herpy

TORTOISES AND TURTLES

Painted Turtle

Chrysemys picta

Chrysemys picta is a diurnal, semi-aquatic turtle from North America with red and yellow stripes on the neck, legs and shell margin. The shell reaches 13-25 cm, and the animal can live for many decades. An adult requires a large, filtered tank with several hundred litres of water, a warm basking spot and strong UVB.

Family: Emydidae

KEY FACTS

THE ANIMAL

Adult size	**13-25 cm** total length incl. tail
Weight	**300-500 g**
Lifespan	**25-40 years**
Active	**By day**
Lifestyle	**Semi-aquatic**
Habitat	**Wetland and temperate woodland and meadow**
Difficulty	**Intermediate**

CARE

Min. enclosure	**130 × 65 × 60 cm** L × W × H for 1 adult
Temperature, day	**20-30 °C**
Basking spot	**30-40 °C**
Temperature, night	**15-24 °C**
Humidity	**50-80%**
Water	**Aquaterrarium** depth 25-35 cm
Water temperature	**21-27 °C**
UVB	**Essential** Ferguson zone 3
Diet	**Insects, complete diet, plants, vertebrates and worms/snails**
Kept	**Singly or in groups**

BREEDING

Reproduction	**Egg-laying**
Clutch size	**4-15 eggs**
Clutches per year	**1-5**
Incubation	**72-80 days** at 25-30 °C

PROTECTION AND PAPERWORK

CITES	**Not listed**
EU annex	**Annex B**
IUCN	**Least Concern (LC)**

About the species

Chrysemys picta is a small to medium-sized freshwater turtle that spends most of the day in the water and goes on land to bask and lay eggs. The shell (carapace) is oval, smooth and relatively flat, olive green to black without a keel. The plastron is yellow, in some with reddish tones and dark markings in the middle. The skin is olive to black with red and yellow stripes on the neck, legs and tail, and the face has yellow stripes with a large yellow patch behind each eye. The feet are webbed. All measurements in the text are shell length.

Adults measure 13-25 cm, and females grow larger than males. The female has a taller, more rounded shell and weighs on average about 500 g against the male's about 300 g. The male is recognised by very long claws on the forelegs and a longer, thicker tail, where the cloacal opening sits further out. Size varies with the subspecies: the western grows largest and rarely exceeds 20 cm, occasionally up to 25 cm, the eastern and the central reach about 18 cm, and the southern form about 15 cm.

The species has three subspecies, which interbreed where their ranges meet. The eastern (*C. p. picta*) has the scutes of the shell in straight rows across the back and an almost uniformly yellow plastron. The central (*C. p. marginata*) has a dark, symmetrical patch in the middle of the plastron. The western (*C. p. bellii*) has a net-like pale pattern on the shell and a large coloured patch, often reddish, that extends out towards the edge of the plastron. The southern form (*C. dorsalis*) is now most often regarded as a separate species. Husbandry is the same for all forms.

The species is often confused with *Trachemys scripta*. *C. picta* is flatter and has neither the red patch behind the eye nor the mottled plastron.

Lifespan in captivity is typically 25-30 years, and some animals reach 40-50 years. The species is shy and not a turtle to pick up; most animals are stressed by being handled. An adult turtle needs a large volume of water, warmth and UVB throughout its long life.

Read more: Lighting and UVB

Distribution and habitat

Chrysemys picta is North America's most widespread turtle and the only one whose range extends from the Atlantic to the Pacific. The species occurs in southern Canada from Nova Scotia and New Brunswick across Quebec, Ontario and the prairie provinces to British Columbia, in most of the USA from Maine to Washington and Oregon, and in a single stream in northern Mexico (Chihuahua). To the south it reaches the Gulf Coast in Louisiana and Alabama, and in the south-western USA (including Texas, New Mexico, Arizona and Utah) only scattered populations occur.

The eastern subspecies lives from the Canadian Maritimes to Georgia east of the Appalachians. The central lives in the Great Lakes region and the Midwest down to Tennessee and north-western Alabama. The western lives from the Canadian prairies and the Great Plains west to the Pacific coast.

Outside the native range the species now occurs as an introduced animal, among other places around Phoenix in Arizona and in Germany, Spain, the Philippines and Indonesia, because animals have escaped. The countries shown on the map are only the native range.

> **Native range:** Canada, United States and Mexico.

HABITAT

Chrysemys picta lives in calm, shallow fresh water with a soft, muddy bottom: ponds, small lakes, marshes, swamps and slow rivers and canals. The species prefers large wetlands with abundant aquatic vegetation and longer periods of high water, and it also copes in man-made ponds and polluted waters.

The day follows the sun. The animal emerges at sunrise and basks for several hours on logs, stones and other objects above the water. Once warmed, it returns to the water to feed, and after cooling it comes up again once or twice. Many animals bask together, and up to 50 individuals can lie in heaps on the same log. When in danger they slip into the water in a flash. At night the animal rests on the bottom or on an object under water.

In colder regions the species hibernates by burying itself in mud on the bottom of the water. The young hatch in August and September, and in the northern regions many stay in the nest over the winter and emerge the next spring; they can tolerate frost because the blood can supercool. In the southernmost regions the species does not necessarily hibernate. The females leave the water from the end of May to dig a nest, often in open, sunlit, sandy soil near the water.

Care

THE ENCLOSURE

Keep the animal in an aquarium, a large tank or a closed indoor pond, not in an ordinary enclosure. The tank must be at least five times as long as the shell of the largest animal and half as wide as it is long, with the land area counted as part of the floor area. The water must be at least twice as deep as the shell is wide. The dimensions in the fact box, 130 × 65 × 60 cm, suit a turtle of up to 25 cm and give a water section of 90 × 65 cm with 35 cm of water (about 200 litres), a land area of 40 × 65 cm and a 25 cm rim above the water. Larger is always better, and each additional turtle requires more space.

Set up for an adult from the start, because the young grow quickly. Water is heavy: 200 litres weighs 200 kg, so place the setup on a floor that can bear it. The land area must be large enough that the whole animal comes completely out of the water and dries. Build it as a shore or shelf with a rough ramp, and place a large, flat stone as a basking spot. The lamp and UVB sit directly over the basking spot. A hiding place under water must be safe, so that the animal cannot get stuck and drown. Plants in the tank are torn to pieces whether or not the animal eats them. The bottom can be bare, or you can use stones that are too big to swallow, or gravel so fine that it passes harmlessly.

Keep the setup completely escape-proof, both indoors and outdoors. An outdoor pond in summer must be secured against both escape and predators: fencing going at least 30 cm into the ground, and netting over the top. Avoid fine-mesh netting, which cuts out much of the sun's UVB.

Read more: Heat and temperature

TEMPERATURE

The surface of the basking spot should be about 40 °C, measured with an infrared thermometer a couple of hours after the lamps are switched on, and the air above the basking spot 30-35 °C. Heat with halogen lamps in deep domes with ceramic fittings, and let the lamp sit at the same distance from the basking spot as the UVB tube. The air in the rest of the room should be 20-30 °C by day.

The water should be 24-27 °C. Adults tolerate cooler water down to about 21 °C, and young need 24-29 °C; both figures are borrowed from *Trachemys scripta*. Set the water heater to the lowest temperature, so that a gradient forms in the tank, and protect the heater with a perforated plastic guard or a PVC pipe, so that the animal does not burn itself. Check the water with a digital thermometer, and make sure there are no draughts, because strong fluctuations in temperature can cause respiratory infections.

At night the lamps are switched off, and the air temperature may fall to about 15-24 °C. The lamps' on-off times are set on a timer to 11-13 hours of light a day.

Hibernation is natural for the species. The animal stops eating when the water becomes colder than 15-18 °C in autumn, and in the northern regions hibernation lasts from October to March with a body temperature of about 6 °C; the southernmost populations do not necessarily hibernate. In captivity hibernation is not required, and an animal kept at an even warmth all year does fine without. If you want to give the animal a hibernation, follow the same procedure as for *Trachemys scripta*: only healthy, well-nourished animals after a vet check, no feeding in the last weeks before, 3-5 °C for at most 14 weeks and weighing every 2-4 weeks. An animal that becomes lethargic by itself and stops eating in the middle of the warm season must go to a vet.

Read more: Brumation and the seasons

HUMIDITY AND WATER

The turtle's humidity is the water itself, so the relative humidity of the air is not documented in detail for the species and is not decisive; 50-80 % in the room is ample. What is decisive is the cleanliness of the water.

The animal passes its droppings in the water, so the water quickly becomes dirty. Use a powerful filter, and change part of the water regularly; the filter alone is not enough. Remove food remains and debris with a fish net after feeding.

Read more: Humidity, misting and ventilation

WATER AND WATER QUALITY

The water is the animal's living space, so it must be deep, clean and warm. The water should be at least twice as deep as the shell is wide, and 25-35 cm suits adults. The temperature is 24-27 °C (see Temperature).

The filter must filter both mechanically and biologically. The mechanical part removes food remains and droppings; the biological part, with sponge or ceramic rings, houses beneficial bacteria that convert toxic nitrogen waste. The bacteria need flowing water. A filter intended for fish is often too weak, so choose one rated for at least 2-3 times the volume of water, preferably an external canister filter. Undergravel filters and small internal filters are not suitable. An air stone provides extra oxygen, but is not a filter.

Clean the filter at least once a month, and rinse the filter medium in water from the tank, not from the tap, so that the bacteria are preserved. Never use soap. Unplug with dry hands before touching the filter, and connect all electrical equipment near the water to an RCD (residual current device). Do not clean the filter in the kitchen.

LIGHTING AND UVB

UVB is a necessity. The species belongs to Ferguson zone 3-4. The UV index at the surface of the basking spot should be around 3.0-4.0, and there may well be areas with a lower UV index so that the animal can choose. Use a T5 HO tube with a reflector that covers 50-75 % of the length of the set-up and sits above the basking spot.

The distance from the tube to the animal's back is 28-33 cm for a tube with 5-6 % UVB and 43-53 cm for a tube with 10-12 % UVB. Never hang the tube closer than 25 cm to the basking spot, because then the radiation does not cover the animal evenly. Plastic and glass block UVB completely, and mesh blocks a good deal, so there must be nothing between the tube and the animal. UVB tubes lose strength and must be replaced regularly. Outdoors the sun provides both heat and UVB in the warm months.

Supplement with a powerful daylight lamp of around 6,400 K. The light should be on about 12 hours a day. Never use coloured light, not even at night, because the animal's eyes are very sensitive to colours.

FEEDING

C. picta is omnivorous. In the wild it eats aquatic plants, algae, aquatic insects, crustaceans, snails, small fish and carrion. The young animals are mostly carnivorous, and with age the diet becomes more plant-based. The turtle eats in the water, so throw the food into the tank. The red and yellow colour of the skin comes from plant pigments (carotenoids) in the food, so a varied diet with algae and aquatic plants maintains the colours.

The feeding plan is borrowed from *Trachemys scripta*, which has almost the same diet. Animals under 1 year get roughly 50 % animal food and 50 % greens: animal food every day, greens every day and pellets every other day. Animals over 1 year get 25 % animal and 75 % greens: animal food 1-2 times a week, greens every day and pellets 2-3 times a week. A portion of animal food is what the animal can eat in 5-10 minutes, a portion of greens corresponds to the size of the shell, and a portion of pellets to the size of the head.

Choose pellets with 30-40 % protein, low fat content, vitamin D and a high calcium-phosphorus ratio, and give vitamin and mineral supplements. Animal food: earthworms, mealworms, cockroaches, crickets, prawns and krill, farmed snails and small fish; whole animals are better than pieces. Greens: duckweed, water lettuce, water hyacinth, dandelion, clover, chickweed, leaf lettuce, endive and kale. Fruit is an occasional treat. Never give avocado, onion, tomato, citrus fruits, mushrooms, rhubarb or hot pepper. Use only wild plants that are reliably identified and not sprayed. The animal gets calcium via pellets and a cuttlebone in the tank, whose hard plastic backing must be removed first.

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

BEHAVIOUR AND HANDLING

C. picta is diurnal, shy and quick to flee into the water. It is not tame and does not thrive on contact, so it should be handled only when necessary, for example for health checks or cleaning. Handling stresses the animal, and it can bite and scratch. If the animal must be lifted, take it from underneath and hold the shell with both hands. Wash hands with soap before and after, and do not let children under 5 handle the animal.

The species is not truly social, but tolerates other turtles of the same size with similar requirements if there is plenty of space and many hides and basking spots. Both sexes can be dominant or territorial. If persistent aggression is seen, provide a larger tank or separate the animals. Keep males with females only if the females can get away, because the males can be rough during mating. The simplest form is one animal in a large tank.

Breeding

SEXUAL MATURITY AND SEXING

The male has longer claws on the forelegs, a longer and thicker tail, and the cloacal opening sits further out on the tail; the female is larger, has a taller shell and a shorter tail. Males are sexually mature at 7-9 cm plastron length, in most populations after 2-5 years, and females at 10-13 cm plastron length after 6-10 years. In the northernmost populations it is slower: males after 7-9 years and females after 11-16 years. Growth is fast in the first years, and the animals then grow slowly.

MATING

Mating takes place under water in spring and autumn, when the water is still cool. The male follows the female until they are face to face, and strokes her face and neck with the long claws; a receptive female returns the movement. If this is repeated several times, the female swims to the bottom, where mating takes place. The male can injure the female with the tooth-like

points of the beak and the claws. The female can store sperm for up to three years and lay several clutches after a single mating, and a clutch can have several fathers.

EGG-LAYING AND CLUTCHES

The female lays eggs from late May to mid-July, as few as 4 and up to 15 eggs per clutch, depending on size and subspecies (about 5 in the eastern, 8 in the central and 12 in the western). Most females lay 1-2 clutches a year, and some up to 5. She digs a flask-shaped nest with the hind legs in soft, sandy, sunlit soil and lays the eggs in it; she then covers the hole and leaves the nest. The work takes up to four hours. A female must always have a box of soil or sand on the land area, even when kept alone, so that she has a place to dig.

INCUBATION

The eggs have a soft, flexible shell and are white and porous. Incubation lasts 72-80 days in the wild and about as long under artificial conditions; the young emerge in August and September. The sex is determined by the incubation temperature: 23-27 °C in the middle third of the incubation period produces males, and higher or lower temperatures produce females, but the amount of water in the nest matters more for survival, metabolism and growth than the temperature. Incubate the eggs at 25-30 °C; the figure is an estimate, because an incubation temperature for captivity has not been documented for the species. In the northern parts of the range, young overwinter in the nest and emerge the following spring.

Read more: Incubating eggs

REARING THE YOUNG

The young fend for themselves from hatching; the parents look after neither eggs nor young. They live on the yolk for the first week to week and a half and then begin to eat. In the wild they grow quickly and often double in size during the first year. Young are mostly carnivorous (see Food).

A young one can be kept in a tank with at least about 40 litres of water and a land area where it can dry completely. Each additional young one requires about 20 litres more water. The water should be 24-29 °C, and there must be hides, a basking spot and UVB. If several young are kept together, they must be the same size, and all must get food.

Health and common mistakes

Turtles hide illness, so watch for changes. Weigh and measure the animal regularly, and keep a log of weight, appetite and behaviour. Signs of illness: swollen or sunken eyes, the animal listing or unable to dive, open mouth, foam or bubbles at the nose, excessive basking or the animal refusing to enter the water, unwillingness to eat, crooked or irregular growth, discolouration and sores on skin or shell.

Typical problems and husbandry errors: - Dirty water if the filter is too weak or the water is not changed. - Calcium deficiency and diseases of bone and shell with too little UVB or calcium. - Swallowed plastic from the cuttlebone or furnishings. - Too small a volume of water, where the animal cannot swim and cannot get out of the water. - Draughts or air that is too cold, which can cause respiratory infections.

All reptiles can be symptom-free carriers of Salmonella and infect people. Wash hands with soap before and after contact with the animal, water and equipment, and do not let children under 5 handle the animal. After a bite, the wound must be rinsed under running water for about five minutes and cleaned with mild soap; seek a doctor for deep, bleeding or inflamed wounds.

Seek a vet experienced with reptiles 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.