



ULAN COAL MINES LIMITED
A.B.N. 80 000 189 248



UCML Biodiversity Monitoring 2010 Monitoring Results

- Survey of Open Cut Rehabilitation Areas and Salinity/Biodiversity Offset Areas – UCML Terrestrial Fauna and Habitat (Non Bat)
- Ulan Underground Mine Extensions – Terrestrial and Aquatic Fauna Monitoring Survey Programme To Satisfy Conditions of Consent for ML 1341 and ML 1468



ULAN COAL MINES LIMITED
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SECTION A

Obtained from:

***SURVEYS OF BIODIVERSITY OFFSET AREAS AND OPEN CUT REHABILITATION AREAS
AT ULAN COAL MINE - TERRESTRIAL FAUNA (NON-BAT)***

by Biodiversity Monitoring Surveys

November 2010



Open Cut Rehabilitation & Biodiversity Offset Areas, 2010 Survey

Table 1 - Habitat Characteristics Obtained from Trap Site Descriptions

HABITAT CHARACTERISTICS	B2 Wd	B2 Regen	B2 Grass	B3 Knoll	B3 Regen 1	B3 Regen 2	Overall
Tree Cover	60%	56%	0	80%	28%	0	56%
Shrub Cover >2m	28%	16%	4%	4%	0	0	9%
Sapling Cover >2m	8%	36%	0	36%	64%	100%	41%
Shrub Cover <2m	88%	72%	52%	60%	44%	0	53%
Sapling Cover <2m	0	12%	0	16%	4%	73%	17%
Cutting Grass	4%	24%	12%	8%	12%	0	10%
Forb Cover	80%	84%	100%	84%	100%	100%	91%
Grass Cover	80%	76%	100%	80%	100%	80%	86%
Fern Cover	0	0	8%	4%	4%	0	3%
Litter Cover	96%	100%	4%	100%	96%	87%	80%
Log Cover	52%	20%	8%	52%	32%	7%	28%
Rock Cover	0	0	0	28%	12%	0	7%
Habitat Complexity Score	16	16	6	17	15	12	14

Table 2 - Habitat Characteristic Values for the Woodland and Regeneration Sites in 2004, 2005, 2008 and 2010

Habitat Characteristic	2004	2005	2008	2010
Tree Density/ha	912	1767	1794	2884
Shrub Density/ha	2419	2944	2976	3384
Sapling Density/ha	515	406	639	928
Grass Cover %	25.9	19.4	29.7	8.8
Forb Cover %	7.6	12.7	13.0	11.8
Litter Cover %	76	84	78	61
Litter Weight	552	604	327	417
Log Cover %	3.1	2.6	3.8	2.3



Open Cut Rehabilitation & Biodiversity Offset Areas, 2010 Survey

Table 3 – Birds recorded during survey

Scientific Name	Common Name	Status	Area B2	Area B3	Rehab
Dromaiidae					
<i>Dromaius novaehollandiae</i>	Emu	P	X	X	X
Anatidae					
<i>Anas gracilis</i>	Grey Teal	P	X	X	X
<i>Anas rhynchotis</i>	Australasian Shoveler	P			
<i>Anas superciliosa</i>	Pacific Black Duck	P	X	X	X
<i>Aythya australis</i>	Hardhead	P			X
<i>Chenonetta jubata</i>	Australian Wood Duck	P	X	X	
<i>Cygnus atratus</i>	Black Swan	P			X
Podicipedidae					
<i>Tachybaptus novaehollandiae</i>	Australasian Grebe	P	X	X	X
Phalacrocoracidae					
<i>Phalacrocorax melanoleucos</i>	Little Pied Cormorant	P			X
<i>Phalacrocorax sulcirostris</i>	Little Black Cormorant	P			X
<i>Phalacrocorax carbo</i>	Great Cormorant	P	X		X
Ardeidae					
<i>Egretta novaehollandiae</i>	White-faced Heron	P	X	X	X
<i>Egretta pacifica</i>	White-necked Heron	P			
Accipitridae					
<i>Accipiter fasciatus</i>	Brown Goshawk	P			X
<i>Aquila audax</i>	Wedge-tailed Eagle	P			X
<i>Haliastur sphenurus</i>	Whistling Kite	P	X		
Falconidae					
<i>Falco berigora</i>	Brown Falcon	P			
<i>Falco cenchroides</i>	Nankeen Kestrel	P	X	X	X
<i>Falco peregrinus</i>	Peregrine Falcon	P			
Recurvirostridae					
<i>Himantopus himantopus</i>	Black-winged Stilt	P			X
Rallidae					
<i>Fulica atra</i>	Eurasian Coot	P			X
<i>Gallinula tenebrosa</i>	Dusky Moorhen	P			X
Turnicidae					
<i>Turnix varia</i>	Painted Button-quail	P			
<i>Turnix velox</i>	Little Button-quail	P			X
Charadriidae					
<i>Elsayornis melanops</i>	Black-fronted Dotterel	P		X	
<i>Vanellus miles</i>	Masked Lapwing	P	X	X	



Scientific Name	Common Name	Status	Area B2	Area B3	Rehab
Laridae					
<i>Larus novaehollandiae</i>	Silver Gull	P			X
Columbidae					
<i>Geopelia placida</i>	Peaceful Dove	P			X
<i>Ocyphaps lophotes</i>	Crested Pigeon	P	X	X	X
<i>Phaps chalcoptera</i>	Common Bronzewing	P	X		
Cacatuidae					
<i>Cacatua galerita</i>	Sulphur-crested Cockatoo	P	X	X	X
<i>Calyptorhynchus funereus</i>	Yellow-tailed Black-Cockatoo	P			
<i>Calyptorhynchus lathami</i>	Glossy Black-Cockatoo	V	X	X	
<i>Eolophus roseicapillus</i>	Galah	P	X	X	X
Psittacidae					
<i>Alisterus scapularis</i>	Australian King-Parrot	P	X		
<i>Glossopsitta concinna</i>	Musk Lorikeet	P	X		
<i>Platycercus adscitus eximius</i>	Eastern Rosella	P	X	X	X
<i>Psephotus haematonotus</i>	Red-rumped Parrot	P	X	X	
<i>Aprosmictus erythropterus</i>	Red-winged Parrot	P			
Cuculidae					
<i>Cacomantis flabelliformis</i>	Fan-tailed Cuckoo	P			
<i>Cuculus pallidus</i>	Pallid Cuckoo	P		X	
Strigidae					
<i>Ninox novaeseelandiae</i>	Southern Boobook	P			
<i>Ninox strenua</i>	Powerful Owl	V			
Podargidae					
<i>Podargus strigoides</i>	Tawny Frogmouth	P	X		
Caprimulgidae					
<i>Eurostopodus mystacalis</i>	White-throated Nightjar	P		X	
Aegothelidae					
<i>Aegotheles cristatus</i>	Australian Owlet-nightjar	P			
Halcyonidae					
<i>Dacelo novaeguineae</i>	Laughing Kookaburra	P	X	X	X
<i>Todiramphus sanctus</i>	Sacred Kingfisher	P			
Meropidae					
<i>Merops ornatus</i>	Rainbow Bee-eater	P		X	
Menuridae					
<i>Menura novaehollandiae</i>	Superb Lyrebird	P			



Scientific Name	Common Name	Status	Area B2	Area B3	Rehab
Climacteridae					
<i>Cormobates leucophaeus</i>	White-throated Treecreeper	P	X		X
Maluridae					
<i>Malurus cyaneus</i>	Superb Fairy-wren	P	X	X	X
<i>Malurus lamberti</i>	Variiegated Fairy-wren	P			
Pardalotidae					
<i>Pardalotus punctatus</i>	Spotted Pardalote	P	X		X
<i>Pardalotus striatus</i>	Striated Pardalote	P	X	X	
Acanthizidae					
<i>Acanthiza chrysorrhoa</i>	Yellow-rumped Thornbill	P	X	X	X
<i>Acanthiza nana</i>	Yellow Thornbill	P	X		X
<i>Acanthiza pusilla</i>	Brown Thornbill	P	X	X	X
<i>Acanthiza reguloides</i>	Buff-rumped Thornbill	P			
<i>Acanthiza apicalis</i>	Inland Thornbill	P			
<i>Gerygone olivacea</i>	White-throated Gerygone	P		X	
<i>Origma solitaria</i>	Rockwarbler	P			
<i>Pyrholaemus sagittatus</i>	Speckled Warbler	V	X	X	X
<i>Sericornis frontalis</i>	White-browed Scrubwren	P	X	X	
Meliphagidae					
<i>Acanthagenys rufogularis</i>	Spiny-cheeked Honeyeater	P			X
<i>Acanthorhynchus tenuirostris</i>	Eastern Spinebill	P	X		
<i>Anthochaera carunculata</i>	Red Wattlebird	P	X		X
<i>Lichenostomus chrysops</i>	Yellow-faced Honeyeater	P	X		
<i>Lichenostomus fuscus</i>	Fuscous Honeyeater	P	X	X	
<i>Lichenostomus leucotis</i>	White-eared Honeyeater	P	X		X
<i>Lichenostomus penicillatus</i>	White-plumed Honeyeater	P			X
<i>Manorina melanocephala</i>	Noisy Miner	P	X	X	X
<i>Melithreptus brevirostris</i>	Brown-headed Honeyeater	P	X		
<i>Melithreptus lunatus</i>	White-naped Honeyeater	P	X		
<i>Philemon corniculatus</i>	Noisy Friarbird	P	X	X	X
<i>Plectorhyncha lanceolata</i>	Striped Honeyeater	P	X		
Petroicidae					
<i>Eopsaltria australis</i>	Eastern Yellow Robin	P			X



<i>Microeca fascinans</i>	Jacky Winter	P		X	
Scientific Name	Common Name	Status	Area B2	Area B3	Rehab
Pomatostomidae					
<i>Pomatostomus temporalis temporalis</i>	Grey-crowned Babbler (south-eastern sub-species)	V	X	X	X
Eupetidae					
<i>Cinlosoma punctatum</i>	Spotted Quail-thrush	P	X		
Neosittidae					
<i>Daphoenositta chrysoptera</i>	Varied Sittella	V	X		
Pachycephalidae					
<i>Colluricincla harmonica</i>	Grey Shrike-thrush	P	X	X	
<i>Pachycephala pectoralis</i>	Golden Whistler	P			X
<i>Pachycephala rufiventris</i>	Rufous Whistler	P	X		X
Dicruridae					
<i>Grallina cyanoleuca</i>	Magpie-lark	P	X	X	X
<i>Myiagra rubecula</i>	Leaden Flycatcher	P			
<i>Rhipidura albiscapa</i>	Grey Fantail	P	X		X
<i>Rhipidura leucophrys</i>	Willie Wagtail	P	X	X	X
Artamidae					
<i>Cracticus nigrogularis</i>	Pied Butcherbird	P	X	X	X
<i>Cracticus torquatus</i>	Grey Butcherbird	P	X	X	X
<i>Gymnorhina tibicen</i>	Australian Magpie	P	X	X	X
<i>Strepera graculina</i>	Pied Currawong	P	X	X	X
Campephagidae					
<i>Coracina novaehollandiae</i>	Black-faced Cuckoo-shrike	P	X	X	X
Oriolidae					
<i>Oriolus sagittatus</i>	Olive-backed Oriole	P	X		X
Corvidae					
<i>Corvus coronoides</i>	Australian Raven	P	X	X	X
Corcoracidae					
<i>Corcorax melanorhamphos</i>	White-winged Cough	P	X	X	X
Sturnidae					
<i>Sturnus vulgaris</i>	Common Starling	U	X	X	X
Hirundinae					
<i>Hirundo neoxena</i>	Welcome Swallow	P	X	X	X
<i>Petrochelidon ariel</i>	Fairy Martin	P			X
<i>Petrochelidon nigricans</i>	Tree Martin	P	X	X	X
Zosteropidae					
<i>Zosterops lateralis</i>	Silvereye	P	X		
Sylviidae					
<i>Acrocephalus australis</i>	Australian Reed-	P			X



Scientific Name	Common Name	Status	Area B2	Area B3	Rehab
Warbler					
Dicaeidae					
<i>Dicaeum hirundinaceum</i>	Mistletoebird	P			X
Motacillidae					
<i>Anthus australis</i>	Australasian Pipit	P		X	
Estrilidae					
<i>Neochmia temporalis</i>	Red-browed Finch	P			
<i>Taeniopygia bichenovii</i>	Double-barred Finch	P			

Table 4 – Amphibians recorded during survey

Scientific Name	Common Name	Status	Area B2	Area B3	Rehab
Hylidae					
<i>Litoria peronii</i>	Peron's Tree Frog	P	X		X
Myobatrachidae					
<i>Limnodynastes dumerilii</i>	Eastern Banjo Frog	P	X	X	X
<i>Limnodynastes peronii</i>	Striped Marsh Frog	P			
<i>Limnodynastes tasmaniensis</i>	Spotted Marsh Frog	P	X	X	X
<i>Neobatrachus sudelli</i>	Painted Burrowing Frog	P	X		
<i>Crinia signifera</i>	Common Eastern Froglet	P	X	X	X



Table 5- Reptiles recorded during survey

Scientific Name	Common Name	Status	Area B2	Area B3	Rehab
Cheluidae					
<i>Chelodina longicollis</i>	Eastern Snake-necked Turtle	P	X	X	X
Agamidae					
<i>Pogona barbata</i>	Eastern Bearded Dragon	P		X	X
Gekkonidae					
<i>Oedura lesueurii</i>	Lesueur's Velvet Gecko	P			
Varanidae					
<i>Varanus varius</i>	Lace Monitor	P			
Scincidae					
<i>Anomalopus leuckartii</i>	Two-claw Worm-skink	P			
<i>Ctenotus robustus</i>	Robust Ctenotus	P			
<i>Ctenotus taeniolatus</i>	Copper-tailed Ctenotus	P			
<i>Lampropholis delicata</i>	Dark-flecked Garden Sunskink	P		X	
<i>Lampropholis guichenoti</i>	Garden Skink	P			
<i>Lerista bougainvillii</i>	South-eastern Slider	P			
<i>Tiliqua rugosa</i>	Shingle-back	P			
Typhlopidae					
<i>Ramphotyphlops weidii</i>	Blind Snake	P			
Elapidae					
<i>Pseudechis porphyriacus</i>	Red-bellied Black Snake	P			X
<i>Pseudonaja textilis</i>	Eastern Brown Snake	P			
<i>Suta spectabilis dwyeri</i>	Variable Black-naped Snake	P			



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SECTION B

Obtained from:

***Ulan Underground Mine – Terrestrial and Aquatic Fauna Monitoring
Survey Programme To Satisfy Conditions of Consent for ML 1341 and
ML 1468
(NON-BAT)***

by Biodiversity Monitoring Surveys



Fauna Species Observed During 2010 Terrestrial Survey – by Area

Table 1 – Birds recorded during survey

Common Name	Site A	Site B	Site E	Site K	Site L	Ulan Ck	Trig Rd	Cicada Rd	Incidental
Emu						X	X	X	
Grey Teal					X				X
Australasian Shoveler									X
Pacific Black Duck					X				
Hardhead									X
Australian Wood Duck				X	X	X	X		
Black Swan									
Australasian Grebe					X				
Little Pied Cormorant									X
Little Black Cormorant									X
Great Cormorant									X
White-faced Heron									X
White-necked Heron				X					
Brown Goshawk									X
Wedge-tailed Eagle	X	X		X					
Whistling Kite									X
Brown Falcon									X
Nankeen Kestrel				X					
Peregrine Falcon									X
Black-winged Stilt									X
Eurasian Coot									X
Dusky Moorhen									X
Painted Button-quail				X					
Little Button-quail									X
Black-fronted Dotterel									X
Masked Lapwing				X					
Silver Gull									X
Peaceful Dove									X
Crested Pigeon				X					
Common Bronzewing					X			X	
Sulphur-crested Cockatoo	X	X	X	X	X	X	X		
Yellow-tailed Black-Cockatoo									X
Glossy Black-Cockatoo			X		X				
Galah	X	X	X	X	X	X	X	X	
Australian King-Parrot			X		X				
Musk Lorikeet		X	X			X	X		
Eastern Rosella	X	X	X	X	X	X	X	X	
Red-rumped Parrot									X
Red-winged Parrot									X
Fan-tailed Cuckoo					X				



Common Name	Site A	Site B	Site E	Site K	Site L	Ulan Ck	Trig Rd	Cicada Rd	Incidental
Pallid Cuckoo									X
Southern Boobook	X		X						
Powerful Owl	X					X			
Tawny Frogmouth	X		X					X	
White-throated Nightjar			X						
Australian Owlet-nightjar			X						
Laughing Kookaburra	X	X	X	X	X	X	X	X	
Sacred Kingfisher						X	X		
Rainbow Bee-eater									X
Superb Lyrebird	X		X			X			
White-throated Treecreeper	X	X	X	X	X		X	X	
Superb Fairy-wren					X	X	X	X	
Variiegated Fairy-wren									X
Spotted Pardalote	X	X	X	X		X	X		
Striated Pardalote					X	X	X		
Yellow-rumped Thornbill				X	X				
Yellow Thornbill		X	X	X	X	X	X	X	
Brown Thornbill	X	X		X	X	X	X	X	
Straited Thornbill	X	X	X		X			X	
Buff-rumped Thornbill						X			
Inland Thornbill				X					
White-throated Gerygone	X		X	X	X	X		X	
Rockwarbler	X		X					X	
Speckled Warbler		X		X				X	
White-browed Scrubwren	X					X	X	X	
Spiny-cheeked Honeyeater									
Eastern Spinebill	X			X					
Red Wattlebird			X	X	X	X	X	X	
Yellow-faced Honeyeater	X			X	X			X	
Fuscous Honeyeater									X
White-eared Honeyeater									X
White-plumed Honeyeater									X
Noisy Miner				X					
Brown-headed Honeyeater				X					
White-naped Honeyeater									X
Noisy Friarbird	X	X	X		X	X	X	X	
Striped Honeyeater				X					
Eastern Yellow Robin	X				X	X	X	X	
Jacky Winter				X					
Grey-crowned Babbler									X
Spotted Quail-thrush									X
Varied Sittella		X							
Grey Shrike-thrush		X		X	X			X	
Golden Whistler						X	X		



Common Name	Site A	Site B	Site E	Site K	Site L	Ulan Ck	Trig Rd	Cicada Rd	Incidental
Rufous Whistler	X	X	X			X	X	X	
Magpie-lark				X					
Leaden Flycatcher			X					X	
Grey Fantail	X		X	X	X	X	X		
Willie Wagtail					X	X		X	
Pied Butcherbird				X					
Grey Butcherbird									X
Australian Magpie		X		X	X	X	X		
Pied Currawong	X	X	X	X	X		X	X	
Black-faced Cuckoo-shrike		X	X	X		X	X	X	
Olive-backed Oriole		X	X	X		X		X	
Australian Raven		X	X	X	X	X	X	X	
White-winged Chough		X	X	X	X	X	X	X	
Common Starling				X					
Welcome Swallow									X
Fairy Martin									X
Tree Martin									X
Silvereye									X
Australian Reed-Warbler									X
Mistletoebird				X					
Australasian Pipit									X
Red-browed Finch									X
Double-barred Finch									X



Table 2 – Mammals recorded during survey

Common Name	Site A	Site B	Site E	Site K	Site L	Ulan Ck	Trig Rd	Cicada Rd	Incidental
Short-beaked Echidna			X						
Yellow-footed Antechinus	X		X		X	X			
Common Dunnart			X						
Sugar Glider			X					X	
Common Brushtail Possum	X	X	X	X	X	X	X	X	
Common Ringtail Possum	X		X		X			X	
Bare-nosed Wombat	X	X	X	X	X	X	X	X	
Eastern Grey Kangaroo						X	X		
Common Wallaroo				X					
Red-necked Wallaby				X	X			X	
Swamp Wallaby				X		X		X	
House Mouse									X
Southern Bush Rat	X								
Dingo, domestic dog									X
Red Fox	X			X					
Cat									X
European Cattle		X							
Feral Pig				X	X	X	X	X	
Brown Hare		X							
Rabbit					X	X	X		
Fallow Deer									X
Rusa Deer									X



Table 3 – Reptiles recorded during survey

Common Name	Site A	Site B	Site E	Site K	Site L	Ulan Ck	Trig Rd	Cicada Rd	Incidental
Eastern Snake-necked Turtle					X				
Eastern Bearded Dragon				X		X		X	
Lesueur's Velvet Gecko	X		X		X	X			
Lace Monitor		X	X		X	X		X	
Two-claw Worm-skink						X			
Robust Ctenotus						X			
Copper-tailed Ctenotus	X		X					X	
Dark-flecked Garden Sunskink	X					X			
Garden Skink					X	X			
South-eastern Slider	X								
Shingle-back				X					
Blind Snake						X			
Red-bellied Black Snake									X
Eastern Brown Snake				X					
Variable Black-naped Snake			X						



Table 4 – Amphibians recorded during survey

Common Name	Site A	Site B	Site E	Site K	Site L	Ulan Ck	Trig Rd	Cicada Rd	Incidental
Peron's Tree Frog									X
Eastern Banjo Frog					X	X	X		
Striped Marsh Frog					X		X		
Spotted Marsh Frog									X
Painted Burrowing Frog									X
Common Eastern Froglet							X		

Table 5 – COMPARISON BETWEEN HABITAT CHARACTERISTICS MEASURED DURING PRESENT AND PAST SURVEYS

HABITAT CHARACTERISTICS	MEAN RESULTS FROM 1995-2009 SURVEYS	RESULTS FROM PRESENT SURVEY
Woodland Habitat		
Tree Cover	43.0%	40.5%
Shrub Cover	57.0%	65.0%
Sapling Cover	20.5%	30.0%
Bracken Cover	0.1%	0
Cycad Cover	4.1%	4.0%
Cutting Grass Cover	11.2%	15.5%
Forb Cover	61.7%	78.0%
Grass Cover	62.1%	68.0%
Fern Cover	2.7%	9.0%
Litter Cover	91.0%	90.7%
Log Cover	33.7%	36.5%
Rock Cover	29.6%	35.5%
Outcrop Habitat		
Cliff Base	12.7%	10.4%
Overhang	7.2%	12.0%
Ledge	8.7%	7.2%
Rock-fall	8.8%	12.0%



Results from 2010 Aquatic Surveys

Table 1 - Families Identified and Numbers Counted in 2010, Goulburn River Sites

Phylum	Class/Sub-class	Order	Family	Group Name	GR1	GR2	GR3	GR4	GR5	GR6
Cnidaria	Hydrozoa			Hydra		1	4			
Annelida	Oligochaeta	-	Lumbriculidae	Worm		1				
Arthropoda	Crustacea	Cladocera	Daphniidae	Water Fleas	19					
Arthropoda	Crustacea	Decapoda	Atyidae	Freshwater Shrimp			4	24	7	4
Arthropoda	Crustacea/Ostracoda	-	Notodromadidae	Seed Shrimps		22				1
Arthropoda	Insecta	Coleoptera	Hydrophilidae	Water Scavenger Beetle		27		1	2	
Arthropoda	Insecta	Coleoptera	Dystiscidae	Diving Beetle	1	7	4	2		1
Arthropoda	Insecta	Coleoptera	Scirtidae	Marsh Beetle		3			1	3
Arthropoda	Insecta	Diptera	Chironomidae	Non-biting Midge	6	43	34	31	2	4
Arthropoda	Insecta	Diptera	Simuliidae	Black Fly		5		29	4	38
Arthropoda	Insecta	Diptera	Ephydriidae	Ephydriids		2				
Arthropoda	Insecta	Diptera	Dixidae	Meniscus Midge			2			
Arthropoda	Insecta	Ephemeroptera	Leptophlebiidae	Mayfly nymph				1	7	22
Arthropoda	Insecta	Ephemeroptera	Caenidae	Mayfly nymph						1
Arthropoda	Insecta	Ephemeroptera	Baetidae	Baetids	2	1	20	50	34	45
Arthropoda	Insecta	Plecoptera	Gripopterygidae	Stonefly nymph						5
Arthropoda	Insecta	Plecoptera	Notonemouridae	Stonefly nymph				1		
Arthropoda	Insecta	Hemiptera	Veliidae	Small Water Strider	1	4				
Arthropoda	Insecta	Hemiptera	Corixidae	Waterboatmen	7	1	8	9	53	
Arthropoda	Insecta	Hemiptera	Notonectidae	Backswimmer	3					
Arthropoda	Insecta	Odonata (Epiproctophora)	Corduliidae	Dragonflies			6			1
Arthropoda	Insecta	Odonata	Aeshnidae	Dragonflies	1	1		1		
Arthropoda	Insecta	Odonata	Cordulephyidae	Dragonflies		1				
Arthropoda	Insecta	Odonata	Coenogriconidae	Damselflies		1	1			
Phylum	Class/Sub-class	Order	Family	Group Name	GR1	GR2	GR3	GR4	GR5	GR6
Arthropoda	Insecta	Trichoptera	Hydrobiosidae	Free-living Caddis					3	



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Phylum	Class/Sub-class	Order	Family	Group Name	GR1	GR2	GR3	GR4	GR5	GR6
Arthropoda	Insecta	Trichoptera	Leptoceridae	Stick Caddis				1		1
Arthropoda	Insecta	Trichoptera	Calocidae	Caddisfly Larvae				3	2	1
Arthropoda	Insecta	Trichoptera	Colamoceratidae	Sleeping Bag Caddis				2	8	2
Arthropoda	Insecta	Megaloptera	Sialidae	Alder Fly			1			
Arthropoda	Insecta	Lepidoptera	Pyalidae	Moth larvae				1		
Chelicerata	Arachnida	-	Pisauridae	Fishing Spider		1				
Chelicerata	Arachnida	Acarina	Tetragnathidae	Long-jawed Spiders					3	
Mollusca	Gastropoda	-	Physidae	Freshwater Snail	6	16				
Mollusca	Gastropoda	-	Lymnaeidae	Freshwater Snail		4		3	2	1
Mollusca	Gastropoda	na	Planorbidae	Water Snails				2	2	10
Platyhelminthes	Turbellaria	-	DugesIIDae	Flatworms		3				1
Chordata	Anura	-	Myobatrachidae	Amphibian	1	1			1	
Chordata	Osteiothyes	na	Poeciliidae	Mosquito Fish	7		6	1	2	3
Arthropoda	Insecta	Odonata (Zygopora)	Coenagrionidae	Damselfly			1			
Arthropoda	Insecta	Odonata (Zygopora)	Lestidae	Damselfly					1	
Arthropoda	Insecta	Plecoptera	Notenemouridae	Stonefly					1	
Arthropoda	Insecta	Trichoptera	Calocidae	Caddisfly			1	17	2	5
Arthropoda	Insecta	Trichoptera	Hydroptilidae	Microcaddis	3			1		
Arthropoda	Insecta	Trichoptera	Calamoceratidae	Sleeping Bag Caddis				5	3	5
Arthropoda	Insecta	Trichoptera	Hydropsychidae	Free-living Caddisfly		1				
Chelicerata	Arachnida	-	Tetragnathidae	Long-jawed Spider	2			1		1
Chelicerata	Arachnida	Acarina	-	Water Mite					1	
Cnidaria		Hydrozoa	Hydridae	Hydra					1	
Mollusca	Gastropoda	-	Physidae	Freshwater Snail	4	6	1		1	2
Mollusca	Gastropoda	-	Lymnaeidae	Freshwater Snail			1			
Mollusca	Bivalvia		Sphaeriidae	Pea Shell	1			39		2
Platyhelminthes	Turbellaria	Tricladida	DugesIIDae	Flatworms		3	1			
Chordata				Mosquito Fish	28	1	3	5	19	4



Table 2: Aquatic Fauna Located Within Ulan Creek in 2010

Phylum	Class/Sub-class	Order	Family	Group Name	UC1	UC2	UC3	UC4	UC5	UC6	UC7	UC8	UC9	UC10	UC11
Annelida	Hirudinea	-	Glossiphoniidae	Leech							1				
Annelida	Oligochaeta		Oligochaetes	Sludge Worm		2									
Arthropoda	Crustacea	Cladocera	Daphniidae	Water Fleas							50				
Arthropoda	Crustacea	Decapoda	Atyidae	Freshwater Shrimp								3	4	39	5
Arthropoda	Copepoa	Calanoida	-	Copepods				2							
Arthropoda	Ostracoda	-	Notodromadidae	Seed Shrimp			5	29	7	22	3	1	1	5	
Arthropoda	Collembola	-	Hypogastruridae	Springtail	50	15	17	26	7	6				1	2
Arthropoda	Insecta	Coleoptera	Elmidae	Riffle Beetle				1							
Arthropoda	Insecta	Coleoptera	Dystiscidae	Diving Beetle larvae			10	1		2	2	1	1	4	11
Arthropoda	Insecta	Coleoptera	Dystiscidae	Diving Beetle adult sp.1					1	4	1	4	1		1
Arthropoda	Insecta	Coleoptera	Dystiscidae	Diving Beetle adult sp.2					1			1			2
Arthropoda	Insecta	Coleoptera	Dystiscidae	Diving Beetle adult sp.3											1
Arthropoda	Insecta	Coleoptera	Gyrinidae	Whirlygig Beetle										1	
Arthropoda	Insecta	Coleoptera	Scirtidae	Marsh Beetle larvae											
Arthropoda	Insecta	Coleoptera	Scirtidae	Marsh Beetle adult sp.1				1					1		2
Arthropoda	Insecta	Coleoptera	Scirtidae	Marsh Beetle adult sp.2				1							



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Phylum	Class/Sub-class	Order	Family	Group Name	UC1	UC2	UC3	UC4	UC5	UC6	UC7	UC8	UC9	UC10	UC11
Arthropoda	Insecta	Coleoptera	Hydrophilidae	Water Scavenger Beetle	1										
Arthropoda	Insecta	Coleoptera	Haliplidae	Crawling Water Beetle larvae						2					
Arthropoda	Insecta	Coleoptera	Haliplidae	Crawling Water Beetle adult						2					
Arthropoda	Insecta	Diptera	Chironomidae	Non-biting Midge sp.1	4	3	26	50	19	50	50	50	20	4	4
Arthropoda	Insecta	Diptera	Chironomidae	Non-biting Midge sp.2				2	1						
Arthropoda	Insecta	Diptera	Simuliidae	Black Fly larvae sp 1				1		15			20		1
Arthropoda	Insecta	Diptera	Simuliidae	Black Fly larvae sp 2											
Arthropoda	Insecta	Diptera	Simuliidae	Black Fly adult				1		5					
Arthropoda	Insecta	Diptera	Sciomyzidae	Marsh Fly											
Arthropoda	Insecta	Diptera	Ceratopogonidae	Biting Midge			1			5	2	50		1	2
Arthropoda	Insecta	Diptera	Stratiomyidae	Soldier Fly larvae sp.1		2		1							
Arthropoda	Insecta	Diptera	Stratiomyidae	Soldier Fly larvae sp.2		1									
Arthropoda	Insecta	Diptera	Ephydriidae	Ephydrid			1			1					
Arthropoda	Insecta	Ephemeroptera	Caenidae	Mayfly	2				7	3	4				
Arthropoda	Insecta	Ephemeroptera	Leptophlebiidae	Mayfly sp.1	5	3	40	50	34	3	1	4	1	2	2
	Insecta	Ephemeroptera	Leptophlebiidae	Mayfly sp.2			10								
Arthropoda	Insecta	Ephemeroptera	Baetidae	Mayfly									3		
Arthropoda	Insecta	Hemiptera	Notonectidae	Backswimmer			1								1
Arthropoda	Insecta	Hemiptera	Corixidae	Waterboatmen sp.1	1		1	7	13	1		1	6	2	2



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Phylum	Class/Sub-class	Order	Family	Group Name	UC1	UC2	UC3	UC4	UC5	UC6	UC7	UC8	UC9	UC10	UC11
Arthropoda	Insecta	Hemiptera	Corixidae	Waterboatmen sp.2	1				1		50				
Arthropoda	Insecta	Hemiptera	Veliidae	Small Water Strider sp.1		1	1	2	5					1	
	Insecta	Hemiptera	Veliidae	Small Water Strider sp.2			1	1	1						
Arthropoda	Insecta	Hemiptera	Nepidae	Needle Bug				1							
Arthropoda	Insecta	Hemiptera	Gerridae	Water Strider	1										
Arthropoda	Insecta	Lepidoptera	-	Aquatic Caterpillar					1						
Arthropoda	Insecta	Megaloptera	Corydalidae	Dobsonfly	1	1						1			
Arthropoda	Insecta	Epiproctophora	Aeshnidae	Dragonfly						1					1
Arthropoda	Insecta	Zygopora	Coenagrionidae	Damselfly											1
Arthropoda	Insecta	Zygopora	Lestidae	Damselfly									1		
Arthropoda	Insecta	Plecoptera	Notenemouridae	Stonefly									1		
Arthropoda	Insecta	Trichoptera	Calocidae	Caddisfly	1		1	1		4	5	5	2	17	1
Arthropoda	Insecta	Trichoptera	Hydroptilidae	Microcaddis	1									1	
Arthropoda	Insecta	Trichoptera	Calamoceratidae	Sleeping Bag Caddis								5	3	5	
Chelicerata	Arachnida	-	Lycosidae	Wolf Spider		1									
Chelicerata	Arachnida	-	Tetragnathidae	Long-jawed Spider			1	1		2		1		1	
Chelicerata	Arachnida	Acarina	-	Water Mite		1			1				1		
Cnidaria		Hydrozoa	Hydridae	Hydra									1		
Mollusca	Gastropoda	-	Physidae	Freshwater Snail	2	2		3	1			2	1		1
Mollusca	Gastropoda	-	Lymnaeidae	Freshwater Snail		2									1
Mollusca	Gastropoda	-	Ancylidae	Freshwater Limpet				2	2						
Mollusca	Bivalvia		Sphaeriidae	Pea Shell								2		39	
Platyhelminthes	Turbellaria	Tricladida	Dugesiidae	Flatworms											1



Phylum	Class/Sub-class	Order	Family	Group Name	UC1	UC2	UC3	UC4	UC5	UC6	UC7	UC8	UC9	UC10	UC11
Chordata				Mosquito Fish								4	19	5	3
				Ant				1	2						