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TORTOISES AND TURTLES

Eastern Snake-necked Turtle

Chelodina longicollis

Chelodina longicollis is a medium-sized, carnivorous freshwater turtle from south-eastern Australia. The neck is so long that it reaches about 60 % of the shell length, and the animal catches its prey with a lightning-fast strike from the bottom. Females grow to 28 cm. The species needs a large, deep and clean tank with a basking spot, and it is an animal to watch, not to pick up.

Family: Chelidae Former name: *Chelodina novaehollandiae*

KEY FACTS

THE ANIMAL

Adult size	**18-28 cm** total length incl. tail
Weight	**450-820 g**
Lifespan	**30-50 years**
Active	**By day**
Lifestyle	**Semi-aquatic**
Habitat	**Wetland and temperate woodland and meadow**
Difficulty	**Intermediate**

CARE

Min. enclosure	**150 × 75 × 65 cm** L × W × H for 1 adult
Temperature, day	**22-26 °C**
Basking spot	**30-34 °C**
Temperature, night	**18-22 °C**
Humidity	**50-80%**
Water	**Aquaterrarium** depth 35-40 cm
Water temperature	**22-25 °C**
UVB	**Essential** Ferguson zone 2
Diet	**Insects, vertebrates and worms/snails**
Kept	**Singly**

BREEDING

Reproduction	**Egg-laying**
Sexually mature	**84-144 months**
Clutch size	**6-24 eggs**
Clutches per year	**1-3**
Incubation	**110-185 days** at 26-30 °C

PROTECTION AND PAPERWORK

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

About the species

Chelodina longicollis is a side-necked turtle (Pleurodira). It does not draw its head straight back but folds the neck sideways under the edge of the shell. The carapace is broad and flat with a groove along the middle that deepens with age, and the colour ranges from black to light brown, while the plastron is cream to yellow with black seams. The neck is long and narrow, grey to black above and cream below, covered with small pointed tubercles. The head is narrow and pointed. Young animals are black to dark grey with an orange stripe along each side of the neck and jaw and orange spots on the plastron.

All measurements in the text refer to shell length. Females are larger and deeper-bodied than males and have a shorter, thicker tail. Males have a longer tail and a slightly concave plastron. The differences are small, so sex is hard to see in young animals. Females grow to 28 cm and males to 25 cm; in nutrient-poor areas the animals stay smaller, females about 22 cm

and males about 19 cm. Adults weigh 450-820 g.

The species has scent glands and releases a yellow, foul-smelling fluid when it feels threatened. In young animals this happens at the slightest touch, and in adults it lessens as the animal gets used to its keeper. The animal may also snap in defence. It is an animal to observe and not to handle.

The turtle hybridises freely with *Chelodina canni* and *Chelodina rugosa* where the ranges meet. In the trade it is easily confused with the much larger *Chelodina expansa*, which reaches about 40 cm and needs a far larger tank.

Distribution and habitat

Chelodina longicollis lives in south-eastern Australia: from Port Lincoln on the Eyre Peninsula in South Australia through Victoria and New South Wales and along the coastal rivers of Queensland to the north, up to the catchment of the Fitzroy River. The species is found throughout the Murray-Darling basin, and west of the Great Dividing Range it reaches north to the Burdekin River. Populations on islands in Bass Strait north of Tasmania are introduced, and introduced animals occur in Tasmania and around Perth and Albany in south-western Australia.

The species is common throughout its range. The greatest threats are foxes, which eat the eggs, road traffic, drought and changes to wetlands.

> **Native range:** Australia.

HABITAT

Chelodina longicollis is found in many kinds of fresh water: swamps, lakes, river lagoons, farm dams and slow-flowing, overgrown watercourses, but also in faster water and in brackish water. It is most numerous in shallow, temporary wetlands without fish and other turtles. The animal spends most of its time on the bottom and basks only a little.

The species travels overland, up to several kilometres, between waterholes, especially when it rains. If the waterhole dries out, the animal digs into the leaf litter under trees or heads for permanent water and can lie dormant (aestivate) until the rain returns. The climate is temperate. The species is active and feeds at lower temperatures than other Australian turtles and therefore lives further south and higher up than they do. In the highlands of New South Wales it can overwinter under ice.

Its food is anything that can be caught in the water: insect larvae, worms, tadpoles, frogs, small fish, crustaceans, molluscs and plankton as well as carrion. Prey is caught by ambush: the neck is thrown forward, the mouth opens, and the prey is sucked in.

Read more: Rearing tadpoles

Care

THE ENCLOSURE

Keep *Chelodina longicollis* in an aquarium or tub, not in an ordinary terrarium. The species is a bottom-dwelling swimmer and needs depth more than basking space. 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 size in the box, 150 × 75 × 65 cm, is the minimum for one adult female and gives a water section of 110 × 75 cm holding about 330 litres at 40 cm of water, with room for a basking spot. A male of 18-20 cm manages with 100 × 50 cm.

The water must be at least twice as deep as the shell is wide: 35-40 cm for an adult female and about 30 cm for a male. Young are kept in water about as deep as the shell length, with easy access to the surface. A long, low tub suits better than a tall, narrow one.

The basking spot must be large enough for the animal to climb completely out of the water and dry completely, for example a floating dock or a sloping bank, and sit under a heat lamp and a UVB lamp. The bottom can be bare, which is easiest to keep clean. If a substrate is wanted, use large, smooth river stones; gravel, small stones and sand collect waste. Provide hides in the form of roots, large stones and plants, as the species wants cover. Hides and plants must have no edges or holes where the animal can get stuck.

Powerful filtration is necessary, because the species eats messily. Use an external canister filter rated for at least twice as much water as the tub holds. The tub must be escape-proof, because the species climbs and wanders.

Read more: Lighting and UVB Read more: Heat and temperature

TEMPERATURE

The water should be 22-25 °C. The temperature is maintained with a thermostat-controlled water heater, and measurements are taken both in and above the water. Below 20 °C the animal becomes lethargic and stops eating, and water that is too cold or sudden changes cause respiratory infections.

The basking spot should be 30-34 °C. The air in the room should be 22-26 °C during the day and may fall to 18-22 °C at night. Young do well at the warmer end of the water range. The lamps are switched off at night.

Controlled hibernation is not necessary. Animals kept indoors are healthiest when the temperature is the same all year. If the animal stays a long time in a dark corner out of the water, something is wrong with the water or the temperature.

Read more: Brumation and the seasons

HUMIDITY AND WATER

The turtle's moisture is the water, so air humidity is not decisive; 50-80 % in the room is sufficient. What matters is clean water. Change about a quarter to a third of the water every week, and remove food remains after the meal. Feeding in a separate tub keeps the main tub cleaner. Use a chlorine water conditioner when topping up with new water.

Read more: Humidity, misting and ventilation

WATER AND WATER QUALITY

The water is the animal's home. For adults it should be 35-40 cm deep (at least twice as deep as the shell is wide), well oxygenated, clean and 22-25 °C. The filter must clean both mechanically and biologically, and it is cleaned in tank water, not tap water, so that the bacteria are preserved. Undergravel filters and small internal filters are not enough for an adult animal. All electrical equipment near the water must be behind a residual current device (RCD).

LIGHTING AND UVB

The species is diurnal and depends on UV light for its bones. It spends less time at the basking spot than *Trachemys scripta*, but UVB is still necessary. Ferguson zone 2 is an estimate based on that behaviour; the zone has not been documented for the species. Use a UVB tube made for reptiles over the basking spot and a white heat lamp beside it, and replace the tube according to the manufacturer's instructions, at least once a year. Glass and plastic block UVB, so nothing may stand between the lamp and the animal.

The light must be on for at least 12 hours a day. In summer the animal can have unfiltered sun outdoors in shallow water, but never unsupervised, because it can overheat.

FEEDING

Chelodina longicollis is a carnivore. The food must be animal-based and varied: earthworms, bloodworms and blackworms, crickets and other insects, small fish such as guppies, shrimp, krill, mussels and snails. Larger animals can have a thawed baby mouse as an occasional treat, at most once a month. Saltwater food is rinsed and soaked for at least an hour.

Pellets for carnivorous aquatic turtles can be tried, but many animals do not take them, so nutrition should not be built on them. The food is low in calcium, so sprinkle calcium on it twice a week, and give a multivitamin with vitamin A every week. Vitamin A deficiency causes swollen eyes and loss of appetite.

Young are fed every day, and subadults every other day. Adults are fed twice a week. A meal is about the size of the animal's head; food remains are removed after a couple of hours. The species eats in the water.

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

BEHAVIOUR AND HANDLING

Chelodina longicollis is an animal for observation. It is not social and lives alone in the wild, and in a tank fights often arise between two animals, because the dominant one grows faster. Keep one animal.

When disturbed, the animal withdraws and releases musk. Keep fingers away from the water when the animal is fed, because the neck shoots forward in a fraction of a second. If the animal must be lifted, take hold of the shell from behind with both hands, and keep your fingers away from the head. Wash your hands before and after. Children under five should not handle the animal.

Breeding

SEXUAL MATURITY AND SEXING

Males become sexually mature after 7-8 years and females after 10-12 years. Males are smaller when they mature: 14-19 cm against 17-21 cm for females, depending on the population. Sex can be seen from the tail, which is longer in the male, and from the male's slightly concave plastron.

MATING

Mating takes place in the water in the Australian spring, most often in September. The male nods his head, swims quickly after the female and lies on top of her with his plastron against her carapace. The female can wriggle free, but the male rarely gives up. Give the female space and hides, and separate the animals if the male is too persistent.

EGG-LAYING AND CLUTCHES

The female lays 6-24 hard-shelled, elongated eggs, about 14 on average. The eggs are about 30 mm long and 20 mm wide and weigh 6-7 g. Egg-laying takes place in October-January (the Australian spring and early summer), and up to three clutches a year are possible; the number depends on how much food the female has had. The female will walk several hundred metres from the water to find a high-lying spot, softens the soil with fluid from the cloaca and digs with her hind legs. Give the female a box with damp sandy or clay-mixed soil on the land area.

INCUBATION

Incubation takes 110-185 days, usually 120-150. Sex does not depend on temperature. The embryo can go dormant along the way, which is why incubation time varies so much. The incubation temperature has not been documented for the species; 26-30 °C is an estimate, and eggs develop faster at the warm end. Use a damp, but not wet, substrate and do not turn the eggs. The young are about 3 cm and weigh 4-5 g.

Read more: Incubating eggs

REARING THE YOUNG

The young are independent from hatching; the parents look after neither eggs nor young. Young animals are kept in shallow water, at shell-length depth, at the warmer end of the temperature range, with a basking spot, UVB and hides. The food is bloodworms, blackworms, small pieces of earthworm and small fish, every day. Most young do not take pellets. Keep young singly or with plenty of space, so that they do not bite each other.

Health and common mistakes

The species is hardy when the water and temperature are right. Most illnesses are caused by husbandry.

- Respiratory infection: wheezing breathing, bubbles from the nose and lopsided floating. Almost always caused by water that is too cold or a basking spot that is too cold. Requires a vet.
- Shell rot: white or grey patches that cannot be scrubbed off, in unclean water.
- Vitamin A deficiency: swollen eyes and loss of appetite on a monotonous diet without supplements.
- Lack of UVB and calcium causes soft and deformed shells and bones.
- Loss of appetite in water below 20 °C is not an illness but a sign that the heat needs adjusting.

All reptiles can be symptom-free carriers of *Salmonella*. Wash your hands after contact with animals, water and equipment. See a vet with reptile experience if the animal does not eat, has swollen eyes, an open mouth or floats lopsided.

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.