
**Fauna Survey at the fore dune section between
Mudjimba Esp, Mudjimba and Ramona St, Marcoola,
Queensland for Coolum District Coast Care Inc.**



**Report written by the Wildlife Preservation Society of Queensland
Sunshine Coast and Hinterland Branch Inc. through the
Faunawatch program.**

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1. Introduction

The Wildlife Preservation Society of Queensland Sunshine Coast and Hinterland Branch Inc. (WPSQSCH) were contracted by Coolum District Coast Care Inc. to undertake a fauna survey on the fore dunes between Mudjimba and Marcoola Queensland. The purpose of the survey was to establish a baseline understanding of species in the area and define a clear and repeatable working method. Two techniques were used to record the range of vertebrate fauna that are most likely to be present in the target site. This included opportunistic sightings in 4 hour or 8 hour blocks plus baited and motion detection camera traps. Although not specifically targeted a list of non-vertebrate fauna identified during field work is also provided.

2. Methods

2.1 Study Site

The survey site is located between Mudjimba Esplanade, Mudjimba and Ramona Street, Marcoola, Queensland. Due to the length of the site the survey was conducted in two parts (Fig. 1). The north site bordered Ramona St at the north end and continued south for 1050 metres. It is situated between the South Pacific Ocean to the east and David Low Way and the Sunshine Coast Airport to the west. The southern site bordered Mudjimba Esplanade beach access 251 and continued 750 metres north to the southern end of the north site. It is located between the South Pacific Ocean to the east and high rise housing complexes to the west.



Fig. 1 Location of North and South sites

The north site comprises of fore dune complex (RE12.2.14) backing onto closed and wet heath (RE 12.2.12) and onto Palustine wetland with seasonally waterlogged sandplain (RE12.2.7) at the northern end (Fig. 2), and a *Banksia aemula* woodland on deeply leached soil (RE 12.2.7) at the south end of the site.



Fig.2 North site showing large season ponds forming in areas of low relief (Photo by Rob Kernot).

The southern site consists of the fore dune complex (RE12.2.14) backing onto the closed and wet heath (RE 12.2.12). Within the test site there is some variation within the vegetation complexes based on small changes in relief. This results in poorly drained quaternary dunes from overflow and infiltration at low points of the sand mass to sparse open vegetated grassland at the dune front. Primary vegetation species include *Casuarina equisetifolia*, *Banksia robur/integrifolia*, *Pandanus*, *Melaleuca* and *Baeckea* (Fig. 3).



Fig. 3. South survey site with animal trail

2.2 Opportunistic Survey

Opportunistic surveys were conducted four times over the survey period. These consisted of visual and call identification of vertebrates and non-vertebrates (birds, mammals, butterflies). Samples of scats were analysed in the field. Due to specialised techniques and time restrictions although not specifically targeted reptiles, amphibians and insects identified during the survey were recorded. These surveys were conducted in two dedicated four hour blocks per site, plus two eight hour blocks conducted during camera trap setup and retrieval per site.

2.3 Camera Trap

To assist in fauna detection motion detection cameras were setup throughout the survey site. These cameras work by either using a food source to attract fauna to the trap, or by positioning the camera at an identified fauna path. To maximise the probability of attracting trap-shy individual's two baiting types were implemented. The first method used an oat mixture placed in a perforated container (Fig. 4), the second uses an uncooked chicken frame wired to a horizontal tree limb 1 metre off ground level.



Fig. 4. Oat camera bait placed on animal trails running under vine undergrowth

The cameras were positioned pointing at the bait at a distance of 3 metres with a clear visual path. These cameras are activated by body heat and motion moving within its field of view. This event triggers either a sequence of 3 photos or video capture until no further motion is detected.

The cameras were installed approximately 100 metres apart along the length of the two survey sites (Fig. 5). Where beach access paths crossed the survey site extra distance was allowed to minimise the edge effect caused by human disturbance in that area to maximise the probability of fauna detection. The oat baited camera traps were checked and re-baited after 4 nights. All cameras ran continuously for the 7 day survey.



Fig. 5 Camera trap positions in the north and south site

At the northern end of the north site three cameras were positioned to observe if fauna uses this location to cross David Low Way to move between the survey site and Noosa National Park. These unbaited, motion detection cameras were positioned at this location as this section is the only access point of the fore dune complex to the Mt Coolum National Park and the wallum heathlands (Fig. 6).



Fig. 6 Three motion detection cameras were placed parallel to David Low Way at the northern end of the north site to identify if fauna is using this section to move between the Mt Coolum National Park and the fore dunes.

3. Results

95 species were recorded over the survey period (Table 1). This consisted of 46 birds, 5 mammals, 4 amphibians, 24 butterflies, 8 spiders and 5 reptiles (Table 1). This included one species, Wallum Froglet (*Crinia tinnula*), that is listed as Vulnerable under the Queensland Nature Conservation Nature Act 1992 and ICUN 2011.

Table 1. Summary of all species identified from Opportunistic survey, Camera Trap, and Scat analysis.

	Common Name	Scientific Name
Birds	Australian Brush-turkey	<i>Alectura lathamii</i>
	Little Black Cormorant	<i>Phalacrocorax sulcirostris</i>
	Brahminy Kite	<i>Haliastur Indus</i>
	Osprey	<i>Pandion haliaetus</i>
	Pied Oystercatcher	<i>Haematopus longirostris</i>
	Silver Gull	<i>Larus novaehollandiae</i>
	Bar-shouldered Dove	<i>Geopelia humeralis</i>
	Spotted Turtle-dove	<i>Streptopelia chinensis</i>
	Little Corella	<i>Cacatua sanguinea</i>
	Rainbow Lorikeet	<i>Trichoglossus haematodus</i>
	Forest Kingfisher	<i>Todiramphus macleayii</i>
	Sacred Kingfisher	<i>Todirhamphus sanctus</i>
	Rainbow Bee-eater	<i>Merops ornatus</i>
	Variegated Fairy-wren	<i>Malurus lamberti</i>
	Red-backed Fairy-wren	<i>Malurus melanocephalus</i>
	Striated Pardalote	<i>Pardalotus striatus</i>
	White-browed Scrubwren	<i>Sericornis frontalis</i>
	Mangrove Gerygone	<i>Gerygone levigaster</i>
	Brown Thornbill	<i>Acanthiza pusilla</i>
	Little Wattlebird	<i>Anthochaera chrysoptera</i>
	Noisy Friarbird	<i>Philemon corniculatus</i>
	Blue Faced Honeyeater	<i>Entomyzon cyanotis</i>
	Lewin's Honeyeater	<i>Meliphaga lewinii</i>
	Brown Honeyeater	<i>Lichmera indistincta</i>
	White-cheeked Honeyeater	<i>Phylidonyris nigra</i>
	Eastern Yellow Robin	<i>Eopsaltria australis</i>

	Eastern Whipbird	<i>Psophodes olivaceus</i>
	Rufous Whistler	<i>Pachycephala rufiventris</i>
	Golden Whistler	<i>Pachycephala pectoralis</i>
	Little Shrike-thrush	<i>Colluricincla megarhyncha</i>
	Grey Shrike-thrush	<i>Colluricincla harmonica</i>
	Magpie-lark	<i>Grallina cyanoleuca</i>
	Willie Wagtail	<i>Rhipidura leucophrys</i>
	Spangled Drongo	<i>Dicrurus bracteatus</i>
	Black-faced Cuckoo-shrike	<i>Coracina novaehollandiae</i>
	Varied Triller	<i>Lalage leucomela</i>
	Australasian Figbird	<i>Sphecotheres viridis</i>
	White-breasted Woodswallow	<i>Artamus leucorhynchus</i>
	Pied Butcherbird	<i>Cracticus nigrogularis</i>
	Torresian Crow	<i>Corvus orru</i>
	Australian Pipit	<i>Anthus novaeseelandiae</i>
	Double-barred Finch	<i>Taeniopygia bichenovii</i>
	House Sparrow	<i>Passer domesticus</i>
	Mistletoe Bird	<i>Dicaeum hirundinaceum</i>
	Welcome Swallow	<i>Hirundo neoxena</i>
	Silvereye	<i>Zosterops lateralis</i>
Butterflies	Black Jezebel	<i>Delias nigrina</i>
	Blue Tiger	<i>Tirumala hamata hamata</i>
	Blue Triangle	<i>Graphium sarpedon choredon</i>
	Bordered Rustic	<i>Cupha prosopoe prosopoe</i>
	Brown Ringlet	<i>Hypocysta metirius</i>
	Common Crow	<i>Euploea core corinna</i>
	Caper White	<i>Belenois java teutonia</i>
	Evening Brown	<i>Melanitis leda bankia</i>
	Fuscous Swallowtail	<i>Papilio fuscus capaneus</i>
	Glasswing	<i>Acraea andromacha andromacha</i>
	Hairy Line-blue	<i>Erysichton lineata lineata</i>
	Large Grass Yellow	<i>Eurema hecabe phoebus</i>
	Lemon Migrant	<i>Catopsilia pomona Pomona</i>
	Meadow Argus	<i>Junonia villida</i>
	Monarch	<i>Danaus plexippus plexippus</i>
	Orchard Swallowtail	<i>Papilio aegeus aegeus</i>
	Purple Crow	<i>Euploea tulliolus tulliolus</i>
	Scarlet Jezebel	<i>Delias argenthona argenthona</i>

	Small Dusky Blue	<i>Candalides erinus erinus</i>
	Small Green-banded Blue	<i>Psychonotis caelius</i>
	Swamp Tiger	<i>Danaus affinis affinis</i>
	Tailed Emperor	<i>Polyura sempronius</i>
	Wide-banded Grass-dart	<i>Taractrocera papyria papyria</i>
	White-banded Line Blue	<i>Nacaduba kurava parma</i>
Insects Other	Red Swamp Dragon	<i>Agrionoptera insignis allogenes</i>
	Yellow-striped Flutterwing	<i>Rhyothemis phyllis chloe</i>
	Blue-banded Bee	<i>Amegilla pulchra</i>
Spiders	Four-spined Spider	<i>Gasteracantha quadrispinosa</i>
	Garden Orb-weaver	<i>Eriophora transmarinus</i>
	Golden Orb-weaver	<i>Nephila sp.</i>
	Jumping Spider	<i>Astia sp.</i>
	Leaf Curling Spider	<i>Phonognatha sp.</i>
	Russian Tent Spider	<i>Cyrtophora sp.</i>
	St. Andrew's Cross	<i>Argiope keyserlingi</i>
	Silver Orb-weaver	<i>Leucauge sp.</i>
Frogs	Broad-palmed Rocketfrog	<i>Litoria latopalmata</i>
	Eastern Sedgefrog	<i>Litoria fallax</i>
	Stripped Marshfrog	<i>Limnodynastes peronii</i>
	Wallum Froglet	<i>Crinia tinnula</i>
Reptiles	Garden Skink	<i>Lampropholis delicata</i>
	Secretive Skink	<i>Lampropholis amicula</i>
	Wall Skink	<i>Cryptoblepharus virgatus</i>
	Eastern Water Dragon	<i>Physignathus lesueurii</i>
	Lace Monitor	<i>Varanus varius</i>
Crustaceans	Ghost Crab	<i>Ocypode cordimanna</i>
Mammals	Northern Brown Bandicoot	<i>Isodon macrourus</i>
	Ringtail Possum	<i>Pseudocheirus peregrinus</i>
	Swamp Wallaby	<i>Wallabia bicolor</i>
	Ship Rat	<i>Rattus rattus</i>
	Swamp Rat	<i>Rattus lutreolus</i>

The species were identified through the following:

3.1 North Site.

Opportunistic Survey identified 79 species in the site through visual or auditory methods (Table 2). The overall assemblage is consistent with expected species from this vegetation community type and seasonal conditions. One individual of Wallum Froglet (*Crinia tinulla*) was identified through its call (Fig. 7) and was the only species of a conservation status of Vulnerable as classified in the Queensland Conservation Act 1992 and the ICUN Red List.



Fig. 7 Approximate location of Wallum Froglet (*Crinia tinulla*)

Another species of note identified by camera trapping and visually by the field surveyors was the presence of swamp wallabies (*Wallabia bicolor*) (Fig. 8). Although a true population study was not undertaken in the survey method a low presence of macropod paths, beds and scats may indicate a small population of the species residing in the area.

Camera traps captured 5 species in the site (Fig 8-12 & App 1). This included Brush Turkey (*Alectura lathamii*), Lace Monitor (*Varanus varius*), Swamp Wallaby (*Wallabia bicolor*), Northern Brown Bandicoot (*Isodon macrourus*) and Ship Rat (*Rattus rattus*).



Fig. 8 Swamp Wallaby on camera N



Fig. 9 Ship rat on Camera N5



Fig. 10 Lace Monitor on camera N6



Fig. 11 Brush Turkeys on camera N8



Fig. 12 Northern Brown Bandicoot on camera N4

Camera traps positioned at the northern end of the site (N1, N2, N3) did not capture any species crossing David Low Way. Subsequent to the formal survey period during a photo recording trip a swamp wallaby was found dead 15 metres to the west side of the motorway (Fig 13 & 14).



Fig. 13 Location of dead Swamp Wallaby (*Wallabia bicolor*)



Fig. 14 Wallaby carcass with David Low Way in the background

At the time of examination major decomposition had occurred with an approximate time of death seven days prior to finding the body (Fig. 14). No obvious cause of injury could be seen but with minimal disturbance to the body an attack and feeding by feral dogs or dingoes appears unlikely.

Despite the large amounts of rain over the first three days of the survey a wide assemblage of butterfly species were found (Fig. 15). Twenty four species represents a high proportion of expected species for the region and season.



Fig. 15. 24 butterfly species were identified including the Small Green Banded Blue (*Psychonotis caelius*) and Blue Tiger *Tirumala hamata hamata*

Table 2. Summary of all species identified in the North site from Opportunistic survey, Camera Trap, and Scat analysis.

Site: Marcoola-Mudjimba Fore dunes – North Site

Date: 16/03/2012 – 26/03/2012

	Common Name	Scientific Name
Birds	Australian Brush-turkey	<i>Alectura lathamii</i>
	Little Black Cormorant	<i>Phalacrocorax sulcirostris</i>
	Brahminy Kite	<i>Haliastur Indus</i>
	Osprey	<i>Pandion haliaetus</i>
	Pied Oystercatcher	<i>Haematopus longirostris</i>
	Silver Gull	<i>Larus novaehollandiae</i>
	Bar-shouldered Dove	<i>Geopelia humeralis</i>
	Spotted Turtle-dove	<i>Streptopelia chinensis</i>
	Little Corella	<i>Cacatua sanguinea</i>
	Rainbow Lorikeet	<i>Trichoglossus haematodus</i>
	Sacred Kingfisher	<i>Todirhamphus sanctus</i>
	Rainbow Bee-eater	<i>Merops ornatus</i>
	Variegated Fairy-wren	<i>Malurus lamberti</i>
	Red-backed Fairy-wren	<i>Malurus melanocephalus</i>
	Striated Pardalote	<i>Pardalotus striatus</i>

	White-browed Scrubwren	<i>Sericornis frontalis</i>
	Mangrove Gerygone	<i>Gerygone levigaster</i>
	Brown Thornbill	<i>Acanthiza pusilla</i>
	Little Wattlebird	<i>Anthochaera chrysoptera</i>
	Noisy Friarbird	<i>Philemon corniculatus</i>
	Blue Faced Honeyeater	<i>Entomyzon cyanotis</i>
	Lewin's Honeyeater	<i>Meliphaga lewinii</i>
	Brown Honeyeater	<i>Lichmera indistincta</i>
	White-cheeked Honeyeater	<i>Phylidonyris nigra</i>
	Eastern Yellow Robin	<i>Eopsaltria australis</i>
	Eastern Whipbird	<i>Psophodes olivaceus</i>
	Little Shrike-thrush	<i>Colluricincla megarhyncha</i>
	Grey Shrike-thrush	<i>Colluricincla harmonica</i>
	Magpie-lark	<i>Grallina cyanoleuca</i>
	Willie Wagtail	<i>Rhipidura leucophrys</i>
	Black-faced Cuckoo-shrike	<i>Coracina novaehollandiae</i>
	Varied Triller	<i>Lalage leucomela</i>
	Australasian Figbird	<i>Sphecotheres viridis</i>
	White-breasted Woodswallow	<i>Artamus leucorhynchus</i>
	Pied Butcherbird	<i>Cracticus nigrogularis</i>
	Torresian Crow	<i>Corvus orru</i>
	Australian Pipit	<i>Anthus novaeseelandiae</i>
	Mistletoe Bird	<i>Dicaeum hirundinaceum</i>
	Welcome Swallow	<i>Hirundo neoxena</i>
	Silvereye	<i>Zosterops lateralis</i>
Butterflies	Black Jezebel	<i>Delias nigrina</i>
	Blue Tiger	<i>Tirumala hamata hamata</i>
	Bordered Rustic	<i>Cupha prosopis prosopis</i>
	Common Crow	<i>Euploea core corinna</i>
	Caper White	<i>Belenois java teutonia</i>
	Evening Brown	<i>Melanitis leda bankia</i>
	Fuscous Swallowtail	<i>Papilio fuscus capaneus</i>
	Glasswing	<i>Acraea andromacha andromacha</i>
	Hairy Line-blue	<i>Erysichton lineata lineata</i>

	Large Grass Yellow	<i>Eurema hecabe phoebus</i>
	Lemon Migrant	<i>Catopsilia pomona Pomona</i>
	Monarch	<i>Danaus plexippus plexippus</i>
	Orchard Swallowtail	<i>Papilio aegeus aegeus</i>
	Purple Crow	<i>Euploea tulliolus tulliolus</i>
	Scarlet Jezebel	<i>Delias argenthona argenthona</i>
	Small Dusky Blue	<i>Candalides erinus erinus</i>
	Small Green-banded Blue	<i>Psychonotis caelius</i>
	Swamp Tiger	<i>Danaus affinis affinis</i>
	Wide-banded Grass-dart	<i>Taractrocera papyria papyria</i>
	White-banded Line Blue	<i>Nacaduba kurava parma</i>
	Yellow-striped Flutterwing	<i>Rhyothemis phyllis chloe</i>
	Blue-banded Bee	<i>Amegilla pulchra</i>
Spiders	Jumping Spider	<i>Astia sp.</i>
	Four-spined Spider	<i>Gasteracantha quadrispinosa</i>
	Garden Orb-weaver	<i>Eriophora transmarinus</i>
	Golden Orb-weaver	<i>Nephila sp.</i>
	Russian Tent Spider	<i>Cyrtophora sp.</i>
	Silver Orb-weaver	<i>Leucauge sp.</i>
Frogs	Eastern Sedgefrog	<i>Litoria fallax</i>
	Stripped Marshfrog	<i>Limnodynastes peronii</i>
	Wallum Froglet	<i>Crinia tinnula</i>
Reptiles	Eastern Water Dragon	<i>Physignathus lesueurii</i>
	Garden Skink	<i>Lampropholis delicata</i>
	Lace Monitor	<i>Varanus varius</i>
Crustaceans	Ghost Crab	<i>Ocypode cordimanna</i>
Mammals	Northern Brown Bandicoot	<i>Isodon macrourus</i>
	Ringtail Possum	<i>Pseudocheirus peregrinus</i>
	Swamp Wallaby	<i>Wallabia bicolor</i>
	Ship Rat	<i>Rattus rattus</i>



Fig 16 Four spined spider
(*Gasteracantha quadrispinosa*)

3.1 South Site.

Opportunistic surveys identified 49 species in the Southern site (Table 3). This consisted of 28 birds, 17 butterflies, 3 spiders, 3 frogs, 5 reptile, and 3 mammal species. The resulted in a 38% decrease in overall species than the north site and a general lower quantity of fauna tracks and scats were observed.

The assemblage was consistent with the vegetation community situated in a high disturbance area. The Honeyeater family was the most represented group with 7 species. High quantities of Rainbow Lorikeet, Little Wattlebirds, Brown (Fig. 17) and Blue Faced Honeyeaters (Fig. 18), Torresian Crow and Brush Turkey (Fig. 22) suggest the effect of human disturbance in this area.



Fig. 17 Brown Honeyeater



Fig. 18 Blue Faced Honeyeater

One honeyeater species of interest was the White-cheeked Honeyeater (Fig. 19). These appear in higher quantities at the southern fringes of the site constantly entering then leaving the site in a southern direction.



Fig 19. White Cheeked Honey Eater in southern fringe of South survey site

Another species of note was a pair of nesting Double-barred Finch (Fig. 20 and 21).



Fig. 20 Double Barred Finch Nest



Fig. 21 A pair of nesting Double-barred Finch

Camera traps captured 3 species in the site (Fig 23-24 & App 1). This included Brush Turkey (*Alectura lathamii*), Lace Monitor (*Varanus varius*), and Ship Rat (*Rattus rattus*).



Fig. 22 Brush Turkey on camera S1



Fig. 23 Ship Rat on camera S5



Fig. 24 Lace Monitor on camera S1

Table 3. Summary of all species identified in the South site from Opportunistic survey, Camera Trap, and Scat analysis.

Site: Marcoola-Mudjimba Interdunes – South Site

Date: 16/03/2012 – 02/04/12

	Common Name	Scientific Name
Birds	Australian Brush-turkey	<i>Alectura lathamii</i>
	Bar-shouldered Dove	<i>Geopelia humeralis</i>
	Rainbow Lorikeet	<i>Trichoglossus haematodus</i>
	Red-backed Fairy-wren	<i>Malurus melanocephalus</i>
	Variegated Fairy-wren	<i>Malurus lamberti</i>
	White-browed Scrubwren	<i>Sericornis frontalis</i>
	Mangrove Gerygone	<i>Gerygone levigaster</i>
	Little Wattlebird	<i>Anthochaera chrysoptera</i>
	Noisy Friarbird	<i>Philemon corniculatus</i>
	Blue Faced Honeyeater	<i>Entomyzon cyanotis</i>
	Lewin's Honeyeater	<i>Meliphaga lewinii</i>
	Brown Honeyeater	<i>Lichmera indistincta</i>
	White-cheeked Honeyeater	<i>Phylidonyris nigra</i>
	Eastern Yellow Robin	<i>Eopsaltria australis</i>
	Little Shrike-thrush	<i>Colluricincla megarhyncha</i>
	Grey Shrike-thrush	<i>Colluricincla harmonica</i>
	Leaden Flycatcher	<i>Myiagra rubecula</i>
	Magpie Lark	<i>Grallina cyanoleuca</i>
	Willie Wagtail	<i>Rhipidura leucophrys</i>
	Spangled Drongo	<i>Dicrurus bracteatus</i>
	Varied Triller	<i>Lalage leucomela</i>
	Australasian Figbird	<i>Sphecotheres viridis</i>
	Torresian Crow	<i>Corvus orru</i>
	Double-barred Finch	<i>Taeniopygia bichenovii</i>
	House Sparrow	<i>Passer domesticus</i>
	Mistletoe Bird	<i>Dicaeum hirundinaceum</i>
	Welcome Swallow	<i>Hirundo neoxena</i>
	Silvereye	<i>Zosterops lateralis</i>
Butterflies	Black Jezebel	<i>Delias nigrina</i>
	Blue Tiger	<i>Tirumala hamata hamata</i>
	Blue Triangle	<i>Graphium sarpedon choredon</i>
	Bordered Rustic	<i>Cupha prosopis prosopis</i>

	Brown Ringlet	<i>Hypocysta metirius</i>
	Common Crow	<i>Euploea core corinna</i>
	Evening Brown	<i>Melanitis leda bankia</i>
	Large Grass Yellow	<i>Eurema hecabe phoebus</i>
	Meadow Argus	<i>Junonia villida</i>
	Monarch	<i>Danaus plexippus plexippus</i>
	Orchard Swallowtail	<i>Papilio aegeus aegeus</i>
	Purple Crow	<i>Euploea tulliolus tulliolus</i>
	Scarlet Jezebel	<i>Delias argenthona argenthona</i>
	Small Dusky Blue	<i>Candalides erinus erinus</i>
	Small Green-banded Blue	<i>Psychonotis caelius</i>
	Swamp Tiger	<i>Danaus affinis affinis</i>
	Tailed Emperor	<i>Polyura sempronius</i>
Spiders	Garden Orb-weaver	<i>Eriophora transmarinus</i>
	Golden Orb-weaver	<i>Nephila sp.</i>
	Leaf Curling Spider	<i>Phonognatha sp.</i>
Frogs	Broad-palmed Rocketfrog	<i>Litoria latopalmata</i>
	Eastern Sedgefrog	<i>Litoria fallax</i>
	Stripped Marshfrog	<i>Limnodynastes peronii</i>
Reptiles	Eastern Stripped Skink	<i>Ctenotus robustus</i>
	Garden Skink	<i>Lampropholis delicata</i>
	Wall Skink	<i>Cryptoblepharus virgatus</i>
	Lace Monitor	<i>Varanus varius</i>
	Secretive Skink	<i>Lampropholis amicula</i>
Mammals	Swamp Wallaby	<i>Wallabia bicolor</i>
	Swamp Rat	<i>Rattus lutreolus</i>
	Ship Rat	<i>Rattus rattus</i>

4. Discussion

This fauna survey has identified 89 different species within the site. The quantity of species shows the importance of the fore dune system as it forms a continuous corridor running along the coast creating and linking a large refugial habitat from the Maroochy river in the south to the Noosa river in the north, and a network of national parks and reserves to the west. Human disturbance however seems evident in both sites with the apparent absence or small populations of native mammals and bird species that require a greater buffer between natural habitat and anthropogenic clearing or development. This was most noticeable in the southern site with the narrowing of the west-east width of the natural vegetation (Fig. 25).



Fig. 25 High rise complexes to the west of the Southern site has reduced the width of the fore dune corridor.

This combined with high-rise buildings dominating the western edge and frequent beach access paths (Fig. 26) running laterally across the dune complex are all creating edge effects for current and potential fauna residence.



Fig. 26 Several beach access paths run laterally across the fore dunes between the buildings on the western side to the South Pacific Ocean on the east.

When compared to the north site this resulted in a 32% decrease in bird species and a 30% decrease in species overall. Despite the effect of human disturbance a pair of Double Barred Finches was observed nesting in the southern end of the south site. Although classified as common in the area they would more readily be associated with a larger patch of land during nesting. This hopefully indicates their resilience to anthropogenic pressures.

One species was identified as having a classification of Vulnerable as defined in the Queensland Nature Conservation Act 1992 and ICUN 2011. Following several days of heavy rain vocalisation of a Wallum Froglet (*Crinia tinulla*) was heard in the low lying grassed and reeded swamp situated at the northern end of the site between the airport runway on David Low Motorway and the treed fore dunes (Fig 27).



Fig. 27 A Wallum Froglet (*Crinia tinulla*) was heard in this reed and grassed low lying seasonal swamp

Seasonal cooler day and night time temperatures restricted the ability to make any further identifications and audio recording. With little known of the current presence of this species on the eastern side of the motorway future surveying should provide further evidence of population abundance of this species. Other acid frogs and vulnerable amphibian species are known to be populating the western side of the

motorway in the Mt Coolum National Park. With short term pressures such as human development and the chytrid fungus devastating amphibian populations, and longer term trends on the Sunshine Coast of higher temperature and reduced rainfall is of great importance to understand these species distribution and populations within the area.



Fig. 28 Eastern Sedge Frogs were seen and heard throughout the survey site (Photo by Rob Kernot)

Visual identification of Swamp Wallabies populating the survey site indicate the overall health and importance of the Mudjimba-Marcoola fore dunes. Although cameras located at the north end of the site failed to confirm if any species were crossing the David Low Way motorway animal paths running through this section clearly indicate movement of large fauna in the area (Fig. 29).



Fig. 29 Fauna tracks at the northern end of the North site

Subsequent to the formal survey period a swamp wallaby body was detected 15 metres on the western side of the motorway. No obvious signs of mortality could be found but could include poisoning, dog attack or natural causes. Due to the location of the body in an open grassed area and little evidence of dog feeding it would be proposed that the fatality was caused from a vehicle collision on the motorway. Further analysis of the body will continue to try to determine the cause of death.

5. Conclusion

The fore dunes between Mudjimba and Marcoola have proved to be a rich area of fauna diversity creating vital refugia for native species. This was particularly evident with the range and quantity of butterfly species that were using and moving through the natural corridor. The area does however exhibit signs of pressure caused by anthropogenic disturbance through clearing and development on the western side of the survey site. This is particularly evident at the southern end where the narrowing of natural habitat and beach access paths appears to be limiting the presence of fauna.

Large amounts of frogs and tadpoles were found in the low lying swamps areas, including an acid frog classified as a vulnerable species by the Queensland Nature Conservation Act 1992. Also with tentative evidence of macropods crossing the motorway further surveys at the site is recommended to understand the fundamental drivers to these two groups population viability and understanding the movement dynamics between the western and eastern side of David Low Way (Fig. 30).



Fig. 30 David Low Way cutting access between Mt Coolum National Park Marcoola section and the fore dune complex

As this section is the only direct access linking the Mt Coolum National Park Marcoola section with the fore dune corridor understanding any barrier effect the motorway has to fauna movement and the hydrological flow that is supplying the fore dune swamps will be critical.

6. Acknowledgements

This project was carried out with financial support from Coolum District Coast Care Inc. with logistic support from the Wildlife Preservation Society of Queensland, Sunshine Coast and Hinterland Branch Inc.

Fauna survey work was conducted under DERM Scientific Purposes Permit no. WISP05484408 and DPI Animal Ethics permit no. CA2009/02/329.

All photographs were taken by Paul Smith on the survey site unless otherwise indicated. These photos remain the property of photographers.

7. Appendices

A1. Camera Trap details

North Site

Cam	Make	Position	Bait	Captures
N1	SG	26°35' 24.6"S 153°05'47.7"E	Oat	Dog Walker
N2	Bsh	26°35' 25.0"S 153°05'48.4"E	Oat	-
N3	SG	26°35' 27.5"S 153°05'49.2"E	Oat	-
N4	SG	26°35' 33.7"S 153°05'48.4"E	Oat	Brush Turkey. Lace Monitor, Swamp Wallaby x2, Nth Brown Bandicoot x2
N5	SG	26°35' 36.6"S 153°05'48.5"E	Oat	Brush Turkey, Ship Rat
N6	Bsh	26°35' 40.7"S 153°05'48.8"E	Chicken Frame	Brush Turkey. Lace Monitor 1 Adult/ 1 Juv
N7	SG	26°35' 43.9"S 153°05'48.7"E	Oat	Swamp Wallaby
N 8	Bsh	26°35' 46.8"S 153°05'48.9"E	Oat	Swamp Wallaby x2, Brush Turkey, Ship Rat
N9	SG	26°35'53.2"S 153°05'49.1"E	Oat	Swamp Wallaby, Brush Turkey, Ship Rat
N10	SG	26°35'53.3"S 153°05'49.8"E	Oat	Brush Turkey
N11	Bsh	26°35'56.4"S 153°05'50.1"E	Oat	Brush Turkey, Swamp Wallaby

South Site

S1	Bsh	26°36'20.1"S 153°05'53.3"E	Oat	Brush Turkey, Lace Monitor
S2	SG	26°36'15.1"S 153°05'52.4"E	Oat	-
S3	Bsh	26°36'12.4"S 153°05'51.8"E	Oat	Hit?
S4	Bsh	26°36'03.9"S 153°05'51.8"E	Oat	-
S5	SG	26°35'59.5"S 153°05'50.5"E	Oat	Ship Rat, Brush Turkey

*Bsh – Bushnell, SG – Scout Guard

A2. North site survey 1.

Site: Marcoola-Mudjimba Interdunes – North Site

Date: 16/03/2012

Survey Time: 07:00 – 11:00

	Common Name	Scientific Name	Heard or Seen	Quantity
Birds	Australian Brush-turkey	<i>Alectura lathamii</i>	S	6
	Little Black Cormorant	<i>Phalacrocorax sulcirostris</i>	S	1
	Brahminy Kite	<i>Haliastur Indus</i>	S	2
	Silver Gull	<i>Larus novaehollandiae</i>	S	1
	Bar-shouldered Dove	<i>Geopelia humeralis</i>	S	6
	Spotted Turtle-dove	<i>Streptopelia chinensis</i>	S	4
	Little Corella	<i>Cacatua sanguine</i>	S	18
	Rainbow Lorikeet	<i>Trichoglossus haematodus</i>	S	15
	Sacred Kingfisher	<i>Todirhamphus sanctus</i>	S	1
	Mangrove Gerygone	<i>Gerygone levigaster</i>	S	2
	Variegated Fairy-wren	<i>Malurus lamberti</i>	S	3+
	Red-backed Fairy-wren	<i>Malurus melanocephalus</i>	S	3
	Striated Pardalote	<i>Pardalotus striatus</i>	H	1
	Little Wattlebird	<i>Anthochaera chrysoptera</i>	S	6+
	Blue Faced Honeyeater	<i>Entomyzon cyanotis</i>	S	3+
	Lewin's Honeyeater	<i>Meliphaga lewinii</i>	S	10+
	Brown Honeyeater	<i>Lichmera indistinct</i>	H	2+
	White-cheeked Honeyeater	<i>Artamus leucorhynchus</i>	S	4
	Eastern Yellow Robin	<i>Eopsaltria australis</i>	S	5
	Little Shrike-thrush	<i>Colluricincla megarhyncha</i>	H	2
	Magpie Lark	<i>Grallina cyanoleuca</i>	S	2
	Willie Wagtail	<i>Rhipidura leucophrys</i>	S	2
	Varied Triller	<i>Lalage leucomela</i>	S	2
	Australasian Figbird	<i>Sphecotheres viridis</i>	S	5
	Pied Butcherbird	<i>Cracticus nigrogularis</i>	H	1
	Torresian Crow	<i>Corvus orru</i>	S	4

	Mistletoe Bird	<i>Dicaeum hirundinaceum</i>	S	3
	Silvereye	<i>Zosterops lateralis</i>	S	15
	Welcome Swallow	<i>Hirundo neoxena</i>	S	4
Butterflies	Blue Tiger	<i>Tirumala hamata hamata</i>	S	10
	Fuscous Swallowtail	<i>Papilio fuscus capaneus</i>	S	1
	Glasswing	<i>Acraea andromacha andromacha</i>	S	1
	Hairy Line-blue	<i>Erysichton lineata lineate</i>	S	8+
	Large Grass Yellow	<i>Eurema hecabe phoebus</i>	S	3
	Lemon Migrant	<i>Catopsilia pomona Pomona</i>	S	1
	Orchard Swallowtail	<i>Papilio aegaeus aegaeus</i>	S	3
	Small Dusky Blue	<i>Candalides erinus erinus</i>	S	5+
	Small Green-banded Blue	<i>Psychonotis caelius</i>	S	6
	Swamp Tiger	<i>Danaus affinis affinis</i>	S	1
	Blue-banded Bee	<i>Amegilla pulchra</i>	S	1
	Yellow-striped Flutterwing	<i>Rhyothemis phyllis chloe</i>	S	1
Spiders	Four-spined Spider	<i>Gasteracantha quadrispinosa</i>	S	3
	Garden Orb-weaver	<i>Eriophora transmarinus</i>	S	2
	Golden Orb-weaver	<i>Nephila sp.</i>	S	1
	Russian Tent Spider	<i>Cyrtophora sp.</i>	Evid.	1
Reptiles	Lace Monitor	<i>Varanus varius</i>	S	1
Frogs	Stripped Marsh Frog	<i>Limnodynastes peronii</i>	H	8+
Crustaceans	Ghost Crab	<i>Ocypode cordimanna</i>	S	4
Mammals	Swamp Wallaby	<i>Wallabia bicolor</i>	Evid.	1

A3. North site survey 2.

Site: Marcoola-Mudjimba Interdunes – North Site

Date: 20/03/2012

Survey Time: 07:00 – 15:30

	Common Name	Scientific Name	Heard or Seen	Quantity
Birds	Pied Oyster Catcher	<i>Haematopus longirostris</i>	S	2
	Rainbow Lorikeet	<i>Trichoglossus haematodus</i>	S	25
	White-browed Scrubwren	<i>Sericornis frontalis</i>	S	2
	Brown Thornbill	<i>Acanthiza pusilla</i>	S	2
	Variegated Fairy-wren	<i>Malurus lamberti</i>	S	3+
	Little Wattlebird	<i>Anthochaera chrysoptera</i>	S	6+
	Lewin's Honeyeater	<i>Meliphaga lewinii</i>	S	8
	Brown Honeyeater	<i>Lichmera indistinct</i>	S	4
	White-cheeked Honeyeater	<i>Phylidonyris nigra</i>	S	6+
	Eastern Whipbird	<i>Psophodes olivaceus</i>	H	1
	Little Shrike-thrush	<i>Colluricincla megarhyncha</i>	S	4
	Magpie-lark	<i>Grallina cyanoleuca</i>	S	2
	Willie Wagtail	<i>Rhipidura leucophrys</i>	S	2
	Black-faced Cuckoo-shrike	<i>Coracina novaehollandiae</i>	S	2
	Varied Triller	<i>Lalage leucomela</i>	S	3
	Pied Butcherbird	<i>Cracticus nigrogularis</i>	S	1
	Mistletoe Bird	<i>Dicaeum hirundinaceum</i>	H	1
	Silvereye	<i>Zosterops lateralis</i>	S	15
Butterflies	Black Jezebel	<i>Delias nigrina</i>	S	6
	Blue Tiger	<i>Tirumala hamata hamata</i>	S	8
	Common Crow	<i>Euploea core corinna</i>	S	5
	Evening Brown	<i>Melanitis leda bankia</i>	S	4
	Monarch	<i>Danaus plexippus plexippus</i>	S	2
	Orchard Swallowtail	<i>Papilio aegeus aegeus</i>	S	1
	Purple Crow	<i>Euploea tulliolus tulliolus</i>	S	2+
Spiders	Jumping Spider	<i>Astia</i> sp.	S	1
	Silver Orb-weaver	<i>Leucauge</i> sp.	S	3
Frogs	Stripped Marsh Frog	<i>Limnodynastes peronii</i>	H	30

	Eastern Sedgefrog	Litoria fallax	S	15+
Reptile	Lace Monitor	Varanus varius	S	1
Mammals	Swamp Wallaby	Wallabia bicolor	Evid.	1

A4. North site survey 3.

Site: Marcoola-Mudjimba Interdunes – North Site

Date: 23/03/2012

Survey Time: 09:50 – 14:50

	Common Name	Scientific Name	Heard or Seen	Quantity
Birds	Australian Brush-turkey	<i>Alectura lathamii</i>	S	2
	Silver Gull	<i>Larus novaehollandiae</i>	S	1
	Osprey	<i>Pandion haliaetus</i>	S	1
	Bar-shouldered Dove	<i>Geopelia humeralis</i>	S	1
	Spotted Turtle-dove	<i>Streptopelia chinensis</i>	S	1
	Rainbow Lorikeet	<i>Trichoglossus haematodus</i>	S	15+
	Variegated Fairy-wren	<i>Malurus lamberti</i>	S	4
	Striated Pardalote	<i>Pardalotus striatus</i>	H	1
	White-browed Scrubwren	<i>Sericornis frontalis</i>	S	2+
	Brown Thornbill	<i>Acanthiza pusilla</i>	S	2
	Little Wattlebird	<i>Anthochaera chrysoptera</i>	S	6+
	Blue Faced Honeyeater	<i>Entomyzon cyanotis</i>	S	4
	Brown Honeyeater	<i>Lichmera indistinct</i>	S	2
	Lewin's Honeyeater	<i>Meliphaga lewinii</i>	S	10
	White-cheeked Honeyeater	<i>Phylidonyris nigra</i>	S	8+
	Eastern Yellow Robin	<i>Eopsaltria australis</i>	S	2
	Eastern Whipbird	<i>Psophodes olivaceus</i>	H	2+
	Little Shrike-thrush	<i>Colluricincla megarhyncha</i>	S	2
	Grey Shrike-thrush	<i>Colluricincla harmonica</i>	S	1
	Magpie-lark	<i>Grallina cyanoleuca</i>	S	2
	Black-faced Cuckoo-shrike	<i>Coracina novaehollandiae</i>	S	2
	Varied Triller	<i>Lalage leucomela</i>	S	4
	White-breasted Woodswallow	<i>Artamus leucorhynchus</i>	S	1
	Silvereye	<i>Zosterops lateralis</i>	S	25
	Welcome Swallow	<i>Hirundo neoxena</i>	S	10
Butterflies	Black Jezebel	<i>Delias nigrina</i>	S	4

	Blue Tiger	<i>Tirumala hamata hamata</i>	S	10
	Bordered Rustic	<i>Cupha prosope prosope</i>	S	1
	Common Crow	<i>Euploea core corinna</i>	S	5+
	Caper White	<i>Belenois java teutonia</i>	S	1
	Large Grass Yellow	<i>Eurema hecabe phoebus</i>	S	4
	Orchard Swallowtail	<i>Papilio aegaeus aegaeus</i>	S	2+
	Purple Crow	<i>Euploea tulliolus tulliolus</i>	S	3+
	Wide-banded Grass-dart	<i>Taractrocera papyria papyri</i>	S	1
Spiders	Four-spined Spider	<i>Gasteracantha quadrispinosa</i>	S	2
	Silver Orb-weaver	<i>Leucauge sp.</i>	S	4
Frogs	Stripped Marsh Frog	<i>Limnodynastes peronii</i>	H	35
	Eastern Sedgefrog	<i>Litoria fallax</i>	S	2
	Wallum Froglet	<i>Crinia tinnula</i>	H	4+
Reptiles	Grass Skink	<i>Lampropholis delicata</i>	S	2
Mammals	Swamp Wallaby	<i>Wallabia bicolor</i>	Evid	1

A5. North site survey 4.

Site: Marcoola-Mudjimba Interdunes – North Site

Date: 26/03/2012

Survey Time: 07:30 – 15:30

Group	Common Name	Scientific Name	Heard or Seen	Quantity
Birds	Australian Brush-turkey	<i>Alectura lathamii</i>	S	2
	Osprey	<i>Pandion haliaetus</i>	S	1
	Rainbow Lorikeet	<i>Trichoglossus haematodus</i>	S	30
	Rainbow Bee-eater	<i>Merops ornatus</i>	S	4
	White-browed Scrubwren	<i>Sericornis frontalis</i>	S	2
	Mangrove Gerygone	<i>Gerygone levigaster</i>	S	1
	Little Wattlebird	<i>Anthochaera chrysoptera</i>	S	5
	Noisy Friarbird	<i>Philemon corniculatus</i>	H	1
	Brown Honeyeater	<i>Lichmera indistincta</i>	H	3+
	Lewin's Honeyeater	<i>Meliphaga lewinii</i>	S	8+
	White-cheeked Honeyeater	<i>Phylidonyris nigra</i>	S	6+
	Eastern Yellow Robin	<i>Eopsaltria australis</i>	H	1
	Little Shrike-thrush	<i>Colluricincla megarhyncha</i>	H	2
	Grey Shrike-thrush	<i>Colluricincla harmonica</i>	S	2
	Magpie-lark	<i>Grallina cyanoleuca</i>	S	2
	Willie Wagtail	<i>Rhipidura leucophrys</i>	S	1
	Varied Triller	<i>Lalage leucomela</i>	S	4
	Australasian Figbird	<i>Sphecotheres viridis</i>	S	1
	Pied Butcherbird	<i>Cracticus nigrogularis</i>	S	1
	Mistletoe Bird	<i>Dicaeum hirundinaceum</i>	H	1
	Australian Pipit	<i>Anthus novaeseelandiae</i>	S	4
	Silvereye	<i>Zosterops lateralis</i>	S	20+
	Welcome Swallow	<i>Hirundo neoxena</i>	S	6+
Butterflies	Black Jezebel	<i>Delias nigrina</i>	S	15
	Blue Tiger	<i>Tirumala hamata hamata</i>	S	50+
	Bordered Rustic	<i>Cupha prosopis prosopis</i>	S	1
	Common Crow	<i>Euploea core corinna</i>	S	10+

	Caper White	<i>Belenois java teutonia</i>	S	3
	Evening Brown	<i>Melanitis leda bankia</i>	S	4
	Large Grass Yellow	<i>Eurema hecabe phoebus</i>	S	6
	Lemon Migrant	<i>Catopsilia pomona Pomona</i>	S	1
	Orchard Swallowtail	<i>Papilio aegeus aegeus</i>	S	8
	Purple Crow	<i>Euploea tulliolus tulliolus</i>	S	4+
	Scarlet Jezebel	<i>Delias argenthona argenthona</i>	S	2
	Small Dusky Blue	<i>Candalides erinus erinus</i>	S	4
	Small Green-banded Blue	<i>Psychonotis caelius</i>	S	4
	White-banded Line Blue	<i>Nacaduba kurava parma</i>	S	1
Spiders	Four-spined Spider	<i>Gasteracantha quadrispinosa</i>	S	2
	Russian Tent Spider	<i>Cyrtophora sp.</i>	S	4
Frogs	Eastern Sedgefrog	<i>Litoria fallax</i>	S	2
	Stripped Marsh Frog	<i>Limnodynastes peronii</i>	S	10+
Reptiles	Eastern Water Dragon	<i>Physignathus lesueurii</i>	S	1
	Garden Skink	<i>Lampropholis delicata</i>	S	2
	Lace Monitor	<i>Varanus varius</i>	S	1
Mammals	Swamp Wallaby	<i>Wallabia bicolor</i>	S	1
	Ringtail Possum	<i>Pseudocheirus peregrinus</i>	Evidn	1

A6. South site survey 1.

Site: Marcoola-Mudjimba Interdunes – South Site

Date: 16/03/2012

Survey Time: 11:00 – 15:00

	Common Name	Scientific Name	Heard or Seen	Quantity
Birds	Bar-shouldered Dove	<i>Geopelia humeralis</i>	S	3
	Rainbow Lorikeet	<i>Trichoglossus haematodus</i>	S	10+
	Variegated Fairy-wren	<i>Malurus lamberti</i>	S	3
	White-browed Scrubwren	<i>Sericornis frontalis</i>	H	1
	Noisy Friarbird	<i>Philemon corniculatus</i>	H	1
	Lewin's Honeyeater	<i>Meliphaga lewinii</i>	S	10+
	Brown Honeyeater	<i>Lichmera indistinct</i>	S	8
	White-cheeked Honeyeater	<i>Artamus leucorhynchus</i>	S	6+
	Little Shrike-thrush	<i>Colluricincla megarhyncha</i>	S	2
	Grey Shrike-thrush	<i>Colluricincla harmonica</i>	S	1
	Leaden Flycatcher	<i>Myiagra rubecula</i>	S	3
	Willie Wagtail	<i>Rhipidura leucophrys</i>	S	1
	Varied Triller	<i>Lalage leucomela</i>	S	4
	Double-barred Finch	<i>Taeniopygia bichenovii</i>	S	2
	Mistletoe Bird	<i>Dicaeum hirundinaceum</i>	S	2
	Silvereye	<i>Zosterops lateralis</i>	S	20
Butterflies	Blue Tiger	<i>Tirumala hamata hamata</i>	S	8+
	Blue Triangle	<i>Graphium sarpedon choredon</i>	S	1
	Brown Ringlet	<i>Hypocysta metirius</i>	S	4
	Common Crow	<i>Euploea core corinna</i>	S	1
	Evening Brown	<i>Melanitis leda bankia</i>	S	2
	Large Grass Yellow	<i>Eurema hecabe phoebus</i>	S	2
	Monarch	<i>Danaus plexippus plexippus</i>	S	1
	Orchard Swallowtail	<i>Papilio aegeus aegeus</i>	S	4
	Small Dusky Blue	<i>Candalides erinus erinus</i>	S	3
Spiders	Garden Orb-weaver	<i>Eriophora transmarinus</i>	S	2
	Leaf Curling Spider		S	1
Reptiles	Lace Monitor	<i>Varanus varius</i>	S	1
	Secretive Skink	<i>Lampropholis amacula</i>	S	1

A7. South site survey 2.

Site: Marcoola-Mudjimba Interdunes – South Site

Date: 27/03/2012

Survey Time: 08:00 – 16:00

	Common Name	Scientific Name	Heard or Seen	Quantity
Birds	Bar-shouldered Dove	<i>Geopelia humeralis</i>	S	2
	Variegated Fairy-wren	<i>Malurus lamberti</i>	S	2
	White-browed Scrubwren	<i>Sericornis frontalis</i>	S	1
	Mangrove Gerygone	<i>Gerygone levigaster</i>	H	1
	Little Wattlebird	<i>Anthochaera chrysoptera</i>	S	5
	Noisy Friarbird	<i>Philemon corniculatus</i>	S	1
	Blue Faced Honeyeater	<i>Entomyzon cyanotis</i>	S	3
	Lewin's Honeyeater	<i>Meliphaga lewinii</i>	S	3
	Brown Honeyeater	<i>Lichmera indistinct</i>	S	10
	White-cheeked Honeyeater	<i>Artamus leucorhynchus</i>	S	15+
	Eastern Yellow Robin	<i>Eopsaltria australis</i>	H	1
	Grey Shrike-thrush	<i>Colluricincla harmonica</i>	S	3
	Leaden Flycatcher	<i>Myiagra rubecula</i>	S	2
	Magpie Lark	<i>Grallina cyanoleuca</i>	S	4
	Varied Triller	<i>Lalage leucomela</i>	S	2
	Australasian Figbird	<i>Sphecotheres viridis</i>	S	2+
	Torresian Crow	<i>Corvus orru</i>	S	4
	Double-barred Finch	<i>Taeniopygia bichenovii</i>	S	3
	Mistletoe Bird	<i>Dicaeum hirundinaceum</i>	H	1
	Welcome Swallow	<i>Hirundo neoxena</i>	S	6
	Silvereye	<i>Zosterops lateralis</i>	S	8+
Butterflies	Black Jezebel	<i>Delias nigrina</i>	S	8
	Blue Tiger	<i>Tirumala hamata hamata</i>	S	15+
	Blue Triangle	<i>Graphium sarpedon choredon</i>	S	1
	Common Crow	<i>Euploea core corinna</i>	S	6
	Evening Brown	<i>Melanitis leda bankia</i>	S	3
	Large Grass Yellow	<i>Eurema hecabe phoebus</i>	S	4

	Orchard Swallowtail	<i>Papilio aegeus aegeus</i>	S	6+
	Small Dusky Blue	<i>Candalides erinus erinus</i>	S	1
	Small Green-banded Blue	<i>Psychonotis caelius</i>	S	2
Spiders	Garden Orb-weaver	<i>Eriophora transmarinus</i>	S	2
Reptiles	Eastern Stripped Skink	<i>Ctenotus robustus</i>	S	1
	Secretive Skink	<i>Lampropholis amicula</i>	S	1

A8. South site survey 3.

Site: Marcoola-Mudjimba Interdunes – South Site

Date: 30/03/2012

	Common Name	Scientific Name	Heard or Seen	Quantity
Birds	Australian Brush-turkey	<i>Alectura lathamii</i>	S	1
	Bar-shouldered Dove	<i>Geopelia humeralis</i>	S	2
	Rainbow Lorikeet	<i>Trichoglossus haematodus</i>	S	20+
	Red-backed Fairy-wren	<i>Malurus melanocephalus</i>	S	3
	Little Wattlebird	<i>Anthochaera chrysoptera</i>	S	8
	Noisy Friarbird	<i>Philemon corniculatus</i>	H	1
	Blue Faced Honeyeater	<i>Entomyzon cyanotis</i>	S	5
	Lewin's Honeyeater	<i>Meliphaga lewinii</i>	S	4
	Brown Honeyeater	<i>Lichmera indistincta</i>	S	6+
	White-cheeked Honeyeater	<i>Phylidonyris nigra</i>	S	12
	Eastern Yellow Robin	<i>Eopsaltria australis</i>	S	1
	Grey Shrike-thrush	<i>Colluricincla harmonica</i>	S	1
	Leaden Flycatcher	<i>Myiagra rubecula</i>	S	1
	Varied Triller	<i>Lalage leucomela</i>	S	1
	Torresian Crow	<i>Corvus orru</i>	S	5
	Double-barred Finch	<i>Taeniopygia bichenovii</i>	S	2
	House Sparrow	<i>Passer domesticus</i>	H	2
	Mistletoe Bird	<i>Dicaeum hirundinaceum</i>	S	1+
	Welcome Swallow	<i>Hirundo neoxena</i>	S	6+
	Silvereye	<i>Zosterops lateralis</i>	S	12
Butterflies	Blue Tiger	<i>Tirumala hamata hamata</i>	S	10+
	Bordered Rustic	<i>Cupha prosopis prosopis</i>	S	2
	Common Crow	<i>Euploea core corinna</i>	S	5
	Large Grass Yellow	<i>Eurema hecabe phoebus</i>	S	4
	Meadow Argus	<i>Junonia villida</i>	S	1
	Orchard Swallowtail	<i>Papilio aegaeus aegaeus</i>	S	3+
	Scarlet Jezebel	<i>Delias argenthona argenthona</i>	S	1

	Small Dusky Blue	<i>Candalides erinus erinus</i>	S	8
	Tailed Emperor	<i>Polyura sempronius</i>	S	1
Spiders	Garden Orb-weaver	<i>Eriophora transmarinus</i>	S	4
Frogs	Broad-palmed Rocketfrog	<i>Litoria latopalmata</i>	S	1
Reptiles	Wall Skink	<i>Cryptoblepharus virgatus</i>	S	1

A9. South site survey 4.

Site: Marcoola-Mudjimba Interdunes – South Site

Date: 02/04/2012

	Common Name	Scientific Name	Heard or Seen	Quantity
Birds	Australian Brush-turkey	<i>Alectura lathamii</i>	S	1
	Bar-shouldered Dove	<i>Geopelia humeralis</i>	S	2
	Rainbow Lorikeet	<i>Trichoglossus haematodus</i>	S	25+
	White-browed Scrubwren	<i>Sericornis frontalis</i>	S	3
	Little Wattlebird	<i>Anthochaera chrysoptera</i>	S	6+
	Noisy Friarbird	<i>Philemon corniculatus</i>	H	2
	Blue Faced Honeyeater	<i>Entomyzon cyanotis</i>	S	4
	Lewin's Honeyeater	<i>Meliphaga lewinii</i>	S	8+
	Brown Honeyeater	<i>Lichmera indistincta</i>	S	15+
	White-cheeked Honeyeater	<i>Phylidonyris nigra</i>	S	10+
	Golden Whistler	<i>Pachycephala pectoralis</i>	S	1
	Little Shrike-thrush	<i>Colluricincla megarhyncha</i>	S	1
	Willie Wagtail	<i>Rhipidura leucophrys</i>	S	1
	Spangled Drongo	<i>Dicrurus bracteatus</i>	S	1
	Varied Triller	<i>Lalage leucomela</i>	S	3
	White-breasted Woodswallow	<i>Artamus leucorhynchus</i>	H	1
	Torresian Crow	<i>Corvus orru</i>	S	4
	Double-barred Finch	<i>Taeniopygia bichenovii</i>	S	2
	Welcome Swallow	<i>Hirundo neoxena</i>	S	4+
	Silvereye	<i>Zosterops lateralis</i>	S	8+
Butterflies	Blue Tiger	<i>Tirumala hamata hamata</i>	S	10+
	Bordered Rustic	<i>Cupha prosopis prosopis</i>	S	2
	Evening Brown	<i>Melanitis leda bankia</i>	S	4
	Large Grass Yellow	<i>Eurema hecabe phoebus</i>	S	4
	Orchard Swallowtail	<i>Papilio aegaeus aegaeus</i>	S	2
	Purple Crow	<i>Euploea tulliolus tulliolus</i>	S	2

	Small Dusky Blue	<i>Candalides erinus erinus</i>	S	5+
	Small Green-banded Blue	<i>Psychonotis caelius</i>	S	6+
	Swamp Tiger	<i>Danaus affinis affinis</i>	S	1
	Tailed Emperor	<i>Polyura sempronius</i>	S	1
Spiders	Garden Orb-weaver	<i>Eriophora transmarinus</i>	S	4
	Golden Orb-weaver	<i>Nephila sp.</i>	S	1
Reptiles	Garden Skink	<i>Lampropholis delicata</i>	S	1
	Wall Skink	<i>Cryptoblepharus virgatus</i>	S	1
Mammals	Swamp Rat	<i>Rattus lutreolus</i>	S	2

A10. Melaleuca Swamp site (Skate Park) survey.

Site: Marcoola-Mudjimba Interdunes – Melaleuca Swamp, Mudjimba Esp, Marcoola

Date: 30/03/2012

Group	Common Name	Scientific Name	Heard or Seen	Quantity
Birds	Forest Kingfisher	<i>Todiramphus macleayii</i>	S	1
	Variegated Fairy-wren	<i>Malurus lamberti</i>	S	3+
	White-browed Scrubwren	<i>Sericornis frontalis</i>	S	2
	Brown Thornbill	<i>Acanthiza pusilla</i>	S	2
	Lewin's Honeyeater	<i>Meliphaga lewinii</i>	S	5
	Brown Honeyeater	<i>Lichmera indistincta</i>	S	4
	White-cheeked Honeyeater	<i>Phylidonyris nigra</i>	S	8
	Eastern Yellow Robin	<i>Eopsaltria australis</i>	S	2
	Rufous Whistler	<i>Pachycephala rufiventris</i>	H	1
	Little Shrike-thrush	<i>Colluricincla megarhyncha</i>		
	Grey Shrike-thrush	<i>Colluricincla harmonica</i>	S	1
	Black-faced Monarch	<i>Monarcha melanopsis</i>	S	3
	Spectacled Monarch	<i>Monarcha trivirgatus</i>	S	1
	Leaden Flycatcher	<i>Myiagra rubecula</i>	H	1
	Varied Triller	<i>Lalage leucomela</i>	S	1
	Pied Butcherbird	<i>Cracticus nigrogularis</i>	S	1
	Torresian Crow	<i>Corvus orru</i>	S	6
	Silvereye	<i>Zosterops lateralis</i>	S	6
Butterflies	Black Jezebel	<i>Delias nigrina</i>	S	6
	Blue Triangle	<i>Graphium sarpedon choredon</i>	S	5+
	Evening Brown	<i>Melanitis leda bankia</i>	S	4
	Lemon Migrant	<i>Catopsilia pomona Pomona</i>	S	1
	Orchard Swallowtail	<i>Papilio aegeus aegeus</i>	S	2
Dragonflies	Red Swamp Dragon	<i>Agrionoptera insignis allogenes</i>	S	5
Spiders	Garden Orb-weaver	<i>Eriophora transmarinus</i>	S	5
	St. Andrew's Cross	<i>Argiope keyserlingi</i>	S	1