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FROGS

Gray Treefrog

Dryophytes versicolor

Dryophytes versicolor is a small, compact tree frog of 3-5 cm from eastern North America that changes colour between grey, green and brown depending on the surface, temperature and humidity. It is nocturnal, hardy and a good choice for beginners, and the male's trill is one of the best-known sounds of a spring evening at the forest edge.

Family: Hylidae Former name: *Hyla versicolor* **Mild skin toxins**

KEY FACTS

THE ANIMAL

Adult size	**3-5 cm** snout-vent length
Lifespan	**5-10 years**
Active	**At night**
Lifestyle	**Arboreal**
Habitat	**Wetland and temperate woodland and meadow**
Skin toxins	**Mild** Wash your hands after contact and keep your fingers away from your eyes and mouth
Difficulty	**Beginner**

CARE

Min. enclosure	**60 × 30 × 45 cm** L × W × H for 2 adults
Temperature, day	**20-26 °C**
Temperature, night	**18-22 °C**
Humidity	**50-80%**
Water	**Water dish**
UVB	**Optional** Ferguson zone 1
Diet	**Insects**
Kept	**Singly, in pairs or in groups**

BREEDING

Reproduction	**Egg-laying**
Development	**Tadpoles in water**
Egg-laying site	**In water**
Sexually mature	**12-24 months**
Eggs per clutch	**1,000-2,000**
Clutches per year	**1**
Hatching	**3-7 days**
Larval period	**42-65 days** from hatching to metamorphosis
Larval diet	**Algae/plants**
Parental care	**None**

PROTECTION AND PAPERWORK

CITES	**Not listed**
IUCN	**Least Concern (LC)**

About the species

Dryophytes versicolor is a small tree frog with a short, sturdy body and rough, warty skin that is more uneven than in most frogs. Adults usually measure 3-5 cm from snout to vent, and the largest recorded female is 6 cm. Females grow a little larger than males, and the male has a dark throat, while the female's is paler. The large adhesive discs on the toes let the frog climb easily on bark, glass and other smooth surfaces.

The colour varies with background, season, temperature and humidity. Most often the back is grey with dark spots, but the frog can shift from almost black to almost white and can also turn green or brown. The change happens slowly, not within a few seconds. Juveniles and animals in the breeding season are often green. Below the eye there is normally a pale spot, and the legs have dark crossbars. The inner thighs and groin are bright yellow to orange with black spots, and these colours flash when the frog jumps. Dead animals and animals in unfamiliar surroundings are mostly grey.

D. versicolor was formerly called *Hyla versicolor*, and that name is still used in older literature and in the trade. The species name versicolor is Latin and means of changing colour. The species is tetraploid, that is, with 48 chromosomes against 24 in the almost identical *D. chrysoscelis*. The two species cannot be told apart by appearance, only by the male's call and to some extent by range. In crosses many of the larvae die early, and the few that reach adulthood have reduced fertility. Care is the same for both.

Skin toxicity: Like most amphibians, the species secretes a weak, irritating substance from the skin. It is not dangerous, but can cause irritation of mucous membranes such as the eyes, lips and nose, and in open wounds. No difference between wild and captive-bred animals is documented. Wash your hands after contact, and do not touch your face.

In captivity the frog lives 5-10 years, some up to 15 years.

The frog is delicate and easily startled and is an animal to watch rather than to handle.

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

Distribution and habitat

Dryophytes versicolor lives in the eastern half of North America. In the USA the range runs from Maine and New England west to central Texas and Oklahoma. The two species taken together reach south to northern Florida, but in the south it is mostly the almost identical *D. chrysoscelis* that occurs. In Canada the species occurs from southern Ontario and Quebec to Manitoba, and an isolated population lives in New Brunswick.

D. chrysoscelis shares large parts of the area. In general *D. versicolor* lies mostly to the north and northeast, while the other species is most frequent to the south, but the boundary is blurred, and both species breed in the same ponds in some places, for example in Wisconsin and northern Michigan. The map shows the countries where *D. versicolor* itself is native.

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

HABITAT

Dryophytes versicolor lives in woodland and woodland edges near water: deciduous and mixed forest, old fields, wooded suburbs and groves of trees on farms near both temporary and permanent ponds, marshes and lakes. It is found at all altitudes and is strongly tied to trees, where during the day it rests on branches and leaves, often in the open and even in direct sun, relying on its camouflage. It is also seen on house walls and near lamps, where it takes the insects that gather there.

In winter the frog hibernates on land under fallen logs, roots and leaf litter or in hollow trees. The species tolerates freezing of its body fluids: glycerol in the blood lowers the freezing point, and in the hardest cold spells up to 80 % of the body turns to ice until it gets milder. It tolerates down to about -8 °C.

The males begin calling in late April or May, when the evening air is above about 15 °C, and the breeding season lasts a few weeks, in some places into June or July. Warm, cloudy evenings produce the strongest chorus. The species prefers to breed in fish-free woodland ponds.

Care

THE ENCLOSURE

A pair of *D. versicolor* can be kept in an enclosure of 60 × 30 × 45 cm. A single frog manages in a smaller enclosure of about 30 × 30 × 45 cm, and for each additional frog the floor area should be increased a little. Height matters more than floor area, because the species is arboreal. A glass enclosure is suitable because it lets the heat out and does not make the enclosure too warm. The lid must fit tightly, as the frog is a skilled climber, and an enclosure with a front door is easier to service than one with a lid on top.

Furnish with branches of different thickness and angle, cork bark, bamboo tubes and plants that hang out over the perches. The frog sleeps during the day under a leaf or in a crevice, so there must be cover both high up and low down. The substrate can be coconut fibre or another safe soil mix, and damp kitchen paper is easiest in a quarantine enclosure. Avoid aquarium gravel, small pieces of bark and sand, which the frog may swallow when snapping at food. It helps to cover three sides of the enclosure with a dark background so the animals feel secure.

Outside the breeding season the species lives fairly solitarily. Animals of the same size can be kept together in a roomy enclosure, but they are opportunistic and may eat smaller conspecifics, so sort them by size. Keep the species as the only species in the enclosure.

Read more: Quarantine and hygiene

TEMPERATURE

Keep the terrarium at 20-26 °C by day and a few degrees cooler at night, around 18-22 °C. The species is tolerant and can for a short time cope with anything from about 10 °C to 32 °C without harm, but this is not something to aim for. If the room is cool, a weak lamp over one side can provide a warmer corner so that the frog can choose for itself. A heat mat on the side of the glass with a thermostat is another option, which also gives a small temperature gradient. The temperature must not exceed 27 °C for long, because the species is not tropical and small terrariums overheat easily. Have a thermometer at the top.

In the wild the species hibernates, but a proper winter rest is not necessary in the terrarium and is therefore not stated in the box. A cool period can stimulate breeding, but details of temperature and duration are not documented for the species.

Read more: Heat and temperature

HUMIDITY AND MISTING

The species is not tropical and does not need high humidity. Aim for 50-80 %, and mist the enclosure a few times a week, or daily if the air in the room is very dry. Humidity may rise after spraying and fall again, so it is a fluctuation over the day rather than a constantly high value. Live plants and a slightly damp substrate help keep the humidity up.

Good ventilation is more important than high humidity, and the substrate should not be wet. Mist with dechlorinated tap water or spring water. In the wild, rain helps set off the males' calling, so an artificial rainy season in spring may work in the same way.

WATER AND WATER QUALITY

D. versicolor should have a water bowl that the frog can sit in, and it is often used at night. The bowl need not be large, but the frog must be able to cover itself completely, and the rim must be easy to climb over. Change the water every day or when it is dirty, and scrub the bowl regularly.

Use dechlorinated tap water, treated with a product against chlorine, chloramine and heavy metals, or spring water. Distilled water is not suitable, because it can disturb the frog's water balance. Never use soap or cleaning products, because amphibians absorb substances through the skin. If there are tadpoles on the way, they need a separate tub (see Breeding).

Read more: Rearing tadpoles

LIGHTING AND UVB

The frog needs a regular daily rhythm, for example 12 hours of light and 12 hours of darkness, with enough light for the plants to thrive. Fluorescent tubes or LEDs keep the heat down. In the wild the frog often sleeps in the open and in the sun, so a weak UVB source (Ferguson zone 1) with plenty of shade is a favourable addition, especially in a planted enclosure, but the species also manages without. Replace the tube according to the manufacturer's instructions. Glass and plastic block UVB, so a window gives only light and heat and no UVB.

Read more: Lighting and UVB

FEEDING

Dryophytes versicolor is an insectivore with a large appetite. It takes crickets, flies, moths, waxworms, small silkworms and earthworms, and crickets can make up the bulk of the diet. Mealworms and waxworms are used for variety. Small animals get fruit flies and very small crickets. A feeder insect that is about the size of the frog's head or slightly smaller is normally right.

Young animals are fed up to daily. Adults get three to six crickets every second or third day, depending on the size of the frog and the feeder insects. The species can become fat if overfed, so reduce the amount if the frog becomes round. Preferably feed just before the lights go out. Feed the insects well before giving them to the frog, and dust them with calcium and vitamins.

For adults it is enough to dust every second time, for juveniles every time.

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

BEHAVIOUR AND HANDLING

D. versicolor is nocturnal and really gets going when the lights go out. During the day it sits still on a branch or a leaf, and at night it uses the whole enclosure. It is an active hunter that jumps from branch to branch, and the adhesive discs let it climb vertical glass. The males are territorial in the breeding season and defend their calling site with long calls.

The males' trill is powerful, especially in spring, and can be heard from far away, so place the enclosure where the sound does not disturb. The frog is easily startled and should be handled only when necessary, and only by adults. Use clean, wet hands without soap or cream, or damp, powder-free gloves, or move the frog with a glass. Wash your hands afterwards.

Breeding

SEXUAL MATURITY AND SEXING

The males reveal themselves by calling and have a dark throat, while the females are slightly larger and have a paler throat. The males become sexually mature after 1-2 years, the females normally after about 2 years, so the box shows 12-24 months. Juveniles cannot be sexed, so buy a small group if you want both sexes, and choose captive-bred animals if you can find them. Wild-caught animals often carry parasites, and catching the species in the wild is subject to local rules.

MATING

In the wild the species breeds from late April to June or July, when the evening air is above about 15 °C, and the female chooses the male with the longest and most frequent calls. The male switches to a longer, more insistent mating call when a female approaches. The mating system is polygynous: a male can mate with several females. Some males, often in their first breeding season, do not call in order to save energy, but stay close to a calling male. In the enclosure it is not documented what triggers breeding; a cool period followed by heavy misting and warmer weather is a reasonable attempt. The female comes to the water only to lay eggs. The male clasps her, and the eggs are fertilised outside the body.

EGGS AND TADPOLES

The female lays the eggs in water in flat, loose packets of 10-40 eggs that cling to plants at the surface. In total a female lays 1,000-2,000 eggs, and she lays only once a year. There is no parental care, and the female plays no role after laying.

Move the eggs or tadpoles to a separate tub of clean water without fish, where food and water quality are easy to control. The tadpoles feed on algae and decaying plant material and filter food from the water or scrape it from surfaces. Specific feeding advice for captive rearing is not documented for the species, so plant-based food with algae is a reasonable starting point. Change the water often, and spread them over several tubs if there are many.

METAMORPHOSIS

The eggs hatch after 3-7 days, depending on the water temperature. The tadpoles metamorphose 42-65 days after hatching. Development is faster in warm water and with plenty of food.

When the front legs appear, the tadpole must be able to climb out of the water easily. Lower the water level, and add sloping stones, cork or floating plants so that it can climb out and not drown. The newly metamorphosed froglets are almost always green for a couple of days before turning grey.

REARING THE YOUNG

The newly metamorphosed young are about 15 mm and should have fruit flies and tiny crickets, dusted with calcium, every day. Keep them in a humid rearing enclosure with plants and a shallow water bowl. Some froglets stay pale green until they are adults. Sort the young by size, and give larger food as they grow. The species reaches full size within one to two years, and growth depends on food and climate.

Health and common mistakes

D. versicolor is hardy, but these problems recur:

- Wild-caught animals: they may carry parasites and diseases and be difficult to acclimatise. Choose captive-bred animals, or quarantine wild-caught ones.

- Obesity: the species has a large appetite and easily becomes fat if fed too much and too often.
- Skin infections: reddish discolouration or white, cottony areas, especially on the belly and under the hind legs, are often caused by bacteria or fungi in an injury.
- Deficiency diseases: fast-growing young animals can develop skeletal problems from a lack of calcium and vitamins, so dust the food as directed.
- Lethargy, refusal to eat or bloating may be due to stress, too low or too high a temperature or poor water quality.

A healthy frog has a compact, muscular body and clear skin and sits high up in the enclosure during the day. Isolate sick animals, and seek a vet with knowledge of amphibians. Never release frogs or tadpoles into the wild, as they can pass diseases on to native amphibians.

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.