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Appendix 1:
Faunal Species found in the Lower Hunter Estuary

The following species lists are sourced from HCRCMA (2008a)

1. Birdlife on Ash Island

(list compiled by Hunter Bird Observers Club 1980-2006)

Brown Quail	Latham's Snipe	White-throated Treecreeper
Maggie Goose	Black-tailed Godwit	Superb Fairy-wren
Blue-billed Duck	Bar-tailed Godwit	Striated Pardalote
Musk Duck	Little Curlew	White-browed Scrubwren
Freckled Duck	Whimbrel	Brown Gerygone
Black Swan	Eastern Curlew	Mangrove Gerygone
Australian Shelduck	Marsh Sandpiper	Brown Thornbill
Australian Wood Duck	Common Greenshank	Yellow-rumped Thornbill
Pacific Black Duck	Lesser Yellowlegs	Yellow Thornbill
Australasian Shoveler	Terek Sandpiper	Red Wattlebird
Northern Shoveler	Common Sandpiper	Little Wattlebird
Grey Teal	Grey-tailed Tattler	Striped Honeyeater
Chestnut Teal	Ruddy Turnstone	Noisy Friarbird
Pink-eared Duck	Red Knot	Noisy Miner
Hardhead	Red-necked Stint	Yellow-faced Honeyeater
Australasian Grebe	Pectoral Sandpiper	Brown Honeyeater
Hoary-headed Grebe	Sharp-tailed Sandpiper	White-cheeked Honeyeater
Darter	Curlew Sandpiper	Eastern Spinebill
Little Pied Cormorant	Ruff	White-fronted Chat
Pied Cormorant	Painted Snipe	Rufous Whistler
Little Black Cormorant	Black-winged Stilt	Grey Shrike-thrush
Great Cormorant	Banded Stilt	Black-faced Monarch
Australian Pelican	Red-necked Avocet	Restless Flycatcher
White-faced Heron	Pacific Golden Plover	Maggie-lark
Little Egret	Grey Plover	Rufous Fantail
White-necked Heron	Red-capped Plover	Grey Fantail
Great Egret	Double-banded Plover	Willie Wagtail
Intermediate Egret	Black-fronted Dotterel	Spangled Drongo
Cattle Egret	Red-kneed Dotterel	Black-faced Cuckoo-shrike
Striated Heron	Banded Lapwing	White-winged Triller
Nankeen Night Heron	Masked Lapwing	Olive-backed Oriole
Black Bittern	Silver Gull	Figbird
Australasian Bittern	Gull-billed Tern	White-breasted Woodswallow
Australian White Ibis	Caspian Tern	Grey Butcherbird
Straw-necked Ibis	Crested Tern	Pied Butcherbird
Royal Spoonbill	Whiskered Tern	Australian Magpie
Yellow-billed Spoonbill	White-winged Black Tern	Pied Currawong
Black-necked Stork	Rock Dove	Australian Raven
Osprey	Spotted Turtle-Dove	Torresian Crow
Black-shouldered Kite	Crested Pigeon	Skylark
Black Kite	Peaceful Dove	Richard's Pipit
Whistling Kite	Bar-shouldered Dove	Yellow Wagtail
Brahminy Kite	Galah	House Sparrow#
White-bellied Sea-Eagle	Sulphur-crested Cockatoo	Red-browed Finch
Spotted Harrier	Yellow-tailed Black Cockatoo*	Chestnut-breasted Mannikin
Swamp Harrier	Rainbow Lorikeet	European Goldfinch
Brown Goshawk	Scaly-breasted Lorikeet*	Mistletoebird
Collared Sparrowhawk	Eastern Rosella	Welcome Swallow
Wedge-tailed Eagle	Red-rumped Parrot	Tree Martin
Brown Falcon	Pallid Cuckoo	Fairy Martin
Black Falcon	Fan-tailed Cuckoo	Clamorous Reed-Warbler
Australian Hobby	Horsfield's Bronze-Cuckoo	Tawny Grassbird
Peregrine Falcon	Shining Bronze-Cuckoo	Little Grassbird
Nankeen Kestrel	Channel-billed Cuckoo	Rufous Songlark
Buff-banded Rail	Common Koel	Brown Songlark
Lewin's Rail	Southern Boobook	Golden-headed Cisticola
Baillon's Crake	Masked Owl	Silvereye
Australian Spotted Crake	Grass Owl*	Common Starling#
Spotless Crake	Barn Owl	Common Myna#
Purple Swamphen	White-throated Needletail	
Dusky Moorhen	Azure Kingfisher	
Black-tailed Native Hen	Laughing Kookaburra	
Eurasian Coot	Sacred Kingfisher	

Number of species = 185

* These species were added after 2003.
Introduced.

2. Summary of Threatened Species and Communities on Ash Island (recorded on the western end of Kooragang Island)

Common name	Scientific name	TSC Act			EPBC Act				CAMBA/ JAMBA
		1	2	3	Thr	Mig-wet	Mig-terr	Marine	
Compiled by Kooragang Wetland Rehabilitation Project: Updated 22/10/02									
Amphibians									
Green and Golden Bell Frog	<i>Litoria aurea</i>	E			V				
Birds									
Common Sandpiper	<i>Actitis hypoleucos</i>								CJ
Magpie Goose	<i>Anseranas semipalmata</i>		V						
Fork-tailed Swift	<i>Apus pacificus</i>								CJ
Great Egret	<i>Ardea alba</i>								CJ
Cattle Egret	<i>Ardea ibis</i>								CJ
Ruddy Turnstone	<i>Arenaria interpres</i>					x		x	CJ
Australasian Bittern	<i>Botaurus poiciloptilus</i>		V						
Sharp-tailed Sandpiper	<i>Calidris acuminata</i>								CJ
Sanderling	<i>Calidris alba</i>		V						CJ
Red Knot	<i>Calidris canutus</i>								CJ
Curlew Sandpiper	<i>Calidris ferruginea</i>					x		x	CJ
Pectoral Sandpiper	<i>Calidris melanotos</i>								J
Red-necked Stint	<i>Calidris ruficollis</i>								CJ
Great Knot	<i>Calidris tenuirostris</i>								CJ
Greater (Large) Sand Plover	<i>Charadrius leschenaultii</i>		V						CJ
Lesser Sand-plover, Mongolian Plover	<i>Charadrius mongolus</i>		V			x		x	CJ
Black-necked Stork	<i>Ephippiorhynchus asiaticus</i>	E							
Latham's Snipe, Japanese Snipe	<i>Gallinago hardwickii</i>					x		x	CJ
White-bellied Sea Eagle	<i>Haliaeetus leucogaster</i>						x	x	C
Grey-tailed Tattler	<i>Heteroscelus brevipes</i>								CJ
Wandering Tattler	<i>Heteroscelus incanus</i>								J
White-throated Needletail	<i>Hirundapus caudacutus</i>						x	x	CJ
Black Bittern	<i>Ixobrychus flavicollis</i>		V						
Swift Parrot	<i>Lathamus discolor</i>								
Broad-billed Sandpiper	<i>Limicola falcinellus</i>		V			x		x	CJ
Asian Dowitcher	<i>Limnodromus semipalmatus</i>								CJ
Bar-tailed Godwit	<i>Limosa lapponica</i>					x		x	CJ
Black-tailed Godwit	<i>Limosa limosa</i>		V			x		x	CJ
Black-faced Monarch	<i>Monarcha melanopsis</i>						x	x	
Yellow Wagtail	<i>Motacilla flava</i>								C
Satin Flycatcher	<i>Myiagra cyanoleuca</i>								
Eastern Curlew	<i>Numenius madagascariensis</i>					x		x	CJ
Whimbrel	<i>Numenius phaeopus</i>					x		x	CJ
Blue-billed Duck	<i>Oxyura australis</i>		V						
Osprey	<i>Pandion haliaetus</i>		V						
Ruff	<i>Philomachus pugnax</i>								CJ
Pacific Golden Plover	<i>Pluvialis fulva</i>					x		x	
Grey Plover	<i>Pluvialis squatarola</i>								CJ
Rufous Fantail	<i>Rhipidura rufifrons</i>						x	x	
Painted Snipe	<i>Rostratula benghalensis</i>		V			x		x	C
Little Tern	<i>Sterna albifrons</i>		E						CJ
Caspian Tern	<i>Sterna caspia</i>								CJ
Freckled Duck	<i>Stictonetta naevosa</i>		V						
Wood Sandpiper	<i>Tringa glareola</i>								CJ
Greenshank, Common Greenshank	<i>Tringa nebularia</i>					x		x	CJ
Little Greenshank, Marsh Sandpiper	<i>Tringa stagnatilis</i>					x		x	CJ
Buff-breasted Sandpiper	<i>Tryngites subruficollis</i>								J
Masked Owl	<i>Tyto novaehollandiae</i>		V						
Regent Honeyeater	<i>Xanthomyza phrygia</i>								
Terek Sandpiper	<i>Xenus cinereus</i>		V			x		x	CJ
Mammals									
Large-eared Pied Bat, Large Pied Bat	<i>Chalinolobus dwyer</i>								
Spot-tailed Quoll, Spotted-tail Quoll, Tiger Quoll (south-east mainland and Tasmanian subspecies)	<i>Dasyurus maculatus maculatus (s. lat.)</i>								
Little Bentwing-bat	<i>Miniopterus australis</i>		V						
Eastern Bentwing-bat	<i>Miniopterus schreibersii oceanensis</i>		V						
Eastern Freetail-bat	<i>Mormopterus norfolkensis</i>		V						
Large-footed Myotis	<i>Myotis adversus</i>		V						
Long-nosed Potoroo (SE mainland)	<i>Potorous tridactylus tridactylus</i>								
Grey-headed Flying fox	<i>Pteropus poliocephalus</i>				V				
Yellow-bellied Sheath-tail-bat	<i>Saccolaimus flaviventris</i>		V						
Greater Broad-nosed Bat	<i>Scoteanax rueppellii</i>		V						
Plants									
White Cynanchum	<i>Cynanchum elegans</i>		E						
	<i>Zannichellia palustris</i>		E						
Endangered ecological communities (TSC Act)									
Sydney Coastal Estuary Swamp Forest in the Sydney Basin Bioregion									

Common name	Scientific name	TSC Act			EPBC Act				CAMBA/ JAMBA
		1	2	3	Thr	Mig-wet	Mig-terr	Marine	
Sydney Freshwater Wetlands									
Key threatening processes (TSC Act)									
Alteration to the natural flow regimes of rivers and streams and their floodplains and wetlands									
Predation by <i>Gambusia holbrooki</i> (Plague Minnow or Mosquito Fish)									
Ramsar site (considered in EPBC Act)									
KWRP project sites overlap with Kooragang Nature Reserve									
Protected Communities (FM Act)									
Mangroves									
Saltmarsh									
Key									
TSC - NSW Threatened Species Conservation Act, 1995									
1 - Schedule 1: Endangered species, populations and ecological communities (E= endangered)									
2 - Schedule 2: Vulnerable species (V= vulnerable)									
3 - Schedule 3: Key threatening processes									
CAMBA/JAMBA - China Australia Migratory Bird Agreement / Japan Australia Migratory Bird Agreement									
C - China-Australia Migratory Bird Agreement									
J - Japan-Australia Migratory Bird Agreement									
EPBC - Commonwealth Environment Protection and Biodiversity Conservation Act									
Th - Threatened species									
(E - Endangered)									
(V - Vulnerable)									
Mig-wet - Wetland species covered by migratory provisions of the EPBC Act, 1999									
Mig-terr - Terrestrial species covered by migratory provisions of the EPBC Act, 1999									
Marine - Species covered by marine provisions of the EPBC Act, 1999									
FM Act - Fisheries Management Act 1994; Updated 27/5/02									

3. Reptiles found on Ash Island

(recorded by KWRP staff and ecology consultants)

Family	Scientific Name	Common Name
Chelidae	<i>Chelodina longicollis</i>	Eastern Long-necked Turtle
Scincidae	<i>Eulamprus quoyii</i>	Eastern Water Skink
	<i>Eulamprus tenuis</i>	Yellow-bellied Skink
	<i>Lampropholis delicata</i>	Garden Skink
	<i>Physignathus lesueurii ssp lesueurii</i>	Eastern water Dragon
Elapidae	<i>Dendrelaphis punctulata</i>	Green Tree Snake
	<i>Hemiaspis signata</i>	Black-bellied Swamp Snake
	<i>Pseudechis porphyriacus</i>	Red-bellied Black Snake

4. Fish and Crustacean Species of the Hunter River Estuary

Compiled from studies at Kooragang and Tomago sites (West) and Fullerton sit (East) by R Williams and D Sullings NSW Fisheries and studies at Ironbark Cree by A. Hyde. (* indicates a commercial/recreation species).

Family	Taxon	Common Name
ELOPIDAE	<i>Elops hawaiiensis</i>	Giant Herring
ANGUILLIDAE	<i>Anguilla australis</i>	Short-fin Eel
ANGUILLIDAE	<i>Anguilla reinhardtii</i>	Long-fin Eel *
CLUPEIDAE	<i>Herklotsichthys castelnaui</i>	Southern Sprat
CLUPEIDAE	<i>Hyperlophus vittatus</i>	Sandy Sprat *
ENGRAULIDAE	<i>Engraulis australis</i>	Australian Anchovy
GALAXIIDAE	<i>Galaxias maculatus</i>	Common Jollytail
CYPRINIDAE	<i>Carassius auratus</i>	Goldfish
PLOTOSIDAE	<i>Cnidoglanis macrocephala</i>	Estuary Catfish
ANTENNARIIDAE	<i>Antennarius striatus</i>	Striped Angler Fish
POECILIIDAE	<i>Gambusia holbrooki</i>	Mosquito Fish
MELANOTAENIDAE	<i>Pseudomugil signifer</i>	Blue-eye
SCORPAENIDAE	<i>Centropogon australis</i>	Fortesque
PLATYCEPHALIDAE	<i>Platycephalus fuscus</i>	Dusky Flathead *
CHANDIDAE	<i>Ambassis jacksoniensis</i>	Port Jackson Glassfish
CHANDIDAE	<i>Ambassis marianus</i>	Ramsay's Glassfish
TERAPONTIDAE	<i>Pelates quadrilineatus</i>	Trumpeter
TERAPONTIDAE	<i>Terapon jarbua</i>	Crescent Perch
SILLAGINIDAE	<i>Sillago ciliata</i>	Sand Whiting *
POMATOMIDAE	<i>Pomatomus saltator</i>	Tailor *
GERRIDAE	<i>Gerres subfasciatus</i>	Silver Bidy *
SPARIDAE	<i>Acanthopagrus australis</i>	Yellowfin Bream *
SPARIDAE	<i>Rhabdosargus sarba</i>	Tarwhine *
MONODACTYLIDAE	<i>Monodactylus argenteus</i>	Silver Batfish
GIRELLIDAE	<i>Girella tricuspidata</i>	Luderick*
SCATOPHAGIDAE	<i>Selenotoca multifasciata</i>	Striped Scat
MUGILIDAE	<i>Liza argentea</i>	Flat-tail Mullet *
MUGILIDAE	<i>Mugil cephalus</i>	Sea Mullet *
MUGILIDAE	<i>Mugil georgii</i>	Fantail Mullet *
MUGILIDAE	<i>Myxus elongatus</i>	Sand Mullet *
HEMIRAMPHIDAE	<i>Hyporhamphus regularis</i>	River garfish *
GOBIIDAE	<i>Acanthogobius flavimanus</i>	Oriental Goby
GOBIIDAE	<i>Arenigobius bifrenatus</i>	Bridled Goby
GOBIIDAE	<i>Arenigobius frenatus</i>	Half-bridled Goby
GOBIIDAE	<i>Cristatogobius gobioides</i>	Crested Oyster Goby
GOBIIDAE	<i>Cryptocentrus critatus</i>	Oyster goby
GOBIIDAE	<i>Favonigobius exquisites</i>	Exquisite sand Goby
GOBIIDAE	<i>Favonigobius tamarensis</i>	Tamar River Goby
GOBIIDAE	<i>Gobiopterus semivestitus</i>	Glass Goby
GOBIIDAE	<i>Gobiopterus sp</i>	unknown goby
GOBIIDAE	<i>Mugilogobius paludis</i>	Mangrove Goby
GOBIIDAE	<i>Mugilogobius stigmaticus</i>	Checkered mangrove Goby
GOBIIDAE	<i>Pseudogobius olorum</i>	Blue-spot Goby
GOBIIDAE	<i>Redigobius macrostoma</i>	Large-mouth Goby
ELEOTRIDIDAE	<i>Gobiomorphus australis</i>	Striped Gudgeon
ELEOTRIDIDAE	<i>Gobiomorphus coxii</i>	Cox's Gudgeon
ELEOTRIDIDAE	<i>Hypseleotris compressus</i>	Empire Fish
ELEOTRIDIDAE	<i>Philypnodon grandiceps</i>	Flathead Gudgeon

ELEOTRIDIDAE	<i>Philypnodon sp.</i>	Dwarf flathead Gudgeon
GOBIOIDIDAE	<i>Taeniooides mordax</i>	Mud Goby
BOTHIDAE	<i>Pseudorhombus arsius</i>	Large-tooth Flounder
BOTHIDAE	<i>Pseudorhombus jenysii</i>	Small-tooth Flounder *
SOLEIDAE	<i>Synaptura nigra</i>	Black Sole
MONACANTHIDAE	<i>Meuschenia freycineti</i>	Six-spine Leatherjacket
MONACANTHIDAE	<i>Meuschenia trachylepis</i>	Yellow-finned Leatherjacket *
TETRAODONTIDAE	<i>Tetractenos hamiltoni</i>	Common Toadfish
PENAEIDAE	<i>Metapenaeus macleayi</i>	School Prawn *
PENAEIDAE	<i>Penaeus plebejus</i>	Eastern king Prawn *
PENAEIDAE	<i>Metapenaeus bennettae</i>	Greasyback Prawn
SERGESTIDAE	<i>Acetes australis</i>	Acetes
PALAEMONIDAE	<i>Macrobrachium intermedium</i>	Grass Shrimp
PALAEMONIDAE	<i>Macrobrachium novaehollandiae</i>	Long-armed Prawn
ALPHEIDAE	<i>Alpheus euphrosyne</i>	Snapping Prawn
MYSIDACEA	<i>Mysid sp</i>	unknown mysid
UNKNOWN	<i>Unknown</i>	unknown shrimp 2
UNKNOWN	<i>Unknown</i>	unknown shrimp 3
HYMENOSOMATIDAE	<i>Halicarcinus ovatus</i>	Spider Crab
HYMENOSOMATIDAE	<i>Halicarcinus spp</i>	Unknown
PORTUNIDAE	<i>Portunus pelagicus</i>	Blue swimming Crab
PORTUNIDAE	<i>Scylla serrata</i>	Mud Crab *
GRAPSIDAE	<i>Paragrapsus laevis</i>	Mottled shore Crab
GRAPSIDAE	<i>Sesarma erythroductyla</i>	Red-fingered Marsh Crab
OCYPODIDAE	<i>Australoplax tridentata</i>	Stripe-faced Crab
OCYPODIDAE	<i>Heloecius cordiformis</i>	Semaphore Crab

5. Frog species recorded on Kooragang Island

Common name	Scientific name
Common Froglet	<i>Crinia signifera</i>
Ornate Burrowing Frog	<i>Limnodynastes ornatus</i>
Striped Marsh Frog	<i>Limnodynastes peronii</i>
Salmon-striped Frog*	<i>Limnodynastes salmini</i>
Spotted Marsh Frog	<i>Limnodynastes tasmaniensis</i>
Green and Golden Bell Frog	<i>Litoria aurea</i>
Green Tree Frog	<i>Litoria caerulea</i>
Bleating Tree Frog	<i>Litoria dentata</i>
Eastern Dwarf Tree Frog	<i>Litoria fallax</i>
Jervis Bay Tree Frog	<i>Litoria jervisiensis</i>
Broad-palmed Frog	<i>Litoria latopalmata</i>
Peron's Tree Frog	<i>Litoria peronii</i>
Verreaux's Tree Frog	<i>Litoria verreauxii</i>
Tylers' Tree Frog	<i>Litoria tyleri</i>
Smooth Toadlet	<i>Uperoleia laevigata</i>

* All frog species except *Limnodynastes salmini** were recorded by Andrew Hamer during presence surveys on Kooragang Island, 1999-2001.

* *Limnodynastes salmini* was recorded by Brad McPherson, SOFAR on Kooragang Island, 2005

6. Bat species recorded on Kooragang Island (recorded by Fly by Night Bat Surveys, 2002)

Common name	Scientific name
MOLOSSIDAE	
White-striped Mastiff Bat	<i>Tadarida australis</i>
Little Freetail Bat	<i>Mormopterus sp. 2</i>
VESPERTILIONIDAE	
Gould's Wattled Bat	<i>Chalinolobus gouldii</i>
Chocolate Wattled Bat	<i>Chalinolobus morio</i>
Little Bent-wing Bat	<i>Miniopterus australis</i>
Large Bent-wing Bat	<i>Miniopterus schreibersii</i>
Fishing Bat	<i>Myotis adversus</i>
Gould's Long-eared Bat	<i>Nyctophilus gouldi</i>
Eastern Broad-nosed Bat	<i>Scotorepens orion</i>
Little Forest Bat	<i>Vespadelus vulturinus</i>

7. Non-Marine molluscs of Ash Island
(surveyed by Michael Shea, 1999)

CLASS (SUB-CLASS)	FAMILY	GENUS SPECIES	HABITAT
GASTROPODA (PROSOBRANCHIA)	HYDROBIIDAE	Tetea rufilabris	Fresh / Brackish water pools
		Aschoris tasmanica	Fresh / Brackish water pools
	ASSIMINEIDAE	Assiminea buccinoides	Mangroves / Saltmarsh
GASTROPODA (PULMONATA)	AMPHIBOLDAE	Salinator solida	Mangroves / Saltmarsh
	ELLOBIIDAE	Ophicardelus ornatus	Mangroves / Saltmarsh
Ophicardelus quoyi		Mangroves / Saltmarsh	
Ophicardelus sulcatus		Mangroves / Saltmarsh	
Cassidula zonata		Mangroves / Saltmarsh	
	ANCYLIDAE	Ferrissia petterdi	Freshwater pools
	LYMNAEIDAE	Austropeplea brazieri	Freshwater pools
	PLANORBIDAE	Isidorella newcombi	Freshwater pools
		Glyptophysa gibbosa	Freshwater pools
	PHYSIDAE	Physa acuta	Freshwater channels (intro. from Europe)
	SUCCINEIDAE	Succinea eucalypti	Swampy pasture
	PUPILLIDAE	Gastrocopta strangeana	Rainforest remnants / Casuarina groves
	RHYTIDIDAE	Strangesta strangei (=Helix strangei) (Cox)	Aust. Land Shells p.26, locality as Ash Is. Possibly locally extinct; from rainforest
	PUNCTIDAE	Paralaoma caputspinulae	Rainforest remnants, farmland, Casuarina groves
	CHAROPIDAE	Elsothera c.f. funereal	Rainforest remnants
		Allocharopa brazieri(?)	Rainforest remnants
	CARYODIDAE (= ACAVIDAE)	Pygmipanda atomata (= Bulimus atomatus)	Mon. Aust. Land Shells p. 71, Locality as Ash Island and Hexham (Scott) Locally extinct in lower Hunter; from rainforest
	ZONITIDAE	Zonitoides arboreus	Rainforest remnants. (Introduced from USA)
	LIMACIDAE	Limax maximus	Abandoned buildings/ farmland (Introduced from Europe)
		Lehmannia marginata	Farmland (Introduced from Europe).
	AGRIOLIMACIDAE	Deroceras laeve	Farmland / Moist weedy areas (Introduced)
	MILACIDAE	Milax gagates	Farmland / Abandoned buildings (Intro. from Europe).
	CAMAENIDAE	Thersites novaehollandiae	Mon. Aust. Land Shells p.66. Locality

Selected Bibliography: Cox, J.C. 1868. A Monograph of Australian Land Shells. Sydney NSW.