botanist**, preparing the flora and fauna component of the Environmental Impact Assessment for the proposed widening of the Princes Highway near Mogo on the NSW South Coast (2000 for Ove Arup)
- Botanist**, preparing a Native Vegetation Management Plan for Section A of the proposed Queensland Interconnection Transmission Line, Northern Table Lands, NSW (1999 for TransGrid)
- Botanist**, implementing Site Assessment Protocols, including rapid flora survey, threatened species impact assessment and report preparation from Section A of the proposed Queensland Interconnection Transmission Line, Northern Table Lands, NSW (1999 for TransGrid)
- Project Manager/Botanist**, flora survey for an area of proposed residential subdivision, Greensborough, Victoria (1999 WBCM Developments Vic)
- Botanist**, flora survey and provision of management recommendations for grassy-woodland remnants near Cranbourne South, Victoria (1999 Bosco Johnson Pty. Ltd.)
- Botanist**, targeted threatened flora survey of the proposed Hume Freeway by-pass, Albury-Wodonga (1998 for VicRoads)
- Botanist**, flora survey, mapping of *Acacia pubescens* and assisting in the preparation a plan of management for vegetation of the Yennora Woolstores (1998 for A.T. Cocks and Partners Pty Ltd)
- Botanist**, assessment of gas affected die back, and regeneration potential of vegetation in the Cataract River area for BHP Collieries (1997 for Gary Leonard and Associates)

Publications:

- Richardson M.B.G., Ayre D.J.A. and Whelan R.J. (1998) Pollinator behaviour, mate choice and the realised mating systems of *Grevillea mucronulata* and *Grevillea sphacelata*. *Australian Journal of Botany* Vol. 48: 357-366.

Consultant Reports:

- Richardson, M.B.G. and Reeves, J. 2005. Advice regarding the natural and cultural heritage values and potential constraints to exploration of a site near Wilton, NSW. Biosis Research Pty. Ltd, NSW (for BHP Billiton).
- Richardson, M.B.G. and Gorrod, E. 2004. Terrestrial Flora and Fauna Habitat Assessment: Dendrobium Area 2 and 3 Surface Exploration Program, Lake Cordeaux Catchment. Biosis Research Pty. Ltd, NSW (for BHP Billiton).
- Richardson, M.B.G. 2004. Assessment of the site of a proposed borehole associated with the Appin Colliery to West Cliff Colliery underground coal transport facility, Appin. Biosis Research Pty. Ltd, NSW (for BHP Billiton).
- Richardson, M.B.G. 2004. Flora and Fauna Assessment of site of a proposed fan unit within Broughton's Pass Pump Station, Appin. Biosis Research Pty. Ltd, NSW (for BHP Billiton).
- Richardson, M.B.G., Gorrod, E., and Reeves, J. 2004. Breccia Diatreme Drilling Investigations, Review of Environmental Factors, Terrestrial Flora and Fauna Assessment and Archaeological Assessment. Biosis Research Pty. Ltd, NSW (for BHP Billiton).
- Richardson, M.B.G. 2004. Flora and Fauna Assessment of two proposed borehole sites near the Sydney Water, water treatment facility, Appin. Biosis Research Pty. Ltd, NSW (for BHP Billiton).
- Richardson M.B.G. 2004. Targeted Flora Surveys of the riparian vegetation of the Georges River – Upstream of Jutt's Crossing, Appin. Biosis Research Pty. Ltd, NSW (for BHP Billiton).
- Harrington R., Richardson M.B.G., Mueck S.G. and English T-A. 2003. Darling Anabranch Pipeline and Environmental Flows Environmental Impact Statement-Terrestrial and Aquatic Flora and Fauna Report (in prep), between Mildura Vic and Menindee NSW. Biosis Research Pty. Ltd, NSW (for DIPNR).

- Richardson M.B.G. Harrington S.M and Harrington R. 2003. Terrestrial ecological monitoring of subsidence effects within the Nepean River (in prep), Douglas Park/Appin NSW. Biosis Research Pty. Ltd, NSW (for BHP Billiton).
- Richardson M.B.G. 2003. Advice regarding the revegetation of the Cordeaux Colliery Number 2 Shaft, near Picton NSW. Biosis Research Pty. Ltd, NSW (for BHP Billiton).
- Richardson M.B.G. 2003. Flora and Fauna Assessment for the proposed rehabilitation of the Goaf Ejection Stack on Wedderburn Road and within the Dharawal State Conservation Area. Biosis Research Pty. Ltd, NSW (for BHP Billiton).
- Richardson, M.B.G. 2003. Additional terrestrial and aquatic flora and fauna assessment of proposed culverts CC14 and CC20 for the Rouse Hill Stage 3 development – Balmoral Road Urban Release, Rouse Hill NSW. Biosis Research Pty. Ltd, NSW (for Manidis Roberts Consultants).
- Richardson, M.B.G. 2003. Terrestrial Flora and Fauna Assessment – Proposed Tourism Development, West Berrima NSW. Biosis Research Pty. Ltd, NSW (for Squillace Architects).
- Richardson M.B.G. and Hardy V. 2003. Georges River Piezometer Site and Access Track Natural and Cultural Heritage Assessment, Appin NSW. Biosis Research Pty. Ltd, NSW (for BHP Billiton).
- Richardson, M.B.G. 2003. Flora and Fauna Assessment of Four Sites for the Decommissioning of Cordeaux Colliery, near Picton NSW. Biosis Research Pty. Ltd, NSW (for BHP Billiton).
- Richardson, M.B.G. & Harrington, S. 2003. Targeted Surveys for *Cryptostylis hunteriana*, Twofold Bay, Eden. Biosis Research Pty. Ltd, NSW (for GHD and the Department of Defence).
- Richardson, M.B.G. 2002. West Cliff Colliery Proposed Removal of a Threatened Plant Species. Documentation Supporting an Application for a Licence under Section 91 of the Threatened Species Conservation Act 1995 for the Removal of *Persoonia hirsuta* (2 specimens). Biosis Research Pty. Ltd, NSW (for BHP Billiton).
- Richardson, M.B.G. & Harrington, S. 2002. Targeted Surveys for *Caladenia tessellata* and the Giant Burrowing Frog, Twofold Bay, Eden. Biosis Research Pty. Ltd, NSW (for GHD and the Department of Defence).
- Richardson M.B.G. 2002. Terrestrial Flora and Fauna Habitat Assessment Dendrobium Coal Mine- Area 1 and 2. Biosis Research Pty. Ltd, NSW (for BHP Billiton).
- Richardson M.B.G. and Predavec M. 2002. Dendrobium Coal Mine Flora and Fauna Environmental Management Program (Subsidence) Area 1 – Longwalls 1 and 2. Flora and Fauna Program. Biosis Research Pty. Ltd, NSW (for BHP Billiton).
- Richardson M.B.G. 2002. Assessment of No Net Loss for the Frankston-Cranbourne Road, Frankston Victoria . Biosis Research Pty. Ltd, NSW (for Vic Roads).
- Richardson M.B.G. 2002. Assessment of the flora and fauna values associated with the route of the proposed PED communications line for the West Cliff Colliery, Appin. Biosis Research Pty. Ltd, NSW (for BHP Billiton).
- Richardson M.B.G. 2002. Flora Assessment of a Section of the Maldon Dombarton Railway Cutting within the Sydney Metropolitan Water Catchment. Biosis Research Pty. Ltd, NSW (for BHP Billiton).
- Richardson M.B.G. and Hardy V. 2002. Marhnyes Hole Pre-emptive Slot and Grout Curtain Site Preparation, Natural and Cultural Heritage Assessment, Appin. Biosis Research Pty. Ltd, NSW (for BHP Billiton).
- Richardson M.B.G. 2002. West Cliff Colliery Seismic Line K 2002, Terrestrial Flora and Fauna Habitat Assessment, Appin. Biosis Research Pty. Ltd, NSW (for BHP Billiton).
- Richardson M.B.G. 2002. Terrestrial Flora and Fauna Habitat Assessment proposed borehole development, upper Marhnyes Hole area, Appin. Biosis Research Pty. Ltd, NSW (for BHP Billiton).
- Richardson M.B.G. 2002. Terrestrial Flora and Fauna Habitat Assessment for water supply pipeline and borehole, Appin. Biosis Research Pty. Ltd, NSW (for BHP Billiton – West Cliff Colliery).

- Richardson M.B.G. and Taylor-Wood E. 2002. Base line data collation for riparian and instream vegetation and fauna habitat of the Woronora river for potential environmental flow management. Biosis Research Pty. Ltd, NSW (for Patterson Britton)
- Richardson M.B.G. 2002. Terrestrial Flora and Fauna Habitat Assessment for Retrieval of Several Power Poles from the Metropolitan Special Areas, Cataract Catchment, near Wollongong. Biosis Research Pty. Ltd, NSW (for BHP Billiton).
- Richardson M.B.G. 2002. West Cliff Colliery Seismic Line J 2002, Terrestrial Flora and Fauna Habitat Assessment, Appin. Biosis Research Pty. Ltd, NSW (for BHP Billiton).
- Richardson M.B.G. 2002. Targeted surveys for *Acacia baueri* spp. *aspera* within the proposed Stage 3 Coal Wash Emplacement Site at West Cliff Colliery. Biosis Research Pty. Ltd, NSW (for BHP Billiton).
- Richardson M.B.G. 2002. Assessment of the flora and fauna values associated with the route of the proposed PED communications line for the West Cliff Colliery, Appin. Biosis Research Pty. Ltd, NSW (for BHP Billiton).
- Richardson M.B.G. and Harrington S. 2002. Gosford, Western Costal Open Space Study (COSS). Biosis Research Pty. Ltd, NSW (for Gosford City Council).
- Richardson M.B.G. 2001. Assessment of the ecological values of the existing Elouera Colliery ventilation shafts No. 3 and No. 4 for potential fire protection clearance, Mount Kembla. Biosis Research Pty. Ltd, NSW (for BHP Billiton).
- Predavec M., Nicolson O., Richardson M.B.G., Riddett R., Reeves S. and Paterson K. 2001. Cultural and Natural Heritage of Sydney Kingsford Smith Airport, Biosis Research Pty. Ltd, NSW (for Sydney Airports Corporation).
- Richardson M.B.G. 2001. Preliminary Site Inspection of Possible Locations for Soccer Field Development at Kenthurst Park, Roughly Road Kenthurst. Biosis Research Pty. Ltd, NSW (for Kenthurst Soccer Club).
- Richardson M.B.G. and Anink P. 2001. Terrestrial and Aquatic Baseline Flora and Fauna Assessment, Stage 3 Development Areas 14 and 15 – Rouse Hill. Biosis Research Pty. Ltd. NSW (for Rouse Hill Infrastructure Pty Ltd).
- Predavec M.P. and Richardson M.B.G. 2001. Targeted flora and fauna searches associated with the Department of Defence multipurpose wharf and associated facilities, Twofold Bay, Eden. Biosis Research Pty. Ltd., NSW (for GHD and the Department of Defence).
- Richardson M.B.G. 2001. Flora and Fauna Assessment for the Proposed Electrical and Communications Borehole Housing Site at West Cliff Colliery, Appin (for BHP Billiton).
- Harrington S. and Richardson M.B.G. 2001. Flora Assessment of Ten Sewage Pumping Stations (SPS) Sites. Biosis Research Pty. Ltd. NSW (for GHD).
- Richardson. M.B.G. and Taylor-Wood E. 2001. Canley Vale School Natural Heritage Assessment. Biosis Research Pty. Ltd. NSW (for NSW Dept. Public Works).
- Richardson, M.B.G. and Dray S., 2001. Flora and Fauna Assessment, Castle Hill Heritage Park, Supplementary Surveys. Biosis Research Pty. Ltd, NSW (for Spackman and Mossop).
- Richardson M.B.G. and English T.A. 2001. Flora, Fauna and Archaeological Assessment, Friskies Pet Care, Rail Freight Facility. Biosis Research Pty. Ltd, NSW (for SEMF Holdings).
- Richardson M.B.G. 2001. Riparian Vegetation Survey, 37 Epping Road, Macquarie Park. Biosis Research Pty. Ltd, NSW (for Urbis).
- Richardson M.B.G. 2001. Assessment of the relevance of the Tree Preservation Order for the Proposed Pipeline Development at 102/101 Gipps Road, Smithfield. Biosis Research Pty. Ltd, NSW (for Urbis).
- Taylor-Wood E., McCormick S., Mueck S., Richardson M.B.G. and Jukic M 2001. Vegetation/habitat mapping of inundated areas of Menindee Lakes. Biosis Research Pty. Ltd. (for DLWC).
- Richardson M.B.G. and Saunders D. (2001) Flora and Fauna Assessment for a Proposed McDonalds Development at Heathcote. Biosis Research Pty. Ltd. (for Mallesons Stephen Jaques Solicitors).
- Richardson, M.B.G. 2001. Targeted Threatened Species Assessment for Proposed Fibre Optic Cable Rollout near Dubbo. Biosis Research Pty. Ltd, NSW (for Ove Arup Brisbane).

- Richardson, M.B.G. 2001. Targeted Threatened Species Assessment for Proposed Fibre Optic Cable Rollout near Orange. Biosis Research Pty. Ltd, NSW (for Ove Arup Brisbane).
- Richardson, M.B.G. and Predavec, M. 2001. Dendrobium Coal Project, likely impacts of Subsidence on Terrestrial Ecology. Biosis Research Pty. Ltd, NSW (for BHP Illawarra Coal).
- Predavec M. Nicolson O. and Richardson, M.B.G. 2001. Cultural and Natural Heritage Values of Sydney Kingsford Smith Airport. Biosis Research Pty. Ltd, NSW (for Salomon Smith Barney).
- Richardson, M.B.G., O'Sullivan T. 2001. Dendrobium Coal Project: Terrestrial Aquatic Habitat Assessment. Biosis Research Pty. Ltd, NSW (for BHP Illawarra Coal).
- Richardson, M.B.G., and M. Predavec 2001. Wicks Road Flora and Fauna Assessment. Biosis Research Pty Ltd, NSW (for Lend Lease).
- Richardson, M.B.G., and M. Predavec 2001. Dendrobium Coal Project Species Impact Statement. Biosis Research Pty Ltd, NSW (for BHP Illawarra Coal).
- Richardson M.B.G. 2000. Flora and Fauna Assessment, Quamby Thuddungra Road. Biosis Research Pty. Ltd, NSW (for Young Shire Council).
- Richardson M.B.G. 2000. Flora Assessment Henry Lawson Drive and Milperra Road Milperra. Biosis Research Pty. Ltd. (Report to OTEK).
- Bali R. and Richardson M.B.G. 2000. York Road Bushland, Queens Park: Independent Review and Assessment of Environmental Documentation.
- Richardson M.B.G. English T-A and Dray S. 2000. Flora and Fauna Assessment, Avondale Golf Course, Pymble. Biosis Research Pty. Ltd, NSW (for Avondale Golf Club).
- Richardson M.B.G. English T-A, and Dray S. 2000. Part 5 Assessment - Proposed Land Scaping Works, Louisa Reserve. Biosis Research Pty. Ltd, NSW (for Bankstown City Council).
- Richardson M.B.G. and Saunders D. 2000. Tree Assessment and Eight Part Test, Lots 8 and 9 Riverside Corporate Park, North Ryde. Biosis Research Pty. Ltd, NSW (for East View (Australia) Pty. Ltd.).
- Richardson M. 2000. Eight Part Test Assessment, corner of Miller Road and Kemp Place, Glenorie. Biosis Research Pty. Ltd, NSW (for Kellaway/Longe Partnership).
- Saunders D. and Richardson M. 2000. Flora and fauna assessment of proposed Mogo to Moruya Princes Highway Upgrade. Biosis Research Pty. Ltd, NSW (for Ove Arup).
- Richardson M. 1999. Heathcote Tree Inspection for a proposed McDonalds Family Restaurant Development. Biosis Research Pty. Ltd, NSW (for A.T. Cocks Consultants).
- Taylor-Wood E. and Richardson M. 1999. Preliminary assessment of impacts of the proposed M2 freeway tunnel on a wetland in Lane Cove. Biosis Research Pty. Ltd, NSW (for Hyder Consulting).
- Richardson M. (1999) Tree inspection for the proposed car park development at Minto Mall. Biosis Research Pty. Ltd, NSW (for Balvim Development).
- Richardson T.A. and Richardson M. 1999. Wentworth Falls mineral water bore, evaluation of impact assessment. Biosis Research Pty. Ltd, NSW (for Koh Blue Mountain Spring Water).
- Saunders D and Richardson M. 1999. Flora and fauna habitat assessment for three altered optic fibre cable routes south of Sydney. Biosis Research Pty Ltd, NSW (for Kinhill).
- Richardson M. and Saunders D. 1999. Louisa Reserve proposed cricket oval Eight Part Test. Biosis Research Pty Ltd, NSW (Report to Bankstown City Council).
- Saunders D and Richardson M 1999. Glenmore Bio Park Eight Part Test. Biosis Research Pty. Ltd., NSW (for Penrith City Council).
- Saunders D and Richardson M 1999. Fagan Park Ecology Centre Feasibility Assessment. Biosis Research Pty. Ltd., NSW (for Spencer Steer and Associates).
- Richardson M and Dray S 1999. Native Vegetation Management Plan, Proposed Queensland Interconnection – Section A. Biosis Research Pty. Ltd., NSW (for TransGrid).
- Dray S and Richardson M 1999. Native Vegetation Management Plan, Proposed Queensland Interconnection – Section B. Biosis Research Pty. Ltd., NSW (for TransGrid).

- Saunders D and Richardson M 1999. Eight Part Test Assessment of the Proposed Substation and Associated Access Road. Biosis Research Pty. Ltd., NSW (for TransGrid).
- Saunders D, Hill A and Richardson M 1999. Flora and Fauna Assessment for the Proposed Queensland Interconnection Transmission Line – Section A. Biosis Research Pty. Ltd., NSW (for TransGrid).
- Anderson J, Dray S, Saunders D and Richardson M 1999. Additional Flora and Fauna Surveys, Second Sydney Airport – Badgerys Creek. Biosis Research Pty. Ltd., NSW (for PPK Environment and Infrastructure).
- Richardson M. 1999. Flora Survey and Tree Inspection 346 St Helena Road, Greensborough. Biosis Research Pty. Ltd., Vic (for WBCM Pty. Ltd.).
- Richardson M. 1999. Ballarto Road Grassy Woodland Ecological Values and Management Issues. Biosis Research Pty. Ltd., NSW (for Bosco Johnson Pty. Ltd.).
- Dray S and Richardson M 1999. Flora Survey of Middle and Georges Heads, Sydney Harbour National Park. Biosis Research Pty. Ltd., NSW (for Root Projects Australia).
- Saunders D. and Richardson M. 1998. Flora, Vegetation Community and Fauna Assessment of Argyle Street, Windsor, NSW. Biosis Research Pty. Ltd., NSW (for VMPPM Development Consultants).
- Anderson J and Richardson M 1998. Flora, Vegetation Community and Fauna Assessment, Davidson Road Chullora. Biosis Research Pty. Ltd., NSW (for Morris Bray Architects).
- Anderson J, Richardson M and Nair R 1998. Flora and Fauna Assessment for the Department of Transport of the Inner West Light Rail Extension. Biosis Research Pty. Ltd., NSW (for the NSW Dept. of Transport).
- Anderson J and Richardson M 1998. Flora and Fauna Assessment for Caddens Future Urban Area. Biosis Research Pty. Ltd., NSW (for Landcom).
- Richardson M 1998. Flora Survey of Maxwells Creek, Casula. For Biosis Research Pty. Ltd., NSW (for Site Image (Australasia) Pty. Limited).
- Delaney R. Richardson M. and Timewell C. 1998. Supplementary Biological Survey – Phase II Hume Freeway – Albury/Wadonga Section. Biosis Research Pty. Ltd., NSW (for VicRoads).
- Saunders D and Richardson M 1998. Flora, fauna and vegetation community assessment of Healey Circuit, Huntingwood. Biosis Research Pty Ltd, NSW (for Paclib Management Pty Ltd).
- Dray S and Richardson M 1998. Management Plan, Yennora Distribution Park. Biosis Research Pty. Ltd., NSW (for Australia Asia Property Services).

Rhidian Harrington

Position:

Senior Ecologist, Biosis Research Pty. Ltd. / Sydney Group Resource Manager

Professional Affiliations and Memberships:

Birds Australia
Ecological Society of Australia

Qualifications:

BACHELOR OF SCIENCE (HONS), JAMES COOK UNIVERSITY
MASTER OF SCIENCE (ZOOLOGY), UNIVERSITY OF THE WITWATERSRAND
DOCTOR OF PHILOSOPHY (ZOOLOGY), UNIVERSITY OF MELBOURNE

Employment Profile:

2003-present	Senior Ecologist, Biosis Research Pty. Ltd.
2002-03	Project Officer, Black-eared Miner Recovery Team, La Trobe University, Melbourne
2002	Scientific writer, Institute of Land and Food Resources (ILFR), University of Melbourne
1998-01	Research coordinator/demonstrator, Melbourne University
1998-02	Research Assistant, Puckapunyal Army Reserve, Victoria
1995-96	Research assistant, Botswana National Parks
1993-95	Lecturer/Demonstrator, University of the Witwatersrand, South Africa
1992	Research assistant for OTC and National Parks Queensland, Australia
1992	Research assistant, Australian Centre for Tropical and Freshwater Research, Queensland
1987	Volunteer research assistant, National Park and Wildlife Service, Zimbabwe

Fields of Competence:

- ✓ Terrestrial ecology
- ✓ Zoology
- ✓ Flora and fauna survey and identification
- ✓ Identification of Australian vertebrates
- ✓ Native vegetation classification and mapping
- ✓ Literature reviews
- ✓ Experimental design
- ✓ Expert evidence
- ✓ Statistical data analysis
- ✓ Environmental impact assessment
- ✓ Impact minimisation (mitigation) guidelines
- ✓ GIS mapping
- ✓ Project management

Professional Experience:

Rhidian has over 12 years experience in applied conservation biology and consulting. A sample of key professional experience is presented below.

- Project Manager/Ecologist**, Targeted surveys for microchiropteran bats and impact assessment for threatened species for the proposed electricity adjustments associated with the F3 to Branxton Link (2006-present for the RTA)
- Zoologist**, Targeted surveys and impact assessment for threatened animal species for the proposed West Cliff coal wash emplacement, Area 3 (2006-present for BHPBilliton)
- Zoologist/Expert Advice**, for the critical review of flora and fauna documentation for the North Beach Byron tourist development, (2006 for Department of Planning)
- Project Manager/Ecologist**, Route option assessment and targeted surveys and impact assessment for threatened species for proposed Pacific Highway Upgrade: Woodburn to Ballina (2006-present for Hyder Consulting and the RTA)
- Project Manager/Ecologist**, baseline flora and fauna survey and assessment of environmental buffers of the Northern Exploration Drilling Area (Palm Creek), Weipa region, Queensland (2005 for Comalco Weipa)
- Zoologist**, impact assessment of subsidence on threatened animal species for the proposed West Cliff Colliery Area 5 - longwalls 31-33, Appin, NSW (2005 for BHPBilliton)
- Zoologist**, Targeted surveys and impact assessment for threatened species (Mallee Emuwren and Long-eared Bat) for the proposed Long Term Containment Facility, Nowingi, Victoria (2005 for Major Projects Victoria)
- Project Manager/Ecologist**, Targeted surveys and impact assessment for threatened species for proposed electricity adjustments associated with the National Highway Link F3 to Branxton, Kurri Kurri region, NSW (2005 for Energy Australia and the RTA)
- Project Manager/Ecologist**, Constraints assessment, route option assessment and targeted surveys and impact assessment for threatened species for the proposed Pacific Highway Upgrade: Tintenbar to Ewingsdale (2004-present for Arup and the NSW Roads and Traffic Authority)
- Project Manager/Ecologist**, Targeted surveys and impact assessment for threatened species for proposed modifications to a High Pressure Gas Pipeline, Stockrington Road, near Seahampton, NSW (2004 for GHD and the RTA)
- Project Manager/Ecologist**, Targeted surveys and impact assessment for threatened species for proposed modifications to the South Maitland Railway, Kurri Kurri (2004 for the RTA)
- Project Manager/Ecologist**, Targeted surveys for Koala and Yellow-bellied Glider and impact assessment for threatened species for the proposed Oxley Highway Upgrade, Port Macquarie (2004-present for the RTA)
- Project Manager/Ecologist**, Review of detailed road design in collaboration with road engineers to reduce impacts on threatened flora and fauna on the proposed National Highway Link F3 to Branxton (2004-present for the RTA)
- Project Manager/Ecologist**, Design of mitigation measures for threatened flora and fauna impacted by the proposed National Highway Link F3 to Branxton (2004-present for the RTA)
- Project Manager/Ecologist**, Translocation assessment for threatened flora and fauna impacted by the proposed National Highway Link F3 to Branxton (2004-05 for the RTA)

Ecologist, Targeted surveys and impact assessment for threatened species for the proposed Pacific Highway Upgrade, Moorlands to Herons Creek (2004 for Arup and the RTA)

Project Manager/Ecologist, Targeted surveys and impact assessment for threatened species for the proposed modifications to the National Highway Link F3 to Branxton (2004 for the RTA)

Project Manager/Ecologist, Targeted surveys for *Tetratheca juncea* and *Cryptostylis hunteriana* for the proposed F3 Freeway to Branxton Geotechnical Variation. (2004 for the RTA)

Ecologist, survey and statistical design to measure the impacts of mine subsidence for the Dendrobium Coal Project (2004 for BHPBilliton)

Project Manager/Ecologist, Targeted surveys for threatened avifauna and habitat along the Darling Anabranch and a proposed pipeline (2003-2004 for NSW Department of Infrastructure, Planning and Natural Resources)

Project Manager/Ecologist, Habitat assessment and eight part tests for threatened species along the Darling Anabranch. (2003-2004 for NSW Department of Infrastructure, Planning and Natural Resources)

Project Manager/Ecologist, Targeted surveys and eight part tests for threatened species for the proposed National Highway Link F3 to Branxton (2003 for the RTA)

Project Officer, Black-eared Miner Recovery Team (2002-2003 for La Trobe University, Melbourne)

Scientific Writer, Institute for Land and Food Resources (ILFR) (2002 for the University of Melbourne)

Project Manager/Zoologist, Environmental Baseline Survey of Khirthar National Park, Pakistan, (2000-2001 for Premier-Shell and the Sindh Wildlife Department, Pakistan)

Chief Investigator, studying the impacts of artificial water points on avifaunal distribution and abundance in the arid mallee habitat of south-east Australia (1998-2002 for Birds Australia)

Research Assistant, Kangaroo Census Team, Puckapunyal Army Reserve, Victoria (1998-2002 for the Department of Defence)

Research Assistant, aerial and ground census, wildlife monitoring and data analysis (1995-1996 for the National Parks Service, Botswana)

Chief Investigator, determining the causes of the roan antelope decline in Kruger National Park, South Africa (1993-1995 for the National Parks Service, South Africa)

Lecturer in Ecology, teaching and coordinating ecology and conservation biology for first year students (1995 for the University of the Witwatersrand, South Africa)

Research Assistant, fauna survey of Prudhoe Island Queensland (1992 for OTC and Queensland National Parks)

Chief Investigator, studying the importance of riparian vegetation to avifauna in the tropical woodlands of north Queensland (1992 for James Cook University)

Research Assistant, fauna surveys of the Burdekin River Floodplains, Queensland (1992 for Australian Centre for Tropical and Freshwater Research)

Research Assistant, research into savanna ecology, including soil erosion, and the management of Hwange National Park (1987 for the National Parks Service, Zimbabwe)

Consultant Reports:

Harrington, R. 2006. F3 Freeway to Branxton Link: Design Review Report. Report for NSW Roads and Traffic Association (RTA)

Harrington, R. and Wilkins, S. 2006. Pacific Highway Upgrade Tintenbar to Ewingsdale Preferred Route Report – Terrestrial Ecology. Report for Arup and the RTA

Clarke, R., Harrington, R., Smith, N. & Cartner, K. 2006. Southern Exploration Drilling Area (Boyd Bay and Norman Creek) Flora and Fauna Baseline Survey. Report for Comalco Weipa

Smith, N., Harrington, R., Clarke, R. & Cartner, K. 2006. Northern Exploration Drilling Area (Musgrave) Flora and Fauna Baseline Survey. Report for Comalco Weipa

Harrington, R., Smith, N., Clarke, R., Beitzel, M. & Cartner, K. 2005. Northern Exploration Drilling Area (Palm Creek) Flora and Fauna Baseline Survey. Report for Comalco Weipa

Harrington, R. and Wilkins, S. 2005. Pacific Highway Upgrade Tintenbar to Ewingsdale Route Option Development Report – Terrestrial Ecology. Report for Arup and the RTA

Smith, N., Harrington, R. and Richardson, M. 2005. West Cliff Colliery Area 5 – Longwalls 31-33: Impacts of Subsidence on Terrestrial Flora and Fauna. Report for BHP Billiton

Smales, I., Koehler, S., Miller, J. and Harrington, R. 2005. Survey for Mallee Emu Wren *Stipiturus mallee* within 20 kilometres of the LTCF study area, Nowingi, Victoria. Report for Major Projects Victoria

Harrington, R. and Smith, N. Electricity Adjustments Associated with the Proposed National Highway Link F3 Freeway to Branxton: Flora and Fauna Assessment. Report for Energy Australia and the RTA

Harrington, R. & Gorrod, E. 2005. Gas Pipeline Realignment Terrestrial Flora and Fauna Impact Assessment, Stockrington Road, near Seahampton. Report for GHD and the RTA

Harrington, R. and Gorrod, E. 2004. South Maitland Railway Flora and Fauna Impact Assessment: The proposed raising of the South Maitland Railway over the proposed National Highway Link F3 to Branxton. Report for the RTA

Harrington, R., Gorrod, E. and English, T. 2004. Oxley Highway Deviation: Species Impact Statement. Report for the RTA

Harrington, R. 2004. National Highway Link F3 Freeway to Branxton: Road Design Review. Report for the RTA

Harrington, R. and O'Sullivan, T. 2004. National Highway Link F3 Freeway to Branxton: Fauna Mitigation Measures. Report for the RTA

- Harrington, R., O'Sullivan, T. and Mueck, S. 2004. National Highway Link F3 Freeway to Branxton: Options for the translocation of threatened fauna and flora. Report for the RTA
- Harrington, R., Predavec, M., Harrington, S. and O'Sullivan, T. 2004. Pacific Highway Upgrade Moorland to Herons Creek: Environmental Impact Statement - Terrestrial Flora and Fauna Report. Report for ARUP and the RTA
- Harrington, R. 2004. National Highway Link F3 Freeway to Branxton: Updated Additional Flora and Fauna Assessment - Threatened Species Assessment for Proposed Modifications. Report for NSW Roads and Traffic Association (RTA)
- O'Sullivan, T., Harrington, R. and Smith, N. 2004. National Highway Link F3 to Branxton: Targeted Species Survey & Habitat Assessment for Geotechnical Investigation - Surveyors Creek to Branxton. Report for NSW Roads and Traffic Association (RTA)
- O'Sullivan, T., Harrington, R., Smith, N. 2004. National Highway Link F3 to Branxton - Targeted Species Survey & Habitat Assessment for Geotechnical Investigation: F3 to Surveyors Creek Section. Report for NSW Roads and Traffic Association (RTA)
- Harrington, R. 2004. Darling Anabran Environmental Flows Species Impact Statement. Report for EarthTech/Department of Infrastructure, Planning and Natural Resources
- Harrington, R., Richardson, M., English, T., Miller, J., Taylor-Wood, E. and Bishop, K. 2004. Darling Anabran Environmental Flows Environmental Impact Statement - Terrestrial and Aquatic Flora and Fauna Assessment Report. Report for EarthTech/Department of Infrastructure, Planning and Natural Resources
- Harrington, R., Richardson, M., English, T., Mueck, S. and Bishop, K. Darling Anabran Pipeline Environmental Impact Statement - Terrestrial and Aquatic Flora and Fauna Assessment Report. Report for EarthTech/Department of Infrastructure, Planning and Natural Resources.
- Harrington, R., Predavec, M., Richardson, M., English, T., O'Sullivan, T. & Harrington, S. 2003, National Highway Link F3 to Branxton: Updated Additional Flora and Fauna Assessment. Report for NSW Roads and Traffic Association (RTA).
- Harrington, R. and Harrington, S. 2003. Flora and fauna assessment of Lot 3, Holroyd High School, Greystanes. Report for GHD.
- Harrington, R. and Harrington, S. 2003. Preliminary flora and fauna assessment of Lot 3, Holroyd High School, Greystanes. Report for GHD.
- Harrington, R. & Clarke, M. F. 2003. Proposal for the translocation of Black-eared Miners from South Australia to NSW. Unpublished report to Department of Environment and Heritage (DEH), South Australia.
- Harrington, R. and Clarke, M. F. 2003. Field management of the Black-eared Miner. Unpublished report for the Department of Environment and Heritage (DEH), South Australia.
- Morgan, D.G. and Harrington, R. 2001. Khirthar National Park Baseline Environmental Study. Chapter 5a: Fauna. Report to the Sindh Wildlife Department and Premier-Shell, Pakistan.

OTHER PAPERS:

- Harrington, R. 2005. The distribution and abundance of avifauna around artificial watering points in the arid and semi-arid mallee environments of south-east Australia. *Journal of Arid Environments* (in prep.)
- Harrington, R. 2005. Changes in vegetation structure and soil characteristics around artificial watering points in the arid mallee of south-east Australia. *Journal of Arid Environments* (in prep.)
- Harrington, R. & Morgan, D.G. 2005. The relationship between vegetation structure and floristics, avifauna and distance to water in an arid mallee system. *Austral Ecology* (in prep.)
- Harrington, R. & Morgan, D.G. 2005. Patterns of water utilisation by avifauna in an arid mallee environment. *Emu* (in prep.)
- Harrington, R. & Morgan, D.G. 2005. The immediate effects of water point closure on avifauna in an arid mallee environment. *Journal of Arid Environments* (in prep.)
- Harrington, R., Ballentine, M. & Morgan, D.G. 2005. The relationship between changes in vegetation floristics and herbivore diets around artificial watering points in the arid mallee of south-east Australia. *Rangeland Journal* (in prep.)
- Yamada, K., Ansari, M., Harrington, R., Morgan, D. and Burgman, M.A. 2004. Sindh Ibex (*Capra aegagrus blythi*) in Kirthar National Park, Pakistan: Sensitivity of a Habitat and Population Model. In: H.R. Akçakaya, M.A. Burgman, O. Kindvall, C.C. Wood, P. Sjögren-Gulve, J.S. Hatfield and M.A. McCarthy (Eds), *Species Conservation and Management: Case Studies*, pp 469-481. Oxford University Press, New York
- Harrington, R., Owen-Smith, N., Viljoen, P.C., Biggs, H.C, Mason, D.R. & Funston, P. 1999. Establishing the causes of the roan antelope decline in Kruger National Park, South Africa. *Conservation Biology* 90: 69 - 78.

Glenn W Muir

Position:

Ecologist, Biosis Research Pty. Ltd.

Professional Affiliations and Memberships:

Society of Australian Systematic Biologists
Frog and Tadpole Study Group of NSW
Royal Zoological Society of NSW

Qualifications:

BACHELOR OF SCIENCE, MACQUARIE UNIVERSITY

Employment Profile:

2004-present Ecologist, Biosis Research Pty. Ltd.
1996-2004 Ecologist, Australian Museum Business Services

Fields of Competence:

- ✓ Green and Golden Bell Frog habitat design
- ✓ Fauna survey and identification
- ✓ Habitat assessment
- ✓ Flora and fauna impact assessment
- ✓ Threatened species management plans
- ✓ Biodiversity assessment
- ✓ Expert evidence
- ✓ Project management

Professional Experience:

Glenn has 10 years experience in ecological consulting. He is an expert on the Green and Golden Bell Frog and has worked with the population at Sydney Olympic Park for many years. A sample of key professional experience is presented below.

Project Manager, Green and Golden Bell Frog Management and Corridor Design at Blaxland Common, Sydney Olympic Park for Sydney Olympic Park Authority

Project Manager, Green and Golden Bell Frog Habitat Design for Scotts Point, Kooragang Island for Kooragang Wetland Rehabilitation Project

Project Manager, Conservation Management and Monitoring of the Green and Golden Bell Frog (*Litoria aurea*) at Homebush Bay for Olympic Co-ordination Authority (1996 – 2000)

Project Manager, Management Plan for the Green and Golden Bell Frog (*Litoria aurea*) at Homebush Bay for Olympic Co-ordination Authority

Project Manager, Surveys of the distribution and abundance of the Southern Bell Frog (*Litoria raniformis*) in the Coleambally Irrigation Area for the Coleambally Irrigation Corporation

- Terrestrial Ecologist**, Targeted Surveys for Littlejohn's Tree Frog (*Litoria littlejohni*) near Wollongong, NSW for BHP Billiton
- Terrestrial Ecologist**, Monitoring of Frogs, Reptiles and Birds at Hartley Quarry for RW Corkery & Co
- Project Manager**, Species Impact Statement for the Water Reclamation and Management Scheme and Frog Habitat Works at Homebush Bay for Olympic Co-ordination Authority
- Terrestrial Ecologist**, Review of Statement of Evidence regarding the Green and Golden Bell Frog at Kurnell Peninsula for Austeco Environmental Consultants and Sutherland Shire Council
- Terrestrial Ecologist**, Survey of the Reptile Fauna of Norfolk Island for the Commonwealth Department of Environment and Heritage
- Project Officer**, Preparation of Draft National Survey Standards for Reptiles for the Commonwealth Department of Environment and Heritage
- Advice and Review**, Environmental Management Plan for the Brickpit Ring project, Homebush Bay
- Advice and Review**, Eight Part Test for the Brickpit Ring project, Homebush Bay
- Project Manager**, Survey and Translocation Strategy for the Cumberland Plain Land Snail for the Camden Gas Project for Sydney Gas Limited
- Terrestrial Ecologist**, Identification of Land Snails for ERM
- Project Manager**, Biodiversity Survey of the Coleambally Irrigation Area for Coleambally Irrigation Co-operative Ltd
- Project Manager**, Habitat Restoration Strategy, Habitat Management Strategy and Flora and Fauna Management Plan at Devils Pinch for Gutteridge Haskins & Davey
- Expert Witness (Terrestrial Ecologist)**, Land & Environment Court for Topic v Liverpool City Council
- Project Manager**, Flora and Fauna Assessment and Species Impact Statement for the proposed New England Highway Upgrade at Devils Pinch for Gutteridge Haskins & Davey
- Project Manager**, Targeted Survey & Impact Assessment of Threatened Woodland Birds, Devils Pinch for Gutteridge Haskins & Davey
- Project Manager**, Biodiversity and Conservation Value Assessment of the Southern Extension Area, proposed conservation reserve, Hoxton Park for Landcom
- Project Manager**, Species Impact Statement for the upgrade of the Great Western Highway, Lawson Viaduct Option for GHD Pty Ltd
- Project Manager**, Flora and Fauna Impact Assessment for Precincts 1 & 2 at South Hoxton Park Aerodrome Release Area for Landcom

Project Manager, Flora and Fauna Assessment for proposed extension to the Dillwynia Correctional Centre and relocation of Wildlife Care Facility for BBC Consulting Planners

Terrestrial Ecologist, Flora and Fauna Assessment of Schofields Aerodrome for Parsons Brinckerhoff

Terrestrial Ecologist, Flora and Fauna Assessment of Department of Defence Property at Endeavour House, Coogee for IT Environmental

Project Manager, Flora and Fauna Assessment for the Airds Neighborhood Renewal Masterplan for LFA (Pacific) Pty Ltd

Project Manager, Terrestrial Flora and Fauna Report for the proposed widening of the Spit Bridge for GHD Pty Ltd

Project Manager, Preliminary Frog Habitat Assessment of St Peters Tip

Project Manager, Review of Threatened Species Assessment for the Erina Fair Re-development for Bovis Lend Lease

Project Manager, Review of Eight Part Test for the Goodlet & Smith Brickworks Merrylands for Burrell Threlfo & Pagan

Project Manager, Preliminary Assessment of the Green and Golden Bell Frog at Enfield Brickpit for Hannas Civil Engineering Pty Ltd

Project Manager, Targeted Survey for the Green and Golden Bell Frog, Mary St Rhodes for Woodward-Clyde

Project Manager, Flora and Targeted Herpetofauna Survey for the Homebush Bay Waterfront Development for Hassell Pty Ltd

Project Manager, Management Plan for the Green and Golden Bell Frog for the Homebush Bay Waterfront Estate for Ingham Planning

Project Manager, Targeted Survey for the Green and Golden Bell Frog, 76 Gibson Avenue, Padstow for Civic Design

Project Officer, Species Impact Statement for the Stage 2 Site Preparation of Newington for Waste Service NSW

Project Officer, Habitat Assessment Report for the Homebush Bay Brickpit for Olympic Co-ordination Authority

Project Officer, Flora and Fauna Assessment for the Proposed Brickpit Rim Developments at Homebush Bay for Olympic Co-ordination Authority

Project Officer, Eight Point Test for *Litoria aurea* for Stage 1 of the Millennium Parklands at Homebush Bay for Olympic Co-ordination Authority

Sian Wilkins

Position:

Botanist, Biosis Research Pty. Ltd.

Qualifications:

Bachelor of Environmental Science (Hons I) (Terrestrial Biology) University of New South Wales
Statement of Attainment in Bushland Weed Control – Padstow TAFE

Employment Profile:

2004-present Botanist, Biosis Research Pty. Ltd.
2002-2004 Botanist, Anne Clements and Associates Pty. Ltd.

Fields of Competence:

- ✓ Flora survey and identification
- ✓ Native vegetation classification and mapping
- ✓ Rare or threatened species and ecological communities assessment
- ✓ Environmental impact statement – natural environment
- ✓ Impact minimisation (mitigation) guidelines
- ✓ Project management, research, data analysis and report preparation
- ✓ Monitoring rehabilitation of vegetation

Sian has experience conducting vegetation surveys in a range of different environments across NSW, including identification and assessment of endangered ecological communities (such as Cumberland Plain Woodland, Shale Sandstone Transition Forest, River-flat Eucalypt Forest, Swamp Oak Floodplain Forest, Shale Gravel Transition Forest, Freshwater Wetlands, Hunter Lowland Redgum Forest, Lower Hunter Spotted Gum - Ironbark Forest and Lowland Rainforest); and targeted surveys for threatened flora species (such as *Acacia chrysotricha*, *A. pubescens*, *Callistemon linearifolius*, *Epacris purpurescens*, *Eucalyptus parramattensis* ssp. *decadens*, *Grevillea juniperina* ssp. *juniperina*, *G. parviflora* spp. *parviflora*, *Melaleuca biconvexa*, *Pimelea spicata*, *Tetratheca juncea* and *Tetratheca glandulosa*).

Professional Experience:

Sian has four years experience in applied conservation biology and consulting. A sample of key professional experience at Biosis Research is presented below.

Project Manager/Botanist, survey and impact assessment of rail maintenance works at Kemira Valley

Project Manager/Botanist, survey and impact assessment for threatened species, populations and communities for flood mitigation works, Wollongong Council Area

Project Manager/Botanist, survey for threatened species, populations and communities in western Sydney

Project Manager/Botanist, targeted survey for *Melaleuca biconvexa*, the Entrance Road upgrade

Project Manager/Botanist, targeted survey for *Acacia chrysotricha* for the Nambucca District Water Supply Scheme Augmentation

Project Manager/Botanist, survey and impact assessment, expansion of Wattle Grove School in south-western Sydney

- Botanist**, terrestrial ecology investigations and constraints mapping and assessment of the upgrade of the Pacific Highway from Tintenbar to Ewingsdale in the North Coast
- Botanist**, vegetation mapping and threatened species surveys for the upgrade of the Pacific Highway from Woodburn to Ballina in the North Coast
- Botanist**, survey and reporting for Hoxton Park Airport Opportunities and Constraints Assessment
- Botanist**, survey and reporting for Integral Energy in Cumberland Plain Woodland at Hoxton Park
- Botanist**, survey and conservation assessment of native vegetation communities of the Meeting Place Precinct, Botany Bay National Park
- Botanist**, long-term monitoring of the potential effects of subsidence due to longwall mining on rainforest, sclerophyll woodland and upland swamps in the Sydney Catchment Area
- Botanist**, survey and impact assessment of coal mining exploration activities in the Sydney Catchment Area
- Botanist**, survey and impact assessment of subsidence due to longwall mining in the Sydney Catchment Area
- Botanist**, targeted survey and impact assessment, third Hunter River Crossing, Maitland
- Botanist**, survey and impact assessment, including preliminary constraints assessment and options assessment, F3 to Raymond Terrace
- Botanist**, survey and impact assessment of proposed school site, Central Coast
- Botanist**, survey and impact assessment for the upgrade of Cowpasture Road, Hoxton Park
- Botanist**, pre-clearance surveys for threatened species and noxious weeds for the upgrade of Windsor Road
- Botanist**, survey and impact assessment for industrial development in Rooty Hill
- Botanist**, survey of six proposed school sites in western Sydney for the Department of Commerce
- Botanist**, tagging of threatened species in western Sydney for proposed upgrade of electricity easement

Consultant Reports:

- Wilkins S. and English T. (2006) Terrestrial Flora and Fauna Habitat Assessment: Appin Area 3 Seismic Survey and Borehole Investigations. (Report for BHP Billiton)
- Wilkins S. (2005) Native Vegetation of the Meeting Place Precinct, Botany Bay National Park: Conservation Significance Assessment. (Report for Design 5, on behalf of the Department of Environment and Conservation)
- Harrington R. and Wilkins S. (2005) Pacific Highway Upgrade Tintenbar to Ewingsdale Route Option Development Report – Terrestrial Ecology (Prepared for ARUP on behalf of the RTA)

- Muir G. and Wilkins S. (2005) Flora & Fauna Assessment for the Proposed Hoxton Park Training Centre (Prepared for Integral energy)
- Muir G., Wilkins S. and Beitzel M. (2005) Hoxton Park Airport Flora and Fauna Assessment: Opportunities and Constraints Report (Prepared for Report for HPAL Freehold Pty Limited)
- Wilkins S. (2005) Terrestrial Flora and Fauna Habitat Assessment: Appin Colliery Area 3 Seismic Survey Investigations. (Prepared for BHP Billiton)
- Wilkins S. and Charlton J. (2005) Appin Area 3 Longwalls 301A, 301 and 302: Impacts of Subsidence on Terrestrial Flora and Fauna (Prepared for BHP Billiton)
- Terri-Ann English and Wilkins S. (2005) Kemira Valley Rail Maintenance: Flora and Fauna Impact Assessment. (Prepared for BHP Billiton)
- Wilkins S. and Charlton J. (2005) Flora and Fauna Impact Assessment for Bellambi Street, Justine Avenue and Cheryl Place Flood Mitigation Works. (Prepared for Wollongong City Council)
- Gorrod, E. and Wilkins S. (2005) Tree Assessment for Proposed Works, The Entrance Road, Erina. (Prepared for the RTA)
- Gorrod, E., Charlton J. and Wilkins S. (2005) Flora and Fauna Assessment for a Proposed Temporary Boardwalk, The Entrance Road, Erina. (Prepared for the RTA)
- Wilkins S. and Charlton J. (2005) Pacific Highway Upgrade: F3 Freeway to Raymond Terrace Terrestrial Flora and Fauna Route Options Assessment. (Prepared for Maunsell on behalf of the RTA)
- Wilkins S. and Charlton J. (2005) Flora and Fauna Assessment Lot 4 DP 262213, Old Wallgrove Road, Eastern Creek. (Prepared for Minter Ellison)
- Wilkins S. (2005) Nambucca Water Supply Scheme: Targeted Survey for *Acacia chrysotricha*. (Prepared for NSW Department of Commerce)
- Beitzel M., Charlton J. and Wilkins S. (2005) Third Crossing of the Hunter River, Maitland: Preliminary Terrestrial and Aquatic Flora and Fauna Impact Assessment. (Prepared for RTA)
- Charlton J. and Wilkins S. (2005) Terrestrial Flora and Fauna Update for the Proposed Hamlyn Terrace Primary School. (Prepared for the Department of Education and Training)
- Beitzel M., Charlton J. and Wilkins S. (2005) Updated Terrestrial & Aquatic Habitat Assessment, Cowpasture Road, Hoxton Park. (Prepared for RTA)
- Beitzel M. and Wilkins S. (2005) Regional Distribution Centre Flora and Fauna Impact Assessment. (Prepared for Readymix Holdings)
- Publications:**
Wilkins S., Keith D. A., and Adam P. (2003) Measuring success: Evaluating the Restoration of a Grassy Eucalypt Woodland on the Cumberland Plain, Sydney, Australia. *Restoration Ecology* Vol. 11 (4), 489-503

Nathan Smith

Position:

Botanist, Biosis Research Pty. Ltd.

Qualifications:

Bachelor of Science (Resource & Environmental Management), School of Earth Sciences, Macquarie University, Sydney.
 Certificate II & IV Bushland Regeneration, School of Horticulture, Northern Sydney Institute of Technology and Further Education, Ryde.
 Statement of Attainment in Spatial Information Systems, School of Surveying, Sydney Institute of Technology, Ultimo.

Employment Profile:

2003-present	Botanist, Biosis Research Pty. Ltd.
2001-2003	Toolijooa Environmental Restoration Pty Ltd, Native Plant Seed Collector and Bush Regeneration Project Manager
2000-2003	North Sydney Council, Bushcare Supervisor
1998-2003	Australian Bushland Restoration Pty Ltd, Bushland Management Supervisor
1996-1997	Agserv Pty Ltd, Weed Control Operator & Bush Regeneration Supervisor

Fields of Competence:

- ✓ Bushland management & site assessment
- ✓ Native plant and weed identification
- ✓ Threatened species assessment (including EECs)
- ✓ Native vegetation classification
- ✓ Habitat restoration and mine site rehabilitation

Professional Experience:

Nathan has over 11 years experience in environmental restoration and consulting. A sample of key professional experience is presented below.

Botanist, ecological monitoring for Area 2 of the Dendrobium Coal Mine within the Lake Cordeaux Catchment (In preparation for BHP Billiton)

Project Manager, Rehabilitation of four disused surface infrastructure sites for BHPBIC. Corrimal Number 2 Shaft and Pump Site, Port Kembla Number 2, Nebo 1 and 2 Shaft Site, Wongawilli Shaft Site.

Botanist, Various REF's and impact assessments for the ongoing surface exploration projects within the Cordeaux Catchment (south of Picton Road) (2004 – current for BHPB Billiton)

Botanist, Elouera Long Wall 11 terrestrial flora and fauna and archaeological assessment of potential subsidence impacts associated with Longwall 11 of the Elouera Colliery (2004-present for BHPB Billiton).

Botanist, Entrance Road Duplication terrestrial and aquatic ecological impact assessment (2003 for the RTA)

Botanist, ecological monitoring for Stage 1, Longwalls 1 and 2 of the Dendrobium Coal Mine (2003 – current for BHP Billiton)

Botanist, Targeted surveys and impact assessment for threatened animal species for the proposed West Cliff coal wash emplacement, Area 3 (2006-present for BHPBilliton)

Botanist, Route option assessment and targeted surveys and impact assessment for threatened species for proposed Pacific Highway Upgrade: Woodburn to Ballina (2006-present for Hyder Consulting and the RTA)

Botanist, baseline flora and fauna survey and assessment of environmental buffers of the Northern Exploration Drilling Area (Musgrave), Weipa region, Queensland (2005 for Comalco Weipa)

Botanist, impact assessment of subsidence on threatened animal species for the proposed West Cliff Colliery Area 5 - longwalls 31-33, Appin, NSW (2005 for BHPBilliton)

Botanist, Constraints assessment for for the proposed Long Term Containment Facility, Nowingi, Victoria (2004 for Major Projects Victoria)

Botanist, Targeted surveys and impact assessment for threatened species for proposed electricity adjustments associated with the National Highway Link F3 to Branxton, Kurri Kurri region, NSW (2005 for Energy Australia and the RTA)

Botanist, Field botanical surveys and impact assessment for threatened species for the proposed Pacific Highway Upgrade: Tintenbar to Ewingsdale (2004-present for Arup and the NSW Roads and Traffic Authority)

Botanist, Targeted surveys and impact assessment for threatened species for proposed modifications to the South Maitland Railway, Kurri Kurri (2004 for the RTA)

Botanist, Review of detailed road design in collaboration with road engineers to reduce impacts on threatened flora and fauna on the proposed National Highway Link F3 to Branxton (2004-present for the RTA)

Botanist, Design of mitigation measures for threatened flora and fauna impacted by the proposed National Highway Link F3 to Branxton (2004-present for the RTA)

Botanist, Translocation assessment for threatened flora and fauna impacted by the proposed National Highway Link F3 to Branxton (2004-05 for the RTA)

Botanist, Targeted surveys and impact assessment for threatened species for the proposed modifications to the National Highway Link F3 to Branxton (2004 for the RTA)

Botanist, Targeted surveys for *Tetratheca juncea* and *Cryptostylis hunteriana* for the proposed F3 Freeway to Branxton Geotechnical Variation. (2004 for the RTA)

Botanist, Targeted surveys and eight part tests for threatened species for the proposed National Highway Link F3 to Branxton (2003 for the RTA)

Consultant Reports:

Clarke, R., Harrington, R., **Smith, N.** & Cartner, K. 2006. Southern Exploration Drilling Area (Boyd Bay and Norman Creek) Flora and Fauna Baseline Survey. Report for Comalco Weipa

Smith, N., Harrington, R., Clarke, R. & Cartner, K. 2006. Northern Exploration Drilling Area (Musgrave) Flora and Fauna Baseline Survey. Report for Comalco Weipa

Harrington, R., Smith, N., Clarke, R., Beitzel, M. & Cartner, K. 2005. Northern Exploration Drilling Area (Palm Creek) Flora and Fauna Baseline Survey. Report for Comalco Weipa

- Smith, N.**, Harrington, R. and Richardson, M. 2005. West Cliff Colliery Area 5 – Longwalls 31-33: Impacts of Subsidence on Terrestrial Flora and Fauna. Report for BHP Billiton
- Harrington, R. and **Smith, N.** Electricity Adjustments Associated with the Proposed National Highway Link F3 Freeway to Branxton: Flora and Fauna Assessment. Report for Energy Australia and the RTA
- Harrington, R. and **Smith, N.** 2004. National Highway Link F3 Freeway to Branxton: Updated Additional Flora and Fauna Assessment - Threatened Species Assessment for Proposed Modifications. Report for NSW Roads and Traffic Association (RTA)
- O'Sullivan, T., Harrington, R. and **Smith, N.** 2004. National Highway Link F3 to Branxton: Targeted Species Survey & Habitat Assessment for Geotechnical Investigation - Surveyors Creek to Branxton. Report for NSW Roads and Traffic Association (RTA)
- O'Sullivan, T., Harrington, R., **Smith, N.** 2004. National Highway Link F3 to Branxton - Targeted Species Survey & Habitat Assessment for Geotechnical Investigation: F3 to Surveyors Creek Section. Report for NSW Roads and Traffic Association (RTA)

Jennifer Charlton

Position:

Zoologist, Biosis Research Pty. Ltd.

Professional Affiliations and Memberships:

Birds Australia.
Waterfall Springs Conservation Association, NSW, Australia.

Qualifications:

Bachelor of Science in Zoology, University of New South Wales, Sydney.

Other:

Senior First Aid Certificate – St John Ambulance, January 2005.

Employment Profile:

2004-present	Zoologist, Biosis Research Pty. Ltd.
2003-2004	Technical Officer, Australian Museum Business Services.
2003-2004	Mammal & Bird Keeper Assistant, The Australian Reptile Park, Somersby.
2003-2004	Records Officer, Waterfall Springs Sanctuary, Kulnura.
2001-2004	Database Co-ordinator, Wildlife ARC, Central Coast, NSW.

Fields of Competence:

- ✓ Fauna survey (diurnal and nocturnal)
- ✓ Mammalian fauna research
- ✓ Frog and reptile surveys
- ✓ Bird surveys
- ✓ Bat surveys
- ✓ Radio-tracking surveys
- ✓ Habitat and biodiversity assessment
- ✓ Rare and threatened species assessment
- ✓ Terrestrial fauna monitoring
- ✓ Database design and management

Professional Experience:

Jennifer has three years experience as a zoologist. A sample of key professional experience is presented below.

Zoologist, Targeted bat surveys of Elouera Colliery portals, specifically for Eastern Bent-wing Bat *Miniopterus schreibersii*, to assess bat presence and usage of portals (2006 for BHP Billiton)

Zoologist, Terrestrial fauna monitoring at Hartley Quarry to assess potential impacts of the quarry works on birds, frogs and reptiles (2006 for RW Corkery & Co Pty Limited)

Zoologist, Terrestrial fauna surveys including targeted searches for threatened species for F3 to Raymond Terrace Pacific Highway Upgrade, Summer Survey (2006 for Maunsell Australia)

- Zoologist, Terrestrial fauna monitoring to assess the potential impacts of subsidence in Dendrobium Area 2, seasonal surveys (2005 and 2006 for BHP Billiton)
- Zoologist, Terrestrial fauna habitat assessment of Appin Area 3 Longwalls 301A, 301 & 302 to assess potential impacts of subsidence (2005 for BHP Billiton)
- Zoologist, Targeted surveys for threatened Cumberland Plain Land Snail, *Meridolum corneovirens* at Wattle Grove Public School (2005 for Department of Commerce)
- Zoologist, Survey for evidence of use or occupancy by an Endangered Population of the Long-nosed Bandicoot, *Perameles nasuta* at 87 Stuart Street, Manly (2005 for Environa Studio)
- Zoologist, Terrestrial fauna habitat assessment of Elouera Colliery Longwall 14 to assess potential impacts of subsidence (2005 for Delta Mining)
- Zoologist, Terrestrial fauna habitat assessment of proposed Penrith Lakes Nepean Pump and Pipeline, Penrith Lakes (2005 for Maunsell Australia Pty. Ltd.)
- Zoologist, Targeted surveys for threatened frog species Littlejohn's Tree Frog, *Litoria littlejohni* in Dendrobium Area 2 (2005 for BHP Billiton)
- Zoologist, Terrestrial fauna habitat assessment of Bulli Colliery Rehabilitation Sites, Bulli (2005 for Forbes Rigby Pty. Ltd.)
- Zoologist, Terrestrial fauna monitoring to assess the potential impacts of subsidence in Elouera Swamps, seasonal surveys (2005 and 2006 for BHP Billiton)
- Project Manager/Zoologist, Terrestrial flora and fauna assessment for proposed Hamlyn Terrace Primary School, Hamlyn Terrace (2005 for Department of Education and Training)
- Zoologist, Terrestrial fauna habitat assessment of Cowpasture Rd, Hoxton Park (2005 for NSW RTA)
- Zoologist, Terrestrial fauna assessment for Third Crossing of the Hunter River, Maitland (2005 for NSW RTA)
- Zoologist, Terrestrial fauna habitat location for protection and/or relocation of fauna species during road upgrade, Baulkham Hills and Kellyville (2005 for Maunsell Australia Pty. Ltd.)
- Zoologist, Terrestrial fauna habitat assessment for conservation significance and land valuation, Eastern Creek (2005 for Minter Ellison Lawyers)
- Zoologist, Terrestrial fauna habitat assessment for proposed flood mitigation works, Tarrawanna (2005 for Forbes Rigby Pty. Ltd.)
- Zoologist, Terrestrial fauna habitat assessment for proposed temporary boardwalk, The Entrance Rd, Erina (2005 for RTA)
- Zoologist, Terrestrial fauna monitoring to assess the potential impacts of subsidence in Dendrobium Area 1, seasonal surveys (2004, 2005, 2006 for BHP Billiton)

- Zoologist, Assisted in terrestrial fauna surveys including targeted searches for threatened species for F3 to Raymond Terrace Pacific Highway Upgrade, preliminary constraints overview (2004 for Maunsell Australia)
- Technical Officer, Targeted surveys for threatened frog species at Sydney Olympic Park, including the Green and Golden Bell Frog, *Litoria aurea*
- Records Officer, Developed and maintained Access database for Waterfall Springs Sanctuary. Collated captive macropod data to be used for Brush-tailed Rock Wallaby (*Petrogale penicillata*) breeding program
- Mammal & Bird Keeper Assistant, Cared for native Australian mammals and birds, and observed their behaviour, habitat, dietary requirements, and social interactions for Australian Reptile Park. Included Koalas, Tasmanian Devils, Eastern Grey Kangaroos, Spotted-tail Quolls, Echidnas, Wombats, Grey-headed Flying Foxes, Emus, Cassowaries, Owls, Parrots, Doves, Waders and other birds
- Database Co-ordinator, Managed Access database of native mammals, birds, reptiles and amphibians for Wildlife ARC, Central Coast, NSW
- Research Assistant, Elliot Trapping surveys for Swamp Rats, Eastern Chestnut Mice, New Holland Mice and Brown Antechinus in heath habitat, Myall Lakes National Park, for ACU
- Research Assistant, Radio-tracking of collared Swamp Wallabies to map territories, Cowan, NSW
- Research Assistant, Biodiversity survey of the Dananbilla/Koorawatha region with NSW NPWS. Surveyed for birds, invertebrates, reptiles, and mammals, including bats
- Research Assistant, Radio-tracking of Little Penguins for the Sydney Harbour Little Penguin Project to observe and monitor daily movements

Consultant Reports:

- Charlton, J. 2006. Elouera Colliery Bat SIS Survey Results (for BHP Billiton)
- Wilkins, S. and Charlton, J. 2006. Third Crossing of the Hunter River, Maitland: Terrestrial Flora and Fauna Assessment (for NSW RTA)
- Richardson, M. and Charlton, J. 2006. Dendrobium Coal Project Area 1 and 2 Terrestrial Flora and Fauna – Summary of Results (for BHP Billiton)
- Beitzel, M., Muir, G. and Charlton, J. 2005. Littlejohn's Tree Frog Dendrobium Area 2 (for BHP Billiton)
- Wilkins S. and Charlton J. 2005. Appin Area 3 Longwalls 301A, 301 and 302 Impacts of Subsidence on Terrestrial Flora and Fauna (for BHP Billiton)
- Wilkins S. and Charlton J. 2005. Pacific Highway Upgrade: F3 to Raymond Terrace Terrestrial Flora and Fauna Route Options Assessment Expanded Study Area (for Maunsell Australia Pty Ltd)
- Smith N. and Charlton J. 2005. Elouera Colliery Longwall 14 Impacts of Subsidence on Terrestrial Flora and Fauna (for Delta Mining)

- Beitzel M., Charlton J. and Wilkins S. 2005. Penrith Lakes Nepean Pump and Pipeline: Terrestrial and Aquatic Flora and Fauna Impact Assessment (for Maunsell Australia Pty Ltd)
- Smith N. and Charlton J. 2005. Bulli Colliery Rehabilitation: Flora and Fauna Impact Assessment (for Forbes Rigby Pty Ltd)
- Beitzel M., Wilkins S. and Charlton J. 2005. Updated Terrestrial and Aquatic Habitat Assessment, Cowpasture Rd, Hoxton Park (for NSW RTA)
- Beitzel M., Charlton J. and Wilkins S. 2005. Third Crossing of the Hunter River, Maitland: Preliminary Terrestrial and Aquatic Flora and Fauna Assessment (for NSW RTA)
- Charlton J. and Wilkins S. 2005. Terrestrial Flora and Fauna Assessment Update for proposed Hamlyn Terrace Primary School, Hamlyn Terrace (for Department of Education and Training)
- Harrington R., Predavec M., Richardson M., English T., O'Sullivan T., Harrington S., Smith N. and Charlton J. 2005. National Highway Link F3 to Branxton – Updated Additional Flora and Fauna Assessment (for NSW RTA)
- Wilkins S. and Charlton J. 2005. Flora and Fauna Assessment Lot 4 DP 262213, Old Wallgrove Road, Eastern Creek (for Minster Ellison Lawyers)
- Wilkins S. and Charlton J. 2005. Terrestrial Flora and Fauna Route Options Assessment for the F3 Freeway to Raymond Terrace Pacific Highway Upgrade (for Maunsell Australia Pty Ltd)
- O'Sullivan T., Wilkins S., Charlton J. and Blount C. 2005. F3 Freeway to Raymond Terrace Pacific Highway Upgrade – A Draft Preliminary Overview: Terrestrial and Aquatic Ecology (for Maunsell Australia Pty Ltd)
- Gorrod E., Charlton J. and Wilkins S. 2005. Flora and Fauna Assessment for a Proposed Temporary Boardwalk, The Entrance Rd, Erina (for NSW RTA)
- Wilkins S. and Charlton J. 2005. Flora and Fauna Impact Assessment for Bellambi St, Justine Ave and Cheryl Place Flood Mitigation Works (for Forbes Rigby Pty Ltd)

Brendan J Smith

Position:

Botanist, Biosis Research Pty. Ltd.

Qualifications:

- B.Sc. Environmental Biology (Distinction Average). 2005
- University of Technology, Sydney.
- AUSRIVAS Certificate (Australian River Assessment System). 2005
- DEH Accreditation, University of Technology, Sydney.
- Associate Diploma of Applied Science, Horticulture. 1996
- Ryde TAFE College.
- Certificate In Horticulture 1992
- Padstow TAFE

Employment Profile:

2006-present	Botanist, Biosis Research
2004 – 2006	Project Officer, Total Earth Care Pty Ltd
2004 – 2005	Interpretive Ranger (Part time), Kur-ring-gai Council
2004 – 2004	Bush Regenerator / Seed Collection Officer, Total Earth Care Pty Ltd
2001 – 2003	Interpretive Hiking Guide – Blue Mountains, Wildframe Ecotours
2000 – 2000	Contracts Administration Clerk, Warner Bros. London
1998 – 1999	TAFE Teacher, Native Plant Propagation, Ryde TAFE College
1995 – 1999	Nursery team leader, Kur-ring-gai Council Community Nursery
1995 - 1999	Native Seed Collection Workshops, Facilitator, Various Councils

Fields of Competence:

- ✓ Flora survey and identification
- ✓ Bushland management & site assessment
- ✓ Native plant and weed identification
- ✓ Threatened species assessment (including EECs)
- ✓ Native vegetation classification
- ✓ Habitat restoration
- ✓ Weed density mapping
- ✓ Indigenous plant collection and production
- ✓ Project management and report preparation
- ✓ Monitoring rehabilitation of vegetation

Professional Experience:

Brendan is a botanist with Biosis Research, Sydney office. Brendan has 9 years experience working with indigenous plant species in flora surveys, natural area restoration and weed management. Brendan's experience includes consulting projects involving flora assessments - including targeted surveys for threatened species, and fauna assessments.

Brendan has managed and been involved with restoration projects throughout the Sydney region involving the translocation of threatened species, soil translocations, large scale seed collection, revegetation, weed control and erosion controls. He has managed an indigenous plant nursery and was responsible for all facets of local provenance plant production for small and large scale revegetation projects. Specific projects have involved the management of endangered ecological communities including Blue Gum High Forest, Cumberland Plain

Woodland, Sydney Coastal River Flat Forest, Duffy's Forest, Coastal Swamp Forest Complex, Swamp Oak Forest on Floodplains and Eastern Suburbs Banksia Scrub. Work with threatened species has included project involving *Acacia pubescens*, *Epacris purpurescens* var. *purpurescens*, *Grevillea caleyi*, *Eucalyptus camfieldii*, *E. leuhmanniana*, *Haloragodendron lucasi* and *Melaleuca deanei*.

Brendan has prepared successful proposals for Flora and Fauna Assessments, Bush Regeneration projects, annual work plans and reports, weed and native species lists, site plans and weed density maps. These contracts have involved post-bushfire weeding, the creation of Fire Access Management Zones, large-scale revegetation projects, storm-water remediation, weed control and supervision of volunteers.

Consultant Reports:

A small sample of the reports that Brendan has contributed to are listed below.

Morrisey, B. Smith, (2006) Flora and Fauna Assessment– Ellis Trig Station Phone Tower Proposal in Ku-ring-gai National Park (prepared for Hassel and Associates)

Smith B. Cartner, K. (2006) Tower 62 Access Trail, Lane Cover National Park. (prepared for Energy Australia)

Smith B. Cartner, K. (2006). Tallawarra Power Station, Transmission Line Installation. (prepared for URS Pty Ltd on behalf of TRUenergy)

Smith B. Beitzel M. (2006) Terrestrial and Aquatic Flora and Fauna Assessment for the Proposed Tahmoor Transmission Line Upgrade (Prepared for Centennial Coal).

Projects:

Botanist, Targeted surveys for threatened plant species and for the proposed Westcliff coal wash emplacement, Area 3 (2006 for BHP Billiton)

Botanist, Ecological Assessment of Transmission Line Corridors at Tallawarra Gas Power Station (2006 for URS Pty. Ltd.)

Botanist, Flora monitoring to assess the potential impacts of subsidence in Dendrobium Area 2, seasonal surveys (2006 for BHP Billiton)

Botanist, Targeting surveys to estimate the distribution and abundance of threatened species within the proposed development footprint of the Pacific Hwy Upgrade, Raymond Terrace (2006 for NSW RTA)

RACHEL V. BLAKEY

CURRICULUM VITAE

Position:

Research Assistant, Biosis Research Pty. Ltd.

Professional Affiliations and Memberships:

Birds Australia

Australasian Wader Study Group

Qualifications:

BSc (Honours) University of Queensland, St Lucia, QLD.

BSc (Dean's scholarship) Zoology, Monash University, Clayton, VIC.

Other:

PADI Divemaster qualification (includes PADI Rescue Diver and Dive Medic training).

Senior First Aid Certificate – St John Ambulance, expires 14/12/2008.

NSW General Boat license #01129768, expires 31/10/09.

Employment Profile:

2006-present Research Assistant, Biosis Research Pty. Ltd.

2005-2006 Technical Assistant, Biosis Research Pty. Ltd.

2004-2005 Executive Assistant, Giaconda Limited

2004 Volunteer Research Assistant, Marine and Estuarine Ecology Unit, University of Queensland

2003-2004 Science Tutor, Moreton Bay Research Centre, Stradbroke Island, QLD

2002-2004 Divemaster Village Dive, Exmouth, WA & Dive Victoria, Portsea, Vic & Bluezone Scuba, Brisbane, QLD.

Fields of Competence:

- ✓ Field and laboratory experimental techniques
- ✓ Shorebird surveys
- ✓ Bat surveys
- ✓ Terrestrial and Aquatic field survey techniques

Professional Experience:

A sample of key professional experience is presented below.

Research assistant, Terrestrial flora monitoring to assess the potential impacts of subsidence in Dendrobium Area 2, seasonal surveys (2006 for BHP Billiton).

Research assistant, Terrestrial flora monitoring to assess the potential impacts of subsidence in Dendrobium Area 1, seasonal surveys (2006 for BHP Billiton).

Research Assistant, Winter targeted bat surveys of Elouera Colliery portals, specifically for Eastern Bent-wing Bat *Miniopterus schreibersii*, to assess bat presence and usage of portals (2006 for BHP Billiton).

Research assistant, Terrestrial fauna monitoring to assess the potential impacts of subsidence in Dendrobium Area 2, seasonal surveys (2006 for BHP Billiton).

Research assistant, Terrestrial fauna monitoring to assess the potential impacts of subsidence in Dendrobium Area 1, seasonal surveys (2006 for BHP Billiton).

Research assistant, Targeted surveys for threatened Littlejohn's Tree Frog in Illawarra catchment area, *Litoria littlejohni* including habitat assessments (2006 for *BHP Billiton*).

Research assistant, Flora monitoring to assess the potential impacts of subsidence in Dendrobium Area 1, seasonal surveys (2006 for *BHP Billiton*).

Research assistant, Targeted surveys for threatened Cumberland Plain Land Snail, *Meridolum corneovirens* at Prospect Reservoir (2006 for *Integral Energy*).

Field assistant, Targeted surveys for threatened frog species at Sydney Olympic Park, including the Green and Golden Bell Frog, *Litoria aurea* (2006 for *Sydney Olympic Park Authority*).

Field assistant, Aquatic surveys for proposed Penrith Lakes Pipeline, Penrith Lakes (2006 for *Maunsell Aecom Australia Pty. Ltd.*).

Field Assistant, Autumn targeted bat surveys of Elouera Colliery portals, specifically for Eastern Bent-wing Bat *Miniopterus schreibersii*, to assess bat presence and usage of portals (2006 for *BHP Billiton*).

Field Assistant, Terrestrial fauna surveys including targeted searches for threatened species for F3 to Raymond Terrace Pacific Highway Upgrade, Summer Survey (2006 for *Maunsell Australia*).

Field assistant, Terrestrial fauna habitat assessment of Appin Area 3 Seismic lines and Boreholes (2006 for *BHP Billiton*).

Field assistant, Vegetation surveys as part of Honours project examining effects of disturbance on vegetation communities in Castlereagh woodlands (2005 for *University of Technology Sydney*).

Project Manager, Shorebird species surveys and observation and diet analysis of the Eastern Curlew (*Numenius madagascariensis*) on intertidal mudflats of Stradbroke Island, QLD (2003/2004 for *University of Queensland*)

Research Assistant, Aquatic field surveys and estuarine fish, crustacean and macro-invertebrate identification to species level (2004 for *Marine and Estuarine Ecology Unit*).

Field Supervisor, Supervising and Conducting water quality monitoring and macro-invertebrate surveys of freshwater lakes and swamps at Stradbroke Island, QLD, as part of the *Waterwatch Queensland* program (2004 for *Moreton Bay Research Centre*).

Divemaster, Management & responsibility for recreational Dive vessel of 10 people including: Boat and diving safety briefing, in-water supervision, inspection of new sites and marine life interpretation (2003/2004 for *Bluezone Scuba, Brisbane, QLD*).

Research Diving Assistant, Collection of tagging of Short-tailed nudibranch *Ceratosoma brevicaudatum* for Honours project examining nudibranch population dynamics (2003 for *University of Queensland*).

Divemaster, Management & responsibility for recreational Dive vessel of 20 people including: Boat and diving safety briefing, in-water supervision, inspection of new sites and marine life interpretation (2002/2003 for *Dive Victoria, Portsea, Vic*).

Divemaster, Management & responsibility for recreational Dive vessel of 20 people including: Boat and diving safety briefing, in-water supervision, inspection of new sites and marine life interpretation (2002 for *Village Dive, Exmouth, WA*).

Research Assistant, Collection and behavioural monitoring of freshwater leeches *Helobdella papillornata* for research project examining parental care in invertebrates (2001 for *School of Biological Sciences, Monash University*).

Publications:

Blakey, R., Zharikov, Y and Skilleter, G.A. (2006) Lack of an osmotic constraint on intake rate of the eastern curlew *Numenius madagascariensis*. *Journal of Avian Biology* 37(4): 299-305.

KATIE CARTNER**CURRICULUM VITAE****Position:**

Zoologist, Biosis Research Pty. Ltd.

Professional Affiliations and Memberships:

Waikato Botanical Society, New Zealand.

Qualifications:

Bachelor of Science (Biological Sciences) University of Waikato, New Zealand.

Other:

Senior First Aid Certificate – St John Ambulance, June 2004.

Cardiopulmonary Resuscitation – St John Ambulance, June 2006.

OHS General Induction for Construction Work in NSW (Green Card) – June 2006.

OHS Workplace Consultation – National Safety Council of Australia, January 2006.

Employment Profile:

2006- Zoologist, Biosis Research Pty. Ltd.
 2005-2006 Research Assistant, Biosis Research Pty. Ltd.
 2004-2005 Technical Assistant, Biosis Research Pty. Ltd.
 2003-2004 Administration Assistant, Omnilab Pty Ltd.
 2003 Volunteer, Department of Conservation (Mercury Islands, NZ).
 2003 Volunteer, Department of Conservation (Tiri tiri Matangi Island, NZ)
 2001-2003 Field and Laboratory Technician, Landcare Research, NZ.
 2000-2001 Laboratory Technician, AgResearch, NZ.

Professional Experience:

Katie has over four years experience working in an assistant role in various natural heritage assessments, surveys and research. A sample of key experience is listed below.

Zoologist, Targeted surveys for threatened owl species and threatened snake Broad-headed Snake *Hoplocephalus bungaroides* for the proposed Westcliff coal wash emplacement, Area 3 (2006 for BHP Billiton)

Zoologist, Targeted surveys for microchiropteran bats at Elouera Colliery Portals, specifically for Eastern Bent-wing Bat *Miniopterus schreibersii*, to assess bat presence and usage of portals (2006 for BHP Billiton).

Zoologist, Targeted surveys for threatened frog species Littlejohn's Tree Frog *Litoria littlejohni* in Dendrobium Area 2 (2006 for BHP Billiton).

Zoologist, Terrestrial fauna habitat assessment of Tower 62 Access Track in Lane Cove National Park (2006 for EnergyAustralia).

Zoologist, Ecological Assessment of Transmission Line Corridors at Tallawarra Gas Power Station (2006 for URS Pty. Ltd.).

Zoologist, Terrestrial fauna monitoring to assess the potential impacts of subsidence in Dendrobium Area 2, seasonal surveys (2005 and 2006 for BHP Billiton).

Research Assistant, Macrophyte monitoring surveys at Penrith Lakes (2006 for Penrith Lakes Development Corporation).

Zoologist, Terrestrial fauna habitat assessment of Bulli Mine Rehabilitation Sites (2005 for Forbes Rigby Pty. Ltd.).

Field Assistant, Assisted with an assessment of possible impacts of subsidence on creek systems (2005 for BHP Billiton).

Field Assistant, Conducted aquatic ecology assessment of the Bundanoon Sewerage Treatment Plant upgrades (2005 for SMEC Australia).

- Zoologist**, Fauna habitat assessment of track leading to ventilation shaft site (2005 for BHP Billiton).
- Field Assistant**, Terrestrial fauna habitat assessment and targeted survey for *Litoria aurea* at the proposed P5 Mountain Cross Course (2005 for Pittendrigh Shinkfield & Bruce).
- Field Assistant**, Targeted survey for *Melaleuca biconvexa*, the Entrance Road upgrade (2005 for RTA Central Coast).
- Field Assistant**, Aquatic habitat assessment for the upgrade of Cowpasture Road (2005 for RTA).
- Field Assistant**, Aquatic habitat assessment for Windsor Rd pre clearance surveys (2005 for Maunsell Australia).
- Field Assistant**, Re-vegetation of Goaf Ejection Stack Site Rehabilitation Project (2005 for BHP Billiton).
- Field Assistant**, Sub-surface testing for proposed wind farm, Crookwell II (2005 for Gamsea Energy Australia).
- Field Assistant/Zoologist**, Assisted in terrestrial fauna monitoring to assess potential impacts of subsidence in Dendrobium Area 1 (2004 and 2005 for BHP Billiton).
- Field Assistant**, Set-up study sites and assisted with botanical surveys for monitoring the effects of subsidence (2004 for BHP Billiton).
- Field Assistant/Zoologist**, Assisted in terrestrial fauna surveys including targeted surveys for threatened species for F3 – Raymond Terrace Pacific Highway Upgrade (2004 for Maunsell Australia).
- Field Assistant/Botanist**, Conducted targeted surveys of *Melaleuca biconvexa* for Oxley Highway Bypass SIS (2004 for RTA Technical Services).
- Research Assistant**, Conducted background research of subsidence impacts literature (2004 for BHP Billiton).
- Field Assistant/Zoologist**, Conducted terrestrial fauna monitoring to assess the potential impacts of subsidence in Elouera Swamps (2004 for BHP Billiton).
- Field Assistant**, Translocation and radio-tracking surveys of the Middle Island Tusked Weta *Motuweta isolata* (2003 for Department of Conservation, NZ).
- Field Assistant**, Animal handling and welfare on Tiri Tiri Matangi Island Scientific Reserve (2003 for Department of Conservation, NZ).
- Database Co-ordinator**, Managed Access databases of target bird species (2003 for Landcare Research, NZ).
- Field Technician**, Conducted field surveys to map the abundance and distribution of native bird species (2003 for Landcare Research, NZ).
- Field Technician**, Assisted a Plant Ecologist/Botanist with PhD research studies on the reproductive strategies of native shrub species (2001 for Landcare Research, NZ).
- Laboratory Technician**, Conducted clover-nematode interaction field trials and clover root-weevil experiments (2000 and 2001 for AgResearch, NZ).
- Field Assistant**, Radio-tracking of Brown Kiwi *Apteryx australis mantelli* and kiwi predator control (1998 for Department of Conservation and Landcare Research, NZ).

Consultant Reports:

- Harrington, R., Smith, N., Charlton, J., Muir, G. and **Cartner, K.** 2006. Proposed F3 Freeway to Branxton Link - Updated Additional Flora and Fauna Assessment: Threatened Species Assessment for Proposed Design Changes (prepared for NSW Roads and Traffic Authority).
- Cartner, K. and Smith B. 2006. Flora and Fauna Assessment: Tower 62 Access Trail, Lane Cove National Park (prepared for EnergyAustralia).
- Cartner, K. and Smith, B. 2006. Tallawarra Power Station, Transmission Line Installation. (prepared for URS Pty. Ltd. on behalf of TRUenergy).
- Beitzel, M., Taylor Wood, E., Suansri, R. & Cartner, K. 2006. Macrophyte Survey of Penrith Lakes. Report for Penrith Lakes Development Corporation.
- Clarke, R., Harrington, R., Smith, N. & Cartner, K. 2006. Southern Exploration Drilling Area (Boyd Bay and Norman Creek) Flora and Fauna Baseline Survey. Report for Comalco Weipa.

- Smith, N., Harrington, R., Clarke, R. & Cartner, K. 2006. Northern Exploration Drilling Area (Musgrave) Flora and Fauna Baseline Survey. Report for Comalco Weipa.
- Harrington, R., Smith, N., Clarke, R., Beitzel, M. & Cartner, K. 2005. Northern Exploration Drilling Area (Palm Creek) Flora and Fauna Baseline Survey. Report for Comalco Weipa.