



Lindsay Robert Agnew

Position	Director, Austecology
Qualifications	B.Sc (Ecology and its Applications, Griffith University) CEnvP (Ecology Specialist)
Professional Affiliations	Ecological Society of Australia Queensland Environmental Law Association Australian Mammal Society Society of Conservation Biology Australasian Bat Society and Birdlife Australia Society of Ecological Restoration International Australian and Queensland Wader Study Groups
Fields of Special Competence	Terrestrial fauna habitat assessment, impact assessment and management Conservation significance and biodiversity values assessment Habitat management and planning for natural and reconstructed environments Expert witness services to the Planning & Environment Court and Land Court
Employment History	2007 onwards Director and Principal Zoologist, Austecology 2004 - 2007 Director and Principal Terrestrial Ecologist - Ecoserve 1998 - 2004 Associate and Principal Terrestrial Zoologist - WBM Australia 1991 - 1998 Ecologist - Brisbane City Council. Pre-1991 Field Research Officer (Griffith University) and Consultant Ecologist (Lone Pine Koala Sanctuary).

CONSULTANCY PROJECT EXPERIENCE – 1998 to Present

Note – Only Projects where I have been a principal investigator/author or sole author are listed here.

Significant Species Assessments

- Koala Survey and Habitat Assessments – former APM Petrie Mill site, 965 Gympie Road, Petrie (2015).
- Koala Survey and Habitat Assessments - Lot 3 SP237241, Ripley (2014).
- Koala Habitat Management Plan – Yarrabilba PDA (2014).
- Koala Corridor and Habitat Values Assessment – Yarrabilba UDA (2014)
- Wet Season Black-throated Finch Surveys - Lot 4 SP132604 - Pinnacles, Townsville (2014).
- Koala Survey and Habitat Assessments – 18-30 School Road and 171-191 Priestdale Road, Rochedale (2014).
- Glossy Black-Cockatoo Survey and Habitat Assessments – Lot 1 SP144215, Tallebudgera Valley (2014).
- MNES Threatened Fauna Surveys - Lots 750 SP189053, 749 SP189044, and 754 on SP189054, Spring Mountain (2014).
- Black-throated Finch Surveys and Habitat Condition Assessment – Lot 26 E124278, Gumlow, Townsville.
- Dry Season Black-throated Finch Surveys - Lot 4 SP132604 - Pinnacles, Townsville (2014).
- Koala Surveys and Habitat Condition Assessment - Lot 1 RP844176, Lot 1 RP816807, Lot 1 RP844176, Lot 2 RP883358, and Lots 4 and 5 SP141239, Wellington Point (2014).
- Fauna MNES Management Plan – Lots 22 SP234042 and 29 SP221266, Spring Mountain (2014).
- Dry Season Black-throated Finch Surveys and Habitat Assessment – Lot 286 EP1901, Lot 1 RP742554, and Lot 10 SP136003, Mount Low (2014).
- MNES & MSES Threatened Fauna Surveys and Habitat Condition Assessment - Lot 4 SP132604 - Pinnacles, Townsville (2014).
- Koala Habitat Assessment - Lot 1 RP108155, Moggill (2014).
- Koala Habitat Assessment - Lot 11 RP14134, Birkdale (2014).
- Black-throated Finch (southern) Wet Season Program & Target Nest Search Program - Lot 267 EP1719 & Lot 256 SP1196179, Townsville (2012).

- Koala Surveys and Habitat Condition Assessment - Lot 2 RP1707, Wellington Point (2014).
- Black-throated Finch, Squatter Pigeon, and *Delma labialis* Survey Program – Lot 267 EP1719 & Lot 256 SP1196179, Townsville (2012-2014).
- Koala and MSES Threatened Fauna Assessments – Lots 1 & 6 RP206168 and Lot 3 RP108155, Moggill (2014).
- Assessment of Koala Habitat Values – 2865 Beaudesert Road, Parkinson (2013).
- MNES & NCA Threatened Fauna Due Diligence Assessment – Lot 750 SP189053, Spring Mountain (2013).
- Black-throated Finch (southern) Dry Season Program - Lot 267 EP1719 & Lot 256 SP1196179, Townsville (2012).
- Target Threatened Fauna Species Survey Program – Galilee Coal Project Rail SEIS - (2012-2013).
- MNES Threatened Fauna and Migratory Bird Surveys - Spring Mountain, Springfield Lakes (2012-2013)
- Koala Surveys and Habitat Condition Assessments - Lots 194 & 195 S3157, North Deebing Creek (2013).
- Koala Management Plan – Yarrabilba PDA (2012)
- Threatened and Migratory Fauna Investigations – Land at Burdell, Townsville (2012)
- Koala Survey, Habitat Assessment & Offset Management Plan – 812 & 834 Mt Gravatt-Capalaba Road, Mackenzie (2012).
- Koala Survey and Habitat Assessments – Springfield Lakes (2012)
- Fauna, Black-throated Finch & Threatened Fauna Assessment Report – Galilee Coal Project SEIS (2012)
- Koala Corridor and Habitat Assessment – Yarrabilba UDA (2012).
- Koala Surveys and Habitat Assessments - Lot 2 SP103802 & Lot 60 SP165461, Tannum Sands (2012).
- Koala Surveys and Habitat Assessments - 830-834 Mt Gravatt-Capalaba Road, Mackenzie (2012).
- Migratory Bird Surveys and Habitat Assessments – Caloundra South PER (2012)
- Water Mouse Surveys and Habitat Assessments of Bells Creek – Caloundra South PER (2012)
- MNES Threatened Fauna & Migratory Bird Surveys - Lot 2 SP103802 & Lot 60 SP165461, Tannum Sands (2012).
- Late Dry Season Black-throated Finch Surveys – EPC 1080, Clermont district (2011)
- Late Dry Season Black-throated Finch & Squatter Pigeon Surveys – Lot 1 RP734267, Bohle Plains (2011)
- Wet & Dry Season Black-throated Finch Monthly Monitoring Surveys – EPC 1040, Galilee Basin (2011/12)
- Black-throated Finch Surveys and Water Mouse Habitat Assessments – Abbot Point State Development Area (2011).
- Cassowary and Threatened Stream Frog Surveys - 105-109 Mansfield Street, Cairns (2011)
- Wet Season Black-throated Finch Surveys and Habitat Assessment – Lot 286 EP1901, Lot 1 RP742554, and Lot 10 SP136003, Mount Low (2010).
- Koala Survey and Habitat Assessment – 63 Redbank Creek Road, Adare (2010).
- Wet Season Ornamental Snake Surveys – BMA Norwich Park Mine offset management areas (2010).
- Squatter Pigeon Surveys and Habitat Management Plan – BMC Poitrel Mine (2010).
- Survey & Habitat Suitability Assessments for Threatened & Migratory Fauna – Main Green Swamp Rd, Lockyer Waters (2010)
- Wallum Sedgefrog Surveys & Habitat Assessments - Sunshine Motorway Duplication (Kawana Way to Mooloolah River Interchange) (2010).
- Wet Season Ornamental Snake Surveys – BMC Poitrel Leases (2010).
- Habitat Assessments - Threatened & Migratory Wetland-dependent Fauna – Splitters Creek, Rockhampton (2010).
- Koala Survey and Habitat Assessment – Warner Movieworld land holdings, Nerang (2010).
- Wallum Sedgefrog Surveys & Habitat Assessments - Multi-Modal Transport Corridor (Main Drive- Maroochy Boulevard) (2010).
- Black-throated Finch and Threatened Species Surveys – Lot 666 SP122698, Mt. Louisa, Townsville (2009-)
- Koala Habitat Values Assessment - Investa Property Group landholdings at Palmview, Caloundra (2009).
- Koala Habitat Values Assessment – Lot 137 SP169488, Buckley Road, Burpengary (2009).
- Rare and Threatened Fauna Survey – Lot 367 CG286 and Lot 2 RP169511, Mt. Ninderry, Yandina (2009)
- Koala Habitat Mapping – Lots 1 & 2 RP886148, Wembley Rd, Berrinba.
- Threatened Reptile Survey and Habitat Values Assessment – Lot 1 RP737035, Cape Pallarenda (2009)
- Spotted-tail Quoll Surveys and Habitat Suitability Assessment – Round Ridge Road, Jimboomba (2009).
- Assessment of Potential Impacts to Capricorn Yellow Chat Habitat - Fitzroy River Water Extraction Project (2009).
- Ornamental Snake Surveys and Habitat Assessment – BMA Gregory Crinum (2009).
- Black-breasted Button-quail & Threatened Species Investigation – Mariners Cove, Eli Creek (2008)
- Assessment of Mahogany Glider & Cassowary Habitat Values – Hinchinbrook Habitats, Ingham (2008)

- Rare & Threatened Fauna and Biodiversity Surveys of the Willawa Nature Refuge, Theodore (2008)
- Wallum Acid Frog Surveys – Lands adjoining Pearce Avenue, Caloundra (2008)
- Surveys for Threatened Fauna & Biodiversity – BMA Terang Leases, Blackwater (2008).
- Capricorn Yellow Chat Monitoring Surveys – GAWB Rockhampton to Gladstone Corridor (2007 - 2008).
- A Review of the Vulnerable Squatter Pigeon (southern subspecies) Records within Central Queensland and Plan to Model Potential Habitat Usage (2007).
- Threatened Fauna Species Assessments - Lot 9 on RP727756, Ryker's Road, Cape Tribulation (2007).
- Black-throated Finch Surveys and Habitat Assessment – Roseneath Quarry, Townsville (2007)
- Rare and Threatened Fauna and Flora Surveys – BMA South Walker Mine (2007).
- Wallum Froglet Population Monitoring Program for the Bundilla Heath Translocation Site (2006)
- Glossy Black-cockatoo Surveys and Habitat Values Assessments – Nathanvale, Gold Coast (2006).
- Assessment of Habitat Values for Species of Conservation Significance – Kawana Beach Site, Bokarina (2006).
- Grey-crowned Babbler Surveys & Conservation Management Plan – United Collieries, Hunter Valley (2005).
- Ornamental Snake Habitat Suitability & Impact Assessment – Moranbah to Newlands Rail Link (2005).
- Black-breasted Button-quail Management Plan – Lenthall's Dam (2005)
- Habitat Suitability Assessments for Macleay's Double-eyed Fig Parrot – Yorkey's Knob (2005).
- Vertebrate Fauna Diversity & Species of Conservation Significance – Indooroopilly Golf Course (2005)
- Threatened Species Assessment and Management Planning – BMA Terang leases (2005).
- Threatened Fauna Species and Vertebrate Biodiversity Survey of Lot 31 on RP 858565, Maroochy (2005)
- Assessment of Habitat Values for Species of Conservation Significance – East Pit, Curragh Mine (2005).
- Threatened Species & Biodiversity Values Assessment - Mooloolah River, Mooloolah (2004).
- Pre-clearing and Clearing Surveys for Ornamental Snake - Curragh Mine North Project (2004)
- Threatened Species and Biodiversity Values Assessment of Lands at Maree Street, Aroona (2004).
- Microbat Artificial Roost Habitat Management Plan – Phase 2 Monitoring Program, Moura Mine (2003)
- Fingal Coastal Development Advice – Threatened Vertebrate Fauna (2003)
- Burnett River Dam Baseline Aquatic Surveys – Platypus (2003)
- Eidsvold Weir Baseline Aquatic Surveys – Platypus (2003)
- Vertebrate Diversity & Target Species Surveys of Wetland & Riparian Habitats - Saraji Mine (2003)
- Target Species Investigations - 772/810 New Cleveland Road & 208 Tilley Road, Wakerley (2003).
- Theodore Mine EPBC Act Referral (2003)
- Implementation Management Plan for Glossy Black Cockatoos-Bayview Noosa (2002)
- Squirrel Glider Population Viability Assessment and Model - QDH Land, Bracken Ridge (2002)
- An Assessment Raptor Habitat Values and Management Plan - QDH Land, Bracken Ridge (2002)
- Investigation of Glossy Black Cockatoo Habitat - Eenie Creek Road Extension, Noosa (2002).
- Glossy Black Cockatoo and Target Species Surveys for the Kingsmore Estate, Reedy Creek (2002).
- Elf Skink Surveys and Habitat Assessment for the NSBC site and Noosa Shire (2002)
- Preliminary Threatened Species Impact Assessments - Hymix land at Coomera (2001)
- Assessment of Replacement Osprey Nest Structures on Fisherman Islands, Port of Brisbane (2001)
- Threatened Species Habitat Assessment – Howard's Tree Farm, Wooyung (2001)
- Conservation Management Plan for Glossy Black-Cockatoos-Progress Hill, Noosa (2001)
- Rare & Threatened Flora & Fauna Assessment–Gregory to Blackwater Dragline Relocation Route (2000)
- Grass Owl Surveys & Assessment of Coastal Habitats of the Harrington District, New South Wales (1999).
- Conservation Management of Microbat Roosts and Maternity Sites at Moura Mine (1999). -
- Wallum Froglet Survey and Habitat Assessment of Crowdy Bay National Park and Harrington (1999) -
- Harrington Waters Estate - Wallum Froglet Habitat Assessment (1999)
- Shorebird High Tide Roost Assessment - Sovereign Islands (1999)
- Rare and Threatened Vertebrate Fauna Surveys of Moura Mine (1999)
- An Appraisal of Little Tern occurrence at Woogoopah Island - Opportunities & Recommendations (1998)

Natural Resource Inventories & Conservation Planning Studies

- Biodiversity Monitoring Program – BMA Hay Point Facility (2012- 2013)
- 2011 Fauna and Flora Monitoring Event - Grazing Management Trials-BMA Terang Leases (2011)
- Biodiversity Management Plan – BMC South Walker Creek Mine(2010)
- Biodiversity Management Plan – BMC Poitrel Mine (2010)
- Kakadu Ramsar Site - Ecological Character Description Report and Information Sheet (2010)

- Dundowran Structure Plan - Fauna and Fauna Habitat Values – Fraser Coast Regional Council (2009).
- Gippsland Lakes Ramsar Site- Ecological Character Description Report and Information Sheet (2009)
- Biodiversity Management Plan – BMA Gregory Crinum (2009)
- Shoalwater Bay and Corio Bay Ramsar Sites - Ecological Character Description Report & Information Sheet (2009)
- Corner Inlet Ramsar Site - Ecological Character Description Report and Information Sheet (2009)
- Moreton Bay Ramsar Site - Ecological Character Description Report and Information Sheet (2008)
- Currawinya Lakes Ramsar Site - Ecological Character Description Report and Information Sheet (2008).
- Shorebird Management Plan for The Port Botany Expansion Project – Construction Phase (2007).
- Terrestrial Flora and Fauna Management Plan for The Port Botany Expansion Project – Construction Phase (2007).
- Threatened Species and Biodiversity Action Plan – BMA Saraji (2006).
- Threatened Species and Biodiversity Action Plan – BMA Peak Downs (2006).
- An Audit & Regional Overview of Biodiversity Values for BMA Coal Operations within Central Queensland (2006).
- Review of Habitat Values for Biodiversity & Species of Conservation Significance – BMA Poitrel (2006).
- Review of Habitat Values for Biodiversity & Species of Conservation Significance – BMA Terang (2005).
- Review of Habitat Values for Biodiversity & Species of Conservation Significance – BMA Blackwater (2005).
- Review of Habitat Values for Biodiversity & Species of Conservation Significance – BMA Saraji (2005).
- Review of Habitat Values for Biodiversity & Species of Conservation Significance – Gregory Crinum (2005).
- Review of Habitat Values for Biodiversity & Species of Conservation Significance – BMA Peak Downs (2005).
- Review of Habitat Values for Biodiversity & Species of Conservation Significance – BMA South Walker (2005).
- Review of Habitat Values for Biodiversity & Species of Conservation Significance – BMA Goonyella Riverside & Broadmeadows Mines (2005)
- Review of Habitat Values for Biodiversity and Species of Conservation Significance – Hay Point Facility (2005)
- Biodiversity and Threatened Species Action Plan – BMA Norwich Park Mine (2005)
- Coomera River Catchment Environmental Inventory – Avifauna (2003-2004)
- Mapping of Ecological Habitats and Inventory for Botany Bay - Planning NSW (2003)
- Caboolture Common Classification System Application – Stage 2 (2002)
- Moreton Bay Sand Extraction Study (2001)
- An Investigation of EPBC and NCA Act implications of the Proposed Coomera Town Centre LAP (2002)
- Caboolture Shire Environmental Planning Study – Nature Conservation Studies (2001)
- Lake Samsonvale ICMS – State of the Catchment Report (2001)
- Tamborine Mountain Escarpment Flora and Fauna Study (2000)
- An Assessment of Fauna Habitat Values of the Port of Brisbane Corporation Land Portfolio (2000)
- North East Wetlands Fauna Survey (1999)
- Ecological Background Studies for Tallows, Belongil and Jerusalem Creeks (1999)
- Brisbane Entertainment Centre Precinct Fauna and Flora Assessment (1999)
- Burnett River Catchment Fauna and Flora Overview (1998)
- Habitat Inventory of Rocky Reefs of South-east Queensland (1999)
- Aquatic and Riparian Environmental Assessments - Gold Coast (1998)

Impact Assessment Statements and other Statutory Reporting Requirements

- EPBCA Offset Management Plan - Yarrabilba PDA (2015)
- Fauna MNES Management Plan - Lot 750 SP189053, Spring Mountain (2014).
- EPBCA MNES Referral - Yarrabilba UDA (2014).
- Vertebrate Fauna and Threatened Species Assessments - Galilee Coal Project Rail SEIS (2012-2013)
- Threatened Fauna Offset Strategy – Mine Site and Rail Corridor - Galilee Coal Project SEIS (2012).
- SEIS Fauna MNES Report – Rail and Mine Site, Galilee Coal Project (2012).
- Migratory Shorebirds and Water Mouse – Public Environment Report – Caloundra South (2011-2012)
- An Assessment of Matters of National Environmental Significance - Crinum North Pre-development Drilling Program BMA Gregory Crinum Mine (2010).
- Review of Environment Management Plan – Unimin Warwick Mine Site (2009).

- Introduced Species Management Strategy – Terrestrial Vertebrate Fauna. BMA Gregory Crinum (2009).
- Introduced Terrestrial Flora Species Management Strategy. BMA Gregory Crinum (2009)
- Fauna and Fauna Habitat Values Assessment – Tompkins Road Industrial Area, Townsville (2008).
- Vertebrate Fauna Habitat Values – Sunshine Motorway Upgrade – Mooloolah River to Eenie Creek (2008)
- Gladstone Area Water Board Fitzroy River to Gladstone Pipeline EIS – Terrestrial Fauna (2008)
- EPBC Referral - Terrestrial Fauna - 84 Eagleby Road, Eagleby. Eagleby (2007).
- Terrestrial Vertebrate Fauna Issues - Pacific Paradise Bypass and Maroochydore Road Upgrade (2007).
- REF and EPBC Referral - Ipswich Motorway Northern Options - Terrestrial Fauna (2007).
- United Collieries Warkworth Longwall Panels 10 & 11 Expansion EIS - Flora and Fauna, (2007)
- Ipswich Motorway Northern Option Feasibility Study - Vertebrate Fauna Issues Report (2007).
- Caloundra South CAMCOSS Re-alignment EIS & EPBC Referral - Terrestrial Fauna (2007).
- Design Issues related to Terrestrial Vertebrate Fauna - Glasshouse Mountains Road Upgrade (2007)
- GAWB Rockhampton to Gladstone Pipeline REF and EPBC Referral - Terrestrial Fauna (2007).
- Brisbane Airport Parallel Runway EIS – Terrestrial Vertebrate Fauna (2005-06).
- REF and EPBC Referral - Brisbane Airport Parallel Runway Project - Terrestrial Fauna (2007).
- Flora & Fauna Baseline Surveys for the BMA Isaac River IAS (2006)
- Wonbindi Coal Project Flora and Fauna EMP (2006)
- Fauna, Flora and Vegetation Assessment for South Walker Mine SAA4 IAS (2006)
- Dawson North Expansion EIS and EPBC Referral – Vertebrate Fauna and Ecology Sections (2005).
- An Investigation of Flora, Fauna and Biodiversity Values associated with Brigalow Remnants along the Proposed Heyford Back Access Road – BMA Peak Downs Mine (2005).
- Ecological Assessments – Ipswich Motorway Northern Options (2005)
- Wildlife Management Issues associated with Fresh Air Rises and Intakes-Cannington Mine (2004)
- Bruce Highway (Cooroy to Curra) Strategic Planning Study Stage 2 - Ecological Issues & Constraints (2004)
- Moura North EMOS – Flora and Fauna (2003-04)
- Theodore Coal Project (Stage 2) EIS – Nature Conservation (2003-04).
- Vermont Coal Project IAS and EIS – Nature Conservation (2003)
- Mt. Birnie to Boullia Telstra Cable Alignment – Ecological Assessments (2003)
- Theodore Mine EPBC Act Assessments (2003)
- Caboolture to Landsborough Rail Duplication (2002-2003)
- Fauna and Flora Management Plan-Manning River Dredging for the Harrington Waters Estate (2002)
- Jacaranda Pit IAS – Terrestrial Vertebrate Fauna Assessments - Saraji Mine (2002)
- Fauna and Fauna Habitat Assessment – Ramp 4 Underground Project, Goonyella Riverside Mine (2002)
- Coledale Beach Hazards Study-Ecology Section (2002)
- Bruce Highway Upgrade (Uhlmann to Buchanans Road)-Flora and Fauna Pre-construction REF (2002)
- Moreton Bay Sand Extraction-Ecology Section (2002)
- Moorvale Coal Project IAS (2001)
- Review of Flora and Fauna EIS Issues – Pacific Beach Development, Tugun (2001)
- Environmental Assessments of Four Mile Beach, Port Douglas (2001)
- Fauna and Flora Habitat Assessment for the Peak Downs Highway Diversion at Coppabella (2000)
- Port of Brisbane Expansion IAS (2000)
- Caboolture to Maroochydore Corridor Study - IAS and Land Use Transport Strategy (1999)
- Eenie Creek Flora and Fauna Impact Assessment (1999)
- Terrestrial and Aquatic and Terrestrial Vertebrate Fauna Survey - Saraji Mine IAS (1999)
- Hexham Swamp/Ironbark Creek EIS (1998)
- Port of Airlie Marina IAS (1998)

Extractive Industry

- Flora & Fauna Monitoring – Grazing Impact Monitoring Program – BMA Terang Leases, Blackwater (2011).
- Threatened Fauna and Biodiversity Surveys – BMA Norwich Park Nature Refuge Area (2010).
- Threatened Fauna and Biodiversity Surveys – BMC Poitrel Mine (2010).
- Threatened Fauna and Biodiversity Surveys – M Block BMA Gregory Crinum (2009).
- Fauna and Fauna Habitat Values Assessment – Behana Gorge Road, Aloomba (2008)
- Brigalow and SEVT RE and Regrowth Community Assessments - Anglo Dawson Mine (2008)
- Flora & Fauna Monitoring – Grazing Impact Monitoring Program – BMA Terang Leases, Blackwater (2008).
- Assessment of Fauna & Flora Values – M Block BMA Gregory Crinum (2008).

- Rehabilitation Monitoring Program 2008 – Anglo Dawson Mine (2008)
- Surveys of Biodiversity and Rare and Threatened Fauna and Flora – BMA Poitrel Mine (2007).
- Abbott Point Wetlands and Caley Valley Wetlands Wet Season Flora and Fauna Surveys (2007).
- South Marshmead Biodiversity Inventory, Blackwater (2007).
- Autumn Fauna Baseline Survey – United Collieries, Warkworth (2007)
- Koala Surveys and Habitat Assessment for BMA Peak Downs (2006).
- Summer Fauna Baseline Survey – United Collieries, Warkworth (2006).
- 2006 Fauna Survey of Post-Mining Landscapes of Peak Downs Mine (2006)
- Summer Season Fauna Baseline Survey – BMA Goonyella Riverside & Broadmeadows Mines (2006).
- 2006 Vertebrate Fauna Survey of Selected Remnant Regional Ecosystems – BMA Saraji (2006).
- Winter Season Fauna Baseline Inventory - BMA Saraji (2006).
- Winter Season Fauna Survey - BMA Peak Downs (2006).
- Flora and Fauna Baseline Survey and Biodiversity Action Plan – United Collieries, Warkworth (2005).
- 2005 Vegetation, Fauna and Soils Monitoring Program for Post-mining Rehabilitation – Moura Mine (2005).
- Autumn Season Vertebrate Fauna Surveys of Remnant Habitats of Norwich Park Mine 2005
- Vertebrate Fauna Surveys of Remnant Habitats of One Mile Dam and Surrounds – Saraji Mine (2005)
- Peak Downs Mine Flora and Fauna Surveys – Summer 2005.
- Abbott Point Wetlands and Caley Valley Wetlands Dry Season Flora and Fauna Surveys (2004).
- Target Species Investigations and Replicate Baseline Surveys of Cannington Mine Leases–Summer 2004
- Flora and Fauna Assessment of Oaky Creek Mine Proposed Lease Extension (2004)
- Blackwater Mine –Regional Ecosystem and Fauna Habitat Assessment (2004)
- Norwich Park Mine – Baseline Flora and Fauna Habitat Assessment (2004)
- Review of Fauna Habitat Values of Mine Rehabilitation in the Ramp 6E/7 area, Moura Mine (2004)
- Flora and Fauna Assessment of the Moranbah North Mine – Summer 2002 and 2004 (2004)
- Flora and Fauna Assessment – Collinsville Coal Project (2003-04)
- Moranbah North Mine Isaac River Subsidence – Review of Ecological Impacts (2003)
- Phase Two Vertebrate Fauna Monitoring & Data Integration Report – Cannington Mine & Surrounds (2003)
- Vertebrate Diversity & Target Species Surveys of Wetland & Riparian Habitats - Saraji Mine (2003)
- Theodore Mine EPBC Act Assessments (2003)
- Threatened Species and Wetland Surveys – Saraji Mine (2003)
- Terrestrial Vertebrate Fauna Monitoring Program (Phase 2)–Moura Mine (2002)
- Flora and Fauna Assessment of the Moranbah North Coal Lease (2002)
- Dry Season Aquatic & Terrestrial Vertebrate Fauna Surveys – Cannington Mine (2002)
- Jacaranda Pit IAS – Terrestrial Vertebrate Fauna Assessments - Saraji Mine (2002)
- Vertebrate Biodiversity & Flora Assessments, Remnant Habitats-Goonyella Riverside project (2002)
- Design and Field Trials for Bat Gates for Disused Mine Tunnels, Moura Mine (2001)
- Moorvale Coal Project IAS – Terrestrial Ecology Section (2001)
- Fauna Habitat Assessment of Disused Voids and Low Wall Landscapes of Blackwater Mine (2001)
- Ravensworth Mine Baseline Terrestrial Fauna Assessment (2001)
- Summer 2001 Aquatic and Terrestrial Fauna Surveys of South Blackwater Mine (2001)
- Terrestrial Vertebrate Fauna Monitoring Program (Phase 1)–Moura Mine (2001)
- Summer 2001 Vertebrate Fauna Survey and Data Integration Report for Curragh Mine, Blackwater (2001)
- Rare & Threatened Flora & Fauna Assessments – Oaky Creek to Blackwater Dragline Relocation Route (2000)
- Wet and Dry Season Vertebrate Fauna Surveys of Blackwater Mine (2000)
- Flora and Fauna Surveys – Southern Exploration Lease, Coppabella Mine (2000)
- An Investigation of the Flora and Fauna Values for the Dragline Relocation Route between Goonyella Riverside and South Walker Mines (2000)
- Wet Season Aquatic and Terrestrial Fauna Survey- Goonyella Riverside Mine (2000)
- A Terrestrial and Aquatic Fauna Study of Curragh Mine (2000)
- Summer Season Terrestrial Vertebrate Fauna Survey of the Moorvale EPC, Nebo District (2000)
- Conservation Management of Microbat Roosts and Maternity Sites at Moura Mine (1999)
- Rare and Threatened Vertebrate Fauna Surveys of Moura Mine (1999)
- Assessment of Fauna Habitat Enhancement Initiatives at Peak Downs Mine (1999)
- Terrestrial Flora and Fauna Assessment of Coppabella Mine Site (1999)
- Wet Season Survey of Terrestrial and Aquatic Fauna of Saraji Mine (1999)
- An Assessment of Terrestrial Fauna Habitat Values and Management Practices at Moura Mine (1999)

- Terrestrial Flora and Fauna Assessment of Moorvale Mine Site (1999)
- An Investigation of the Terrestrial Vertebrate Fauna Values of Holts Hill, Clagiraba (1999)
- Wet Season Aquatic and Terrestrial Survey of Blackwater Mine (1999)
- Port of Airlie Extractive Industry IAS (1998).

Urban Development

- Fauna & Fauna Habitat Values Assessment – Lot 2 RP198239 & Lot 3 SP218991, Rochedale (2015).
- Fauna & Fauna Habitat Values Assessment – Lot 127 SP102378 & Lot 2 RP62306, Rochedale (2014).
- Existing Information Review and Habitat Assessments - Terrestrial Fauna Habitat Values - Hymix Land at Bald Hills (2013).
- Threatened Species and Fauna Biodiversity Surveys – Lot 990 SP211776, Oakhurst (2010).
- Fauna & Fauna Habitat Values Assessment – Lot 1 RP163300, Cunningham Highway, Blackstone (2010)
- Fauna & Fauna Habitat Values Assessment – Lot 110 SP779, Settlement Rd, The Gap (2009)
- Fauna & Fauna Habitat Values Assessment – Mt. Low, Townsville (2009).
- Threatened Species and Fauna Biodiversity Assessment – 255 Black River Rd, Townsville (2009).
- Threatened Species and Fauna Biodiversity Assessment – Stage 16 Forest Shores, Halifax Bay (2009).
- Biodiversity & Threatened Species Assessments – 338 Tallebudgera Connection Rd & 169 Trees Rd, Tallebudgera (2008-2010).
- Terrestrial Fauna & Fauna Habitat Values Assessment – Cool Waters Holiday Village, Shoal Bay (2008).
- Fauna and Fauna Habitat Values Investigation – 44 to 56 Yates Street, Magnetic Island (2008).
- Fauna and Fauna Habitat Values Assessment – Allendale Drive, Alligator Creek, Townsville (2008).
- Fauna and Fauna Habitat Values Assessment – Geaney Lane, Deeragun, Thuringowa (2008).
- Terrestrial Fauna & Fauna Habitat Values Assessment - Tinnanbar EcoVillage Site (2007).
- Ecological Design Considerations for Bioremediation Wetlands – Neumann Developments (2007).
- Fauna & Fauna Habitat Values Assessment – 55 Alligator Creek Road, Townsville (2007 -).
- Fauna & Fauna Habitat Values Assessment – Lot 207 K124620 & Lot 1 on EP2169, Townsville (2007).
- Fauna and Fauna Habitat Values Assessment – Svensson Rd, Mt. Low (2007 -).
- Assessment of Fauna & Fauna Habitat Values - Turtle Cove, Captain Cook Highway, Wangetti (2007)
- Biodiversity & Threatened Species Assessments – 1105-1030 Currumbin Ck Rd, Currumbin Valley (2006).
- Fauna and Fauna Habitat Values Assessment – Juniper Lands adjacent to the Mooloolah River (2005)
- Survey of Vertebrate Fauna Diversity & Threatened Species – 293 Compton Rd, Kuraby (2005)
- Fauna and Fauna Habitat Assessment Report for 19 First Ave, Woorim (2005)
- Fauna Assessment Report for 438 Old Cleveland Road East, Birkdale (2005)
- Review of Fauna and Fauna Habitat Values – Hoffmann land at Old Hollett Road, Noosaville (2005).
- Fauna Habitat Values Assessment – 105 Mt Petrie Road, Belmont (2005).
- Ecological Assessment Report – 30 & 38 Sheaffe Street, Bracken Ridge (2004)
- Pre-clearing and Clearing Surveys – Kelvin Grove Campus, Queensland University of Technology (2004)
- Ecological Assessment Report – 35 Arenga Street, Manly (2004)
- Fauna Habitat Values Investigation - 720-744 New Cleveland Road, Gumdale (2004)
- Fauna and Fauna Habitat Values Assessment – 2 Inala Avenue, Durack (2004)
- Habitat Values Assessment – 784/808 Blunder Road & 32 Peacock Street, Durack (2004)
- Habitat Values Assessment – 73 Landis Street, McDowall (2004)
- Fauna and Fauna Habitat Values Assessment – 100 Brookside Street, Doolandella (2004)
- Threatened Species and Biodiversity Assessment – Maree Street, Caloundra (2004)
- Re-evaluation of Fauna Habitat Values - 102-122 Cloverdale Road, Doolandella (2004)
- Fauna and Fauna Habitat Values Assessment, 972-1010 Blunder Road, Doolandella (2004)
- Flora and Fauna Assessment Report - 678 Manly Road, Wakerley (2004)
- Fauna and Fauna Habitat Values Assessment – 744 New Cleveland Road, Wakerley (2004)
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Attachment B Birdlife Australia Report 2015



28 January 2015

Director
Austecology
5 Davina St
Tarragindi
QLD 4121

Dear Mr Agnew,

Thank you for your email on the 16th January requesting BirdLife Australia's views on the potential significance of Black-throated Finch records on the Moray Downs Property. BirdLife Australia's view on this matter are detailed below, and informed by the attached notes.

BirdLife Australia is a highly respected, science-based, not-for-profit conservation organisation. With our specialised knowledge and the commitment of our Australia-wide network of 75,000 supporters, we are the country's largest organisation devoted to the future of Australia's bird life.

The Moray Downs property supports Australia's largest known population of the Southern Black-throated Finch (BTF).

Based on the number of BTF recorded at the site, BirdLife Australia considers the Moray Downs Property one of the most important sites for this species in Australia.

Removal or degradation of habitat at Moray Downs would therefore likely:

1. Lead to a long term decrease in the size of a population
2. Disrupt the breeding cycle of the population;
3. Modify and destroy habitat to the extent that the sub-species is likely to decline; and
4. Interfere with the recovery of the sub-species.

The Conservation Advice provided to the Minister for the Environment, from the Threatened Species Scientific Committee (TSSC) at the time of amending the list of Threatened Species under the Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act) in February 2005 states that the:

"key threat to this subspecies is the loss or degradation of habitat due to changes in land use management practices".

The Conservation Advice further States that:

"The priority recovery and threat abatement actions required for this species are: Protecting and enhancing habitat where the species is known to occur including securing sites for conservation, involving land managers in conservation, and monitoring management effectiveness".

Please contact me on 0447 484 067 or Samantha.vine@birdlife.org.au to discuss the issue further.

Yours sincerely,

A handwritten signature in blue ink, appearing to read "Samantha Vine".

Samantha Vine
Head of Conservation

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Significance of the Moray Downs Population of the southern Black-throated Finch.

In September 2013, James Cook University PhD student Stanley Tang sighted a flock of at least 400 Southern Black-throated Finches (BTF) at the 'Ten Mile Bore' site on the Moray Downs property.

Prior to the 2013 sighting the area surrounding Townsville was thought to be the finch's stronghold. However, we have no records to indicate that BTF in the Townsville area ever occurred in the sort of numbers seen on Moray Downs.

BirdLife are aware that surveys of the site since 2010 have regularly identified high numbers of birds, with flocks between 10 and 40 birds regularly recorded. As recently as December 2014, over 100 birds have been sighted in the vicinity of Ten Mile Bore. Clearly, significant numbers of birds continue to utilise this site.

Importance of the population within the national context

The extent of occurrence for the Black-throated Finch has contracted by an estimated 80% over the last 30 years. Further, given the finch is a small bird reliant on highly seasonal and very specific resources, the area of occupancy within its current area of occurrence is likely to be small.

We are concerned that the Townsville population is declining due to development pressures. The Townsville population of the BTF occurs on the fringe of Australia's largest tropical city, and is under threat from land clearing, intensification of livestock grazing, weed invasion, habitat fragmentation and possibly invasive animals. BTF population assessments based on annual water hole counts indicate that, at very best, there may be a few hundred birds remaining in the area. The Townsville district certainly does not harbor a large, stable or secure population.

In contrast, records of many hundreds of BTF utilising the Moray Downs habitat over the last few years demonstrate that the property support BTF habitat of the highest integrity.

Likely impact of Carmichael mine site development within the national context

Given the large numbers of finches reliant on habitat that will be destroyed for the proposed Carmichael mine, and the high likelihood that the population in the Townsville region is declining, it is highly probable that the habitat in the vicinity of Ten Mile Bore will be critical for the persistence of the southern Black-throated Finch in the long term.

Reports released as part of the EIS process suggest that the high value of the habitat is a result of a confluence of many landscape factors that have created an important refuge for the sub-species: lightly or un-grazed woodlands with a high diversity of grasses that provide food resources; springs, ephemeral streams and some key permanent water sources, a diversity of high quality habitat that provides tree species that they are known and have been recorded nesting in, and adjacent Trioda covered sandstone ranges that may be the critical dry season food and water resources.

BirdLife Australia are of the view that it is unlikely that any of the proposed offsets will result in a "no net loss" of BTF habitat for a number of reasons.

Firstly, we know the mine site provides the best quality habitat. Where finches have been seen on proposed offset sites, they have not been in numbers anywhere near as significant as at the Ten Mile Bore site.



If proposed offset habitat requires rehabilitation or creation, there are no guarantees that it will be of similar quality to the habitat it is supposed to replace. Our understanding of the complexity of BTF needs, especially over the long-term is far from complete. Even if it were technically feasible to create good habitat it could take many years, so whilst the impacts of habitat destruction are certain, the effectiveness of offsets are not.

Secondly, the cumulative impact of the numerous mines in the Galilee Basin will destroy a substantial portion of the finch population and there is simply not enough scope to offset all the impacts. The vast majority of habitat that proponents have available to them for potential offsets is actually subject to mineral exploration licences.

The situation for the Black-throated Finch in a national context is therefore exacerbated by the fact that decisions to approve numerous developments effecting the sub-species are being made in isolation from one another. Little consideration is being given to the progressive and cumulative impact the numerous mines and associated infrastructure will have on the finch. Proponents of the numerous projects in the Galilee are arguing that they can effectively offset the impact of their individual developments yet already almost 170,000 ha of prime BTF habitat will need to be created to compensate for current development approvals (see below).

For a bird already at high risk of extinction there can be little chance of recovery should the Carmichael mine go ahead and destroy it' stronghold, especially if much of the remaining habitat will be destroyed and/or fragmented.

This mine will push the bird closer to extinction.



Black Throated Finch (BTF) offset requirements in the Galilee Basin

Galilee Project approvals and assessments under the EPBC Act and approximate BTF offset requirements (from EPBC Approval notices and referral documents).

Project	Date	EPBC reference code	Approximate BTF Offset requirements (hectares)
Carmichael	24.07.2014	2010/5736	31,000
Alpha Coal project	23.08.2012	2008/4648	Up to 63,546
Alpha Coal Mine & Rail proposal	27.08.2014 (variation)	2008/4648	Up to 57,232
Kevin's Corner project	1.11.2013	2009/5033	3170
Galilee Coal (Northern Export Facility) & rail project	19.12.2013	2009/4737	10,000
North Galilee Basin Rail Project	23.09.2014	2013/6885	No specified offset area. Must offset 1836.2 ha BTF habitat in accordance with EPBC offset policy, or the actual area of disturbance as determined through further surveys (maximum 1836.2 ha).
China Stone	referral	2014/7353	Unknown
Galilee Infrastructure Corridor	assessment	2012/6489	Unknown
Central Old Integrated Rail project	assessment	2012/6322	Unknown
South Galilee Coal Project	assessment	2010/5496	Unknown

Attachment C Vanderduys et. al. (2015) Paper

1 **Addressing potential cumulative impacts of development on threatened species: the**
2 **case of the endangered black-throated finch**

3

4 *Eric Vanderduys^a, April Reside^b, Anthony Grice^c, Juliana Rechetelo^d*

5

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15

16

17 **Abstract**

18 In Australia, where threatened biodiversity is adversely affected by development, policies
19 often state that "no net loss" should be the goal and biodiversity offsetting is one mechanism
20 available to achieve this. However, developments are often approved on an *ad hoc* basis
21 and cumulative impacts are not sufficiently examined. We demonstrate the potential for
22 serious threat to an endangered subspecies when multiple developments are planned. We
23 modelled the distribution of the black-throated finch (*Poephila cincta cincta*) using bioclimatic
24 data and Queensland's Regional Ecosystem classification. We overlaid granted, extant
25 extractive and exploratory mining tenures within the known and modelled ranges of black-
26 throated finches to examine the level of incipient threat to this subspecies. Our models
27 indicate that more than half of the remaining *P. cincta cincta* habitat is currently under
28 extractive or exploratory tenure. Therefore, insufficient habitat exists to offset all potential
29 development so "no net loss" is not possible. This has implications for future conservation of
30 this and similarly distributed species and for resource development planning, especially the
31 use of legislated offsets for species protection.

32 **Key words:** *black-throated finch; Poephila cincta cincta; endangered; mining; biodiversity*
33 *offsets; cumulative impacts*

34

35 **Introduction**

36 The high rates of biodiversity decline documented globally demand close attention to the
37 conservation status of threatened species where threats are ongoing [1]. Many species
38 continue to decline because of changes in land use that include broadscale land clearing for
39 agriculture and urban development, as well as more subtle effects from fragmentation,
40 invasive species, grazing, changed fire regimes and shifting climate envelopes [2].

41 In Australia, where threatened species and ecosystems are likely to be adversely affected by
42 development, state and federal legislation dictates that development proponents must show
43 that impacts will be "offset". This may mean compensating against losses to achieve "no net
44 loss" of the matter in question [3,4], implementing management to maintain or improve
45 viability and provide equivalence to counterbalance any losses of the matter in question
46 [5,6]. However, it is difficult to compensate for loss of threatened species, particularly
47 species with very specific requirements or where species' requirements are poorly known or
48 where suitable habitat cannot readily be recreated [7]. Thus, achieving the goals of the acts
49 and policies referred to above is logistically problematic [8], and evaluating whether these
50 goals are achieved is equally fraught [9,10]. Creating reliable offsets when known areas of
51 high suitability are compromised lacks both theoretical support and practical methodology.

52 It is well recognised that potential cumulative impacts [11] are often overlooked when
53 multiple developments are considered in isolation and the landscape context is ignored [12],
54 decreasing the likelihood of achieving a "no net loss" outcome. Defining appropriate
55 reference frames and counterfactual scenarios is critical to effective offsetting [13,14] as are
56 timeframes for establishing [8] and maintaining the benefits of the offsets [14]. These
57 precautions are critical because "when offsetting is proposed, impacts to biodiversity are
58 certain and effective offsets are not" [15]. Both statutory [strategic assessments; 16] and
59 non-statutory [e.g. Galilee Basin Offset Strategy; 17] instruments exist to help plan within a
60 landscape context. Four strategic assessments are in place and twelve in progress across

61 Australia [16,18]. However, there is no requirement to coordinate offset selection, tenure
62 arrangements and maintenance outside of strategic assessment frameworks.

63 We examine the extent of potential cumulative impacts of mining industry activities using the
64 case study of a threatened bird, the black-throated finch *Poephila cincta cincta*. Its extent of
65 occurrence has contracted by an estimated 80% over the last 30 years due to land clearing
66 and intensification of livestock grazing [19,20]. The black-throated finch is being considered
67 in development offset processes in Queensland, Australia due to resource extraction
68 developments planned in its remaining habitat [e.g. 17,21]. We look at the potential for
69 adequate offset development against these impacts by examining all the resource extraction
70 and exploration leases together, and particularly those located in modelled black-throated
71 finch habitat. The area available for offsets is likely to be diminished when many
72 developments occur in one region, and likely to be uncoordinated in the absence of an
73 overarching strategic statutory plan.

74 **Methods**

75 *Species data*

76 The black-throated finch is an Australian Estrildid grass-finch consisting of two subspecies,
77 the northern: *Poephila cincta atropygialis*, confined to Cape York Peninsula and the northern
78 and western Gulf Plains, Queensland; and the southern subspecies: *Poephila cincta cincta*,
79 now largely restricted to the Townsville Plain and inland areas of the Desert Uplands and
80 Brigalow Belt Bioregions south to about 23°S (Figure 1). The northern subspecies is not
81 listed as threatened, while the southern subspecies is listed as endangered under the
82 Federal *Environment Protection and Biodiversity Conservation Act* [22], the Queensland
83 *Nature Conservation Act* [23] and the New South Wales *Threatened Species Conservation*
84 *Act* [24]. The southern subspecies is henceforth referred to as "BTF". The BTF once
85 occurred as far south as 31°S in NSW, but there are no recent records and it may now be
86 extinct in NSW [20]. In the vast area of its former range in southern Queensland (south of

87 23°S) there have been only nine records since 1980 [25; Queensland Wildnet and Black-
88 throated Finch Recovery Team databases, unpublished data], including one in 1990 from
89 near Stanthorpe in the extreme south and one at Rockhampton in 2004 (Figure 1). BTF now
90 appear to have two major strongholds – parts of the Townsville Plain in the northern
91 Brigalow Belt Bioregion, and along the eastern edge of the Desert Uplands Bioregion [see
92 26].

93 **Figure 1 Distribution of BTF records colour-coded by years. BTF records from all year-classes**
94 **were used to create the bioclimatic model. The most relevant IBRA bioregions are shaded:**
95 **BRB = Brigalow Belt; DEU = Desert Uplands; EIU = Einasleigh Uplands. Towns mentioned in**
96 **text are shown.**

97 BTF records were accessed from Birdlife Australia [25,27], CSIRO Ecosystem Sciences [28],
98 the Black-throated Finch Recovery Team (BTFRT, unpublished data, 2014) and ongoing
99 research (Rechetelo, unpublished data, 2014) databases, and data acquired through a 10-
100 year waterhole monitoring program co-ordinated by the BTFRT on the Townsville Plain. Data
101 were vetted by eliminating northern subspecies records, plus any listed as unspecified
102 subspecies and north of 18.9° S which is the approximate northern limit of *P. c. cincta*. The
103 BTF records shown in Figure 1 are those that were used to create the bioclimatic model.

104 *Climate data*

105 Climate data were derived from ANUCLIM [29] at a 9-second resolution (approximately
106 250m grids). The climate variables used were 30-year averages for the period 1976-2005 of
107 annual mean temperature, temperature seasonality, maximum temperature of the warmest
108 period, minimum temperature of the coldest period, annual precipitation, precipitation of the
109 wettest period, precipitation of the driest period and precipitation seasonality.

110 *Modelling protocol*

111 The BTF climate envelope was modelled using Maxent [30]. We used default settings and
112 10 000 random background points. The suitable climate space for BTF was designated as

113 the area within the climate envelope that had a climate suitability score equal to or greater
114 than the Maxent-derived "equate entropy of thresholded and original distributions logistic"
115 threshold; the threshold that gave the best approximation of the species' known distribution,
116 a value of 0.24. The species model was clipped, so that below the threshold suitability
117 became zero, and above the threshold retained the continuous suitability values. High
118 suitability was designated as a climate suitability score ≥ 0.5 . The model was validated by the
119 AUC score, and by calculating the omission errors of recent significant records, which were
120 defined as being from 1990 or later, with abundance greater than two or where there was
121 evidence of breeding (1386 records).

122 We further refined the model by clipping the climate distribution model using vegetation and
123 land-use data to achieve a realised species distribution. We removed from the climate
124 envelope islands and built up areas of cities and towns where no BTF have been recorded.
125 We then determined the primary Regional Ecosystem [RE; 31,32] designation underlying
126 each BTF record within the suitable climate modelled areas. Primary REs with three or fewer
127 presence records were ignored as being unlikely favourable habitat and REs listed as water
128 or non-remnant (cleared) were also ignored. There were 20 REs within the area that had a
129 suitability of ≥ 0.24 ; and 17 REs within the area with ≥ 0.5 suitability. Recognising that black-
130 throated finches sometimes use non-remnant areas in proximity to suitable habitat (i.e.
131 suitable REs), we buffered suitable REs to a distance of 1118 m. This distance was chosen
132 as an average of the maximum distances travelled by 15 radio-tracked BTF on the
133 Townsville Plain (Rechetelo, unpublished data, 2014). We determined that suitable habitat
134 was any area that had a climate suitability score of ≥ 0.24 and was one of the 20 suitable
135 REs, buffered to 1118 m (**Table 1**); this is hereafter referred to as the habitat model.

136 **Table 1. Areas of modelled favourable Regional Ecosystems (RE) for BTF at two bioclimatic thresholds (≥ 0.24 and ≥ 0.5), areas**
 137 **currently mapped as remnant, and areas not covered by extant mining or exploration leases. Totals for mining tenures add up to**
 138 **more than the buffered total because some areas have more than one mining tenure over them and because of rounding.**

		Climate suitability ≥ 0.24						Climate suitability ≥ 0.5			
RE1	Total available (km ²)	Area with no mining interest (km ²)		% no mining interest	Total available (km ²)	Area with no mining interest (km ²)		% no mining interest	IBRA subregion(s)		
9.8.1a	10446	3454	0	33.1	0	0	0		Cape-Campaspe Plains and Undara - Toomba Basalts		
9.12.1a	7011	4001	2220	57.1	3876	2220	57.3		Broken river		
10.5.5a	6906	1383	1317	20.0	5858	1317	22.5		Cape-Campaspe Plains		
10.3.28a	2314	376	357	16.3	1704	357	21.0		Alice Tableland and Cape Campaspe Plains		
10.3.6a	2257	431	384	19.1	1782	384	21.5		Cape-Campaspe Plains		
11.11.15	2066	1222	763	59.2	1175	763	64.9		Beucazon Hills		
11.3.35	1018	544	524	53.5	965	524	54.3		Townsville Plains		
10.7.11a	762	79	74	10.4	540	74	13.6		Alice Tableland and Cape Campaspe Plains		
11.3.30	610	349	347	57.2	596	347	58.2		Townsville Plains		
11.3.25b	545	327	209	60.0	372	209	56.1		Townsville Plains		
11.12.9	479	320	310	66.7	430	310	72.2		Townsville Plains		
9.3.3b	375	266	0	71.0	0	0	-		Broken River and Undara - Toomba Basalts		
11.11.9	298	231	229	77.5	280	229	81.7		Cape River Hills		

		Climate suitability ≥ 0.5					
		Climate suitability ≥ 0.24			Climate suitability ≥ 0.5		
RE1	Total available (km ²)	Area with no mining interest (km ²)	% no mining interest	Total available (km ²)	Area with no mining interest (km ²)	% no mining interest	IBRA subregion(s)
11.3.12	241	203	84.1	238	200	84.0	Townsville Plains
11.3.35a	209	138	66.2	209	138	66.2	Townsville Plains
7.12.24a	144	140	97.2	17	17	100.0	Townsville Plains
11.3.31	119	66	55.2	119	65	55.0	Townsville Plains
11.3.27	21	13	62.7	12	12	96.7	Townsville Plains
7.12.65b	12	12	100.0	6	6	100.0	Townsville Plains
9.12.33b	5	2	39.0	0	0	-	Gilberton Plateau
TOTAL RES	35840	13559	37.8	18179	7172	39.4	
BUFFERED	75431	32435	43.0	35193	15153	43.0	

139 Because regional ecosystem classifications do not indicate pre-clearing vegetation type, we
140 used broad vegetation classifications [BVG; 33], overlaid with non-remnants in the Regional
141 Ecosystem classification, to determine potential cleared extents available for rehabilitation as
142 offsets.

143 *Resource extractive and exploratory industries extents*

144 In Queensland there are a number of extractive (mining) permit and lease types, governed
145 by the *Mineral Resources Act 1989* and the *Petroleum and Gas (Production and Safety) Act*
146 *2004* [34,35]. These range from low level permits that allow exploration activities to occur in a
147 given area, up to higher permits that allow for resource extraction. Exploration permits are no
148 guarantee of future realised resource extraction but do require that on-ground activities such
149 as a drilling program are conducted in a timely fashion as detailed in a work program to be
150 submitted to the Department of Natural Resources and Mines [36]. From Geological Survey
151 of Queensland maps [37], we accumulated granted extractive and exploratory industry
152 tenures (Exploration Permits for Coal (EPC), Exploration Permits for Geothermal (EPG),
153 Exploration Permits for Mineral (EPM), Exploration Permits for Petroleum (EPP), Mining
154 Claim (MC), Mineral Development Licence (MDL), Mining Lease (ML), Petroleum Lease (PL),
155 Petroleum Survey Licence (PSL)) for Queensland that were extant as of 30 May 2014. If we
156 assume that areas subject to lower permits such as exploration permits have a lower chance
157 of resource realisation than areas covered by extraction leases, then it is useful to look at the
158 proportions of each tenure type in relation to modelled BTF habitat. In parts of the southern
159 and central Galilee Basin, some MLs and MDLs have been granted over exploration permits
160 and proponents have submitted detailed plans of proposed impact areas [37,38,39,40,41].
161 We mapped the planned extents of these developments using geo-rectified images in
162 ArcGIS 10.1. We overlaid the BTF habitat model with the resource tenure information to
163 determine the overlap of these potential land uses with BTF habitat. We also overlaid the
164 habitat model on the protected area estate of Queensland [42], to determine its current
165 protected extent.

166 We used these same resource tenure data in relation to the Galilee Basin Offset Strategy
167 [GBOS; 17]. The GBOS identifies three priorities that make up a strategic footprint within the
168 northern Brigalow Belt and Desert Uplands bioregions: 1) high conservation value areas; 2)
169 key north-south and east-west corridors that link to adjacent bioregions; and 3) areas with
170 potential for rehabilitation, that is, for offsetting.

171 **Results**

172 The species climate envelope model had high performance with an AUC of 0.96, and 97% of
173 the recent significant records fell within the climatically highly suitable (climate suitability
174 ≥ 0.5) area. The remaining 3% of the recent significant records were within the climatically
175 suitable area (climate suitability ≥ 0.24).

176 The total area of the habitat model was 75,431 km². The buffered high suitability (≥ 0.5) area
177 was 35,193 km². Total areas of the non-buffered REs were 35,840 and 18,179 km²,
178 respectively. A breakdown of favourable RE extents is given in Table 1.

179 Of both the climatically suitable and highly suitable areas of the habitat model combined,
180 43.0% (32,435 km²) remains outside the areas of granted tenure (Figure 2). National Parks
181 cover 2.2% of the modelled habitat and 0.8% of the highly suitable modelled habitat. Of the
182 suitable REs within the habitat model, 37.8% (13,559 km²) and 39.4% (7,172 km²) remains
183 outside granted extractive or exploratory industry tenures for suitable and highly suitable
184 climate, respectively. The different levels of mining permit and the extent to which these and
185 National Parks coincide with modelled habitat are presented in Table 2. Of EPCs in the
186 Galilee Basin that have been converted to MDLs or MLs, and thus have a higher probability
187 of going ahead as mines, and that have also submitted development plans with infrastructure
188 and mine footprints, 41% of the combined original exploration area is likely to be impacted if
189 the mines go ahead as planned (Table 3).

190 **Figure 2 Modelled BTF habitat and extant extractive/exploratory tenures. (A) BTF habitat**
191 **modelled as most favourable (dark green), which are the favourable REs within the ≥ 0.5 climate**

192 envelope, through to less favourable (lightest green) which are the 1118 m buffered favourable
 193 REs in the ≥ 0.24 climate envelope. Dashed line denotes the ≥ 0.5 climate envelope; dotted line
 194 the ≥ 0.24 envelope. (B) Extractive/exploratory tenures overlaid on modelled BTF habitat. Green
 195 shades are as per (A), red – orange areas are equivalent to green layers except overlaid by
 196 extant extractive/exploratory tenures. Extents for both maps are identical.

197 **Table 2. Total areas for mining tenures within the habitat model area. Areas are incongruent**
 198 **with figures presented in Table 1 because some areas have more than one mining tenure over**
 199 **them and because of rounding.**

Tenure	Climate suitability	Climate suitability
	≥ 0.24	≥ 0.5
	Total area (km ²)	Total area (km ²)
EPC	24699	14023
EPG	10744	309
EPM	18937	12416
EPP	14976	9038
MC	0.13	0.02
MDL	741	741
ML	1438	956
PL	88	85
PSL	920	9
TOTAL	72543.13	37577.02
National Park		
REs	737	68
National Park		
(buffered)	1659	274

200

201 **Table 3. Total areas for EPCs, MDLs and MLs from the southern and central Galilee Basin.**
 202 **Alpha and Kevin's Corner are grouped together because they shared portions of EPC1210. All**
 203 **areas were calculated from DNRM (2014) and other listed source documents using ArcGIS 10.1**
 204 **geo-rectified, low resolution imagery from source documents and creating polygons around**
 205 **affected area.**

Proponent	Lease/Tenement	Area (Ha)	Area affected (Ha)	% affected	Source
Adani	EPC1080 (east portion only)	18714	32112 [‡]	72	(Adani Mining Pty Ltd 2013)
	EPC1690	26016			
Alpha / Kevin's Corner	EPC1210	36818			(Hancock Galilee Pty Ltd 2011;
	MDL285	33706			Hancock
	MDL333	31507			Prospecting Pty Ltd
	ML70425		26923		2010; Queensland
	ML70426		26265	52	Government 2013)
China First	EPC1040	75674	53881	39	(Waratah Coal
	EPC1079	63863			2011)
China Stone	EPC987 (south portion only)	20066	16787	84	(Macmines Australia Pty Ltd 2012)
South Galilee	EPC1049	89523			(SGCP 2012)
	EPC1180	19096			
	ML70453		14823	14	
TOTAL				41	

206 [‡]Does not include approximately 2929 ha industrial area, airport and accommodation village
 207 that lie outside extents of EPC1080 and 1690.

208 For post 2000 BTF records that are not on the Townsville Plains (and thus likely to be more
209 impacted by mining tenures), 66 of 76 records (87%) are from or within 1118 m of BVG 17b
210 (woodlands to open-woodlands dominated by *Eucalyptus melanophloia* (or *E. shirleyi*) on
211 sand plains and footslopes of hills and ranges). Cleared extents of BVG 17b within the
212 favourable and highly favourable climate envelopes are 3494 and 1093 km², respectively.

213 Of the priority areas identified in the GBOS [17], overall 31.5% falls outside areas with
214 overlying resource tenure: 42.3% of Priority 1; 23.4 % of Priority 2; and 26.4% of Priority 3.

215

216 **Discussion**

217 The entire habitat of widespread species is rarely threatened by singular events. Rather,
218 small percentage habitat losses, fragmentation and degradation result in cumulative impacts
219 resulting in "death by a thousand cuts" [43]. Responsibility for the survival of widespread
220 species may be difficult to define and does not usually fall into the hands of one proponent.
221 The regulatory framework protecting threatened species may be similarly evasive in terms of
222 assigning responsibility. Consequently, decline and extinction of once-widespread species
223 has occurred through multiple factors acting in concert [2].

224 Our model of BTF habitat shows that over 60% of the remaining suitable habitat falls within
225 granted, extant resource extraction or exploration tenures. Therefore, insufficient BTF habitat
226 exists to secure enough land to offset all the potential extraction or exploration
227 developments. Given that the BTF has lost 80% of its historic range, losing over 60% of the
228 remaining habitat would be a serious threat to the species' persistence. It is unlikely that all of
229 the extraction or exploration tenure areas will be developed as mines, but for areas with
230 detailed mine plans, 41% of the original lease area is planned to be developed. Furthermore,
231 80% of the BTF stronghold along the eastern edge of the Desert Uplands Bioregion is under
232 resource extraction or exploration tenures (**Table 1**), suggesting that if approximately 40% of
233 lease areas are developed, then around 32% of the BTF's stronghold is likely to be lost to

234 mining activities. Furthermore, there is a danger that multiple exploratory activities, separate
235 from current planned mines would result in fragmentation, habitat loss and degradation
236 without requiring offsetting, because impacts may be perceived to be insignificant and thus
237 not trigger further investigation. One test pit and associated infrastructure, for example,
238 covers an area of approximately 93 ha [from imagery courtesy of the 44] and we can find no
239 evidence of a referral for this activity.

240 The Galilee Basin Offset Strategy (EHP 2013) provides guidance for biodiversity offset
241 planning for the northern Brigalow Belt and Desert Uplands bioregions, which encompass
242 most of the BTF's remaining range. Under the strategy, offsets may be established in
243 degraded or cleared areas that can be improved or rehabilitated in order to actually offset
244 biodiversity losses (EHP 2013, p. 21). However, the whole of the eastern part of the Galilee
245 Basin is held under coal exploration tenure by a number of companies (DNRM 2014; EHP
246 2013) and given that over 50% of the modelled BTF habitat could be explored and/or
247 developed for mining, it is technically impossible to apply the current offset arrangements
248 and achieve no net loss of BTF. Little of this key region is available for rehabilitation to offset
249 BTF habitat loss: within the Brigalow Belt, Desert Uplands and Einasleigh Uplands, which
250 collectively provided 99.5% of post-2000 BTF records, 24% and 20% of the climatically
251 suitable and highly suitable envelopes, respectively, is non-remnant (cleared). The total area
252 of non-remnant land is considerably less than the area under extractive or exploratory
253 tenures (Table 2), so there is a deficit of land that could be rehabilitated for BTF habitat
254 offsets. Furthermore, cleared areas of formerly favourable habitat such as open woodlands
255 dominated by *Eucalyptus melanophloia* (BVG17b) are even more limited. One recently
256 approved mine [45] alone will impact approximately 97 km² of BTF habitat [46]. Therefore, if
257 cleared habitat is to be rehabilitated for offsetting purposes to the Federally required [45]
258 extent of approximately 309 km², then around 28% of the cleared BVG 17b, which is the
259 main favourable habitat impacted, would be used as offsets for this mine alone. Within
260 recorded movement distances of BTF (16 km; Rechetelo, unpublished data, 2014) of this

261 mine's boundary there is less than 43 km² of non-remnant BVG 17b, meaning close proximity
262 offsetting is likely to be impossible [3,7,9]. Furthermore, neighbouring applications for
263 additional MDLs and MLs totalling at least 1047 km², are in place [37,47] further limiting the
264 scope for local offsets.

265 Another important issue relates to the time lag for restoration to occur. Nowhere within the
266 BTF's range has intentional forward planning occurred to mitigate against time lags [e.g. 46],
267 nor is it a requirement under the GBOS [17]. Rather, the purchase or management of offsets
268 usually begins after development commences [e.g. 48]; this strategy can only result in a net
269 loss of habitat or environmental values [49,50]. If sufficient habitat is to be available
270 continuously, and this is essential for persistence of the species, offsets must be created
271 before the activity that they seek to offset is undertaken [8,50]. To use specific examples
272 from one mine, rehabilitation activities listed in ecofund [51] and GHD [46] are likely to take
273 many years to develop into the high quality habitat they are intended to offset. Hollow-
274 bearing trees, for example, which may be used as nest sites for BTF are likely to take much
275 longer than 30 years to develop [10]. Furthermore, to our knowledge, restoration has not
276 been attempted for BTF habitat in any context. In other systems restoration of highly
277 degraded habitat often leads to a different ecological community than that which previously
278 existed [e.g. 52,53,54]. Where clearing has not occurred, impacts such as grazing are more
279 easily mitigated and thus grazing land managed for BTF could potentially be used as offsets
280 [50]. However, it is not possible to assess this potential aspect of offsetting because specific
281 details are omitted in the Environmental Offset Package [51; pp. 29-43].

282 In the Galilee Basin, other threatened species, such as the yakka skink (*Egernia rugosa*),
283 and communities such as RE 10.9.3a (a *Eucalyptus cambageana* woodland), are also likely
284 to be impacted by exploratory or extractive industries to an extent that is difficult or
285 impossible to offset. For example, the entire extent of the *Eucalyptus cambageana* woodland
286 community is within areas of extractive or exploration tenure. For many species and
287 communities, the land available for offsets is limited; so offsets may come in the form of

288 research funding. Although useful for understanding the ecology of the species as a basis for
289 improved conservation, research funding offsets have little direct benefit in actually
290 conserving habitat or protecting the population [55].

291 Over 70% of the area designated by the strategic footprint in the GBOS [17] as potential
292 offsets against loss of biodiversity is itself covered by resource extraction or exploration
293 tenures. Priority 1 areas occupy less extent than priority 3 areas (16,063 km² vs 20,416 km²)
294 as they must to adequately offset areas that are in better condition [49,50]. However, the
295 extent of priority 1 areas under exploratory or extractive tenure is 9,258 km², whereas extent
296 of priority 3 areas (potentially to be used as offsets) *not* under exploratory or extractive
297 tenure is 5,383 km², which is 58.1% of the area it is supposed to offset. Thus, just over half of
298 the area that would be required for a 1:1 offset ratio is actually available for offsets.

299 In addition to the areas lost if the planned exploration and extraction go ahead, the remaining
300 land will become more fragmented, which increases the likelihood of incursion by invasive
301 species, and could change fire regimes, leading to overall lower suitability [2]. The railway
302 corridors that are planned to service extractive industries in the Galilee Basin have not been
303 considered in this paper, but if they were built they would be long [e.g. 189 km x 95 m:
304 56, approx. 495 km: 57] pathways for potential weed invasion and lead to further
305 fragmentation [58]. Also not considered to this point in this paper is potential habitat
306 fragmentation as a result of gas drilling, which has an inherently high edge to footprint ratio
307 because of well spacing and access roads [59]. This is being undertaken at the southern
308 edge of the BTF's current range. The BTF is demonstrably vulnerable to land conversion,
309 having disappeared from much of the southern extent of its range during a period in which
310 the land was converted for agriculture. The BTF is primarily a ground feeder dependent for
311 food on seeds of several species which it generally accesses on relatively open ground [20].
312 BTF are thus vulnerable to habitat alteration by invasive species such as grader grass
313 (*Themeda quadrivalvis*) and shrubby stylo (*Stylosanthes scabra*) (Rechetelo, unpublished
314 data, 2014). Given that BTF have been recorded moving up to 16 km to find food and water

315 (Rechetelo, unpublished data, 2014) fragmentation is likely to make movement across the
316 landscape more difficult and reduce population viability.

317 Our results show that provision of offsets to provide protection for BTF is likely to be a
318 difficult proposition in the stronghold area of the eastern Desert Uplands. Protection of
319 remnant high value habitat should not be considered as offsetting as this can only result in a
320 net loss of suitable habitat [49], and protection of offsets developed from cleared or degraded
321 land is likely to be problematic for a number of reasons. First, conditions on approvals [e.g.
322 60] require offset areas to be 'legally secured' for at least the duration of the impact [3,4,6].
323 There may be a recommendation of 'in perpetuity' protection [17], but the security of offsets is
324 questionable because they may be revoked [61], Nature Refuges may be developed for
325 mining [62], and even for National Parks, there is currently a designated financial offset ratio
326 (10:1) that may, potentially, be proponent-driven [5]. This policy framework undermines the
327 prospects for secure offset protection for BTF. Second, the ecological requirements of BTF
328 are poorly understood. Although preferred habitats are generally known (see model), there is
329 no established means of rehabilitating heavily degraded or cleared land as BTF habitat. This
330 further undermines the prospects for confidently using offsets as a protection mechanism.
331 Third, timeframes given in offset documents such as 'for the duration of the impact', or 'until
332 2073' [48], are likely to be insufficient as a long-term protection mechanism and provide little
333 guarantee of offset success.

334 Other land use factors threaten the persistence of the BTF, particularly in other stronghold
335 areas such as the the Townsville Plain, where only 34% of the sub-region is planned for
336 resource extraction. The population in this area occurs on the fringe of Australia's largest
337 tropical city and is under threat from ongoing urban expansion, weed invasion, habitat
338 fragmentation and possibly invasive animals. The human population of the Townsville Local
339 Government Area is forecast to expand between 122 - 134% over 2011 levels by 2021, while
340 the broader Townsville region is forecast to expand by 118 - 128% over the same time frame
341 [63,64]. There is no reliable BTF population estimate and the large number of records for this

342 region (Figure 1, Table 1) does not equate to a large, stable or secure population but rather
343 proximity to an urban centre with many bird observers, including annual water hole counts
344 since 2004 (BTFRT, unpublished data).

345 While the plight of the BTF is being considered under federal threatened species legislation,
346 we show here that current mitigation strategies are unlikely to be sufficient to prevent further
347 severe decline. To make a genuine effort to avoid net loss of a species facing development
348 in its habitat, stricter protocols such as those proposed by Bos et al (2014), need to be in
349 place. Primarily in the context of groundwater, the Independent Expert Scientific Committee
350 on Coal Seam Gas and Large Coal Mining Development [65] considered that, given the
351 scale of proposed developments within the Galilee Basin, information on cumulative impacts
352 should be commensurate with the scale of all proposed developments. The same holistic
353 approach should be taken when considering development approvals and conditions so that
354 overall risks to a species can be fully evaluated.

355 Our approach has looked broadly at scope for establishing offsets for BTF in central
356 Queensland in the face of planned and prospective broadscale landscape change. It could
357 be refined by taking into account the fine scale habitat requirements of the species including
358 habitat degradation by grazing and exotic plants, especially buffel grass (*Cenchrus ciliaris*).
359 This would require further research.

360 **Acknowledgments**

361 We thank Justin Perry, Chris Pavey (both CSIRO), Alex Kutt (Australian Research Centre for
362 Urban Ecology, University of Melbourne) and Juliana McCosker (Environment and Heritage
363 Protection, Emerald) for helpful suggestions on a draft of this paper. Downscaled climate
364 data were provided by Jeremy VanDerWal at the eResearch Centre at James Cook
365 University, Townsville. The production of this manuscript was supported by the CSIRO
366 Division of Ecosystem Sciences, CSIRO Building Resilient Australian Biodiversity Assets
367 Theme and CSIRO Land and Water Flagship.

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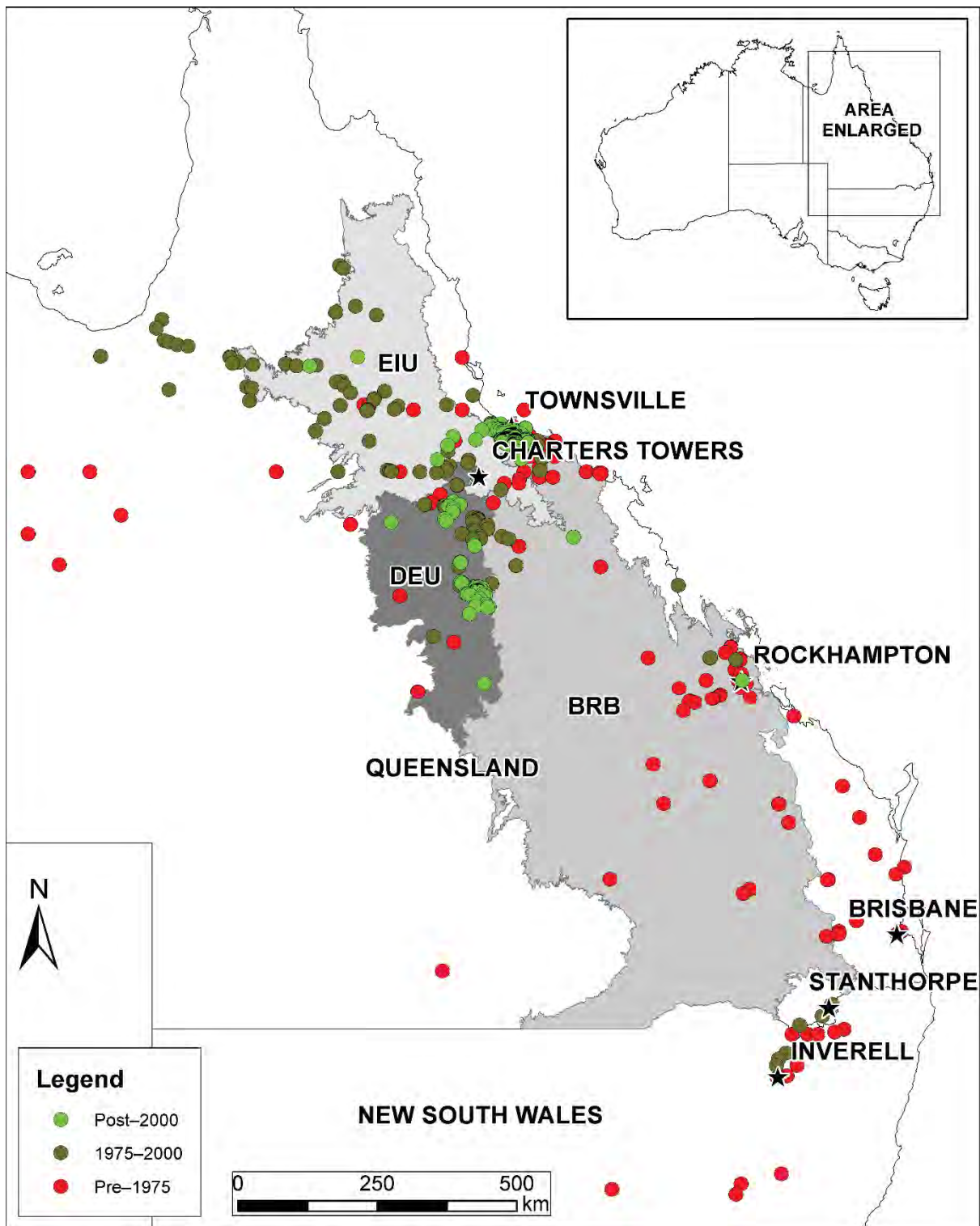


Figure 1 Distribution of BTF records colour-coded by years. BTF records from all year-classes were used to create the bioclimatic model. The most relevant IBRA bioregions are shaded: BRB = Brigalow Belt; DEU = Desert Uplands; EIU = Einiasleigh Uplands. Towns mentioned in text are shown.

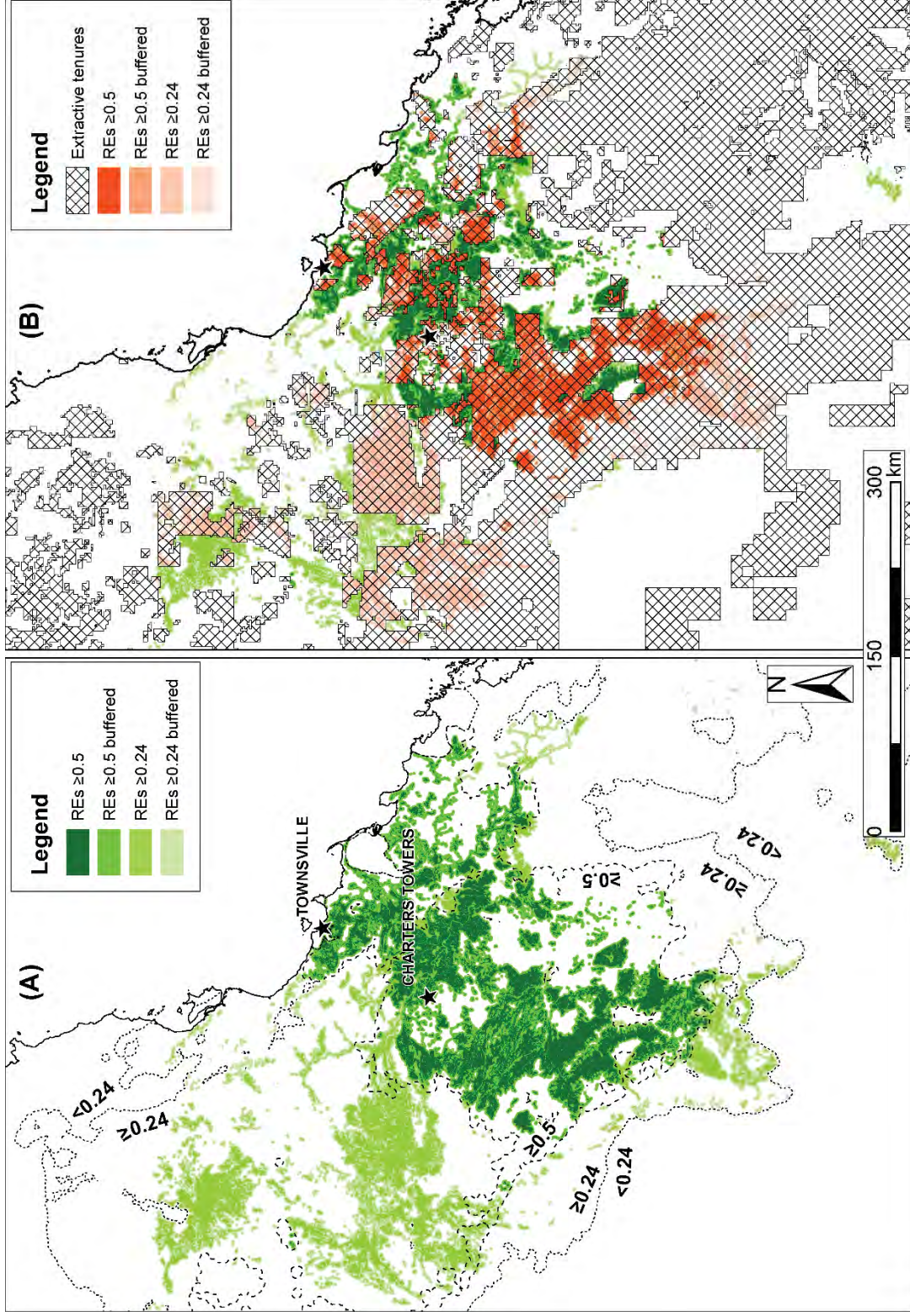


Figure 1 Modelled BTF habitat and extant extractive/exploratory tenures. (A) BTF habitat modelled as most favourable (dark green), which are the favourable REs within the ≥ 0.5 climate envelope, through to less favourable (lightest green) which are the 1118 m buffered favourable REs in the ≥ 0.24 climate envelope. Dashed line denotes the ≥ 0.5 climate envelope; dotted line the ≥ 0.24 envelope. (B) Extractive/exploratory tenures overlaid on modelled BTF habitat. Green shades are as per (A), red – orange areas are equivalent to green layers except overlaid by extant extractive/exploratory tenures. Extents for both maps are identical.

Attachment D BTF Recovery Team Meeting Minutes - 3 May 2013

Lindsay Agnew

From: Tony Grice [tony.grice54@gmail.com]
Sent: Friday, 13 March 2015 11:42 AM
To: Lindsay Agnew; Alma Ridep-Morris
Subject: Notes
Attachments: Adani meeting notes 2013.pdf; _Certification_.htm

Hi Lindsay

Here are the notes from the RT meeting with Adani. We are happy for you to use them and welcome any feedback.

Cheers
Tony

No virus found in this message.
Checked by AVG - www.avg.com
Version: 2015.0.5646 / Virus Database: 4306/9284 - Release Date: 03/12/15

Present: Tony, Rob, April, Alma, James

Alex Kutt, Hamish Manzi 3 5 13

BTFRT meeting w/ Alex Kutt + Hamish

(1)

- Key Habitat variables
- BTF appear in \bar{e} landscape
- need site specific information for this site + this whole region
- Regional intent for conservation of BTF
- Regional approach to conserve region's ecosystems

Hamish - we rely on info known @ the time + studies

- guidelines for this project

Tony - there's no regional approach for this area, not knowing popⁿ size, distribⁿ, mobility of BTF before we all know how to mitigate effects

- plan open cut 50% of footprint + that's a devastating effect on BTF
- major impacts of spp.

Hamish - primarily driven by explorⁿ's program

(2)

rough line N → S where coal
is deep underground

- could be 10-20 yrs.
project - not clear in EIS is
timing & period

- rehabilitation: looking at
revised main forms of the
pits

- mix response of rehabilit'n
from diff + stake holders
- grazing

Tony + Rob - no evidence about
rehabilitation of area can
bring back BTF pop'n

Alex - ^{all} finches have variety of habitats
use

Rob - difficult to have rehabilit'n
as suitable for BTF

James - use landscape diff +
times of year

Hamish - SewPAC want to see
rehabilit'n

- identified in EIS that all
areas to be offset
- impact is there
- underground activity may
be additional impact on

- water retention, ground splitting
- Hamish - SewPAC - disturb habitat,
need to find equivalent habitat
- Tony - north area is a good
habitat for BIF
- Hamish - net loss, process involved
Alpha project - 8:1 multiplier
- habitat to secure + how to
manage it
- Look at offset areas, but no
regional context here
- Tony - This region (central Gld,
Galilee Basin) the best
region for BIF
- if there are good high popn
this is the region that is
the peak region for BIF popn
- peak of the site
- Hamish - regional context how to
manage it
Western area less grazed
- Alex - challenge of management
- fire managing country
- poisonous country (red ...)
- James - offsets, exploration leaseholders

(4)

Hamish - freehold, mine leases
offset not necessarily going
to be offset

Rob - work out where you going
to mine, where you're going
to offset

Hamish - can offset Moray Down
in e north

Galilee Basin - offset

- info gathered by desktop
conservation strategies, ecological
- but excludes
- offsets - preference to acquire
offsets

Tony - offset is not a land-use or
tenure, but some sort of
arrangement to offset impact
from another country

- ex. trend in grazing regime
can impact BTF popⁿ
- offset for grazing regime
is regulated

Hamish - being an offset doesn't
preclude to land use
- what we want to know

Hamish - Adani can fund an acquire
land for offset - popⁿ

(5)

Alma - offset in perpetuity?

Hamish - offset requirement for
30 years

Rob - offset relies on mgmt

Hamish - ones that have been ^{leases} converted to mining are excluded to becoming offsets

Hamish - what we know about coal exploration, way out west is more underground coal

Tony - do you feel you've got good picture of BTF in your footprint

Alex - yes, we've got good picture in \bar{e} footprint

Tony - but you don't have full picture of their mobility

Tony - 60 BTFs banded, most re-sighting close to where they were banded, but found some away ^{nearly} 5 km distance, stay in immediate vicinity for period of time
- Townsville coastal plain ~~is~~ is highly modified

mm

BEN90M1006P 1S490411
BEN90M1006P 1S490411

(6)

- Rob - how many birds in
Maray Downs
- Alex - hundreds of birds
w/ mix flocks w/ other
birds, surveyed in May 2012
- Hamish - exploration ^{surveys} had a
number of sightings
consistent w/ GHD surveys
- Tony - we'd be interested to see
the data, is that a prospect,
is that w/ GPS
- Hamish - yes we can gather that
data for you
- Tony - use platyphyllo + mellaleuca
nests found
- what's the end goal of GHD
- Alex - SewPAC wants to see more
BIF data collected, what's going
on @ site; intent (Appendix N)
want to go out & replicate
that survey, find sites
where record BIFs
- permanent mark sites, 100m transect
 - intent to repeat surveys @ habitat sites
 - cameras - found BIFs on troughs

Alex - incidental records, info on #s, where they are

- Northern Morray Downs are prospective offset areas

Hamish - part of our commitment to give data

- project to the south, going through EIS, spoken to other mine proponents to do data-sharing

Tony - need to have comparable techniques

Alex - what influence do you have w/ SELWPAC on project

Tony - we contact & work w/ SELWPAC to get our ideas across, Rob's point about regional approach is important

Hamish - 50 sites, want to look @ more

Rob - data is important for the community to know

Tony - want to hold on to more habitat

April - do you collect data for sake of ^{influence Δ of mine} collection, will it ^{protect}

Hamish - data collect will inform \bar{e} condition, what needs to happen on the stage, better id of offsets

Alex - understand habitat, will depend on what SELWPAC condition

(8)

Rob - decision falls on Directors
- don't rely on offsets, wise decision

Hamish - conditions based on info.
provided

Alex - SewPAC wanted to talk about
surveys, spp. distribⁿ modelling,
broad scale distribⁿ

~~Hamish~~ - ~~required~~ how far records of
enviro., REs

Tony - how well mapped are water
Hamish - historical ^{data on} Doves, dams,
springs mapped

Alex - issue of artificial water points
surveys should
Tony - relate it to REs, water layers,
land condition, topography,
land types, ~~soils~~

Hamish - soils as well

Tony - Land condition for BTF
intact woody layer, tree layer,
ground cover of grass species
diff^t spp. that could be
driving good habitat

Hamish - will have aerial photography
Tony - conceptual model of what
drives BTF habitat, healthy
grassland can be poor habitat
∴ composition, biomass & seeding imp.

9

April - fPar data - scale

Tony - scale, BTF localised, sedentary
short distance movers, BTF spend
most of life 10km where they
were hatched (but no evidence)
so respond to fine scale
- Nicki's

- burnt country - foraging in burnt
country + study area

Hamish - what about connectivity w/
other spp?

Alex - flock w/ other spp.
 $\frac{1}{3}$ to a $\frac{1}{2}$

Tony - flock w/ other granivores,
double-bills, plum-heads, but
possibly only after same resource

Hamish - timing of project, good
to have info of where hatch + where
they move to

Alex - broad distribn, spot surveys,
ground truthing areas

Hamish - start program to build in
commitment go beyond initial
phase

Tony - broad picture where they are
in regional basis, in your
footprint + surrounding areas
adjacent sites + effects

- what are the habitat characteristics are they relating to (close to water, habitat condition)
- F - 3 scales important
- H - mobility question is a big unknown
- Need to think of a scale that constitutes a big enough area for BTF to use as habitat
- F - You can look @ country & look at flock-level, but important to do also seasonal surveys to cover timing of flock
- Rob - Townsville Coastal plain diff to Morray Downs area
- Tony - ecological traits diff in diff landscape
- BTF here may be only moving 3-5 kms, but BTF in Morray Downs move 10-20 km away
- Alma - survey method > BTF survey guideline
- Alex - longer term, w/ many sites
- Tony - Biodiversity Bird Australia having your surveys in many sites
- Alex - w/ longer time is good how feasible to get handle of radio-tracking & timing
- April - depends on density of flock, could take months

∴ composition, biomass . .

(11)

Tony - regional, sub-regional, local survey
- catching/banding time consuming

April - what's the temporal survey

Hamish - annual surveys for 5 yrs ^{for beyond}

Tony - need to have seasonal surveys
for that 5 yrs.

Hamish - approach annual surveys

Tony - get value out of it, more
months a year, look @ seasonal
surveys at regional level

- banding/radio-tracking will give
you local level info (more additional
investment)
- better off to do more regional info

+ get popⁿ estimates ^{info}

Rob - also important to get local densityⁿ

Tony - to get regional estimate, marking
& recapturing of local flock will
not be sufficient, therefore need
to cover more flocks consultant to do

Alex - banding might not be possible for

Hamish - may be an indirect funding
could be an

Tony - knowing how BTF using e
landscape

- there is value of using banding
& radio tracking, ^{not done by consultants} logistically
Adani should be funding it into future

- Hamish - adaptive management, is there value for
- Alex - surveys every couple of months to cover regional surveys
- Tony - vital 1st step to look @ popⁿ in e area
- Hamish - intention: talk to SeWPAC in 2 wks time, need to draw all info together
- Tony - happy to give feedback
 - info important & help influence the decision that are made to protect BTF
- James - Stanley will be going down there later in e year
- Tony - get a handle of data you've got
- Hamish - have data that can be provided to RT, have photos of BTF as well, info public info so we can provide it
 - Hamish, Alex meet w/ SeWPAC Francis Knight, Emma Culley
 - met w/ RT today
- Tony - don't interpret that ^{idea} _{our meeting} as a great

(13)

Hamish - guidelines for EIS,
couldn't cover ^{overall} density,
data come from areas where
landowners allow us access

- Endeavour to avoid some impacts
like ⁱⁿ sighting areas to have
constructed stage

~~Improving~~

Tony - what's the current water
mgmt regime?

Hamish - stock troughs will be filled,
dams haven't been removed
- refine water mapping + water

Alex - RT's ^{Sources?} questions?

Tony - ① RT would like to look @ BIF
data Adani collected + we
can give feedback on

② Cooperation of Juliana + Stan's work

③ Offsets + ^{their} limitations

Hamish - did resource study of
rail line,



EDO Qld.

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*Using the law to protect
our environment.*

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25 November 2014

Lindsay Agnew
Austecology
5 Davina Street
Tarragindi Qld 4121

Sent by email: Lindsay@austecology.com.au

Dear Mr Agnew

Land Services of LSCC Inc. – Analysis of Carmichael coal mine assessment

We confirm that we act for Land Services of Coast and Country Inc. (**LSCC**) in respect of its concerns with the Carmichael Coal Mine (**Project**). LSCC has made an objection to the grant of a mining lease (**ML**) and environmental authority (**EA**) for the Project which are currently the subject of proceedings in the Queensland Land Court (**Proceedings**).

1. Engagement

1.1 On behalf of LSCC, we wish to engage you to act as an independent expert witness in the Proceedings in relation to your area of expertise; threatened fauna.

2. Instructions

2.1 You are instructed to review this letter and accompanying documents and advise generally as to whether you consider there are any significant issues or deficiencies in the assessment of your area of expertise for the Project.

2.2 Participate in the court process in the manner set out in the orders of the Court made on 20 October 2014.

3. Background information

3.1 The Project is a proposed open-cut and underground coal mine 160 km north-west of the town of Clermont, in Central Queensland. The mining lease application is for 30

years with an annual coal production rate of around 60 million tonnes per annum, but it is noteworthy that the Applicant's intention is to run the mine for 60 years.

- 3.2 The Project is situated in the Galilee Basin in the catchment of the Burdekin River, which flows into wetlands and the Great Barrier Reef, and the area of the Project and its surroundings is predominantly used for agriculture, particularly grazing.
- 3.3 The thermal coal deposits for the Project are located within Mining Lease Applications 70441, 70505 and 70506 (**MLAs**). Approximately 28,000 hectares of the mining lease area is proposed to be disturbed by the open-cut and underground mining operations and related activities.
- 3.4 Adani Mining Pty Ltd (**Applicant**) lodged MLA 70441 for a mining lease (**ML**) under the *Mineral Resources Act 1989* (Qld) (**MR Act**) on or about 8 November 2010 and subsequently applied for MLAs 70505 and 70506 on 9 July 2013.
- 3.5 The Coordinator-General declared the Project a significant project¹ for which an environmental impact state (**EIS**) was required under the *State Development and Public Works Organisation Act 1971* (Qld) (**SDPWO Act**) by [gazettal notice](#) on 26 November 2010.
- 3.6 The Applicant's EIS was published and public submissions invited from 15 December 2012 to 11 February 2013. A Supplementary EIS (**SEIS**) was published and public submissions invited from 25 November 2013 to 20 December 2013.
- 3.7 The Coordinator-General's report on the Project under the SDPWO Act was delivered on 7 May 2014. The Coordinator-General recommended that the mine be approved subject to conditions.
- 3.8 The Applicant made an application for an environmental authority (**EA**) under the *Environmental Protection Act 1994* (Qld) (**EP Act**) on 11 April 2014.
- 3.9 Objections to the MLAs and EAs were referred to the Queensland Land Court on about 29 September 2014.

4. **Brief of Material**

- 4.1 Once you have confirmed your availability to act in this matter, we will send you an invite to the electronic brief in this matter through Dropbox (a copy of the index to the current Dropbox brief is **Annexure A**). We can provide these document in other electronic format or in hard copy if necessary.
- 4.2 We draw your attention in particular to the general application and approval documents in Index B.

5. **Timing**

- 5.1 Our client lodged an objection to the ML on 17 June 2014, and an objection to the EA on 10 September 2014.

¹ Note that the SDPWO Act was amended in December 2012 (with the amendments taking effect on 21 December 2012). The amendments replaced the term 'significant project' with the term 'coordinated project' and these terms may be used interchangeably.

- 5.2 You be required to participate in the proceedings in accordance with the Orders made on 20 October 2014 (document 22 of Index A of your Brief).
- 5.3 You may be required to meet with any corresponding expert from the other parties and prepare a joint report on setting out points of agreement and disagreement.
- 5.4 You may be required to give oral evidence, or be cross-examined on your evidence, at a hearing.

6. **Your duty to the Land Court**

- 6.1 We enclose as **Annexure B** rules 22 to 24I of the *Land Court Rules 2000* which govern experts in the Land Court.
- 6.2 In particular we note that rule 24C of the *Land Court Rules 2000* provides that you have a duty to assist the Land Court which overrides any obligations you may have to LSCC as your client.
- 6.3 We also emphasise that we and our client don't seek to influence your views in any way and we ask for your independent opinion to assist the Land Court. Consequently, please note that any statements of fact or opinion in this letter of instructions, the above documents, or anything given or said to you by us relevant to the issues in your report do not constrain you in any way and are not intended to influence your views. We ask you to form your own opinion about the relevant facts and circumstances for the purposes of your report.
- 6.4 Any joint report or separate expert report you prepare should confirm that each expert understands the expert's duty to the court and has complied with that duty.

7. **Format of your statement of evidence (other than joint report)**

- 7.1 Suggestions for the format of your report are set out in **Annexure C**, "Format of your statement of evidence".
- 7.2 If you have taken part in a meeting of experts, the joint report is taken to be your statement of evidence and you are to produce a further statement of evidence in relation to any issue of disagreement.
- 7.3 Your report must:
- (1) be addressed to the Court;
 - (2) include your qualifications;
 - (3) include all material facts, whether written or oral, on which your report is based;
 - (4) include references to any literature or other material you relied on to prepare the report;
 - (5) include for any inspection, examination or experiment you conducted, initiated, or relied on to prepare your report—
 - i. a description of what was done; and

- ii. whether the inspection, examination or experiment was done by the expert or under the expert's supervision; and
 - iii. the name and qualifications of any other person involved; and
 - iv. the result;
- (6) if there is a range of opinion on matters dealt with in your report, include a summary of the range of opinion, and the reasons why you adopted a particular opinion;
- (7) include a summary of the conclusions you reached; and
- (8) include a statement about whether access to any readily ascertainable additional facts would assist you in reaching a more reliable conclusion;
- (9) include a confirmation at the end of the statement of evidence:
- a) the factual matters included in the statement are, as far as the expert knows, true; and
 - b) the expert has made all enquiries considered appropriate; and
 - c) the opinions included in the statement are genuinely held by the expert; and
 - d) the statement contains reference to all matters the expert considers significant; and
 - e) the expert understands the expert's duty to the court and has complied with the duty; and
 - f) the expert has read and understood the rules contained in this part, as far as they apply to the expert; and
 - g) the expert has not received or accepted instructions to adopt or reject a particular opinion in relation to an issue in dispute in the proceeding.
- (10) include your signature.

7.4 You should attach to the report:

- (1) a copy of your Curriculum Vitae; and
- (2) a copy of this letter.

7.5 Please number all pages and paragraphs of your report. You may wish to include an index.

7.6 If your report includes any photographs, measurements, graphs or illustrations these should be firmly attached to the report, and clearly identified and numbered.

8. **Change of opinion**

8.1 If for some reason, you change your opinion after delivering your report, please advise us as soon as possible. If that change is material, a supplementary report will need to be prepared, which explains the reasons for the change in your opinion.

9. **Confidentiality and privilege**

9.1 In accepting this engagement, you agree that:

- (1) this letter and all future communications (whether electronically maintained or not) between us are confidential. These communications may be subject to client legal privilege;
- (2) you must take **all** steps necessary to preserve the confidentiality of our communications and of any material or documents created or obtained by you in the course of preparing your report;
- (3) you must not disclose the information contained in our communications or obtained or prepared by you in the course of preparing your report without obtaining consent from us;
- (4) you must not provide any other person with documents which come into your possession during the course of preparing this report, whether created by you or provided to you by us or our clients, without obtaining consent from us.

9.2 The duty of confidentiality continues beyond the conclusion of your instructions.

9.3 If you are ever obliged by law to produce documents containing any of this confidential information (whether by subpoena, notice of non-party discovery or otherwise) please contact us immediately so that we may take steps to claim client legal privilege.

9.4 You should ensure that you retain copies of all drafts of your report together with all documents that you rely on in preparing your report. We will inform you when you are no longer required to retain them.

9.5 If requested, you must return to us all documents and other material (including copies) containing confidential information. Where any confidential information is in electronic form, we may require you to delete this information instead.

9.6 Any internal working documents and draft reports prepared by you may not be privileged from disclosure and may be required to be produced to the opposing parties in the litigation, and to the Court.

9.7 You may be cross-examined about any changes between your working documents and your report. The Court will be interested to understand the reason or reasons for any changes, and you should be prepared to, and able to, explain them.

10. **Document management**

10.1 Please ensure that all documents created pursuant to this retainer are marked "Privileged and Confidential: prepared for the purpose of the Queensland Land Court objection hearing to the Carmichael Coal Mine".

11. **Court appearance**

11.1 At the hearing of any objection, you may be required to attend Court and give evidence. You must be personally involved and knowledgeable in all aspects of the preparation of the report.

11.2 If you are required to attend Court to give evidence, we will contact you to discuss your availability and make the necessary arrangements.

If you have any questions regarding your engagement or require further information, please do not hesitate to call us on 3211 4466.

Yours faithfully

Environmental Defenders Office (Qld) Inc

A handwritten signature in black ink, appearing to read 'Sean Ryan', with a stylized flourish extending to the right.

Sean Ryan

Senior Solicitor

To provide feedback on EDO services, write to us at the above address.

ANNEXURE A – Index to Brief

ANNEXURE B

Land Court Rules 2000 (Qld)

Part 5 Evidence

Division 1 Preliminary

22 Definitions for pt 5

In this part—

expert means a person who would, if called as a witness in a proceeding, be qualified to give opinion evidence as an expert witness in relation to an issue in dispute in the proceeding.

joint report, for a proceeding, means a report—

- (a) stating the joint opinion of experts in relation to an issue in dispute in the proceeding; and
- (b) identifying the matters about which the experts agree or disagree and the reasons for any disagreement.

meeting of experts—

- 1 A meeting of experts is a meeting at which experts in each area of expertise relevant to a proceeding meet, in the absence of the parties—
 - (a) to discuss and attempt to reach agreement about the experts' evidence in relation to an issue in dispute in the proceeding as it relates to the experts' area of expertise; and
 - (b) to prepare a joint report.
- 2 The term includes —
 - (a) a resumed meeting of experts or further meeting of experts; and
 - (b) a meeting attended by the experts in either, or a combination, of the following ways—
 - (i) personally;
 - (ii) a way that allows contemporaneous communication between the experts, including by telephone, video link or email.

party, for a proceeding, means a party to the proceeding or the party's lawyer or agent.

statement of evidence, of an expert, see rule 24E.

Division 2 Meetings of experts

23 Application of div 2

Unless the court otherwise orders, this division applies in relation to a meeting of experts ordered or directed by the court at any time in a proceeding.

24 Party must ensure expert ready to take part in meeting of experts

Before a meeting of experts, a party to a proceeding must do all things reasonably necessary or expedient to ensure an expert chosen by the party is ready to take part fully, properly and promptly in the meeting, including by giving the expert—

- (a) reasonable prior notice that the court has ordered or directed a meeting of experts; and
- (b) notice of the contents of any order or direction about the meeting, including the time by which the meeting must be held; and
- (c) reasonable notice of the issue in dispute in the proceeding to the extent it is relevant to the expert's expertise; and
- (d) enough information and opportunity for the expert to adequately investigate the facts in relation to the issue in dispute in the proceeding; and
- (e) written notice that the expert has a duty to assist the court and the duty overrides any obligation the expert may have to the party or any person who is liable for the expert's fee or expenses.

24A Experts attending meeting must prepare joint report

(1) The experts attending a meeting of experts must, without further reference to or instruction from the parties, prepare a joint report in relation to the meeting.

(2) However, the experts attending the meeting may, at any time before the joint report is completed, ask all parties to respond to an inquiry the experts make jointly of all parties.

(3) Despite subrule (1), any of the experts may participate in a mediation involving the parties.

(4) The joint report must—

- (a) confirm that each expert understands the expert's duty to the court and has complied with the duty; and
- (b) be given to the parties.

(5) The applicant or appellant must deliver to the registry, personally or by facsimile or email, a copy of the joint report received under subrule (4) at least 21 days before the date set for the hearing.

24B Admissions made at meeting of experts

(1) Subrule (2) does not apply to a joint report prepared in relation to a meeting of experts.

(2) Evidence of anything done or said, or an admission made, at a meeting of experts is admissible at the hearing of the proceeding or at the hearing of another proceeding in the court or in another civil proceeding only if all parties to the proceeding agree.

(3) In this rule—

civil proceeding does not include a civil proceeding founded on fraud alleged to be connected with, or to have happened during, the meeting.

Division 3 Evidence given by experts

24C Duty of Expert

- (1) A witness giving evidence in a proceeding as an expert has a duty to assist the court.
- (2) The duty overrides any obligation the witness may have to any party to the proceeding or to any person who is liable for the expert's fee or expenses.

24D Giving or accepting instructions to adopt or reject a particular opinion prohibited

A person must not give, and an expert must not accept, instructions to adopt or reject a particular opinion in relation to an issue in dispute in a proceeding.

24E Expert must prepare statement of evidence

- (1) An expert must prepare a written statement of the expert's evidence (a statement of evidence) for the hearing of a proceeding.
- (2) If the expert has taken part in a meeting of experts—
 - (a) a joint report prepared in relation to the meeting is taken to be the expert's statement of evidence in the proceeding; and
 - (b) a further statement of evidence in relation to any issue of disagreement recorded in the joint report is to be prepared by the expert.
- (3) However, the further statement of evidence must not, without the court's leave—
 - (a) contradict, depart from or qualify an opinion in relation to an issue the subject of agreement in the joint report; or
 - (b) raise a new matter not already mentioned in the joint report.

24F Requirements for statement of evidence other than joint report

- (1) An expert's statement of evidence, other than a joint report, must be addressed to the court and signed by the expert.
- (2) The statement of evidence must include the following information, to the extent the information is not already contained in a joint report prepared for the proceeding—
 - (a) the expert's qualifications;
 - (b) all material facts, whether written or oral, on which the statement is based;
 - (c) references to any literature or other material relied on by the expert to prepare the statement;
 - (d) for any inspection, examination or experiment conducted, initiated or relied on by the expert to prepare the statement—
 - (i) a description of what was done; and
 - (ii) whether the inspection, examination or experiment was done by the expert or under the expert's supervision; and
 - (iii) the name and qualifications of any other person involved; and
 - (iv) the result;

(e) if there is a range of opinion on matters dealt with in the statement, a summary of the range of opinion and the reasons why the expert adopted a particular opinion;

(f) a summary of the conclusions reached by the expert;

(g) a statement about whether access to any readily ascertainable additional facts would assist the expert in reaching a more reliable conclusion.

(3) The expert must confirm, at the end of the statement of evidence—

(a) the factual matters included in the statement are, as far as the expert knows, true; and

(b) the expert has made all enquiries considered appropriate; and

(c) the opinions included in the statement are genuinely held by the expert; and

(d) the statement contains reference to all matters the expert considers significant; and

(e) the expert understands the expert's duty to the court and has complied with the duty; and

(f) the expert has read and understood the rules contained in this part, as far as they apply to the expert; and

(g) the expert has not received or accepted instructions to adopt or reject a particular opinion in relation to an issue in dispute in the proceeding.

24G Serving statement of evidence other than joint report

(1) This rule applies to a statement of evidence other than a joint report.

(2) A party to a proceeding intending to call evidence by an expert in the proceeding must deliver to the registry, personally or by facsimile or email, and serve on each other party to the proceeding, a copy of the expert's statement of evidence.

(3) A party must comply with subrule (2) at least 21 days before the date set for the hearing or, if the court directs a different time, within the time directed by the court.

24H Matters contained in statement of evidence not to be repeated

During examination in chief, an expert must not, without the court's leave, repeat or expand on matters contained in the expert's statement of evidence or introduce new material.

24I Evidence from only 1 expert may be called

Other than with the court's leave, a party to a proceeding, at any hearing of the proceeding, may call evidence from only 1 expert for each area of expertise dealt with in the hearing.

ANNEXURE C

Court Rules

- 1 A copy of the relevant sections of the *Land Court Rules 2000* is provided at Annexure B.
- 2 While the format of your report is discretionary, you should ensure that your report complies with the above requirements, and that compliance with these requirements is readily apparent.

Format

- 3 We make the following suggestions regarding the layout of your report.
- 4 Ensure that your report contains your full name and address.
- 5 Please number all pages and paragraphs of your report. You may wish to include an index. If your report includes any photographs, measurements, graphs or illustrations these should be firmly attached to the report, and clearly identified and numbered.
- 6 Your report may include the following sections and headings:

6.1 “Introduction”

This section should:

- refer to, and annex, the letter of instructions received from us;
- specifically identify and refer to any literature or other source materials (eg text books, industry guidelines and handbooks) used in support of your opinion. If lengthy, it may be practical to list this material in an annexure to the report. If for some reason, you do not refer to certain material when preparing your report, please specifically identify this material and outline the reasons it was not referred to; and
- refer to any methodology you have adopted in preparing the report, including a detailed description of any test or examinations, who carried them out, their qualifications and the results.

6.2 “My qualifications”

In this section of your report, you need to qualify yourself as an expert in the areas in which you have been asked to provide an opinion. You should describe how your specialist knowledge (whether obtained through training, study or experience), your experience and qualifications qualify you as an expert in these areas.

Your curriculum vitae should also be annexed to your report and referred to under this heading.

6.3 “Summary of my opinion”

You are required to include a summary of your opinion.

6.4 “Background facts and assumptions”

The Court Rules require you to list all “facts, matters and assumptions on which each opinion expressed in the report is based”.

The facts and assumptions you rely on need to be linked to their sources and clearly stated and verifiable. These may be sufficiently set out in our letter of instructions.

If you are called as a witness, you may be required to give evidence in relation to your assumptions.

6.5 “My opinion”

This part of your report should contain your detailed reasons for your opinions on the questions put to you. This will be the most substantial part of your report.

When drafting your report, you should make it clear that the opinion is wholly or substantially based on your expert knowledge. Your opinions must be confined to areas within your expert knowledge.

You must set out the process of reasoning that you followed in coming to your opinion and identify the facts and assumptions upon which you rely for the opinion. Where there are alternative views available, you should explain why you have chosen a particular alternative.

6.6 “Qualification of the opinion”

If appropriate, you should set out any qualification of your opinion, without which the report would be incomplete or inaccurate. If applicable, you should state that a particular question or issue falls outside your relevant field of expertise.

You should also state if your opinion is not concluded because of insufficient research or data or for any other reason.

6.7 “Confirmation”

You must confirm, at the end of the report—

- a) the factual matters stated in the report are, as far as the expert knows, true; and
- b) the expert has made all enquiries considered appropriate; and
- c) the opinions stated in the report are genuinely held by the expert; and
- d) the report contains reference to all matters the expert considers significant; and
- e) the expert understands the expert’s duty to the court and has complied with the duty;
- f) the expert has read and understood the Land Court Rules 2000, as far as they apply to the expert;
- g) the expert has not received or accepted instructions to adopt or reject a particular opinion in relation to an issue in dispute in the proceeding

Please ensure that you make all necessary inquiries in a timely fashion to enable you to confirm these matters.

6.8 “Signature”

The final page of your report must be signed by you.