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TORTOISES AND TURTLES

Aldabra Giant Tortoise

Aldabrachelys gigantea

Aldabrachelys gigantea is one of the largest land tortoises in the world: females reach about 90 cm and nearly 160 kg, males about 120 cm and 250 kg, and the species lives for more than 100 years. It comes from Aldabra Atoll in the Indian Ocean. An adult needs a heated barn and a large, secure outdoor paddock, so the species is only for keepers who can provide both.

Family: Testudinidae Former name: *Testudo gigantea; Testudo elephantina; Testudo ponderosa; Testudo sumeirei; Testudo gouffei; Dipsochelys dussumieri*

KEY FACTS

THE ANIMAL

Adult size	**90-125 cm** total length incl. tail
Lifespan	**80-100 years**
Active	**By day**
Lifestyle	**Terrestrial**
Habitat	**Savanna**
Difficulty	**Expert**

CARE

Min. enclosure	**800 × 400 × 80 cm** L × W × H for 2 adults
Temperature, day	**24-28 °C**
Basking spot	**29-32 °C**
Temperature, night	**18-23 °C**
Humidity	**55-65%**
Water	**Water dish**
UVB	**Essential** Ferguson zone 3
Diet	**Plants**
Kept	**In groups**

BREEDING

Reproduction	**Egg-laying**
Sexually mature	**180-240 months**
Clutch size	**9-25 eggs**
Clutches per year	**1-2**
Incubation	**98-148 days** at 27-30 °C

PROTECTION AND PAPERWORK

CITES	**Appendix II**
EU annex	**Annex B**
IUCN	**Not Evaluated (NE)**

About the species

Aldabrachelys gigantea has a high, domed carapace in brown, grey or almost black tones, thick legs covered in heavy scales and an unusually long neck. The neck lets the animal reach branches up to about a metre above the ground. The males' carapace averages 122 cm in length, and they weigh about 250 kg. Females are smaller: the carapace averages 91 cm, and they weigh about 159 kg. Medium-sized animals in captivity weigh 70-110 kg. All measurements in the text are carapace length.

The shape of the shell follows the habitat: animals that feed on plants close to the ground have a more domed shell, where the front edge bends down over the neck. Animals that also feed higher up have a flatter shell with an upturned front edge, so that the neck can stretch freely.

The species is long-lived. The animals pass 100 years and can reach more than 150, but great age is hard to document because the animals outlive the people who keep track of them. A tortoise bought as a youngster therefore needs a plan for the rest of its life that reaches far beyond the keeper's own. The species was described in 1812 as *Testudo gigantea*. The giant tortoises of the granitic Seychelles are today treated as subspecies of *A. gigantea*; they have vanished from the wild and survive only in captivity and in reintroduced populations. The name was kept by a ruling in 2013, so the older name *Dipsochelys dussumieri* is not used.

Distribution and habitat

Aldabrachelys gigantea is native to Aldabra Atoll in the Seychelles in the western Indian Ocean, where about 180,000 animals make up the largest population in the world. The atoll is protected from human influence.

On other islands the species has been introduced or released as part of conservation work and tourism, among others on islands in the inner Seychelles, in the Amirantes and on Changuu off Zanzibar. These populations are not part of the species' native range and are not shown on the map.

The type locality is Aldabra.

> **Native range:** Seychelles.

HABITAT

On Aldabra the species lives in grassland, low scrub, mangrove swamp and coastal dunes. The animals use almost every available habitat, but gather above all on open grassland. Grazing has created a distinctive low plant cover in which more than 20 species of grasses and herbs have become short and set seed close to the ground to avoid the thick, shearing jaws. As the largest animals on the atoll, the giant tortoises fell small trees and create paths that other animals also use.

The animals are most active in the morning, when they graze and eat leaves and twigs. When the sun is high they seek shade under trees or in small caves, dig into mud and look for cooling pools. There is little fresh water to drink, so the animals get most of their moisture from their food. The species lives both alone and in herds.

The diet consists of grass, leaves, twigs, fruit and occasionally small animals and carrion.

Care

THE ENCLOSURE

Little has been published about keeping *Aldabrachelys gigantea* outside zoos. Temperatures, humidity and UVB zone are based on the atoll's tropical climate and on care guidelines for the species, and the space requirement follows the rules for large tortoises.

A. gigantea does not belong in an enclosure indoors but in a heated barn with a large outdoor paddock. The barn must be at least 8 times the carapace length of the largest animal in length and 4 times in width. For two animals, the largest measuring 100 cm, that gives 800 × 400 cm with walls of at least 80 cm; a fully grown male of 120 cm needs 960 × 480 cm. For the third and fourth animal at least 10% is added to the floor area, and from the fifth animal 20%. A tortoise table or an indoor enclosure can only be used for young animals.

An adult tortoise weighs more than 100 kg and cannot be lifted. The floor must bear the weight and be possible to hose down, the substrate should be soil and sand, the walls opaque and so strong that they withstand the animal pushing against them, and the doors wide enough for the animal to walk in and out. In addition to the barn there must be a large, secure paddock with grass, shrubs, shade, shelter and a mud wallow, which the animal uses whenever the weather allows, and ideally a heated shed in the paddock so it can go in when the weather turns. The animals eat and trample the planting, so it must be renewed regularly. Barn and paddock must be ready before the animal is bought and have room for the fully grown animal.

Read more: Lighting and UVB Read more: Humidity, misting and ventilation

TEMPERATURE

By day the barn should be 24-28 °C with a basking spot of 29-32 °C under a heat lamp, and at night 18-23 °C; the night must not fall below 18 °C. The animal regulates its temperature by moving between sun and shade, so the whole range must be available. The species tolerates a fair amount of cold but does best in warmth. Use radiant heat with a thermostat, ideally

supplemented by underfloor heating, and not heat rocks. The species does not hibernate and must be kept warm and active all year.

Read more: Heat and temperature

HUMIDITY AND WATER

Humidity should be 55-65% for adults, while young animals need 70-80%. A low, wide, non-slip bowl of clean water must be available at all times, because animals in captivity drink a lot. An adult tortoise cannot be lifted into a bath, so the animal must be able to walk into a water container or a mud wallow itself, where it can cool off and drink. Young animals can be given a lukewarm bath, with the water reaching no higher than the lower edge of the shell.

LIGHTING AND UVB

The species is diurnal and lives in full sun. Indoors UVB lighting is essential: the animal needs to be under a UVB source for 10-12 hours a day, and there should be a spot with a UV index of 2-3 at the basking site (Ferguson zone 3). The lamp must be mounted so high that the animal cannot reach it, and replaced as the manufacturer advises, because UVB output falls over time. Sunlight is always best, and the animal should be out in the paddock as soon as the temperature allows. Glass and Perspex block UVB.

FEEDING

The diet is almost entirely plants: grass, herbs, leaves, twigs and, in smaller amounts, fruit. Little has been published about feeding in captivity, so the diet in the wild is the guide: grass and wild herbs such as dandelion, plantain and clover, hay and leafy branches, supplemented with leafy greens, cactus pads (opuntia), carrot and sweet potato. Fruit is given at most as a small treat. Cabbage is limited, because large tortoises easily develop thyroid problems from a lack of iodine. Make the diet as varied as possible so that deficiencies are avoided.

Dust calcium and vitamins over the food 2-3 times a week, and keep a cuttlebone available. Tortoise pellets can be used as an addition, but not as the main food. In summer grazing in the paddock is the best and cheapest food; indoors adults get salad and hay three days a week, while young animals are fed daily. Growth that is too fast causes uneven, raised shell growth and weak bones, so do not give more protein and energy than necessary.

Read more: Calcium, vitamins and supplements

BEHAVIOUR AND HANDLING

The species is social and curious and quickly learns to recognise its keeper. An adult is so heavy and strong that it knocks over small trees and shrubs, and flimsy fences will not hold it. Handling is only possible while the animals are small, and adults are never lifted.

The species lives in herds and can be kept in a large group if there is plenty of room and each tortoise can get away from the others. Males fight over females and space, so watch that no animal is chased or kept away from food and water. Do not mix the species with other tortoise species, because diseases spread.

The animals are most active in the morning, withdraw into the shade when the sun is high and sleep many hours a day. Provide opportunities to dig and wallow in mud, and set up shelters so that the animals have somewhere to retreat to.

Breeding

SEXUAL MATURITY AND SEXING

The male is larger than the female and has a longer, thicker tail and a concave plastron. The female is smaller and has a flat plastron. In captivity the animals mature after about 15 years; the 15-20 years in the fact box is an estimate. The animals grow throughout life and live 80-100 years or more, a few over 150 years.

MATING

On Aldabra mating takes place between February and May. During mating the male knocks his shell against the female's many times and gives a deep, trumpeting bellow. Give the female plenty of hiding places and the chance to get away from the male, and separate the animals if she is injured.

EGG-LAYING AND CLUTCHES

On Aldabra the females lay 9-25 hard-shelled eggs the size of tennis balls in July-September, in a nest about 30 cm deep. The female carries the eggs for about ten weeks before laying them, and she can lay two clutches in one season; in dense populations females lay only a few eggs at intervals of several years. In captivity egg-laying can fall at other times, for example in November and January, if it is warm enough for the female to go outside. Give the female a large, secluded spot with deep, loose, moist soil where she can dig.

Fewer than half of the eggs are normally fertile, and a clutch typically produces only 3-5 viable young. Hatching success is low, in the wild too: most eggs that fail to hatch have not developed at all, and clutches without a single hatchling are common.

INCUBATION

On Aldabra incubation lasts 98-148 days, and in zoos up to about eight months has been recorded. At 30 °C the eggs hatch after 107 days on average. The best incubation temperature is not documented; the 27-30 °C in the fact box are the temperatures used in incubators in captivity. In the wild the young hatch in October-December. Place the eggs in an incubator with moist vermiculite, and do not turn them.

Read more: Incubating eggs

REARING THE YOUNG

Size and weight at hatching are not documented. Young animals can be kept on a tortoise table or in a low enclosure of up to 120 cm, but they quickly outgrow it. The substrate is a mix of soil and sand, kept slightly moist while the animals are small, and humidity should be 70-80%. Provide the same temperatures and UVB as for the adults, daily feeding with finely chopped herbs and grass, and lukewarm baths. The young should be out in fresh air and sun as early and as often as possible. Let them grow slowly.

Health and common mistakes

Disease in the species has been studied very little. The most common problems in captivity are respiratory infection in the cold, intestinal worms, and shell and bone disorders caused by growth that is too fast, too little UVB and too little calcium. Small roundworms of the oxyurid type occur in captive animals, and how common they are varies greatly from one collection to another.

- Respiratory infection: runny nose, wheezing breathing and lethargy when the temperature is too low.
- Parasites: have faeces examined by the vet, especially in new and grazing animals.
- Shell and bone disorders: provide UVB, calcium and a diet of grass and herbs rather than high protein and fruit.
- Thyroid problems: limit cabbage.

A large tortoise is difficult to examine and transport, so find a vet with experience of large tortoises before you get the animal. Contact the vet if the animal is not eating, is losing weight or has loose faeces. A new animal must be quarantined before it is put together with other tortoises.

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.