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TORTOISES AND TURTLES

Ouachita Map Turtle

Graptemys ouachitensis

Graptemys ouachitensis is a diurnal, medium-sized freshwater turtle from rivers and lakes in the Mississippi drainage of the USA. The female reaches up to about 26 cm and the male about 18 cm, and the species has a broad yellow mark behind the eye. The species is shy and needs a large, clean, well-oxygenated aquatic enclosure with a basking area and strong UVB, so it suits experienced keepers best.

Family: Emydidae Former name: *Graptemys pseudogeographica ouachitensis*

KEY FACTS

THE ANIMAL

Adult size	**9-26 cm** total length incl. tail
Lifespan	**15-30 years**
Active	**By day**
Lifestyle	**Semi-aquatic**
Habitat	**Wetland**
Difficulty	**Experienced**

CARE

Min. enclosure	**130 × 65 × 60 cm** L × W × H for 1 adult
Temperature, day	**24-28 °C**
Basking spot	**30-35 °C**
Temperature, night	**20-24 °C**
Humidity	**50-80%**
Water	**Aquaterrarium** depth 30-40 cm
Water temperature	**22-26 °C**
UVB	**Essential** Ferguson zone 3
Diet	**Insects, complete diet, plants, vertebrates and worms/snails**
Kept	**Singly or in groups**

BREEDING

Reproduction	**Egg-laying**
Sexually mature	**24-84 months**
Clutch size	**6-16 eggs**
Clutches per year	**2-3**
Incubation	**60-82 days** at 26-30 °C

PROTECTION AND PAPERWORK

CITES	**Appendix III**
EU annex	**Annex C**
IUCN	**Least Concern (LC)**

About the species

Graptemys ouachitensis is a medium-sized aquatic turtle with a low, dark keel along the middle of the carapace and a distinctly serrated rear edge. The carapace is olive green with narrow, irregular yellow lines that resemble a road map, and most shells have one to six black spots at the rear, surrounded by yellow or orange rings. The rings fade with age. The keel is distinct in young animals and males and more rounded in females. The plastron is yellow to cream with dark green swirls or a faint grey stripe along the seams; the lines are clearest in young animals and turn brownish in older females.

The head, neck, legs and tail are dark green to brown with many yellow stripes. The distinguishing feature is a large, broad yellow mark behind each eye, widest just behind the eye and narrowing at the top of the head, a large yellow patch below each eye and a patch on the lower jaw. The eye has a cream-white to white iris and usually a thin, black horizontal line through the pupil. The markings can resemble those of *Graptemys pseudogeographica*, which has a thick yellow stripe behind the eye that runs upwards and backwards like an inverted L, and those of *Graptemys geographica*, which has a small yellow patch behind the eye. In central and eastern Missouri *G. ouachitensis* hybridises with *G. pseudogeographica*, and the offspring have mixed features. The head pattern varies and also depends on incubation temperature.

All measurements in the text are shell length. The female is far larger than the male and has a broader head: females are 12-26 cm, males 9-18 cm. The male has longer claws on the forelegs and a longer tail. Newly hatched young are 27-35 mm and weigh about 10 g. The weight of adults is not documented.

The species was described in 1953 by Fred Cagle as a subspecies of *G. pseudogeographica* and has been regarded as a separate species since 1993. The former subspecies *Graptemys sabinensis*, which lives only in the Sabine River, is now also regarded as a species of its own. The species is shy, dives at the slightest disturbance and is an animal to watch, not to handle. It lives 15-20 years in captivity, up to 30 years with good care.

Read more: Incubating eggs

Distribution and habitat

Graptemys ouachitensis lives in the central and eastern USA. The range runs from northern Minnesota and Wisconsin in the north to eastern Texas and Louisiana in the south, and from Oklahoma and Kansas in the west to Ohio and Kentucky in the east. The species is found in Alabama, Arkansas, Illinois, Indiana, Iowa, Kansas, Kentucky, Louisiana, Minnesota, Mississippi, Missouri, Nebraska, Ohio, Oklahoma, Tennessee, Texas, West Virginia and Wisconsin. It was described from the Ouachita River in Louisiana, after which it is named.

The species is numerous along the Mississippi and less common in the eastern tributaries in Tennessee and Louisiana. In central Kentucky, eastern Illinois, Indiana and Ohio the populations are scattered, and in West Virginia it has been found only once. The species is not threatened globally, but local populations are threatened by agriculture, fishing nets and polluted water.

> **Native range:** United States.

HABITAT

Graptemys ouachitensis lives mostly in large rivers with moderate to fast current, but is also found in oxbows, reservoirs and swampy backwaters. It is common where there is plenty of aquatic vegetation and where fallen trees, logs and rocks provide basking spots. Females most often stay in the deeper, broader stretches with more current, because they are larger and stronger swimmers. In small streams and ponds the species is seen only rarely.

The animals are diurnal and bask in groups on logs and rocks. They start feeding in mid-morning and then alternate between feeding and basking. From mid-September they eat less, but they bask until mid-October. The animals do not travel far but seek out stretches with moderate current, where they overwinter under water from the end of October or the beginning of November until mid-April. Each animal uses about 800 m of river and does not defend a territory, but competes for basking spots by snapping, climbing on top of one another and pushing.

The diet is more varied than in most related species: aquatic insects and their larvae, snails, mussels, crayfish, carrion fish and aquatic plants and algae, which make up about a third of the diet. What the animal eats depends on the habitat. In rivers with sandy bottoms, fallen terrestrial insects are important, and in lakes with muddy bottoms the animals eat mostly midge larvae. Males and juveniles eat less plant food than females. Females lay eggs on sandbanks and shores no more than 100 m from the water.

Care

THE ENCLOSURE

Little is known about the care of *Graptemys ouachitensis* specifically. Water dimensions, filtration, lighting and feeding are therefore borrowed from the closely related *Graptemys pseudogeographica*, which has almost the same requirements.

Keep the animal in an aquarium, a large tub or a closed outdoor pond, not in an ordinary terrarium. 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. A tub of 130 × 65 × 60 cm gives a water area of 90 × 65 cm with 35 cm of water (about 200 litres) and a land area of 40 × 65 cm. That is the minimum for a female, and larger is better. A male manages with 80 × 40 cm. The rim must stand at least 20-25 cm above the water so the animal cannot climb out.

The species comes from rivers, so the water must be moved by a powerful filter and preferably a circulation pump. A tub with opaque sides gives calm and reduces swimming back and forth along the glass. Provide cover in the water in the form of roots, stones and logs so the animal can retreat, and preferably aquatic plants. The animal is shy, so place the tub in a quiet spot.

The land area is a basking spot that the animal must be able to climb fully onto and dry off on. Build it as a shelf or beach with a rough ramp. The lamp and UVB sit directly above the basking spot, and the basking spot must be large enough for all animals to bask at the same time. A female that is going to lay eggs needs a box with moist sand or soil at least 20 cm deep. The species is social and can be kept in a small group of equally sized animals, but each extra female requires a tub at least 50% larger and more basking spots.

The setup must be escape-proof. An outdoor pond from spring to autumn is a good summer home if it is closed with fencing that extends into the ground and netting over the top against predators.

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

TEMPERATURE

The surface of the basking spot should be 30-35 °C, measured with an IR thermometer a couple of hours after the lamps are switched on. Use a halogen lamp in a deep dome with a ceramic fitting, and place it close to the UVB tube. The air in the room should be 24-28 °C, and at night it may fall to 20-24 °C. The lamps are switched off at night.

The water should be 22-26 °C for adults and a couple of degrees warmer for juveniles. Use a water heater with a plastic guard and thermostat, and check the water with a digital thermometer. The water must not become warmer than the basking spot, and there must be a clear difference between basking spot and water so the animal can regulate its own temperature.

Winter rest: in the wild the species overwinters under water from the end of October to mid-April. In captivity a winter rest is not necessary, and the animal can be kept active all year at the same temperature and light. An outdoor pond is used only from spring to autumn; in winter the animal is moved indoors. A controlled winter rest is only for healthy, well-nourished, fully grown animals and requires experience and a vet check; temperature and duration are not documented for the species.

HUMIDITY AND WATER

Air humidity matters little for an aquatic turtle; 50-80% in the room is suitable. What is decisive is the cleanliness of the water: the species is sensitive, and dirty or oxygen-poor water causes fungal infections of the shell.

The animal eats and passes droppings in the water, so the water quickly becomes loaded. Use a powerful filter and change about 30% of the water every week or every second week; the filter alone is not enough. Remove food remnants with a net after feeding. Feeding in a separate tub keeps the main tub cleaner.

Read more: Humidity, misting and ventilation

WATER AND WATER QUALITY

The water is the animal's living space, so it must be deep, clean, well-oxygenated and warm. The water depth is 30-40 cm for adult animals, and the temperature is 22-26 °C (see Temperature). Deep water gives a shy species security. Juveniles can have shallower water, 10-15 cm, but they grow quickly.

The filter must be powerful, preferably an external canister filter rated for at least 2-3 times the water volume. It must filter both mechanically and biologically, and the flow must keep the water moving. Undergravel filters, small internal filters and hang-on filters are not suitable for an adult animal. Clean the filter at least once a month in water from the tub and not from the tap, so the bacteria are preserved, and never use soap. Use a water conditioner against chlorine. All electrical equipment near the water must be behind a residual-current device (RCD).

LIGHTING AND UVB

UVB is necessary: the species is diurnal and basks for many hours a day, and zone 3 is suitable. Use a T5 HO tube with 5-6% UVB in a reflector that covers about half the length of the setup and sits over the basking spot, 28-33 cm above the animal's back. Glass and plastic block UVB completely, and dense mesh blocks a large part of it. The tube's output falls over time, so replace it according to the manufacturer's instructions and at least once a year.

Supplement with a powerful daylight lamp of about 6,500 K. The light should be on for about 12 hours a day, more in summer (about 14 hours) and less in winter (about 10 hours). Outdoors in a pond, extra light is not necessary. Never use coloured light.

FEEDING

Graptemys ouachitensis is omnivorous and eats only in the water. In the wild the diet consists mostly of aquatic insects and their larvae and about a third plant food, mostly in females, and to a lesser extent of snails, mussels, crayfish and carrion fish. It is easily overfed: too much protein causes rapid growth, obesity and a pyramided shell.

The staple can be aquatic turtle pellets, supplemented with snails in their shells, prawns, freshwater crayfish, earthworms, cockroaches, crickets and pieces of lean fish. Avoid fatty fish. Greens such as duckweed, Canadian waterweed, dandelion, romaine lettuce and endive are given regularly; place them in the water or clip them in place. Fruit is only an occasional treat.

Juveniles are fed every day. Adults are fed 3-4 times a week. Give only what the animal can eat in 4-5 minutes. Keep a cuttlebone available as a calcium source, and remove the hard back first.

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

BEHAVIOUR AND HANDLING

Graptemys ouachitensis is shy and sensitive and dives at the slightest disturbance. It is not an animal to be handled: it is easily stressed and can bite when it feels threatened. Feeding with tongs is the gentlest contact. If the animal must be lifted, take it from underneath with both hands, and keep your fingers away from the head. Wash your hands before and after, and do not let children under 5 handle the animal.

The animals like to bask together but fight over the best places on the basking spot: they snap, climb on top of one another and push. The species can be kept alone or in a small group of equally sized animals, but the females are the most dominant, so the number of females must be kept low. Animals of very different sizes cause fights over the basking spot and the food. An animal that swims back and forth along the glass often has too little space or no cover.

Breeding

SEXUAL MATURITY AND SEXING

The male has longer claws on the forelegs and a longer tail, and the female is much larger with a broader head. In the wild males reach sexual maturity after 2-3 years and females after 6-7 years. Females and males grow equally fast for the first three years, and after that growth is slower in both sexes. The age of sexual maturity in captivity is not documented.

MATING

Mating takes place in spring (April-May) and in autumn (September-November). The male positions himself nose to nose with the female, spreads his claws and vibrates them against the sides of her head 1-14 times. He then lowers his body and bites her on the neck. The female chooses a partner by head pattern and scent. Both males and females mate with several partners. Give the female space and cover so she can get away from a persistent male.

EGG-LAYING AND CLUTCHES

The female lays 6-16 eggs per clutch, on average about 10, and 2-3 clutches a year, 21-48 eggs in total. Egg laying takes place from May to July. The female digs a flask-shaped hole 10-16 cm deep in open sand or soil, most often just after sunset or just before sunrise, lays the eggs and covers them. The eggs are 34-38 mm long and 22-26 mm wide and weigh 8-14 g. Give the female a box with moist sand or soil on the land area, even when she is kept alone; without a suitable place she may retain the eggs.

INCUBATION

Incubation takes 60-82 days. The sex depends on temperature: at about 26-28 °C males are produced, at 30 °C females, and the switch lies around 29 °C. The incubation temperature also changes the head pattern. Incubate the eggs in an incubator on a moist but not wet substrate as for other aquatic turtles, and do not turn them. The young may make clicking sounds in the eggs just before hatching and often stay a day or two in the shell while they absorb the yolk.

REARING THE YOUNG

The young manage on their own from hatching; the parents care for neither eggs nor young. They are 27-35 mm and have the same colours and patterns as the adults, only brighter. Juveniles need shallow water, 10-15 cm, warm water around the clock, plenty of cover, a basking spot they can climb onto easily, UVB and animal food every day together with greens. If several juveniles are kept together, they must be equally sized, and all must get food.

Health and common mistakes

The species is hardy but sensitive to the water, so most problems stem from husbandry. Weigh and measure the animal 1-2 times a month and keep a log of weight, appetite and behaviour; weight loss is often the first sign of illness.

- Fungal infections of the shell: grey patches that spread, caused by dirty water or too little UVB. They require a vet and correction of the water and light.
- Dirty, oxygen-poor water is the most common cause of illness in the species.
- Calcium deficiency and diseases of bone and shell from too little UVB or calcium.
- Pyramiding and obesity from too much protein and too frequent feeding.
- Wrong setup without a land area or without cover, where the animal cannot get out of the water or retreat.

All reptiles can be symptom-free carriers of *Salmonella*. Wash your hands before and after contact with the animal, water and equipment. After a bite, the wound should be rinsed under running water for about five minutes and cleaned. See a vet with reptile experience if the animal loses weight, does not eat, has an open mouth, swollen eyes or swims lopsidedly.

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.