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SNAKES

Central American Boa

Boa imperator

Boa imperator is a heavily built boa from Central America and north-western South America, brown to grey with dark saddle markings and a tail that often turns reddish towards the tip. Young animals climb, adults live mostly on the ground. It reaches 130-250 cm, is active at dusk and at night and lives 20-30 years. It requires a large enclosure, infrequent, small meals and a keeper who can take responsibility for decades.

Family: Boidae Former name: *Boa constrictor imperator*

KEY FACTS

THE ANIMAL

Adult size	**130-250 cm** total length incl. tail
Lifespan	**20-30 years**
Active	**At dusk and at night**
Lifestyle	**Arboreal and terrestrial**
Habitat	**Semi-desert, dry forest and rainforest**
Difficulty	**Intermediate**

CARE

Min. enclosure	**180 × 90 × 90 cm** L × W × H for 1 adult
Temperature, day	**24-30 °C**
Basking spot	**30-32 °C**
Temperature, night	**20-24 °C**
Humidity	**55-75%**
Water	**Water dish**
UVB	**Recommended** Ferguson zone 2
Diet	**Vertebrates**
Kept	**Singly**

BREEDING

Reproduction	**Live-bearing**
Sexually mature	**18-48 months**
Litter size	**10-65 young**
Gestation	**100-120 days**

PROTECTION AND PAPERWORK

CITES	**Appendix II**
EU annex	**Annex B**
IUCN	**Least Concern (LC)**

About the species

Boa imperator is a heavily built, heavy snake with a triangular head, vertical pupils and a pattern of dark saddle markings and ovals on a brown, grey or golden ground colour. The tail is often darker, brown to deep red. The appearance varies greatly with locality: animals from the Cayos Cochinos off Honduras are naturally pale with a salmon-coloured to orange tail, animals from Nicaragua have compact, rounded saddles, and dwarf forms are found on small islands.

Adults are normally 130-250 cm and weigh about 6 kg. Females are distinctly larger than males, and a few animals reach 3.7 m. The species is one of the smaller ones in the genus.

B. imperator was formerly regarded as a subspecies of *Boa constrictor*, but DNA shows a separate lineage with a 5-7 % difference, and it is now a separate species. It has two subspecies, the nominate form and *B. i. sabogae* from the Pearl Islands in the Gulf of Panama. The population on the Mexican Pacific coast is regarded by most as a separate species, *Boa sigma*. The

scientific species name is Latin for emperor or ruler. In the trade the species is often confused with *B. constrictor*, and many animals in captivity are mixtures of different local forms, so ask what is actually being sold. Many morphs exist, for example albino, hypomelanistic and jungle, but this care sheet deals with the species.

The animal is calm and usually tolerates handling well, and that is one of the reasons the species is among the most commonly kept large snakes. Animals from Central America may hiss and strike repeatedly when disturbed, while animals from South America are tamed more easily. The species is a large, strong snake that requires space, time and experience.

Distribution and habitat

Boa imperator lives from Mexico through Central America to north-western South America west of the Andes. In Mexico it is found, among other places, on the Yucatán and in Quintana Roo, Chiapas, Oaxaca, Veracruz, Tamaulipas, San Luis Potosí, Sinaloa, Chihuahua, Michoacán and Guerrero. To the south it follows Belize, Guatemala, El Salvador, Honduras, Nicaragua, Costa Rica and Panama, and it is found in Colombia and Ecuador. The subspecies *B. i. sabogae* lives on the Pearl Islands in the Gulf of Panama, and there are local populations on smaller islands in the Caribbean Sea, including San Andrés, the Corn Islands and the Cayos Cochinos.

Where *B. imperator* and *Boa sigma* meet on the Mexican Pacific coast, especially in Oaxaca, the boundary is unresolved.

> **Native range:** Mexico, Belize, Guatemala, El Salvador, Honduras, Nicaragua, Costa Rica, Panama, Colombia and Ecuador.

HABITAT

The species lives in a wide range of habitats, from humid tropical rainforest to dry forest and semi-desert. It prefers humid forest, where there is moisture, warmth, cover and plenty of prey, and it is often found by rivers and streams, because it is a skilled swimmer. It also uses rodent burrows and hollow trees as hiding places.

Young animals climb and hunt in trees and bushes, while older and heavier animals live mainly on the ground. The species is crepuscular and nocturnal, but may bask by day when the nights are cool. The animal is an ambush hunter that eats birds, bats and mammals such as squirrels, rats, opossums and agouti, as well as iguanas. The prey is killed by constriction. Food is irregular in the wild, and the metabolism is slow.

Care

THE ENCLOSURE

An adult animal needs an enclosure of at least 180 × 90 × 90 cm (length × width × height), and larger and taller is clearly better. As a rule of thumb the length is the length of the snake, and the width and height are half of that. An animal over 2.4 m requires at least 240 × 120 × 120 cm. The enclosure must be large enough for the snake to stretch out fully and for there to be room for a distinct temperature gradient. Ready-made enclosures over 120 × 60 × 60 cm are expensive and rare, so most keepers build their own. Use moisture-resistant materials: PVC board or treated wood sealed with animal-safe varnish. Melamine breaks down in the damp.

A newborn can live in an adult-size enclosure if there are many hides. Young snakes can triple their length in the first year. Alternatively, a ventilated plastic box can be used as a temporary rearing enclosure.

The enclosure must open from the front. An animal that sees a hand coming from above takes it for a predator. The lid or door must be lockable. A large boa escapes through even small openings, so use locks and never tape, which can harm the snake.

The substrate must be at least 5 cm deep, preferably 8-10 cm, so that the animal can dig and the substrate retains moisture. A mixture of 40 % topsoil, 40 % coconut fibre and 20 % play sand is a good choice, and a layer of sphagnum and dry leaves on top increases the humidity. Cypress mulch and coconut bark can be used, but carry a risk of intestinal blockage if the animal swallows them. Avoid pure sand, gravel, carpet substrate, pine and cedar.

Furnish with sturdy branches, cork and hides, both on the ground and higher up. Young animals climb most. Remove droppings weekly, and replace the substrate completely every 3-6 months.

Read more: Heat and temperature Read more: Humidity, misting and ventilation

TEMPERATURE

The species needs a gradient from cool to warm. The air at the basking spot should be 30-32 °C and the cool end 24-26 °C, and the whole enclosure should contain zones between 24 and 32 °C. Use at least two halogen lamps or infrared heat lamps side by side, so that the whole coiled animal is warmed evenly, and place a pale stone or a piece of wood as the basking spot. Lamps over mesh are safest. If they are inside the enclosure, they must have a protective cage. Use clear or white bulbs, not coloured ones.

Heat mats and heat cables can only be a supplement and must always have a thermostat. In the wild the heat comes from above, and the animal usually uses the basking spot only during digestion.

Switch off all heat at night. The temperature can fall to about 20 °C without problems, and if the room is colder, a lightless heat source with a thermostat must supplement. A seasonal rhythm with slightly shorter days and a slightly lower temperature in winter is necessary for breeding (see Mating).

HUMIDITY AND WATER

Humidity should be 55-75 % and fluctuate a little. Briefly above 70 % does no harm if the enclosure is allowed to dry out, whereas persistent damp causes mould. Before a shed, 75-85 % can help the animal to shed in one piece. Measure with a digital hygrometer.

Humidity is maintained by mixing water into the substrate, with a large, heavy water bowl that the animal can lie in, by misting and with a damp hide with sphagnum at the cool end. The water bowl must be so heavy that it does not tip over, and must be cleaned and disinfected every time the animal has defecated in it. A shallow water bowl is safest for young animals, which can drown in a deep one.

LIGHTING AND UVB

The species is crepuscular and nocturnal, so it does not need strong light, but UVB is recommended. It belongs to Ferguson zone 2: occasional sun-basking. The target is a UV index of 2-3 at the basking spot. A T5 HO tube of 5-6 % UVB over mesh should be mounted 25-35 cm above the animal at the basking spot, without mesh 35-45 cm. Check with a UV meter, and replace the tube every 12 months, even if it still lights up.

Switch the light on for about 13 hours in summer and 11 hours in winter. There must be no light at night, because the animal's eyes are adapted to darkness, and light disrupts the day-night rhythm.

Read more: Lighting and UVB

FEEDING

B. imperator is a carnivore and must be given whole prey. Young animals get mice and small rats, and adults get rats, young rabbits, guinea pigs, chicks and quail. Variety is healthy. Use thawed, frozen prey: it is safer than live prey, which can bite and injure the snake. If live prey is offered, it must be removed if it has not been eaten after 15-30 minutes.

The weight of the prey must be no more than 10 % of the snake's weight, and it must not be thicker than the snake's widest point. Boas do not tolerate large prey as well as pythons, and prey that is too large causes regurgitation, which can injure or kill the animal. After the meal there should be at most a slight bulge.

Feeding frequency: - Under 12 months: every 10-12 days. - 12-18 months: every 12-14 days. - 18-30 months: every 2-3 weeks. - 2.5-3 years: every 3-4 weeks. - 3-4 years: every 4-6 weeks. - Over 4 years: every 4-8 weeks.

Lean meals and a slow metabolism are healthy, and feeding too often causes obesity. The spine should be covered and the body round, but not thick. Wait a week after arrival before the first feeding, and avoid handling for 48 hours after a meal. The snake cannot digest plant food. Supplements are not necessary with whole prey.

Read more: Calcium, vitamins and supplements

BEHAVIOUR AND HANDLING

B. imperator is an intelligent, individual snake. Many animals tolerate and like handling, but some prefer to be left in peace. Hatchlings and young animals are often nervous and may hiss and bite, because they are on guard against predators. Consistent, gentle handling makes them calm. Adults that lie coiled with an open, hissing mouth do not want to come out that day.

Give a new animal at least a week in peace, and wait with handling until it feeds regularly. Start with no more than 5 minutes and increase gradually. Wash your hands before and after. Gently tap the animal on the head with a paper roll or a snake hook, so that it knows this is handling and not food, and lift it from below with one hand under the forebody and the other

under the hindbody. Never lift by the tail. The animal coils around your arm to keep its balance, and that is not an attack.

Do not handle the animal when the eyes are bluish before a shed, on the feeding day or within 48 hours after a meal. Adults over 2 m are handled together with another adult. Never leave children alone with the animal.

Keep the animals separately. The species is solitary, and two animals in the same enclosure can eat each other. Mating is the exception, and the animals must be separated after a period.

Breeding

SEXUAL MATURITY AND SEXING

Females are distinctly larger than males, but apart from size the sexes cannot be told apart reliably by appearance. The sex is determined with a probe, which a vet or an experienced breeder should use. The animals reach adult size after 3-4 years, but continue to grow slowly throughout life. Females should be about 3 years old and weigh at least 3.5 kg before they are put to breeding. Males are sexually mature after 18 months, but should be at least 120 cm. Gestation is a strain on the female, so she must be in good condition.

MATING

In the wild the species mates in the dry season, and the males can mate with several females. During mating the female releases scent substances, and the males may wrestle over her. The male wraps his tail around the female's, and mating can last from a few minutes to hours and can be repeated for some weeks. The female can store sperm for up to a year.

In captivity breeding requires a seasonal rhythm. From June to October the air is kept at 28-29 °C, and in October it is lowered to 24-28 °C. Give the animals a meal a week beforehand, because the males eat little or nothing during the cool period. Smaller prey is offered every week. In the enclosure a quarter must be kept at about 31 °C, so that the female can mature the eggs and digest, and this prevents respiratory infection. The males are put in with the females from late October to March, and the temperature is raised gradually from March to May. Chilling increases the risk of respiratory infection, so keep an eye on the animals.

EGG-LAYING AND CLUTCHES

B. imperator gives birth to live young. The length of gestation and the litter size of 10-65 are borrowed from *Boa constrictor*, to which the species was formerly assigned. Ovulation is seen as a pronounced swelling in the middle of the body that looks like a large meal. Two to three weeks later the female sheds (the post-ovulatory shed), and gestation is counted from this shed and lasts about 100-120 days. The young arrive within about four months of ovulation.

A litter is 10-65 young, typically about 16-25, and some may be stillborn or unfertilised eggs (called slugs). The female has at most one litter a year, and in the wild only about half of the females breed in a given year. A female typically has three to five litters over her life in captivity.

INCUBATION

There are no eggs to incubate, because the species gives birth to live young. During gestation the female must have a distinct heat gradient with a warm spot where she can bask, but she must not be overheated. Also give her fresh water and peace. Gestation lasts about 100-120 days counted from the shed after ovulation. The young are born in a thin membrane, which they quickly leave, and are independent from the first day. Remove stillborn young and unfertilised eggs. In rare cases females can produce young without a male (parthenogenesis); this has been demonstrated in the genus.

REARING THE YOUNG

Newborn young are about 38-51 cm and independent from birth. Keep them together at first in a ventilated box with a damp substrate, hides and a shallow water bowl. After about 10 days they shed for the first time, and then they must be moved each to its own box or enclosure. The first meal is a small mouse about two weeks after birth, then a mouse every week for the first months. The young shed every 1-2 months in the first years and can triple their length in the first year, so they must be moved regularly to larger enclosures.

Health and common mistakes

Most problems are caused by mistakes in the setup. Typical problems are:

- Regurgitation from prey that is too large, handling too soon after a meal or too low a temperature. Regurgitation puts a

strain on the animal and can be fatal.
- Obesity from feeding too often.
- Mites (*Ophionyssus natricis*) and internal parasites, especially in wild-caught animals. Use captive-bred animals, and quarantine new animals.
- Shedding problems in air that is too dry: use a humid hide.
- Intestinal blockage from substrate, too low a temperature or dehydration.
- Respiratory infection in air that is too cold or damp: the animal breathes with its mouth open or has a runny nose.
- Mould and bacteria from persistent damp.

Weigh the animal weekly and keep a diary of weight, feeding and sheds. A sudden loss of weight is often the first sign of illness. Reptiles hide illness, so see a vet with reptile experience if the animal does not eat, loses weight or seems lethargic.

Read more: Quarantine and hygiene Read more: Common diseases and signs of illness Read more: Buying animals: captive-bred, wild-caught and transport

Always ask someone who knows

This guide is a good place to start, but it cannot replace experience. Animals differ, and much of what matters most is learned from people who have kept the species for years. Talk to a breeder, an experienced keeper or a vet who knows reptiles and amphibians before you get the animal - and again if anything looks wrong.