Kokerbin Nature Reserve

Fauna Survey

December 2009

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Photograph Acknowledgements:
All photos by Phil Lewis (PL) and Mike Griffiths (MG)

1. Introduction

Kokerbin Nature Reserve is located between Quairading, Bruce Rock and Kellerberrin, and is approximately six kilometres north-west of Kwolyin, 15km north-east of Yoting and 40km north-west of Bruce Rock, in the central Wheatbelt area of Western Australia. M Griffiths and P Lewis Fauna Consultants were commissioned by the Wheatbelt NRM Inc. to undertake a fauna assessment of Kokerbin Nature Reserve. The fauna assessment comprises a desktop review, site inspection, targeted fauna search and assessment of significant fauna habitats occurring in the Kokerbin Nature Reserve.

The targeted fauna search of Kokerbin Nature Reserve is field-based, and comprises point-based bird surveys, monitoring with motion-triggered camera traps and opportunistic searching for fauna, tracks and signs.

All key survey points are recorded with GPS, using the WGS84 map datum.

Point-based bird surveys are conducted in the early hours of morning and late hours of afternoon, and are designed to target a range of diurnal "bush birds", including small canopy and shrub-dwelling species as well as higher flying and soaring birds. Bird monitoring points aim to cover the diversity of vegetation and habitat types represented at Kokerbin Nature Reserve.

Camera trapping uses motion-triggered cameras that can be deployed at selected sites, recording in either photograph or video format. These cameras are a passive way of observing fauna in its natural surroundings and involve minimal disturbance to the natural vegetation and to the fauna, typically resulting in photographs or video clips of wildlife in natural, relaxed poses. Olfactory baits/attractants can be used to maximise the possibilities and duration of fauna encounters. Camera trapping has been deployed around the world in fauna research for many years, typically targeting a range of mammals and other medium to large terrestrial fauna. However it is only in relatively recent years that it has been used for fauna monitoring in Western Australia, where its

applications are still being explored. In many cases it has yielded valuable results that cannot be replicated by other survey methods, but as with any survey methodology, there are limitations, and it should always be regarded as one of many available methods for studying fauna. Camera traps cannot be expected to record small animals moving within leaf litter (such as certain skink species, eg *Lerista* spp.), beneath the soil surface (such as burrowing frogs eg *Helioporus* spp. and blind snakes, *Ramphotyphlops* spp., or partly submerged semi-aquatic frogs (eg *Crinia* spp.). Camera trapping is also generally not applicable to flying animals such as birds and bats, which may be monitored by other methods. As camera-trapping does not involve animals in the hand or capture of any kind, identifications can prove challenging at times, especially with small closely related species and/or when photos or videos show limited coverage of the animals. However there are several recognised advantages of camera trapping as a fauna survey methodology:

- Animal behaviour is often recorded (when camera traps record in video mode)
- Cameras will continue operating for many hours (and days) after the first animal has been recorded (unlike Elliott traps and cage traps that close with the first animal), so can record multiple animals in a 24 hour period. False triggers in conventional trapping typically means that the Elliott or cage traps can no longer capture other animals until re-set; false triggers have little effect in recording other animals with camera traps.
- Certain medium-sized animals like monitor lizards, snakes and echidnas that can be difficult to capture and monitor by conventional survey methods can be readily monitored with camera traps.
- Camera traps can record many species that do not respond to baits (such as is used in Elliott traps and cage traps) by being positioned in “strategic” areas such as walk-ways and access points to water (particularly in summer). Water troughs close to Kokerbin NR are a good example of this.
- Camera traps can be used for monitoring a very diverse range of fauna species and are not limited to any particular fauna type (as harp nets and Anabat data loggers as used for bats, mist nets as used for birds and bats, and funnel traps as used for quails and similar ground-dwelling birds and some small reptile and frog

species). Camera traps can be deployed opportunistically on water points, nest hollows, burrow entrances, on tree branches, natural bridges over gullies and water courses, or simply in walk-ways dictated by local topography where various animals are known to move. They can be useful in monitoring many reptile species, ground-dwelling birds, hollow-nesting birds, small, medium and large mammals, and any vertebrate species that is attracted to water.

- Some camera trap models have audio-recording capacity when in video mode, and so can record vocalisations of certain frog, bird and mammal species while in normal operation.

The Kokerbin Nature Reserve field-based fauna surveys were designed to cover a period of approximately one month in spring, and were not intended to comprehensively monitor all types of vertebrate fauna present. The point-based bird surveys, camera trapping and opportunistic fauna surveys were intended to cover as wide a range of reptile, bird, and mammal as possible, including native and non-native species. Frog species were not targeted due to the general dry conditions and lack of water courses.

2. Methods

2.1 Bird surveys

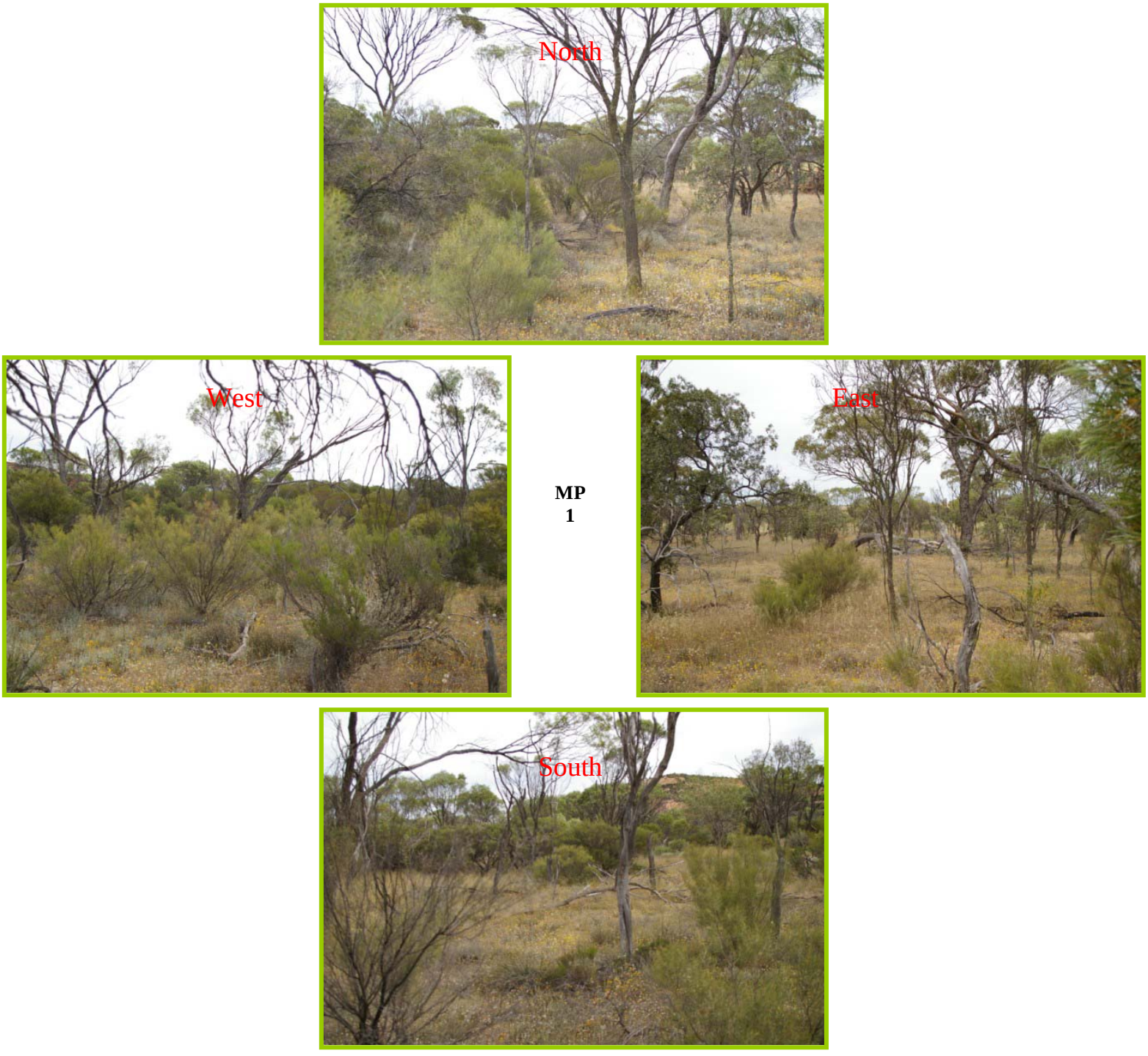
Five bird monitoring points were set up on the Badjaling Reserve using the Birds Australia Atlas of Australian Birds Small Area Search method (Birds Australia, 2009). This method of bird surveying involves establishing a central point and recording all birds reliably seen or heard within 500 metres of this point within the target vegetation type, although this search area can be reduced to suit smaller areas. The searches were carried out in the morning and afternoon when birds are most active for twenty minutes at each site. The five monitoring points were set up in different vegetation types to capture "snapshot" representative habitats of the Kokerbin Nature Reserve. These are shown in Figure 1 (below).

Figure 1: Bird Monitoring Points

M: Monitoring Point (M1=Monitoring Point 1 etc)

Bird monitoring points were chosen according to vegetation type, topography and location within Badjaling Reserve, and are illustrated in Figures 2 – 5:

Figure 2(a) – (d): Monitoring Point 1



Monitoring point 1 was set in York Gum woodlands.
31° 52’ 58.0” S 117 ° 42’ 30.8” E

Figure 3(a) – (d): Monitoring Point 2

MP 2

Monitoring point 2 was set in acacia, tamma shrublands.
31° 53’ 27.8” S 117° 42’ 32.5” E

Figure 4(a) – (d): Monitoring Point 3

MP 3

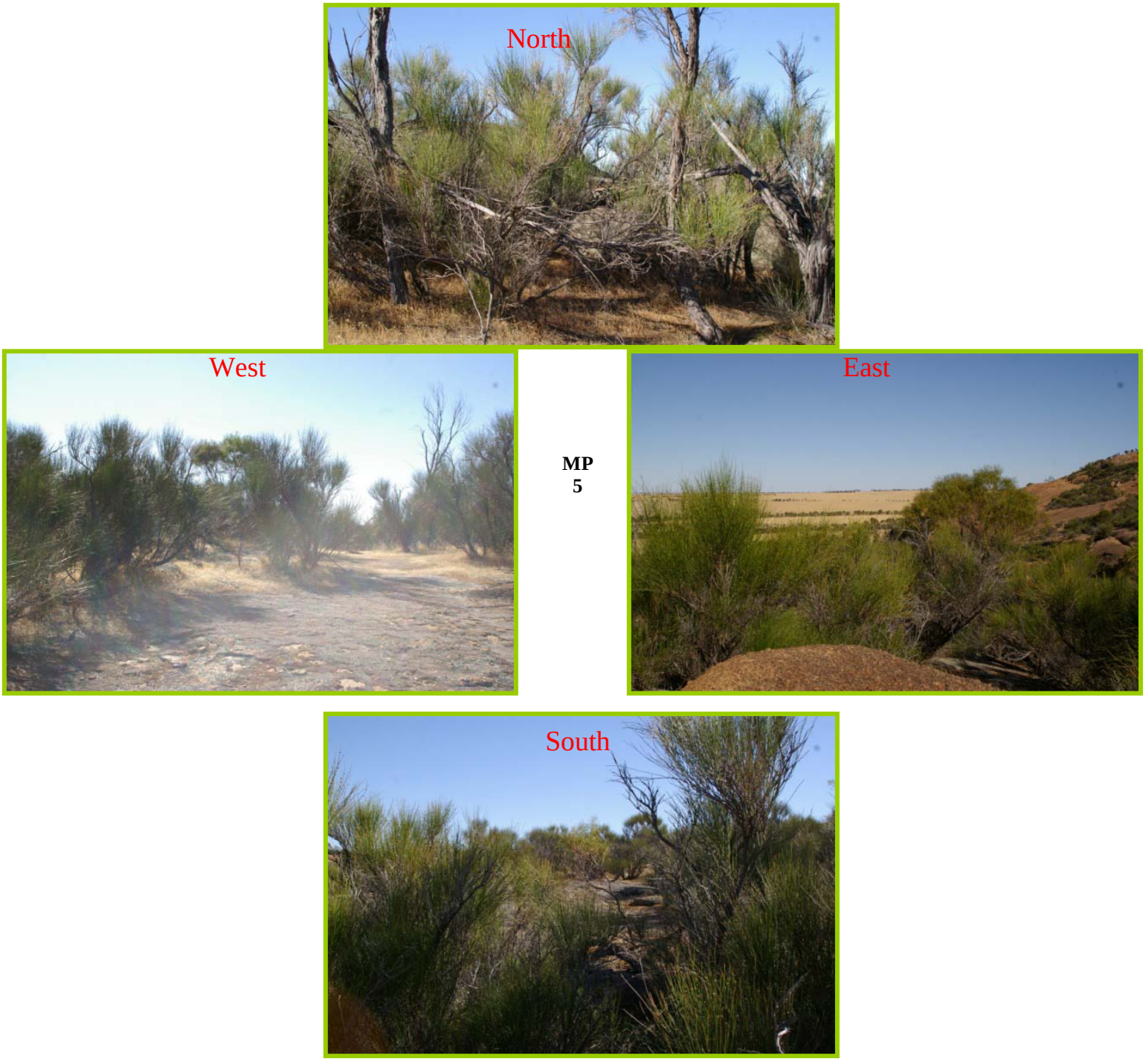
Monitoring point 3 was set in Wandoo woodlands
31° 53’ 25.6” S 117° 42’ 17.4” E

Figure 5(a) – (d): Monitoring Point 4

MP 4

Monitoring point 4 was set in Casuarina woodlands.
31° 53’ 09.2” S 117° 42’ 02.8” E

Figure 6(a) – (d): Monitoring Point 5

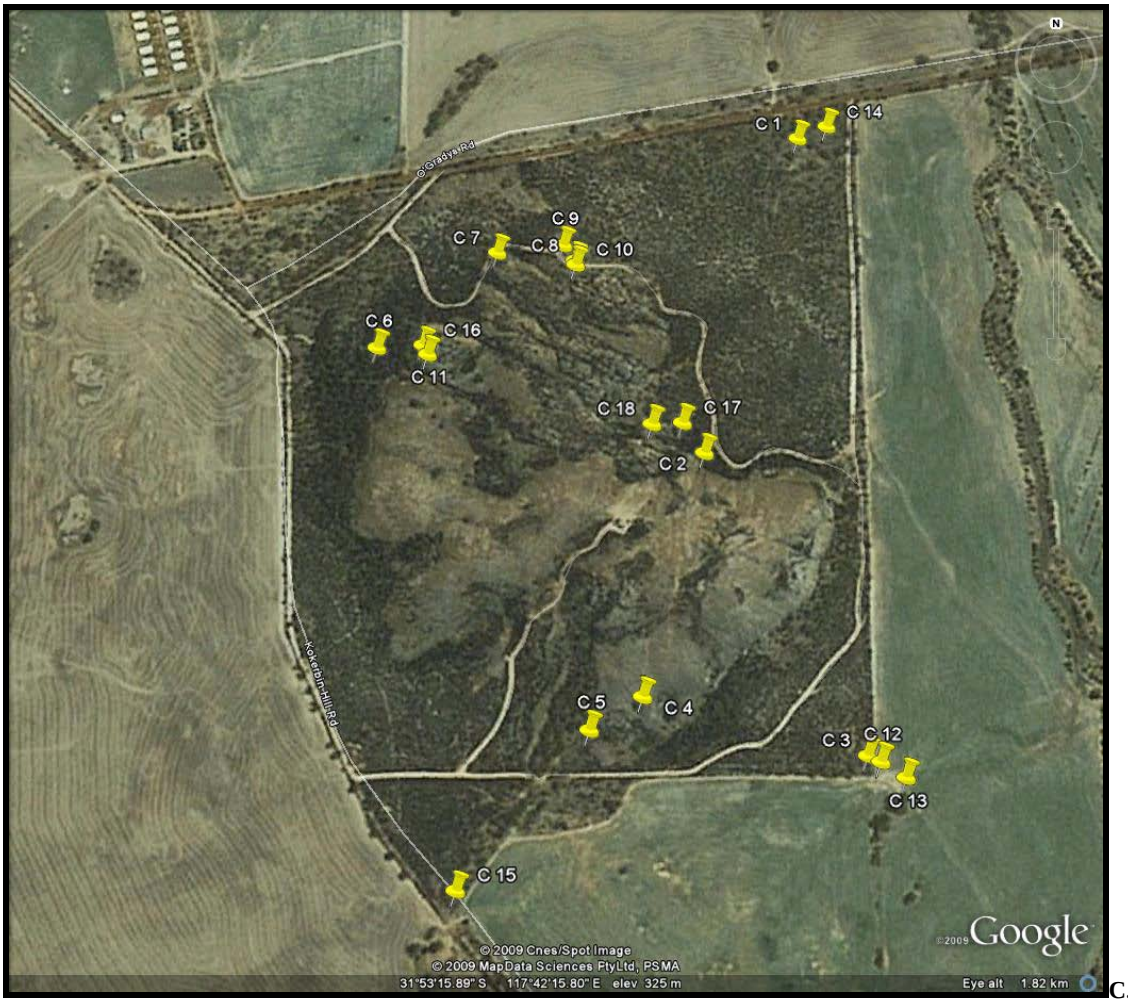


Monitoring point 5 was on the rock.
31° 53’ 09.4” S 117° 42’ 17.0” E

2.2 Camera Trap Surveys

On 19th October 2009 ten motion sensor cameras were set up, with an additional one being set up on the 14th November 2009. These cameras take photos or short videos when triggered by movement in front of the sensor. Universal bait is sometimes used to attract and stop fauna in front of the camera. This is made of sardines, peanut paste/butter and rolled oats. This mix is used by most fauna trappers as the oily smell attracts a very diverse number of different species and there is no viable seed in it that could start a weed infestation. Often cameras are set along animal pads. Many animals use the same path in their daily routine and this forms what is known as an animal pad. Fauna that does not have a set routine also use these pads as they are clear paths through the bushland. At this site two cameras were set looking over stock water troughs on a neighbouring farm and one over a small natural seep in the rock. At this time of year water is one of the best attractants for fauna. This totally passive and unobtrusive use of motion sensor cameras allows us to see and record what is moving around in the bush day and night and catch glimpses of these creatures acting naturally as they go about their daily business without disturbing them at all.

Most cameras were set to video mode but two took photos. Locations are shown in Figure 7:



C.

Figure 7: Camera Sites
(Kokerbin Nature Reserve).

Camera Models

Three different models of camera traps were used at this location.

- Bushnell Trophy Cam: This model camera can be set to take still images or varying length of video. It uses infrared LEDs to illuminate at night. Day time images are in colour and night-time images are in black and white. Six Bushnell Trophy Cams were deployed at Kokerbin NR on the 19/10/09, with one more being deployed on 14/11/09. All were set to 30 second video mode.
- Leaf River IR 5: This model camera can be set to take still images or set to varying length of video. It uses infrared LEDs to illuminate at night. Day time images are colour, with night images being black and white. This model of camera will also record sound while in video mode. Three Leaf River IR 5s were deployed on 19/10/09. All were set to 30 second video mode.
- Olympus (assembled by Archipelago Consulting): This model camera only takes photographs. It uses an incandescent white flash, and captures colour images day and night. One Olympus camera was deployed at Kokerbin NR.

Camera Site 1:

At this site the camera, a Bushnell Trophy Cam, was secured to a trunk of a York Gum directed along a horizontal section of a main branch. These sorts of locations are often used as look out perches by different fauna. Universal bait was spread around on the trunk. This camera site was monitored from 19/10/09 to 28/11/09

31° 52’ 56.7” S. 117° 42’ 31. 4” E

Camera Site 2:

At this site the camera an Olympus was secured to a rock high up in a narrow rock crevasse. Universal bait was spread around in front of the camera. This camera site was monitored from 19/10/09 to 28/11/09
31° 53’ 14.2” S. 117° 42’ 24. 6” E

Camera Site 3:

At this site the camera, a LeafRiver IR 5 was fixed to a dropper aimed at a hole in the adjoining farmer’s fence. Just through the hole were two stock troughs. At this time of year with the weather getting quite warm water is a great attractant for many different fauna. This camera site was monitored from 19/10/09 to 7/11/09
31° 53’ 29.8” S. 117° 42’ 34. 4” E

Camera Site 4:

At this site the camera, a Bushnell Trophy Cam was secured to a shrub in a densely vegetated hollow on the rock. Universal bait was spread around on the surface of the ground. This camera site was monitored from 19/10/09 to 28/11/09
31° 53’ 26.7” S. 117° 42’ 20. 7” E

Camera Site 5:

At this site the camera, a Bushnell Trophy Cam was secured to the trunk of a small tree aimed along a well worn animal pad around a rock. Universal bait was spread around on the surface of the ground. This camera site was monitored from 19/10/09 to 28/11/09
31° 53’ 28.4” S. 117° 42’ 17. 5” E

Camera Site 6:

At this site the camera a LeafRiver IR 5 was secured to a dead tree amongst some casuarinas. This area in had a thick weedy grass layer with lots of well worn animal pads through it. Universal bait was spread around on the surface of the ground. This camera site was monitored from 19/10/09 to 15/11/09
31° 53’ 08.5” S. 117° 42’ 01. 3” E

Camera Site 7:

At this site the camera, a Bushnell Trophy Cam was secured to a small broken off shrub on an animal pad that led from the rock into the surrounding bush. Universal bait was spread around on the surface of the ground. This camera site was monitored from 19/10/09 to 28/11/09
31° 53’ 08.3” S. 117° 42’ 11. 8” E

Camera Site 8:

At this site the camera, a Bushnell Trophy Cam was secured to a rock inside a fairly large rock cave. There were a lot of scats in this area. Universal bait was spread on the surface of the ground. This camera site was monitored from 19/10/09 to 25/10/09
31° 53’ 03.6” S. 117° 42’ 16. 6” E

Camera Site 9:

At this site the camera, a LeafRiver IR 5 was secured a shrub aimed into a large rock cave. There were a lot of scats on the floor of this cave. Universal bait was spread on the surface of the ground. This camera site was monitored from 19/10/09 to 28/11/09
31° 53’ 03.7” S. 117° 42’ 16. 7” E

Camera Site 10:

At this site the camera, a Bushnell Trophy Cam was secured to a rock, aimed into the same rock cave as site 8. This rock cave had a lot of scats over its floor. Universal bait was spread on the surface of the ground. This camera site was monitored from 19/10/09 to 28/11/09
31° 53’ 03.8” S. 117° 42’ 16. 7” E

Camera Site 11:

At this site the camera, a Bushnell Trophy Cam was secured to a tree, aimed along a very obvious animal pad in a relatively confined rock gully. Universal bait was spread on the surface of the ground. This camera site was monitored from 19/10/09 to 8/11/09
31° 53’ 08.9” S. 117° 42’ 07. 5” E

Camera Site 12:

At this site the camera, a Bushnell Trophy Cam was secured to a star picket, aimed over a stock trough next to the reserve on adjacent farmland. This camera was set up with permission of the landowner. As the weather gets warmer water is one of the best attractants for fauna. This camera site was monitored from 14/11/09 to 28/11/09
31° 53’ 35.1” S. 117° 42’ 35. 2” E

Camera Site 13:

At this site the camera, a Bushnell Trophy Cam was secured to a dropper, aimed over a stock trough next to the reserve on adjacent farmland. This camera was set up with permission of the landowner. As the weather gets warmer water is one of the best attractants for fauna. This camera site was monitored from 14/11/09 to 28/11/09
31° 53’ 30.9” S. 117° 42’ 36. 7” E

Camera Site 14:

At this site the camera, a Bushnell Trophy Cam was secured to a dropper, very deliberately aimed over the nest burrow of a pair of Rainbow Bee-eaters. This camera site was monitored from 8/11/09 to 28/11/09
31° 52’ 56.0” S. 117° 42’ 33. 0” E

Camera Site 15:

At this site the camera, a LeafRiver IR 5 was secured to a shrub, aimed along a well worn animal pad that lead from the reserve to an adjacent farm paddock that contained a dam in it. As the weather gets warmer water is one of the best attractants for fauna. As the dam was some distance into the paddock universal bait was spread on the surface of the ground as. This camera site was monitored from 15/10/09 to 28/11/09
31° 53’ 35.3” S. 117° 42’ 09. 1” E

Camera Site 16:

At this site the camera, a LeafRiver IR 5 was secured to a shrub, aimed over a small pool from natural seepage. As the weather gets warmer water is one of the best attractants for fauna. This camera site was monitored from 7/11/09 to 28/11/09
31° 53’ 08.4” S. 117° 42’ 07. 2” E

Camera Site 17:

At this site the camera, a Bushnell Trophy Cam was secured to a shrub, aimed along a confined natural passage way. This camera site was monitored from 19/10/09 to 28/11/09
31° 53’ 12.6” S. 117° 42’ 23. 3” E

Camera Site 18:

At this site the camera, an Olympus was secured to a rock in a small rock cave. Universal bait was spread on the floor of the cave. This camera site was monitored from 19/10/09 to 28/11/09
31° 53’ 12.7” S. 117° 42’ 21. 4” E

2.3 Opportunistic Surveys

Opportunistic surveys were conducted at Kokerbin Nature Reserve, consisting of day walks and a night walk through the Reserve. During these walks all species of fauna observed were recorded as well as track and scats that were seen and could be identified. During the bird surveys species that were observed while moving between monitoring points that were not recorded at the monitoring points were recorded as opportunistic sightings.

3. Results

Birds

42 different bird species were identified and recorded during surveys at Kokerbin NR.
A total of 35 different bird species were identified and recorded from the five monitoring points. Seven of these were only recorded from the bird monitoring points. A total of 35 different bird species were identified and recorded from opportunistic surveys. Seven of these were only recorded from opportunistic surveys. One bird species was recorded by camera trap that was not recorded anywhere else. (Mulga Parrot)

Australian Magpie *Gymnorhina tibicen:* This species was recorded a total of six times. It was only recorded at monitoring points and these recordings were spread fairly evenly around the site.
Australian Raven *Corvus coronoides:* This species was recorded a total of 25 times, 24 times during bird surveys and once during opportunistic surveys. It was recorded across all monitoring points.
Australian Ringneck *Barnardius zonarius:* This species was recorded a total of 36 times, 34 times during bird surveys and twice during opportunistic surveys. It was recorded across all monitoring points, with more sightings being recorded in the Wandoo woodland area of monitoring point 3. This is probably due to these mature Wandoo trees offering good nesting sites. An active nesting hollow was recorded at this monitoring point.
Black-faced Cuckoo-shrike *Coracina novaehollandiae:* This species was recorded a total of 11 times, ten times during bird surveys and once during opportunistic surveys. These recordings were fairly well spread over the entire site. On one occasion a small flock of about 10 birds was recorded.
Black-faced Woodswallow *Artamus cinereus:* This species was recorded a total of five times, once during bird surveys and four times during opportunistic surveys. These recordings were made in the north east and south west corners of the site.
Brown Falcon *Falco berigora:* This species was recorded twice. Both times during opportunistic surveys, one of these was on adjacent land.
Brown Goshawk *Accipiter fasciatus*: This species was recorded three times during bird surveys. It was recorded in the north east of the site.
Brown-headed Honeyeater *Melithreptus brevirostris*: This species was recorded 15 times. It was spread fairly evenly across all monitoring points and was only recorded during bird surveys.
Brown Honeyeater *Lichmera indistincta:* This species was recorded a total of 31 times, 30 times during bird surveys and once on an opportunistic survey It was spread fairly evenly across all monitoring points.
Budgerigar *Melosittacus undulatus:* This species was recorded a total of six times, once during bird surveys and five times during opportunistic survey. Apart from the one sighting in the York gums in the north east most opportunistic sightings were in the south west area of the site. This area had some mature Wandoo's that provided good nesting habitat. As the birds were seen in ones and two it is suspected they may have been breeding here.

Chestnut-rumped Thornbill *Acanthiza uropygialis:* This species was recorded a total of 18 times, 15 times during bird surveys and three times during opportunistic surveys. It was recorded mostly amongst the shrublands of the south east corner of this site. A recording of juvenile birds was made; this indicates this species has bread hear.
Collared Sparrowhawk *Accipiter cirrhocephalus*: This species was recorded twice. One recording during bird surveys and one recording during opportunistic surveys. Both sightings were made just to the north of the rock.
Common Bronzewing *Phaps chalcoptera:* This species was recorded nine times, six times during bird surveys and three times during opportunistic surveys. It was recorded mostly in the Casuarina woodland of monitoring point 4.
Crested Pigeon *Ocyphaps lophotes:* This species was recorded a total of four times, three times during bird surveys and once during opportunistic surveys. It was recorded mostly in the York gum woodlands in the north east of this site.
Galah *Eolophus roseicapillus:* This species was recorded a total of 11 times, 10 times during bird surveys and once during opportunistic surveys. It was recorded in most locations except the shrublands in the south east of the site.
Grey Butcherbird *Cracticus torquatus:* This species was recorded a total of 29 times, 25 times during bird surveys and four times during opportunistic surveys. It was recorded at all monitoring points but was recorded mostly in the Wandoo woodlands where an active nest with chicks was recorded and in the Casuarina woodlands of monitoring point 4.
Grey Shrike-thrush *Colluricincla harmonica:* This species was recorded a total of 11 times, nine times during bird surveys and twice during opportunistic surveys. It was recorded across most of the site.
Horsfield's Bronze-Cuckoo *Chrysococcyx basalis:* This species was recorded a total of six times, five times during bird surveys and once during opportunistic surveys. It was recorded fairly evenly across the site.
Little Eagle *Hieraaetus morphnoides:* This species was recorded two times, both times during opportunistic surveys to the south of the rock.
Magpie-lark *Grallina cyanoleuca:* This species was recorded two times, once in the York gum woodlands and once in the shrublands in the south east where it had probably been to the stock trough in the adjacent paddock.
Nankeen Kestrel *Falco cenchroides:* This species was recorded twice; both sightings were from monitoring point 2. Several birds were seen swooping around above the rock.
Pallid Cuckoo *Cuculus pallidus*: This species was recorded twice. Both recordings were made on the 19/10, the day we were setting up our cameras. It was not recorded again.
Pied Butcherbird *Cracticus nigrogularis:* This species was recorded a total of six times, five times during bird surveys and once on an opportunistic survey. It was fairly evenly spread around the site.
Rainbow Bee-eater *Merops ornatus:* This species was recorded a total of 17 times, 16 times during bird surveys and once during an opportunistic survey. It was mainly recorded in the York gum woodland where an active nesting burrow was recorded and over the shrublands in the south east where it was suspected a pair of birds were nesting amongst the York gums in the adjacent paddock.
Red Wattlebird *Anthochaera carunculata:* This species was recorded once; it was heard calling from an adjacent paddock.

Red-capped Robin *Petroica goodenovi:* This species was recorded a total of 16 times, 15 times during bird surveys and once during opportunistic surveys. It was recorded mainly in the York gum woodland in the north east and the shrubland in the south east. It was recorded as breeding with a fledged young being recorded.
Richards Pipit: This species was recorded a total of three times. All recordings were made during opportunistic surveys on adjacent farmland.
Rufous Whistler *Pachycephala rufiventris:* This species was recorded a total of 30 times, 28 times during bird surveys and twice during opportunistic surveys. It was recorded fairly evenly across this site.
Singing Honeyeater *Lichenostomus virescens:* This species was recorded a total of 48 times, 47 times during bird surveys and once on an opportunistic survey. It was recorded fairly evenly across the entire site. It was recorded as breeding with an active nest and an adult bird carrying food being recorded.
Southern Boobook *Ninox novaeseelandiae*: This species was recorded twice during opportunistic surveys. Both times on the east side of the rock.
Spiny-cheeked Honeyeater *Acanthagenys rufogularis:* This species was recorded a total of five times, Four times during bird surveys and once during an opportunistic survey. Although it was not recorded very often it was spread across the site.
Striated Pardalote *Pardalotus striatus:* This species was recorded a total of 21 times, 19 times during bird surveys and twice during opportunistic surveys. It was fairly wide spread but most recordings were in the Wandoo woodlands.
Tree Martin *Hirundo nigricans:* This species was recorded a total of 26 times, 24 times during bird surveys and twice during opportunistic surveys. It was recorded at fairly evenly across all monitoring points.
Weebill *Smicronis brevirostris:* This species was recorded a total of 28 times, 26 times during bird surveys and twice during opportunistic surveys. It was recorded across the whole site, with most records in the Wandoo woodland.
Western Corella *Cacatua pastinator:* This species was recorded five times during opportunistic surveys. It was recorded on adjacent land.
White-browed Babbler *Pomatostomus superciliosus:* This species was recorded a total of seven times, three times during bird surveys and four times during opportunistic surveys. It was spread over the site with most recordings in denser vegetation.
White-eared Honeyeater *Lichenostomus leucotis*: This species was recorded twice, once feeding on the Rock Kunzier at monitoring point 5 and once on an opportunistic survey.
White-winged Triller *Lalage sueurii:* This species was recorded twice times, once in the York gum woodland and once during an opportunistic survey
Willie Wagtail *Rhipidura leucophrys:* This species was recorded twice, once on the rock at monitoring point 5 and once during opportunistic surveys.
Yellow-rumped Thornbill *Acanthiza chrysorrhoa:* This species was recorded a total of 25 times, 22 times during bird surveys and three times during opportunistic surveys. It was fairly widely recorded with most recordings from the shrublands in the south east.
Yellow-throated Miner *Manorina flavigula:* This species was recorded three times, with all recordings coming from the western side of this site.
Zebra Finch *Poephila guttata*: This species was recorded twice. Both times in the shrubland area in the south east of this site.

Birds Recorded:

From our bird monitoring points, random walks and camera locations 43 different bird species were observed and recorded.

Residents:

Many Western Australian bird species fall into this category. Under normal conditions they never move very far from their home range.

Migratory:

These are birds that breed here in our south-west and then move away, mainly to our north, in late summer-autumn, and then return in late winter-spring. Eleven Migratory bird species were recorded at Kokerbin Rock Nature Reserve. They were Brown Goshawk, Collared Sparrowhawk, Nankeen Kestrel, Pallid Cuckoo, Southern Boobook, Horsfield's Bronze Cuckoo, Rainbow Bee-eater, Tree Martin, Black-faced Cuckoo Shrike, Magpie Lark, and Striated Pardalote. The fact that these birds were recorded at Kokerbin at this time of year is an indication that they are breeding here or at least nearby.

Partial migration:

This is when only certain individuals move away from their breeding areas (generally first year birds). These movements are seasonally regulated and the species involved are termed 'partial migrants'. This term is used because even though some birds have migrated to other areas, most and sometimes all of their breeding areas are still occupied all year Five partial migrant bird species were recorded at Kokerbin Rock Nature Reserve. They are Brown Falcon, Richards Pipit, Red-capped Robin, Willy wagtail and Red Wattlebird.

Nomadism:

This is where individuals of a species regularly move away from their breeding range. This movement is random in the sense of direction as these birds are often following local climatic conditions that have produced good conditions else where. Three nomadic bird species were recorded at Kokerbin Rock Nature Reserve. They are Budgerigar, White-winged Triller and Zebra Finch.

There are other forms of migrants in Western Australia; they however are of species that would be very unlikely to ever be seen at this site so we will not go into detail on them.

Non-Passerines

Order **Falconiformes**

Family **Accipitridae** (hawks, eagles, kites, harriers etc.)

Brown Goshawk *Accipiter fasiatus*:
This species inhabits well wooded country. They migratory moving north in autumn and south in spring. They are rare to moderately common and are usually singular and sometimes in twos. They feed on small birds, lizards and insects.

Photo: PL

Collared Sparrowhawk *Accipiter cirrhocephalus*:
This species inhabits well wooded country. They are partly migratory and are rare to moderately common. They feed mainly on small birds.

Little Eagle *Aquila morphnoides*:
This species inhabits light to moderately dense wooded country. They are scarce to moderately common and are usually alone, sometimes in twos. They feed mainly on rabbits, lizards and other birds that they have killed but will feed on carrion.

Photo: Kokerbin PL

Family **Falconidae** (falcons)

Photo: Kokerbin PL

Brown Falcon *Falco berigora*:
This species inhabits lightly wooded country. It is partly migratory, is generally common and are usually alone or occasionally in twos. It has greatly declined in farmlands since the middle of the centaury. They feed on insects, reptiles, birds and small mammals and are known to feed on carrion.

Nankeen Kestrel *Falco cenchroides*:
This species inhabits treeless or sparsely wooded country. It is migratory and uncommon to very common and are usually alone or occasionally in twos. They feed mainly on insects, small reptiles and house mice.

Order **Columbiformes**
Family **Columbidae** (pigeons, doves)

Common Bronzewing *Phaps chalcoptera*:
This species inhabits light to moderately wooded country, near water. It is moderately common to common and is usually in ones or twos. It feeds mostly on the seeds of leguminous plant seeds. At this site a nest containing two eggs was recorded and one week later the nest contained two chicks.

Photo: Kokerbin PL

Photo: Kokerbin PL

Crested Pigeon *Ocyphaps lophotes*:
This species inhabits lightly wooded country. It is moderately common to very common. This species was originally confined to the arid zone but has flourished with agriculture. It feeds on seeds and leaves, especially of introduced pasture plants and weeds, it also eats some insects. At this site two nests where recorded, both containing two eggs.

Order **Psittaciformes**
Family **Psittacidae** (cockatoos, parrots)

Galah *Cacatua roseicapilla*:
This species is very adaptable and as long as it has drinkable water and large trees in witch to roost and nest it will be there. It feeds mostly on seeds of a wide variety of plants but will also eat the fruits, buds and even the galls on many trees and shrubs. This is another bird species that has thrived with the extra water and grain seeds available since our farmlands have been cleared.

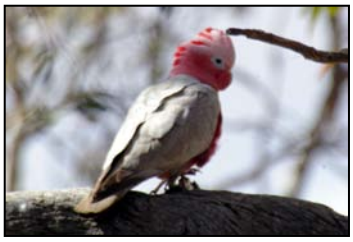


Photo: Kokerbin PL

Photo: Kokerbin PL

Western Corella *Cacatua pastinator*:
This species inhabits lightly wooded country near drinkable water and tall trees. At present it is locally common in farmlands and is usually in small flocks. It feeds on corms, particularly those of Guilford grass, and grain.

Photo: Kokerbin PL

Australian Ringneck (locally known as Twentyeight Parrot) *Platycercus zonarius*:
This species inhabits lightly to moderately wooded country. It is scarce to very common and seen in ones, twos or small flocks. It feeds on grains, fruit and a wide variety of buds and seeds of native and introduced plants.

Mulga Parrot *Platycercus varius*:
This species inhabits lightly wooded country near water. It is scarce to common and usually in pairs or small family groups. It feeds on seeds. This is another species that has benefited from agriculture and has moved into the Wheatbelt the first recorded sighting at Meckering was in 1930 and in Quairading soon after.

Photo: PL

Budgerigar *Melopsittacus undulatus*:
This species inhabits lightly wooded country with seeding grasses, within reach of water and nesting trees. It is highly nomadic; its abundance is extremely variable, depending on seasonal conditions. It feeds on seeds.

Cuculiformes

Family **Cuculidae** (cuckoos)

Photo: PL

Pallid Cuckoo *Cuculus pallidus*:
This species inhabits lightly wooded country. It is migratory and is scarce to common. It is usually in ones and occasionally twos. It is a true cuckoo and parasites the nests of other birds. The Pallid Cuckoo mainly parasites birds that build open nests. Bird species it is known to parasite that have been recorded hear are, Brown Honeyeater, Singing Honeyeater, Brown-headed honeyeater, Yellow-throated Miner, Spiny-cheeked Honeyeater, Red Wattlebird, Red-capped Robin, Rufous Whistler, Grey Shrike-thrush, Black-faced Woodswallow, Willie Wagtail, Magpie Lark, White-winged Triller and Richard's Pipit.

Horsfield's Bronze Cuckoo *Chrysococcyx basalis*:
This species inhabits most kinds of shrublands and woodlands. In most of the state it is a breeding visitor and passage migrant and is scarce to common. It is usually a singular bird and rarely seen in twos. It feeds on insects and caterpillars. It is a true cuckoo and parasites other birds nests. Laying its egg in the nest of another bird and leaving the nest owners to incubate and rear its chick. The Horsfield's Bronze Cuckoo, mainly parasites birds that build closed nests. Bird species they are known to parasite and that have been recorded at this site are, closed nest builders Weebill and Yellow-rumped Thornbill and open nest builders Red-capped Robin, Brown Honeyeater, Willy Wagtail. I have also had personal observations of an adult Richards Pipit feeding a young Horsfield's Bronze Cuckoo at Korrelocking, so this would show they will also parasite ground nesting birds. On the day this bird was observed

Photo: PL

it was often on the ground or very close to it, it was not feeding but appeared as if it was looking for the nests of other birds. There was a family of Fairy-wrens that were not very pleased with the presence of this little cuckoo.

Order **Strigiformes**

Family **Strigidae** (Owls)

Southern Boobook *Ninox novaeseelandiaes:*
This species inhabits well wooded country. It is scarce to common and feeds mainly on dwelling insects, lizards and small mammals.

Order **Coraciiformes**

Family **Meropidae** (bee-eaters)

Photo: Kokerbin PL

Rainbow Bee-eater *Merops ornatus*:
This species inhabits lightly wooded, preferably sandy country near water. It is migratory to our Wheatbelt, coming to nest before returning to the Gascoyne and even Indonesia. It is scarce to very common and is seen in small flocks. It feeds on insects, mainly bees and flies. This species digs a hole in the ground to nest. On 27/09/09 one bird was heard. This would have been one of the first birds arriving for the breeding season.

Photo: Kokerbin PL

Passerines

Order **Passeriformes**

Family **Pardalotidae** (pardalotes)

Striated Pardalote *Pardalotus striatus*:
This species inhabits open woodlands. It is common and usually in ones and twos. They feed mainly on insects.

Family **Acanthizidae** (scrubwrens, gerygones, thornbills, whitefaces etc.)

Weebill *Smicrornis brevirostris*:
This species inhabits mainly the canopies of open eucalyptus forests and are locally common to very common. They are usually seen in pairs or small flocks. They feed mainly on insects.

Photo: PL

Chestnut-rumped Thornbill *Acanthiza uropygialis:*
This species inhabits most types of thickets, scrubs and tall heathlands. Across the state they are generally common to very common and are usually in pairs or small parties. They feed on insects.


Photo: Kokerbin PL

Yellow-rumped Thornbill *Acanthiza chrysorrhoa*:
This species inhabits lightly wooded country with low open ground cover. It is scarce to very common and is usually in ones, twos and small flocks. It feeds on insects. At this site several recordings of adult birds carrying food and feeding fledged young were made. This indicates that this species is breeding here or at least close to this site.

Family **Meliphagidae** (honeyeaters, chats)


Photo: Kokerbin PL

Brown Honeyeater *Lichmera indistincta*:
This species inhabits most wooded habitats and is attracted to flowering trees, shrubs and herbs. It is very common and seen in ones, twos or small flocks. It feeds on nectar and insects. At this site two nests both containing two eggs were found and latter one of these nests contained two chicks. Fledglings were also recorded.


Photo: Kokerbin PL

Singing Honeyeater *Lichenostomus virescens*:
This species is found in most shrublands. It is wide spread and very common. It is usually seen in ones or twos and feeds mainly on insects, nectar, fruit and seeds. A Singing Honeyeaters nest was found with two eggs in it.


Photo: Kokerbin PL


Photo: Kokerbin PL

White-eared Honeyeater *Lichenostomus leucotis*:
This species inhabits most types of woodland, scrubs and thickets. It is somewhat nomadic, is scarce to uncommon and usually in ones, twos or small parties. It feeds mainly on nectar, fruits and insects.

Brown-headed Honeyeater *Melithreptus brevirostris*:
This species inhabits mainly eucalyptus scrubs and woodlands; it is nomadic being attracted to flowering trees and shrubs. It is uncommon to common and usually in small flocks. It feeds on nectar and arthropods.

Yellow-throated Miner *Manorina flavigula*:
This species is another very adaptable one and seems to be at home in most vegetations as well as towns. It is very common and has expanded its range with agriculture. It is seen in ones, twos and small flocks. It feeds mainly on insects, nectar and fruit.

Spiny-cheeked Honeyeater *Acanthagenys rufogularis*:
This species inhabits most types of scrub, tall shrublands and woodlands. It is somewhat nomadic and is scarce to common. It is usually seen in ones and twos. It feeds on nectar, seeds, fruit and insects. A Spiny-cheeked Honeyeater was observed carrying food which is an indication it was probably feeding young somewhere nearby.

Photo: PL

Red Wattlebird *Anthochaera carunculata*:
This species inhabits mainly eucalyptus forests, woodlands and scrubs including towns. It is partly migratory, scarce to common and usually seen in ones and twos. It feeds mainly on nectar and insects. This species is often seen picking the spiders out of the eaves and under verandas.

Family **Petroicidae** (robins etc)

Red-capped Robin *Petroica goodenovii*:
This species inhabits mainly thickets, scrubs and woodlands. They are generally resident with younger birds being partial migrants and are usually seen singularly or commonly in pairs. They feed on insects. At this site young fledglings were recorded being fed by there parents.

Photo: Kokerbin PL

Photo: Kokerbin PL

Photo: PL

Family **Pomatostomidae** (Australian babblers)

White-browed Babbler *Pomatostomus superciliosus*:
This species inhabits thickets and scrub. They are uncommon to common and usually seen in pairs or family parties. They feed mainly on insects. There were many old babbler nests in the area.

Family **Pachycephalidae** (shrike-tits, whistlers, shrike-thrushes)

Photo: Kokerbin PL

Rufous Whistler *Pachycephala rufiventris*:
This species inhabits most woodland types. They bare a common resident and usually seen in ones sometimes twos. They feed mainly on insects.

Grey Shrike-thrush *Colluricincla harmonica*:
This species inhabits most types of thickets, scrubs, woodlands and forests. They are generally common or moderately common and are solitary or commonly in pairs. They feed mainly on insects.

Family **Dicruridae** (flycatchers, fantails, magpie-larks, drongos)

Photo: PL

Willie Wagtail *Rhipidura leucophrys:*
This species inhabits most of the state. They are sedentary and migratory. Breeding birds are uncommon to common. They are usually singular and sometimes in small parties. They feed mainly on insects.

Magpie-lark *Grallina cyanoleuca:*
This species inhabits the greater part of the state. They are a resident and are scarce to common and usually in ones or twos. They feed mainly on insects but also on seeds and vegetable matter.

Family **Campephagidae** (cuckooshrikes, cicadabirds, trillers and minivets)
Black-faced Cuckoo-shrikes *Coracina novaehollandiae:*
This species inhabits the greater part of the state, mostly in eucalypt forests, woodlands and scrubs. They are mainly resident and uncommon to common. They are usually in ones or twos and feed mainly on insects.

Photo: PL

White-winged Triller *Lalage tricolor:*
This species inhabits most of the state in lightly wooded areas. They are irregular migrants to the Wheatbelt coming down from the north to breed before returning again. They feed mainly on insects.

Family **Artamidae** (woodswallows)

Photo: PL

Black-faced Woodswallow *Artamus cinereus:*
This species inhabits the greater part of the state. They are resident and partial migrants. In the south-west this species has greatly increased its range and numbers since European settlement. It feeds mainly on insects, sometimes small skinks and nectar.

Family **Cracticidae** (Australian Magpie, butcherbirds and currawongs)

Grey Butcherbird *Cracticus torquatus:*
This species inhabits mainly thickets and tall shrublands, including understorey of open forests, and woodlands. They are uncommon to moderately common and mainly in ones and twos. They feed on insects, small lizards, small birds as well as some fruits and seeds.

Photo: Kokerbin PL

Photo: Kokerbin PL

Pied Butcherbird *Cracticus nigrogularis:*
This species mainly inhabits lightly wooded country. This is another species that has increased its range since European settlement. They are usually in ones or twos and feed on insects, lizards, small snakes, small birds and some plant material. These birds were observed nesting high up in one of the York gums at this site.

Camera Trap Photo: PL

Australian Magpie *Cracticus tibicen:*
This species mainly inhabits lightly wooded country. They are scarce to common and usually in pairs or small parties. They feed on insects, earthworms, centipedes, scorpions, spiders, frogs, lizards, mice, as well as grains.

Family **Corvidae** (crows and ravens)
Australian Raven *Corvus coronoides:*
This species inhabits a wide range of habitats; it is uncommon to very common. They are generally scavengers and opportunists feeding on insects, carrion, small lizards, small birds, eggs and nestlings.

Family **Hirundinidae** (swallows)
Tree Martin *Hirundo nigricans:*
This species mainly inhabits wooded country. They are a migrant and are common to very common in the Wheatbelt. They are usually in pairs or small flocks. They feed on insects.

Family **Estrididae** (grass-finches)

Zebra Finch *Taeniopygia guttata*:
This species inhabits open or lightly wooded country. In the central wheatbelt it is rare to uncommon and usually in pairs or small flocks. They feed mainly on grass seeds and sometimes small insects.

Family **Motacillidae** (pipits, longclaws and wagtails)

Photo: Kokerbin PL

Richards Pipit *Anthus australis*:
This species inhabits bare or sparsely vegetated ground. It is rare to very common and usually in ones or twos. It feeds mainly on insects.

Mammals
Native:

Western Grey Kangaroo *Macropus fuliginosus:*
This species is the most common macropod in our Wheatbelt. It has adapted well to European settlement. Due to the increase of watering points across our farmlands and grain being freely available it is believed there are more kangaroos in Australia now than when it was first settled by Europeans.

Camera Trap Photo: Kokerbin PL

Euro *Macropus robustus*:
This species is widespread and common over much of Australia inhabiting rocky areas.

Black-flanked Rock Wallaby *Petrogale lateralis*:
This species is in widely scattered populations from Central Australia to Western Australia. It has declined drastically due to predation by foxes and cats. It inhabits rocky areas.

Camera Trap Photo: Kokerbin PL

Photo: Kokerbin PL

Short-beaked Echidna *Tachyglossus aculeatus*:
This species is found throughout Australia and is sparse to common.

Feral:

Black Rat *Rattus rattus*:
This is an introduced species that is widely spread. It can be locally common.

Domestic Dog *Canis familiaris*:
Dogs are widespread across Australia and are well known to hybridise with Dingoes in many areas. They impact heavily on native fauna.

Red Fox *Vulpes vulpes:*
This species was introduced in the 1960's and is now wide spread and common. They are opportunistic omnivores eating nearly anything they stumble upon, they are however predominantly carnivores killing any live prey they can.

Camera Trap Photo: Kokerbin PL

House Cat *Felis catus:*
This species was introduced with the first ships to reach Australia's shores. It is extremely adaptable and is now found all over Australia, including many of our islands. It is a serious predator on our native fauna.

House Mouse *Mus musculus:* This species was introduced. It is wide spread and inhabits all country; it is one of the most common and widespread species of any mammal in Australia today. Its numbers fluctuate with enormously with climate and food

European Rabbit *Oryctolagus cuniculus:*
This species was also introduced and it now covers most of Australia. It thrives in sandy areas such as this with burrowing being easy and a plentiful supply of grasses and young trees and shrubs trying to grow.

Reptiles

Black-headed Monitor *Varanus tristis*:
This species inhabits woodlands and Rock outcrops and are moderately common.

Camera Trap Photo: Kokerbin PL

Photo: Kokerbin PL

Bobtail *Tiliqua rugosa:*
This species is common across most of Australia and inhabits most types of country.

Bynoe's Prickly Gecko *Heteronotia bynoei*:
This species ihabits most habitats. It is very common and found over much of Australia.

Photo: Kokerbin MG

Gould's Monitor *Varanus gouldii*:
This species inhabits most habitats and is moderately common.

Photo: Kokerbin PL

Ornate Rock Dragon *Ctenophorus ornatus*:
This species inhabits rock and is seldom found away from this habitat.

Western Bearded Dragon *Pogona minor:*
This species inhabits a wide variety of habitats. At this site a juvenile was recorded

Frogs

Spotted Burrowing Frog. *Heleioporus albopunctatus*:
This species inhabits clay and sandy soils and is scarce to common in its range.

Photo: Kokerbin MG

4. Appendices

Appendix 1: Bird species recorded during bird surveys

		MP 1	MP 2	MP 3	MP 4	MP 5	**Total**
Australian Magpie	*Gymnorhina tibicen*	1	1	1	2	1	**6**
Australian Raven	*Corvus coronoides*	6	6	6	2	4	**24**
Australian Ringneck	*Barnardius zonarius*	6	7	9	7	5	**34**
Black-faced Cuckoo-shrike	*Coracina novaehollandiae*	1	3	1	3	2	**10**
Black-faced Woodswallow	*Artamus cinereus*		1				**1**
Brown Goshawk	*Accipiter fasiatus*	1				2	**3**
Brown-headed Honeyeater	*Melithreptus brevirostris*	3	2	1	3	4	**15**
Brown Honeyeater	*Lichmera indistincta*	7	8	8	4	3	**30**
Budgerigar	*Melosittacus undulatus*	1					**1**
Chestnut-rumped Thornbill	*Acanthiza uropygialis*	4	11				**15**
Collared Sparrowhawk	*Accipiter cirrhocephalus*					1	**1**
Common Bronzewing	*Phaps chalcoptera*		1		3	2	**6**
Crested Pigeon	*Ocyphaps lophotes*	2			1		**3**
Galah	*Eolophus roseicapillus*	2		4	3	1	**10**
Grey Butcherbird	*Cracticus torquatus*	7	1	8	6	3	**25**
Grey Shrike-thrush	*Colluricincla harmonica*	1	3	1	1	3	**9**
Horsfield's Bronze-Cuckoo	*Chrysococcyx basalis*	1	1		1	2	**5**
Magpie-lark	*Grallina cyanoleuca*	1	1				**2**
Nankeen Kestrel	*Falco cenchroides*		2				**2**
Pied Butcherbird	*Cracticus nigrogularis*	1	1		1	2	**5**
Rainbow Bee-eater	*Merops ornatus*	8	5			3	**16**
Red-capped Robin	*Petroica goodenovi*	7	5	2		1	**15**
Rufous Whistler	*Pachycephala rufiventris*	7	8	2	5	6	**28**
Singing Honeyeater	*Lichenostomus virescens*	10	10	7	9	11	**47**
Spiny-cheeked Honeyeater	*Acanthagenys rufogularis*	1	1		2		**4**
Striated Pardalote	*Pardalotus striatus*	3	5	10	1		**19**
Tree Martin	*Hirundo nigricans*	4	5	7	6	2	**24**
Weebill	*Smicronis brevirostris*	8	5	10	3		**26**
White-browed Babbler	*Pomatostomus superciliosus*		1	1		1	**3**
White-eared Honeyeater	*Lichenostomus leucotis*					1	**1**
White-winged Triller	*Lalage sueurii*	1					**1**
Willie Wagtail	*Rhipidura leucophrys*					1	**1**
Yellow-rumped Thornbill	*Acanthiza chrysorrhoa*	7	10	4	1		**22**
Yellow-throated Miner	*Manorina flavigula*			1	2		**3**
Zebra Finch	*Taeniopygia guttata*		2				**2**

MP – Monitoring Point

Appendix 2: Bird species recorded during opportunistic surveys

		OS	AD	NS	**Total**
Australian Raven	*Corvus coronoides*	1			**1**
Australian Ringneck	*Barnardius zonarius*	2			**2**
Black-faced Cuckoo-shrike	*Coracina novaehollandiae*	1			**1**
Black-faced Woodswallow	*Artamus cinereus*	4			**4**
Brown Falcon	*Falco berigora*	1	1		**2**
Brown Honeyeater	*Lichmera indistincta*	1			**1**
Budgerigar	*Melosittacus undulatus*	5			**5**
Chestnut-rumped Thornbill	*Acanthiza uropygialis*	3			**3**
Collared Sparrowhawk	*Accipiter cirrhocephalus*	1			**1**
Common Bronzewing	*Phaps chalcoptera*	3			**3**
Crested Pigeon	*Ocyphaps lophotes*	1			**1**
Galah	*Eolophus roseicapillus*	1			**1**
Grey Butcherbird	*Cracticus torquatus*	4			**4**
Grey Shrike-thrush	*Colluricincla harmonica*	2			**2**
Horsfield's Bronze-Cuckoo	*Chrysococcyx basalis*	1			**1**
Little Eagle	*Aquila morphnoides*	2			**2**
Pallid Cuckoo	*Cuculus pallidus*	2			**2**
Pied Butcherbird	*Cracticus nigrogularis*	1			**1**
Rainbow Bee-eater	*Merops ornatus*	2			**2**
Red-capped Robin	*Petroica goodenovi*	1			**1**
Red Wattlebird	*Anthochaera carunculata*		1		**1**
Richards Pipit	*Anthus novaeseelandiae*		3		**3**
Rufous Whistler	*Pachycephala rufiventris*	2			**2**
Singing Honeyeater	*Lichenostomus virescens*	1			**1**
Southern Boobook	*Ninox novaeseelandiae*	2			**2**
Spiny-cheeked Honeyeater	*Acanthagenys rufogularis*	1			**1**
Striated Pardalote	*Pardalotus striatus*	2			**2**
Tree Martin	*Hirundo nigricans*	2			**2**
Weebill	*Smicronis brevirostris*	2			**2**
Western Corella	*Cacatua pastinator*		5		**5**
White-browed Babbler	*Pomatostomus superciliosus*	4			**4**
White-eared Honeyeater	*Lichenostomus leucotis*	1			**1**
White-winged Triller	*Lalage sueurii*	1			**1**
Willie Wagtail	*Rhipidura leucophrys*	1			**1**
Yellow-rumped Thornbill	*Acanthiza chrysorrhoa*	3			**3**

OS – Opportunistic sightings. AD – Sightings made on adjacent land. NS - Night sightings

Appendix 3: Reptile and frog species recorded during opportunistic surveys

Bobtail	*Tiliqua rugosa*	seen	1
Broad-banded Sandswimmer	*Eremiascincus richardsonii*	seen	1
Burton's Legless Lizard	*Lialis burtonis*	seen	3
Bynoes Gecko	*Heteronotia bynoei*	seen	1
Ornate Rock Dragon	*Cteophorus ornatus*	seen	many
Spotted Burrowing Frog	*Heleioporus albopunctatus*	seen	1

Appendix 4: Mammal species recorded during opportunistic surveys

Black-flanked Rock Wallaby	*Petrogale lateralis*	seen scats	1 many
Dog	*Canis lupus*	seen	2
Euro	*Macropus robustus*	seen	6
European Rabbit	*Oryctolagus cuniculus*	seen/diggings/tracks/scats	many
Red Fox	*Vulpes vulpes*	seen	1
Short-beaked Echidna	*Tachyglossus aculeatus*	seen/diggings/scats	many

Appendix 5: Species recorded from camera surveys

Camera Trap Sites (C1=Camera Site 1 etc)	C 1	C 2	C 3	C 4	C 5	C 6	C 7	C 8	C 9	C 10	C 11	C 12	C 13	C 14	C 15	C 16	C 17	C 18	Total
Bird species																			
Australian Magpie *Gymnorhina tibicen*													1						1
Australian Raven *Corvus coronoides*	2		5		7		2					13	41			1			71
Australian Ringneck *Barnardius zonarius*												3	9						12
Common Bronzewing *Phaps chalcoptera*																5			5
Crested Pigeon *Ocyphaps lophotes*												1							1
Brown Honeyeater *Lichmera indistincta*												1							1
Grey Shrike-thrush *Colluricincla harmonica*	1							1								3			5
Mulga Parrot *Platycercus varius*													1						1
Rainbow Bee-eater *Merops ornatus*														6					6
Singing Honeyeater *Lichenostomus virescens*										1									1
Southern Boobook *Ninox novaeseelandiae*													1						1

Striated Pardalote *Pardalotus striatus*													1						1
Willie Wagtail *Rhipidura leucophrys*												1	1			3			5
Yellow-rumped Thornbill *Acanthiza chrysorrhoa*	1		1																2
Mammal species																			
Black-flanked Rock Wallaby *Petrogale lateralis*		18						39	139	38							4	5	243
Black Rat *Rattus rattus*				1					3									5	9
European Rabbit *Oryctolagus cuniculus*			26		8		19	1	2	3		33				16			78
House Cat *Felis catus*			2				1			1		4				2			10
House Mouse *Mus musculus*							1											2	3
Red Fox *Vulpes vulpes*			2		1		3	1	5	10		1				9			34
Short-beaked Echidna *Tachyglossus aculeatus*			3		1		2			2	1					34			43
Euro *Macropus robustus*			3		1		3		1			38	69		6	15			136

Western Grey Kangaroo *Macropus fuliginosus*												2			1				3
Unidentified Macropod (One of the above)									2										2
Reptile and Frog species																			
Black-headed Monitor *Varanus tristis*		1														1			2
Bobtail *Tiliqua rugosa*							1									18			19
Goulds Monitor *Varanus gouldii*							1									3			4
Helioptus sp																1			1
Western Bearded Dragon *Pogona minor*						1													1
False triggers	3		48			289		9		10	57		4	94	214	183			

5. Attachments

1. **Attachment 1a Kokerbin Nature Reserve video clips and photos, Camera Sites 1-9 (DVD)**

2. **Attachment 1b Kokerbin Nature Reserve video clips and photos, Camera Sites 9-18 (DVD)**

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