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MONITOR LIZARDS

Mangrove Monitor

Varanus indicus

Varanus indicus is an active, diurnal monitor of 100-120 cm from the coasts and mangrove swamps of the Moluccas. It climbs, digs and swims, and needs a home-built enclosure of several square metres, plenty of heat and a diet of whole prey. The species is an obvious but demanding monitor for the experienced keeper.

Family: Varanidae Former name: *Tupinambis indicus; Varanus guttatus; Varanus cerambonensis*

KEY FACTS

THE ANIMAL

Adult size	**100-120 cm** total length incl. tail
Lifespan	**15-20 years**
Active	**By day**
Lifestyle	**Arboreal, terrestrial and semi-aquatic**
Habitat	**Rainforest and wetland**
Difficulty	**Experienced**

CARE

Min. enclosure	**250 × 120 × 180 cm** L × W × H for 1 adult
Temperature, day	**28-32 °C**
Basking spot	**40-45 °C**
Temperature, night	**22-26 °C**
Humidity	**60-80%**
Water	**Water section** depth 45-60 cm
UVB	**Recommended** Ferguson zone 3
Diet	**Insects, vertebrates and worms/snails**
Kept	**Singly or in pairs**

BREEDING

Reproduction	**Egg-laying**
Clutch size	**2-12 eggs**
Incubation	**210-240 days** at 26.5-29.5 °C

PROTECTION AND PAPERWORK

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

About the species

Varanus indicus is a slender, long-tailed monitor in which the tail makes up about 60-65 % of the total length. Adults typically reach 100-120 cm including the tail, and only a few approach 130 cm. The snout-vent length is not documented. The body is dark green to black with small golden-yellow spots, the belly is pale and unmarked, the tongue is dark violet, and the snout is pointed. The species belongs to the subgenus *Euprepiosaurus* together with, among others, *V. jobiensis*, *V. doreanus* and *V. spinulosus*.

The taxonomy has been in flux. The species was described in 1802 as *Tupinambis indicus* and has had more than 25 names. For many years the name covered a very large population from the Moluccas across New Guinea to the Solomon Islands and northern Australia, but today only the population on Ambon, Seram and the neighbouring islands is regarded as the true *V. indicus*, while *V. chlorostigma*, among others, was revived as a separate species in 2023. This means that animals sold as *V. indicus* may belong to closely related species, and that older accounts of husbandry and breeding do not always concern the same species. The name *V. cerambonensis* is now a synonym.

The species is wary and intelligent and uses its tongue to sniff out prey. It is one of only two monitors with salt-excreting nasal glands, which make it possible to live in brackish water and eat prey from the sea, and it can catch fish in deep water.

It is a lifelong commitment. An adult needs an enclosure equivalent to a small room, many hours of cleaning and care every week, and a food bill for whole prey that adds up over the years. Animals that have outgrown a small enclosure are stressed and can become difficult to handle. The species should therefore only be acquired if there is space and time for an adult animal that will live for 15-20 years.

Distribution and habitat

Varanus indicus lives in the Moluccas in Indonesia: on Ambon, Seram, Buru, Saparua, Haruku and the Banda Islands. This is the narrow delimitation under the latest taxonomy. Older records have the species living far more widely, from New Guinea and the Solomon Islands to northern Australia, but those animals probably belong to other species in the same group.

Animals from the species group have also been introduced to several islands in the Pacific, including the Marshall Islands. Introduced populations are not shown on the map. Occurrence on Sulawesi has not been confirmed.

> **Native range:** Indonesia.

HABITAT

The species lives in humid lowland forest near the coast, in mangroves and along rivers and lakes. It is primarily terrestrial, but readily goes into brackish water and is a skilled swimmer. It is diurnal and spends much of its time on the ground, where it hunts, but also climbs trees, both to sleep and to hunt.

The climate is warm and humid all year. In the wild the species eats almost anything it can overpower: eggs of reptiles and birds, crabs, molluscs, insects, small mammals, smaller lizards, fish and carrion. In some areas it also takes young crocodiles.

Care

THE ENCLOSURE

As an adult, *Varanus indicus* needs a large, home-built enclosure or a whole room. The minimum for one animal is 250 × 120 × 180 cm (length × width × height), and bigger is better. Ready-made enclosures in the trade are too small. Juveniles can start in a smaller enclosure, but they grow quickly, and it is wisest to plan the large enclosure from the start so that the animal does not have to be moved several times.

The substrate must be deep: 15-30 cm of a mixture of soil, sand and coconut fibre or cypress mulch that can be kept moist, so that the animal can dig. Add sturdy climbing branches and shelves at several heights, and plenty of hides on the floor and higher up in the enclosure. At least a third of the floor area should be a water section at least 45-60 cm deep, so that the animal can swim. The water must be changed frequently, because the animal often empties its bowels in it.

Doors and lamps must be secure. Heat sources must be shielded so that the animal cannot burn itself on them. Ventilation must be good, even though the humidity is high.

Read more: Humidity, misting and ventilation

TEMPERATURE

The species needs a large temperature gradient. The background temperature by day must be 28-32 °C, and the basking spot must be markedly warmer. The basking spot must be 40-45 °C, measured as surface temperature with an IR thermometer. There must also be a cool zone, so that the animal can choose for itself. At night the temperature may fall to 22-26 °C.

Use several powerful heat lamps or a combination lamp, and place the basking spot high enough that the animal can bask at full length. Watch the animal's behaviour. An animal that lies on the basking spot all day is too cold, and an animal that gapes and avoids the heat is too hot.

Read more: Heat and temperature

HUMIDITY AND WATER

The humidity should be 60-80 %, which is easy to achieve with a large water section, moist substrate and daily misting. Let the surface of the substrate dry out a little between mistings so that it does not turn sour. A wet, stagnant environment causes skin and respiratory problems, so do not forget ventilation.

The animal must always have access to fresh drinking water, and the water must be changed frequently.

WATER AND WATER QUALITY

The species swims a lot and often empties its bowels in the water. A water section of at least a third of the floor and 45-60 cm deep is a reasonable minimum. Change 25-50 % of the water weekly or more often, and clean the water out completely if it gets dirty.

LIGHTING AND UVB

The species is diurnal and needs UVB. Use powerful T5 tubes in Ferguson zone 3, possibly combined with a mercury vapour lamp that gives both heat and UV. Replace the tubes every 6-12 months, even if they still light up. The UVB source must be positioned above the basking spot and not behind glass or plastic. Direct sunlight is beneficial when the weather allows and the enclosure is secured against escape and predators.

Control the light with a timer so that the day matches the tropics, about 12 hours. The night must be dark.

Read more: Lighting and UVB

FEEDING

Varanus indicus is a carnivore and must be given whole prey. Good food types are whole fish, prawns or crayfish, mice and small rats, whole chicks or quail, and larger insects such as grasshoppers and cockroaches. Hard-boiled eggs can be given now and then. A staple diet of rodents easily leads to obesity and fatty liver, so give rodents as one part of the diet, not the whole diet. Canned prepared food can be used as a supplement, but canned food for dogs and cats contains too much protein and too few minerals.

Juveniles and subadults under 18 months are fed every day or every other day, adults every 2-4 days depending on the animal's body condition. The prey should not be wider than the animal's head. Dust insects and fish with calcium, and give a multivitamin supplement once a week. Use tongs when feeding to avoid bites, and do not give more than the animal can eat at one time.

Read more: Calcium, vitamins and supplements

BEHAVIOUR AND HANDLING

The species is wary and can become tame if handled calmly and regularly as a juvenile. Captive-bred animals usually become calm, whereas wild-caught animals often remain defensive. It first shows flight, then inflation of the body and throat, gaping mouth and hissing, and finally tail whipping, biting and clawing. The claws are sharp, and the tail can whip hard. A bite from an adult animal can cause deep wounds, so use gloves and a calm pace.

Support the whole body when you lift it, and never grab the tail alone. The species can be unpredictable during feeding, shedding and illness. Keep sessions short, and avoid handling the animal right after feeding. Frightened animals often empty their bowels on whoever is holding them.

All monitors can carry salmonella, so wash your hands thoroughly after any contact with the animal, the enclosure and the water, and do not let the animal roam freely on kitchen counters. The species is kept singly or in pairs. Males fight, and two males cannot be kept together.

Read more: Quarantine and hygiene Read more: Buying animals: captive-bred, wild-caught and transport

Breeding

SEXUAL MATURITY AND SEXING

Sex differences are not obvious in juveniles. Males grow larger than females. Reliable sexing of juveniles requires experience or a vet with reptile experience. The age of sexual maturity is not documented. The animal should be fully grown and in good condition before you try to breed from it.

MATING

Monitors live solitary lives and should only be put together for mating. Males fight over females. During mating the male rubs his chin against the female's head, and the pair slowly rotate. Breaks in which the animals are kept apart for four weeks to three months can help synchronise them. These are recommendations for monitors in general, and no breeding protocol has

been documented for the species. The female can become stressed and injured, so keep an eye on the animals and separate them if there is serious unrest. The male should be removed after mating.

EGG-LAYING AND CLUTCHES

The female lays 2-12 elongated, white eggs of 4-5 cm. The number of clutches per year is not documented. For most monitors, four to eight weeks pass from mating to egg laying. The female often tries several places before she lays, and many monitors stop eating in the days before.

Give the female a nest box with moist, loose substrate that she can enter from above and that is dark. The box must be large enough for her to turn around. After laying, the female is exhausted and must be given plenty of food. See a vet if she digs for a long time and then stops completely without laying.

INCUBATION

The eggs must be removed from the enclosure immediately, because adult monitors eat eggs. They must not be turned: mark the top with a pencil and place them in a box with vermiculite or perlite mixed with an equal amount of water by weight. The incubation temperature is 26.5-29.5 °C and the humidity 80-90 %. The figures are borrowed from general guidelines for monitors and have not been measured specifically for the species.

Hatching takes place after about seven to eight months. Do not open eggs that are overdue if they still look healthy. If an egg is sweating, you can carefully make a small slit in the top.

Read more: Incubating eggs

REARING THE YOUNG

The first known captive breeding succeeded in 1993, at that time under the broad species definition. The hatchlings live off the yolk for the first few days and must then be offered small insects such as cockroaches and crickets, dusted with calcium and vitamins. Keep them in a small, uncluttered enclosure with hides, where the feeder insects cannot hide, and with a shallow water dish. Make sure that all of them eat, and remove dominant animals if they keep the others away from the food. As they grow, they must be moved to larger and larger enclosures.

Read more: Feeder animals: keeping and breeding

Health and common mistakes

Varanus indicus is robust when temperature, light and diet are right. Typical problems are:

- Obesity and fatty liver from too much rodent food and too little exercise.
- Metabolic bone disease and growth defects from too little calcium, vitamin D3 and UVB.
- Parasites in wild-caught animals. Have a faecal sample taken and have the animal dewormed by a vet before it is put into an enclosure with other animals.
- Stress and injuries from enclosures that are too small and poor handling. Animals that repeatedly run into the glass can get snout injuries.
- Poor shedding if the humidity is too low. A lukewarm bath of 15-30 minutes loosens remnants. Young animals shed every few weeks, adults every fourth to eighth week.
- Respiratory and skin infections in a wet, stagnant environment.

In the trade the species has long been wild-caught, but captive breeding has become more common. Captive-bred animals are calmer and healthier than wild-caught ones. See a vet with experience in reptiles if the animal loses weight, loses its appetite or seems listless.

Read more: Common diseases and signs of illness

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.

The full guide with map and updates: herpy.org/en/monitor-lizards/varanus-indicus