

# **Tjiwarl Bush Blitz**

## ***Terrestrial Vertebrates***

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Nomenclature and taxonomy used in this report is consistent with:

The Australian Faunal Directory (AFD)

<http://www.environment.gov.au/biodiversity/abrs/online-resources/fauna/afd/home>

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## **Abstract**

A two-week survey was carried out in Tjiwarl country in late winter-early spring in 2023. Base Camp was BHP's Nickel West operation. All the survey sites were reached almost exclusively by car. We used a combination of pit-trapping (including funnel traps), hand capture – day and night (head-torching) and raking for burrowing species.

The team captured a wide range of common reptiles, with very few frogs. Representative skinks, geckos, dragons, and snakes were captured (or sighted) throughout the study. Several small carnivorous marsupials (Dasyurids) and one small songbird (Inland Thornbill) were also vouchered. Much of the country was not in pristine condition, and so overall capture rate was low. More success per unit effort was had at Wanjarri Nature Reserve (although quite far from base camp) where the bush was much healthier, supporting a higher diversity of reptiles.

## **1. Introduction**

The Goldfields region around and within the Tjiwarl Determination Area had been previously surveyed sporadically by various parties, including former CALM regional ecologist, Mark Cowan (based in Kalgoorlie). Lizards in particular are known to have some of the highest species richness in this part of the western arid zone (Powney et al. 2010). Museum database records indicate reasonable numbers of all the major herpetological groups, and a few mammals had been vouchered from the region. We had heard from Mark Cowan before the survey that the country had been subject to over-grazing but that there were still interesting animals throughout the area.

## **2. Methods**

### **2.1 Site selection**

We selected trap sites based on diversity of habitats and the availability of people willing to help dig in pit-traps (especially DBCA-Kalgoorlie people) and changed trap-lines part-way through the survey. For the first day of the survey, there was a large contingent willing to dig traps, so we dug in two lines in sandy areas near the southern border of the survey area. These sites were very dry and the vegetation was in poor condition. A small number of Ningaiui, a dunnart, and the Inland Thornbill were captured from this area. After two unproductive trap nights, we then moved the trapping sites north to more wooded areas with flowering vegetation, which were far more diverse. Wanjarri was quite far from the base camp, so during the latter half of the survey we had planned to run traps there but ultimately did not.



Aged ring of spinifex at Yakabindie Woodland trapping site.

For active foraging sites (head-torching, raking), we were opportunistic and chose rocky outcrops where possible for geckos and places with deep leaf litter on sand for raking burrowing species. One night was spent out on Mount Anderson on the southern tip of Boolygoo Range. This feature had unique geology (banded iron, fractured in large plates), topography, and vegetation in comparison to the other survey sites.

## **2.2 Survey techniques**

As part of ongoing commitment to advancing scientific knowledge, the WA Museum employs rigorous and ethically responsible methods in the collection of terrestrial vertebrate specimens. The approach taken is grounded in best practices that prioritise ecological sustainability, animal welfare and adherence to regulatory guidelines. This ensures that collection activities contribute valuable insights while respecting the delicate balance of the ecosystems we study.

### *Photography*

Capturing a specimen's appearance in life is an important part of the vouchering process. In a large tray we create a natural environment, place the animal on the tray, and capture the photograph quickly before the animal moves. In some cases, specimens are photographed as they are encountered in the field with no contact and minimal disturbance.

### *Ground observation (active foraging)*

Foraging for animals is conducted by overturning rocks and large logs or bark pieces. Extreme care is taken to not cause any long-term displacement or loss of habitat through foraging activities. Vegetation, rocks, or substrate that is moved is returned to its best possible original condition. There may be short term displacement when an animal is caught by hand (see below) and released, as even when released to the immediate same area most animals will travel away from that area to escape the animal handler.

### *Hand capture*

The process involves gently and manually capturing reptiles by hand, typically without the use of specialized equipment. Hand capture is often suitable for small reptiles that are not aggressive or venomous. Capture is as fast and as stress free as possible with the animal transferred to a calico (reptile) or plastic (frog) bag as soon as possible (always carried by field workers).

### *Dry pitfall trap*

A pitfall trap is a simple and effective method to capture ground-dwelling vertebrates. The trap consists of a smooth sided 20L bucket or PVC pipe, typically 60cm (arm length) deep. A shelter for captured animals is placed in the base of the structure. Animals walking on the soil surface fall into the pit and are unable to escape. The trap is checked, and animals collected.

### *Funnel Trap*

Funnel trapping is used to capture small ground dwelling animals such as snakes and legless lizards that would otherwise easily escape a pit trap. The process involves selecting and setting up appropriate traps, placing them strategically along a mesh fence to funnel the animals into the trap. The trap consists of a funnel-shaped entrance that guides animals into a containment chamber, making it challenging for them to escape. The design typically involves a wide opening that narrows down into a tunnel or funnel, leading to a confined space where the captured animals are safely held, much like a traditional fish trap.

### *Raking*

Raking is a method used to capture shallow burrowing animals, particularly those inhabiting soil or sand. It involves dragging a specialized rake-like tool through the substrate to expose and capture subterranean reptiles. The rake typically has long tines that penetrate the burrows, to gently bring the animals to the surface. Typically carried out with a 3-pronged cultivator, raking is often the only way to sample small burrowing species.

### *Tissue punch from ear – mammals*

This technique involves using a small, specialized tool called a tissue punch to extract a tiny circular section of tissue from the ear of the mammal. To reduce the level of impact, ear punches are kept sharp and clean, and care is taken when deciding where to place the ear notch to ensure that it is in an area with few blood vessels.

### *Tail tipping – reptiles*

Tail tipping in reptiles involves the removal of a portion of the tail with a clean and precise cut to minimize stress and harm to the reptile. A tissue sample <30 mm tip of the tail will be taken from large individuals (> 100 mm snout-vent length) for genetic analysis. For smaller species (<100 mm snout-vent length), a 10–20 mm tail tip is sufficient. For snakes, turtles and some lizards, a pair of sharp sterile surgical scissors will be used. For many lizards, pinching the tail triggers the natural autotomy response and is preferred. When lizards voluntarily dropped their tails during capture or handling, this was collected as a tissue sample. Natural tail loss and regrowth occur in many species. Reptiles with tails used for specific functions (such as knob tails, blind snakes, and death adders) are not tail tipped because it may compromise the animal's ability to perform the function.

### 2.2.1 Methods used at standard survey sites

For the two standard survey sites, sampling was quite different. The second survey site SSS2 was not suitable for reptiles or frogs, as there was very little cover present for them. Nevertheless, a single *Ctenotus* skink was observed at this site while actively foraging but was not captured after nearly 15 minutes of effort by PD. MP raked a burrowing *Lerista* skink, which were somewhat common in the general area.

For SSS1 in Wanjarri Nature Reserve, one evening of active searching with head torches resulted in the capture of a handful of geckos. One *Diplodactylus laevis*, the Desert Fat-tailed gecko was captured here and is the only record of this animal from this survey. As previously mentioned, the Country was very healthy within the boundaries of the reserve, and there were many flowering plants with abundant, large spinifex clumps.



Left – *Ctenotus* (skink) in a 20L bucket; right – sheets of tin at a tip similar to where *Gehyra variegata* were found.

### 2.3 Identifying the collections

Dichotomous keys and comparative photographs from the below field guides were used for tentative identifications during the expedition. Preserved specimens of these taxa and other likely candidates were used to check these identifications as the new specimens were accessioned into the WA Museum collections.

Linette Umbrello, Research Associate, Collections & Research, Western Australian Museum checked the identifications of our two *Sminthopsis*, referring to the WA Museum key to Footpads of Western Australian Dasyurids, available online in PDF format via below reference.

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### 3. Results and Discussion

Appendix 1 lists all reptiles, frogs, mammals and birds vouchered and/or observed during the Tjiwarl Bush Blitz. Collections made during this Bush Blitz will result in 99 specimens being added to public collections and 129 records being added to publicly accessible databases.

#### 3.1 Un-named or not formalised taxa

| Taxon  | Comment  |
|--|--|
| <i>Lucasium squarrosum</i> (ground gecko)          | Ryan Ellis to pursue genetic analysis of this specimen; inland populations previously known to diverge somewhat from populations nearer to the coast.                        |
| <i>Heteronotia binoei</i> asexual lineages A and B | Kate O'Hara at ANU is working on the origins and diversity of these clonal populations; Stephen Zozaya at ANU is currently resolving the taxonomy of this challenging group. |

#### 3.2 Putative new species (new to science)

No putative new vertebrate taxa were collected on this expedition, although that is not unusual for vertebrates that usually require detailed lab investigation and genotyping to describe new taxa.

#### 3.3 Exotic and pest species

No pest species were observed on this expedition, although several grazing cattle were noted in the vicinity of some trapping and spotlighting localities.

#### 3.4 Threatened species

No threatened vertebrate species were recorded or collected on this expedition.



### 3.5 Range extensions

No range extensions or significant infills were recorded for any taxa collected on this expedition.

### 3.6 Genetic information

Tissues from all specimens vouchered were taken. Subsamples of *Gehyra* and *Heteronotia* gekkonids were taken by Pepper to ANU for Stephen Zozaya for sequencing. Ellis provided a subsample of the *Lucasium squarrosus* to Biologic for sequencing as well. All other tissues are stored at the WA Museum for future use.

## 4. Information on species lists

### Family Pelodryadidae – Australian Tree Frogs

The only frogs encountered during the survey were two tadpoles of the Western Water-holding Frog, *Cyclorana occidentalis* at Albion Downs Waterfall. Tadpoles were kept in a plastic tub for nearly a week so that they could develop enough for identification. This species has quite large and voracious tadpoles, and the identification was confirmed by examining the mouthparts (which have several useful diagnostic characters) using the book by Anstis (2017) and on overall appearance – large with flat heads, common in the area.

#### Family Pelodryadidae – Australian Tree frogs

*Cyclorana occidentalis* (tadpoles)

### Family Gekkota – geckos and pygopods (4 families)

Geckos were reasonably diverse during the survey, with 10 species recorded. They were encountered while spotlighting or roadcruising at night, and some were also trapped.

There were no carphodactylids (i.e. *Nephrurus* spp) recorded, possibly owing to colder temperatures or bad luck, as at least a few are typically encountered per survey where they occur.

There were five species of diplodactylid geckos, which are diverse in the arid zone. The spiny-tailed species *Strophurus strophurus* was encountered reasonably often, especially after Doughty & Ellis demonstrated how they are best spotted in bushes at night using eye shine. Six were vouchered, and one was brought to the Open Day to show students this attractive species.

The next most common gecko was the beak-faced gecko, *Rhynchoedura ornata*. This is a termite specialist that lives in spider holes. Four specimens were vouchered.

There were only single records of *Lucasium squarrosus*, *Diplodactylus pulcher* and *D. laevis*. The *Lucasium* was of special interest to Ryan Ellis, who photographed the specimen in life and a special project was proposed to BHP to further investigate its taxonomic affinities. The *D. pulcher* was shown at the school, as this is an especially attractive species. We found *D. laevis* – another termite specialist with a flat tail adapted to plugging burrows – on SSS1 (one of the few reptiles encountered on the standard survey sites).



*Diplodactylus pulcher* – the only specimen captured on the trip.

Gekkonid lizards (cosmopolitan geckos) were represented by the ubiquitous species in the genera *Heteronotia* and *Gehyra*. Many *Heteronotia binoei* were captured, as they are one of the most common and widespread species in arid and northern Australia, though it is well known this “species” encapsulates many divergent lineages, including asexual parthenogens (a project being undertaken by ANU researchers). Interestingly, all *H. binoei* captured on this survey were females and some with heavy mite loads, indicating that in this area there are likely the parthenogens of this taxa. We did observe two quite different phenotypes – one very spotty, and another that is more banded, suggesting that both parthenogenetic lineages occur in sympatry in this area.

There were two *Gehyra* species identified: *G. variegata* and the newly-described cryptic species *G. crypta*. The latter species was formerly part of *G. montium* from about 10 years ago (split from the then Australia-wide *G. variegata*), and was more recently split from *G. montium* in 2017. The *G. crypta* had black and white spots and tended to occur on rocks such as the large exfoliating granites near Wanjarri Nature Reserve where the team searched, whereas specimens of the more arboreal and generalist *G. variegata* were collected from under rubbish at a tip. Tissue subsamples of all gekkonids were sent to ANU via Pepper.



Left – Two *Gehyra* (LHS) and three *Heteronotia* geckos (RHS). Note the colour/pattern difference between the furthest right spotty specimen and the adjacent banded specimens, suggesting they belong to different asexual lineages; right – Ryan Ellis holding one of the Bynoe's geckos.

There were only two pygopod (legless or flap-footed gecko) species observed, *Lialis burtonis* (a specialist diurnal lizard predator with nearly an Australia-wide distribution) and *Delma butleri*, which was displayed at the Open Day.

#### **Family Diplodactylidae – Gondwanan ground geckos**

*Diplodactylus laevis*

*Diplodactylus pulcher*

*Lucasium squarrosum*

*Rhynchoedura ornata*

*Strophurus strophurus*

#### **Family Gekkonidae – cosmopolitan geckos**

*Gehyra crypta*

*Gehyra variegata*

*Heteronotia binoei*

#### **Family Pygopodidae – legless geckos**

*Delma butleri*

*Lialis burtonis*

### **Family Agamidae – dragon lizards**

Only three species of dragon lizards were encountered on the survey. Bearded dragons (*Pogona*) were seen on roads as they were likely females basking to warm developing eggs. We hand-collected a military dragon (*C. isolepis*) running amongst spinifex clumps at Wanjarri Nature Reserve. The woodland site traps resulted in several *C. scutulatus* (lozenge-marked dragons) being captured as well. It is possible that temperatures were too

low during the survey to fully activate these heat-loving lizards, as several more species occur in the area (e.g. *Moloch horridus*, the Thorny Devil).



*Ctenophorus scutulatus* in a 20L bucket.

### **Family Agamidae – dragon lizards**

*Ctenophorus isolepis*

*Ctenophorus scutulatus*

*Pogona minor minor*

### **Family Scincidae - skinks**

Skinks are the most diverse group of reptiles in Australia and that was the case for our survey as well. There were six species of *Ctenotus* (comb-eared, or lined skinks) captured, which have their highest diversity in the arid zone. Traps were especially useful for capturing these lizards, as they are generally too swift for hand capture as they are closely associated with spinifex and shrubs and all are diurnally-active species. The single individual of *Ctenotus severus* was hand captured on Mount Anderson while spotlighting, this taxon was not recorded elsewhere on this survey.

One sub-adult *Egernia formosa*, the Goldfields Crevice skink, was captured by hand in a boulder pile at the edge of a creek bed. This specimen represents the northern-most record for the inland southern population. The southern population is separated from the Pilbara population, making this an interesting capture. A tissue sample was taken and it is to be prepared as a skeleton for the WAM collection.

Two burrowing *Lerista* species were captured by raking. *Lerista desertorum* was the most commonly raked species, especially at the southern woodland site. Only one specimen of *L. timida* was raked, and this species has a massive distribution across southern Australia and may change names pending a major revision.

Only one species each of *Morethia* and *Menetia* were captured. *Morethia butleri* is widely distributed in the south-western arid zone and is associated with woodlands. *Menetia greyii* has a nearly pan-Australian distribution and likely harbours many cryptic species. The single record of *Menetia greyii* is thanks to a hand capture by Tjiwarl Ranger Fifi. Future work is planned on this widespread species by Doughty & Allentoft.

One large Western Bluetongue lizard (*Tiliqua occipitalis*) was relocated off a vehicle track by Thorn and a member of the BHP team, on the road out to Lake Mason through Yakabindie Station.



*Tiliqua occipitalis* seen crossing a road.

#### **Family Scincidae – skinks**

*Ctenotus helenae*

*Ctenotus leonhardii*

*Ctenotus pantherinus*

*Ctenotus quattuordecimlineatus*

*Ctenotus schomburgkii*

*Ctenotus severus*

*Egernia formosa*

*Lerista desertorum*

*Lerista timida*

*Menetia greyii*

*Morethia butleri*

*Tiliqua occipitalis*

#### **Families Pythonidae & Elapidae - snakes**

Several Children's pythons (*A. childreni*) were observed during the survey, but not vouchered as this species is widespread, common, well-collected and recently revised.

There were two highly venomous snakes encountered during the survey, the western brown snake (*P. mengdeni*) and ringed brown snake (*P. modesta*). The former was only observed, one specimen of the latter was vouchered and the other had genetic material sampled.

The burrowing snake *Simoselaps bertholdi* was raking at the southern woodland site and was also shown at the Open Day owing to its beautiful patterning and colouration.



Kailah Thorn holding the burrowing snake in the field.

**Family Pythonidae – pythons, constricting snakes**

*Antaresia childreni*

**Family Elapidae – front-fanged venomous snakes**

*Pseudonaja mengdeni*

*Pseudonaja modesta*

*Simoselaps bertholdi*

## **Order Monotremata – an Echidna**

One Echidna (*Tachyglossus aculeatus*) was relocated off of Albion Downs-Yeelirrie Road by Thorn. The healthy individual curled into a ball on approach and was picked up using thick gloves and placed in the shade, well away from the road. The Tjiwarl rangers were especially excited to hear about the Echidna sighting as sightings are few and far between.

**Family Tachyglossidae**

*Tachyglossus aculeatus*

## Families Macropodidae & Dasyuridae – Kangaroos and carnivorous marsupials

One large male Red Kangaroo (*Osphranter robustus*) was spotted from a vehicle by Thorn and the BHP team while driving down Albion Downs-Yeelirrie Road. Usually, the large kangaroos would not be recorded as observations on most trips, but this was the only living kangaroo spotted over the duration of this trip.

Small carnivorous marsupials were relatively common at most trap sites. Ningai (*N. ridei*) were more common at the woodland sites – Agnew Dune (with nearby dry woodland) and the Yakabindie Woodland trap lines captured multiple Ningai each day. Three were vouchered, two further individuals were sampled for genetic material and all other captures recorded as observations. Two Hairy-footed dunnarts (*Sminthopsis hirtipes*) were trapped at the first dry trapline at Agnew Dune that was later abandoned, but not recorded from other traplines.

### Macropodidae

*Osphranter robustus*

### Dasyuridae

*Ningai ridei*

*Sminthopsis hirtipes*



The Hairy-Footed Dunnart *Sminthopsis hirtipes* in a calico bag after capture.

## Family Muridae - Rodents

One native rodent was captured on this survey and no introduced rats or mice were observed. A Sandy Inland Mouse (*Pseudomys hermannsburgensis*) was released from a pitfall trap on the Yakabindie Woodland trapline. These animals are already well-represented in the Museum collection and their taxonomy is well resolved so further sampling was not necessary.

### Muridae

*Pseudomys hermannsburgensis*

## Family Acanthizidae – Australian warblers

One bird was vouchered opportunistically on this trip, while spotlighting for reptiles around the Agnew Dune traplines. A small Inland Thornbill was sleeping in a stunted eucalypt and was hand captured by Doughty.

### Acanthizidae

*Acanthiza apicalis*

## 5. Information for land managers

As was evidenced by the low capture rate at the first two sites compared to Wanjarri and other northern sites, much of the land appears to be quite degraded with low numbers of mammals and reptiles. It may take some time after the removal of livestock for the land to recover to get the density and diversity to pre-grazing levels.

## 6. Other significant findings

The main interesting find was that of a gecko, *Lucasium squarrosum*. Ryan Ellis has approach BHP for some funds to genotype this individual to see how it fits with previous work done by Mitzy Pepper, Paul Doughty and others. We will inform Bush Blitz of any interesting outcomes from this work.

## 7. Conclusions

The Tjiwarl Determination Area surrounding the WA Goldfields town of Leinster was surveyed in late winter of 2023 by a team of zoologists from the WA Museum, Biologic Consultants, Australian National University and Curtin University alongside staff from DBCA in collaboration with Bush Blitz and the Tjiwarl Rangers. Two weeks of active foraging, spotlighting, raking, and trapping resulted in the capture of 99 specimens representing 29 vertebrate species, along with field observations of 7 others too quick or too big to capture. Overall diversity of vertebrates on pastoral properties was lower than expected, while the jointly managed Wanjarri Reserve appeared to a healthy refuge for arid zone reptiles.

## Acknowledgements

Fifi and the Tjiwarl Ranger team for their knowledge of country and assistance choosing the survey sites and hosting a great camp out at Wanjarri. Linette Umbrello for her verification of the identification of the small Dasyurids. Arianna Urso for assistance in databasing and specimen accession at the WA Museum.



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| Appendix 1. List of Mammals, Amphibians, and Reptiles recorded during the Tjiwarl (Leinster) Bush Blitz |                                       |                             |                      |                       |                 |              |           |                     |  |  |
|---|---------------------------------------|-----------------------------|----------------------|-----------------------|-----------------|--------------|-----------|---------------------|--|--|
| Family  | Species                               | Common name                 | Putative new species | Threatened (EPBC Act) | Threatened (WA) | Exotic/ pest | Obs. only |                     |  |  |
| Dasyuridae  | <i>Sminthopsis hirtipes</i>           | Hairy-footed Dunnart        | No                   | No                    | No              | No           |           | Mammals             |  |  |
| Dasyuridae  | <i>Ningai ridei</i>                   | Wongai Ningai               | No                   | No                    | No              | No           |           |                     |  |  |
| Macropodidae  | <i>Osphranter rufus</i>               | Red Kangaroo                | No                   | No                    | No              | No           | X         |                     |  |  |
| Tachyglossidae  | <i>Tachyglossus aculeatus</i>         | Echidna                     | No                   | No                    | No              | No           | X         |                     |  |  |
| Muridae   | <i>Pseudomys hermannsburgensis</i>    | Sandy Inland Mouse          | No                   | No                    | No              | No           | X         |                     |  |  |
| Pelodyadidae  | <i>Cyclorana occidentalis</i>         | Western Water-holding Frog  | No                   | No                    | No              | No           |           | Frogs               |  |  |
| Agamidae  | <i>Ctenophorus scutulatus</i>         | Lozenge-marked Dragon       | No                   | No                    | No              | No           |           | Dragons             |  |  |
| Agamidae  | <i>Ctenophorus isolepis</i>           | Military Dragon             | No                   | No                    | No              | No           |           |                     |  |  |
| Agamidae  | <i>Pogona minor</i>                   | Western Bearded Dragon      | No                   | No                    | No              | No           |           |                     |  |  |
| Diplodactylidae   | <i>Diplodactylus laevis</i>           | Desert Fat-tailed Gecko     | No                   | No                    | No              | No           |           | Geckos              |  |  |
| Diplodactylidae   | <i>Diplodactylus pulcher</i>          | Spotted Sandplain Gecko     | No                   | No                    | No              | No           |           |                     |  |  |
| Diplodactylidae   | <i>Lucasium squarrosus</i>            | Mottled Ground Gecko        | No                   | No                    | No              | No           |           |                     |  |  |
| Diplodactylidae   | <i>Rhynchoedura ornata</i>            | Western Beaked Gecko        | No                   | No                    | No              | No           |           |                     |  |  |
| Diplodactylidae   | <i>Strophurus strophurus</i>          | Western Spiny-tailed Gecko  | No                   | No                    | No              | No           |           |                     |  |  |
| Gekkonidae  | <i>Gehyra crypta</i>                  | Western Cryptic Gehyra      | No                   | No                    | No              | No           |           |                     |  |  |
| Gekkonidae  | <i>Gehyra variegata</i>               | Variegated Gehyra           | No                   | No                    | No              | No           |           |                     |  |  |
| Gekkonidae  | <i>Heteronotia binoei</i>             | Bynoe's Gecko               | No                   | No                    | No              | No           |           |                     |  |  |
| Pygopodidae   | <i>Delma butleri</i>                  | Butler's Legless Lizard     | No                   | No                    | No              | No           |           |                     |  |  |
| Pygopodidae   | <i>Lialis burtonis</i>                | Burton's Legless Lizard     | No                   | No                    | No              | No           | X         |                     |  |  |
| Pythonidae  | <i>Anteresia childreni</i>            | Children's Python           | No                   | No                    | No              | No           | X         | Constricting Snakes |  |  |
| Scincidae   | <i>Ctenotus helenae</i>               | Clay-soil Ctenotus          | No                   | No                    | No              | No           |           | Skinks              |  |  |
| Scincidae   | <i>Ctenotus leonhardii</i>            | Common Desert Ctenotus      | No                   | No                    | No              | No           |           |                     |  |  |
| Scincidae   | <i>Ctenotus pantherinus</i>           | Leopard Skink               | No                   | No                    | No              | No           |           |                     |  |  |
| Scincidae   | <i>Ctenotus quattuordecimlineatus</i> | Fourteen-lined Skink        | No                   | No                    | No              | No           |           |                     |  |  |
| Scincidae   | <i>Ctenotus schomburgkii</i>          | Barred Wedge-snout Ctenotus | No                   | No                    | No              | No           |           |                     |  |  |
| Scincidae   | <i>Ctenotus severus</i>               | Stern Ctenotus              | No                   | No                    | No              | No           |           |                     |  |  |
| Scincidae   | <i>Egernia formosa</i>                | Goldfields Crevice Skink    | No                   | No                    | No              | No           |           |                     |  |  |

| Family       | Species                     | Common name                   | Putative new species | Threatened (EPBC Act) | Threatened (WA) | Exotic/ pest | Obs. only |                 |
|--------------|-----------------------------|-------------------------------|----------------------|-----------------------|-----------------|--------------|-----------|-----------------|
| Scincidae    | <i>Lerista desertorum</i>   | Central Deserts Robust Slider | No                   | No                    | No              | No           |           |                 |
| Scincidae    | <i>Lerista timida</i>       | Timid Slider                  | No                   | No                    | No              | No           |           |                 |
| Scincidae    | <i>Menetia greyi</i>        | Common Dwarf SKink            | No                   | No                    | No              | No           |           |                 |
| Scincidae    | <i>Morethia butleri</i>     | Woodland Morethia Skink       | No                   | No                    | No              | No           |           |                 |
| Scincidae    | <i>Tiliqua occipitalis</i>  | Western Bluetongue            | No                   | No                    | No              | No           | X         |                 |
| Elapidae     | <i>Pseudonaja mengdeni</i>  | Western Brown Snake           | No                   | No                    | No              | No           | X         |                 |
| Elapidae     | <i>Pseudonaja modesta</i>   | Ringed Brown Snake            | No                   | No                    | No              | No           |           | Venomous Snakes |
| Elapidae     | <i>Simoselaps bertholdi</i> | Jan's Banded Snake            | No                   | No                    | No              | No           |           |                 |
| Acanthizidae | <i>Acanthiza apicalis</i>   | Inland Thornbill              | No                   | No                    | No              | No           |           | Birds           |