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TORTOISES AND TURTLES

Red-bellied Short-necked Turtle

Emydura subglobosa

Emydura subglobosa is a colourful, diurnal side-necked turtle from rivers, lagoons and swamps in southern New Guinea and northern Australia. It has a pink to red plastron and two yellow stripes on each side of the head. Females grow to 26 cm, and the species lives for at least 20-30 years, so it needs a large, filtered aquarium with a basking spot, heat and UVB.

Family: Chelidae Former name: *Emydura albertisii*

KEY FACTS

THE ANIMAL

Adult size	**13-26 cm** total length incl. tail
Lifespan	**20-30 years**
Active	**By day**
Lifestyle	**Semi-aquatic**
Habitat	**Wetland**
Difficulty	**Intermediate**

CARE

Min. enclosure	**130 × 65 × 60 cm** L × W × H for 1 adult
Temperature, day	**26-29 °C**
Basking spot	**32-35 °C**
Temperature, night	**22-24 °C**
Humidity	**50-80%**
Water	**Aquaterrarium** depth 30-40 cm
Water temperature	**24-28 °C**
UVB	**Recommended** Ferguson zone 2
Diet	**Insects, complete diet, plants, vertebrates and worms/snails**
Kept	**Singly**

BREEDING

Reproduction	**Egg-laying**
Sexually mature	**84-144 months**
Clutch size	**4-11 eggs**
Clutches per year	**2-4**
Incubation	**60-120 days** at 26-30 °C

PROTECTION AND PAPERWORK

CITES	**Not listed**
EU annex	**Not listed**
IUCN	**Not Evaluated (NE)**

About the species

Emydura subglobosa is a medium-sized aquatic turtle with a smooth, low-domed carapace in beige, chestnut brown or slate grey. The head is grey to olive green with a heavy yellow stripe from the tip of the snout through the eye and two yellow barbels on the chin. The plastron is white, pink or orange to red, and the legs, tail and underside of the neck have red markings. Hatchlings have bright colours and a pale rim around the shell; with age the red fades to pink.

Shell length is 13-17 cm in males and 15-26 cm in females. Females grow larger and have shorter tails, while males have a longer, thicker tail. Like all side-necked turtles (family Chelidae), the species does not draw its neck straight in but folds it sideways under the edge of the shell. The neck can therefore get caught against solid objects, so the furnishings must leave wide, open passages between rocks and roots.

The species was described in 1876, and *Emydura albertisii* is a synonym. Two subspecies are distinguished, *E. s. subglobosa* and *E. s. worrelli*, which are only weakly separated genetically. The name *subglobosa* means "almost spherical" and refers to the shape of the shell. The animals in the trade today are mostly captive-bred. The species is rarely aggressive towards other turtles, but bites hard when it feels threatened. It is a powerful swimmer and quickly outgrows a small, decorative aquarium.

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

Distribution and habitat

Emydura subglobosa lives in southern New Guinea, both in Papua New Guinea and in the Indonesian part of the island, and in northern Australia. In Australia the nominate form is found only at the very tip of Cape York in Queensland, at the Jardine River. The subspecies *E. s. worrelli* lives in rivers in the Northern Territory by the Gulf of Carpentaria, including Batten Creek and the MacArthur River; exactly where the boundary between the two subspecies lies has not been settled. The type locality is Naiabui on the Amama River in south-eastern Papua New Guinea.

The species has not been assessed by the IUCN, and population sizes are not documented. The map shows only the original range.

> **Native range:** Papua New Guinea, Indonesia and Australia.

HABITAT

The species lives in fresh water: slow-flowing rivers, lagoons, lakes, swamps and seasonal wetlands on tropical lowland plains. The animals are diurnal, spend most of their time in the water, where they forage, and alternate between swimming and basking to regulate body temperature. The climate is tropical with a wet and a dry season. The average temperature is about 23-30 °C for most of the year, and in the dry period in mid-year nights can fall to 10-15 °C. When the water level falls in the hot, dry season, the animals move to flooded areas.

In the wild the species lives mainly on molluscs, crustaceans and aquatic insects. Females leave the water only to lay eggs in sand or soil on the bank or at the foot of trees.

Care

THE ENCLOSURE

Keep the species in a large aquarium or tub, not in an ordinary terrarium. An adult needs at least 130 × 65 × 60 cm, five times the shell length in length and half that in width with the land area included, and bigger is always better. Young animals can be kept in smaller tubs, but must be moved up as they grow, so plan for the adult size from the start.

The land area must be large enough for the whole animal to climb out of the water and dry completely, and it must have a ramp with good grip. A floating island that tips under the animal rarely gives a fully dry basking spot. Furnish with smooth stones, driftwood, cork and robust aquatic plants. Avoid sharp stones, fine gravel that the animal can swallow, and decorations where it can get stuck underwater. The bottom can be bare or have large river stones or sand. The species swims a lot, so provide open swimming space and hides both in the water and on land.

The aquarium must be completely escape-proof, with a lid or high walls. It is best to keep one animal per aquarium: males can harass females, and peaceful animals can still bite and stress each other. If several animals are to be kept together, they need a tank at least 50 % larger and an extra basking spot per animal. Quarantine new animals separately with their own net and equipment, and do not share a filter with unknown animals. Adult females must have access to a deep, slightly damp nesting box with sand, even without a male.

Read more: Heat and temperature Read more: Quarantine and hygiene

TEMPERATURE

The water should be kept at 24-28 °C all year round, controlled by a thermostat and a heater that is protected against knocks. The basking spot should have a surface temperature of 32-35 °C, measured with a digital probe, and the air above the water 26-29 °C. At night the air temperature may fall to 22-24 °C. The basking spot should warm the animal locally without overheating the whole aquarium. Young and newly acquired animals especially need stable warmth.

The species is tropical and should not hibernate. If activity or appetite falls suddenly, check the water temperature, basking spot, water quality and the animal's general condition rather than assuming it is a natural rest period.

HUMIDITY AND WATER

Humidity is governed by the water and needs no special regulation; the figure in the box applies to the air in a closed aquarium. What matters is that the basking spot is warm and dry, so that shell and skin can dry completely. A basking spot that is too wet causes shell rot.

Read more: Humidity, misting and ventilation

WATER AND WATER QUALITY

Turtles foul the water quickly. Use a powerful external filter rated for more than the aquarium's water volume, because filter capacities are stated for fish and are too optimistic for turtles. Ammonia and nitrite must be zero in a cycled system, and water quality is judged by testing, not by whether the water looks clear. Cloudy water, smell, skin irritation and repeated eye problems are most often caused by poor water quality. Cycle the biological filter before the animal arrives. Moderate flow is fine, but the animal must be able to rest without fighting a strong jet. Remove uneaten food quickly, because warm water promotes bacterial growth. Change part of the water regularly.

The water can be as deep as possible; 30-40 cm is a practical minimum for an adult. Young and newly acquired animals need several stable resting places just below the surface. The species tolerates slightly acidic to slightly alkaline water (pH about 6-8), and a little chlorine does it no harm; use a water conditioner if you are in doubt about the water.

LIGHTING AND UVB

The basking spot needs strong light, and UVB is recommended. Use a 5-7 % T5 HO UVB tube that covers the basking spot, and measure with a UV meter: aim for a UV index of 1-2 at shell height at the basking spot, falling to almost zero in the shade. The species belongs to Ferguson zone 2. Replace the tube according to the manufacturer's instructions, because output falls long before the light goes out. Glass blocks UVB, so sun through a window is not enough. Control the light with a timer so that it follows day length. Night lighting is not necessary.

The species basks less than many other aquatic turtles, so UVB is not strictly necessary, but it gives a healthier shell and better calcium metabolism.

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

FEEDING

The species is omnivorous. The staple is a complete pelleted food for aquatic turtles, supplemented with insects, worms, crustaceans, purged snails, a little whole fish and aquatic plants or leafy greens. Young animals get more animal food and smaller, more frequent meals. Adults get fewer and less nutrient-rich meals, so that they do not become fat and foul the water, while plant food is available at all times. Whole invertebrates and whole fish are better than fish fillet, because pure muscle meat has a poor mineral balance. Avoid fatty feeder fish and feeder fish with parasites or a lot of thiaminase. Calcium is provided through whole prey, cuttlebone or a supplement. Do not give mammal meat, dog or cat food, bread, dairy products or fatty, processed food. Dried shrimp are not suitable as a staple.

The species gets used to a fixed feeding routine easily; an adult is fed three times a week. Feed in a separate tub if possible, so that the water in the aquarium stays clean.

BEHAVIOUR AND HANDLING

Emydura subglobosa is an active swimmer that feels safest in the water. It is an animal to watch, not to hold, even though many animals learn to take food from the hand. Handling should be sparing, because it stresses the animal and carries a risk of bites and falls. If the animal must be moved, support the whole body with both hands and hold it low over a safe surface. The species bites hard and can also scratch with its claws.

It does not defend a territory, but it is not social either. A fixed weekly routine prevents most problems: check water quality, temperature, access to the basking spot, appetite and shell, rinse the filter material before flow falls, and change part of the water before it smells or turns cloudy. Never release unwanted animals into the wild; find a responsible new owner.

Breeding

SEXUAL MATURITY AND SEXING

Males have a longer and thicker tail than females. The difference can be seen from a shell of about 9 cm and is distinct at about 14 cm. Females grow larger than males. In the wild the animals become sexually mature after 7-12 years at a shell length of 14-15 cm. How quickly animals in captivity become sexually mature is not documented.

MATING

The genus *Emydura* mates all year round with peaks in spring and autumn. The male courts with a series of signals: he strokes, blinks and nods his head in front of the female, positions himself snout to snout and squirts water from his nostrils. The pair then nod in turn while lining up side by side. The animals stay together for many hours, and mating may be repeated over several days. The male can be pushy, so watch for bites, and separate the animals if the female becomes stressed or injured.

EGG-LAYING AND CLUTCHES

The female leaves the water at night or early in the morning and lays the eggs in a hole in sand or soil. In the wild this happens in the late dry season from August to October. She lays 4-11 white, ellipse-shaped eggs, 7 on average, and can lay 2-4 clutches a year. The eggs are about 35 × 19 mm and weigh about 8 g. The female does not cover the nest but goes straight back to the water. Give the female a deep box with damp sand or soil. Females can produce eggs without a male, and a female that paces restlessly, tries to escape or strains may have eggs that will not come out and must see a vet immediately.

INCUBATION

The incubation temperature is not documented for the species; the range in the box is an estimate based on tropical aquatic turtles. The eggs hatch after 2-4 months, earliest at high temperature. In the Australian side-necked turtles that have been studied, sex does not depend on temperature. The eggs must not be turned or shaken.

Read more: Incubating eggs

REARING THE YOUNG

The young are about 3 cm at hatching. They stay in the egg for a day or two and live off the rest of the yolk, and they are independent from the first day. Keep them in a smaller aquarium with shallow water, several stable resting places just below the surface and an easily accessible basking spot, and change the water often. The young need more animal food than adults and smaller, more frequent meals. Their colours are strongest in the early period and fade with age. Move them to larger tubs as they grow, and keep them separate from adults.

Health and common mistakes

In *Emydura subglobosa* most problems are caused by water quality, heat and diet. The typical mistakes are:

- Shell rot from a basking spot that does not dry completely, and skin and eye irritation from dirty water.
- Obesity from overfeeding.
- Soft shell and poor growth from too little UVB and calcium.
- Burns from lamps that are set up wrongly.
- Injuries from being kept with other animals, especially bites.
- Eggs stuck in females without a suitable nesting box.

Contact a vet with reptile experience if the animal has persistent swellings, floats lopsided, will not eat, wheezes or breathes with an open mouth, bleeds or has damage to the shell.

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.