# Woodie Woodie Mine:

# **Targeted Pilbara Olive Python Survey 2020**



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# **Executive Summary**

#### Introduction

Woodie Woodie Manganese Mine (Woodie Woodie) operates in the East Pilbara region of Western Australia. Consolidated Minerals Limited (CML) has recently recommenced operations and proposes to mine 18 manganese prospects over the next five years. CML commissioned Western Wildlife to carry out a targeted survey for the Pilbara Olive Python (*Liasis olivaceus barroni*) across the mine. This report details the findings of the survey conducted in February 2020.

### Methods

The survey was undertaken in accordance with the *Statement of environmental principles, factors and objectives* (Environmental Protection Authority (EPA) 2016a), *Environmental factor guideline – terrestrial fauna* (EPA 2016b), *Technical guidance – terrestrial fauna surveys* (EPA 2016c), the *Technical Guide: terrestrial vertebrate fauna surveys for environmental impact assessment* (EPA and DEC 2010) and the *Survey guidelines for Australia's threatened reptiles* (DSEWPaC 2011).

A literature review was undertaken to provide a background summary of the ecology and status of the Pilbara Olive Python. Critical habitat for the python was identified from the literature review, and the habitats mapped using existing fauna habitat mapping and field observations. The field survey was carried out between the 23<sup>rd</sup> and 27<sup>th</sup> February 2020. Vehicle and walking spot-lighting transects were undertaken in areas of potentially suitable habitat to search for pythons.

### **Results and Discussion**

On this survey, two Pilbara Olive Pythons were recorded, a live python near a waterhole and a dead python on a road crossing. Only a further two records are known from within 50km of the survey area between 2007 and 2020, suggesting that the population is not large. In the Woodie Woodie mine corridor, critical habitat for the Pilbara Olive Python includes major creeklines, waterholes and rocky outcrops and breakaways. These habitats comprise 7.3% of the mine corridor.

Further dedicated surveys and monitoring of this species at Woodie Woodie are not recommended. Due to its cryptic nature, the survey effort involved in obtaining a statistically valid sample is unfeasible. Protection of this species at Woodie Woodie is best achieved through protection of existing habitat, implementing measures to reduce the risk of road mortalities, including positioning any artificial waterbodies away from road traffic, and education of staff to ensure any observations are reported.

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# 1. Introduction

Woodie Woodie Manganese Mine (Woodie Woodie) operates in the East Pilbara region of Western Australia. Consolidated Minerals Limited (CML) has recently recommenced operations and proposes to mine 18 manganese prospects over the next five years. The Pilbara Olive Python (*Liasis olivaceus barroni*) was previously recorded near Woodie Woodie and is listed as Vulnerable under *The Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) and *Biodiversity Conservation Act 2016* (BC Act). Thus CML commissioned Western Wildlife to investigate the status of the Pilbara Olive Python at Woodie Woodie.

The objectives of the Pilbara Olive Python survey were to:

- Identify potential Pilbara Olive Python habitat in the Woodie Woodie mine corridor.
- Survey for the presence of Pilbara Olive Python in potential habitat areas.

This report details the findings of the targeted survey conducted in February 2020.

### 1.1 Regional Location

The Woodie Woodie Manganese Mine is about 400 km southeast of Port Hedland, 170 km southeast of Marble Bar and 100 km east of Nullagine in the Eastern Pilbara region of Western Australia (Figure 1).

The Woodie Woodie Mine is within the Chichester subregion of the Pilbara Bioregion (DEWHA 2004), which is comprised of undulating plains of Achaean granite and basalt, with basalt ranges (Kendrick and McKenzie 2001). The climate is semi-desert tropical, receiving about 300mm of rain per year (Kendrick and McKenzie 2001). The dominant land-uses are grazing on native pastures, Aboriginal lands and reserves, Unallocated Crown Land and Crown Reserves, Conservation and Mining (Kendrick and McKenzie 2001).

A significant feature in the area surrounding the mine is the Oakover River and its various tributaries. The Oakover River contains permanent water at Running Waters, Yilgalong Pool and Carawine Pool (among others), and is thus important fauna habitat for wetland species. About 15km to the east of the survey area is the Little Sandy Desert, which supports a different faunal assemblage. Species that favour rocky habitats, such as the Pilbara Olive Python, are likely to be close to the eastern edge of their range in the region.

### 1.2 Survey Area

The survey area for the Pilbara Olive Python survey is shown in Figure 2. Although the overall survey area was large, surveys concentrated only on potentially suitable habitat in and around the mine corridor. The area of the mine corridor is 10,634 ha.



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### 1.3 Climate and Weather

The nearest weather station is Telfer Aero (Bureau of Meteorology Site 013030). The climate is characterised by hot wet summers and cool dry winters (Figure 3). The mean annual rainfall is 364.2mm, based on data collected 1974 – 2020 (BOM 2020). Prior to the survey the summer rainfall was below average in December and February, but well above average in January. The weather during the survey period was typically warm and humid, with night time temperatures exceeding 25°C (Table 1), and thunderstorm activity the night of the 27<sup>th</sup> February.



Figure 3. Climate statistics for Telfer Aero (data after BOM 2020).

Day	Tempera	iture (°C)	Rainfall	Survey Deried	
	Minimum Maximum		(mm)	Survey Periou	
13	28	43.7	0		
14	25.7	43	3.4		
15	28.8	42.4	0		
16	23.7	41.5	24		
17	29.8	44.1	0		
18	31.1	42.5	0		
19	24.5	40.1	0		
20	28.5	40	0		
21	27.7	39.7	0		
22	28.2	40.3	0		
23	28.9	41.3	0	+	
24	28.9	43	0.2	+	
25	26.4	43.1	0	+	
26	26.3	43.6	0	+	
27	27.7	43.8	0	+	
28	29.5	42.7	0	+	

#### Table 1. Weather for Telfer Aero, 13 – 28 February 2020.

# 2. Methods

### 2.1 Guidance Documents and Licencing

The fauna surveys were conducted in accordance with:

- Statement of environmental principles, factors and objectives (Environmental Protection Authority (EPA) 2016a)
- Environmental factor guideline terrestrial fauna (EPA 2016b)
- Technical guidance terrestrial fauna surveys (EPA 2016c)
- Technical guide: terrestrial vertebrate fauna surveys for environmental impact assessment (EPA and DEC 2010)
- Survey guidelines for Australia's threatened reptiles (DSEWPaC 2011)

All fauna works were carried out under Fauna Taking (Biological Assessment) Licence BA27000071 issued by the Department of Biodiversity, Conservation and Attractions (DBCA).

# 2.2 Personnel

The personnel involved in the fauna survey are listed in Table 2.

Person	Qualification	Role	Experience
Jenny Wilcox	BSc. Hons.	<ul> <li>Lead Zoologist</li> <li>Plan, supervise and conduct fauna survey</li> <li>Collate data</li> <li>Prepare report</li> </ul>	20 years
Mike Brown	BSc. Hons.	Senior Zoologist <ul> <li>Undertake fieldwork</li> </ul>	14 years
Kaylee Prince	BSc.	Assisting Zoologist <ul> <li>Undertake fieldwork</li> </ul>	10 years (as environmental officer)

### Table 2. Personnel involved with the fauna survey.

### **2.3 Taxonomy and Nomenclature**

Taxonomy and nomenclature for fauna species used in this report follow the Western Australian Museum checklists, as updated in September 2019. In the text, common names are used where appropriate, and all scientific names are given in species lists. Where a species lacks a common name, they are referred to by their scientific name.

#### 2.4 Literature Review

A review of the relevant literature was undertaken in order to provide background information on the distribution, habitat, biology, ecology and current threats to the Pilbara Olive Python. Sources consulted included general biology texts, action plans, recovery plans, referral guidelines, journal articles and unpublished environmental reports. In addition, DBCA's Threatened and Priority Fauna Database was searched for Pilbara Olive Python records within 50km of a central point in the survey area (21° 39' 58" S, 121° 14' 09" E).

### 2.5 Field Studies

As the survey was undertaken during summer, spot-lighting was used as the primary survey method. There was limited road access in identified habitat areas so most spot-lighting was undertaken on foot by three personnel, using head-torches to scan for pythons in waterholes, drainage lines and rocky areas. For each transect walked, a tracklog was recorded, any observations of pythons (sightings, scats, shed skins etc.) were recorded with a GPS location and any other fauna observed were also recorded.

#### Table 3. Spot-lighting transects.

Transect name	Transect type	Date	Start time	Finish time	Length (km)	Habitat
Wspot01	Walking	24 Feb 2020	18:40	21:19	2.6	Major creekline, waterpool, rocky outcrops.
Wspot02	Walking	24 Feb 2020	21:25	23:36	4.6	Major creekline, several waterpools, rocky outcrops.
Wspot03	Walking	25 Feb 2020	18:39	20:08	2.2	Major creekline, waterpool, limited rocky outcrops.
Wspot04	Walking	25 Feb 2020	20:57	23:12	2.6	Major creekline, several waterpools, rocky outcrops.
Wspot05	Vehicle	26 Feb 2020	00:01	01:41	20.8	Road-spotting – main southern access.
Wspot06	Walking	26 Feb 2020	18:38	20:56	2.5	Major creekline, several waterpools, rocky outcrops.
Wspot07	Walking	26 Feb 2020	21:35	22:17	1.4	Major creekline, dry, limited rocky outcrops.
Wspot08	Walking	26 Feb 2020	22:26	23:11	0.9	Major creekline, dry, limited rocky outcrops.
Wspot09	Walking	27 Feb 2020	00:18	02:28	2.3	Major creekline, flowing due to dewatering.
Wspot10	Vehicle	27 Feb 2020	19:14	20:45	33.5	Road-spotting – main southern access, Woodie Woodie road.
Wspot11	Walking	27 Feb 2020	20:45	21.26	0.6	Major creekline, flowing due to dewatering, near record of road-killed Pilbara Olive Python.
WSpot12	Walking	27 Feb 2020	22:07	01:05	3.6	Major creekline, flowing due to dewatering.



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### 2.6 Habitat Mapping

Pilbara Olive Python habitat was identified from the literature review, mapped using existing fauna habitat mapping, and where possible ground-truthed during the field survey. Only habitat within the mine corridor was mapped. Waterhole locations were obtained from surface hydrology point data as available from Geoscience Australia (Crossman and Li 2015).

# 3. Survey Limitations

Various factors can limit the effectiveness of a fauna survey. Pursuant to EPA Technical Guidance (EPA 2016c), these factors have been identified and their potential to impact on the effectiveness of the surveys has been assessed in Table 4 below.

#### Table 4. Fauna survey limitations.

Potential Limitation		Extent of limitation for the fauna survey
Competency /experience of the team carrying out the survey	Not limiting	Supervising zoologist has 20 years' experience with fauna surveys in Western Australia, including surveys in the Pilbara Bioregion and at Woodie Woodie in particular. Assisting zoologists have $10 - 14$ years' experience.
Proportion of fauna identified, recorded and/or collected.	Not limiting	Pilbara Olive Python were successfully recorded.
Sources of information e.g. previously available information (whether historic or recent) as distinct from new data	Minor limitation	The Pilbara Biological Survey (2002 – 2013) undertaken by DBCA provides context for surveys in this Bioregion. Several fauna surveys have been undertaken at Woodie Woodie, providing relevant background information. However, there are few records of Pilbara Olive Python from Woodie Woodie or the surrounding area.
Timing/weather/season/cycle	Not limiting	Timing and weather was suitable for Pilbara Olive Python detection, with warm and humid nocturnal conditions.
Disturbances (e.g. fire, flood, accidental human intervention etc.), which affected results of survey	Not limiting	No disturbances during the field survey.
Intensity (in retrospect, was the intensity adequate)	Not limiting	Sufficient time was allowed to survey potential habitat in and near the survey area.
Completeness (e.g. was relevant area fully surveyed)	Not limiting	Good geographic coverage over survey area.
Resources (e.g. degree of expertise available in animal identification to taxon level)	Not limiting	No taxonomic issues were encountered.
Remoteness and/or access problems	Not limiting	Potential habitat areas were accessible on foot.
Availability of contextual (e.g. biogeographic) information on the region	Minor limitation	The Pilbara Biological Survey (2002 – 2013) undertaken by DBCA provides context for surveys in this Bioregion, however, there are few records of Pilbara Olive Python in the surrounding area.

# 4. Results

### 4.1 Background on the Pilbara Olive Python

The Pilbara Olive Python (*Liasis olivaceus barroni*) is listed as Vulnerable under both *The Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) and *Biodiversity Conservation Act 2016* (BC Act). As a Threatened species under the EPBC Act, it is considered a Matter of National Environmental Significance (MNES).

An iconic species of the Pilbara region, the Pilbara Olive Python is large and mostly nocturnal. Adults are usually around 2.5m long, with individuals reliably measured up to 4.5m long (Pearson 2003). Due to its cryptic habits, there are no reliable estimates of population size (DEWHA 2008), however, it was thought to be uncommon with the initial description of the subspecies in 1981 performed on a mere eight specimens collected over 65 years (Pearson 2003).

Within its range, the Pilbara Olive Python has been found to be widely distributed with many sizable populations (Pearson 2003). It is generally associated with large river systems, such as the Coongan, Shaw, Yule, Harding, Fortescue, Ashburton and Robe Rivers (DSEWPaC 2011). The favoured habitat of the Pilbara Olive Python is generally considered to be deep gorges with waterholes, however, it also occurs in riverine habitats (DSEWPaC 2011) and on the Burrup Peninsula it inhabits large rock piles in spinifex grasslands (Tutt *et al.* 2004). Radio-tracking studies on the Robe and Fortescue Rivers have found that in summer pythons range along rivers, visiting permanent pools, and in winter they shelter in rocky areas away from water, including caves in flat-topped hills (Pearson 2003, DEWHA 2008). Artificial waters, such as sewage ponds and recreational lakes, are also used (Pearson 2003).

Breeding occurs in winter, with males travelling up to three or four kilometres in search of females (Tutt *et al.*, 2004, Pearson 2003). Females only breed every 3 – 4 years (DPAW 2013). Nests sites have been observed under large slabs of rock at a considerable distance from water (DPAW 2013, Pearson 2003). In January the eggs hatch, and the young disperse (Pearson 2003).

Although only preliminary results are available, on the Burrup Peninsula the Pilbara Olive Python has been found to occupy a large and distinct home-range (Tutt *et al.* 2004). Females have been found to have a highly localised home-range of 89.76 – 365.33 ha (based on three individuals) and males wander widely in search of females and have a home range of 449.26 ha (based on a single individual) (Tutt *et al.* 2004, DPAW 2013).

The diet of the Pilbara Olive Python includes variety of birds and mammals, including pigeons, ducks, egrets, corellas, rock-wallabies, fruit bats and small euros (Pearson 2003, Ellis 2013). It feeds by ambushing prey from waterholes or on animal trails.

Threats to the Pilbara Olive Python are listed in the Conservation Advice for the species (DEWHA 2008):

- Direct predation by feral cats (*Felis catus*) and foxes (*Vulpes vulpes*), particularly of juveniles.
- Loss of prey species, such as Northern Quolls (*Dasyurus hallucatus*) and rock-wallabies (*Petrogale spp*.) to predation by foxes.
- Loss of habitat to gas and mining developments, including changes to hydrology and downstream impacts such as sedimentation or pollution.
- Deliberate road-kills.
- Killed due to being mis-identified as a venomous snake species.

There is still a lack of information on the basic ecology of the Pilbara Olive Python. Although radio-tracking studies have been completed in several Pilbara locations, these datasets remain largely unpublished. The cryptic habits of this species make it difficult to systematically survey, as even a large-scale survey may fail to record any individuals. Even at sites where the species is known to occur, such as at the Fortescue Metals Group Christmas Creek mine site, subsequent monitoring over two years failed to detect the species (Ecologia 2014).

# 4.2 Pilbara Olive Python Habitat at Woodie Woodie

The Pilbara Olive Python potentially occurs in a variety of habitats when dispersing and looking for mates, however, habitats at Woodie Woodie likely to be 'habitat critical for survival' are:

- Major creek-lines
- Waterholes
- Rocky outcrops and breakaways

Critical habitats are likely to provide important foraging, shelter and breeding habitat, and total 778 ha within the mine corridor (Figure 5, Table 5). Three major creek-line systems occur in the mine corridor, Muddauthera Creek in the north, Brumby Creek in the centre and Warri Creek in the south, all of which drain to the Oakover Rivers in the west. Of these, within the mine corridor only Muddauthera Creek has several waterholes and is in close proximity to rocky outcrops (Plates 1 and 2). The remaining creeks still provide habitat, particularly when in close proximity to rocky areas, but where they pass through the mine corridor, they lack permanent or semi-permanent waterholes, instead exhibiting a sandy or stony dry creek bed (Plates 3 and 4).

Habitat type	Brief description	Area (ha)
Major creek-lines	Larger eucalyptus-lined watercourses that potentially provide permanent or semi-permanent waterholes	527
Waterholes	Permanent and semi-permanent waterholes in major creek-lines.	N/A
Rocky outcrops and breakaways	Rocky outcrops, low gorges and breakaways that potentially provide critical shelter habitat.	251
Disturbed	Unlikely to be used as habitat.	2,545
Other	Habitat that is unlikely to be critical habitat.	7,311

Table 5. Pi	ilbara Olive F	ython habitat	in the Woodie	Woodie mine	corridor.
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Plate 1. Rocky outcrops in the hills overlooking Muddauthera Creek.



Plate 2. Rocky outcrops and waterhole on Muddauthera Creek.



Plate 3. Warri Creek.



Plate 4. Brumby Creek.

### 4.3 Pilbara Olive Python Records

Weather conditions during the survey were conducive to recording pythons, with a total of four species recorded as well as other species of snake (Appendix 1). One live and one dead Pilbara Olive Python were recorded during this survey (Table 6, Figure 5, Plate 5). The live python was recorded in the northwest corner of the mine corridor. An opportunistic record made during a Level 2 fauna survey (Western Wildlife 2007), was also captured on DBCA's Threatened and Priority Fauna Database (DBCA 2018). There were no other records of this species within 50km on DBCA's Threatened and Priority Fauna Database. A previously unreported record from 2017 is also included (Plate 5), bringing the total known records for the survey area between 2007 and 2020 to four.

Date of record	Record details	Location	Source
23 Feb 2020	Dead adult python (road-killed) >2m long, on Woodie Woodie Road at the crossing with Brumby Creek. Specimen found previous week by Woodie Woodie staff and the identity confirmed by Western Wildlife.	51K, 311177 E, 7608452 N	This survey
24 Feb 2020	Live adult python >2m long, observed on low rocky cliff overlooking waterhole on Muddauthera Creek.	51K, 315073 E, 7613408 N	This survey
02 Oct 2017	Dead adult python (road-killed) >2m long, on Woodie Woodie Road at the crossing with Brumby Creek. Identity confirmed from photograph provided.	51K, 311126 E, 7608348 N	Woodie Woodie enviro staff, pers. comm. (2020)
02 May 2007	Dead adult python (road-killed) on Nifty Road near tributary of Warri Creek, with low gorges, rocky outcrops and waterholes.	51K, 320720 E, 7602365 N	Western Wildlife (2007), also DBCA (2018).

### Table 6. Pilbara Olive Python records in and around Woodie Woodie.



Plate 5. Road-killed pythons found on Woodie Woodie Rd in 2017 (left) and 2020 (right).



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# 5. Discussion and Conclusions

The Pilbara Olive Python is known to occur at Woodie Woodie, although records are sparse. Major creek-lines with waterholes and adjacent rocky areas are likely to be critical habitat for the species. These habitats comprise 778 ha, (7.3%) of the mine corridor. The python population at Woodie Woodie is likely to be centred around major creeklines with waterholes in the summer, and in rocky areas away from water in the winter.

Within the mine corridor the highest value summer foraging habitat areas are those along Muddauthera Creek, as this has several waterholes and is generally in close proximity to rocky shelter areas, and Brumby Creek, where dewatering has provided dense riparian habitat. Warri Warri Creek generally lacks waterholes and adjacent rocky habitats where it passes within the mine corridor, as it traverses the spinifex flats rather than the rocky hills, however, there are waterholes in this creekline to the east, outside the mine corridor. As the Pilbara Olive Python is large and mobile, even rocky areas away from major creek-lines may provide shelter habitat, particularly in winter when pythons move away from water and into nearby hills.

The species is likely to be near the eastern edge of its range at Woodie Woodie, as the Great Sandy Desert does not provide suitable habitat. It is difficult to ascertain the status of the Pilbara Olive Python population at Woodie Woodie due to the small number of records, however, the available evidence tends to suggest that the population is unlikely to be large. The Pilbara Olive Python was recorded on only one of the previous fauna surveys at Woodie Woodie (Western Wildlife 2007, 2009, 2010, 2014), and over more than a decade there is only one record of the species from mine personnel.

Further dedicated surveys and monitoring of this species at Woodie Woodie are not recommended. Due to its cryptic nature, the survey effort involved in obtaining a statistically valid sample is unfeasible. Even at an 'exceptional' location for pythons, two nights of night-driving may be required to record a single individual (DSEWPaC 2011) and the python habitat at Woodie Woodie is generally not accessible by road.

Protection of this species at Woodie Woodie is best achieved through protection of existing habitat, implementing measures to reduce the risk of road mortalities, including positioning any artificial waterbodies away from road traffic, and education of staff to ensure any observations are reported.

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# Appendices

#### Zone Easting Northing Taxon Name Common Name Site Name Date 311177 7608452 Liasis olivaceus barroni Pilbara Olive Python No site 23/02/2020 51 7613406 Wspot01 51 315392 Gehyra punctata 24/02/2020 51 315392 7613406 Desert Tree Frog Wspot01 Litoria rubella 24/02/2020 315073 7613408 Wspot01 51 Liasis olivaceus barroni Pilbara Olive Python 24/02/2020 Wspot02 316116 7611586 51 Lucasium stenodactylum 24/02/2020 316116 7611586 Wspot02 51 Aspidites melanocephalus Black-headed Python 24/02/2020 51 316116 7611586 Antaresia stimsoni Stimson's Python Wspot02 24/02/2020 51 316116 7611586 Litoria rubella Desert Tree Frog Wspot02 24/02/2020 Wspot02 7611586 316116 51 Cyclorana maini Sheep Frog 24/02/2020 51 318341 7612098 Wspot03 25/02/2020 Gehyra variegata 318341 7612098 Desert Tree Frog Wspot03 51 Litoria rubella 25/02/2020 51 318341 7612098 Cyclorana maini Wspot03 25/02/2020 Sheep Frog 312631 7615151 Wspot04 Burhinus grallarius 51 Bush Stone-curlew 25/02/2020 51 312631 7615151 Litoria rubella Desert Tree Frog Wspot04 25/02/2020 312631 7615151 Wspot04 51 Antaresia stimsoni Stimson's Python 25/02/2020 Wspot04 51 312631 7615151 Nycticorax caledonicus Nankeen Night Heron 25/02/2020 312631 7615151 Wspot04 51 Heteronotia spelea 25/02/2020 312631 7615151 Wspot04 51 Antaresia perthensis Pygmy Python 25/02/2020 312631 7615151 Wspot04 51 Gehyra punctata 25/02/2020 7615151 Wspot04 312631 51 Chelodina steindachneri Steindachner's Turtle 25/02/2020 51 312631 7615151 Wspot04 Heteronotia binoei Bynoe's Gecko 25/02/2020 51 317458 7597314 Wspot05 Varanus acanthurus Spiny-tailed Goanna 26/02/2020 51 320722 7602081 Antaresia perthensis **Pygmy Python** Wspot06 26/02/2020 320722 7602081 Wspot06 51 26/02/2020 Diplodactylus savagei 51 320722 7602081 **Desert Tree Frog** Wspot06 Litoria rubella 26/02/2020 7602081 Wspot06 51 320722 Cyclorana maini Sheep Frog 26/02/2020 51 320722 7602081 Wspot06 Gehyra variegata 26/02/2020 317111 7599025 Wspot08 51 Gehyra punctata 26/02/2020 7599025 Wspot08 51 317111 Litoria rubella **Desert Tree Frog** 26/02/2020 311528 7608088 Wspot09 51 Suta punctata Spotted Snake 27/02/2020 311528 7608088 Wspot09 51 Furina ornata Moon Snake 27/02/2020 51 311528 7608088 Wspot09 Gehyra variegata 27/02/2020 7608088 51 311528 Wspot09 Anilios grypus 27/02/2020 51 310925 7608499 Carlia munda Wspot11 27/02/2020 51 310925 7608499 Wspot11 27/02/2020 Gehyra variegata 310925 7608499 Wspot11 51 Antaresia stimsoni Stimson's Python 27/02/2020 7607542 314381 Wspot12 27/02/2020 51 Antaresia stimsoni Stimson's Python 7607542 51 314381 Wspot12 27/02/2020 Oedura fimbria 7607542 314381 Wspot12 51 Gehyra var<u>iegata</u> 27/02/2020 51 314381 7607542 Pseudechis australis Mulga Snake Wspot12 27/02/2020

#### Appendix 1. Fauna recorded during the Pilbara Olive Python survey.