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Appendix A DETAIL OF ALL CONSTRAINTS AND MANAGEMENT MEASURES AND SURVEY EFFORT

North KP	South KP	Ref Code	Issue and management measure
222.5	222.8	C1	Coolibah Black Box Woodland EEC. No net loss of mature trees. Reinstate coarse woody debris.
222.5	224	C2	Potential Stripe-faced Dunnart habitat. High potential for Pale-headed Snake. Avoid removal of Hollow Bearing Trees (HBT). Reinstate woody debris, ecologist & herpetologist onsite.
225.2	226	C3	<i>Dichanthium</i> spp. Dominant grasslands of the Brigalow belt Bioregions, EPBC EEC. ROW rerouted to avoid
225.9	226.1	C4	High potential for Five-clawed worm Skink <i>A.mackayi</i> . Cracking black plains present. Reduce ROW to minimum feasible. Herpetologist onsite
227.7	228.2	N1	<i>Dichanthium</i> spp grassland - with low potential to conform to the EEC. In this area the construction period would be minimised and grass would be turfed to 100mm depth, stored and kept moist (Sods would not phase)
230.9	231.1	C5	High potential for Five-clawed worm Skink <i>A.mackayi</i> . Cracking black plains present. Reduce ROW to minimum feasible. Herpetologist onsite
233	235	C6	<i>Dichanthium</i> spp. Dominant grasslands of the Brigalow belt Bioregions, EPBC EEC. ROW rerouted to avoid. Potential Coolibah-Black Box EEC
235	235.2	C7	Hollow Bearing trees and Koala habitat. Turquoise Parrot recorded here. Avoid Hollow Bearing trees. Choose crossing point that minimises fragmentation of the movement corridor. Grass seed mix would include
236.2	236.4	C8	<i>Dichanthium</i> spp. Dominant grasslands of the Brigalow belt Bioregions, EPBC EEC. ROW rerouted to avoid
238.2	238.4	C9	<i>Dichanthium</i> spp. Dominant grasslands of the Brigalow belt Bioregions, EPBC EEC. ROW rerouted to avoid
238.4	240	N2	<i>Dichanthium</i> spp grassland - with low potential to conform to the EEC. In this area the construction period would be minimised and grass would be turfed to 100mm depth, stored and kept moist (Sods would not Potential Coolibah-Black Box EEC. Pied honeyeater recorded near here.
240.2	243.2	L1	No access. Originally identified as Coolibah - Black Box Woodland EEC
244.2	245.2	P1	Field work confirmed no longer a constraint
246.3	247.3	P2	Field work confirmed no longer a constraint
250.9	251.2	C10	Coolibah Black Box EEC (TSC Act). Avoid mature trees.
251.2	251.5	C11	Potential snail site. Mitigation to be determined following ID. ID confirmed the species was not a <i>Notopala sublineata</i> and likely to be <i>N. cf. suprafasciata</i> .
251.5	251.8	C12	Riparian vegetation
252.5	253	P3	Field work confirmed no longer a constraint
254	256	C13	Coolibah Black Box EEC (TSC Act). Rainbow Bee-eater recorded. Avoid mature trees.
256	256.8	P4	Field work confirmed no longer a constraint
261.8	262	P5	Field work confirmed no longer a constraint
262.6	262.7	C14	Riparian vegetation. Avoid mature trees. Reinstate coarse woody debris
264.8	265	P6	Field work confirmed no longer a constraint
266.7	268	P7	Field work confirmed no longer a constraint
269.8	270	P8	Field work confirmed no longer a constraint
272.8	273	P9	Field work confirmed no longer a constraint
276	276.5	N3	Desktop identified areas adjacent but not this area. Field work confirmed Myall woodland EEC. ROW realigned to avoid EEC.
283.8	286.9	P10	Field work confirmed no longer a constraint
287.9	288.7	C15	Fauna movement corridor. Avoid mature trees. Construct ROW through widest gap in vegetation.
289.2	290	C16	Fauna movement corridor. Potential Stripe faced dunnart habitat. Turquoise parrot & Rainbow Bee-eater recorded here. Healthy patch of vegetation. ROW realigned to avoid patch by continuing north-west up rejoin REV K line
297.8	298.8	P11	Field work confirmed no longer a constraint
302.7	303.1	N3	Grey-crowned Babblers observed foraging. ROW already avoids grey-crowned babbler vegetation
305.7	306	P12	Field work confirmed no longer a constraint
306.8	308.3	C17	Myall woodland EEC. ROW will not require clearing of native vegetation
313	314.9	P13	Field work confirmed no longer a constraint
317	318	C18	Coolibah Black Box EEC (TSC Act). Avoid mature trees.
319	324.8	P14	Field work confirmed no longer a constraint
328	329.8	L1a	No access
333	333.1	C19	High potential for Pale-headed snake, Masked Owl recorded. No net loss of mature trees. Reinstate coarse woody debris
333.8	334.8	L2	No access
337.8	337.9	L3	No access
339.6	340	C20	Wetland and Koala habitat. Magpie goose and masked owl recorded. ROW realigned to avoid the wetland. No mature trees will be cleared
356	357	C21	Coolibah Blackbox EEC. Grey crowned Babblers. ROW would be positioned to avoid mature trees, particularly River Red gums
357.8	358	C22	Continuous corridor for fauna movement with HBT. ROW would be aligned to avoid mature trees.
364.8	365.5	C23	Grey-crowned Babblers. Turquoise parrot recorded near here. ROW would avoid mature vegetation. Avoid Grey-crowned babbler breeding season
365	365.9	P16	Field work confirmed no longer a constraint
366.8	366.9	C24	HBT and Koala Habitat. ROW would avoid River Red Gums at Gurley Creek Crossing.
370.9	371.9	P17	Field work confirmed no longer a constraint
379.9	380.1	C25	Grey-crowned Babbler and nests recorded. Clearing would occur outside the Grey-crowned babbler breeding season of July-December. Where the ROW dissects the native riparian vegetation the ROW would avoid
380.9	381	C26	Grey-crowned Babbler and nests recorded. Clearing would occur outside the Grey-crowned babbler breeding season of July-December. Where the ROW dissects the native riparian vegetation the ROW would avoid
391.5	392	C27	Five clawed worm skink recorded. Reduce ROW width to minimum.
396.2	396.4	P18	Field work confirmed no longer a constraint
398.8	399	L4	No access
399.8	400	L5	No access
400.8	401	L6	No access
405.8	406	C28	Corridor for fauna movement. ROW would be aligned to avoid mature trees.
411.8	412.3	C29	Myall woodland EEC. ROW will not remove mature trees.
412.3	413.9	P19	Field work confirmed no longer a constraint
415	415.1	C30	Riparian vegetation.
423	424	L7	No Access
438	440	C31	Grey-crowned Babblers and juveniles recorded. Diamond Firetail recorded. ROW of way does not pass through vegetation.
454.5	455	C32	Koala, Grey-crowned Babblers, Speckled Warbler seen. Masked Owl in response to call playback. ROW to stay in power easement
460.8	462.2	P20	Field work confirmed no longer a constraint
462.2	462.3	C33	Fauna movement corridor. ROW would be aligned to avoid mature trees.
477	478	P21	Field work confirmed no longer a constraint
501.9	502.1	C34	Koala habitat, fauna movement corridor. ROW would be aligned to avoid all mature trees.
505.2	505.5	C35	Koala recorded here. ROW would be aligned to avoid all mature trees.
528.2	528.5	C36	Koalas recorded feeding in trees within pipeline corridor. Rainbow Bee-eater recorded. The ROW would be aligned to avoid all mature River Red Gum trees.
556.8	557	C37	Hollow Bearing trees and Koala habitat. Avoid Hollow Bearing trees. Choose crossing point that minimises fragmentation of the movement corridor. Minimise ROW
557.2	557.4	C38	Hollow Bearing trees and Koala habitat. Avoid Hollow Bearing trees. Choose crossing point that minimises fragmentation of the movement corridor. Minimise ROW
559.9	560	C39	Hollow Bearing trees and Koala habitat. Avoid Hollow Bearing trees. Choose crossing point that minimises fragmentation of the movement corridor. Minimise ROW
583	586	N5	White Box Yellow Box Blakeley's Red Gum Grassy Woodland and derived Grassland with exotic ground-cover (TSC Act). Avoid mature trees.
604	605.3	N6	White Box Yellow Box Blakeley's Red Gum Grassy Woodland and derived Grassland with exotic ground-cover (TSC Act). Avoid mature trees.
625.5	626.5	N7	Box gum woodland TSC and EPBC. Avoid mature trees - ROW only just touches on edge of this vegetation type.
639	642.8	N8	White Box Yellow Box Blakeley's Red Gum Grassy Woodland and derived Grassland with exotic ground-cover (TSC Act). Diamond Firetail and Brown treecreper. recorded. Avoid mature trees. Reinstate coarse
642.8	644	N9	Box gum woodland TSC and EPBC. To be determined. ROW will not disturb this EEC
664	665	C40	Grey crowned babblers nesting. Clearing would occur outside the Grey-crowned babbler breeding season of July-December. Where the ROW dissects the native vegetation the ROW would avoid removal of mat
665	666	P22	Field work confirmed no longer a constraint
666	667	L8	No access
673	674.5	L9	No access
692	693	L10	No access
719.5	720.5	C41	Very large spotted gums, hollows, rainforest gullies down slope of track. Habitat for arboreal mammals and hollow dependent birds. ROW aligned to avoid large mature vegetation
721.8	722.2	C42	Gully vegetation. HBT, arboreal fauna habitat etc. ROW realigned to avoid gully entirely
722.2	723	C43	Scattered remnant vegetation. The ROW would not remove any trees in this section.
761	769	P24	Speckled warbler and rufous fantail recorded here. Avoid mature vegetation.
790	791	N10	Lower Hunter Spotted Ironbark Forest EEC (TSC Act). The ROW would be through the existing gap in the mature trees and as such no native canopy vegetation would be removed
806	808	P25	Field work confirmed no longer a constraint
808	811	L11	No access
812	819	P26	Field work confirmed no longer a constraint
819.5	820	C44	Patches of Swamp Oak floodplain forest EEC. Koala records in area. Good bird and amphibian habitat. The ROW would remain as much as possible in the powerline easement to minimise vegetation clearing and would be completely avoided and the ROW would remain in the powerline easement.

North KP	South KP	Ref Code	Issue and management measure
820	821.3	C45	River flat Eucalypt forest on Coastal flood plain EEC (both sides of the electrical easement 820-821 and near the playing field at 821-821.3) and Swamp Oak Floodplain Forest EEC (patches 820-821.3) Swamp S Toamga Road). The ROW would be in the cleared areas to 821. From 821 to 822 the Hunter River would be under bored. The stand of Grevillea parviflora taken to ensure that the population is not accidentally harmed by parking of vehicles or storage
822	827	C46	Key population of <i>L. aurea</i> . Construction will occur in the existing disturbed area associated with the access track from KP 822.5 – 826.5. Construction should only occur in winter not to disrupt breeding season specialist onsite during all clearing, trenching, HDD and filling to manage construction team and species (including Chytrid controls). Coastal Saltmarsh
823	824	C47	Excellent diverse habitat for wetland birds including nationally and internationally habitat for listed migratory birds . Measures as for GGBF
824	825	C48	Good quality mangroves, saltmarsh (protected under Fisheries Act). Habitat connectivity. Migratory bird habitat . This creek flows through the Ramsar site. ROW would be within existing road and easement mangrove creek.
Lateral at Kyle Str Ruth		L12	Squirrel Glider records in the area. Good patch of woodland. Very high population of possums. Flowering Melaleucas provide foraging habitat for Grey Headed Flying-fox (EPBC). Some very large habitat trees.

Legend

- C Known constraint to be managed or avoided
- P Previously identified constraint that as a result of field work is no longer a constraint
- N New constraint as a result of alignment changes etc.
- L Limitation as a result of restricted access.

Appendix B CIRRUCULUM VITAE OF SENIOR FIELD STAFF



Jacqui Coughlan

BSc (hons). PhD.
Manager – Biodiversity



Jacqui's practical ecological skills in terrestrial and freshwater ecology have been developed over 20 years in several states. She has conducted and managed numerous fauna and flora surveys in New South Wales, ACT, Queensland and Western Australia and has a thorough working knowledge of State and Commonwealth legislation related to flora and fauna. She has a broad knowledge base of ecological issues and is able to provide clients with sound and practical advice regarding environmental legislation and assessment protocols. Jacqui provides both project management and mentoring advice for the environment team as well as personally contributing vital technical expertise to environment projects. Jacqui has recently joined **ngh**environmental after five years as Principal Ecologist at ERM where she worked closely on a number of Defence projects with Ruth Baker. Since 2006 Jacqui has been involved in the preparation of natural heritage management plans in New South Wales, Western Australia, and Queensland.

TERTIARY EDUCATION

- Bachelor of Science (Hons Freshwater Ecology) (James Cook University, 1989)
- PhD Bird Ecology (James Cook University, 2000)
- Masters Environmental Law (Sydney University - in progress)

PROFESSIONAL EXPERIENCE

2000 to Present

Natural Heritage Management Plans

2006 Garden Island Western Australia (Fleet Base West). Jacqui undertook field and desktop surveys of the flora and fauna of Garden Island for input to Defence Heritage Management Plan as required to fulfil Defence's obligations under the *EPBC Act 1999*. The site is listed on the Register of the National Estate and the Commonwealth Heritage Register.

2007 North Queensland Wet Tropics (Tully Training Area and Paluma). Jacqui conducted field surveys, reporting and liaison with Defence staff

2008 Anzac Rifle Range (Malabar, NSW) – peer review.

2008 Canungra Field Training Area (Qld) – peer review.

2008 Commonwealth Law Courts – peer review.

Audit of Green Offset Strategy for Coal & Allied Warkworth Coal Mine, Hunter Valley.

British Gas - proposed LNG facility at Gladstone (Qld). Input on terrestrial and marine ecological issues to Site Selection Study, Initial Advice Statement (IAS), EPBC Referrals and ongoing survey design and approvals process.

Fauna Literature Review for Coal & Allied Hunter Valley Operations. All reports and threatened species data reviewed and summarised to inform strategic landscape level rehabilitation planning. (*project director, technical review*)

Defence Grassland Management Strategies – Majura Training Area and Belconnen Naval Transmission Station (*project direction, survey design and peer review*).

Environmental Management Plans for Weeds, Threatened Species, Feral Animals and Vegetation for a 120 ha residential and commercial development site in Jervis Bay, including DECC and DEWHA peer review process and negotiations.

UTS Kuringai Redevelopment (Rezoning and Part 3a Concept Plan). Assessments, reporting, referral, panel for Community Reference Group, Preliminary Information to DEWHA on controlled action.

Pre-Clearing Surveys and Clearing Supervision including capture and relocation of fauna 120 ha

residential and commercial development site in Jervis Bay (*field work, liaison with contractors, reporting*).

Kangaroo Management Plans – Defence Establishment Orchard Hills and HMAS Creswell (*strategic advice, field work, review and client liaison*).

WWF Threatened Species Flagship Program. Strategic advice to WWF regarding priority species for conservation. Australia wide workshop on Quoll conservation to prioritise funding areas. Literature review and gaps analysis for all threatened Macropod species.

Caddens Release Area - Masterplanning and rezoning advice for residential release in western Sydney. Project direction and technical review of terrestrial and aquatic flora and fauna surveys and reporting. *Preparation of Conservation Management Strategy.*

Phytophthora surveys and management plans for various Defence sites including HMAS Penguin, RAAF Williamtown. *Strategic advice and technical review.*

Bird Surveys and Impact Assessment for proposed wind farm in Xilinhot, Inner Mongolia. Jacqui designed and conducted bird and habitat surveys according to AUSWEA standards and liaised with local experts. International client required assessment for financial investment decision.

Vincentia Species Impact Statement and EPBC Referral. For three years Jacqui has had the role of Project Director, as well as conducting specialist surveys and reporting for a proposed residential and commercial development on a 127 hectare site in Jervis Bay, NSW. Jacqui has also assisted Stockland Developments with stakeholder and agency consultations and negotiations throughout the life of the project and prepared a referral to Department of the Environment and Heritage under the *EPBC Act 1999*.

Threatened Species Monitoring Majura Training Area and Campbell Park Offices ACT. Jacqui was project managing a long term monitoring of the extent and condition of Natural Temperate Grasslands and threatened flora species. Results of annual monitoring will be used to guide management of the properties.

HMAS Penguin Marine Ecology. Jacqui project managed and peer reviewed marine surveys of the Naval Waters around HMAS Penguin, Sydney. The results of the baseline surveys will allow Defence to assess the impacts of their diver training activities on the marine environment, particularly in sensitive areas.

Bega Sewerage Scheme. Input to eight EIS's for upgrade of sewerage schemes at villages in the Bega region.

Gujarat. Fauna surveys for impact assessment of extension of underground mining activities in Illawarra.

Baseline fauna assessment for a 220 hectare site within the Holsworthy Military area. Fauna survey for all terrestrial vertebrate fauna groups. The project required close liaison with botanists at Wollongong University who were concurrently mapping vegetation of the area.

Towra Beach Renourishment EIS. Project management of aquatic ecology, terrestrial ecology and archaeology components of EIS. Wader bird surveys including endangered Little Tern. Preparation of EPBC Referral to Environment Australia. *Project Management, Survey and Review.*

Preparation of Referral to the Department of the Environment and Heritage under the Commonwealth EPBC Act 1999 for the reclamation and filling of Lake Burley Griffin as part of the Kingston Foreshore Redevelopment Project. This included literature review of previous studies and related statutory and planning information. Consideration was given to potential impacts on listed migratory bird species inhabiting the nearby Jerrabomberra wetlands.

EIS for proposed consolidation of Metalcorp facilities, Hexham. Flora and Fauna Assessment and review of previous EIS.

Provision of advice to Abigroup Leighton Joint Venture regarding fauna underpass and culvert design along the Western Sydney Orbital (M7).

External Peer Review of Species Impact Statement and Offset Strategy for threatened bird species to be impacted by proposed extension of Warkworth Coal Mine, Hunter Valley, NSW.

Review of REF's for Transgrid Central Region transmission line maintenance activities in Sydney Catchment Authority and NPWS land (*Project Management and Review*).

Preparation of consolidated report on rezoning of abandoned B2/B3 corridor lands, Turramurra, Sydney. Identification of constraints related to threatened flora and fauna species and endangered vegetation communities. Project Manager and Report Author.

Flora assessment for Cumberland Plain Woodland, Shale-Sandstone Transitional Forest and *Acacia pubescens* under the EPBC Act, 1999 for the proposed sewerage reticulation scheme, Oaks, Oakdale and Belimbla Park for Sydney Water (*Project Manager*).

An investigation of the movements of Koalas in relation to major roads in north-east New South Wales - Project Management, field work, client liaison, meetings, presentations, monitoring reports.

Investigation of the movements of vertebrate fauna in relation to the Pacific Highway and an assessment of the efficacy of road underpass structures for RTA - Project Management, client liaison, report writing.

Flora and fauna assessment of the proposed re-alignment and re-construction of 5 timber bridges on the Oxley Highway west of Wauchope Project Management, field work, report review.

Flora and fauna assessment of the proposed re-alignment and re-construction of 4 timber bridges on the Bruxner Highway, Tenterfield (*Project Manager*)

Biodiversity survey for the Mulgoa Nature Reserve in western Sydney for NPWS. Field work and reporting (*Project Manager*)

Preparation of bird species profiles for Sydney Olympic Park Authority for use on their web site.

Analysis of watercourse crossings along Western Sydney Orbital Route. Assessment of proposed mitigation measures.

Prior to 2000

Optic fibre cable – Exmouth Western Australia for Optus. Environmental Impact Assessment for installation of 60 km of optic fibre cable and installation of repeater tower in Cape Range National Park Exmouth, Western Australia. Assessment of regional conservation significance of vegetation communities along the route and the potential for rare plant species to occur in those communities.

Reviews of Environmental Factors Cooktown Developmental Road, Cape York Peninsula, including Hell's Gate, Trevethan Creek, Moorehead River Crossing and Annan River road for re-alignments, widening and installation of bridges.

Review of Environmental Factors for re-alignment of 10 km of range road, Byerstown Range, Peninsula Development Road, Cape York Peninsula.

Baseline Monitoring for upgrades and re-alignments along the Cooktown Development Road (Annan River section) including reptile and small mammal trapping, amphibian census, spotlighting for nocturnal fauna, bird census, vegetation assessments (riparian, mangrove and woodland habitats).

Review of Environmental Factors for Queensland Department of Main Roads – North West District for re-alignments and road sealing along a 31 km section of Herveys Range Developmental Road west of Townsville.

Review of Environmental Factors for Queensland Department of Main Roads – North West District for the installation of several overtaking lanes, floodways and bridges on the Barkly Highway between Cloncurry and Mt Isa and an intersection at the junction of Barkly Highway and Burke Developmental Road.

Review of Environmental Factors for Queensland Department of Main Roads – North West District for road upgrades and widening of 10 km section of Flinders highway between Hughenden and Richmond in western Queensland.

Review of Environmental Factors for Queensland Department of Main Roads – North West District for re-alignments and widening of 10 km of Kennedy Highway between Ravenshoe and Mt Garnet, North Queensland.

Review of Environmental Factors for Rex Range Road between Mt. Molloy and Mossman. Identification of sensitive issues, pertaining to the flora and fauna of the wet tropics World Heritage Area. Identification of constraints and mitigation procedures.

Environmental Impact Assessment for installation of 60 km of optic fibre cable, Herveys Range Developmental Rd, west of Townsville. Vegetation survey and identification of plant species or vegetation communities of conservation significance along the route. Assessment of potential for fauna of conservation significance to occur along the route and potential impacts. Description of level of weed infestation and vegetation intactness.

Environmental Impact Assessment for proposed location of a gas fired power station and evaporation ponds, Townsville. Fauna survey including small mammal trapping, spotlighting, bird census, pitfall trapping for reptiles, amphibians and small mammals. Survey of vegetation types, extent and conservation status. Assessment of level of disturbance and weed infestation. Identification of control measures for declared weeds. Targeted sampling and design of monitoring program for endangered Red Goshawk.

Environmental Impact Assessment – Ross River Sands, Townsville. Vegetation and weed assessment, mapping and description of marine plant communities and fauna habitat assessment. Assessment of regional conservation significance of vegetation communities on the site.

Environmental Impact Assessments for construction and operation of 120 km of 220 kV powerlines between Mt Isa and Gunpowder, far-western Queensland. Survey and description of vegetation communities and assessment of terrestrial flora and fauna, including the identification of rare, threatened or poorly known species and communities and the potential for impacts to occur.

Ergon Energy. Environmental Impact Assessment for installation of 24 km of 220 kV powerlines from Mica Creek power station (Mt Isa) to Hilton substation.

Ergon Energy. Environmental Impact Assessment for installation of 350 km of 220 kV powerlines from Hughenden to Winton and Richmond in western Queensland.

Environmental Impact Assessment for the construction of an all weather boat ramp and access channel at Molongle Creek, Upstart Bay (North Queensland). Work involved survey and identification of mangroves for assessment under Section 51 C of Fisheries Act, survey of intertidal invertebrates and waterbirds, sampling of seagrass beds and water quality monitoring.

Impact Assessment Study for 30 km Southern Corridor access to city of Cairns as part of an Integrated Land Use and Transport Study. Fauna sampling of habitats along the proposed route and assessment of connectivity and viability of urban vegetation remnants. Project Manager of Ecology component of multidisciplinary project.

Baseline fauna assessment on Keswick Island, North Queensland. Intensive survey of all habitats for birds, reptiles, mammals, and systematic searches of beaches for signs of turtle hatching activity.

Preliminary fauna survey of the Mount Isa region - Bird censusing, small mammal live trapping, reptile searches and trapping, vegetation descriptions and insect sampling (including sorting and identification of insects from samples).

PROFESSIONAL AFFILIATIONS

- Birds Australia (formerly RAOU) since 1991
- Ecological Society of Australia since 1993
- Environment Institute of Australia (EIANZ)
- Royal Zoological Society of New South Wales

PUBLICATIONS

Williams S.E., Vernes K. and Coughlan J. 1999. Vertebrate fauna of Cannabullen Plateau: a mid-altitude rainforest in the Australian wet tropics. *Memoirs of the Queensland Museum*. 43 (2): 849-858.

Coughlan J. and Pearson R. (2004). The bird communities of dry rainforest and surrounding woodlands in north Queensland. Pp 474-492 in Conservation of Australia's Forest Fauna (2nd edition) edited by Daniel Lunney. *Royal Zoological Society of NSW, Mosman, NSW, Australia*



Natascha Arens

B.App.Sc., M.B. & Env.Mgt.
Director – Sydney Office



Natascha has over 15 years professional experience in environmental management and impact assessment. She has worked in both the public and private sector in a number of roles, including senior management roles. She has developed flora and fauna management plans, weed management plans, erosion and sediment control plans, rehabilitation plans and environmental management plans for large civil projects. Environmental Impact Assessment has also played a key role in her career. Her work in this area has been across a diverse range of environments from dry arid areas to alpine environments and subtropical areas. The diversity of her experience coupled with her onsite and project management experience has equipped her with an excellent understanding of environmental issues, legislation and planning in regional and urban environments. Instigating improved environmental performance is something Natascha pursues with enthusiasm.

TERTIARY EDUCATION

Southern Cross University, Lismore

Bachelor of Applied Science (Conservation Technology and Management)

University of Newcastle

Masters of Business and Environmental Management

PROFESSIONAL EXPERIENCE

June 2006 to Present

nghenvironmental Manager (Director)

Key accountabilities in this position include

- Marketing the Company's services
- Management of the nghenvironmental Sydney Office
- Major Project management
- Maintenance and compliance with the company Quality & OHS&R System
- Review and monitor major projects
- Management of financial and quality performance of the Sydney Office

Key Projects

- Bullaburra East, Great Western Highway Upgrade Review of Environmental Factors (REF), Flora Fauna Assessment, Community Consultation and Environmental Management Plan (EMP)
- Queensland to Hunter Gas Pipeline Biodiversity Assessment
- Woomargama Bypass – Hume Highway – Preliminary Biodiversity Assessment
- Holbrook Bypass – Hume Highway – Preliminary Biodiversity Assessment
- Pacific Highway Upgrade - Bulahdelah Stage 4 EMP
- Ballina Bypass Pacific Highway Preliminary Works REF and EMP
- RTA Road Services Environmental Management System (EMS)
- Deniliquin Council EMS
- RTA Hunter Region Environmental Awareness Training Package
- Railcorp EMS - Waste and Resource Use and Environmental Management components
- Railcorp Government Energy Management Reporting
- Railcorp Waste Reduction and Purchasing Policy reporting and Plan
- Railcorp Greenhouse Challenge Plus Inventory
- RTA Environmental Management Guidelines for Design, Construct and Maintain Contracts
- Sydney Catchment Authority Minor Works REF
- Sydney Catchment Authority Upper Canal Maintenance REF
- Environmental Management System and Compliance Auditing

- April 2006 to June 2006** **RTA Environmental Management Systems Policy Officer**
Key accountabilities in this position include
- Manage, review and update the RTA's Environmental Management System (EMS).
 - Provide input into training programs and reporting
 - Undertake compliance reporting
 - Investigate opportunities and facilitate environmental performance improvement in RTA Operations
- January 2003 & June 2005 - March 2006** **RTA Manager Environmental Technology Branch**
Key accountabilities in this position include:
- Major Project management
 - Management of the three sections within the branch (up to 18 full time staff)
 - Facilitate improvement of environmental management within the RTA
 - Maintenance and compliance with the Branch Quality system (ISO 9000)
 - Reviewing and monitoring of major projects
 - Preparation of monthly financial performance reports
 - Attending senior management meetings
 - Marketing the branch's services
- Nov 2002 – Dec 2002** **RTA Environmental Officer – Environmental Projects Section**
Feb 2003 – June 2005
Key accountabilities in this position include:
- Project Management
 - Develop and deliver environmental training packages for RTA, Rail Infrastructure Corporation, Civil Construction Companies and local government
 - Environmental Management Systems (EMS) auditing
 - Preparation of Environmental Management Plans (EMP) including preparation of procedures, site specific inductions, environmental checklists and specialist management plans for erosion and sediment control, water quality, flora, fauna, waste, emergencies and incident response
 - Review of RTA environmental specifications and procedures
 - Site inspection and site specific onsite environmental induction
 - Ensure the delivery of projects within agreed financial, quality and time restraints
- Nov 2003 – Feb 2004** **RTA Biodiversity and Sustainability Policy Officer**
The RTA Biodiversity and Sustainability Unit reports directly to the Chief Executive.
Key responsibilities in this role included:
- Respond to ministerial enquiries
 - Preparation of media releases
 - Comment on state and federal legislation changes
 - Prepare RTA policy on biodiversity and sustainability
 - Prepare and implement of RTAs Sustainability Action Plan
 - Manage funding for Roadside Environment Committee (The REC is made up of 11 natural resource management groups)
 - Manage RTA funded biodiversity related research projects
 - Provide Corporate advice on biodiversity
- July – December 2003** **RTA Manager - Environmental Projects Section (secondment)**
Additional responsibilities to those detailed above include:
- Maintain registers of projects won, financial performance and provide reporting to the branch manger
 - Manage the section as a commercially operating consultancy
 - Marketing and promotion of the services the section to internal and external clients
 - Manage contract staff
- Aug 2002 – Nov 2002** **RTA Manager Environmental Assessments (secondment)**
Managing the Environmental Assessments Unit of Environmental Technology Branch
Key responsibilities in this position included:
- Manage the section as a commercially operating consultancy
 - Provide expert advice on environmental assessment, management and planning
 - Direct, reviewing and monitoring the production of EIA documents

- Interview and engage contract staff
- Staff induction, including induction to the quality system
- Contract management of staff members engaged through employment agencies
- Ensure the delivery of projects within agreed financial, quality and time restraints
- Maintain and develop client relations both within the RTA and with external clients such as Rail Infrastructure Corporation (RIC)
- Maintain registers of projects won, their financial performance and reporting on this to the branch manager
- Schedule, prepare and conduct section meetings
- Liaison with government authorities

Feb 2000 – August 2002

RTA Environmental Officer – Environmental Assessments

Preparation of Environmental Impact Assessment documents, for road works under Part IV and V of the *Environmental Planning and Assessment Act 1979*

Key accountabilities in this position include:

- Project Management
- Preparation of Environmental Impact Assessments including Review of Environmental Factors and Project Environmental Management Plans
- Preparation of Representation Reports
- Preparation of proposals
- Preparation of briefing document
- Database Management
- Engagement and management of contractors
- Environmental advice to clients

1997 – 1998

Environmental Consultant

- Organisation and completion of species impact statements, which involves the design and implementation of systematic fauna and flora survey
- Co-production of environmental assessment documents in areas where development may impact on the natural environment

1997 – 1998

NSW NPWS Eden District Technical Officer

- Update Eden District Incident Action Plan; a document containing all relevant Information required for responses to emergency situations such as fire, oiled fauna rescue and marine mammal rescue
- Provide technical and professional advice to 33 landholders in preparing a Plan of Management for a Voluntary Conservation Agreement (VCA).

1993 – 1995

NSW NPWS Eden District Technical Officer – Threatened Species Unit

Key accountabilities in this position include:

- Implement and maintain fauna databases, utilising the NPWS GIS
- Process data from field surveys, targeting the long-footed potoroo, smoky mouse and other endangered and locally significant fauna
- Liaison and negotiation with NSW State Forest employees regarding data collection and exchange
- Manipulation of the GIS in order to provide information for land management, primarily State Forest compartment licensing, on a regional and district level
- Small mammal trapping – remote area survey
- Qualitative Amphibian survey
- Identification of plant species to at least genus level
- Endangered mammal hair-tube survey, involving map reading and compass orientation skills

1994 – 1995

NPWS Eden District Discovery Ranger

- Accompany campers and other interested individuals on fauna spotlighting expeditions and guided, interpretive bush walks
- Provide background information on nocturnal arboreal mammals and birds

1993 - 1995

nghenvironmental Environmental Consultant

- Co-production of environmental assessment documents in areas where development may impact on the natural environment

**ADDITIONAL
QUALIFICATIONS AND
SKILLS**

- RABQSA Certified Environmental Management Systems Auditor (ISO 14001)
- Certified Environmental Practitioner (EIANZ)
- EIANZ Member
- Certificate II in Bush Regeneration
- Senior First Aid Certificate
- Certificate IV in Assessment and Workplace Training

REFEREES

Sally Durham
RTA Road and Fleet Services
Client Liaison & Environmental Manager
Gate 2 422 West Botany Street
Rockdale NSW 2216
Phone: 02 95987721
sally_durham@rta.nsw.gov.au

Dave Corry
Senior Projects Manager Network
Development
260 Elizabeth Street
Surrey Hills NSW 2010
Phone: 02 9218 6257
David_corry@rta.nsw.gov.au



Steven Sass

B.App.Sc., (Env.Sci)(Hons)



Professional Affiliations & Memberships

- Adjunct Associate of the Ecology and Biodiversity Group of the Institute for Land, Water and Society at Charles Sturt University. This research group comprises nearly 250 environmental, social and economic scientists.
- Australian Society of Herpetologists
- Ecological Consultants Association of NSW
- Royal Zoological Society of NSW.
- Ecological Society of Australia

Current Employment

Senior Ecologist (Senior Project Officer)

nghenvironmental.

Steven joined **ngh**environmental in August 2006 with expertise in environmental consulting and biodiversity assessment. In the four years prior, he played a key role at Charles Sturt University, undertaking flora and fauna assessments for the Johnstone Centre (Environmental Consulting) and as a research officer within the biodiversity research and education team. As senior ecologist, Steven provides technical advice and peer-review to the **ngh**environmental ecology team.

Steven is a highly experienced ecologist having undertaken more than 400 terrestrial and aquatic biodiversity surveys across eastern and central Australia since 1990. This expertise extends to a wide variety of projects, from single house lots to multi-catchment and landscape scale biodiversity surveys. Steven is currently managing the biodiversity component of several major infrastructure projects such as the Silverton Windfarm proposal in western NSW and 350kms of transmission line duplication. He is also an integral part of the biodiversity team for the Queensland Hunter Gas Pipeline, a 650km project connecting Newcastle to gas infrastructure in Queensland. Steven also has expertise in developing biodiversity strategies with the aim of seeking to improve habitat and movement corridors for threatened species in urban and residential areas.

Steven is also a highly experienced herpetologist and provides specialty advice, research and assessment on frog and reptile fauna and their habitats across NSW to a variety of projects and clients. Steven recently completed a 12 month study of the Rosenberg's Goanna in the Shoalhaven local government area. With support from Shoalhaven City Council and Southern Rivers CMA, the project improved the ecological knowledge of this threatened species in the region and increased community awareness through education. At present, Steven is reviewing several poorly studied threatened reptile species to seek improvements in knowledge of their ecological requirements

Steven is also actively involved with environmental community awareness and education. Past projects include gaining successful funding for woodland rehabilitation and habitat restoration at a local public school and facilitating a number of community field days on the dangers and myths of reptiles. Recently, in collaboration with a local community network on the NSW South Coast, Steven established an artificial microhabitat demonstration site to highlight the role this can play in ecosystem restoration.

He is an Adjunct Associate of the ecology and biodiversity group within the Institute for Land, Water and Society (ILWS), a leading research group at Charles Sturt University, Australia's largest regional university. Steven, and in collaboration with other researchers, has published, submitted or is currently preparing a number of scientific journal manuscripts, which provide a significant contribution to the ecological knowledge of reptiles and frogs. A poorly studied fauna group, these papers aim to provide natural resource managers with updated inventories and species distribution and ecology which will be an invaluable tool in developing strategies for their future management.

Some of Stevens other professional memberships include the Ecological Consultants Association of NSW, the Australian Society of Herpetologists and the Ecological Society of Australia.

Recent Appointments

Technical Officer (Ecology & Environmental Consulting) February 2003 – August 2006

Charles Sturt University, Wagga Wagga.

Duties included, but not limited to:

- Undertake ecological surveys in a variety of aquatic and terrestrial ecosystems across New South Wales, ACT and Victoria for environmental assessment and research.
- Identifying terrestrial and aquatic fauna and flora for environmental assessment and research.
- Demonstration and technical support to the undergraduate and post graduate teaching program including River and Floodplain Ecology, River Protection and Restoration, Restoration Ecology, Aquatic Biology, Fluvial Geomorphology, Quaternary Geomorphology, Concepts of Ecology and Animal Systematics.
- Utilise legislation and regulation to promote sustainable NRM planning with particular focus on biodiversity conservation in terrestrial and aquatic ecosystems.
- Production of high quality technical and environmental assessment reports.
- Management of remote teaching and research program in regards to technical support, risk assessment and OH&S.
- Provide training, maintenance, calibration and undertake assessment on staff and students in the use of specialist equipment such as Flow meters, Secchi disks and hydrolabs.
- Manage research projects and provide technical support to researchers including honours, PhD and Masters students.
- Source funding from internal and external sources through grant applications and collaborations with other agencies.
- Resource management of research and consulting projects including provide quotations to potential clients.
- Liaison with sub contractors when required.

Awards and Grants

2002

- 'Establish population status of Herpetofauna of selected remnant pockets in Murrumbidgee'. Natural Heritage Trust, \$13,660.

2003

- 'Establish population status of herpetofauna of selected remnant pockets on/near the Murrumbidgee'. Natural Heritage Trust. \$20,870.

2004

- 'An evaluation of post-fire reptile communities in the matakana mallee'. The Australian Museum. \$880.
- 'An evaluation of post-fire reptile communities in the matakana mallee'. Charles Sturt University Small grant. \$3500.

2005

- 'Of lizards and logs – Determinants of reptile diversity in a fragmented landscape'. Ethel Mary Read research grant. Royal Zoological Society of Australia. \$750.
- ARC Linkage development grant. Charles Sturt University. \$4000.

2006

- Vice-chancellors Award for Excellence (General Staff) 2006 for exemplary dedication and commitment to the university. Charles Sturt University. \$500.
- CSU Institute for Land, Water and Society Travel Grant. Ecology and Biodiversity Group. \$1000.

2007

- 'Rocks and Rosenberg's: increasing ecological knowledge and community awareness of the threatened Rosenberg's Monitor'. Southern Rivers Catchment Management Authority. \$31,342.

Other Relevant Experience

Founding member of Riverina Frog & Reptile Society Inc. February 1999 – September 2004.

This organisation was formed in 1999, catering to needs of amateur and professional herpetologists. Steven served on the committee in positions ranging from President, Secretary and Field Trip Coordinator over a period of five years.

Environmental consultant - ABC Radio Riverina. December 1998 – present.

As a regular guest on their popular morning show with Anne Delaney, Steven aim is to make the public more aware of the environmental science discipline through awareness and understanding.

Course facilitator – Riverina Community College, Wagga Wagga. 2001

A course written and facilitated by Steven, on the keeping and breeding of reptiles and frogs in captivity, was undertaken.

Ecological Research and Consulting

2008

- Species Impact Statement, Surf Beach Bulky Goods Retail Development, Walker Corporation Pty Ltd.
- Air Photo Interpretation and Vegetation Mapping, Stage 2 & 3, Silverton Wind Farm, Epuron Pty. Ltd.
- Senior Fauna Consultant– 650km Natural Gas Pipeline, Newcastle to QLD Border, Manidis Roberts.
- Proposed rural-residential subdivision, Roseby Drive, Rosedale, Planning Initiatives
- Bird surveys, Bega River and Wetlands Landcare Group Inc.
- Target surveys – Rosenberg’s Goanna, Southern Rivers Catchment Management Authority
- Yellow-bellied Glider surveys, Lake Conjola, Anna Pender Architects
- Proposed Seniors Living Community, George Bass Drive, Rosedale
- Southern Brown Bandicoot – Target surveys and Assessment, Proposed Subdivision, Grandfathers Gully Road, Tollgates Pty Ltd
- Specialist Reptile Advice – Stage 2 & 3 of Proposed 600 turbine Wind Farm, Silverton Wind Farm Developments
- EEC Verification and Habitat Assessment – Proposed subdivision, South Head Rd, Moruya, NSW.
- Flora and Fauna Impact Assessment, Proposed fibre optic cabling, Captains Flat, NSW; Telstra.
- Analysis of Fauna Movement Corridors, Sunshine Bay, NSW, Planning Initiatives.
- Flora and Fauna Impact Assessment, proposed 100 lot residential subdivision, Moruya, NSW, Purdon and Associates
- Increasing ecological knowledge and community awareness of the threatened Rosenberg’s goanna in the Shoalhaven, Southern Rivers Catchment Management Authority
- Biodiversity Assessment, proposed Stage 1b and 1c, Silverton Wind Farm, Silverton Wind Farm Developments Pty Ltd
- Biodiversity Values Study, 350kms transmission line duplication between Broken Hill and Mildura, western NSW, Silverton Wind Farm Developments Pty Ltd
- Specialist Reptile and Frog surveys over 650kms, Queensland Hunter Gas Pipeline, Manidis Roberts
- *Apsasia parapulchella* and *Delma impar* surveys, proposed realignment of Barton Highway, Murrumbateman, Roads and Traffic Authority
- *Ctenophorus decessi* surveys, proposed Stage 1b and 1c, Silverton Wind Farm, Silverton Wind Farm Developments Pty Ltd

2007

- Flora and Fauna Impact Assessment, Proposed dwelling and associated works, Yaouk Valley, Adaminaby;
- Flora and Fauna Impact Assessment, Proposed Subdivision, Hawdons Rd, Moruya;
- Preliminary Ecological Investigation, Proposed Woomargama By-pass, Hume Highway, Roads and Traffic Authority;
- Aquatic Ecological Assessment, Proposed surface drainage line into Tuppal Creek, near Deniliquin, Murray Irrigation Ltd and Habitat Planning;
- Flora and Fauna surveys for a Review of Environmental Factors, Proposed roadworks, Moss Vale Road, Kangaroo Valley;
- Biodiversity strategy including targeted surveys and habitat assessment for five threatened herpetofauna species, Proposed 100 turbine windfarm in central NSW; Epuron Energy;
- Construction Environmental Management Plan, Southern Sydney Freightline, Parsons Brinkerhoff;
- Biodiversity assessment for proposed 12 lot rural residential subdivision on coastal plain, Grandfathers Gully Road, Lilli Pilli, Tollgates Pty Ltd;
- Fauna surveys and Fauna habitat evaluation for Biocertification of LEP, Bega Valley Shire Council;
- Numerous Threatened Species Assessments for Shoalhaven City Council;
- Biodiversity assessment for proposed subdivision in coastal zone, Bingi, Bullock and Walters Surveyors;
- Flora and Fauna Impact assessment for proposed Water Treatment Plant in Mogo State Forest, Department of Commerce and Eurobodalla Shire Council;
- Target White-footed dunnart surveys, Eurobodalla Shire Council;
- Flora and Fauna surveys for proposed telecommunications tower, Nelligen; Telstra
- Mapping of noxious weeds and hollow bearing trees at Coolac by-pass, Hume Highway, Coolac, AbiGroup;
- Mapping of endangered ecological community, proposed subdivision, Bullock & Walters;
- Biodiversity Strategy and Impact Assessment for proposed 22 lot rural residential subdivision, Glenella Road, in the Eurobodalla Local Government Area; Planning Initiatives;
- Biodiversity Strategy and Impact Assessment for proposed 200 lot residential subdivision, Sunshine Bay, in the Eurobodalla Local Government Area; Planning Initiatives;
- Biodiversity Strategy and Impact Assessment for proposed 150 lot residential subdivision, Long Beach, in the Eurobodalla Local Government Area; Planning Initiatives;
- Biodiversity Strategy and Impact Assessment for proposed 150 lot residential subdivision, Rosedale in the Eurobodalla Local Government Area; Planning Initiatives;
- Visual Impact Assessment for proposed telecommunications tower in landscape conservation area, Tilba Tilba; United Group Services;
- Evaluation of movement corridor for green and golden bell frog at Sussex Inlet key population, Shoalhaven City Council;
- Flora and Fauna Impact Assessment for proposed underground cabling in Southern Tablelands, Telstra Corporation;
- Flora and Fauna Impact Assessment for proposed sewerage upgrade scheme for two southern villages adjacent to coastal lake in Eurobodalla Shire Council area, Department of Commerce;
- Flora and Fauna Impact Assessment for proposed subdivision in coastal zone, Meringo, Peter Spurway & Associates;
- Flora and Fauna Impact Assessment for proposed subdivision, Lakewood Drive, Merimbula; Glendinning Minto Planners;
- Target southern brown bandicoot surveys, proposed subdivision, Lakewood Drive, Merimbula, Glendinning Minto Planners;
- Biodiversity Assessment, Proposed 500 turbine windfarm, Barrier Ranges, Broken Hill, Epuron Pty.Ltd;
- Target surveys for threatened herpetofauna (Tawny Rock Dragon, Slender Mallee Blue tongue and Marble headed snake lizard) across proposed development and surrounding areas, near Broken Hill, Epuron Pty Ltd

- Pink-tailed worm lizard surveys for Telstra Corporation at Joint Operations Command Headquarters, Bungendore, NSW.
- Target surveys for threatened herpetofauna (Pink-tailed worm lizard, Striped legless lizard and Grassland Earless dragon). proposed wind farm, Gullen Range, near Goulburn. Epuron Pty Ltd
- Flora and Fauna Assessment, proposed dwelling in EEC, Lake Conjola, NSW. Anna Pender Architects
- Flora and Fauna Impact Assessment, Proposed Aged Care Facility, Surfside, NSW. Australian Christian Property Services.
- Request for Director Generals Requirements for Species Impact Statement, proposed Bulky Goods Retail Development, Batemans Bay, NSW, Walker Corporation Pty. Ltd
- Community Workshop, Rosenbergs Goanna, Nowra. Southern Rivers Catchment Management Authority and Shoalhaven City Council
- Baseline Frog Surveys, Spenco Lagoon and Bega River Anabranch, Bega River and Wetlands Landcare Group Inc.

2006

- Annual Environment Report, Riverina Wool Combing.
- Terrestrial mammal surveys of Booderee National Park, Department of Environment and Heritage;
- Aquatic Ecological Assessment for the proposed Green Swamp/Wunnumurra Stormwater Escape Channel, Habitat Planning;
- Assessment of significance for proposed exploration decline at the Hera Deposit, via Nymagee NSW;
- Threatened Species Assessment for proposed quarry expansion, E.A. Systems;
- Linear Reserves Vegetation Assessment Morven-Gerogery, Cummings and Brittas Reserve Roads, Greater Hume Shire;
- Flora and Fauna assessment for proposed sand extraction, Cobar, NSW. Endeavor Mines;
- Threatened Species Assessment, Re-alignment of Hume Highway south of Tarcutta, NSW, Roads and Traffic Authority;
- Assessment of Significance for Threatened Species, Proposed South Tatton subdivision, Wagga Wagga, Esler & Associates.
- Microbat survey of derelict mine shafts in western NSW, Department of Mineral Resources, NSW.
- Pre-clearance survey of remnant vegetation along main road 82, Roads and Traffic Authority;
- Threatened Species Assessment, Shoulder Widening of Mid Western Highway, Narriah Mountains, Roads and Traffic Authority;
- Yellow-bellied Glider study, Broulee, Planning Initiatives;
- Threatened Species Assessment, Hume Highway Duplication Project, (Northern Section), Sinclair Knight Merz;
- Herpetofauna Assessment, Hume Highway Duplication Project, (Northern Section), Sinclair Knight Merz;
- Flora and Fauna Impact Assessment, Bulky Goods Retail Development, Eurobodalla Shire Council;
- Ecological Investigation, Proposed Woomargama By-pass, Hume Highway, Roads and Traffic Authority;
- Flora and Fauna Impact Assessment, Proposed Underground Cabling, Terragong Swamp, Kiama, Telstra;
- Flora and Fauna Impact Assessment, Proposed subdivision, Nutley's Creek Rd, Bermagui, Keeplan;
- Biodiversity Strategy, Proposed 80-lot subdivision, Moruya, NSW South Coast, RJR Developments;
- GIS Mapping and Fauna surveying for Species Impact Statement, Proposed Water Storage, Eurobodalla Shire Council;
- Review of Environmental Factors, Proposed Overtaking Lanes, Princes Highway, near Tilba, Roads and Traffic Authority.

2005

- Flora and Fauna Assessment for proposed exploratory mining site (Hera) at Nymagee, Triako Resources Limited;
- Annual Environmental Report, Riverina Wool Combing;

- Environmental Monitoring of the Mitta Mitta River associated with the planned major transfer of water resources from Dartmouth Reservoir to Hume Reservoir 2004/2005, Murray Darling Basin Commission;
- Assessment of marine invertebrate processes on rock platforms, Murrays Beach and Moona Moona creek, Department of Environment & Heritage;
- Grazing pressure by introduced and native herbivores in remnant woodland at Yathong Nature Reserve, western NSW, Department of Environment & Conservation;
- Inventory of items of heritage significance, Yathong and Nombinnie Nature Reserves, western NSW, Department of Environment & Conservation;
- Invertebrate biodiversity of the Murrumbidgee Irrigation Area, Murrumbidgee Irrigation P/L;
- Frog and Reptile surveys of Booderee National Park, Department of Environment & Heritage.

2004

- Natural Environment Assessment, St Michaels School, Wagga Wagga. Resolve Planning;
- Bidgee Banks Monitoring and Evaluation project, DIPNR;
- Stage 2 Progress Report, Threatened Species Monitoring at the DEFCOMMSTA Morundah, Department of Defence;
- Flora and Fauna assessment, Lots 1 to 6, Rankins Springs Rd, Griffith City Council;
- Eight part test for proposed Gregadoo Road subdivision, CPC Pertile;
- Ecological Assessment, Gelston Park Road Subdivision; MJM Solutions;
- Assessment of frog and reptile diversity in the Murrumbidgee Irrigation Area, Murrumbidgee Irrigation Pty.Ltd;
- Assessment of marine invertebrate processes on rock platforms, Murrays Beach and Moona Moona creek, Department of Environment & Heritage;
- Vegetation survey of Mallee and Bimble-box woodlands, Yathong Nature Reserve, NSW National Parks and Wildlife Service;
- An evaluation of post-fire reptile populations in the Matakana Mallee region, NSW National Parks and Wildlife Service, Australian Museum and Charles Sturt University;
- Distribution and Abundance of Fish in the Lake Cargelligo system, New South Wales, Charles Sturt University and NSW Fisheries;
- Distribution and Abundance of Fish in the ephemeral wetlands of the Murrumbidgee River. Charles Sturt University and NSW Fisheries;
- Frog and Reptile surveys of Booderee National Park, Department of Environment & Heritage.

2003

- Assessment of frog and reptile diversity in the Murrumbidgee Irrigation Area, Murrumbidgee Irrigation Pty.Ltd;
- Plains Wanderer Grid Surveys, Morundah, NSW, Department of Defence;
- Flora surveys, DEFCOMMSTA, Morundah, Department of Defence;
- Local Environment Study, Googong Area, Queanbeyan, Willana Associates;
- Eight Part Test, Proposed subdivision, Hilltop Estate, Wagga Wagga, Esler & Associates;
- Assessment of marine invertebrate processes on rock platforms, Murrays Beach and Moona Moona creek, Department of Environment & Heritage;
- Frog and Reptile surveys of Booderee National Park, Department of Environment & Heritage;
- Developing indicators of river health: responses of biofilms and their consumers to river flow management. Murray-Darling Basin Commission;

- Surveys of the reptiles of the Wagga Wagga Local Government Area;
- Reptile inventory of Nombinnie Nature Reserve, western NSW, NSW National Parks & Wildlife Service;
- Population status of herpetofauna of selected remnants in the Murrumbidgee, Natural Heritage Trust.

2002

- Habitat assessment for frog diversity, Wagga Wagga City Council;
- Herpetofauna assessment of the Kyeamba Valley, Kyeamba Valley Landcare;
- Assessment of herpetofauna in restored wetlands, Junee Urban Landcare Group;
- Herpetofauna assessment of newly formed Perry National Park, western NSW, The Australian Museum;
- Mammal inventory of newly formed Livingstone National Park. NSW National Parks & Wildlife Service;
- Conservation biology of the Southern Bell Frog, *Litoria reniformis*, Murray Darling Basin Commission and Charles Sturt University;
- Inventory of the reptiles of the Wagga Wagga Local Government Area;
- Population status of herpetofauna of selected remnants in the Murrumbidgee, Natural Heritage Trust.

Peer-reviewed scientific journal publications

Sass, S (in prep) Pitfall trapping or Hand Searching to determine reptile species richness: Implications for future fauna assessments. *Australian Zoologist*.

Sass, S. & Swan, G. (submitted) The herpetofauna of the bumble box-pine woodland remnants of the Cobar Peneplain, western NSW. *Herpetofauna*.

Sass, S., Watson, D.M. & Wilson, A.M. (in prep) The role of fragments in catchment-level conservation of reptile communities in an agricultural landscape. *Ecological Management & Restoration*.

Sass, S. (accepted) A case of predation by an adult Red-bellied Black Snake (*Pseudechis porphyriacus*) on an adult Eastern Brown Snake (*Pseudonaja textilis*). *Herpetofauna*.

Sass, S., Watson, D.M. & Wilson, A.M (2008) The reptile fauna of the Upper Billabong Creek catchment area, Murray Region, southern New South Wales: their distribution and future management. *Herpetofauna* 38 (2)

Sass, S., Watson, D.M. & Herring, M (2007) A range extension for the Blotched Blue tongue lizard (*Tiliqua nigrolutea*) and implications for their future survival. *Herpetofauna* 37 (2): 21-25.

Sass, S. & Wilson, A. (2006) Effects of fire on lizard communities in the mallee shrublands of western NSW. *Herpetofauna* 36 (2): 106-111.

Sass, S. (2006) The reptile fauna of Nombinnie Nature Reserve and State Conservation Area, western NSW. *Australian Zoologist* 33 (4): 511-518.

Wassens, S., **Sass, S.**, & Swan, G (2005) Reptile communities in vegetation remnants of the Murrumbidgee Irrigation Area, New South Wales. *Herpetofauna*. (35) 2.

Sass, S., Swan, G., Wassens, S., Thompson, L (2005) A range extension for the Spinifex snake-lizard (PYGOPODIDAE): A new record for the Murrumbidgee Irrigation Area. *Herpetofauna* (35) 1.

Sass, S. (2003) Observations of diurnal exposure in geckos. *Herpetofauna* (33) 2.

Sass, S. (2003) A survey of the reptiles of Wagga Wagga. *Herpetofauna* (33) 1.

Presentations

Sass, S (2008) Managing the threatened Rosenbergs Goanna around the roads of the Shoalhaven LGA. Shoalhaven City Council

Sass, S (2007) Rocks and Rosenbergs; increasing ecological knowledge and raising community awareness of the threatened Rosenbergs Goanna. Public Workshop held at Shoalhaven City Council training rooms, 19 December 2007.

Sass, S (2007) Arid Ecology: An introduction to flora and fauna of western NSW. *nghenvironmental* September 2007

Sass, S (2007) Biodiversity of the Kalaru Area. Far South Coast Conservation Management Network. November 2007.

Sass, S. (2006) Habitat preferences and distribution of reptile fauna in Nombinnie Nature Reserve and State Conservation Area, western NSW. *Australian Society of Herpetologists Conference*.

Sass, S. (2005) Remnants and Reptiles: Can we make a difference. *5th Annual TechNet Conference*.

Sass, S. (2005). Establishment of a remote teaching and research facility in western New South Wales. *5th Annual TechNet Conference*.

Sass, S. (2005) The short term effects of large scale fires on reptile communities in the mallee shrublands of western New South Wales. *Riverina Frog and Reptile Society Inc forum*.

Sass, S. (2005) Of lizards and logs – Determinants of reptile diversity in a fragmented landscape. *Charles Sturt University School of Environmental and Information Sciences*.

Sass, S., Wassens, S., Swan, G (2005) Managing vegetation remnants for reptile diversity. *Biodiversity in Modified Landscapes 2nd Annual Forum. Griffith*.

Wassens, S., Sass, S., Swan, G (2005) Frog diversity in the Murrumbidgee Irrigation Area. *Biodiversity in Modified Landscapes 2nd Annual Forum. Griffith*.

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Contactable referees

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EMPLOYMENT HISTORY

- 2005-present** **Senior Botanist (Special Projects)**
Australian Museum Business Services (casual,
occasional position)
- 2005-2007** **Senior Biodiversity Officer**
Coffs Harbour City Council
- Natural Resources Management Officer**
Coffs Harbour City Council
- 1990-2000** **Principal, Gary Leonard and Associates**
Botanical and Horticultural Consultants
- 2001-2004** **Teacher of Horticulture**, North Coast
Institute of TAFE, Coffs Harbour (part time
position)
- 2002-2004** **Research Assistant**, School of Rural Medicine,
UNSW, Coffs Harbour Education Campus
(part-time position)
- 1990-1994** **Botanist**, Quality Environmental Management
Wollongong
- 1994-2004** **Senior Botanist**, Gunninah Environmental
Consultants (part-time position) Sydney
- 1995-1996** **Curator**, Janet Cosh Herbarium, University of
Wollongong (part-time position)
- 1979-1989** **Teacher of Horticulture**, TAFE: Ryde and
Wollongong campuses

- 1977 – 1979** **Landscape Supervisor**, Ministry of Works,
Dunedin, NZ
- 1973 – 1977** **Agriculture Officer (Crops)** – Niue (FAO/UNDP
secondment)
Research Assistant – UNDP/FAO Pacific Islands
Biodiversity Surveys
- 1970 – 1973** **Assistant Superintendent of Government
Grounds** – MWD, Wellington, NZ
- 1965 – 1970** **Trainee Gardener**, Wollongong City Council
-

BOOKS PUBLISHED

Eucalypts of the Sydney Region: a Bushwalker's Guide, 2nd Edition NSW
University Press, Sydney, Leonard, G. (2007)

Eucalypts a Bushwalker's Guide NSW University Press, Kensington,
Leonard, G. (1993)

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Land Acquisition for National Parks, Leonard, G. in R. Crocombe (Ed.)
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PAMPHLETS PUBLISHED

- Eucalypt Walk, University of Wollongong, 1998
 - Rainforest Track, Bulli State Recreation Area for the Bulli Pass
Scenic Reserve Trust 1999
 - Woodward Walking Track, Bulli State Recreation Area for the
Bulli Pass Scenic Reserve Trust 1998
 - Cringila Rainforest, Cringila Community Co-op, 1987
-

ACADEMIC RECORD

Current	Completing thesis through SCU, Lismore
1996-1997	MSc (Hons) Biology – preliminary; University of Wollongong
2002	Certificate IV, Workplace Training and Assessment, North Coast Institute of TAFE
1980-1981	Dip Teaching, Sydney CAE
1967-1969	Horticulture Certificate, Ryde TAFE
1966	Greenkeeping Certificate, Wollongong TAFE

PROFESSIONAL MEMBERSHIP

- National Australian Association of Arborists
 - Australian Coast and Wetlands Society
 - Australian Network for Plant Conservation
-

REFEREES

Peter Richards, Senior Environmental Scientist; Eco Logical Australia, Coffs Harbour: Ph. 6651 5484

Clive Treadwell, Manager, Land Use Planning, Coffs Harbour City Council: Ph. 66484650

Appendix C FAUNA SPECIES LISTS

		Recorded or Potential	EPBC	TSC	KP	X	Y
REPTILES							
Five-toed Worm-skink	<i>Anomalopus mackayii</i>	R	V	E	391.8	773573	6685389
AMPHIBIANS							
Green & Golden Bell Frog	<i>Litoria aurea</i>	R	V	E	825.1	380381	6363402
		R	V	E	825.7	380760	6363183
		R	V	E	825.9	380966	6363064
BIRDS							
Black Swan	<i>Cygnus atratus</i>	R	M				
Australian Wood Duck	<i>Chenotta jubata</i>	R	M				
Grey Teal	<i>Anas gracilis</i>	R	M				
Chestnut Teal	<i>Anas castanea</i>	R	M				
Hardhead	<i>Aythya australis</i>	R	M				
Pacific Black Duck	<i>Anas superciliosa</i>	R	M				
Mallard	<i>Anas platyrhynchos</i>	R	M				
Australian Shelduck	<i>Tadorna tadornoides</i>	R	M				
Glossy Ibis	<i>Plegadis falcinellus</i>	R	M				
Black Kite	<i>Milvus migrans</i>	R	M				
Whistling Kite	<i>Haliastur sphenurus</i>	R	M				
Wedge-tailed Eagle	<i>Aquila audax</i>	R	M				
White-bellied Sea-Eagle	<i>Haliaeetus leucogaster</i>	R	M				
Brahminy Kite	<i>Haliastur indus</i>	R	M				
Black-shouldered Kite	<i>Elanus axillaris</i>	R	M				
Brown Goshawk	<i>Accipiter fasciatus</i>	R	M				
Nankeen Kestrel	<i>Falco cenchroides</i>	R	M				
Australian Hobby	<i>Falco longipennis</i>	R	M				
Peregrine Falcon	<i>Falco peregrinus</i>	R	M				
Brown Falcon	<i>Falco subniger</i>	R	M				

		Recorded or Potential	EPBC	TSC	KP	X	Y
Banded Stilt	<i>Cladorhynchus leucocephalus</i>	R	M				
Black-winged Stilt	<i>Himantopus himantopus</i>	R	M				
Black-fronted Dotterel	<i>Charadrius (Eiseyornis) melanops</i>	R	M				
Masked Lapwing	<i>Vanellus miles</i>	R	M				
Turquoise Parrot	<i>Neophema pulchella</i>	R	M	V	235	751594	6825068
		R	M	V	289.8	759926	6776031
		R	M	V	365	777305	6711457
Rainbow Bee-eater	<i>Merops ornatus</i>	R	M		254.3	758783	6809843
		R	M		289.8	759926	6776031
		R	M		528.5	241523	6572502
		R	M		643	292671	6483003
Brown Treecreeper	<i>Climacteris picumnus</i>	R		V	640.4	291502	6485134
Speckled Warbler	<i>Pyrrholaemus saggitatus</i>	R		V	455	778510	6626722
		R		V	769.2	345741	6395259
Pied Honeyeater	<i>Certhionyx variegatus</i>	R		V	240.5	753778	6820826
		R		V	365	777305	6711457
Grey-crowned Babbler	<i>Pomatostomus temporalis</i>	R		V	303.5	767051	6765679
		R		V	356	778720	6720259
		P		V	365	777305	6711457
		R		V	380	775344	6696727
		R		V	406	772192	6671209
		R		V	455	778510	6626722
		R		V	640.4	291502	6485134
		R		V	664	297624	6469393
Rufous Fantail	<i>Rhipidura rufifrons</i>	R	M		768.9	345591	6395592
Diamond Firetail	<i>Stagonopleura guttata</i>	R		V	454.9	778562	6626835
				V	640.4	291502	6485134
Masked Owl	<i>Tyto novaehollandiae</i>	P		V	333	783011	6742700
		P		V	339.7	781140	6736453
		R		V	455	778510	6626722
MAMMALS							
Yellow-bellied Sheath-tail Bat	<i>Saccolaimus flaviventris</i>	R		V	235	751451	6824668
		R		V	365	777325	6711558
		R		V	455	778512	6626711

		Recorded or Potential	EPBC	TSC	KP	X	Y
				V	505	228565	6589891
Beccari's Freetail Bat	<i>Mormopterus beccarii</i>	R		V	235	751451	6824668
Large-eared Pied Bat	<i>Chalinolobus dwyeri</i>	R	V	V	455	778512	6626711
Little Pied Bat	<i>Chalinolobus picatus</i>	R		V	664	297624	6469393
Little Bentwing Bat	<i>Miniopterus australis</i>	R		V	235	751451	6824668
		P		V	365	777325	6711558
		P		V	455	778512	6626711
Eastern Bentwing Bat	<i>Miniopterus schreibersii oceanensis</i>	P		V	723.9	316131	6421754
		R		V	664	297624	6469393
		P		V	720.2	314399	6424787
		P		V	723.9	316131	6421754
Large-footed Myotis	<i>Myotis adversus</i>	P		V	664	297624	6469393
Koala	<i>Phascolarctus cinereus</i>	R		V	455	778510	6626722
		R		V	505.2	228565	6589891
		R		V	528.5	241523	6572502
		R		V	557	254677	6549055

Taxonomic Group	Common name	Scientific Name	KP 222-340	KP 340-440	KP 440-534	KP 534-677	KP 677-833 and Lateral	Incidental sightings on route
REPTILES	Burn's Dragon	<i>Amphibolurus burnsi</i>	Y	Y				Y
	Jacky Lizard	<i>Amphibolurus muricatus</i>			Y		Y	
	Bearded Dragon	<i>Pogona barbata</i>	Y	Y		Y		Y
	Eastern Water dragon	<i>Physignathus lesueurii lesueurii</i>					Y	
	Four-pored earless dragon	<i>Tympanocryptis tetraporophora</i>	Y					
	Green Tree Snake	<i>Dendrelaphis punctulatus</i>	Y					
	Coastal Carpet Python	<i>Morelia spilota mcdowelli</i>		Y				
	Yellow-faced Whip Snake	<i>Demansia psammophis</i>	Y					Y
	Spotted Black Snake	<i>Pseudechis guttatus</i>	Y					Y
	Red-bellied Black Snake	<i>Pseudechis porphyriacus</i>					Y	
	Eastern Brown Snake	<i>Pseudonaja textilis</i>	Y					Y
	Bandy-bandy	<i>Vermicella annulata</i>		Y				Y
	Dubious Dtella	<i>Gehyra dubia</i>		Y				Y
	Common Dtella	<i>Gehyra variegata</i>	Y	Y				Y
	Prickly Gecko	<i>Heteronotia binoei</i>	Y	Y		Y		Y
	Robust Velvet gecko	<i>Oedura robusta</i>					Y	
	Two-clawed Worm Skink	<i>Anomalopus leuckarti</i>					Y	
	Five-clawed Worm Skink	<i>Anomalopus mackayi</i>		Y				
	Southern Rainbow skink	<i>Carlia tetradactyla</i>		Y				Y
	Ragged Snake-eyed Skink	<i>Cryptoblepharus pannosus</i>		Y		Y		
	Elegant Snake-eyed Skink	<i>Cryptoblepharus pulcher pulcher</i>	Y				Y	
	A Snake-eyed Skink	<i>Cryptoblepharus sp.</i>	Y	Y				
	Robust Ctenotus	<i>Ctenotus robustus</i>	Y	Y		Y		Y
	Tree Skink	<i>Ergonia striolata</i>	Y					
	Eastern Water Skink	<i>Eulamprus quoyii</i>			Y			Y

South-Eastern Morethia Skink	<i>Morethia bouleengeri</i>	Y	Y	Y	Y	Y
Pale-flecked Skink	<i>Lampropholis guichenoti</i>	Y				
Three-toed Earless skink	<i>Hemiergis decresiensis</i>		Y			
Garden sun-skink	<i>Lampropholis delicata</i>			Y		
Southern Lerista	<i>Lerista bougainvillii</i>				Y	
Three-toed Lerista	<i>Lerista rhodonooides</i>	Y	Y			
Common Dwarf skink	<i>Menetia greyii</i>	Y				
Blue-Tongued Lizard	<i>Tiliqua scincoides</i>	Y	Y	Y		Y
Shingle-back	<i>Tiliqua rugosa</i>	Y	Y	Y		Y
Gould's Monitor	<i>Varanus gouldii</i>	Y				
Lace Monitor	<i>Varanus varius</i>	Y	Y			Y
Blind snake	<i>Ramphotyphlops wiedii</i>		Y		Y	
Eastern Snake-necked Turtle	<i>Chelodina longicollis</i>		Y		Y	
Common Eastern Froglet	<i>Crinia signifera</i>		Y			
Eastern Banjo Frog	<i>Crinia parasignifera</i>		Y			
Fletcher's Frog	<i>Limnodynastes fletcheri</i>					Y
Striped Marsh Frog	<i>Limnodynastes peronii</i>	Y	Y		Y	
Spotted Marsh Frog	<i>Limnodynastes tasmaniensis</i>		Y		Y	
Green and Golden Bell Frog	<i>Litoria aurea</i>				Y	
Green Tree Frog	<i>Litoria caerulea</i>	Y	Y		Y	
Eastern Sedgefrog	<i>Litoria fallax</i>			Y	Y	Y
Broad-palmed frog	<i>Litoria latopalmata</i>	Y				
Emerald Spotted Treefrog	<i>Litoria peronii</i>	Y	Y		Y	
Desert Tree frog	<i>Litoria rubella</i>					Y
Tyler's Tree frog	<i>Litoria tyleri</i>					Y
Bibron's toadlet	<i>Pseudophryne bibroni</i>					Y
Smooth toadlet	<i>Uperoleia laevigata</i>					Y

AMPHIBIANS

BIRDS

Pale-headed Rosella	<i>Platycercus adscitus</i>	Y	Y	Y	Y
Australian Ringneck	<i>Barnardius zonarius</i>	Y	Y	Y	Y
Red-rumped Parrot	<i>Psephotus haematonotus</i>	Y	Y	Y	Y
Blue Bonnet	<i>Northiella haematogaster</i>	Y	Y	Y	Y
Budgerigar	<i>Melopsittacus undulatus</i>	Y	Y	Y	Y
Turquoise Parrot	<i>Neophema pulchella</i>	Y	Y	Y	Y
Brush Cuckoo	<i>Cacomantis variolosus</i>			Y	Y
Fan-tailed Cuckoo	<i>Cacomantis flabelliformis</i>		Y	Y	Y
Shining Bronze-Cuckoo	<i>Chrysococcyx lucidus</i>		Y	Y	Y
Common Koel	<i>Eudynamys scolopacea</i>			Y	Y
Channel-billed Cuckoo	<i>Scythrops novaehollandiae</i>		Y	Y	Y
Pheasant Coucal	<i>Centropus phasianinus</i>		Y	Y	Y
Southern Boobook	<i>Ninox novaeseelandiae</i>		Y	Y	Y
Barn Owl	<i>Tyto alba</i>			Y	Y
Masked Owl	<i>Tyto novaehollandiae</i>	Y?	Y	Y	Y
Tawny Frogmouth	<i>Podargus strigoides</i>		Y	Y	Y
Red-backed Kingfisher	<i>Todiramphus pyrrhopygia</i>				Y
Sacred Kingfisher	<i>Todiramphus sanctus</i>	Y	Y	Y	Y
Laughing Kookaburra	<i>Dacelo novaeguineae</i>	Y	Y	Y	Y
Rainbow Bee-eater	<i>Merops ornatus</i>			Y	Y
Dollarbird	<i>Eurystomus orientalis</i>	Y	Y	Y	Y
White-throated Treecreeper	<i>Cormobates leucophaeus</i>		Y	Y	Y
Brown Treecreeper	<i>Climacteris picumnus</i>				Y
Splendid Fairy-wren	<i>Malurus splendens</i>				Y
Superb Fairy-wren	<i>Malurus cyaneus</i>	Y	Y	Y	Y
Variegated Fairy-wren	<i>Malurus lamberti</i>	Y	Y	Y	Y
Spotted Pardalote	<i>Pardalotus punctatus</i>			Y	Y
Striated Pardalote	<i>Pardalotus striatus</i>			Y	Y
White-browed Scrubwren	<i>Sericornis frontalis</i>	Y	Y	Y	Y
Speckled Warbler	<i>Chthonicola sagittata</i>			Y	Y

Australian Raven	<i>Corvus coronoides</i>	Y	Y	Y	Y	Y	Y	Y
Little Raven	<i>Corvus mellori</i>		Y	Y				
Torresian Crow	<i>Corvus orru</i>		Y					
White-winged Chough	<i>Corcorax melanorhamphos</i>	Y		Y				
Apostlebird	<i>Struthidea cinerea</i>	Y	Y	Y				
Satin Bowerbird	<i>Ptilonorhynchus violaceus</i>		Y					
Spotted Bowerbird	<i>Chlamydera maculata</i>	Y						
Australian (Richard's) Pipit	<i>Anthus novaeseelandiae</i>			Y	Y	Y	Y	Y
Double-banded Finch	<i>Taeniopygia bichenovii</i>	Y	Y	Y	Y			
Zebra Finch	<i>Taeniopygia guttata</i>	Y	Y					
Red-browed Finch	<i>Neochmia temporalis</i>					Y		
Diamond Firetail	<i>Stagonopleura guttata</i>							Y
House Sparrow	<i>Passer montanus</i>	Y		Y				
Fairy Martin	<i>Hirundo ariel</i>			Y	Y			
Welcome Swallow	<i>Hirundo neoxena</i>	Y	Y	Y	Y		Y	Y
Tree Martin	<i>Hirundo nigricans</i>			Y				
Clamorous Reed-Warbler	<i>Acrocephalus stentoreus</i>	Y						Y
Brown Songlark	<i>Cincloramphus cruralis</i>	Y	Y	Y	Y			Y
Rufous Songlark	<i>Cincloramphus mathewsi</i>			Y				
Silvereye	<i>Zosterops lateralis</i>				Y		Y	Y
Common Myna	<i>Acridotheres tristis</i>	Y			Y		Y	Y
Common Starling	<i>Sturnus vulgaris</i>	Y	Y	Y	Y		Y	Y
Common Blackbird	<i>Turdus merula</i>			Y				
Short-beaked Echidna	<i>Tachyglossus aculeatus</i>		Y		Y		Y	Y
Brown Antechinus	<i>Antechinus stuartii</i>							Y
Koala	<i>Phascolarctus cinereus</i>					Y	Y	
Common Brushtail Possum	<i>Trichosurus vulpecula</i>		Y	Y	Y	Y	Y	Y

MAMMALS

Unidentified Trichosurus sp.	<i>Trichosurus sp.</i>	Y	Y	Y	Y	Y
Common Ringtail Possum	<i>Pseudocheirus peregrinus</i>	Y	Y			Y
Eastern Grey Kangaroo	<i>Macropus giganteus</i>	Y	Y	Y		
Common Wallaroo	<i>Macropus robustus</i>	Y	Y			
Red-necked Wallaby	<i>Macropus rufogriseus</i>	Y	Y			
Red Kangaroo	<i>Macropus rufus</i>	Y	Y			
Swamp Wallaby	<i>Wallabia bicolor</i>	Y	Y	Y		Y
Little Red Flying-fox	<i>Pteropus scapulatus</i>		Y			
Eastern Horseshoe Bat	<i>Rhinolophus megaphyllus</i>			Y		Y
Yellow-bellied Sheath-tail Bat	<i>Saccolaimus flaviventris</i>	Y	Y			
Beccari's Freetail Bat	<i>Mormopterus beccarii</i>	Y				
Southern Freetail Bat	<i>Mormopterus planiceps (long penis form)</i>	Y	Y	Y		Y
Inland Freetail Bat	<i>Mormopterus planiceps (small penis form)</i>	Y	Y	Y		
White-striped Freetail Bat	<i>Tadarida australis</i>	Y	Y	Y		Y
Large-eared Pied Bat	<i>Chalinolobus dwyeri</i>		Y	Y	Y	Y
Gould's Wattled Bat	<i>Chalinolobus gouldii</i>	Y	Y	Y	Y	Y
Chocolate Wattled Bat	<i>Chalinolobus morio</i>		Y	Y	Y	Y
Little Pied Bat	<i>Chalinolobus picatus</i>	Y	Y	Y		
Little Bentwing Bat	<i>Miniopterus australis</i>					Y
Eastern Bentwing Bat	<i>Miniopterus schreibersii oceanensis</i>				Y	Y
Large-footed Myotis	<i>Myotis adversus</i>				Y	Y
Unidentified Longeared Bat sp.	<i>Nyctophilus sp.</i>		Y	Y		Y
Inland Broadnosed Bat	<i>Scotorepens balstoni</i>	Y	Y	Y		
Little Broadnosed Bat	<i>Scotorepens greyi</i>	Y	Y	Y		
Southern Forest Bat	<i>Vespadelus regulus</i>					Y
Little Forest Bat	<i>Vespadelus vulturnus</i>	Y	Y	Y	Y	Y
Bush Rat	<i>Rattus fuscipes</i>					Y
House Mouse	<i>Mus musculus</i>					Y
Black Rat	<i>Rattus rattus</i>	Y	Y	Y		
Unidentified Rat sp.	<i>Rattus sp.</i>				Y	
Dog	<i>Canis familiaris</i>					Y

Fox	<i>Vulpes vulpes</i>	Y	Y	Y	Y	Y	Y	Y
Cat	<i>Felis catus</i>		Y		Y		Y	Y
Sheep	<i>Ovis aries</i>		Y					
Pig	<i>Sus scrofa</i>	Y	Y					Y
Hare	<i>Lepus capensis</i>	Y	Y	Y			Y	
Rabbit	<i>Oryctolagus cuniculus</i>	Y	Y				Y	Y

Marine

Crayfish								Y
Eel								Y