

MAY 2022

CODE OF PRACTICE FOR

# **Recommended minimum enclosure sizes for reptiles**



*“People can live in slums and shanty towns, but do we think they should? No, and it’s the same with our reptiles. We should always aspire to do better for them.”*

Dave Hayden  
Chairman of the FBH





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# Introduction

## Objective

This document underpins the Good Practice Guidelines<sup>1</sup> for the welfare of privately kept reptiles in the UK. It aims to promote the physical health and psychological wellbeing of the reptile by stating a set of guidelines for minimum enclosure size in which a reptile has the opportunity to engage in normal behaviours such as locomotion, basking and hiding. It does not apply to commercial activities involving reptiles which are regulated by licensing<sup>2,3,4,5</sup>.

As well as providing space, the enclosure must meet the other environmental conditions and needs of the animal, as per the Good Practice Guidelines. For example, an enclosure housing a species that normally climbs must have sufficient usable vertical space for the reptile to climb, and an enclosure housing an aquatic or semi-aquatic species must have sufficient water volume for the reptile to swim<sup>6</sup>.

The enclosure sizes described in this document are the minimum that the FBH feels is required to provide adequate opportunities for natural behaviour, enrichment and provision of the required environmental conditions for successful, long-term maintenance.

Further benefits can be provided to most species by using larger enclosures and the FBH would encourage keepers to use an enclosure larger than the minimum sizes outlined in this document wherever possible. While space is a very important part of setting up an enclosure to house your reptile, it is important to maximise this by making the space usable for your animal. This can be done in many ways, for example by adding climbing space – either vertically by giving the back texture, or horizontally by adding a shelf or platform.

Some species will exhibit stress type behaviours such as refusing to eat or pushing themselves against the glass in a large open space, so it is important to not focus purely on providing a large space<sup>7,8,9,10</sup>. This can usually be mitigated by increasing places for hiding and cover and increasing the usable area within the enclosure i.e. increasing the habitat complexity.

This information will be kept under constant review and updated regularly. The FBH will be monitoring and evaluating new evidence as it becomes available. We will continue consulting with other groups and private keepers to include more detailed considerations in this document as it develops.

If you wish to provide feedback on any part of this document, please email: [info@thefbh.org](mailto:info@thefbh.org).



### The Good Practice Guidelines

Published by the FBH, *The Good Practice Guidelines* set out the responsibilities of a private keeper under the Animal Welfare Act.

This *Code of practice for minimum enclosure sizes for reptiles* provides detailed guidance to support the good practice guidelines.

## Rationale

These guidelines have been developed using available evidence and comparison to enclosure size standards in other countries, namely Germany<sup>11</sup> and Australia<sup>12</sup> who have had recommended minimum enclosure size documents since 1997 and 2013 respectively. It should be noted the minimum enclosures that will allow the animal to live can be achieved in considerably smaller spaces than those listed in this document. However, this document considers other elements of keeping reptiles that are now considered important to the animal's welfare in addition to basic provisions. For example, the provision of UV lighting and the space to provide an appropriate light gradient<sup>13</sup>.

There is little published research into the link between enclosure size and wellbeing in reptiles kept in captivity. Research studies into whether enrichment affects the welfare of corn snakes<sup>14</sup>, leopard geckos<sup>15</sup> and bearded dragons<sup>16</sup> showed that welfare improved when enrichment was added to the enclosures. These studies all used enclosures similar to or smaller than the minimum enclosure sizes listed in this document for these species. This indicates that enrichment plays an important role in the welfare of reptiles and that these benefits can be achieved in the minimum enclosure sizes recommended in this document.

## What we mean by minimum

The FBH has taken the term 'minimum enclosure size' to be an enclosure size that is larger than that needed simply to keep the animal alive, but one where the FBH deems that the keeper can provide a minimum standard of wellbeing for their animal. This combines several aspects and incorporates the Five Needs (and the Five Provisions<sup>17</sup>) which are a legal responsibility of the owner under the Animal Welfare Act 2006<sup>6</sup>, namely the freedom from discomfort and exposure and freedom to express normal behaviour;

- An enclosure that allows the correct environmental conditions to be provided – i.e. suitable heat, light cycles and humidity. This includes providing a large enough basking area relative to the animal and suitable gradients in conditions.
- An enclosure that allows space for appropriate habitat to be provided – i.e. climbing area, digging area, hides, etc. This will increase the usable space for the animal including the use of height.
- An enclosure that provides the animal with appropriate space for its movement/activity levels, i.e. the enclosure sizes for very active species are larger than those for more sedentary species based on natural behaviour.



## General

The information in this document generally relates to minimum enclosure sizes for a single adult or subadult animal. The sizes are described as multiples of the animal's size – for lizards this is Snout to Vent Length (SVL), for snakes it is Total Length (TL), and for chelonia this is Plastron Length (PL), although we also discuss Straight Carapace Length (SCL). The dimensions of enclosure sizes are stated as width x depth x height, and for species that are truly arboreal the longest dimension can be the height of the enclosure to provide climbing space.

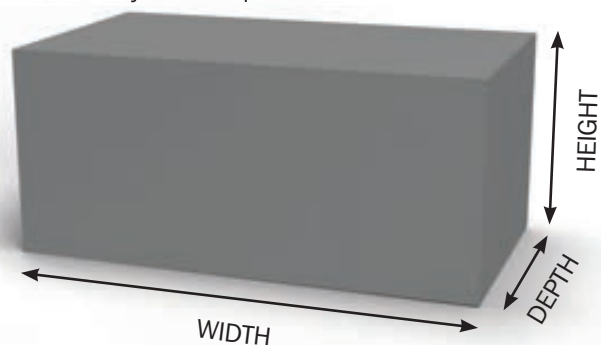
While reptiles and amphibians should usually be kept singly, housing more than one animal together can be done successfully. However, it requires careful consideration of the space required, as well as the compatibility of the animals themselves. Keepers must be confident that they can provide sufficient space, that there will be no adverse behaviours, and accept a greater risk that any disease may be spread between animals. Adverse behaviour includes territorial disputes, competition between individuals for resources such as food, hides or basking sites, unwanted or excessive mating behaviour, predator/prey interactions or stress.

The area required for additional animals in an enclosure will vary depending on the species involved, their habits and compatibility. Terrestrial species may require an increase in floor area for each additional animal, while arboreal species will require attention to increasing the volume of space available and the climbing/perching opportunities. Generally, unless a keeper is confident about the compatibility and requirements of a species then they should not keep more than a single animal in an enclosure.

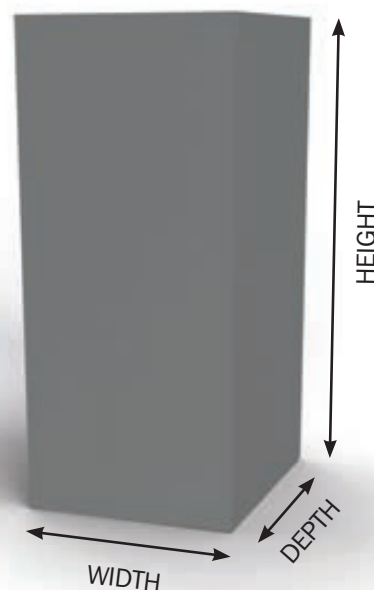
The groups of animals used in this document contain, in some cases, a wide range of species with varying environmental requirements. As such, keepers will need to consider the practicality of their set-up within the enclosure size being used. For example, the keeper will need to ensure the equipment will fit in the space and function as required. Another example is that for animals that dig, the keeper will need to consider whether to increase the height of the enclosure to include a sufficient substrate layer across

the whole of the enclosure.

Hibernation, brumation and estivation in response to seasonal and environmental changes are a natural behaviour of many reptile species, both in the wild and in captivity<sup>18</sup>. The minimum enclosure sizes listed through this document in general do not take this behaviour into consideration. If a keeper chooses to let this occur in the animals usual enclosure then they may wish to increase the enclosure size so that the animal has suitable space to do so.<sup>19,20</sup> Alternatively if the keeper is using a separate enclosure for this then given the decrease in activity levels it may be appropriate for a considerably smaller space to be used.



**Horizontal enclosure for terrestrial animals**



**Vertical enclosure for arboreal animals**

# Summary of recommended

Group	Example family, genera or species				Min enclosure size (W x D x H)
LIZARDS					
Geckos – group 1	<i>Aeluroscalabotes</i> <i>Agamura</i> , <i>Cyrtopodion</i> <i>Diplodactylus</i> <i>Eublepharis</i>	<i>Goniurosaurus</i> <i>Hemitheconyx</i> <i>Nephurus</i> <i>Pachydactylus</i> <i>Paroedura</i>	<i>Ptenopus</i> <i>Stenodactylus</i> <i>Teratolepis</i> <i>Teratoscincus</i>	<i>Tarentola chazaliae</i> <i>Tropicolotes</i> <i>Underwoodisaurus</i>	6 x 3 x 3 SVL
Geckos – group 2	<i>Rhacodactylus</i> <i>Correlophus</i> <i>Cyrtodactylus</i> <i>Geckolepis</i> <i>Gehyra</i>	<i>Gekko</i> <i>Hemidactylus</i> <i>Homopholis</i> <i>Lepidodactylus</i> <i>Naultinus</i>	<i>Oedura</i> <i>Phelsuma</i> <i>Ptyodactylus</i> <i>Tarentola</i> <i>Phyllurus</i>	<i>Saltuarius</i> <i>Uroplatus</i> <i>Eurydactylodes</i>	4 x 4 x 5 SVL
Geckos – group 3	<i>Alsophylax</i> <i>Gonatodes</i>	<i>Lygodactylus</i> <i>Phyllodactylus</i>	<i>Saurodactylus</i> <i>Sphaerodactylus</i>		8 x 4 x 4 SVL
Iguanas	<i>Basiliscus</i> <i>Brachylophus</i> <i>Cachryx</i>	<i>Ctenosaura</i> <i>Conolophus</i> <i>Cyclura</i>	<i>Dipsosaurus</i> <i>Iguana</i> <i>Sauromalus</i>	<i>Chalarodon</i> <i>Oplurus</i>	6 x 3 x 3 SVL
Agamas – group 1	<i>Agama</i> <i>Xenagama</i>	<i>Laudakia</i> <i>Stellagama</i>	<i>Trapelus</i> <i>Pogona</i>	<i>Uromastix</i>	6 x 3 x 3 SVL
Agamas – group 2	<i>Calotes</i> <i>Acanthosaura</i> <i>Bronchocela</i>	<i>Acanthocercus</i> <i>Chlamydosaurus</i> <i>Phrynocephalus</i>	<i>Gonocephalus</i> <i>Hypsilurus</i> <i>Physignathus</i>	<i>Hydrosaurus</i>	4 x 4 x 5 SVL
Chameleons – group 1	<i>Archalus</i> <i>Bradypodion</i>	<i>Chamaeleo</i> <i>Calumma</i>	<i>Furcifer</i> <i>Kinyongia</i>	<i>Nadzikambia</i>	4 x 4 x 6 SVL
Chameleons – group 2	<i>Brookesia</i>	<i>Palleon</i>	<i>Rieppelean</i>	<i>Rhampholeon</i>	10 x 6 x 4 SVL
Monitors	<i>Varanus</i>				6 x 3 x 3 SVL
Skinks	<i>Scincus</i> <i>Chalcides</i> <i>Eumeces</i> <i>Mabuya</i>	<i>Tiliqua</i> <i>Cyclodomorphus</i> <i>Tribolonotus</i> <i>Egernia</i>	<i>Dasia</i> <i>Lamprolepis</i> <i>Corucia</i> <i>Tropidophorus</i>	<i>Mochlus</i>	6 x 4 x 3 SVL
Teiidae and Lacertidae – group 1	<i>Aspidoscelis</i> <i>Cnemidophorus</i>	<i>Dicrodon</i> <i>Ameiva</i>	<i>Lacerta</i> <i>Timon</i>		8 x 4 x 4 SVL
Teiidae and Lacertidae – group 2	<i>Salvator</i> <i>Tupinambis</i>	<i>Dracaena</i>	<i>Shinisaurus</i> <i>crocodilurus</i>	<i>Crocodylurus</i>	6 x 3 x 3 SVL
Gerrhosauridae	<i>Angolosaurus</i> <i>Cordylus</i>	<i>Tetradactylus</i> <i>Tracheloptychus</i>	<i>Zonosaurus</i> <i>Broadleysaurus</i>		6 x 4 x 3 SVL
Anguinae	<i>Anguis</i>	<i>Hyalosaurus</i>	<i>Ophisaurus</i>	<i>Pseudopus</i>	1.2 x 0.5 x 0.3 SVL

All dimensions in the tables refer to W x D x H. Alternative dimensions which provide the same floor or wall area are also acceptable.

# enclosure sizes

Group	Example family, genera or species				Min enclosure size (W x D x H)
SNAKES					
Pythons	<i>Antaresia</i> <i>Apodora</i> <i>Aspidites</i>	<i>Bothrochilus</i> <i>Leiopython</i> <i>Liasis</i>	<i>Morelia</i> <i>Python</i> <i>Simalia</i>	<i>Loxocemus</i> <i>Malayopython</i>	0.9 x 0.45 x 0.3 TL*
Boas	<i>Acrantophis</i> <i>Boa</i> <i>Chilabothrus</i> <i>Corallus</i>	<i>Epicrates</i> <i>Eunectes</i> <i>Calabaria</i> <i>Candoia</i>	<i>Charina</i> <i>Eryx</i> <i>Gongylophis</i> <i>Sanzinia</i>	<i>Bolyeriidae</i>	0.9 x 0.45 x 0.3 TL*
Colubrids – group 1	All colubrids excluding particularly active and aquatic species.	Some common genera kept in the UK include: <i>Ahaetulla</i> <i>Boiga</i>	<i>Drymarchon</i> <i>Elaphe</i> <i>Heterodon</i> <i>Hydrodynastes</i> <i>Lampropeltis</i>	<i>Oreocryptophis</i> <i>Orthriophis</i> <i>Pantherophis</i> <i>Pituophis</i> <i>Zamenis</i>	0.9 x 0.45 x 0.3 TL*
Colubrids – group 2	Some common genera with particularly active species include:	<i>Coelognathus</i> <i>Coluber</i> <i>Gonyosoma</i>	<i>Hierophis</i> <i>Masticophis</i> <i>Phrynonax</i>	<i>Platyiceps</i> <i>Psammophiidae</i> <i>Spilotes</i>	1.2 x 0.5 x 0.3 TL*
Colubrids – group 3	Some common aquatic genera include:	<i>Amphiesma</i> <i>Natrix</i>	<i>Nerodia</i> <i>Thamnophis</i>	<i>Tropidonophis</i>	1.0 x 0.5 x 0.3 TL*
Vipers	<i>Azemiops</i> <i>Bitis</i> <i>Agkistrodon</i> <i>Atropoides</i> <i>Bothropcophias</i> <i>Bothropoides</i> <i>Bothrops</i> <i>Calloselasma</i> <i>Caucus</i> <i>Cerastes</i> <i>Cerrophidion</i>	<i>Crotalus</i> <i>Daboia</i> <i>Echis</i> <i>Eristicophis</i> <i>Garthius</i> <i>Gloydius</i> <i>Hypnale</i> <i>Lachesis</i> <i>Macrovipera</i> <i>Montivipera</i> <i>Mixcoatlus</i>	<i>Ophryacus</i> <i>Ovophis</i> <i>Porthidium</i> <i>Protobothrops</i> <i>Proatheris</i> <i>Pseudocerastes</i> <i>Rhinoceros</i> <i>Sistrurus</i> <i>Vipera</i> <i>Atheris</i> <i>Bothrieichis</i>	<i>Bothriopsis</i> <i>Cryptelytrops</i> <i>Parias</i> <i>Popeia</i> <i>Trimeresurus</i> <i>Tropidolaemus</i> <i>Viridovipera</i>	0.9 x 0.45 x 0.3 TL*
Elapids	<i>Aspidelaps</i> <i>Antaioserpens</i> <i>Micrurus</i> <i>Acanthophis</i>	<i>Naja</i> <i>Notechis</i> <i>Pseudechis</i> <i>Pseudonaja</i>	<i>Walterinnesia</i> <i>Hemachatus</i> <i>Dendroaspis</i> <i>Bungarus</i>	<i>Ophiophagus</i> <i>Boulengerina</i>	0.9 x 0.45 x 0.3 TL*
CHELONIANS					
Turtles and terrapins	<i>Bataguridae</i> <i>Chelydridae</i> <i>Emydidae</i>	<i>Erymnochelys</i> <i>Geoemydidae</i> <i>Kinosternidae</i>	<i>Platysternidae</i> <i>Pleurodira</i> <i>Peltocephalis</i>	<i>Podocnemis</i> <i>Trachemys</i> <i>Trionychidae</i>	8 x 4 PL
Tortoises	<i>Chelonoidis</i> <i>Dipsochelys</i> <i>Geochelone</i> <i>Astrochelys</i>	<i>Homopus</i> <i>Indotestudo</i> <i>Kinixys</i> <i>Malacochersus</i>	<i>Manouria</i> <i>Psammobates</i> <i>Pyxis</i> <i>Stigmochelys</i>	<i>Testudo</i>	8 x 4 PL

\* Alternative dimensions that provide at least 1 times TL across the floor area without compromising the space available, e.g. 1.0 x 0.3 x 0.3 or 0.8 x 0.6 x 0.3 or 0.7 x 0.7 x 0.3 are acceptable.



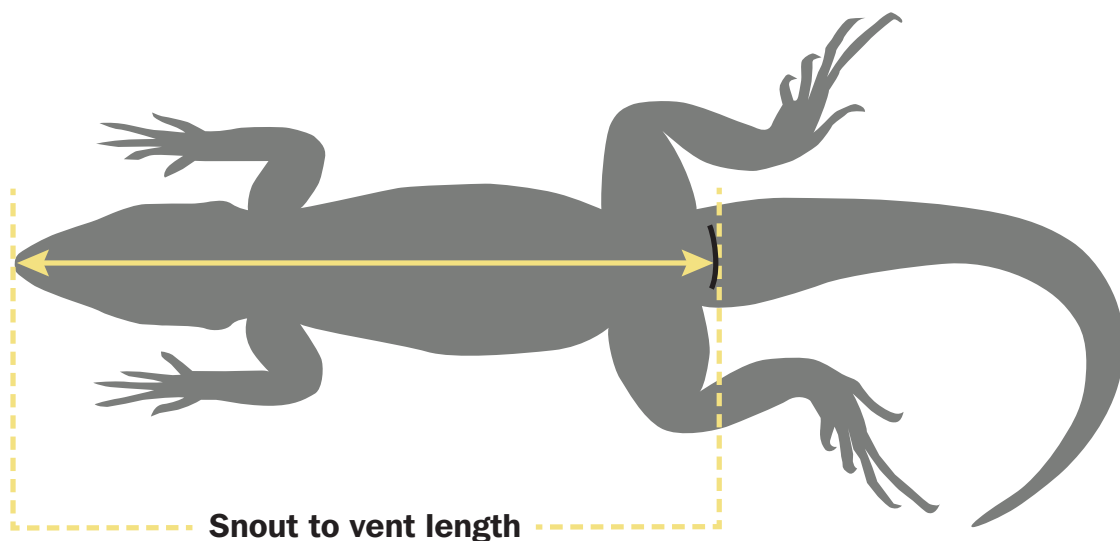
# Lizards

**These guidelines relate to an enclosure housing a single lizard that is an adult or a lizard that is more than 12 months old.**

For terrestrial species the longest dimension of the enclosure size is the width, i.e. considering the provision of floor area. For species identified as arboreal or requiring climbing space (tree, wall, leaf-dwelling species), it may be appropriate to consider the longest dimension as the height, i.e. considering the dimensions of the back wall of the enclosure, so that the animal has sufficient room to climb and utilise vertical space<sup>21,22</sup>.

Enclosure sizes for lizards are based on the length of the animal (snout to vent) and the dimensions (given as width x depth x height – w x d x h) are multiples of the animal's length from snout to vent (SVL). For example if a lizard was 10cm SVL and the guidance was for an enclosure that was 4 times the lizard's SVL then this would need to be 40cm.

Some species of lizards are very small, for example *Lygodactylus williamsi* would have a SVL of 4cm, so basing the enclosure size on SVL may lead to a very small terrarium. We have tried to group these small lizards such that their minimum enclosure size is larger than other species in the same family, relative to their size. In general we would encourage that all dimensions are at least 30cm. This is to ensure that the enclosure is large enough to provide stable heat and light, allowing a graduated range for both.





# LIZARDS – GECKOS

## Geckos

Group	Example family, genera or species				Min enclosure size
Geckos – group 1	<i>Aeluroscalabotes</i> <i>Agamura</i> , <i>Cyrtopodion</i> <i>Diplodactylus</i> <i>Eublepharis</i>	<i>Goniurosaurus</i> <i>Hemitheconyx</i> <i>Nephurus</i> <i>Pachydactylus</i> <i>Paroedura</i>	<i>Ptenopus</i> <i>Stenodactylus</i> <i>Teratolepis</i> <i>Teratoscincus</i>	<i>Tarentola chazaliae</i> <i>Tropicolotes</i> <i>Underwoodisaurus</i>	6 x 3 x 3 SVL
Geckos – group 2	<i>Rhacodactylus</i> <i>Correlophus</i> <i>Cyrtodactylus</i> <i>Geckolepis</i> <i>Gehyra</i>	<i>Gekko</i> <i>Hemidactylus</i> <i>Homopholis</i> <i>Lepidodactylus</i> <i>Naultinus</i>	<i>Oedura</i> <i>Phelsuma</i> <i>Ptyodactylus</i> <i>Tarentola</i> <i>Phyllurus</i>	<i>Saltuarius</i> <i>Uroplatus</i> <i>Eurydactylodes</i>	4 x 4 x 5 SVL
Geckos – group 3	<i>Alsophylax</i> <i>Gonatodes</i>	<i>Lygodactylus</i> <i>Phyllodactylus</i>	<i>Saurodactylus</i> <i>Sphaerodactylus</i>		8 x 4 x 4 SVL

Geckos have been grouped into three groups where genera with similar requirements have been grouped together. The example genera in each group does not provide an exhaustive list of all geckos – for geckos

not listed in this guidance document the minimum enclosure size should be based on that for geckos with similar behaviour and habitat requirements<sup>23,24</sup>.

### GECKOS – GROUP 1

This group covers a wide range of terrestrial gecko species that can be considered to have similar needs for space. This group includes leopard geckos and fat-tail geckos<sup>25</sup>.

#### Group 1 example species

- Leopard gecko (*Eublepharis macularius*)
- African fat-tailed gecko (*Hemitheconyx caudicinctus*)
- Cat gecko (*Aeluroscalabotes felinus*)
- Knob-tailed gecko (*Nephurus* sp.)
- Thick-toed banded gecko (*Pachydactylus fasciatus*)
- Australian barking gecko (*Underwoodisaurus millii*)
- Wonder gecko (*Teratoscincus scincus*)

#### Group 1 example calculation

##### Leopard gecko (*Eublepharis macularius*)

A leopard gecko with a snout to vent length of 15cm (6"), and total length of 25cm (10"), would require an enclosure of at least 90 x 45 x 45cm (3' x 18" x 18").

Being a mostly terrestrial species compared to a lot of geckos the dimensions that would best suit a leopard gecko would be wider rather than taller.

There are numerous enclosures available that are approximately 90 x 45 x 45cm (3' x 18" x 18"), which would provide the minimum enclosure size for a leopard gecko around 25cm (10") long.

**Minimum enclosure size: 6 x 3 x 3 times SVL**



## GECKOS – GROUP 2

This group covers a wide range of arboreal gecko species that can be considered to have similar needs for space. This group contains crested geckos and day geckos. The enclosure size for this group differs slightly from the Group 1 geckos and provides greater volume of space in the enclosure rather than focusing on a larger floor area (or back wall area). It is therefore more of a priority for the keeper to ensure that the space within the enclosure can be used by the animal<sup>24</sup>.

### Group 2 example species

- Gargoyle gecko (*Rhacodactylus auriculatus*)
- New Caladonian giant gecko (*Rhacodactylus leachianus*)
- Crested gecko (*Correlophus ciliatus*)
- Tokay gecko (*Gecko gecko*)
- Tropical house gecko (*Hemidactylus mabouia*)
- Madagascar giant day gecko (*Phelsuma grandis*)
- Peacock day gecko (*Phelsuma quadriocellata* ssp.)
- Moorish gecko (*Tarentola mauritanica*)
- Satanic leaf-tail gecko (*Uroplatus phantasticus*)

**Minimum enclosure size: 4 x 4 x 5 SVL**

### Group 2 example calculation

#### Crested gecko (*Correlophus ciliatus*)

An average size crested gecko could measure 11cm (4.3") snout to vent, and 20cm (8") total length, would require an enclosure size 44 x 44 x 55cm.

There are numerous enclosures on the market that are 45 x 45 x 60cm (18" x 18" x 24") which could be set up appropriately and be used as the minimum size of enclosure for a crested gecko around 20cm long.

## GECKOS – GROUP 3

This group contains active diurnal and dwarf species<sup>26,27</sup>. As mentioned above the larger enclosure size for this group is to provide an enclosure size that allows the provision of stable heat and light provision, rather than relating solely to the size of the animals<sup>13</sup>.

### Group 3 example species

- Ocellated gecko (*Gonatodes ocellatus*)
- Electric blue gecko (*Lygodactylus williamsi*)
- Mourning gecko (*Lepidodactylus lugubris*)

**Minimum enclosure size: 8 x 4 x 4 SVL  
or at least 30cm for each dimension**



# LIZARDS – IGUANIDAE, AGAMAS

## Iguanidae

Including Malagasy iguanas<sup>28,29</sup>

Group	Example family, genera or species				Min enclosure size
Iguanas	<i>Basiliscus</i> <i>Brachylophus</i> <i>Cachryx</i>	<i>Ctenosaura</i> <i>Conolophus</i> <i>Cyclura</i>	<i>Dipsosaurus</i> <i>Iguana</i> <i>Sauromalus</i>	<i>Chalarodon</i> <i>Oplurus</i>	6 x 3 x 3 SVL

### Example species

- Green/plumed basilisk (*Basiliscus plumifrons*)
- Common basilisk (*Basiliscus basiliscus*)
- Fiji iguana (*Brachylophus vitiensis*)
- Black spiny-tail iguana (*Ctenosaura similis*)
- Rhinoceros iguana (*Cyclura cornuta*)
- Desert iguana (*Dipsosaurus dorsalis*)
- Green iguana (*Iguana iguana*)

### Example calculation

#### Fiji iguana (*Brachylophus fasciatus*)

An adult Fiji iguana with a snout to vent length of 25cm (10"), total length 80cm (31"), would have a minimum enclosure size of 75cm x 75cm x 1.5m (30" x 30" x 5') if set up as an arboreal enclosure. It is important that this enclosure provides suitable climbing and basking opportunities to use the vertical space. There are mesh enclosures available that are close to these dimensions, and while there is little in the way of wooden vivaria available these can be custom made.

Minimum enclosure size 6 x 3 x 3 SVL

## Agamas<sup>30,31</sup>

Group	Example family, genera or species				Min enclosure size
Agamas – group 1	<i>Agama</i> <i>Xenagama</i>	<i>Laudakia</i> <i>Stellagama</i>	<i>Trapelus</i> <i>Pogona</i>	<i>Uromastix</i>	6 x 3 x 3 SVL
Agamas – group 2	<i>Calotes</i> <i>Acanthosaura</i> <i>Bronchocele</i>	<i>Acanthocercus</i> <i>Chlamydosaurus</i> <i>Phrynocephalus</i>	<i>Gonocephalus</i> <i>Hypsilurus</i> <i>Physignathus</i>	<i>Hydrosaurus</i>	4 x 4 x 5 SVL

Agamas have been grouped into two groups where genera with similar requirements have been grouped together. The example genera in each group does not provide an exhaustive list of all agamas – for agamas

not listed in this guidance document the minimum enclosure size should be based on that for agamas with similar behaviour and habitat requirements.

# LIZARDS – IGUANIDAE, AGAMAS

## AGAMAS – GROUP 1

This group covers a range of terrestrial agama species that can be considered to have similar needs for space. This group includes bearded dragons and spiny-tailed lizards.

### Group 1 example species

- Bearded dragon (*Pogona vitticeps*)
- Rankins dragon (*Pogona henrylawsoni*)
- Egyptian spiny-tailed lizard (*Uromastix aegyptia*)
- Moroccan spiny-tailed lizard (*Uromastix nigriventris*)

**Min enclosure size: 6 x 3 x 3 times SVL**

### Example calculation

#### Bearded dragon (*Pogona vitticeps*)

An adult bearded dragon with a snout to vent length of 20cm (8"), total length 40cm (16"), would have a minimum enclosure size of 120 x 60 x 60cm. Bearded dragons will utilise height and climbing space, but would generally be considered terrestrial and benefit from a long enclosure. There are many enclosures available that are 120 x 60 x 60cm (4' x 2' x 2') which could be used for a bearded dragon of this size.

## AGAMAS – GROUP 2

This group covers a wide range of agama species that are mostly arboreal and that can be considered to have similar needs for space. This group contains sailfin lizards and frilled dragons. The enclosure size for this group differs slightly from Group 1 agamas and provides greater volume of space in the enclosure rather than focusing on a larger floor area (or back wall area). It is therefore more of a priority for the keeper to ensure that the space within the enclosure can be used by the animal.

### Group 2 example species

- Frilled dragon (*Chlamydosaurus kingii*)
- Asian water dragon (*Physignathus cocincinus*)
- Sailfin dragon (*Hydrosaurus* sp.)
- Australian water dragon (*Intellagama lesueurii*)

**Min enclosure size: 4 x 4 x 5 SVL**



# LIZARDS – CHAMELEONS, MONITORS

## Chameleons

Group	Example family, genera or species				Min enclosure size
Chameleons – group 1	<i>Archalus</i> <i>Bradypodion</i>	<i>Chamaeleo</i> <i>Calumma</i>	<i>Furcifer</i> <i>Kinyongia</i>	<i>Nadzikambia</i>	4 x 4 x 6 SVL
Chameleons – group 2	<i>Brookesia</i>	<i>Palleon</i>	<i>Rieppelean</i>	<i>Rhampholeon</i>	10 x 6 x 4 SVL

### CHAMELEONS – GROUP 1

Most of these species are arboreal so enclosures that are taller rather than wider will be appropriate, ensuring appropriate climbing options are provided.

For terrestrial true chameleons the minimum enclosure size should refer to flood space (wider rather than taller), and the specific needs of each species should be considered when providing enclosures<sup>32,33,34,35</sup>.

#### Group 1 example species

- Veiled/Yemen chameleon (*Chamaeleo calyptatus*)
- Parson's chameleon (*Calumma parsonii*)
- Panther chameleon (*Furcifer pardalis*)
- Jackson's chameleon (*Trioceros jacksonii*)
- Senegal chameleon (*Chamaeleo senegalensis*)

**Minimum enclosure size: 4 x 4 x 6 SVL**

### CHAMELEONS – GROUP 2

Leaf chameleons are small or very small chameleons. As mentioned above in the pygmy gecko section, the larger enclosure size for this group is to provide an enclosure size that allows the provision of stable heat and light provision.

#### Group 2 example species

- Pygmy chameleon (*Rhampholeon sp.*)
- Bearded pygmy chameleon (*Rieppelean brevicaudatus*)

**Minimum enclosure size: 10 x 6 x 4 SVL  
or at least 30cm for each dimension**





## Monitor lizards

Group	Example family, genera or species	Min enclosure size
Monitors	<i>Varanus</i>	6 x 3 x 3 SVL

Monitors are grouped by species given that the genus *Varanidae* has its own section in this document. It should be noted that monitors range from terrestrial to arboreal and many species also are adept in the water and would benefit from a large water source or area to swim. Monitors are generally very active and will utilise horizontal, vertical and aquatic space within an enclosure<sup>36,37,38</sup>. So in addition to these minimum enclosure sizes consideration should be given to how this space is provided and how it can be utilised by the animal. For aquatic and semi-aquatic species it is recommended that at least half of the usable minimum enclosure size should provide an aquatic environment.

### Example species

- Spiny-tailed monitor (*Varanus acanthurus*)
- Blue tree monitor (*Varanus macraei*)
- Emerald tree monitor (*Varanus prasinus*)
- Black tree monitor (*Varanus beccarii*)
- White throat monitor (*Varanus albigularis albigularis*)
- Black throat monitor (*Varanus albigularis ionidesi*)
- Savannah/Bosc monitor (*Varanus exanthematicus*)
- Argus monitor (*Varanus panoptes*)
- Lace monitor (*Varanus varius*)
- Peacock monitor (*Varanus aellenbergi*)
- Mangrove monitor (*Varanus indicus*)
- Peach-throated monitor (*Varanus jobiensis*)
- Quince monitor (*Varanus melinus*)
- Roughneck monitor (*Varanus rudicollis*)
- Crocodile monitor (*Varanus salvadorii*)
- Cuming's water monitor (*Varanus cumingi*)
- Nile monitor (*Varanus niloticus*)
- Asian water monitor (*Varanus salvator*)
- Kimberley rock monitor (*Varanus glauerti*)
- Pilbara rock monitor (*Varanus pilbarensis*)
- Mertens' water monitor (*Varanus mertensi*)

**Minimum enclosure size: 6 x 3 x 3 SVL**



## Skinks

Group	Example family, genera or species				Min enclosure size
Skinks	<i>Scincus</i> <i>Chalcides</i> <i>Eumeces</i> <i>Mabuya</i>	<i>Tiliqua</i> <i>Cyclodomorphus</i> <i>Tribolonotus</i> <i>Egernia</i>	<i>Dasia</i> <i>Lamprolepis</i> <i>Corucia</i> <i>Tropidophorus</i>	<i>Mochlus</i>	6 x 4 x 3 SVL

Skinks are commonly kept by private keepers in the UK<sup>40</sup>.

There is considerable variation between species as they originate from a wide range of habitats including tropical, temperate, arid, forest and semi-aquatic conditions. This requires very different set-ups to create suitable climate and habitat conditions, but the minimum enclosure size remains the same<sup>39</sup>. Keepers should focus on the environment provided within the enclosure to maximise welfare outcomes.

### Example species

- Common sandfish (*Scincus scincus*)
- Berber/Schneider's skink (*Eumeces schneiderii*)
- Blue tongue skink (*Tiliqua sp.*)
- Pink tongue skink (*Cyclodomorphus gerrardii*)
- Red-eyed crocodile skink (*Tribolonotus gracilis*)
- Emerald tree skink (*Lamprolepis smaragdina*)
- Solomon islands/Monkey-tailed skink (*Corucia zebrata*)
- Fire skink (*Mochlus fernandi*)

**Minimum enclosure size: 6 x 4 x 3 SVL**





# LIZARDS – SKINKS, TEIIDAE, LACERTIDAE

## Teiidae and Lacertidae

Runners, whiptails, caiman lizards, tegus and wall lizards

Group	Example family, genera or species				Min enclosure size
Teiidae and Lacertidae – group 1	<i>Aspidoscelis</i> <i>Cnemidophorus</i>	<i>Dicrodon</i> <i>Ameiva</i>	<i>Lacerta</i> <i>Timon</i>		8 x 4 x 4 SVL
Teiidae and Lacertidae – group 2	<i>Salvator</i> <i>Tupinambis</i>	<i>Dracaena</i>	<i>Shinisaurus</i> <i>crocodilurus</i>	<i>Crocodylus</i>	6 x 3 x 3 SVL

The Teiidae and Lacertidae families of lizards are grouped into two groups for the purpose of setting minimum enclosure sizes due to activity level of the species in each group.

### TEIIDAE AND LACERTIDAE – GROUP 1

#### Group 1 example species

- Jungle runner (*Ameiva ameiva*)
- Sand lizard (*Lacerta agilis*)
- Italian wall lizard (*Podarcis siculus*)

**Minimum enclosure size: 8 x 4 x 4 SVL**

### TEIIDAE AND LACERTIDAE – GROUP 2

This group contains tegus and false monitors, and also including caiman and crocodile lizards, which should contain a significant proportion of water, i.e. one third to half the available area of the enclosure.

#### Group 2 example species

- Red tegu (*Salvator rufescens*)
- Argentine black and white tegu (*Salvator merianae*)
- Golden tegu (*Tupinambis teguixin*)
- Caiman lizard (*Dracaena guianensis*)
- Chinese crocodile lizard (*Shinisaurus crocodilurus*)

**Minimum enclosure size: 6 x 3 x 3 SVL**



## LIZARDS – GERRHOSAURIDAE, ANGUIDAE

### Gerrhosauridae

#### Plated lizards

Group	Example family, genera or species	Min enclosure size
Gerrhosauridae	<i>Angolosaurus</i> <i>Tetradactylus</i> <i>Zonosaurus</i> <i>Cordylus</i> <i>Tracheloptychus</i> <i>Broadleysaurus</i>	6 x 4 x 3 SVL

#### Example species

- Giant plated lizard (*Gerrhosaurus validus*)
- Sudan plated lizard (*Gerrhosaurus major*)

**Minimum enclosure size: 6 x 4 x 3 SVL**

### Anguidae

#### Slow worms and glass lizards

Group	Example family, genera or species	Min enclosure size
Anguinae	<i>Anguis</i> <i>Hyalosaurus</i> <i>Ophisaurus</i> <i>Pseudopus</i>	1.2 x 0.5 x 0.3 SVL

This group are characterised for being legless lizards or with small remnants of legs.

#### Example species

- Common slow worm (*Anguis fragilis*)
- European glass lizard (*Pseudopus apodus*)

**Minimum enclosure size: 1.2 x 0.5 x 0.3 SVL**

# Snakes

**These guidelines for minimum enclosure size relate to an enclosure housing a single adult snake or a snake that is more than 18 months old. Enclosure sizes for snakes are based on the total length of the animal and the dimensions are multiples of the animal's length. For terrestrial species the minimum enclosure size should generally have the longest dimensions illustrated in the tables as the width. For truly arboreal species identified as requiring climbing space it may be suitable for the longest dimension to be the height rather than the width<sup>41,42,43</sup>.**

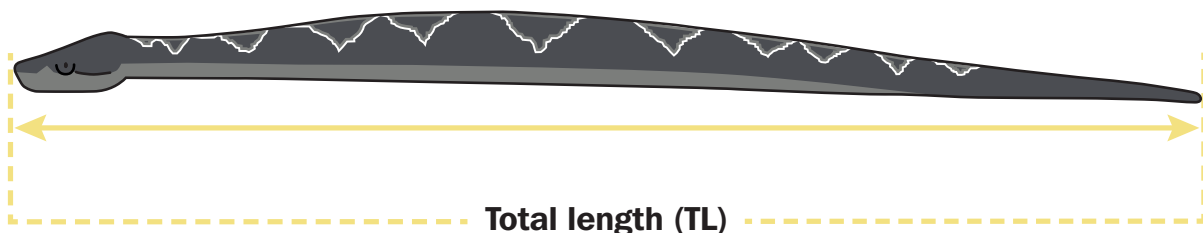
While there is little available evidence to demonstrate the causal need for a snake to stretch out to maintain its health, there is a growing evidence base that given the opportunity, snakes will at times nearly fully stretch out, even if adopting a completely linear posture may happen very rarely, if at all. Therefore, permanent housing should provide the option to fully stretch their body should they choose to do so. One dimension inside the enclosure should always be at least as long as the snake. This could be the width, depth or internal diagonal and for terrestrial snakes must be at floor level. Generally, the recommended minimum enclosure size for snakes is  $0.9 \times 0.45 \times 0.3$  (W x D x H) times the snake's length. This ensures the internal floor diagonal is 1 times the length of the snakes. Alternative dimensions could be used which provide 1 times the length of the snake and allow the opportunity to stretch<sup>9</sup>; e.g. wider but less depth;  $1 \times 0.3 \times 0.3$ , deeper but less wide;  $0.8 \times 0.6 \times 0.3$  and maximising the floor area;  $0.7 \times 0.7 \times 0.3$ . The recommended dimensions are designed to maximise the usable floor area and volume for the animals to utilise. In all cases the depth and height of the enclosure should not be less than 0.3 times the length of the snake.

For small snakes (those less than 1m in length) that are kept in wooden vivaria using the high dimension of 0.3 times the snake's length may not provide enough height to correctly provide heat and UV which would typically require at least 30cm (12") in height. Commercially available vivaria commonly have a height of 45cm (18") and 60cm (24") which would provide sufficient space to mount heat and light fittings, while glass terrariums with mesh lids would typically have heating and lighting mounted above the enclosure.

There are species/genera that are not covered in this document, these in general will be snakes that are rare in captivity in the UK. For guidance on minimum enclosure sizes on these snakes, find a similar species/genera and consider what other factors should be taken into account for these species\*.

## Rack systems for snakes

Suitable environments can be provided in rack systems – i.e. those that adhere to minimum enclosure sizes, provide a light/UV cycle, thermo-gradient and other environmental stimuli that allow the animals to display natural behaviour. Rack systems can also have a practical purpose for short-term unenriched housing which should generally be limited to three months, for example keeping an animal sterile in quarantine or for medical reasons, for periods of brumation, and as practical housing for young or baby animals while they become established. Outside of these specific uses the FBH does not support the long-term use of rack systems for snakes where the physical movement of the animals is severely restricted and keepers should ensure the minimum enclosure sizes in this document are met. Animals kept for longer periods in racks should be provided environmental enrichment that can benefit the animals' physical or mental welfare<sup>10,44</sup>.



\* Commercial sellers are regulated under the Animal Welfare (Licensing of activities involving animals) regulations, which set legal minimum cage sizes of  $2/3 \times$  length of the snake in England and Scotland, and  $1 \times$  length of the snake in Wales. These regulations do not apply to private keepers.

# SNAKES – PYTHONS

## Pythons

Group	Example family, genera or species				Min enclosure size
Pythons	<i>Antaresia</i> <i>Apodora</i> <i>Aspidites</i>	<i>Bothrochilus</i> <i>Leiopython</i> <i>Liasis</i>	<i>Morelia</i> <i>Python</i> <i>Simalia</i>	<i>Loxocemus</i> <i>Malayopython</i>	0.9 x 0.45 x 0.3 TL*

Pythons are considered under one group<sup>45,46,47,48</sup>.

### Example species

- Children's python (*Antaresia childreni*)
- Spotted python (*Antaresia maculosa*)
- Black-headed python (*Aspidites melanocephalus*)
- Woma python (*Aspidites ramsayi*)
- Bismarck ringed python (*Bothrochilus boa*)
- Northern white lipped python (*Bothrochilus albertisii*)
- Macklot's python (*Liasis mackloti*)
- Olive python (*Liasis olivaceus*)
- Green tree python (*Morelia viridis*)
- Carpet python (*Morelia spilota*)
- Bredl's python (*Morelia bredli*)
- Indian python (*Python molurus*)
- African rock python (*Python sebae*)
- Royal python (*Python regius*)
- Burmese python (*Python bivittatus*)
- Borneo short-tailed python (*Python breitensteini*)
- Scrub python (*Simalia kinghorni*)
- Reticulated python (*Malayopython reticulatus*)

**Minimum enclosure size: 0.9 x 0.45 x 0.3 times total length of the snake**

### Example calculation

#### Royal python (*Python regius*)

A small adult royal python measuring around 120cm (4') would have a minimum enclosure size of around 108 x 54 x 40cm (3'7" x 21" x 16"). Alternatively we could consider the dimensions of 1 x 0.3 x 0.3 which would lead to a minimum enclosure size of 120 x 36 x 36cm (4' x 15" x 15").

When considered in terms of the size of commonly available enclosures, a 120 x 60 x 60cm (4' x 2' x 2') vivarium would have a diagonal dimension of 135cm (4'6") and so would meet the minimum requirements for a snake up to 135cm (4'6"). For a larger royal python a 150 x 60 x 60cm (5' x 2' x 2') vivarium would meet the minimum requirements for a snake up to 160cm (5'3"). While royal pythons will take opportunities to climb they would generally be better described as terrestrial and so would be suited to an enclosure that was wider than it was higher.

### Considerations for larger species

Several species within this group can attain sizes over 3.6m (12'), although only a minority of individuals will attain such length. Minimum enclosure sizes for individual animals over this length should be considered outside of 0.9 x 0.45 x 0.3 times length, although the enclosure should in no cases be smaller than 3.2 x 1.62 x 1m (10'6" x 5'8" x 3') (as per 0.9 x 0.45 x 0.3 for a 3.6m (12') snake). While bigger is better in terms of enclosure size (providing other environmental conditions are met) beyond this length a snake's enclosure size should be considered on an individual basis. It is encouraged that keepers put resources into providing other sources of wellbeing for these animals, such as additional height, climbing space, exercise outside of the enclosure, water area and other enrichment. Anyone considering purchasing a larger species should ensure that they are able to provide the required housing for the whole of its life. If there is any doubt that this will be possible then a smaller species should be considered.

\* Alternative dimensions that provide at least 1 times TL across the floor area without compromising the space available, e.g. 1.0 x 0.3 x 0.3 or 0.8 x 0.6 x 0.3 or 0.7 x 0.7 x 0.3 are acceptable.









# SNAKES – BOAS

## Boas

Group	Example family, genera or species				Min enclosure size
Boas	<i>Acrantophis</i> <i>Boa</i> <i>Chilabothrus</i> <i>Corallus</i>	<i>Epicrates</i> <i>Eunectes</i> <i>Calabaria</i> <i>Candoia</i>	<i>Charina</i> <i>Eryx</i> <i>Gongylophis</i> <i>Sanzinia</i>	<i>Bolyeriidae</i>	0.9 x 0.45 x 0.3 TL*

Boas are a large family of snakes that include a number of subfamilies and a diverse range of species which inhabit different habitats, including terrestrial and arboreal species<sup>48,49</sup>. As such, provision of these requirements is equally important as minimum enclosure sizes and as with lizards, for arboreal species the longest dimensions of the enclosure size may be height.

### Example species

- Dumeril's boa (*Acrantophis dumerili*)
- Common boa (*Boa imperata*)
- True red-tailed boa (*Boa constrictor*)
- Jamaican boa (*Chilabothrus subflavus*)
- Emerald tree boa (*Corallus caninus*)
- Brazilian rainbow boa (*Epicrates cenchria cenchria*)
- Green anaconda (*Eunectes murinus*)
- Yellow anaconda (*Eunectes notaeus*)
- Solomon Islands ground boa (*Candoia paulsoni*)
- Rosy boa (*Lichanura trivirgata*)
- Kenyan sand boa (*Eryx colubrinus*)

**Minimum enclosure size: 0.9 x 0.45 x 0.3 times total length of the snake**

### Example calculation

#### Boa constrictor (*Boa constrictor*)

An adult boa constrictor measuring 2.1m (7') would require a minimum enclosure size of 1.9 x 0.94 x 0.6m (6' x 3' x 2'). Alternatively, using the dimensions of 1 x 0.3 x 0.3 times the length of the snake, this would lead to a minimum enclosure of 2.1 x 0.6 x 0.6m (7' x 2' x 2'). Boas are very good climbers, it would be difficult to classify them as being fully terrestrial. However, in practice for a boa of this size it would likely be more practical to consider providing an enclosure that was wider rather than taller for minimum enclosure size.

### Considerations for larger species

As with pythons, some members of this group, notably *Eunectes* – can on rare occasions exceed 3.6m (12') in length. The same exception as with the python group should be considered, but even more important is to consider their other needs for *Eunectes*, primarily providing an appropriately large body of water.

## SNAKES – COLUBRIDS

### Colubrids

Group	Example family, genera or species				Min enclosure size
Colubrids – group 1	All colubrids excluding particularly active and aquatic species.	Some common genera kept in the UK include: <i>Ahaetulla</i> <i>Boiga</i>	<i>Drymarchon</i> <i>Elaphe</i> <i>Heterodon</i> <i>Hydrodynastes</i> <i>Lampropeltis</i>	<i>Oreocryptophis</i> <i>Orthriophis</i> <i>Pantherophis</i> <i>Pituophis</i> <i>Zamenis</i>	0.9 x 0.45 x 0.3 TL*
Colubrids – group 2	Some common genera with particularly active species include:	<i>Coelognathus</i> <i>Coluber</i> <i>Gonyosoma</i>	<i>Hierophis</i> <i>Masticophis</i> <i>Phrynonax</i>	<i>Platyceps</i> <i>Psammophiidae</i> <i>Spilotes</i>	1.2 x 0.5 x 0.3 TL*
Colubrids – group 3	Some common aquatic genera include:	<i>Amphiesma</i> <i>Natrix</i>	<i>Nerodia</i> <i>Thamnophis</i>	<i>Tropidonophis</i>	1.0 x 0.5 x 0.3 TL*



# SNAKES – COLUBRIDS

Colubrids vary greatly in their size, with over 200 genus contained within Colubrid. Species vary from aquatic, fossorial, terrestrial to arboreal and as such it is important to ensure the animal's needs are met in this regard when considering enclosure sizes. It should be noted that there have been some reclassifications of snakes within this family but these are all considered in the same group for the purpose of enclosure sizes<sup>48</sup>.

## COLUBRIDS – GROUP 1

**EXCLUDES active and aquatic genera.**

### Group 1 example species

- King snake (*Lampropeltis getula* ssp.)
- Milk snake (*Lampropeltis triangulum* ssp.)
- Corn snake (*Pantherophis guttatus*)
- Western hognose snake (*Heterodon nasicus*)
- Gopher snake (*Pituophis catenifer*)
- Pine snake (*Pituophis melanoleucus*)
- Bullsnake (*Pituophis catenifer sayi*)
- Mangrove snake (*Boiga dendrophila*)
- Dione's ratsnake (*Elaphe dione*)
- Japanese four-lined ratsnake (*Elaphe quadrivirgata*)
- Taiwanese beauty snake (*Elaphe taeniura friesei*)
- King ratsnake (*Elaphe carinata*)
- Bamboo rat snake (*Oreocryptophis porphyraceus*)
- Eastern indigo snake (*Drymarchon couperi*)
- Yellow tail cribo (*Drymarchon corais*)
- False water cobra (*Hydrodynastes gigas*)
- Baron's green racer (*Philodryas baroni*)

**Minimum enclosure size: 0.9 x 0.45 x 0.3 times total length of the snake**

### Group 1 example calculation

#### Corn snake (*Pantherophis guttatus*)

An adult corn snake measuring around 120cm (4') would have a minimum enclosure size of around 108 x 54 x 40cm (3'7" x 21" x 16"). Alternatively we could consider the dimensions of 1 x 0.3 x 0.3 which would lead to a minimum enclosure size of 120 x 36 x 36cm (4' x 15" x 15").

We could also consider this in terms of the size of commonly available enclosures, for example a 120 x 60 x 60cm (4' x 2' x 2') vivarium would have a diagonal dimension of 135cm (4'6") and so would meet the minimum requirements for a snake up to 135cm (4'6"). For a larger corn snake a 150 x 60 x 60cm (5' x 2' x 2') vivarium would meet the minimum requirements for a snake up to 160cm (5'3"). While corn snakes will take opportunities to climb they would generally be better described as terrestrial and so would be suited to an enclosure that was wider than it was higher.

## COLUBRIDS – GROUP 2

**Active genera that require additional space.**

### Group 2 example species

- Trinket snake (*Coelognathus helena*)
- Eastern racer (*Coluber constrictor*)
- Rhinoceros ratsnake (*Gonyosoma boulengeri*)
- Coachwhip snake (*Masticophis flagellum*)
- Tiger ratsnake (*Spilotes pullatus*)

**Minimum enclosure size: 1.2 x 0.5 x 0.3 times total length of the snake**

## COLUBRIDS – GROUP 3

Colubrids that are predominantly or heavily aquatic, including garter snakes and grass snakes. Due to their aquatic nature, enclosures for these species should provide suitable space devoted to water.

### Group 3 example species

- Buff striped keelback (*Amphiesma stolatum*)
- Grass snake (*Natrix natrix*)
- Dice snake (*Natrix tessellata*)
- Banded water snake (*Nerodia fasciata*)
- Common garter snake (*Thamnophis sirtalis*)
- Checkered garter snake (*Thamnophis marcianus*)

**Minimum enclosure size: 1.2 x 0.5 x 0.3 times the snake's length, with at least half of this area being water.**

# SNAKES – VIPERS

## Vipers

Group	Example family, genera or species				Min enclosure size
Vipers	<i>Azemiops</i> <i>Bitis</i> <i>Agkistrodon</i> <i>Atropoides</i> <i>Bothropcophias</i> <i>Bothropoides</i> <i>Bothrops</i> <i>Calloselasma</i> <i>Caucus</i> <i>Cerastes</i> <i>Cerrophidion</i>	<i>Crotalus</i> <i>Daboia</i> <i>Echis</i> <i>Eristicophis</i> <i>Garthius</i> <i>Gloydus</i> <i>Hypnale</i> <i>Lachesis</i> <i>Macrovipera</i> <i>Montivipera</i> <i>Mixcoatlus</i>	<i>Ophryacus</i> <i>Ovophis</i> <i>Porthidium</i> <i>Protobothrops</i> <i>Proatheris</i> <i>Pseudocerastes</i> <i>Rhinoceros</i> <i>Sistrurus</i> <i>Vipera</i> <i>Atheris</i> <i>Bothriechis</i>	<i>Bothriopsis</i> <i>Cryptelytrops</i> <i>Parias</i> <i>Popeia</i> <i>Trimeresurus</i> <i>Tropidolaemus</i> <i>Viridovipera</i>	0.9 x 0.45 x 0.3 TL*

Vipers are a large family of snakes that includes a diverse range of genera and species, including terrestrial and arboreal species. Vipers can be found across much of the world and inhabit a range of habitats including arid, temperate and tropical conditions<sup>50,51,52</sup>. As such, ensuring the requirements are met in addition to enclosure size is crucial.

### Example species

- Eastern copperhead (*Agkistrodon contortrix*)
- Cottonmouth (*Agkistrodon piscivorus*)
- Eyelash viper (*Bothriechis schlegelii*)
- Fer de lance (*Bothrops asper*)
- Malabar pit viper (*Craspedocephalus malabaricus*)
- Eastern diamondback rattlesnake (*Crotalus adamanteus*)
- Timber rattlesnake (*Crotalus horridus*)
- Neotropical rattlesnake (*Crotalus durissus ssp.*)
- Bushmaster (*Lachesis muta*)
- White-lipped pit viper (*Trimeresurus albolabris*)
- Rough scaled bush viper (*Atheris hispida*)
- Puff adder (*Bitis arietans*)
- Gaboon viper (*Bitis gabonica*)
- Desert horned viper (*Cerastes cerastes*)
- Russell's viper (*Daboia russelii*)
- Saw-scaled viper (*Echis carinatus*)
- European adder *Vipera berus*)



**Min enclosure size: 0.9 x 0.45 x 0.3 times total length of the snake**









# SNAKES – ELAPIDS

## Elapids

### Excluding sea snakes

Group	Example family, genera or species				Min enclosure size
Elapids	<i>Aspidelaps</i> <i>Antaioserpens</i> <i>Micrurus</i> <i>Acanthophis</i>	<i>Naja</i> <i>Notechis</i> <i>Pseudechis</i> <i>Pseudonaja</i>	<i>Walterinnesia</i> <i>Hemachatus</i> <i>Dendroaspis</i> <i>Bungarus</i>	<i>Ophiophagus</i> <i>Boulengerina</i>	0.9 x 0.45 x 0.3 TL*

There are many more elapid genera that are not listed here, but these are less common in captivity in the UK<sup>53</sup>. However, for minimum enclosure sizes for species not covered here, it is likely that the same minimum enclosure sizes will be appropriate.

#### Example species

- Black mamba (*Dendroaspis polylepis*)
- Eastern green mamba (*Dendroaspis angusticeps*)
- Rinkhals (*Hemachatus haemachatus*)
- Common coral snake (*Micrurus fulvius*)
- Forest cobra (*Naja melanoleuca*)
- Egyptian cobra (*Naja haje*)
- Monocled cobra (*Naja kaouthia*)
- King cobra (*Ophiophagus hannah*)
- Coastal taipan (*Oxyuranus scutellatus*)

**Minimum enclosure size: 0.9 x 0.45 x 0.3 times total length of the snake**



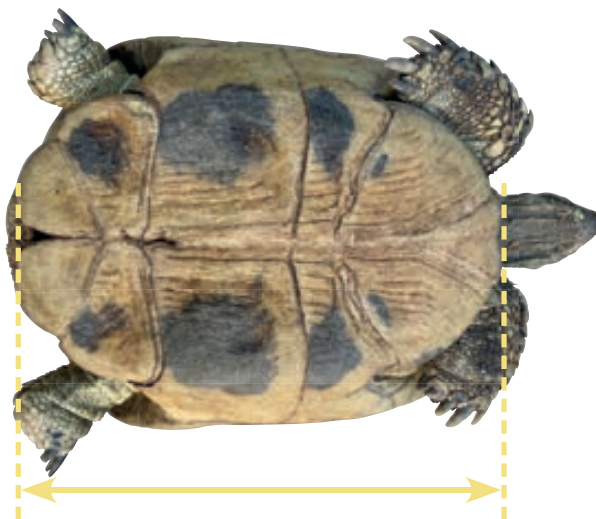
# Chelonians

**Enclosure sizes for chelonia are based on the Plastron Length (PL) and the dimensions in this guidance are multiples of this length. The plastron length is the straight line measurement of the underside of the tortoise or terrapin, as shown in the illustration.**

Less commonly chelonia size can be quoted as Straight Carapace Length (SCL). SCL refers to the straight line measurement between the front and back of the carapace, and NOT the distance over the top (dome) of the shell. Generally SCL and PL will be very similar but differences may be seen in species with pronounced gular or anal plastron plates, or species with a flared carapace such as Marginated tortoises. SCL is more difficult to measure and can also be influenced by different shaped carapaces or growth deformity of the carapace, making PL the preferred method of measurement.

Many chelonians kept in the UK will hibernate and some are allowed to hibernate naturally in their enclosure, but usually they are hibernated artificially by placing them in a separate environment for hibernation<sup>54</sup>. Other commonly kept species do not hibernate. The enclosure sizes stated in this document are the minimum requirements for chelonia during active periods. Appropriate consideration will need to be given to hibernation, whether that is providing additional space and opportunity for hibernation within their enclosure, or providing a suitably sized smaller environment for hibernation. For chelonia hibernated in controlled environments it is acceptable for their enclosures to be small and restrictive while they are inactive<sup>55</sup>.

**Plastron Length**



**Straight Carapace Length**





# TURTLES AND TERRAPINS

## Turtles and terrapins

### Freshwater aquatic and semi-aquatic

Group	Example family, genera or species				Min enclosure size
Turtles and terrapins	<i>Bataguridae</i> <i>Chelydridae</i> <i>Emydidae</i>	<i>Erymnochelys</i> <i>Geoemydidae</i> <i>Kinosternidae</i>	<i>Platysternidae</i> <i>Pleurodira</i> <i>Peltocephalis</i>	<i>Podocnemis</i> <i>Trachemys</i> <i>Trionychidae</i>	8 x 4 PL

These guidelines relate to freshwater aquatic and semi-aquatic species, and an enclosure housing a single adult turtle or sub-adult turtle<sup>56,57,58</sup>.

All species within this group need to be able to bask, and females need to be given space to nest and lay eggs and so a suitable land area should be provided<sup>59</sup>. The size of the land area should be appropriate to individual species – some of the animals in this group will rarely leave the water, while others e.g. American box turtles are mostly terrestrial but will still use water on a daily basis. It is important that entry to the water should be sloped as some animals will sit on the slope partially submerged<sup>60,61</sup>.

In addition to minimum enclosure size for turtles and terrapins that are aquatic and semi-aquatic, water depth and volume must be considered, such that there is sufficient water volume to enable the turtle to swim freely or lie submerged in the enclosure. In general this will be considered as having at least half of the water area being greater than 4 times the carapace height. For example, for an enclosure with a 100 x 30cm (3' x 1'), then at least half of this area should be of a greater depth than 4 times the turtle's carapace height, e.g. 50 x 30cm (18" x 12") of the full water area. Individual species of turtle will differ in their natural habitats and so it is the responsibility of the keeper to determine the most appropriate water volume and depth<sup>62</sup>.

#### Example species

- Common snapping turtle (*Chelydra serpentina*)
- Alligator snapping turtle (*Macrochelys temminckii*)
- European pond turtle (*Emys orbicularis*)
- Common box turtle (*Terrapene carolina*)
- Painted turtle (*Chrysemys picta*)
- Common/Northern map turtle (*Graptemys geographica*)
- Mississippi map turtle (*Graptemys pseudogeographica kohni*)
- River cooter (*Pseudemys concinna*)
- Red-eared terrapin (*Trachemys scripta elegans*)
- Yellow-bellied slider (*Trachemys scripta scripta*)
- Reeves' turtle/Chinese pond turtle (*Mauremys reevesii*)
- Chinese box turtle (*Cuora flavomarginata*)
- Black river turtle (*Rhinoclemmys funerea*)
- Common/Eastern mud turtle (*Kinostemon subrubrum*)
- Musk turtle (*Sternotherus carinatus*)
- Mata mata (*Chelus fimbriata*)
- Fly river turtle (*Carettochelys insculpta*)
- African helmeted turtle (*Pelomedusa subrufa*)

**Minimum enclosure size: 8 x 4 plastron length PL, with a water area to basking area ratio appropriate to species and life stage.**





## TURTLES AND TERRAPINS

Housing multiple turtles together requires a lot of consideration beyond that of just space. In general to do this, the enclosure area must be increased by at least 20% of the original floor area for each additional turtle, (e.g. an enclosure housing four turtles must be at least 60% larger than the minimum enclosure size). If different species are housed together or individuals of different sizes, the calculation must be based on the minimum enclosure size for the largest animal.

### Special considerations

This general rule may not be sufficient for some species and multiple factors need to be addressed. This includes providing adequate water volume, filtration and basking area such that animals can swim, exit the water, and bask at the same time. Where there is a high level of aggression between sexes and animals fight for dominance a much larger area might be required with the inclusion of visual barriers. There may be seasonal requirements that need to be considered, for example providing a suitable hibernation area for all individuals. It may be that the required space to house multiple individuals together is impractical and that suitably sized individual enclosures are preferable.



# TORTOISES

## Tortoises

Group	Example family, genera or species				Min enclosure size
Tortoises	<i>Chelonoidis</i> <i>Dipsochelys</i> <i>Geochelone</i> <i>Astrochelys</i>	<i>Homopus</i> <i>Indotestudo</i> <i>Kinixys</i> <i>Malacochersus</i>	<i>Manouria</i> <i>Psammobates</i> <i>Pyxis</i> <i>Stigmochelys</i>	<i>Testudo</i>	8 x 4 PL

These guidelines relate to an enclosure housing a single adult tortoise or sub-adult tortoise<sup>63,64,65,66</sup>.

### Example species

- Red-footed tortoise (*Chelonoidis carbonarius*)
- Aldabra giant tortoise (*Aldabrachelys gigantea*)
- Indian star tortoise (*Geochelone elegans*)
- Pancake tortoise (*Malacochersus tornieri*)
- Leopard tortoise (*Stigmochelys pardalis*)
- Sulcata/African spurred tortoise (*Centrochelys sulcata*)
- Russian tortoise (*Agrionemys horsfieldii*)
- Hermann's tortoise (*Testudo hermanni*)
- Greek/Spur-thighed tortoise (*Testudo graeca*)
- Marginated tortoise (*Testudo marginata*)

### Example calculation

#### Hermann's tortoise (*Testudo hermanni*)

An adult Hermann's tortoise may be around 20cm (8") PL. This would require a minimum enclosure size of 160 x 80cm (5' x 3'). While Hermann's tortoises are adept at climbing over different terrain types the height of the enclosure is of lesser importance than the available floor area providing the suitable heating and lighting can be provided within the enclosure. There are several vivara that could be used to meet these minimum enclosure sizes and alternatively tortoise tables are available in many different sizes.

### Minimum enclosure size: 8 x 4 plastron length (PL)

When multiple tortoises are housed together the enclosure area must be increased by at least 20% of the minimum requirements for each additional animal, (e.g. an enclosure housing four tortoises must be at least 60% larger than the minimum enclosure size). If different species are housed together or individuals of different sizes, the calculation must be based on the minimum enclosure size for the largest animal.

### Note

This general rule may not be sufficient for some species and multiple factors need to be addressed. The level of aggression between sexes and fighting for dominance needs to be considered, as well as space for hibernation if needed. It may be that the required space to house multiple individuals together is impractical and that suitably sized individual enclosures are preferable.





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[info@thefbh.org](mailto:info@thefbh.org)

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