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IGUANAS

Black Spiny-tailed Iguana

Ctenosaura similis

Ctenosaura similis is the largest species in the genus *Ctenosaura*: a powerful, fast, diurnal iguana from Mexico and Central America with a tail ringed with pointed scales and a crest along the back. It grows to 130 cm, is mostly a herbivore as an adult and rarely becomes tame. It needs a very large enclosure, strong heat and UVB and can live for over 20 years.

Family: Iguanidae Former name: *Ctenosaura completa; Iguana similis*

KEY FACTS

THE ANIMAL

Adult size	**80-130 cm** total length incl. tail
Lifespan	**15-25 years**
Active	**By day**
Lifestyle	**Arboreal, rock-dwelling and terrestrial**
Habitat	**Savanna, dry forest and rocky terrain**
Difficulty	**Experienced**

CARE

Min. enclosure	**200 × 150 × 130 cm** L × W × H for 2 adults
Temperature, day	**28-33 °C**
Basking spot	**40-45 °C**
Temperature, night	**18-24 °C**
Humidity	**50-80%**
Water	**Water dish**
UVB	**Essential** Ferguson zone 3
Diet	**Insects, fruit and plants**
Kept	**Singly, in pairs or one male with several females**

BREEDING

Reproduction	**Egg-laying**
Sexually mature	**21-48 months**
Clutch size	**12-88 eggs**
Clutches per year	**1**
Incubation	**90-120 days** at 28-30 °C

PROTECTION AND PAPERWORK

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

About the species

Ctenosaura similis is a large, heavy iguana with powerful legs and a tail ringed with rows of sharp, keeled scales. The genus name *Ctenosaura* is formed from the Greek for comb and lizard and refers to the comb-like spines on the back and tail. A crest of long spines runs along the back and is tallest in the male. The species name *similis* is Latin for "similar".

The male grows to 130 cm in total, while the female reaches 80-100 cm. The ground colour of adults is pale grey or pale brown to almost black, with 4-12 distinct dark bands across the back. The colour varies a great deal, even within the same population, and the animal lightens after lying in the sun. In the breeding season the male gets an orange head and throat with blue and peach tones on the cheeks. Juveniles are green with brown markings and become pale brown and later grey over the first years. The male has a taller crest, larger femoral pores (up to about 2.5 mm in diameter, in the female rarely over 1 mm) and a visible bulge at the base of the tail, where the hemipenes lie.

The species is fast and can run on its hind legs. It is one of the iguanas that behave most like wild animals in the enclosure: most are shy or aggressive, especially adults that are not used to people. Young animals can be accustomed to people with patience and daily calm around the enclosure, but few become so tame that they can be taken out. If cornered, it lashes with the tail and bites, and the spines and claws can cause deep lacerations. It is far harder to handle than *Iguana iguana*, even though it approaches it in size.

The species was described by John Edward Gray in 1831. Two subspecies are recognised, *C. s. similis* and *C. s. multipunctata* from the Colombian islands of Providencia and San Andrés, but the division is not final. The species hybridises with *Ctenosaura bakeri* in the wild, so animals for breeding must be reliably identified.

Distribution and habitat

Ctenosaura similis lives from the Isthmus of Tehuantepec in southern Mexico and south through Central America to Panama, from sea level up to about 1,300 m, but not in the inner highlands. On the Atlantic side the range is patchy: Tabasco, northern Chiapas, the Yucatán Peninsula, most of Belize, Guatemala and the north coast of Honduras, often along river valleys inland, and only scattered records in Nicaragua, Costa Rica and Panama. On the Pacific side it is continuous from south-eastern Oaxaca and Chiapas through Guatemala, El Salvador, Honduras, Nicaragua and Costa Rica to the Azuero Peninsula in Panama.

The species is also found on many islands off the coasts, including Cozumel and Isla Mujeres, Utila, Roatán and Guanaja, the Corn Islands, Coiba and the Colombian islands of Providencia and San Andrés. On some of the islands it is unknown whether it is native or introduced. It has been introduced and has established populations in southern Florida, on a few Bahamian islands and in Venezuela.

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

HABITAT

The species lives in dry and open surroundings: rocky slopes and stone walls, ruins, scrub and open forest edges with large trees. It is a good digger and lives in crevices between rocks, in holes in the ground and in hollow trees, and it climbs well up to its basking spot in branches and on boulders.

The animals are diurnal and bask for long periods; the body temperature of active animals in the wild is about 36-37 °C. They live in colonies with a dominant male, while the other males have their own smaller territories. Males defend the territory with bobbing, an inflated body, an open mouth, tail whipping and fighting. The area has a distinct rainy season, and mating falls at the start of the dry season. Females gather at communal nesting sites and dig a nest, often about half a metre down.

Read more: Heat and temperature

Care

THE ENCLOSURE

A pair of adults needs an enclosure of at least 200 × 150 × 130 cm (length × width × height). In practice this means a custom-built enclosure or a small room. Juveniles (about 60 × 40 × 60 cm for three to four juveniles) grow quickly and can reach a metre in two to three years, so adult size must be planned for from the start. The enclosure must open from the side, not only from the top: young iguanas instinctively fear anything coming from above, because birds of prey attack from that direction.

The species is territorial, so furnish the enclosure with visual barriers and many hiding places made of boulders, roots, cork tubes or black, corrugated drainage pipes. The drainage pipes are readily used as hides, and an animal can be moved in the pipe without biting. Give each animal its own basking spots and its own food and water bowls, so that they can keep out of each other's way. Make several levels with stable branches and rock pieces that can bear a heavy animal, and secure everything so that it does not topple.

A suitable substrate is a mix of sterilised soil, sand and cypress mulch, or artificial grass in loose mats, which are easy to take out and wash. Avoid wood shavings, corn cob granules and newspaper: shavings can be swallowed and cause life-threatening constipation. Live plants are quickly eaten or trampled, so use robust artificial plants, or keep live plants out of reach. Remove droppings and leftover food daily. The droppings are small, hard and dry, and loose droppings point to the wrong diet or the wrong temperature. Clean with products based on hydrogen peroxide or alcohol, never with phenols.

TEMPERATURE

The air in the enclosure should be 28-33 °C during the day and 18-24 °C at night. The basking spot should reach 40-45 °C in the centre, with an even drop towards the air temperature, so that the animal can choose the temperature it needs. The more gradual the drop, the better. Use one or more lamps or ceramic heaters, adjust the height and wattage of the lamps to the temperature, and always put a guard in front so that the animal cannot touch the bulb. Measure at the basking spot and on the floor with digital thermometers.

Iguanas need to be warm to digest their food, so a temperature that is too low also makes a good diet less valuable. In summer it may be necessary to turn down the lamps or ventilate better if the enclosure gets too hot. If the animal can go outdoors in sunny weather, in a large, secure cage with shade, that is a great advantage.

HUMIDITY AND WATER

Relative humidity should be about 50-60 % during the day and 70-80 % at night. The figures apply to the genus. The habitat is dry in the dry season, but gets a lot of rain in the rainy season, and humidity in the enclosure should follow that rhythm. In the period corresponding to the rainy season (May to November), the whole enclosure is misted thoroughly at least once a day; in the dry season two to three times a month is enough. If the air is too dry, a large water tub can raise humidity through evaporation. All materials must be able to withstand misting, and electrical parts must be placed where the water does not reach them.

An adult meets most of its water requirement through its food, but there must always be a large, stable water bowl with fresh water, and it is cleaned daily. If the water stands completely still, it is not always found; a little movement in the water, e.g. from melting ice cubes, can make the animal drink. Juveniles have a far greater need for fluid than adults and need a bowl 10-15 cm in diameter with water at 25-30 °C, changed daily.

Read more: Humidity, misting and ventilation

LIGHTING AND UVB

The species is diurnal and needs strong light, heat and UVB. UVB is necessary for the production of vitamin D3 and thus for calcium metabolism and breeding, and iguanas need more UVB than most other reptiles. Use a UVB source in Ferguson zone 3, e.g. a powerful UVB tube or a mercury vapour lamp over the basking spot, so that the animal receives a UV index of about 4-6 when it basks. The right distance depends on the type of lamp and is best checked with a UV meter. Replace the lamps according to the manufacturer's instructions, because the UV output falls over time.

Switch the light on for 10-12 hours a day, controlled by a timer, and preferably let the day length follow the seasons. No artificial light is better than sunlight, but glass and most types of plastic do not let UV through, so use UV-transparent material, or put the animal outdoors in a secure cage.

Read more: Lighting and UVB Read more: Calcium, vitamins and supplements

FEEDING

Adults eat mainly plants. Give daily a varied, finely chopped and well-mixed salad of leafy greens (dandelion, clover, mulberry and raspberry leaves in summer, otherwise mustard greens, endive and chicory), vegetables (sweet potatoes, squash, green beans), flowers (dandelion, hibiscus) and a little fruit such as apple, pear, melon and berries. Red and yellow colours attract the animals, so hibiscus flowers, grated carrots, tomato and strawberries can get a reluctant eater started. Spinach, rhubarb and sorrel contain oxalates, and cabbage contains substances that inhibit the thyroid gland, so they are given only in very small amounts. The food must be washed and free of pesticides.

Juveniles eat mainly insects: in juveniles with a body length of about 10 cm (snout to vent), insects make up 40-80 % of the diet. Give them waxworms and small crickets daily together with finely chopped vegetables. As the animal grows, plant food should make up a growing share of the diet. Adults are given animal food (crickets, grasshoppers, waxworms, mealworms, giant mealworms, cockroaches) 1-3 times a week, and the insects are dusted with calcium. Calcium is given daily in the food, while vitamin supplements are given in small, measured amounts, because vitamins A and D in particular are easily overdosed. Remove leftover food daily. Place the food bowl high up if the animal does not like going down to the floor.

Fast-growing juveniles that get too little calcium and UVB quickly develop bone disease, so supplements and light are not to be skimped on.

Read more: Feeder animals: keeping and breeding

BEHAVIOUR AND HANDLING

Ctenosaura similis is shy and defends itself, and only a few animals become so tame that they can be taken out of the enclosure. The chance is greatest with young, captive-bred animals; wild-caught animals are stressed, often ill with parasites and remain wild. Place the enclosure at eye level, and give a new animal two to three weeks of peace after quarantine before it is moved to a place with more going on around it. Then sit by the enclosure every day without touching, and let the animal get used to you. If the animal must be handled, use a towel or a drainage pipe, so that you have a secure hold without squeezing, and wear heavy gloves.

The species is territorial. Adult males cannot be kept together, because they injure each other. A male can be kept with one or two females, but even females occasionally bite each other, and animals that are repeatedly chased away from food and basking spots must be separated. Juveniles are particularly quarrelsome, and juveniles must never live with adults, who may eat them. Do not keep the species with tortoises, because they often carry amoebae, which are difficult to treat in herbivorous lizards. Have an extra enclosure ready.

Daily care of a male and one or two females takes at least 30-60 minutes. New animals must be quarantined and taken to a vet with a faecal sample and a blood sample before they are put together with other animals.

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

Breeding

SEXUAL MATURITY AND SEXING

The sex of adults is seen from the crest, which is tallest in the male, from the bulge under the base of the tail and from the femoral pores, which are clearly larger in the male (up to about 2.5 mm) than in the female (rarely over 1 mm). In very young animals the sex is difficult to see. The animals become sexually mature after 2-4 years.

Breed only animals that are fully grown, in good condition and reliably identified to species. *Ctenosaura similis* can hybridise with close relatives, and hybrids that are not marked as hybrids contaminate the stock of captive-bred animals.

MATING

In the wild mating takes place at the start of the dry season. The male courts with low bobs and licks the female with his tongue, and he gets breeding colours on the head and throat. A female that is not receptive rejects the male and may react violently. Put the animals together under supervision, and be ready to separate them. A fixed annual rhythm of day length and temperature and sufficient UVB help the animals into breeding condition.

EGG-LAYING AND CLUTCHES

Eight to ten weeks after mating the female digs a nest in sand, often at a communal nesting site, and lays her eggs. The clutch is large and grows with the female's size: typically 20-45 eggs, and large females can lay up to 88. The female defends the nest for some time. The enclosure must have a large area of deep, slightly moist sandy substrate or a large nesting box; in the wild the nest lies about half a metre down. Without a suitable nest site the female may hold the eggs back, and this is life-threatening. Give the female fresh water and plenty of food after laying.

INCUBATION

The eggs are carefully lifted out and placed on slightly moist vermiculite or perlite in a closed container, without touching each other and with the same side up as they lay. The incubation temperature is not documented for the species; 28-30 °C is borrowed from *Iguana iguana*, but the substrate must be drier than for that species. Better too dry than too wet. Unfertilised eggs are soft and discoloured and are removed.

The young hatch after 90-120 days and are 15-18 cm long.

Read more: Incubating eggs

REARING THE YOUNG

The young are green with brown markings and do best in groups of three to four animals in an enclosure of about 60 × 40 × 60 cm with branches, a plant, small roots, several tubes of cork or plastic, a water bowl of 10-15 cm, a heat source and a UVB tube. Mist regularly. Separate animals if some are chased away from food and basking spots. Give waxworms and small crickets daily, dusted with calcium, and finely chopped vegetables. The young grow quickly and need larger enclosures after a few months; a metre is not unusual after two to three years.

Health and common mistakes

Illness is most often caused by faults in heat, UVB and diet. The most frequent problems are:

- Bone disease (rickets and fibrous osteodystrophy) in fast-growing juveniles with too little calcium and UVB.
- Constipation from shavings or other things that are swallowed.
- Intestinal parasites, especially in wild-caught animals; a faecal sample is part of the first vet visit.
- Overdosing of vitamins A and D.
- Burns from heat lamps without a guard.
- Bite wounds and tail wounds between animals that cannot be kept together.
- Egg-laying difficulties if the female does not have a suitable nest site.

A healthy animal is lively and curious and alternates between eating, patrolling and basking. A sick animal has sunken eyes, visible hip bones and thin legs and tail, lies listlessly on the floor and does not respond to its surroundings. The animal hides illness for a long time, so find a vet with experience of reptiles before one is needed. Loose droppings in an animal that has otherwise had dry droppings are a sign of a fault in diet or temperature.

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.