Proposal for wild harvest and export of venom, blood and body parts from
Australian native snake species submitted for approval under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act)

1. Title and introduction

The applicant submitting this proposal is operating as Venom Supplies. Hereafter, the applicant is referred to as Venom Supplies. This proposal relates to the harvesting and breeding of snakes for the purpose of the export of snake venom, venom derivative or venom product, naturally sloughed skins, blood and other biological material.

Snake derived venom, blood and tissue have been used internationally for medical research into therapeutic compounds, production of human therapeutics and diagnostics, pure research and development of biological reagents. The current application proposes to continue this work.

Specimens covered:

Native Australian venomous snakes, except those listed under the EPBC Act as threatened (excluding the conservation dependent category), legally held by Venom Supplies (see Appendix 1 for full species list). Specimens may have been taken from the wild or captive born. All wild snakes including parental stock must have been legally harvested under collection permits issued by the relevant state or territory government.

The snakes are held at the premises of Venom Supplies, and the venom, venom derivative or venom product, naturally sloughed skin, from these snakes can be legally exported for research and medical purposes. Export permits are required with the exception of venom, venom derivative or venom product or a naturally sloughed skin for the following species for which an existing exemption is in place:

Common Death Adder	*Acanthophis antarcticus*
Northern Death Adder	*Acanthophis praelongus*
Desert Death Adder	*Acanthophis pyrrhus*
Lowlands Copperhead	*Austrelaps superbus* South Australia and Victoria)
Pygmy Copperhead	*Austrelaps labialis* (Kangaroo Is. only)
Stephens Banded Snake	*Hoplocephalus stephensii*
Peninsular Tiger Snake	*Notechis ater niger* (Kangaroo Island)
Western Tiger Snake	*Notechis ater occidentalis*
Eastern Tiger snake	*Notechis scutatus*
Inland Taipan	*Oxyuranus microlepidotus*
Coastal Taipan	*Oxyuranus scutellatus scutellatus*
King Brown Snake	*Pseudechis australis*
Collett's Snake	*Pseudechis colletti*
Spotted Black Snake	*Pseudechis guttatus*
Red-bellied Black Snake	*Pseudechis porphyriacus*
Dugite	*Pseudonaja affinis*
Peninsula Brown Snake	*Pseudonaja inframacula*
Western Brown Snake	*Pseudonaja nuchalis*
Common Brown Snake	*Pseudonaja textilis*
Rough-scaled Snake	*Tropidechis carinatus*

Venom Supplies is applying for export approval for products from the species listed in Appendix 1 of this proposal.

Species status under state legislation

All species listed are protected under the relevant state legislation. The status of the population of each species is taken into account by the respective state or territory government before approval to collect specimens is granted.

The keeping and movement of native snake species in South Australia is regulated, monitored and enforced by the Department of Environment, Water and Natural Resources (DEWNR), SA. Permits are required for the keeping and movement of animals and regular reports are submitted to the department.

2. General Goal/Aims

The aims and goals of Venom Supplies is to establish a sustainable source from which to access biological samples from a wide range of venomous snake species, particularly from the Australian Elapidae family. Snake venoms are unique blends of biologically active proteins and peptides that have potential applications in medical research, the understanding of physiological processes and in the development of human therapeutics and medications.

Venom Supplies has ties with many domestic and international academic institutions and collaborates closely with these to help facilitate various research projects.

Below is a selected list of published work relating to these aims:

Intra-specific venom variation in coastal taipans.
Theo Tasoulis, Anjana Silva, Punnam Veerati, Nathan Dunstan, Mark Baker, Wayne Hodgson, Geoffrey Isbister
Toxins 12(8):485 July 2020

Activity of two key toxin groups in Australian elapid venoms show a strong correlation to phylogeny but not to diet
Theo Tasoulis, Michael SY Lee, Manon Ziajko, Nathan Dunstan, Joanna Sumner, Geoffrey K Isbister
BMC evolutionary biology 1, 1-13 2020/1220

Anticoagulant activity of black snake (Elapidae: Pseudechis) venoms: Mechanisms, potency, and antivenom efficacy
Christina N Zdenek, Nicholas J Youngman, Chris Hay, James Dobson, Nathan Dunstan, Luke Allen, Leontina Milanovic, Bryan G Fry
Toxicol. Lett 330, 176-184 2020/9/15

A symmetry or asymmetry: Functional and compositional comparison of venom from the left and right glands of the Indochinese spitting cobra (Naja siamensis)
Richard J Harris, Christina N Zdenek, Amanda Nouwens, Charlotte Sweeney, Nathan Dunstan, Bryan G Fry
Toxicon: X, 100050 2020/7/1

Anticoagulant toxicity of black snake (Elapidae: Pseudechis) venoms: Potency, mechanisms, and antivenom efficacy
Christina N Zdenek, Nicholas J Youngman, Chris Hay, James Dobson, Nathan Dunstan, Luke Allen, Leontina Milanovic, Bryan G Fry
Toxicology letters 2020/5/19

Pets in peril: The relative susceptibility of cats and dogs to procoagulant snake venoms
Christina N Zdenek, Joshua Llinas, James Dobson, Luke Allen, Nathan Dunstan, Leijiane F Sousa, Ana M Moura da Silva, Bryan G Fry
Comparative Biochemistry and Physiology Part C: Toxicology & Pharmacology, 108769 2020/5/3

Activity in two key toxin groups in Australian elapids show a strong correlation to phylogeny but not to diet.
Theo Tasoulis, Michael SY Lee, Manon Ziajko, Nathan Dunstan, Joanna Sumner, Geoffrey K Isbister
Toxicon: Official Journal of the International Society on Toxinology, 177, S61-S61 2020/4/1

Three-finger toxins and Australian elapid venoms: Are they important?
Theo Tasoulis, Nathan Dunstan, Geoffrey K Isbister
Toxicon: Official Journal of the International Society on Toxinology, 177, S61-S61 2020/4/1

Clinical implications of convergent procoagulant toxicity and differential antivenom efficacy in Australian elapid snake venoms
Christina N Zdenek, Bianca op den Brouw, Daniel Dashevsky, Alexandra Gloria, Nicholas J Youngman, Ebony Watson, Patrick Green, Chris Hay, Nathan Dunstan, Luke Allen, Bryan G Fry
Toxicology letters, 316, 171-182 2019/11/1

A taxon-specific and high-throughput method for measuring ligand binding to nicotinic acetylcholine receptors
Christina N Zdenek, Richard J Harris, Sanjaya Kuruppu, Nicholas J Youngman, James S Dobson, Jordan Debono, Muzaffar Khan, Ian Smith, Mike Yarski, David Harrich, Charlotte Sweeney, Nathan Dunstan, Luke Allen, Bryan G Fry
Toxins, 11, 10, 600 2019/10

Coagulotoxic effects by brown snake (Pseudonaja) and taipan (Oxyuranus) venoms, and the efficacy of a new antivenom
Christina N Zdenek, Chris Hay, Kevin Arbuckle, Timothy NW Jackson, Mettine HA Bos, Bianca Op den Brouw, Jordan Debono, Luke Allen, Nathan Dunstan, Terry Morley, María Herrera, José M Gutiérrez, David J Williams, Bryan G Fry
Toxicology in Vitro, 58, 97-109 2019/8/1

Mud in the blood: Novel potent anticoagulant coagulotoxicity in the venoms of the Australian elapid snake genus Denisonia (mud adders) and relative antivenom efficacy
Nicholas J Youngman, Christina N Zdenek, James S Dobson, Matyas A Bittenbinder, Amber Gillett, Brett Hamilton, Nathan Dunstan, Luke Allen, Andrew Veary, Elle Veary, Bryan G Fry
Toxicology letters, 302, 1-6 2019/3/1

A comprehensive approach to managing a neglected, neglected tropical disease; The Myanmar Snakebite Project (MSP)
Julian White, Mohammad Afzal Mahmood, Sam Alfred, Khin Thida Thwin, Khin Maung Kyaw, Aung Zaw, David Warrell, Robert Cumming, John Moody, Debbie Eagles, Keiran Ragas, Nathan Dunstan, David Bacon, Plinio Hurtado, Chen Au Peh
Toxicon: X, 1 2019/1/1

Proteomic and functional variation within black snake venoms (Elapidae: Pseudechis)
Jonathan Goldenberg, Vittoria Cipriani, Timothy NW Jackson, Kevin Arbuckle, Jordan Debono, Daniel Dashevsky, Nadya Panagides, Maria P Ikonomopoulou, Ivan Koludarov, Bin Li, Renan Castro Santana, Amanda Nouwens, Alun Jones, Chris Hay, Nathan Dunstan, Luke Allen, Brian Bush, John J Miles, Lilin Ge, Hang Fai Kwok, Bryan G Fry
Comparative Biochemistry and Physiology Part C: Toxicology & Pharmacology, 205, 53-61 2018/2/1

Venoms of related mammal-eating species of taipans (Oxyuranus) and brown snakes (Pseudonaja) differ in composition of toxins involved in mammal poisoning
Jure Skejic, David L Steer, Nathan Dunstan, Wayne C Hodgson
bioRxiv, 378141, 2018/1/1

Catch a tiger snake by its tail: Differential toxicity, co-factor dependence and antivenom efficacy in a procoagulant clade of Australian venomous snakes
Callum Lister, Kevin Arbuckle, Timothy NW Jackson, Jordan Debono, Christina N Zdenek, Daniel Dashevsky, Nathan Dunstan, Luke Allen, Chris Hay, Brian Bush, Amber Gillett, Bryan G Fry
Comparative Biochemistry and Physiology Part C: Toxicology & Pharmacology, 202, 39-54 2017/11/1

Correlation between ontogenetic dietary shifts and venom variation in Australian brown snakes (Pseudonaja)

V Cipriani, J Debono, J Goldenberg, TNW Jackson, K Arbuckle, J Dobson, I Koludarov, B Li, C Hay, N Dunstan, L Allen, I Hendrikx, H F Kwok, B G Fry
Comparative Biochemistry and Physiology Part C: Toxicology & Pharmacology 197 2017

How the Cobra Got Its Flesh-Eating Venom: Cytotoxicity as a Defensive Innovation and Its Co-Evolution with Hooding, Aposematic Marking, and Spitting
N Panagides, TNW Jackson, MP Ikonomopoulou, K Arbuckle, R Pretzler, D C Yang, S A Ali, I Koludarov, J Dobson, B Sanker, A Asselin, R C Santana, I Hendrikx, H v d Ploeg, J Tai-A-Pin, R v d Bergh, H MI Kerkkamp, F J Vonk, A Naude, M A Strydom, L Jacobsz, N Dunstan, M Jaeger, W C Hodgson, J Miles, B G Fry
Toxins 9 (3), 103 2017

Rapid radiations and the race to redundancy: An investigation of the evolution of Australian elapid snake venoms
TNW Jackson, I Koludarov, SA Ali, J Dobson, CN Zdenek, D Dashevsky, P P Masci, A Nouwens, P Josh, J Goldenberg, V Cipriani, C Hay, I Hendrikx, N Dunstan, L Allen, B G Fry
Toxins 8 (11), 309 2016

Proteomic comparisons of venoms of long-term captive and recently wild-caught Eastern brown snakes (Pseudonaja textilis) indicate venom does not change due to captivity
RJR McCleary, S Sridharan, NL Dunstan, PJ Mirtschin, RM Kini
Journal of proteomics 144, 51-62 2016

Deep venomics of the Pseudonaja genus reveals inter-and intra-specific variation
T Reeks, V Lavergne, K Sunagar, A Jones, E Undheim, N Dunstan, B Fry, PF Alewood
Journal of proteomics 133, 20-32 2016

Proteomic comparisons of long-and short-term captive eastern brown snakes (Pseudonaja textilis)
RJR Mccleary, S Sridharan, NL Dunstan, PJ Mirtschin, PF Alewood, RM Kini
Integrative and Comparative Biology 56, E142-E142 2016

Venomics of the Australian eastern brown snake (Pseudonaja textilis): detection of new venom proteins and splicing variants
VL Viala, D Hildebrand, M Trusch, TM Fucase, JM Sciani, DC Pimenta, R K Arni, H Schlüter, C Betzel, P Mirtschin, N Dunstan, P J Spencer
Toxicon 107, 252-265 2015
Label-free (XIC) quantification of venom procoagulant and neurotoxin expression in related Australian elapid snakes gives insight into venom toxicity evolution
J Skejic, DL Steer, N Dunstan, WC Hodgson
Journal of proteome research 14 (11), 4896-4906 2015

Comparative studies of the venom of a new taipan species, Oxyuranus temporalis, with other members of its genus
CM Barber, F Madaras, RK Turnbull, T Morley, N Dunstan, L Allen, T Kuchel, P Mirtschin, W C Hodgson
Toxins 6 (7), 1979-1995 2014

Vintage venoms: proteomic and pharmacological stability of snake venoms stored for up to eight decades

C Jesupret, K Baumann, TNW Jackson, SA Ali, DC Yang, L Greisman, L Kern, J Steuten, M Jouiaei, N R Casewell, E AB Undheim, I Koludarov, J Debono, D HW Low, S Rossi, N Panagides, K Winter, V Ignjatovic, R Summerhayes, A Jones, A Nouwens, N Dunstan, W C Hodgson, K D Winkel, P Monagle, B G Fry
Journal of proteomics 105, 285-294 2014

Venom down under: dynamic evolution of Australian elapid snake toxins
TNW Jackson, K Sunagar, EAB Undheim, I Koludarov, AHC Chan, K Sanders, S A Ali, I Hendrikx, N Dunstan, B G Fry
Toxins 5 (12), 2621-2655 2013

Cross-neutralisation of the neurotoxic effects of Egyptian cobra venom with commercial tiger snake antivenom
R Kornhauser, GK Isbister, MA O'leary, P Mirtschin, N Dunstan, W C Hodgson
Basic & clinical pharmacology & toxicology 112 (2), 138-143 2013

The In vitro Neurotoxic Effects of the Newly Discovered Central Ranges Taipan (Oxyuranus temporalis)
CM Barber, P Mirtschin, N Dunstan, T Morley, WC Hodgson
Toxicon 60 (2), 192 2012

Identification of novel proteins from the venom of a cryptic snake Drysdalia coronoides by a combined transcriptomics and proteomics approach
ST Chatrath, A Chapeaurouge, Q Lin, TK Lim, N Dunstan, P Mirtschin, P Kumar, R M Kini
Journal of Proteome Research 10 (2), 739-750 2011

Venom yields from Australian and some other species of snakes
PJ Mirtschin, N Dunstan, B Hough, E Hamilton, S Klein, J Lucas, D Millar, F Madaras, T Nias
Ecotoxicology 15 (6), 531-538 2006

Influences on venom yield in Australian tigersnakes (Notechis scutatus) and brownsnakes (Pseudonaja textilis: Elapidae, Serpentes)
PJ Mirtschin, R Shine, TJ Nias, NL Dunstan, BJ Hough, M Mirtschin
Toxicon 40 (11), 1581-1592 2002

Book Chapters
Veterinary care of venomous reptiles
J Haberfield, P Martelli, R Johnson, S Barten, A Gillett, B Lock, R Jones, S Simpson, TNW Jackson, C Cochran, N Dunstan, K Sunagar, BG Fry
Venomous Reptiles and Their Toxins: Evolution, Pathophysiology and Biodiscovery 2015
Maintaining venomous reptile collections: protocols and occupational safety: Evolution, Pathophysiology and Biodiscovery
BG Fry, I Hendrikx, P Rowley, TNW Jackson, H Van der Ploeg, R Johnson, M Sasa, N Dunstan, S Barve, B Lock, T Phillip, M Zivkovic, L Boyer, K Wiley, J Harrison, R Carmichael, MC Morris, D Brandl, G Shankar, S McCarthy, K Sunagar, J Pittman, C Cochran
Venomous Reptiles and Their Toxins: Evolution, Pathophysiology and Biodiscovery 2015

3.1 Wild Harvest Details

Description of what is being harvested

Live snakes are collected opportunistically in small numbers, generally by licenced wildlife professionals attending to nuisance snake requests from the public. Venom Supplies currently holds permits in South Australia and Queensland to collect snakes to be used for venom extraction. These permits provide for potential venom requirements and maintenance of genetic vigour of the captive colony.

The snakes will be/have been opportunistically collected in accordance with state legislation controls which regulate the collecting of native species from the wild. Whilst the details of collecting requirements in each state vary slightly, they all generally require a permit to collect and an additional permit to transport the snakes across state lines. Details of these permits are usually available on the respective state website. All the requirements and methods used have to be approved by the respective state authority. In each case it is simply a matter of catching the snakes when opportunities arise. Collection is by hand and in most cases the snakes are collected when they are interacting with the public and are removed to reduce the risk of snake bite to the public.

Location of harvest

These species are harvested in small numbers from private lands in South Australia and Queensland (other states may be included in the future or have been historically) within their normal ranges in accordance with restrictions listed in the approvals from the respective state authorities. The ranges of each species can be obtained from the books Cogger, H.G. (2014), *Reptiles and Amphibians of Australia VII edition* CSIRO PUBLISHING, Melbourne and Wilson, S. and Swan, G. (2013) *A complete guide to Reptiles of Australia IV Edition.* Reed New Holland, Sydney.

Areas collected: Snakes are collected within their normal range in accordance with state controls. In all cases these areas are outside national and conservation parks. The respective ranges can be found in Cogger, H.G. (2014), *Reptiles and Amphibians of Australia VII edition* CSIRO PUBLISHING, Melbourne and Wilson, S. and Swan, G. (2013) *A complete guide to Reptiles of Australia IV Edition.* Reed New Holland, Sydney.

Land Ownership: Snakes are collected from privately owned land across South Australia and Queensland (and other states if required). Approval from the land owner is gained prior to collection as per State approval requirements.

Quantities harvested: In each case the number of snakes harvested is low and in accordance with state permit approval limits. Snakes are collected on an opportunistic basis and in most cases when interacting with the public to remove snake hazard. Over the last approval period (Dec 2014- Aug 2017) a total of 52 individual snakes were collected under Venom Supplies approved collection permits.

Harvest Methods: Snakes are caught by hand using a snake jigger, a soft padded device attached to a handle used to safely pin the snake without harming it (see picture).

Jigger is used to gently restrain snakes

Harvest Time: Snakes are generally harvested during their active period which is mostly from September to April each year.

3.2 General Operations (including breeding)

General husbandry:
Venom Supplies currently has 4 buildings and a number of secure outside enclosures (appendix 2) to maintain it's collection of snakes and rodents (used as a food source). The facilities have 24 hour monitored security and fire systems. Venom Supplies is a recognised DAFF Quarantine Approved Facility and is subject to regular inspections from DAFF to maintain this status.

The majority of snakes at Venom Supplies are housed individually with the exception of snakes together for breeding purposes or those housed in the outdoor enclosures. Snakes (other than those in the outdoor enclosures) are housed in either a plastic 'tub' style enclosure or a fixed, wooden enclosure. All snakes are given a unique ID code and husbandry records are collected and recorded for all individuals during their lifetime. Breeding of snakes is performed on an as needed basis, generally in response to a direct service related requirement but also to maintain overall collection vigor and reduce the necessity of wild harvesting.

4. Impact of Wild Harvest on Ecosystems

The impact of collecting on the ecosystem is immeasurably low and the likely impact of the collecting on species abundance is negligible. In general terms the relative impact of collecting animals for any purpose compared with other environmental impacts such as habitat loss and feral animals can be realised by reading an assessment by Professor Hal Cogger regarding land clearing in Queensland (Cogger *et al*, 2003). The report stated that an estimated 89 million reptiles are being killed annually in Queensland by land clearing. Earlier, hugely conservative, estimates in Ehmann and Cogger (1985), *Australia's endangered herpetofauna: a review of criteria and policies*, reflect the true perspective of collecting compared with other classes of mortality:

Natural mortality	3,840 million	99.77%

Human induced mortality		
Road kills	5.48 million	0.14%
Land clearing	3.26 million	0.08%
Research collecting	0.02 million	0.0005%
Skins and amateur collecting	<0.02 million	0.0005%

5. Monitoring & Assessment (in relation to the wild harvest)

The environmental impact of the proposed activity of collecting snakes is believed to be miniscule. Monitoring is applied at both state and federal levels by state wildlife agencies through returns submitted by us, and Wildlife Trade are informed through Specimen Export Record form lodgement. No population studies have been carried out on these species in the areas from which they are likely to come, nor is any analysis possible.

5.1 Resource assessment (in relation to the wild harvest)

No population studies have been conducted for these species in areas from which they are likely to be taken. See above. Ecological studies of reptiles tend to be conducted in reserves. These specimens will all come/have come from private property.

6. Effective Management Strategies (in relation to wild harvest)

Population changes are hardly detectable when working with such small numbers over brief periods and would be indistinguishable from the effects of season and meteorological conditions on observable abundance.

The effectiveness of our management in the laboratory of the snakes we collect and hold is reflected in returns submitted to state wildlife authorities and AEC. Our standards are maintained at a superior level. Monitoring and feedback may result following review by these bodies of submitted returns.

7. Compliance

As noted under Section 1 *Species status under state legislation*, the species are protected under state legislation. The keeping and movement of native snakes in South Australia is regulated by DEWNR. Venom Supplies provides reports to DEWNR.
Compliance with permit conditions for the collection of snakes from the wild is monitored by state government agencies, particularly DEWNR in South Australia. This is to ensure that only legally obtained specimens are used in commercial trade.

8. Reports

Wildlife Trade is informed about exports through the lodgement of Specimen Export Record forms, which are provided for every consignment exported. Venom Supplies will further provide the information already being supplied to the South Australian and other state authorities if required by Wildlife Trade.

9. Background information

Biological and ecological information on most Australian snake species is poorly known.

Professor Rick Shine from the University of Sydney is the best known in this area and an overview of biology and ecology of the Australian species involved can be found in Shine (1991), *Australian Snakes: A Natural History*.

Allen Greer authored a work which summarises a vast body of knowledge of the biology of Australian snakes in Greer, A.E. 1997. *The Biology and evolution of Australian Snakes* Surrey Beatty and Sons, Chipping Norton.

For taxonomic summaries see Cogger, H.G. (2014), *Reptiles and Amphibians of Australia VII edition* CSIRO PUBLISHING, Melbourne and Wilson, S. and Swan, G. (2013) *A complete guide to Reptiles of Australia IV Edition.* Reed New Holland, Sydney.

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Cogger, H.G., Ford, H., Johnson, C., Holman, J. and Butler, D. (2003). *Impact of Land Clearing on Australian Wildlife in Queensland*. WWF Australia Report.

Ehmann, H. and Cogger, H. (1985) Australia's endangered herpetofauna: a review of criteria and policies. *Biology of Australasian Frogs and Reptiles* (eds G. Grigg, R. Shine & H. Ehmann), pp. 435-447. Royal Zoological Society of New South Wales, Sydney, Australia.

Greer, A.E. 1997. *The Biology and evolution of Australian Snakes,* Surrey Beatty and Sons, Chipping Norton.

Shine, R. (1991). *Australian Snakes: A Natural History*, Reed Books, Sydney.

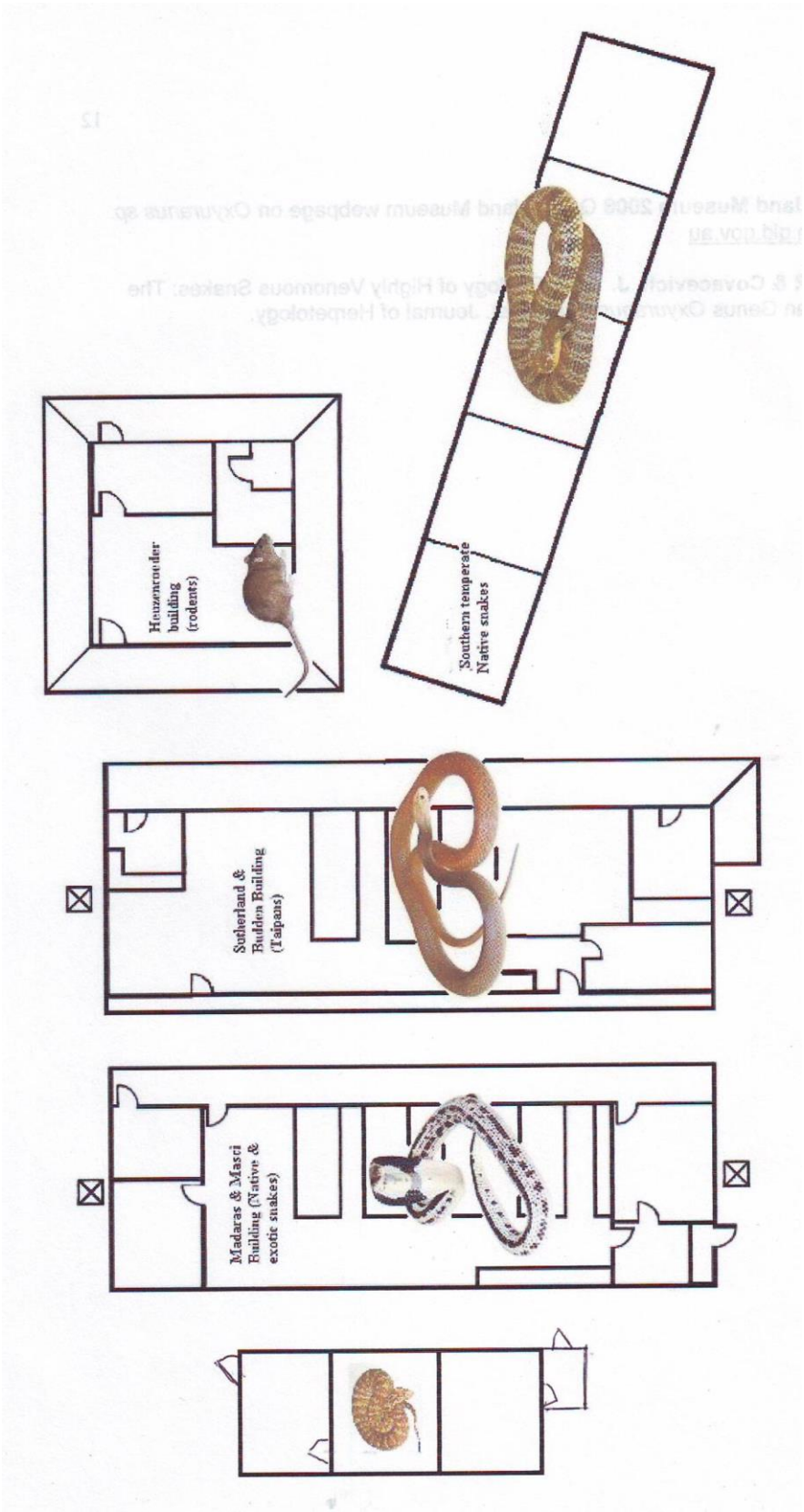
Wilson, S. and Swan, G. (2013) *A complete guide to Reptiles of Australia IV Edition.* Reed New Holland, Sydney.

Appendix 1

Common Name	Scientific Name
Common Death Adder	*Acanthophis antarcticus*
Northern Death Adder	*Acanthophis praelongus*
Desert Death Adder	*Acanthophis pyrrhus*
Lowlands Copperhead	*Austrelaps superbus*
Pygmy Copperhead	*Austrelaps labialis*
Brown Tree Snake	*Boiga irregularis*
Northern Dwarf Crowned Snake	*Cacophis churchilli*
White - Crowned Snake	*Cacophis harriettae*
Dwarf Crowned Snake	*Cacophis krefftii*
Golden Crowned Snake	*Cacophis squamulosus*
Papuan Whip Snake	*Demansia papuensis*
Yellow faced Whip Snake	*Demansia psammophis*
Desert Whip Snake	*Demansia reticulata*
Collared Whip Snake	*Demansia torquata*
Black Whip Snake	*Demansia vestigiata*
De Vi's Banded Snake	*Denisonia devisi*
White Lipped Snake	*Drysdalia coronoides*
Masters Snake	*Drysdalia masteri*
Bardick	*Echiopsis curta*
Red- Naped Snake	*Furina diadema*
Orange -Naped Snake	*Furina ornata*
Brown Headed Snake	*Furina tristis*
Grey Snake	*Hemiaspis damelii*
Black Bellied Swamp Snake	*Hemiaspis signata*
Pale Headed Snake	*Hoplocephalus bitorquatus*
Stephens banded snake	*Hoplocephalus stephensii*
Peninsular Island Snake	*Notechis ater niger*
Western Tiger Snake	*Notechis ater occidentalis*
Eastern Tiger snake	*Notechis scutatus*
Inland Taipan	*Oxyuranus microlepidotus*
Coastal Taipan	*Oxyuranus scutellatus*
Papuan Taipan	*Oxyuranus scutellatus canni*
Little Whip Snake	*Parasuta flagellum*
Monk (hooded) Snake	*Parasuta monachus*
Mitchells Short Tailed Snake	*Parasuta nigriceps*
Mallee Black - headed Snake	*Parasuta spectabilis*
King Brown snake/ Mulga	*Pseudechis australis*
Collett's Snake	*Pseudechis colletti*
Spotted Black Snake	*Pseudechis guttatus*
Papuan Black Snake	*Pseudechis papuanus*
Red Bellied Black Snake	*Pseudechis porphyriacus*
Dugite	*Pseudonaja affinis*
Western Brown Snake	*Pseudonaja aspidorhyncha*
Speckled Brown Snake	*Pseudonaja guttata*
Peninsula Brown Snake	*Pseudonaja inframacula*
Ingram's Brown Snake	*Pseudonaja ingrami*
Western Brown Snake	*Pseudonaja mengdeni*
Ringed Brown Snake	*Pseudonaja modesta*

Western Brown snake	*Pseudonaja nuchalis*
Common/ Eastern Brown Snake	*Pseudonaja textilis*
Capentaria Whip Snake	*Rhinoplocephalus boschmai*
Small Eyed Snake	*Rhinoplocephalus nigrescens*
Black Striped Snake	*Rhinoplocephalus nigrostriatus*
Coral Snake	*Simoselaps australis*
Narrow Banded Snake	*Simoselaps fasciolatus*
Unbanded shovel nosed Snake	*Simoselaps incinctus*
Half Girdled Snake	*Simoselaps semifasciatus*
Dwyers snake	*Suta dwyeri*
Little Spotted Snake	*Suta punctata*
Myall Snake	*Suta suta*
Rough scaled Snake	*Tropidechis carinatus*
Bandy Bandy	*Vermicella annulata*

Appendix 2


Heuzenroeder building (rodents)
Southern temperate Native snakes
Sutherland & Budden Building (Taipans)
Madaras & Masri Building (Native & exotic snakes)