herpy

TORTOISES AND TURTLES

Southeast Asian Box Turtle

Cuora amboinensis

Cuora amboinensis is a medium-sized, almost wholly aquatic turtle with a hinged plastron from the lowlands of South-east Asia. The shell grows to about 20-25 cm, and the animal can live for more than 30 years. The species requires a large, filtered tank with relatively shallow water, a warm basking spot, UVB and warmth all year round, because it never hibernates.

Family: Geoemydidae Former name: *Cistudo amboinensis; Cyclemys amboinensis*

KEY FACTS

THE ANIMAL

Adult size	**18-25 cm** total length incl. tail
Lifespan	**25-38 years**
Active	**By day**
Lifestyle	**Semi-aquatic**
Habitat	**Rainforest and wetland**
Difficulty	**Intermediate**

CARE

Min. enclosure	**130 × 65 × 60 cm** L × W × H for 1 adult
Temperature, day	**25-30 °C**
Basking spot	**30-35 °C**
Temperature, night	**22-25 °C**
Humidity	**60-80%**
Water	**Aquaterrarium** depth 15-25 cm
Water temperature	**25-28 °C**
UVB	**Essential** Ferguson zone 2
Diet	**Insects, complete diet, plants, vertebrates and worms/snails**
Kept	**Singly, in pairs or in groups**

BREEDING

Reproduction	**Egg-laying**
Sexually mature	**48-60 months**
Clutch size	**1-5 eggs**
Clutches per year	**1-3**
Incubation	**70-100 days** at 26-30 °C

PROTECTION AND PAPERWORK

CITES	**Appendix II**
EU annex	**Annex B**
IUCN	**Endangered (EN)**

About the species

Cuora amboinensis is a medium-sized turtle with a hinged plastron that can be closed against the carapace, protecting the head, legs and tail. Despite the hinged shell, the species is not a land tortoise: it is semi-aquatic and spends most of its life in the water. All measurements in the text are shell length (carapace).

The carapace is dark olive-brown to black and lacks the colour patterns many related species have. The head is dark olive with three yellow stripes on each side, and the plastron is yellow to light brown with a large dark blotch on each scute. Typical adults are 20-25 cm, and a few large animals reach 30 cm. Females are slightly larger than males. Young animals have a flat carapace with three longitudinal ridges (keels), which smooth out with age, so the shell becomes more domed. How domed or flat the shell is depends on the regional form.

The taxonomy is under revision: the species is divided into several subspecies, which differ in shell shape, but the care is the same for all of them.

The species is shy and calm and not an animal for handling. Life expectancy is typically 25-30 years, and animals of 38 years are known. The species is threatened in the wild (IUCN: EN), because large numbers are collected for food and medicine and for trade, and wild animals are often weakened by stress, parasites and desiccation. Captive-bred animals are a far better choice.

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

Distribution and habitat

Cuora amboinensis lives in South-east Asia. The species is found on the mainland from north-eastern India and Bangladesh through Myanmar and Thailand to Laos, Cambodia, Vietnam and Malaysia, and on the islands of Indonesia and the Philippines. The name refers to Ambon in Indonesia, where the first described animal came from.

Forms with a flat shell live in the east, in Indonesia and the Philippines, while forms with a more domed shell live on Sumatra, Java and the mainland. The delimitation of the forms has not been settled, and the map follows the broad delimitation of the species.

> **Native range:** India, Bangladesh, Myanmar (Burma), Thailand, Laos, Cambodia, Vietnam, Malaysia, Singapore, Indonesia and Philippines.

HABITAT

Cuora amboinensis lives in the lowlands, from sea level up to about 500 m, in still or slow-flowing fresh water with a soft bottom: ponds, marshes, swamps, rice paddies, irrigation canals and drainage ditches. The species is found both in untouched nature and in cultivated landscape.

The climate is tropical with warmth all year round, and the species does not occur where the temperature falls below about 21 °C. The animals stay mostly in the water, but go onto land to eat, bask and lay eggs, and they are more on land at night. The young are more aquatic than the adults. The species does not migrate, but some animals may move far during their lives. In the wild it eats plants, fruit, seeds, fungi and worms on land and plants, insects and molluscs in the water.

Care

THE ENCLOSURE

Keep the animal in a large aquarium or a tank, not in an ordinary terrarium. The hinged shell makes the species look like a land tortoise, but it is semi-aquatic and needs a water area like a water turtle; desiccated animals in particular are harmed by being kept dry. The tank must be at least five times as long as the shell and half as wide as it is long, with the land area counted as part of the floor area. The tank's dimensions, 130 × 65 × 60 cm, suit an adult of up to 25 cm and give a water area of about 90 × 65 cm with 25 cm of water (about 150 litres), a land area of 40 × 65 cm and a 35 cm rim above the water. Extra space should go to the water surface, not the depth.

The species is a poor swimmer. The water must be shallow enough that the animal can stand on the bottom and reach its head above the surface in resting areas, and there must always be a zone where the water depth is at most equal to the shell length. Hatchlings under 6 cm are kept in 5 cm of water in a shallow tank of about 60 × 40 cm, which is easy to clean, with a sloping bottom, so there is a dry zone at one end. From about 6 cm they can be moved to an aquarium of about 75 × 30 cm with 20-25 cm of water.

The land area is a beach or a shelf with a rough ramp, large enough for the whole animal to climb up and bask. A substrate of cypress mulch in the land area keeps the humidity up, and the animal likes to dig. Avoid gravel, especially white gravel and pea gravel, which the animal swallows. The water area is easiest to keep clean without substrate. Live and artificial aquatic plants give security. Fit a lid, because the species climbs.

Water is heavy: 150 litres weighs 150 kg, so place the setup on a floor that can carry it. Males are rough during mating, so a pair or a group requires a large tank with many hides and the possibility of separating the animals.

From a size of about 8 cm the animal can be kept in an escape-proof outdoor pond during the warmest part of summer. The pond must be dug down to avoid large temperature swings, be about half water and half land and have stones at the edge at several heights, so the animal can easily get up and down. The animal must come indoors as soon as the nights turn cool.

Read more: Humidity, misting and ventilation

TEMPERATURE

The water must be 25-28 °C all year round. Use a water heater with a guard and thermostat, and measure with a digital thermometer. The basking spot must be 30-35 °C, measured with an infrared thermometer a couple of hours after the lamp is switched on. Heat with a reflector lamp or halogen lamp over the land area. The air above the water is 25-30 °C. At night the temperature falls to 22-25 °C; the night temperature is not documented in more detail, but the species is not found in areas below about 21 °C.

The species must never hibernate. It is tropical and active all year, and a cold period harms it. Therefore keep the warmth and light up throughout the winter, and move the animal indoors as soon as an outdoor pond cools. A dry season or rainy season is not necessary in care.

Read more: Heat and temperature

HUMIDITY AND WATER

The turtle's humidity is the water itself, so the relative humidity of the air is not decisive and is not documented in more detail for the species; 60-80 % in the room is suitable. A damp land area with cypress mulch helps the animals keep the shell healthy.

The animal passes its droppings in the water, so the water quickly becomes dirty. Change part of the water regularly and remove food remnants. If the animal has recently been acquired and is desiccated, it must have access to water immediately.

WATER AND WATER QUALITY

The water is the animal's living place, so it must be clean, warm and relatively shallow. Adults thrive in 15-25 cm of water with shallower zones. The temperature is 25-28 °C.

Use a powerful filter, preferably an external canister filter, rated for more than the volume of water. In the very shallow water for hatchlings filtration is not always practical, and here it is compensated for by frequent water changes. Rinse the filter media in tank water, not tap water, so the beneficial bacteria are preserved. Connect all electrical equipment near the water to an RCD (residual-current device). Feed in a separate container, so the main tank is kept clean.

LIGHTING AND UVB

UVB is necessary for the animal to produce vitamin D3 and absorb calcium. The Ferguson zone is not documented for the species; zone 2 is an estimate based on the species living in sheltered water and basking, but not as intensely as open-water turtles. Use a high-quality UVB tube over the basking spot, with no glass or plastic in between, measure the UV index with a meter, and replace the tube regularly, as its output falls.

The basking spot must have both light and heat from lamps mounted above it. The light must be on for 11-13 hours a day. Let the animal be able to retreat into shade or hides under aquatic plants.

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

FEEDING

C. amboinensis is omnivorous, with a predominance of plants in adults. In the wild it eats plants, fruit, seeds, fungi and worms on land, and plants, insects and molluscs in the water. Hatchlings are strongly carnivorous and take insects, worms and fish, but also some greens; with age the diet becomes more plant-based.

Adults are fed every 2-3 days, hatchlings daily in small amounts, because overfeeding causes growth deformities. Give food in the water; the species eats best there. An adult diet is varied green leaves and aquatic plants, worms, snails, insects, whole small fish and floating pellets of good quality.

Supplements: calcium is sprinkled on the food, and a cuttlebone in the tank keeps the beak worn and provides calcium. Always remove the hard backing of the cuttlebone. Frozen fish have lost vitamin E and thiamine, so give a vitamin supplement if fish are a regular part of the diet. Calcium with D3 is only necessary if the animal does not receive UVB.

BEHAVIOUR AND HANDLING

C. amboinensis is shy and calm and not an animal for handling. The animal withdraws into its shell and closes the plastron when startled. Pick it up by lifting the shell with both hands, and wash your hands afterwards.

Keeping singly is the safest option. Males are rough during mating and can tear at the female's neck, so that serious wounds occur if the animals are not separated. A pair needs a large tank, many hiding places and the possibility of being separated.

The animal is most active during the day in the water and at the basking spot. An animal that hides all the time or does not eat is either stressed or ill.

Breeding

SEXUAL MATURITY AND SEXING

The male has a slightly concave plastron, a longer and thicker tail and larger claws; the female has a short, thick tail and shorter claws. The differences are small and are seen only once the animal is sexually mature, at the age of 4-5 years. Females are slightly larger than males.

MATING

Mating takes place in the water, and the species can breed all year round when the temperature is consistently high. Males are rough: they bite the female's neck during courtship, and without separation this can cause serious wounds to the neck and muscles. Therefore keep only a pair in a large tank with many hides and the possibility of separating the animals.

EGG-LAYING AND CLUTCHES

The female lays 1-5 eggs per clutch, typically 2, and several clutches a year, typically 3. The eggs are elongated, brittle and hard-shelled. She digs the nest in damp, well-drained soil with her hind legs and therefore needs a large nesting area on the land section, even when she is kept without a male.

INCUBATION

The eggs hatch after 70-100 days, most often about 76 days. The incubation temperature is not documented for the species; 26-30 °C is an estimate borrowed from related water turtles. The eggs are fragile and must not be turned when moved to the incubator.

Read more: Incubating eggs

REARING THE YOUNG

The hatchlings are almost wholly aquatic and manage on their own from hatching; the parents care for neither eggs nor young. They are kept in very shallow water (5 cm) with a dry zone and are given small amounts of food daily. They are strongly carnivorous, and earthworms are a good food. Overfeeding causes deformities in the shell.

Health and common mistakes

Captive-bred animals are hardy, but wild animals often arrive with serious problems. The most common are: - Diarrhoea from amoebic infection. - Septicaemia after injuries and as a secondary disease to amoebae. - Shell rot (SCUD). - Starvation and desiccation in newly collected animals. - Calcium deficiency and bone and shell diseases from too little UVB or calcium.

Take a fresh faecal sample to the vet as soon as you have acquired an animal. Animals that do not eat must be examined quickly. Always keep the animal warm: the species does not tolerate cold.

All reptiles can be symptom-free carriers of *Salmonella* and infect humans. Wash your hands before and after contact with the animal, water and equipment, and do not let children under 5 handle the animal. See a vet with reptile experience if the animal loses weight, does not eat, has an open mouth or seems lethargic.

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.

The full guide with map and updates: herpy.org/en/tortoises-and-turtles/cuora-amboinensis