

# Tamborine Mountain – The Shelf Road Richmond Birdwing Butterfly Project Fauna Survey.



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**Conducted by ddwfauna**

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## Introduction and Scope

Fauna survey commissioned by Tamborine Mountain Landcare for their approved grant funding - *Community Sustainability Action grants - Protecting Queensland's Threatened Species*

The fauna survey and assessment was undertaken between March and August 2022 to determine what vertebrates and select invertebrates inhabit, or are likely to inhabit, the subject site located on Shelf Road, Tamborine Mountain, Scenic Rim Regional Council.

The subject site is part of a Energex Offset Project. Originally the subject site was largely unvegetated with only a small number of larger remnant trees present including *Flindersia* sp., *Jagera pseudorhus*, *Ficus watkinsiana*, *Aphananthe philippinensis* and a number of *Araucaria cunninghamii*. Over a number of years many thousands of plants including the food plant *Pararistolochia praevenosa* of the *vulnerable* Richmond birdwing butterfly (*Ornithoptera richmondia*), have been planted. Revegetation and restoration activities are continuing, including the removal of weed species and maintenance of previous plantings.

## **Methodology**

### **Field Assessments**

#### **General**

The survey was undertaken over several days and evenings between March and August 2022. The field survey techniques utilised were those commonly adopted in vertebrate and invertebrate fauna surveys in southeastern Queensland. The field surveys involved daylight and nocturnal fauna observations for mammal, bird, reptile, amphibian and several invertebrate faunal groups.

#### **Terrestrial remote sensing cameras**

Two remote sensing cameras were set approximately 50 cm off the ground attached to a stake adjacent to (approximately 5 metres from the camera) a bait placed in front of the camera. The bait consisted of tuna oil and a mixture of rolled oats, peanut butter and honey. Cameras were left in situ for approximately three weeks.

#### **Spotlighting**

Spotlighting searches were conducted on foot using 50-watt headlamps to locate arboreal mammals (gliders, possums and koalas) and other night active species including bats. Surveys begin approximately 30 minutes after dusk and lasted for 2 hours.

#### **Ultrasonic call microchiroptearn bat detection**

This involved sampling at a number of locations over several hours during spotlight surveys.

### **Nocturnal species call playback**

This technique is useful in determining the presence of nocturnal species, which can be difficult to find during spotlight surveys. Call playback was performed at a number of locations over several nights using a 25-watt megaphone, with calls played for five minutes and then five minutes spent listening for replies.

Species played:

- Sugar glider
- Squirrel glider
- Koala
- Powerful owl
- Barking owl
- Southern boobook
- Sooty Owl
- Plumed frogmouth
- White-throated nightjar

### **Scat, pellet and other trace searches**

Predator and non-predator scat searches were undertaken during both diurnal and nocturnal ground searches. Traces such as scratches on trees and diggings in the ground layer were examined during diurnal searches.

### **General search and observation - diurnal and nocturnal**

Active ground searches involved the investigation of the ground layer including under rocks, fallen timber, leaf litter, raking soil, searching under exfoliating bark on logs and examining dead and live trees.

Surveys were carried out under – Animal Ethics Approval - CA2021/021/479 and Research Permit - WA0026562.

## **Results and Discussion**

### **General**

Overall, the subject site was found to have moderate to high faunal values. The species list is shown in full in Attachment 1. In total 81 vertebrate and 39 invertebrate species were recorded during the current survey. The subject site was found to be rich in birds (56 species), mammals (19 species) and butterflies (18 species).

### **Significant species**

#### **State**

Three species listed under the Nature Conservation Act 1992 (NC Act) were recorded during the current survey, the Albert's lyrebird (*Menura alberti*) scheduled as *near threatened*, the Richmond birdwing butterfly (*Ornithoptera richmondia*) and Powerful owl (*Ninox strenua*) both scheduled *vulnerable* (Table 1).

#### **Commonwealth**

One species listed under the Environmental Protection and Biodiversity Conservation Act 1999 (EPBC Act) was recorded during the current survey, the grey-headed flying-fox (*Pteropus poliocephalus*), scheduled *vulnerable* (Table 1).

#### **Migratory bird Agreements**

During the current survey one bird species listed as a marine species or on international migratory bird agreements under the EPBC Act was recorded – the rufous fantail (*Rhipidura rufifrons*) which is a listed marine and migratory species.

**Table 1: Summary of the significant species recorded during the current survey.**

**Status**

As listed in the Queensland Nature Conservation, (Wildlife) Regulation 2006 (Nature Conservation Act 1992).

E = Endangered, V = Vulnerable, NT = Near Threatened, LC = Least Concern, SLC = Special Least Concern

As listed in the Environmental Protection and Biodiversity Conservation Act 1999 (EPBC Act).

CE\* = Critically endangered, E\* = Endangered, V\* = Vulnerable, CD\* = Conservation dependent, M = Marine listed species, Mi = Migratory listed species

<b>Family</b>	<b>Genus</b>	<b>Species</b>	<b>Common Name</b>	<b>Status</b>
PAPILIONIDAE	<i>Ornithoptera</i>	<i>richmondia</i>	Richmond birdwing	V
STRIGIDAE	<i>Ninox</i>	<i>strenua</i>	Powerful Owl	V
MENURIDAE	<i>Menura</i>	<i>alberti</i>	Albert's Lyrebird	NT
RHIPIDURIDAE	<i>Rhipidura</i>	<i>rufifrons</i>	Rufous Fantail	SLC, M, Mi
PTEROPODIDAE	<i>Pteropus</i>	<i>poliocephalus</i>	Grey-headed Flying-fox	LC, V*

## Summary

The key aspects of the fauna survey and assessment includes -

- The vegetation and associated habitat on the subject site provides suitable habitat for a relatively high number of vertebrates and invertebrates. As the vegetation continues to mature and a more complex understory and ground layer develops, the number of species utilising the site will continue to grow.
- The high diversity of tree and shrub species present means that the subject site provides suitable habitat and food resources for numerous invertebrate species, particularly butterflies. The habitat on site will continue to improve for the *vulnerable* Richmond birdwing butterfly as the number of host vines grow and mature.
- The presence of over 50 bird species, comprised of several guilds, suggests the habitat present is of adequate quality, variability and complexity to accommodate all of these guilds.
- The presence of almost 20 species of mammals, including small and medium ground mammals, arboreal mammals, macropods and a number of bat species. This indicates that there is sufficient food and shelter resources for these species on the subject site and surrounding area.
- The small drainage lines and wetland areas provides a water source and habitat for a number of species.
- The continuation of the restoration activities currently being undertaken will serve to enhance the quality of the habitat present, reduce weed incursion, and increase both the species richness and diversity of the fauna present.

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## **Attachment 1: Species List**

### **Key to columns**

As listed in the Queensland Nature Conservation, (Wildlife) Regulation 2006 (Nature Conservation Act 1992).

CE = Critically endangered, E = Endangered, V = Vulnerable, NT = Near Threatened, LC = Least Concern, SLC = Special Least Concern, (-) = Not protected, I = introduced

OR

As listed in the Environmental Protection and Biodiversity Conservation Act 1999 (EPBC Act).

CE\*\*= Critically endangered, E\*\*= Endangered, V\*\*= Vulnerable, CD\*\*= Conservation dependent, M = Marine, Mi = Migratory

Family	Genus	Species	Common Name	Status
<b>LAND SNAILS</b>				
HELICARIONIDAE	<i>Stanisicarion</i>	<i>virens</i>	Fine-speckled Semi-slug	-
CAMAENIDAE	<i>Ramogenia</i>	<i>challengeri</i>	Challenger's Hairy Snail	-
CAMAENIDAE	<i>Sphaerospira</i>	<i>fraseri</i>	Fraser's Banded Snail	-
ATHORACOPHORIDAE	<i>Triboniophorus</i>	<i>graeffei</i>	Red-triangle Slug	-
<b>DRAGONFLIES</b>				
LESTIDAE	<i>Austrolestes</i>	<i>leda</i>	Wandering Ringtail	-
ARGIOLESTIDAE	<i>Austroargiolestes</i>	<i>icteremeles</i>	Common Flatwing	-
AESHNIDAE	<i>Adversaeschna</i>	<i>brevistyla</i>	Blue-spotted Hawker	-
AESHNIDAE	<i>Anax</i>	<i>papuensis</i>	Australian Emperor	-
CORDULIIDAE	<i>Hemicordulia</i>	<i>australiae</i>	Australian Emerald	-
LIBELLULIDAE	<i>Diplacodes</i>	<i>bipunctata</i>	Wandering Percher	-
LIBELLULIDAE	<i>Diplacodes</i>	<i>haematodes</i>	Scarlet Percher	-
LIBELLULIDAE	<i>Diplacodes</i>	<i>melanopsis</i>	Black-faced Percher	-
LIBELLULIDAE	<i>Orthetrum</i>	<i>caledonicum</i>	Blue Skimmer	-
LIBELLULIDAE	<i>Orthetrum</i>	<i>villosovittatum</i>	Fiery Skimmer	-
LIBELLULIDAE	<i>Tramea</i>	<i>loewii</i>	Common Glider	-
LIBELLULIDAE	<i>Tramea</i>	<i>stenoloba</i>	Narrow-lobed Glider	-
<b>CICADAS</b>				
CICADIDAE	<i>Chlorocysta</i>	<i>vitripennis</i>	Small Bottle Cicada	-
<b>LACEWINGS</b>				
CHRYSOPIDAE	<i>Mallada</i>	<i>signatus</i>	-	-
NYMPHIDAE	<i>Nymphes</i>	<i>myrmeleonides</i>	Blue Eyes Lacewing	-
MYRMELEONTIDAE	<i>Myrmeleon</i>	<i>acer</i>	Common Brown Antlion	-
ASCALAPHIDAE	<i>Suhpalasca</i>	<i>nigrescens</i>	-	-
<b>BUTTERFLIES</b>				
PAPILIONIDAE	<i>Graphium</i>	<i>eurypylus</i>	Pale Triangle	-
PAPILIONIDAE	<i>Graphium</i>	<i>sarpedon</i>	Blue Triangle	-
PAPILIONIDAE	<i>Ornithoptera</i>	<i>richmondia</i>	Richmond birdwing	V
PAPILIONIDAE	<i>Papilio</i>	<i>aegeus</i>	Orchard Swallowtail	-
HESPERIIDAE	<i>Ocybadistes</i>	<i>flavovittata</i>	Narrow-brand Grass-dart	-
HESPERIIDAE	<i>Suniana</i>	<i>sunias</i>	Wide-brand Grass-dart	-
PIERIDAE	<i>Belenois</i>	<i>java</i>	Caper White	-
PIERIDAE	<i>Catopsilia</i>	<i>pomona</i>	Lemon Migrant	-
PIERIDAE	<i>Delias</i>	<i>nigrina</i>	Black Jezabel	-
PIERIDAE	<i>Eurema</i>	<i>hecabe</i>	Large Grass-yellow	-
PIERIDAE	<i>Eurema</i>	<i>smilax</i>	Small Grass-yellow	-
NYMPHALIDAE	<i>Danaus</i>	<i>plexippus</i>	Monarch	-
NYMPHALIDAE	<i>Euploea</i>	<i>tulliolus</i>	Purple Crow	-
NYMPHALIDAE	<i>Hypocysta</i>	<i>metirius</i>	Brown Ringlet	-
NYMPHALIDAE	<i>Junonia</i>	<i>villida</i>	Meadow Argus	-
NYMPHALIDAE	<i>Melanitis</i>	<i>leda</i>	Evening Brown	-
LYCAENIDAE	<i>Theclinesthes</i>	<i>miskini</i>	Wattle Blue	-
LYCAENIDAE	<i>Zizina</i>	<i>otis</i>	Common Grass-blue	-
<b>FROGS</b>				
MYOBATRACHIDAE	<i>Crinia</i>	<i>parinsignifera</i>	Beeping Froglet	LC

Family (cont.)	Genus	Species	Common Name	Status
BUFONIDAE	<i>Rhinella</i>	<i>marina</i>	Cane Toad	I
<b>REPTILES</b>				
SCINCIDAE	<i>Lampropholis</i>	<i>delicata</i>	Garden Skink	LC
SCINCIDAE	<i>Saiphos</i>	<i>equalis</i>	Three-toed Skink	LC
AGAMIDAE	<i>Intellagama</i>	<i>lesueurii</i>	Eastern Water Dragon	LC
ELAPIDAE	<i>Cryptophis</i>	<i>nigrescens</i>	Eastern Small-eyed Snake	LC
<b>BIRDS</b>				
MEGAPODIDAE	<i>Alectura</i>	<i>lathami</i>	Australian Brush-turkey	LC
PHASIANIDAE	<i>Coturnix</i>	<i>ypsilonphora</i>	Brown Quail	LC
ANATIDAE	<i>Chenonetta</i>	<i>jubata</i>	Australian Wood Duck	LC
ANATIDAE	<i>Anas</i>	<i>superciliosa</i>	Pacific Black Duck	LC
COLUMBIDAE	<i>Streptopelia</i>	<i>chinensis</i>	Spotted Dove	I
COLUMBIDAE	<i>Macropygia</i>	<i>amboinensis</i>	Brown Cuckoo-Dove	LC
COLUMBIDAE	<i>Chalcophaps</i>	<i>indica</i>	Emerald Dove	LC
COLUMBIDAE	<i>Geopelia</i>	<i>humeralis</i>	Bar-shouldered Dove	LC
PODARGIDAE	<i>Podargus</i>	<i>strigoides</i>	Tawny Frogmouth	LC
CUCULIDAE	<i>Chalcites</i>	<i>lucidus</i>	Shining Bronze-Cuckoo	LC
CUCULIDAE	<i>Cacomantis</i>	<i>flabelliformis</i>	Fan-tailed Cuckoo	LC
RALLIDAE	<i>Porphyrio</i>	<i>porphyrio</i>	Purple Swamphen	LC
RALLIDAE	<i>Amaurornis</i>	<i>moluccana</i>	Pale-vented Bush-hen	LC
RALLIDAE	<i>Gallinula</i>	<i>tenebrosa</i>	Dusky Moorhen	LC
TYTONIDAE	<i>Tyto</i>	<i>tenebricosa</i>	Sooty Owl	LC
STRIGIDAE	<i>Ninox</i>	<i>strenua</i>	Powerful Owl	V
STRIGIDAE	<i>Ninox</i>	<i>boobook</i>	Southern Boobook	LC
ALCEDINIDAE	<i>Dacelo</i>	<i>novaeguineae</i>	Laughing Kookaburra	LC
CACATUIDAE	<i>Calyptorhynchus</i>	<i>funereus</i>	Yellow-tailed Black-Cockatoo	LC
CACATUIDAE	<i>Cacatua</i>	<i>galerita</i>	Sulphur-crested Cockatoo	LC
PSITTACULIDAE	<i>Trichoglossus</i>	<i>moluccanus</i>	Rainbow Lorikeet	LC
PITTIDAE	<i>Pitta</i>	<i>versicolor</i>	Noisy Pitta	LC
MENURIDAE	<i>Menura</i>	<i>alberti</i>	Albert's Lyrebird	NT
PTILONORHYNCHIDAE	<i>Ptilonorhynchus</i>	<i>violaceus</i>	Satin Bowerbird	LC
CLIMACTERIDAE	<i>Cormobates</i>	<i>leucophaea</i>	White-throated Treecreeper	LC
MALURIDAE	<i>Malurus</i>	<i>cyaneus</i>	Superb Fairy-wren	LC
MELIPHAGIDAE	<i>Meliphaga</i>	<i>lewinii</i>	Lewin's Honeyeater	LC
MELIPHAGIDAE	<i>Anthochaera</i>	<i>chrysoptera</i>	Little Wattlebird	LC
MELIPHAGIDAE	<i>Myzomela</i>	<i>sanguinolenta</i>	Scarlet Honeyeater	LC
MELIPHAGIDAE	<i>Lichmera</i>	<i>indistincta</i>	Brown Honeyeater	LC
MELIPHAGIDAE	<i>Philemon</i>	<i>citreogularis</i>	Little Friarbird	LC
PARDALOTIDAE	<i>Pardalotus</i>	<i>punctatus</i>	Spotted Pardalote	LC
PARDALOTIDAE	<i>Pardalotus</i>	<i>striatus</i>	Striated Pardalote	LC
ACANTHIZIDAE	<i>Sericornis</i>	<i>frontalis</i>	White-browed Scrubwren	LC
ACANTHIZIDAE	<i>Acanthiza</i>	<i>lineata</i>	Striated Thornbill	LC
ACANTHIZIDAE	<i>Acanthiza</i>	<i>pusilla</i>	Brown Thornbill	LC
ORIOLIDAE	<i>Sphecotheres</i>	<i>vieilloti</i>	Australasian Figbird	LC
PACHYCEPHALIDAE	<i>Pachycephala</i>	<i>pectoralis</i>	Golden Whistler	LC
PACHYCEPHALIDAE	<i>Colluricincla</i>	<i>megarhyncha</i>	Rufous Shrike-thrush	LC

Family (cont.)	Genus	Species	Common Name	Status
PACHYCEPHALIDAE	<i>Colluricincla</i>	<i>harmonica</i>	Eastern Grey Shrike-thrush	LC
PSOPHODIDAE	<i>Psophodes</i>	<i>olivaceus</i>	Eastern Whipbird	LC
CAMPEPHAGIDAE	<i>Coracina</i>	<i>novaehollandiae</i>	Black-faced Cuckoo-Shrike	LC
CAMPEPHAGIDAE	<i>Lalage</i>	<i>sueurii</i>	White-winged Triller	LC
CAMPEPHAGIDAE	<i>Lalage</i>	<i>leucomela</i>	Varied Triller	LC
ARTAMIDAE	<i>Strepera</i>	<i>graculina</i>	Pied Currawong	LC
RHIPIDURIDAE	<i>Rhipidura</i>	<i>albiscapa</i>	Grey Fantail	LC
RHIPIDURIDAE	<i>Rhipidura</i>	<i>rufifrons</i>	Rufous Fantail	SLC
RHIPIDURIDAE	<i>Rhipidura</i>	<i>leucophrys</i>	Willie Wagtail	LC
CORVIDAE	<i>Corvus</i>	<i>orru</i>	Torresian Crow	LC
PETROICIDAE	<i>Tregellasia</i>	<i>capito</i>	Pale-yellow Robin	LC
PETROICIDAE	<i>Eopsaltria</i>	<i>australis</i>	Eastern Yellow Robin	LC
ACROCEPHALIDAE	<i>Acrocephalus</i>	<i>australis</i>	Australian Reed Warbler	LC
HIRUNDINIDAE	<i>Hirundo</i>	<i>neoxena</i>	Welcome Swallow	LC
ZOSTEROPIDAE	<i>Zosterops</i>	<i>lateralis</i>	Silvereye	LC
DICAEIDAE	<i>Dicaeum</i>	<i>hirundinaceum</i>	Mistletoebird	LC
ESTRILDIDAE	<i>Neochmia</i>	<i>temporalis</i>	Red-browed Finch	LC
<b>MAMMALS</b>				
PERAMELIDAE	<i>Isoodon</i>	<i>macrourus</i>	Northern Brown Bandicoot	LC
PERAMELIDAE	<i>Perameles</i>	<i>nasuta</i>	Long-nosed Bandicoot	LC
PHALANGERIDAE	<i>Trichosurus</i>	<i>caninus</i>	Short-eared Brushtail Possum	LC
PHALANGERIDAE	<i>Trichosurus</i>	<i>vulpecula</i>	Common Brushtail Possum	LC
MACROPODIDAE	<i>Thylogale</i>	<i>stigmatica</i>	Red-legged Pademelon	LC
MACROPODIDAE	<i>Wallabia</i>	<i>bicolor</i>	Swamp Wallaby	LC
MURIDAE	<i>Rattus</i>	<i>fuscipes</i>	Bush Rat	LC
MURIDAE	<i>Rattus</i>	<i>rattus</i>	Black Rat	I
PTEROPODIDAE	<i>Pteropus</i>	<i>alecto</i>	Black Flying-fox	LC
PTEROPODIDAE	<i>Pteropus</i>	<i>poliocephalus</i>	Grey-headed Flying-fox	LC,V*
RHINOLOPHIDAE	<i>Rhinolophus</i>	<i>megaphyllus</i>	Eastern Horseshoe Bat	LC
MOLOSSIDAE	<i>Austronomus</i>	<i>australis</i>	White-striped Free-tailed Bat	LC
MOLOSSIDAE	<i>Ozimops</i>	<i>ridei</i>	Ride's Free-tailed Bat	LC
MINIOPTERIDAE	<i>Miniopterus</i>	<i>australis</i>	Little Bent-wing Bat	LC
VESPERTILIONIDAE	<i>Scotorepens</i>	sp.	-	
VESPERTILIONIDAE	<i>Vespadelus</i>	<i>darlingtoni</i>	Large Forest Bat	LC
VESPERTILIONIDAE	<i>Vespadelus</i>	<i>pumilis/troughtoni</i>	Eastern Forest Bat	LC
FELIDAE	<i>Felis</i>	<i>catus</i>	Feral Cat	I
CANIDAE	<i>Vulpes</i>	<i>vulpes</i>	Fox	I

## Attachment 2: Images of fauna recorded on site.



**Photograph 1:** Wide-brand grass-dart (*Suniana sunias*)



**Photograph 2:** Richmond birdwing (*Ornithoptera richmondia*) caterpillar feeding on planted vine



**Photograph 3:** Three-toed skink (*Saiphos equalis*)



**Photograph 4:** Eastern small-eyed snake (*Cryptophis nigrescens*)



**Photograph 5:** Tawny frogmouth (*Podargus strigoides*)



**Photograph 6:** Albert's Lyrebird (*Menura alberti*) recorded on remote sensing camera



**Photograph 7:** Australian brush-turkey (*Alectura lathami*) recorded on remote sensing camera



**Photograph 8:** Long-nosed bandicoot (*Perameles nasuta*) recorded on remote sensing camera



**Photograph 9:** Short-eared brushtail possum (*Trichosurus caninus*) recorded on remote sensing camera



**Photograph 10:** Swamp wallaby (*Wallabia bicolor*) recorded on remote sensing camera



**Photograph 11:** Cat (*Felis catus*) recorded on remote sensing camera



**Photograph 12:** Fox (*Vulpes vulpes*) recorded on remote sensing camera