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TORTOISES AND TURTLES

Natal Hinge-back Tortoise

Kinixys natalensis

Kinixys natalensis is one of the smallest hinge-back tortoises. It lives in hilly, rocky bush and thorn savanna in eastern South Africa and Eswatini and normally grows to 8-14 cm long. The hinge is weakly developed and is found only in adults. The species is rare and vulnerable in the wild, and little is known about its care, so it is not a tortoise for beginners.

Family: Testudinidae Former name: *Kinixys belliana natalensis*

KEY FACTS

THE ANIMAL

Adult size	**8-16 cm** total length incl. tail
Lifespan	**30-50 years**
Active	**By day**
Lifestyle	**Terrestrial**
Habitat	**Savanna and rocky terrain**
Difficulty	**Experienced**

CARE

Min. enclosure	**120 × 60 × 40 cm** L × W × H for 1 adult
Temperature, day	**26-30 °C**
Basking spot	**32-35 °C**
Temperature, night	**20-24 °C**
Humidity	**50-70%**
Water	**Water dish**
UVB	**Essential** Ferguson zone 2
Diet	**Insects, plants and worms/snails**
Kept	**Singly**

BREEDING

Reproduction	**Egg-laying**
Clutch size	**1-3 eggs**
Incubation	**105-200 days** at 28-31 °C

PROTECTION AND PAPERWORK

CITES	**Appendix II**
EU annex	**Annex B**
IUCN	**Vulnerable (VU)**

About the species

Kinixys natalensis is a small tortoise with an elongated, slightly domed carapace and a flat top. The shell length is normally 8-14 cm, and the largest known is just under 16 cm. All measurements in the text are shell length. An adult female of 9 cm weighs about 130 g. As in the other species of the genus, there is a movable hinge at the rear of the carapace, but in *K. natalensis* it is weakly developed and restricted to the marginal scutes. The hinge develops only in adults and is absent in the young. The tail is short and ends in a spine.

The head is small to medium-sized, brown to yellow, and the snout does not project. The scutes of the shell normally have concentric dark and light rings. Females are larger than males and usually more distinctly marked. Unlike the other hinge-back tortoises, the male does not have a concave plastron.

The species was described by John Hewitt in 1935. From 1957 it was included in *Kinixys belliana* until it was recognised as a separate species again in 1981, and older care literature does not distinguish between them.

Distribution and habitat

Kinixys natalensis lives in a small area of eastern South Africa and eastern Eswatini. The range extends from the hilly interior of KwaZulu-Natal, from Greytown and western Zululand, to the Lebombo Mountains along the border between Eswatini and Mozambique. To the north the species occurs in eastern Mpumalanga and Limpopo from Komatipoort to Hoedspruit, including Kruger National Park. Whether it also lives on the Mozambican side of the Lebombo Mountains has not been established.

The type locality is the valley of the Tugela River in Natal.

> **Native range:** South Africa and Eswatini.

HABITAT

The species lives in hilly, rocky thornveld and bushland at 300-1000 m elevation. Rain falls in summer, and winters are dry and mild. In places it lives side by side with *Kinixys spekii*. Like other species of the genus, it is probably most active in and after rain and lies hidden when it is dry. The diet is mainly plants, but the animal also takes insects and other small animals when it gets the chance. The species is rare, and its population is regarded as vulnerable.

Care

THE ENCLOSURE

Almost no published knowledge exists on the care of *Kinixys natalensis*, and the species is kept very little. Care is therefore based on the habitat and on its closest relatives, especially *Kinixys spekii*, which shares part of its range, and *Kinixys belliana*. *K. natalensis* lives more in rocky terrain than these two, and the set-up should reflect this. Figures that are borrowed or estimated are stated under the individual sections.

Tortoises of the genus *Kinixys* stress easily and have strict requirements for temperature, light level and humidity. They are also difficult to handle and treat. The species is therefore not a tortoise for beginners, and newly imported animals need a plan for parasite treatment from day one.

The enclosure must provide good floor space: at least 8 times the shell length in length and 4 times in width, that is 120 × 60 cm for an animal of 15 cm, and at least 40 cm high. The substrate is 10-15 cm of a well-drained mixture of soil and sand, dry on the surface and slightly damp further down, so that the animal can dig in. Furnish with flat stones and pieces of rock that lie securely and form crevices and hollows, several shelters at both ends, plants and a damp shelter with moss, and provide a large, low bowl of clean water. Fit an opaque strip along the front glass. In a cool, temperate climate the animal can only go outdoors in a safe, shaded enclosure on the warmest summer days.

Read more: Humidity, misting and ventilation

TEMPERATURE

By day the enclosure should be 26-30 °C, with a basking spot of 32-35 °C under a lamp at one end, measured on the substrate. Shelters at the cool end should be kept at 23-26 °C, and at night 20-24 °C is suitable. The figures are borrowed from *K. spekii* and *K. belliana* and are only a starting point, because the species lives at a higher elevation than several of them. The genus basks only a little and seeks shade when the body gets too warm. Use a radiant heat panel or halogen lamps with a thermostat. In the wild the animals are least active in the dry winter, but this should not be imitated: the animal is kept active with steady warmth and food all year.

Read more: Heat and temperature

HUMIDITY AND WATER

Humidity should be around 50-70 %. The figure is borrowed from *K. spekii* and is an estimate. Keep the substrate dry on the surface and slightly damp deeper down, provide a damp shelter, mist regularly, and give a lukewarm bath at least twice a week. Change the water in the bowl daily. Swollen, closed eyes and lethargy are signs of dehydration and should lead to more humidity and a long bath in lukewarm, shallow water.

LIGHTING AND UVB

K. natalensis is diurnal. Sunlight is best. Indoors the species needs UVB lighting with a UV index of 2.0-3.0 at the basking spot (Ferguson zone 2). The zone is borrowed from *K. spekii*. The genus is stressed by bright light, so plants and shelters where the animal can withdraw from the light are important. The light follows the season with about 12 hours a day. Glass and acrylic block UVB.

Read more: Lighting and UVB

FEEDING

The diet is mainly plant material, but the animal also takes insects, snails and other small animals. Give a mixture of herbs such as dandelion, plantain and clover, other leafy greens, button mushrooms and other edible mushrooms, a little soft fruit such as melon and tomato, and snails, earthworms and crickets. Red and orange fruit is readily taken and can get animals that will not eat started. Feed on a flat dish or stone. Dust the food with a calcium and vitamin supplement, and keep a cuttlebone available. Adults and young animals are fed daily.

Read more: Feeder animals: keeping and breeding Read more: Calcium, vitamins and supplements

BEHAVIOUR AND HANDLING

The species is shy and withdraws into its shell or digs in when disturbed. The animal is difficult to handle and examine, so lift it from underneath with two hands and handle it as little as possible. Keep the animals singly; only if the enclosure is large and has many shelters can a pair be kept together, and only one male per enclosure. Do not mix the species with other tortoises, because parasites are transmitted.

Breeding

SEXUAL MATURITY AND SEXING

Females are larger than males. The male's plastron is not concave as in the other hinge-back tortoises, so the sex is harder to see. Age and size at maturity are not documented. The lifespan is not documented; 30-50 years in the box is an estimate borrowed from *K. spekii* and *K. belliana*.

MATING

Mating is not described for the species. In the genus mating takes place in the rainy season. Give the female plenty of shelter and the chance to get away from the male, and separate the animals if she is injured.

EGG-LAYING AND CLUTCHES

Egg-laying is not documented for the species. In *K. belliana* the eggs are laid in the rainy season in clutches of 1-3 eggs, and the figure in the box is borrowed from there. Give the female a box of deep, loose, damp soil where she can dig a nest.

INCUBATION

Incubation time and temperature are not documented for the species. The figures of 28-31 °C and 105-200 days in the box are borrowed from *K. belliana* and are only a starting point. Place the eggs in an incubator with damp vermiculite, and do not turn them.

Read more: Incubating eggs

REARING THE YOUNG

The young have no hinge. In the genus the young are almost exclusively carnivorous; they dry out quickly and need high humidity, a damp shelter, warmth and UVB. Give small snails, earthworms and insects daily together with a little greenery. Further rearing data are not documented for the species.

Health and common mistakes

Newly imported animals of the genus are often in poor condition. The most common problems are emaciation and large numbers of intestinal parasites, both worms and single-celled organisms. Signs are loose droppings with mucus and sometimes blood, undigested food, loss of appetite, weight loss, dehydration and lethargy. Untreated, it can develop into intestinal inflammation and blood poisoning.

- The first step is to restore fluid balance with long baths in lukewarm, shallow water. Faecal samples are examined, and the vet treats according to the findings.
- Some of the parasites can infect both other reptiles and humans, so hygiene and disinfection are essential. Monitor new animals closely for at least 12 months, checking weight, fluid balance and droppings.
- Dehydration: especially in young animals.
- Respiratory infection: runny nose and wheezing breathing in cold conditions and with air that is too dry.

Contact a vet with reptile experience if the animal does not eat, loses weight or has loose droppings. A new animal must be quarantined before it is put with other tortoises.

Read more: Quarantine and hygiene

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.