

Threatened Fauna Monitoring Program

ALBURY-WODONGA NATIONAL HIGHWAY
MAINTENANCE PROGRAM



YEAR 2

JUNE 2010





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1 BACKGROUND

1.1 PROJECT BACKGROUND

The new Albury-Wodonga National Highway, which is approximately 14.7 kms in length, was opened to the public on the 6th March 2007, linking the Hume Highway in Wodonga (Victoria) with the Hume Highway at Ettamogah, just north of Albury (New South Wales). The main objective for constructing this new dual carriageway highway was to strengthen the major transport link that connects the two major cities of Sydney and Melbourne, along with improving safety to road users along this section of the freeway.

An Operational Environmental Management Plan (OEMP) for the Albury-Wodonga Hume Freeway Project (AWNHP) was prepared to provide Abigroup Pty Ltd and Bilfinger Berger Services (BBS) a system that establishes and maintains best practice controls to manage potential environmental impacts during the operational phase of the Albury-Wodonga Hume Freeway project.

A total of 27 Ministerial Conditions were associated with the operational phase of this project with the monitoring of threatened terrestrial fauna species required under Condition of Approval (COA) Number 51. This COA requires the preparation of a *“threatened species management procedure addressing requirements for minimising habitat disturbance, remediation of degraded habitat, monitoring procedures and training. All reasonable measures shall be taken to ensure minimal harm and/or risk to threatened species during operation”*.

nghenvironmental have been engaged by BBS to undertake the threatened species monitoring to ensure that the above COA is met.

1.2 IDENTIFICATION OF TARGET THREATENED SPECIES

The original EIS (GHD 1995) identified a total of 12 threatened species (listed on the schedules of the *Threatened Species Conservation Act 1995* (NSW) (TSC Act) that could potentially occur in the route corridor. Since then a number of additional studies have been conducted for the RTA and other developments in the locality which identified a range of additional threatened species which could potentially occur (RTA 2003, Taylor 2002).

During surveys for the Albury Wodonga Development Corporation (AWDC) threatened species conservation strategy undertaken in 2003 the Black Chinned Honeyeater was found utilising creek line areas and planted revegetation areas near Thurgoona, while the Brown Treecreeper and Barking Owl were also recorded. A pair of breeding Barking Owls was observed roosting in a large River Red Gum (*Eucalyptus camaldulensis*) approximately 100 m north of the Murray River near the main channel (Taylor 2002). This location is approximately 300-400 metres south from the site at Oddies Creek. Research on this breeding pair suggests that they have bred at the site for three successive years from 2000 (Taylor 2002). Barking Owls are listed as Vulnerable on the NSW TSC Act.

It was noted in the original EIS / EES that the Squirrel Glider (*Petaurus norfolcensis*) may potentially occur within the Highway alignment however this species was not expected to be present as it was last recorded in the area in 1954. More recent studies have indicated that the study area contains a viable Squirrel Glider population, particularly between Billy Hughes Bridge and Thurgoona Drive. Similarly, surveys undertaken for the AWDC by Davidson and Datson in 2003 revealed the presence of the Squirrel Glider within the Thurgoona region. Squirrel Gliders are believed to inhabit the creek line areas near Eight Mile Creek, approximately 4 kms north of Thurgoona Drive and near the Thurgoona area. Squirrel Gliders are listed as vulnerable on the NSW TSC Act.

The Charles Sturt University (CSU) Johnston Centre was engaged in 2003 to undertake additional 7 Part tests for the Squirrel Glider with the assessment concluding that the project would act as a barrier to movement of the Squirrel Gliders along the Murray River and across the Thurgoona region, reducing the home range of some individuals and passages for dispersal. The project was also likely to result in the isolation of suitable Squirrel Glider habitat.

Based on the above studies, the list of target species for this monitoring program includes:

- Turquoise Parrot (*Neophema pulchella*)
- Superb Parrot (*Polytelis swainsonii*)
- Black Chined Honeyeater (*Melithreptus gularis gularis*)
- Painted Honeyeater (*Grantiella picta*)
- Regent Honeyeater (*Xanthomyza phrygia*)
- Brown Treecreeper (*Climacteris picumnus victoriae*)
- Bush Stone Curlew (*Burhinus grallarius*)
- Hooded Robin (*Melanodryas cucullata cucullata*)
- Diamond Firetail (*Stagonopleura guttata*)
- Speckled Warbler (*Pyrrholaemus saggitatus*)
- Barking Owl (*Ninox connivens*)
- Swift Parrot (*Lathamus discolor*)
- Squirrel Glider (*Petaurus norfolcensis*).

1.3 TIMING

This is a five year monitoring program with surveys being conducted bi-annually in spring and autumn commencing in spring 2008 and concluding in autumn 2012. An annual report is prepared after completion of the autumn survey period each year.

The annual report is sent to the BBS maintenance contractor (Maintenance Project Manager) for internal review, and then provided onto the NSW Roads and Traffic Authority (RTA). The RTA will then liaise with the NSW Department of Environment and Climate Change and Water (DECCW) and the Department of Primary Industries (DPI) and formulate a response on the monitoring project.

This second annual report documents the results of the second year of monitoring encompassing spring 2009 and autumn 2010 monitoring events, and includes discussion of results over the total period of monitoring.

2 METHODOLOGY

2.1 MONITORING PROGRAM RATIONALE

The primary objective of the monitoring program is to evaluate the effects of the operation of the new Albury-Wodonga National Highway Project on target species. The terrestrial fauna monitoring program is detailed in the OEMP Version A2 (July 2008) and involves targeted monitoring of key threatened species including the Squirrel Glider (*Petaurus norfolcensis*), Barking Owl (*Ninox connivens*) and threatened woodland birds. The aim of this program is to gauge the on-going effect from the operation of the dual carriageway on these threatened species.

The monitoring program has been designed in consultation with Rodney van der Ree of the Australian Research Centre for Urban Ecology to ensure that the data being collected can be utilised in the analysis of broader Squirrel Glider monitoring programs along the Hume Highway. It has been specifically designed to determine:

- The presence, seasonal use of habitat and possible movement behaviour of the Squirrel Glider;
- The distribution, abundance, reproductive output and long term survival of Squirrel Gliders in relation to the highway;
- Whether any cross-highway movements are being undertaken by Squirrel Gliders;
- The presence, abundance and stability of bird populations, particularly threatened woodland birds including the Brown Treecreeper, Diamond Firetail, Speckled Warbler and Hooded Robin, and their response to disturbance and revegetation of the road corridors; and
- The presence of Barking Owls in the general locality and/or near the location of the previously located breeding pair on the Murray River near the Oddies Creek site.

2.2 SITE DESCRIPTION AND SITE SELECTION PROCESS

The terrestrial monitoring program has incorporated three study sites across the Albury region to undertake surveys for the duration of the monitoring program. These study sites were selected on the basis of their ecological characteristics, the potential provision of habitat for target species, and the results of previous surveys where target species have been recorded.

Squirrel Gliders are believed to make use of vegetated areas and travel in an east-west direction using linear strips of woodland along creek line areas and roadsides (van der Ree, 2002). Vegetated roadside strips can also provide movement corridors and can be important for gene flow and recolonisation in small populations. An assessment of significance undertaken by CSU in 2003 for the Squirrel Glider assumed that in addition to the known Thurgoona population, a viable population of Squirrel Glider also occurred along the Murray River area and that all hollow bearing trees along the highway alignment were potentially used by the species. The AWDC also







stated that the species may inhabit areas of Eight Mile Creek as large hollow bearing trees are present and the creek line runs east to west.

Based on the above information, the OEMP vA2 identified three sites that demonstrate the appropriate attributes including Oddies Creek in the South, Thurgoona Drive and Eight Mile Creek in the North (Figure 2-1). The number of traps placed at each site was varied depending on the shape and extent of suitable habitat, access issues and safety. Survey works focus on threatened species habitat along both sides of the highway at each of the three sites. Table 2-1 provides details on each survey site.



Figure 2-1: Map of Study Sites (Source: AWNHP Environmental Review, 2003)

Table 2-1: Site Locations

Location	Description	Aerial View	Landscape View
Oddies Creek	Located south of Albury township, approximately 270 m north-east of the Murray River.		
Thurgoona Drive	Located just north-east of Lavington, Thurgoona Drive traverses over the Albury-Wodonga Highway.		
Eight Mile Creek	Located approximately 5 kms north of Thurgoona Drive, is near Norske Skog.		

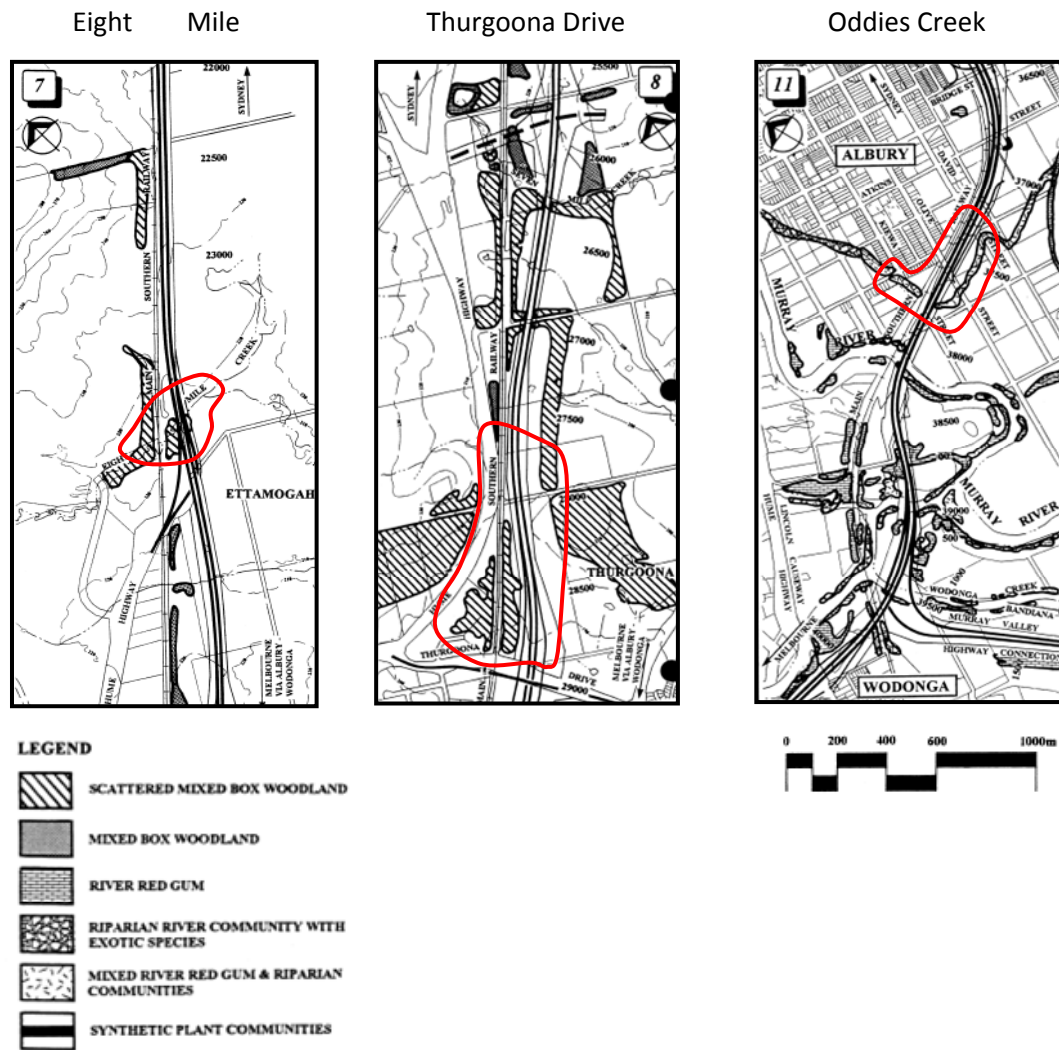


Figure 2-2: Vegetation Communities identified in original EIS (Source: Gunninah Consultants, 1995).

2.3 AVIFAUNA

Diurnal and nocturnal birds were surveyed at all three sites in spring 2009 and autumn 2010. Call-playback was undertaken for the Barking Owl. Each call was played for approximately 5 minutes paired with a period of listening for 5 minutes carried out 3 times according to the then DEC (2004) survey guidelines. Spotlighting was carried out following call playback at each of the three sites for approximately 15 to 30 minutes depending on the size of the area to be covered to identify eye shine from any present individuals. The time spent spotlighting was approximately 15 minutes at Eight Mile Creek, 20 minutes at Oddies Creek and Thurgoona East and 30 minutes at Thurgoona West. Spotlighting and call playback surveys were undertaken by two field staff at each of the three sites for one night each during both the spring 2009 and autumn 2010 survey periods.

Areas supporting suitable habitat for threatened woodland birds were identified in previous studies and these sites were incorporated into the monitoring program. Morning and evening 20 minute surveys were undertaken at each of the three survey sites on one day for each site. All species observed were noted.

2.4 SQUIRREL GLIDERS

Surveys for Squirrel Gliders were undertaken as part of a monitoring program to assess the population (if present) during the operation of the highway. Trap locations for the long term monitoring of this threatened species were selected within the three survey locations based on the following criteria:

- Sites that contained woodland of low to medium habitat quality (i.e. areas supporting trees including large diameter trees, trees with hollows and potentially some shrubby understorey).
- Sites that were large enough to position traps at least 100 m apart, to increase potential capture rates.

The monitoring program is designed so that all trapping methods implemented are consistent across sites; however during the first and second years of survey works, due to access issues at Eight Mile Creek and stolen traps at Oddies Creek a number of traps could not be set. Consequently the number of trap nights has differed at each site in spring and autumn during the first and second years of the monitoring program.

During the first round of surveys undertaken in spring 2008, Bell's TSR (travelling stock route) was also established as a control site. This site is known to have Squirrel Gliders present from Rodney van der Ree's ongoing work for the RTA and was utilised to ensure our trapping methods were succeeding if the species was not being recorded at the other three identified survey sites. Since the species has been recorded at the survey sites in all years, the Bells TSR site is no longer used as a control site.

Live trapping was used for monitoring Squirrel Gliders using specially designed cage traps at each of the three sites. This method was considered more appropriate than spotlighting or hair-tube analysis as information regarding sex, reproduction, distribution and abundance was required for the monitoring program. In addition, differentiation of hairs from Squirrel Gliders and Sugar Gliders is problematic (Lobert *et al.* 2001), and spotlighting can repeatedly fail to detect the presence of Squirrel Gliders due to their small stature, poor reflective eye shine and quiet behaviour (van der Ree 2003). Unlike Sugar Gliders, Squirrel Gliders rarely vocalise: calling rates may only be one per night, and not all nights (Goldingay *pers. comm.* 2009).

Thirty traps were positioned across the three sites. An aluminium extension ladder was used to place the traps at a height of 3-5 m off the ground. Each trap was nailed to the selected tree trunk. Traps were placed approximately 100 m apart to maximise the area covered and to accommodate for home ranges and territories of Squirrel Gliders. Trap locations at each of the

three survey sites during the spring 2009 and autumn 2010 survey periods are shown in **Figure 2-3**, **Figure 2-4** and **Figure 2-5** for

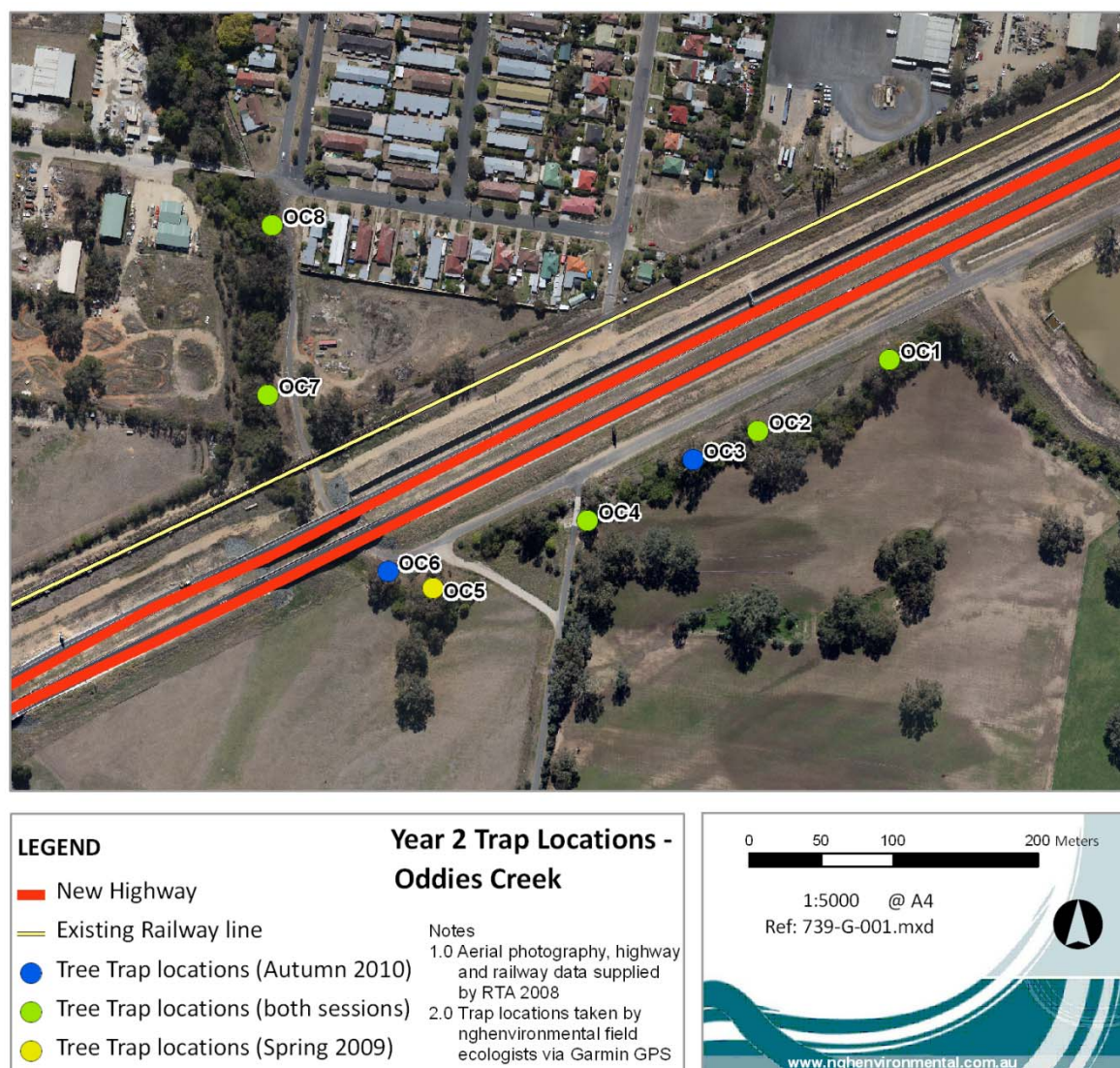


Figure 2-3 – Oddies Creek Trap Locations

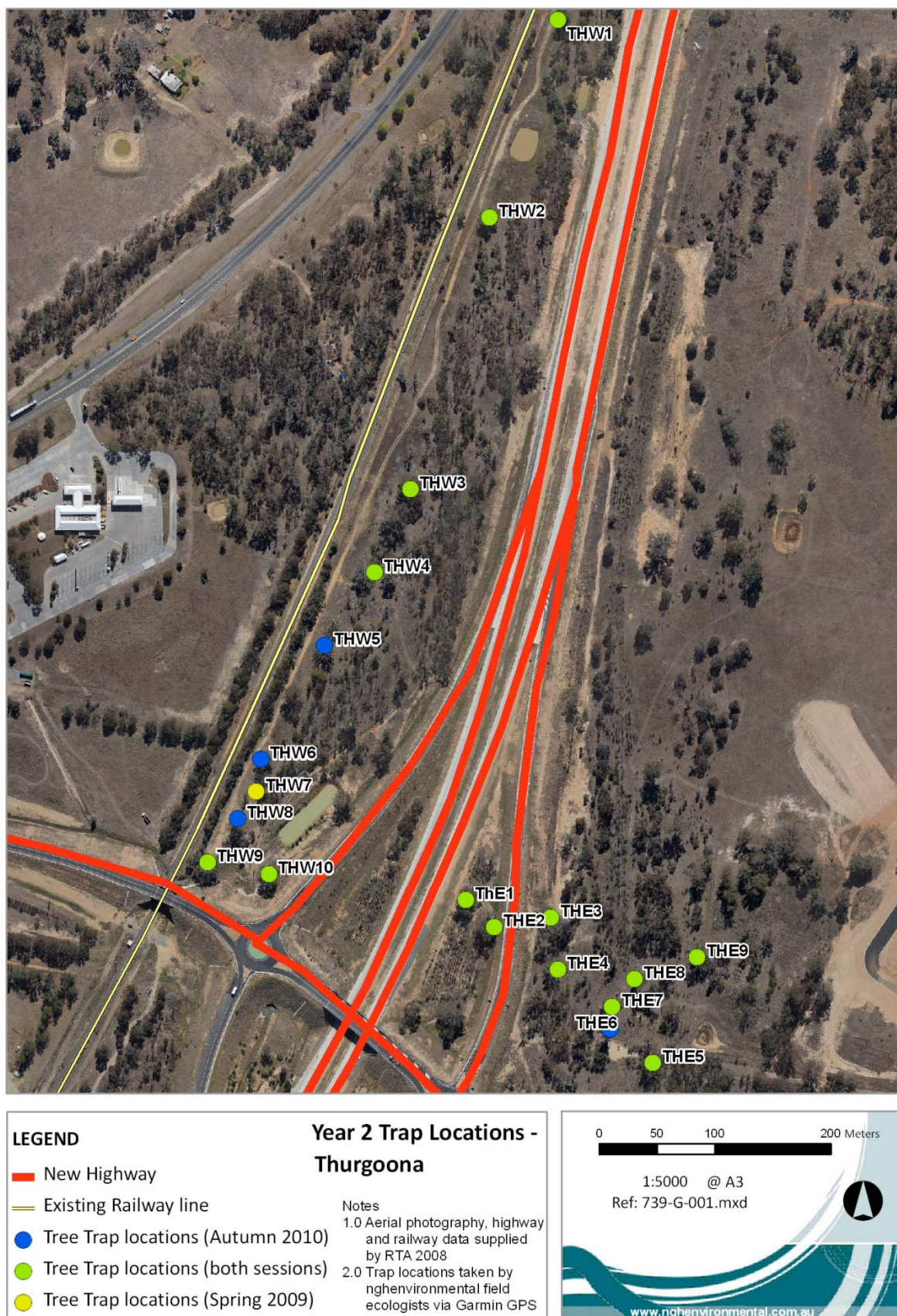


Figure 2-4 – Thurgoona Drive Trap Locations

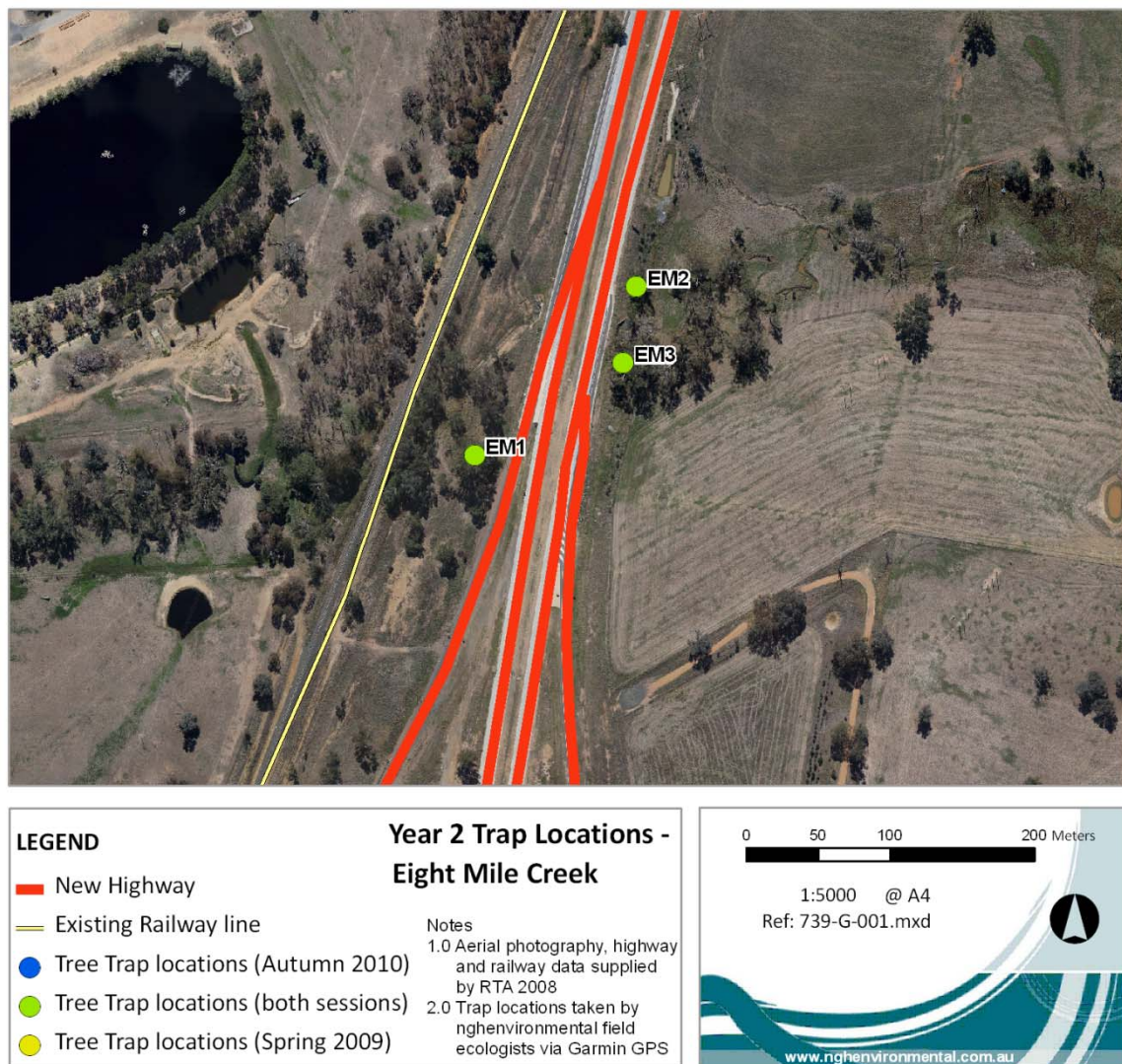


Figure 2-5 – Eight Mile Creek Trap Locations

Each cage trap was baited with a mixture of honey, rolled oats and peanut butter to attract Squirrel Gliders, while a trail of diluted honey water was sprayed above the trap to a height of 5-10 m. The location of each tree trap was marked with a GPS unit to identify locations during each survey period and to identify movement locations and distances of recaptured Squirrel Gliders. Table 2-2 shows the number of cage traps placed at each of the three sites during both the year 1 and year 2 survey periods.

Table 2-2: Number of traps at each site (* denotes where traps were stolen.)

Survey Period	Oddies Creek	Thurgoona Drive East	Thurgoona Drive West	Eight Mile Creek	Bell's TSR (control)	Total
Spring 2008	7 to 4 traps*	6 traps	7 traps	4 traps	7 traps	28
Autumn 2009	6 traps	7 traps	7 traps	3 traps	N/A	23
Spring 2009	6 to 5 traps*	8 traps	7 traps	3 traps	N/A	24
Autumn 2010	7 to 6 traps*	9 traps	9 traps	3 traps	N/A	28

A total of six trap nights were undertaken during each survey period with all traps being set at dusk and checked from dawn the following morning. All captured animals were processed at the point of capture and released after processing.

Each captured native animal was fitted with a microchip with a unique numerical code and given an ear tattoo comprising of a letter and a number (e.g. A9) to easily identify each individual in the field as a back-up for individuals who may have lost their microchip. Males were tattooed in the left ear, while females were tattooed in the right ear. Two tissue samples of the ear were also taken using a toe punch device and then preserved in ethanol to assist in subsequent genetic analysis determining population structures in the future. Tissue samples will be sent to Rod van der Ree to be analysed with other samples undertaken by his team to aid in research for this threatened species within the Albury region.

Processing involved recording the following information for each individual:

- Species identification.
- Weight.
- Sex.
- Tattoo Identification.
- Upper Incisor wear (Squirrel Glider).
- Micro-chip Implant number.
- Tissues sampling details.
- Reproductive condition.

The unique combination of the three identification methods assists in future identification of any recaptured animals.

A combination of traits was used to estimate the age of Squirrel Gliders. Body weight and incisor wear are the most ideal characteristics to use when estimating the age class (Quinn 1995). Age estimates for juvenile individuals less than 18 months in age could be reliably made using these parameters, however after the 18 month age; estimates were less reliable due to the overlap between differing characteristics. The following table 2-3 shows characteristics used to estimate age classes of the Squirrel Glider.

Table 2-3 – Parameters to estimate age class of Squirrel Glider (Derived from Van der Ree 2002)

Trait	< 1 year	1 – 2 years	2 – 3 years	> 3 years
Weight of male (g)	< 200g	> 220 g	> 220 g	> 220 g
Weight of female (g)	< 180 g	> 200 g	> 200 g	> 200 g
Wear of upper incisors	None to slight (1 – 1.5)	Slight to moderate (2 – 2.5)	Moderate to heavy (3 – 3.5)	Moderate to very heavy, both are brown/rotting colour. Worn to gum line. (3.5 – 4)
Wear of lower incisors	White, no cracks	Slight, discoloured, lateral cracks slight	Orange discolouration, lateral cracks obvious, often chipped teeth in older animals	
Pouch condition	Small and shallow with fine white hairs, teats < 1 mm long	Carrying pouch young or pouch larger and deeper than in females that had not bred. Yellow/rusty coloured hairs, black scale often present. Teats > 1 mm long		
Frontal gland condition	Not developed	Partially to well developed		
Patagium colour	White	Cream / yellow / lemon		

To estimate the female reproductive condition each female caught was allocated a one to six reproductive category (Quinn, 1995). The following table 2-4 best represents these categories.

Table 2-4 – Reproductive Categories for Squirrel Gliders.

Category	Description
1 – Juvenile Virgin	Pouch is small, tight and undeveloped. Hairs white and teats < 1 mm.
2 – Pregnant Females	Pouch lining thicker with the pouch wall glandular, muscular and richly vascularised, may or may not have previously bred.
3 – Female carrying pouch young	Female carrying pouch young should be able to see pouch young.
4 – Lactating females	Females with a loose pouch and one or two lactating teats present.
5 – Females recently bred	Pouch and teats are large but are not lactating.
6 – Adult female non breeding	Pouch is larger and deeper than virgin females, but reproductive activity not apparent. Hairs are brown to yellow with teats > 1 mm.

3 RESULTS

3.1 THREATENED OWLS AND WOODLAND BIRDS

No Barking Owls were recorded or observed during call play-back, spot lighting or dawn and dusk surveys at any of the sites at Oddies Creek, Thurgoona Drive or Eight Mile Creek during surveys from spring 2008 to autumn 2010. Given the snapshot nature of the survey and traffic noise from the highway and surrounding neighbours it is expected that this species could still occupy areas of the sites and possibly other areas within the locality including the Murray River. The Barking Owl has large home ranges and can traverse vast amounts of land for foraging, roosting and breeding habitat, all of which is ample along the Murray River, approximately 150 m from the Oddies Creek site.

A total of 21 bird species were recorded during spring 2008 survey, 35 during autumn 2009, 49 species during spring 2009 and 50 species during the autumn 2010 survey (Appendix A). No threatened species listed under the TSC Act or EPBC Act was identified during the bird surveys. Thurgoona Drive provided the most suitable potential habitat for threatened woodland bird species with a higher density of vegetation present, revegetation of shrubs and ground cover species, presence of hollow bearing trees and nest boxes.

The majority of species recorded across Oddies Creek, Thurgoona Drive and Eight Mile Creek are commonly found in woodland areas and road side vegetation. Two introduced bird species were recorded over surveys in year 1 of monitoring (Spring 2008 and Autumn 2009); the Common Blackbird (*Turdus merula*) and the Common Starling (*Sturnus vulgaris*). Two more introduced species were observed during year 2 monitoring session (Spring 2009 and Autumn 2010); Rock Dove (*Columba livia*) and the Spotted Turtle-dove (*Streptopelia chinensis*).

Given the timing and snapshot nature of the surveys it is expected that a range of other species, including threatened species, could occur across all three survey sites at other times of the year.

3.2 SQUIRREL GLIDERS

A total of 24 and 28 cage traps were set up across the three survey sites in spring 2009 and autumn 2010 respectively to determine the presence of and monitor any Squirrel Gliders in the study locality. No control site was necessary during these works as Squirrel Gliders were detected at Thurgoona Drive during monitoring works in year 1.

3.2.1 Spring 2009

A total of eight Squirrel Gliders were captured during the spring 2009 survey with four captures at Thurgoona East and four at Thurgoona West. Five of the Squirrel Gliders were recaptures from year 1 of monitoring (Table 3-1). Two Squirrel Gliders, SQA7F and SQB3M, were re-captured within this monitoring session.

Table 3-1 – Capture Rates for Spring 2009

Individual	Current Capture Date	Sex	Location	Recapture	Date of past capture	Location	Distance
SQA7F	30.09.09 03.10.09	F	THW9 THW7	Yes	17.04.09	THW7	70m
SQB3M	01.10.09 04.10.09	M	THW3 THW3	Yes	N/A	N/A	0m
SQA9M	02.10.09	M	THE7	Yes	15.04.09 17.04.09 20.4.09	THE9, THE5, THE1	320m
SQF3F	03.10.09	F	THE9	Yes	20.04.09	THE9	0m
SQ2BF	03.10.09	F	THE8	No	N/A	N/A	N/A
SQA5M	03.10.09	M	THW3	Yes	20.04.09	THW11	205m
SQB1F	04.10.09	F	THW4	No	N/A	N/A	N/A
SQA8F	04.10.09	F	THE3	Yes	16.04.09 18.04.09	THE9, THE1	205m

Four Common Brushtail Possums were caught a total of eight times. One Common Brushtail Possum was caught once at Oddies Creek before this trap was stolen on the 4th trap night. One Common Brushtail Possum (BTH4F) was caught on the 3rd trap night at Thurgoona East. Two different Common Brushtail Possums were caught three times each (BTH9M and BTH5M) at Thurgoona West. Refer to Appendix B for a detailed database of species captures.

In summary, there were no captures at Eight Mile Creek in spring 2009 (Year 2). Eight Squirrel Gliders were caught at the Thurgoona Drive site, four on the Western side of the highway and four on the Eastern side. No Squirrel Gliders were captured at Oddies Creek. One Common Brushtail Possum was captured at the Oddies Creek site, while three Common Brushtail Possums were captured at Thurgoona Drive, two on the Western site and one on the Eastern site.

3.2.2 Autumn 2010

Autumn 2010 trapping resulted in a similar number of Squirrel Gliders trapped as that seen in Spring 2009 with a total of seven individuals caught in comparison to eight individuals in Spring 2009. All individuals had been previously trapped so no new individuals required microchipping or tattooing.

Five of the seven Squirrel Gliders trapped in this monitoring session were caught on two different nights, SQA9M being trapped the largest number of nights with five consecutive trappings.

Common Brushtail Possums were caught at both Thurgoona East and West sites and at Oddies Creek. More Squirrel Gliders and Common Brushtail Possums were caught in the monitoring sessions of year 2 than year 1. Common Brushtail Possums were caught twice at Thurgoona East and two Common Brushtail Possums were caught on 11 occasions at Thurgoona West. There were three individual Common Brushtail Possums at Thurgoona West; BTH9F and BTH5M and one new individual which were not microchipped due to aggressive behaviour.

Common Brushtail Possums were caught on seven occasions during the Autumn 2010 surveys at Oddies Creek. These Possums were not microchipped due to aggressive behaviour. In addition, three Black Rats (*Rattus rattus*) were trapped at site OC3 (Figure 2-3) at Oddies Creek. These rats were disposed of in an ethical manner in line with best practice guidelines.

No individuals were caught at Eight Mile Creek.

Table 3-2 – Capture Rates for Autumn 2010

Individual	Current Capture Date	Sex	Location	Recapture	Date of past capture	Location	Distance	Found on both sides of the Thurgoona Drive southbound off ramp
SQA7F	20.04.10 22.04.10	F	THW5 THW9	Yes	30.09.09 03.10.09 17.04.09	THW9, THW7, THW7	210m	
SQA9M	20.04.10 21.04.10 22.04.10 23.04.10 24.04.10	M	THE7 THE8, THE6, THE1, THE3	Yes	15.04.09 17.04.09 20.04.09 2.10.09	THE9, THE5, THE1, THE7	320m	Yes
SQA8F	20.04.10	F	THE9	Yes	16.04.09 18.04.09 04.10.09	THE9, THE1, THE3	205m	Yes
SQB3M	21.04.10 24.04.10	M	THW4 THW4	Yes	01.10.09 04.10.09	THW3, THW3	80m	
SQ2BF	21.04.10	F	THE7	Yes	03.10.09	THE8	100m	

	23.04.10		THE4					
SQF3F	21.04.10	F	THE9	Yes	20.04.09 03.10.09	THE9, THE9	0m	
SQA5M	22.04.10 23.04.10	M	THW2 THW5	Yes	20.04.09 03.10.09	THW11, THW3	450m	

3.2.3 Capture Rates

SQB1F has been captured only once in Spring 2009 on one night (4/10/09) at Thurgoona west. It has not since been recaptured (Figure 3-1 and Appendix B).

SQA7F was first captured on the 2nd trap night (trap TW9) and then again on the 5th trap night (THW7) in spring 2009 surveys. In autumn 2010, this Squirrel Glider was caught on the 1st trap night (THW5) and the 3rd trap night (THW9) always at the Thurgoona West site. This individual, captured in the monitoring sessions in year 1 and 2 has not been detected further than 210m from its original trapping location at Thurgoona West.

During spring 2009 trapping, SQB3M was captured on the 3rd trap night (THW3) and then again on the 6th trap night (THW3). This Squirrel Glider was not captured in year 1 monitoring but was caught twice in this monitoring session in the same tree (THW3) at Thurgoona West. In autumn 2010 SQB3M was again captured, this time on the 2nd trap night and the 5th trap night. Each time this animal has been caught it has been re-trapped in the same trap (THW4) although between trapping sessions the individual has been trapped in trees 80m apart.

SQA9M has been caught the largest number of times firstly in autumn 2009 with three captures, secondly in spring 2009 with 1 capture and thirdly in autumn 2010 with five captures totalling nine captures over 1.5 years. This individual has repeatedly been caught on either side of the bypass road at Thurgoona East firstly in autumn 2009 then again in autumn 2010 and has moved between trap sites THE1, THE3 and THE5-9 (Figure 3-1).

SQA8F has also been caught on both sides of the bypass lane with captures in autumn 2009, one on each side of the bypass lane then again in spring 2009, and one more recapture in autumn 2010 totalling four captures over 1.5 years.

SQ2BF has been captured a total of three times at Thurgoona East, once in Spring 2009 and then twice in autumn 2010 in three different traps (THE4, THE7 and THE8; see Figure 3-1) with a total distance of approximately 100m between them.

Over three sessions including autumn and spring 2009 and autumn 2010, SQF3F has been caught 3 times, once in each session. This individual has been caught in the same tree each time (THE9) suggesting some affinity for the location. This Glider was also originally caught by Rod van der Ree in December 2007 at Mitchell Park approximately 450m to the north of the trap at THE9.

SQA5M has been caught over the last three monitoring session in spring and autumn 2009 and autumn 2010 a total of four times. It was captured twice during the last monitoring session in autumn 2010 at traps THW2 and THW5 and once only during both spring and autumn 2009 at THW3 and THW11. The individual has moved a total of 450m in a north-south direction between the trap sites over the 1.5 years it has been caught in traps.

Since the first session of monitoring in spring 2008, no recaptures have been made of those individuals caught in spring 2008. Of the 6 individuals captured in autumn 2009, all but 1 (SQA6M) have been recaptured in both subsequent monitoring sessions in spring 2009 and autumn 2010. Of the three new individuals captured in Spring 2009, two (SQ2BF and SQB3M) individuals were recaptured in the autumn 2010 monitoring session. From the spring 2009 session at Thurgoona west, only this one individual was not recaptured (SQB1F) in autumn 2010.

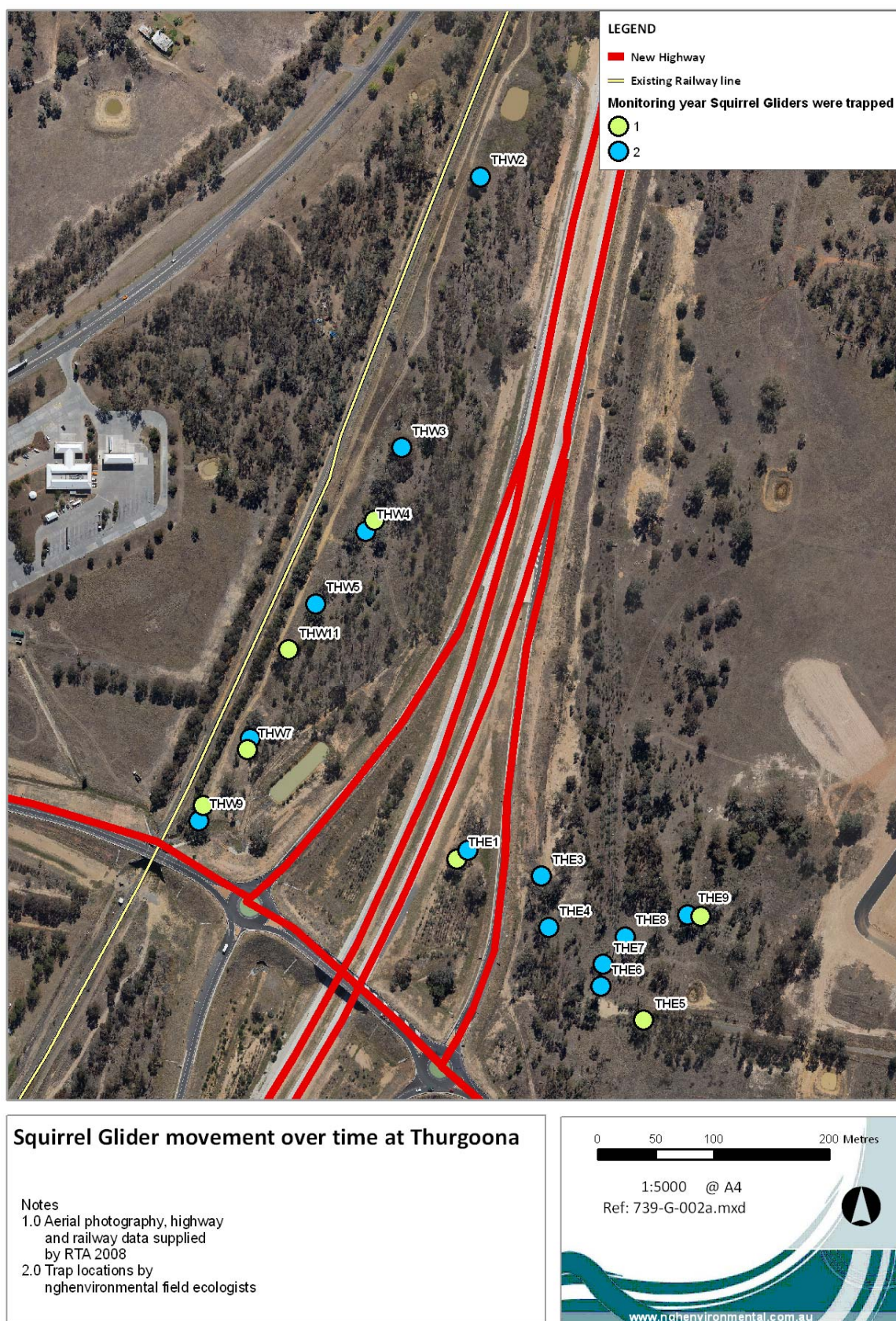


Figure 3-1 - Locations of Squirrel Glider captures over the two year monitoring program.

3.2.4 Squirrel Gliders caught at Thurgoona in year 1 and not in year 2

Squirrel Gliders SQH2M and SQH0F were caught in spring 2008 at Thurgoona west but have not been subsequently captured in any of the three monitoring session since then. SQA6M which was caught at Thurgoona west originally in autumn 2009 has not since been captured in spring 2009 or autumn 2010.

Table 3-3 - Squirrel Glider caught in Spring 2008 which have not been re-captured in autumn 2009, spring 2009 or autumn 2010

Individual	Capture Date	Sex	Location	Age Class
SQH2M	12.09.08	Male	Thurgoona west	2-3 years

Table 3-4 - Squirrel Gliders caught in Autumn 2009 which have not been re-captured in spring 2009 or autumn 2010

Individual	Capture Date	Sex	Location	Age Class
SQA6M	17.04.09	Male	Thurgoona west	2-3 years (blind in one eye)
SQH0F	18.04.09	Female	Thurgoona west	2-3 years

3.2.5 Squirrel Glider condition over time

The Squirrel Gliders caught at the Thurgoona site on both the east and west sides of the dual carriageways appear to be in a stable condition over the 2-year monitoring period. Relative weight in grams has fluctuated over the two years of monitoring but this is to be expected with varying times of the year and the presence and absence of pouch young (Table 3-5). Average weights of individuals have remained steady over time with 252.5g in spring 2008 and 253.6g in autumn 2010.

Table 3-5: Condition of Squirrel Gliders over time from spring 2009 to autumn 2010

Individual	Location at Thurgoona	Condition of Squirrel Glider over time at each Monitoring Session			
		Spring 2008	Autumn 2009	Spring 2009	Autumn 2010
SQH2M	W	265g/UIW 3	-	-	-
SQH0F	W	240g/UIW 3/with 1 unfurred young/blind in left eye	200g/UIW 3/adult not breeding/blind in left eye	-	-
SQF3F	E	-	225g/UIW 3	250g/UIW 3.5	215g/UIW 3/pregnant
SQA5M	W	-	240g/UIW 3.5	265g/UIW 3	270g/UIW 2
SQA6M	W	-	185g/UIW 3	-	-
SQA7F	W	-	260g/UIW/ 3.5/virgin	260g/UIW 3.5/carrying pouch young	245g/UIW 3.5/adult not breeding
SQA8F	E	-	205g/UIW 3.5-4/virgin	285g/UIW 3-3.5/carrying pouch young	230g/UIW 2/carrying pouch young
SQA9M	E	-	265g/UIW 3.5	240g/UIW 3.5	250g/UIW2.5
SQB1F	W	-	-	305g/UIW 3.5 carrying pouch young	-
SQ2BF	E	-	-	290g/UIW 2.5/recently bred	305g/UIW 2.5/carrying pouch young
SQB3M	W	-	-	255g/UIW 3	260g/UIW 2.5
Mean weight (g)		252.5	230	268.8	253.6

Note: location at Thurgoona has been represented as “E” for Gliders found East of the dual carriageways of the Hume Highway and “W” for Gliders found West of these dual carriageways. UIW – Upper Incisor Wear.

3.2.6 Sex ratio and reproductive output

For monitoring in year 2 (spring 2009 and autumn 2010) there was an overall total of three males caught at both session and five females caught in spring 2009 and four females caught in autumn 2010 (Table 3-6). There were members of both sexes caught at each of the sites (both east and west of the dual carriageway) which means if these populations are indeed limited in their ability to cross the dual carriageway that, pending outcomes of other variables such as demographic, genetic and environmental uncertainties, both sub-populations may continue to successfully breed as has been reinforced by the observation of females from both sides of the carriageway with pouch young (Table 3-5).

Table 3-6: numbers of male and female captured Squirrel Gliders over time

Location at Thurgoona	Spring 2008		Autumn 2009		Spring 2009		Autumn 2010	
	M	F	M	F	M	F	M	F
EAST	-	-	1	2	1	3*	1	3*
WEST	1	1*	2	2	2	2*	2	1

*denotes the presence of breeding female Squirrel Gliders

3.2.7 Summary of results

No Squirrel Gliders were captured at Eight Mile Creek or Oddies Creek in year 1 or year 2 survey periods. At Thurgoona Drive a total of eight individual Squirrel Gliders were captured during the first year (spring 2008 and autumn 2009) of the monitoring program and seven during the second year (spring 2009 and autumn 2010) with three individuals being new captures in spring 2009 and three individuals which were caught in year 1 were not caught again during year 2 monitoring.

4 DISCUSSION

No threatened woodland birds have been detected on site and the diversity of birds appears to be stable. The three sites provide sub-optimal habitat and resources for native birds due to their proximity to a large urban centre and the highly fragmented local landscape and lack of significant habitat features present at the sites. The three woodlands are generally open linear strips of vegetation with varying degrees of disturbed and weedy understoreys. There is limited structural complexity at most of the sites; however, Thurgoona east has some regenerating *Acacia* understorey. Given the disturbed and modified nature of the sites and their proximity to a large urban centre, it is not expected any threatened woodland birds would be reliant on the sites, if present in the general locality. The birds detected thus far have been generally common and abundant and consequently tolerant of human modified environments and the limited habitat types present would somewhat restrict the range of bird species that could potentially utilise the sites.

Squirrel Gliders caught from the year 1 and 2 monitoring periods appear to be stable residents of these locations. Many of the individuals have been re-captured over more than one trapping session but in no more than three out of the four sessions thus far. Both sites at Thurgoona east and Thurgoona west contain breeding females. This result suggests successful breeding occurs for these (sub?)populations of Squirrel Gliders despite the presence of the dual carriageway between the two groups on the eastern and western sides, although the success of the young once they leave the pouch is unknown. The success of recaptures may suggest a resident population of Squirrel Gliders which are utilising the resources present at Thurgoona.

During similar trapping assessments in South-eastern Australia near Euroa, carried out by van der Ree (2002), predation was responsible for the loss of 11 Squirrel Gliders with nine individuals exhibiting injuries consistent with owl predation. Owls have not as yet been detected at the three sites despite call playback efforts for threatened owls. Targeting owl surveys soon after dusk will more appropriately gauge the presence of owls within the local area given that in any one night owls travel extensive distances within their home ranges.

Trapping at Oddies Creek has resulted in a number of Brushtail Possums being captured and in the last round of trapping in Autumn 2010, a total of three Black Rats. This location appears to be dominated by its urban characteristics with vegetation being highly modified and dominated by weed and invasive species. While it may have connectivity along the creekline, it consists of a single linear strip of trees and shrubs only.

Consecutive trapping sessions may be having an effect on the ability of the Common Brushtail Possums and the Squirrel Gliders to forage enough food over the trapping period of seven days. SQA9M was trapped for five consecutive nights in total and when released from trap THE1 on the morning of the 24th April 2010 this individual was seen to reside in the tops of the tree for the duration of the day, presumably unable to return (by gliding) to a local hollow during daylight hours. This individual was seen again in the afternoon of this day before it was trapped the next night. In this regard two recommendations are made for further trapping:

- If any Squirrel Gliders or Common Brushtail Possums are being repeatedly trapped in the same location on four or more consecutive nights then that particular trap should be closed for one night or the remainder of the session.
- The traps at Thurgoona are to be the first checked in the morning before traps at Eight Mile Creek and Oddies Creek (if these locations are trapped for future sessions) to ensure individuals are minimally disturbed and able to return to their hollows before full sun.

Some features of the results to date include:

- No threatened woodland birds have been recorded.
- No threatened Barking Owls have been recorded.
- No individual Squirrel Glider has been recorded on both sides of the new Highway at Thurgoona Drive.
- Two individual Squirrel Gliders have been recorded in the retained triangle of vegetation between the southbound off-ramp and the Highway during year 1 and 2 monitoring.
- No Squirrel Gliders have been recorded at the Oddies Creek or Eight Mile Creek sites.

5 CONCLUSION AND RECOMMENDATIONS

After the first year of monitoring, no threatened owl species or woodland birds have been recorded at any of the survey sites. A total of 11 Squirrel Gliders have been captured in traps over the two year monitoring period, seven on the western side and four on the eastern side of the dual carriageway Hume Freeway at Thurgoona. The success of recapturing a number of Squirrel Gliders, including breeding females over at least three monitoring sessions suggests that these individuals are part of a resident breeding population which are currently utilising the resources present at Thurgoona. No individual has been trapped on both sides of the Freeway as yet, indicating the road may be acting as a barrier to the east-west movement of individuals within the population. This barrier may make them more vulnerable to “the vagaries of demographic, genetic and environmental stochasticity” (van der Ree, 2002). The introduction of the use of glider poles may reduce the barrier effects posed by the Hume Freeway.

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Appendix A **BIRD CENSUS RESULTS**

List of avifauna species identified during monitoring works undertaken in Spring 2008, Autumn 2009, Spring 2009 and Autumn 2010 at the three proposed monitoring sites along the newly constructed Albury-Wodonga Hume Freeway.

Notes:

I Denotes introduced/exotic species (non-native).

N Denotes native species

TSC-V: Threatened Species Conservation Act - Vulnerable species

Site:

OC – Oddies Creek

TD – Thurgoona East and West

EM – Eight Mile Creek

Common Name	Scientific Name	Status	Spring 2008	Autumn 2009	Spring 2009	Autumn 2010
ACANTHIZIDAE						
Yellow-rumped Thornbill	<i>Acanthiza chrysorrhoa</i>	N	OC, TD	TD		OC
Striated Thornbill	<i>Acanthiza lineata</i>	N				OC
Brown Thornbill	<i>Acanthiza pusilla</i>	N		OC	OC	OC
Yellow Thornbill	<i>Acanthiza nana</i>	N				OC
White-browed Scrubwren	<i>Sericornis frontalis</i>	N		OC	OC	OC
ACCIPITRIFORMES						
Black-shouldered Kite	<i>Elanus axillaris</i>	N				TD, EM
Whistling Kite	<i>Haliastur sphenurus</i>	N				OC
Collared Sparrowhawk	<i>Accipiter cirrocephalus</i>	N				OC, TD
ACROCEPHALIDAE						
Australian Reed-Warbler	<i>Acrocephalus australis</i>	N			EM	
ANATIDAE						
Pacific Black Duck	<i>Anas superciliosa</i>	N		OC	OC, TD	OC, TD
Australian Wood Duck	<i>Chenonetta jubata</i>	N	TD		OC, TD	OC, TD
Grey Teal	<i>Anas gracilis</i>	N			OC	
Black Swan	<i>Cygnus atratus</i>	N		OC	OC	OC
ANHINIDAE						
Australasian Darter	<i>Anhinga novaehollandiae</i>	N			OC	
ARDEIDAE						
White-faced Heron	<i>Egretta novaehollandiae</i>	N		OC		OC, TD
Intermediate Egret	<i>Ardea intermedia</i>	N				OC
Great Egret	<i>Ardea alba</i>	N			OC	
ARTAMIDAE						

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Common Name	Scientific Name	Status	Spring 2008	Autumn 2009	Spring 2009	Autumn 2010
Pied Butcherbird	<i>Cracticus nigrogularis</i>	N		TD		TD
Australian Magpie	<i>Gymnorhina tibicen</i>	N	TD, EM	OC, TD	OC, TD, EM	OC, TD, EM
Pied Currawong	<i>Strepera graculina</i>	N		TD	OC, TD	OC, TD
CACATUIDAE						
Sulphur Crested Cockatoo	<i>Cacatua galerita</i>	N	EM	TD, EM		OC, EM
Galah	<i>Cacatua roseicapilla</i>	N	TD	OC, TD, EM	OC, TD, EM	OC, TD, EM
CAMPEPHAGIDAE						
Black-faced Cuckoo-shrike	<i>Coracina novaehollandiae</i>	N		TD	OC, TD, EM	TD, EM
CHARADRIIDAE						
Black-fronted Dotterel	<i>Euseyornis melanops</i>	N			OC	
Masked Lapwing	<i>Vanellus miles</i>	N	TD	TD	OC, TD	OC, TD
CLIMACTERIDAE						
White-throated Treecreeper	<i>Cormobates leucophaea</i>	N				OC
COLUMBIDAE						
Rock Dove	<i>Columba livia</i>	I				OC
Crested Pigeon	<i>Ocyphaps lophotes</i>	N	TD	TD	TD	OC
Spotted Dove	<i>Streptopelia chinensis</i>	I			TD	TD
Common Bronzewing	<i>Phaps chalcoptera</i>	N			TD	
CORORACIDAE						
White-winged Chough	<i>Corcorax melanorhamphos</i>	N	TD	TD	TD	TD
CORVIDAE						
Australian Raven	<i>Corvus coronoides</i>	N	OC, TD, EM	OC, TD, EM	OC, TD, EM	OC, TD, EM
CUCULIDAE						
Pallid Cuckoo	<i>Cacomantis pallidus</i>	N			TD	
DICRURIDAE						
Magpie Lark	<i>Grallina cyanoleuca</i>	N	TD, EM	TD	OC, TD, EM	OC, TD, EM
FALCONIDAE						
Australian Hobby	<i>Falco longipennis</i>	N		TD		TD
Brown Falcon	<i>Falco berigora</i>	N	EM			OC
Nankeen Kestrel	<i>Falco cenchriodes</i>	N			EM, TD	
HALCYONIDAE						
Laughing Kookaburra	<i>Dacelo novaeguineae</i>	N	EM	TD	TD, OC	OC, TD, EM
Scared Kingfisher	<i>Todiramphus sanctus</i>	N			TD	
HIRUNDINIDAE						
Fairy Martin	<i>Hirundo ariel</i>	N	TD, EM	OC	TD, EM	OC, TD
Welcome Swallow	<i>Hirundo neoxena</i>	N	TD, EM	OC, TD	OC, EM	TD, EM

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Common Name	Scientific Name	Status	Spring 2008	Autumn 2009	Spring 2009	Autumn 2010
MALURIDAE						
Superb Fairy-wren	<i>Malurus cyaneus</i>	N	OC, EM	OC	OC, TD	OC, TD, EM
MEGALURIDAE						
Rufous Songlark	<i>Cincloramphus mathewsi</i>	N			OC, TD, EM	
MELIPHAGIDAE						
Red Wattlebird	<i>Anthochaera carnunculata</i>	N	TD	TD	TD	OC, TD
White-plumed Honeyeater	<i>Lichenostomus penicillatus</i>	N	OC	OC, TD	TD, EM	TD, EM
Noisy Miner	<i>Manorina melanocephala</i>	N	TD	TD	TD	TD
Blue-faced Honeyeater	<i>Entomyzon cyanotis</i>	N			OC, TD	
Noisy Friarbird	<i>Philemon corniculatus</i>	N			OC, TD	TD
Little Friarbird	<i>Philemon citreogularis</i>	N		TD		
MUSCICAPIDAE						
Common Blackbird	<i>Turdus merula</i>	I	TD	OC, EM	OC	
NECTARINIIDAE						
Mistletoebird	<i>Dicaeum hirundinaceum</i>	N				TD
PACHYCEPHALIDAE						
Grey Shrike-thrush	<i>Colluricincla harmonica</i>	N			TD	TD
PARDALOTIDAE						
Striated Pardalote	<i>Pardalotus striatus</i>	N			OC, TD	OC, TD
PELECANIDAE						
Australian Pelican	<i>Pelecanus conspicillatus</i>	N			OC, TD	
PETROICIDAE						
Red-capped Robin	<i>Petroica goodenovii</i>	N		TD		
PHALACROCORACIDAE						
Little Pied Cormorant	<i>Microcarbo melanoleucos</i>	N			OC, TD	OC
Little Black Cormorant	<i>Phalacrocorax sulcirostris</i>	N		OC	OC	OC
PSITTACIDAE						
Eastern Rosella	<i>Platycercus eximius</i>	N		TD	TD, OC	TD, EM
Crimson Rosella	<i>Playtycerus elegans</i>	N				EM
Yellow Rosella	<i>Platycercus flaveolus</i>	N			OC, EM	OC, TD
Red-rumped Parrot	<i>Psephotus haematonotus</i>	N	TD, EM	TD	TD, EM	TD, EM
RALLIDAE						
Purple Swampphen	<i>Porphyrio porphyrio</i>	N			OC	
Eurasian Coot	<i>Fulica atra</i>	N			OC	
RHIPIDURIDAE						
Grey Fantail	<i>Rhipidura albiscapa</i>	N			OC	OC, TD, EM

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Common Name	Scientific Name	Status	Spring 2008	Autumn 2009	Spring 2009	Autumn 2010
Willie Wagtail	<i>Rhipidura leucophrys</i>	N	OC	TD	TD	OC, TD
STURNIDAE						
Common Starling	<i>Sturnus vulgaris</i>	I		OC	OC,TD, EM	OC, TD, EM
THRESKIORNITHIDAE						
Straw Necked Ibis	<i>Threskiornis spinicollis</i>	N		OC		
Australian White Ibis	<i>Threskiornis molucca</i>	N			OC, TD	OC
ZOSTEROPIDAE						
Silvereye	<i>Zosterops lateralis</i>	N		OC		

Appendix B **DATABASE INFORMATION**

Albury Bypass Terrestrial Monitoring Program Database Information

Species Type	Date	Trap Day	Animal Unique I.D			New or Recapture	GPS I.D	Tree Type	Capture Location	Recapture Location	Distance from Original capture location	Weight (Animal Only)	Upper Incisor Wear	Sex	Female Reproductive Condition
			Micro-chip I.D	Tattoo Number	I.D on data sheet										
Year 1, Spring 2008															
Brush tail Possum	10.09.08	2nd night	0006987AE1	H9	BTH9F	New	64	White Box	Thurgoona West	Autumn 2009, in 64	same trap	1825 g	N/A	Female	N/A
Squirrel Glider	12.09.08	4th night	N/A	H2	SQH2M	New	67	White Box	Thurgoona West	N/A	N/A	265 g	3	Male	N/A
Squirrel Glider	15.09.08	5th night	0006D15472	H0	SQH0F	New	63	White Box	Thurgoona West	Autumn 2009, in 66	165 m	245 g	3	Female	carrying pouch young
Brush tail Possum	10.09.08	2nd night	0006D1419D	H4	BTH4F	New	70	White Box	Thurgoona East	N/A	N/A	1975 g	N/A	Female	N/A
Brush tail Possum	11.09.08	3rd night	0006D159E9	H3	BTH3M	New	71	Blakey's Red Gum	Thurgoona East	same tree	N/A	2975 g	N/A	Male	N/A
Brush tail Possum	10.09.08	2nd night	N/A	A3	BTA3M	New	59	Blakely's Red Gum	Oddies Creek	N/A	N/A	1075 g	N/A	Male	Sub Adult
Squirrel Glider	11.09.08	3rd night	00069822D7	2A	SQ2AF	Recapture	Kylie's	Yellow Box	Bell's TSR	N/A	N/A	245 g	3	Female	carrying pouch young

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Species Type	Date	Trap Day	Animal Unique I.D			New or Recapture	GPS I.D	Tree Type	Capture Location	Recapture Location	Distance from Original capture location	Weight (Animal Only)	Upper Incisor Wear	Sex	Female Reproductive Condition
			Micro-chip I.D	Tattoo Number	I.D on data sheet										
Squirrel Glider	12.09.08	4th night	000 6979421	4A	SQ4AF	Recapture	Kylie's	Stag	Bell's TSR	N/A	N/A	270 g	3	Female	carrying pouch young
Year 1, Autumn 2009															
Brush tail Possum	20.04.09	6th night	0006987AE1	H9	BTH9F	Recapture	64	White Box	Thurgoona West	same trap in Spring 2008	Same trap	N/A	N/A	Female	N/A
Squirrel Glider	17.04.09	3rd night	0006D158D9	A6	SQA6 M	New	69	White Box	Thurgoona West	69 on 5th night	330 m	185 g	3	Male	N/A
Squirrel Glider	18.04.09	4th night	0006D15472	H0	SQH0F	Recapture	66	Blakely's Red Gum	Thurgoona West	Spring 2008 in 63	165 m	200 g	3	Female	Adult not breeding
Squirrel Glider	20.04.09	6th night	0006D144AO	A5	SQA5M	New	66	Blakely's Red Gum	Thurgoona West	N/A	N/A	240 g	3.5	Male	N/A
Squirrel Glider	17.04.09	3rd night	0006D15CA4	A7	SQA7F	New	65	Blakely's Red Gum	Thurgoona West	N/A	N/A	260 g	3.5	Female	Virgin
Squirrel Glider	20.04.09	6th night	000 6988813	F3	SQF3F	Recapture	Kylie's data	Blakely's Red Gum	Thurgoona East	Get Kylie's data	Get Kylie's data	225 g	3	Female	Adult not breeding
Brush tail Possum	17th-20th.04.09	3rd, 4th, 5th, 6th nights	0006D159E9	H3	BTH3M	Recapture	71	Blakely's Red Gum	Thurgoona East	Previous survey effort, same location	same trap	3500 g	N/A	Male	N/A

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Species Type	Date	Trap Day	Animal Unique I.D			New or Recapture	GPS I.D	Tree Type	Capture Location	Recapture Location	Distance from Original capture location	Weight (Animal Only)	Upper Incisor Wear	Sex	Female Reproductive Condition
			Micro-chip I.D	Tattoo Number	I.D on data sheet										
Squirrel Glider	15.04.09	1st, 3rd, 6th nights	0006E4ED5C	A9	SQA9M	New	73	White Box	Thurgoona East	75 and 76	100 m & 220 m = total 320 m	265 g	3.5	Male	N/A
Squirrel Glider	16.04.09	2nd and 4th night	0006D15F4C	A8	SQA8F	New	73	White Box	Thurgoona East	76	209 m (across off ramp)	205 g	3.5 - 4	Female	Virgin
Brush tail Possum	17.04.09	3rd night	N/A	N/A	BT	New	61	Blakely's Red Gum	Oddies Creek	61 (on 5th night)	same trap	N/A	N/A	N/A	N/A
Year 2, Spring 2009															
Squirrel Glider	30.09.09	2nd and 5th night	0006D15CA4	A7	SQA7F	Recapture	76	White Box	Thurgoona West	78 on 5th night		260	3.5	Female	carrying pouch young
Brush tail Possum	30.09.09	2nd, 4th and 5th night	0006D143A3	H5	BTH5M	Recapture	78	Red gum	Thurgoona West	79 on 4th and 5th nights		2700		Male	
Brush tail Possum	30.09.09	2nd, 4th and 6th nights	0006D14529	H9	BTH9F	Recapture	77	White Box	Thurgoona West	77 on 4th and 6th nights		665		Female	
Squirrel Glider	01.10.09	3rd and 6th night	0006D15B89	B3	SQB3M	New	80	Red gum	Thurgoona West	80 on 6th night		255	3	Male	
Squirrel Glider	02.10.09	4th night	0006E4ED5C	A9	SQA9M	Recapture	87	White Box	Thurgoona East			240	3.5	Male	

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Species Type	Date	Trap Day	Animal Unique I.D			New or Recapture	GPS I.D	Tree Type	Capture Location	Recapture Location	Distance from Original capture location	Weight (Animal Only)	Upper Incisor Wear	Sex	Female Reproductive Condition
			Micro-chip I.D	Tattoo Number	I.D on data sheet										
Brush tail Possum	02.10.09	4th night	0006D1419D	H4	BTH4F	Recapture	85	White Box	Thurgoona East					Female	
Squirrel Glider	03.10.09	5th night	6988813	F3	SQF3F	Recapture	88	White Box	Thurgoona East			250	3.5	Female	Recently bred
Squirrel Glider	03.10.09	5th night	0006D15840	2B	SQ2BF	New	89	White Box	Thurgoona East			290	2.5	Female	Recently bred
Squirrel Glider	03.10.09	5th night	0006D144AO	A5	SQA5M	Recapture	80	Red gum	Thurgoona West			265	3	Male	
Squirrel Glider	04.10.09	6th night	0006D152FB	B1	SQB1F	New	79	White Box	Thurgoona West			305	3.5	Female	carrying pouch young
Squirrel Glider	04.10.09	6th night	0006D15F4C	A8	SQA8F	Recapture	85	White Box	Thurgoona East			285	3.5	Female	carrying pouch young
Year 2, Autumn 2010															
Brush tail Possum	20.04.10	1st, 4th, 5th and 6th night	0006D143A3	H5	BTH5M	Recapture	544	White Box	Thurgoona West	549 on 4th night, 549 on 5th night, trap 9 on 6th night		2620		Male	
Squirrel Glider	20.04.10	1st and 3rd night	0006D15CA4	A7	SQA7F	Recapture	547	White Box	Thurgoona West	543 on 3rd night		245	3.5	Female	Adult not breeding

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Species Type	Date	Trap Day	Animal Unique I.D			New or Recapture	GPS I.D	Tree Type	Capture Location	Recapture Location	Distance from Original capture location	Weight (Animal Only)	Upper Incisor Wear	Sex	Female Reproductive Condition
			Micro-chip I.D	Tattoo Number	I.D on data sheet										
Squirrel Glider	20.04.10	1st, 2nd, 3rd, 4th and 5th night	0006E4ED5C	A9	SQA9M	Recapture	561	White Box	Thurgoona East	562 on 2nd night, 560 on 3rd night, 556 on 4th night, 558 on 5th night		250	2.5	Male	
Squirrel Glider	20.04.10	1st night	0006D15F4C	A8	SQA8F	Recapture	563	White Box	Thurgoona East			230	2	Female	carrying pouch young
Brush tail Possum	21.04.10	2nd, 3rd, 4th, 5th and 6th night	0006D14529	H9	BTH9F	Recapture	544	White Box	Thurgoona West	544 on 3rd, 4th, 5th and 6th nights		1700		Female	carrying pouch young
Squirrel Glider	21.04.10	2nd and 5th night	0006D15B89	B3	SQB3M	Recapture	548	White Box	Thurgoona West	548 on 5th night		260	2.5	Male	
Squirrel Glider	21.04.10	2nd and 4th night	0006D15840	2B	SQ2BF	Recapture	561	White Box	Thurgoona East	559 on 4th night		305	2.5	Female	carrying pouch young
Squirrel Glider	21.04.10	2nd night	6988813	F3	SQF3F	Recapture	563	White Box	Thurgoona East			215	3	Female	pregnant
Squirrel Glider	22.04.10	3rd and 4th night	0006D144A0	A5	SQA5M	Recapture	550	White Box	Thurgoona West	547 on 4th night		170	2	Male	
Brush tail Possum	22.04.10	3rd night	0006E4CBC7	C1	BTC1M	new		White Box	Thurgoona East			500		Male	
Brush tail Possum	23.04.10	4th night	0006D1419D	H4	BTH4F	Recapture	558	White Box	Thurgoona East					Female	