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LACERTIDS

European Common Lizard

Zootoca vivipara

Zootoca vivipara is a small, diurnal lizard that lives further north than any other reptile. The species reaches about 15 cm and is found on bogs, heaths, woodland edges and meadows. Over most of its range the female gives birth to live young. It needs a cool, sunny, humid enclosure with plenty of hides and a brumation of three to four months.

Family: Lacertidae

KEY FACTS

THE ANIMAL

Adult size	**12-16 cm** total length incl. tail
Weight	**2-5 g**
Lifespan	**5-12 years**
Active	**By day**
Lifestyle	**Terrestrial**
Habitat	**Wetland and temperate woodland and meadow**
Difficulty	**Intermediate**

CARE

Min. enclosure	**80 × 50 × 50 cm** L × W × H for 2 adults
Temperature, day	**22-28 °C**
Basking spot	**32-38 °C**
Temperature, night	**14-18 °C**
Humidity	**50-80%**
Water	**Water dish**
UVB	**Recommended** Ferguson zone 2
Winter rest	**4-6 °C** 12-16 weeks
Diet	**Insects**
Kept	**In pairs or one male with several females**

BREEDING

Reproduction	**Live-bearing**
Sexually mature	**12-36 months**
Litter size	**2-12 young**
Clutches per year	**1**
Gestation	**35-85 days**

PROTECTION AND PAPERWORK

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

About the species

Zootoca vivipara is a small, slender lizard with a short head, short legs and a thick tail. Adults are 12-16 cm long from snout to tail tip, about 5-6 cm from snout to vent, and weigh 2-5 g. The ground colour is brown, grey, reddish, green or black, often with spots or stripes along the back and black or dark bands on the sides.

The male has a brighter, strongly coloured belly in yellow, orange or green with black spots and a slightly larger head than the female. The female's belly is pale yellow to bright orange, and the colour varies greatly between females. The male's head size affects mating success and fights between males.

The species is named after its reproduction: the scientific name refers to live birth. Over most of its range, including all of northern Europe, the female gives birth to live young, which break out of a thin, soft membrane at or just after birth. In northern Spain and south-western France there are egg-laying populations. The range includes several relatives and cryptic

species, and the taxonomy is still under revision.

The animal is fast and shy and is for watching rather than handling. The tail is shed in the face of danger.

Distribution and habitat

Zootoca vivipara has the largest range of any terrestrial lizard. It is found from Ireland and northern Spain across all of northern and central Europe to Russia and eastern Siberia, Sakhalin and Hokkaido, and north beyond the Arctic Circle. In the south it reaches northern Italy and the Balkans, and in Asia it occurs in northern Kazakhstan, Mongolia and northern China.

In Ireland the species is the only native reptile. The populations in northern Europe live in damp, open habitats, and the distribution is often patchy.

> **Native range:** Ireland, United Kingdom, Norway, Sweden, Finland, Denmark, Netherlands, Belgium, Luxembourg, France, Spain, Andorra, Germany, Switzerland, Liechtenstein, Austria, Italy, Slovenia, Croatia, Bosnia & Herzegovina, Serbia, Montenegro, North Macedonia, Albania, Greece, Bulgaria, Romania, Hungary, Slovakia, Czechia, Poland, Lithuania, Latvia, Estonia, Belarus, Ukraine, Russia, Kazakhstan, Mongolia, China and Japan.

HABITAT

Zootoca vivipara lives in open, sunny places with dense cover nearby and damp ground: the edges of bogs and marshy meadows, woodland clearings and woodland edges, heaths, peat cuttings, railway embankments and the edges of roads and fields. The lizards bask on logs, stumps and tussocks and retreat into the vegetation when disturbed. An animal uses an area of about 500-1,700 m², males a larger one than females. When startled, the animal can both swim and dive.

The species is active from March-April to September-October. Mating takes place in April-May. After a gestation of 5-12 weeks the female gives birth to 2-12 young in July-August. Winter is spent hidden under roots and stones and in holes in the ground, sometimes together with other reptiles and toads. The species tolerates sub-zero temperatures in the wild, but a cold brumation in the enclosure must not reach freezing point.

Read more: Brumation and the seasons

Care

THE ENCLOSURE

Zootoca vivipara does best outdoors in an enclosure or a closed garden bed in full sun with shady, cool zones. Indoors, a pair needs an enclosure of at least 80 × 50 × 50 cm (length × width × height), and a male with three to four females at least 120 × 60 × 60 cm. Larger is always better. The young can be reared in groups in 50 × 30 × 30 cm.

The substrate is a mixture of sand, soil and peat with a layer of moss and leaf litter, kept slightly moist. Furnish with grass tussocks, shrubs, stumps, bark and flat stones, so that there are both basking spots and dense cover. The lizard needs cool, shady places in the enclosure, because it is a species from cold regions and tolerates prolonged heat poorly. Flat hides of bark or slate must lie firmly so that the lizard is not crushed. The back wall can be lined with cork so that the lizard can climb up to the basking spot.

The females need a quiet, hidden and humid place with moss and leaf litter where they can give birth. Females from egg-laying populations need loose, slightly moist soil to dig in. The enclosure needs good cross-ventilation and a secure lid with fine mesh, because the young are small and can escape.

Read more: Heat and temperature

TEMPERATURE

Zootoca vivipara is a species from cold regions, but it basks a lot and keeps its body temperature at around 30-33 °C when active. The daytime temperature in the enclosure is 22-28 °C, and the basking spot should have a surface temperature of 32-38 °C, measured with an infrared thermometer. Next to it there must be cool, shady areas. Place a spotlight over a flat stone or a log so that the lizard can warm up and retreat.

At night the temperature falls to 14-18 °C. Cool nights are important for gravid females: warm nights of around 22 °C during gestation produce weaker young that grow more slowly and more often die. Gravid females, on the other hand, benefit from many hours at the basking spot during the day.

Brumation is necessary and lasts three to four months. Only healthy, well-nourished animals without parasites are put into brumation. Sick, thin and recently acquired animals are kept awake. Weigh the lizard before the wind-down. Over four weeks, day length and temperature are lowered gradually, and the last meal is given two to three weeks before the rest period. The lizard is moved to a plastic box with slightly moist moss and leaf litter, hides and a shallow water bowl. The box stands cool and frost-free at 4-6 °C, in a refrigerator without a freezer compartment or a cellar with a stable temperature. The substrate must never dry out completely. Use two independent thermometers and a rodent-proof box. Waking is done by raising the temperature gradually to normal daytime temperature. The lizard drinks first and starts eating again after a few days. See also the theme on brumation.

HUMIDITY AND WATER

Zootoca vivipara lives in damp areas, and the humidity in the enclosure is 50-60 % by day and 70-80 % at night. There should be a drier and a damper zone so that the lizard can choose for itself. Good ventilation is important so that the substrate does not become permanently wet.

Access to water is especially important during gestation, when the female puts a lot of water into the young.

A shallow water bowl stands in the enclosure and is changed daily. Mist plants and stones lightly every morning so that the lizard can drink the droplets. The moss and the substrate under the hides are kept slightly moist all year.

Read more: Humidity, misting and ventilation

LIGHTING AND UVB

Zootoca vivipara is diurnal and basks a lot, so it needs sunlight or UVB. Outdoors, UVB comes from the sun. Indoors, use a UVB tube over the basking spot so that the UV index is about 1-3 at the lizard's head. This corresponds to Ferguson zone 2, because the lizard alternates between sun and shade. Glass blocks UVB, so the tube must be inside the enclosure or in an open part of the lid.

Day length follows the season and should be 10-14 hours in summer, decreasing in autumn and increasing in spring, so that the lizard is in rhythm with brumation.

Read more: Lighting and UVB

FEEDING

Zootoca vivipara is an insectivore. In the wild the diet consists of flies, spiders, caterpillars, aphids and other small arthropods, and females eat more than males. The lizard eats mostly on sunny days.

In the enclosure, give small crickets, small locusts, waxworms, mealworms, small cockroaches, flies and spiders in sizes the lizard can swallow whole. Food should be varied, and the feeder insects should be well gut-loaded. Dust the food with calcium and a vitamin supplement with D3, especially for females before birth, and put crushed cuttlefish bone in the substrate. For juveniles use the very smallest insects, such as fruit flies, springtails and small crickets.

Feed adults every other day in the active season, as much as they eat in a few minutes. Gravid females are fed generously. In autumn the lizard is fattened up before brumation, and the last meal is given two to three weeks before cooling.

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

BEHAVIOUR AND HANDLING

Zootoca vivipara is a shy, fast and watchful animal. Males are territorial towards other males and can bite the female in the mating season. One male with three to four females, or a pair, is a workable arrangement in a large enclosure with many hides and basking spots. Females can be aggressive towards one another. Watch the animals, and have a spare enclosure ready to separate them.

A new lizard is shy and hides at first. After a few weeks it becomes accustomed to regular feeding times. Avoid grabbing the lizard, because the tail is shed under stress. Adults can eat the young, so keep the young separate.

Breeding

SEXUAL MATURITY AND SEXING

The male has a brighter, more strongly coloured belly and a slightly larger head than the female, and the tail is thicker at the base. In the female the belly colour varies from pale yellow to bright orange.

The lizards reach sexual maturity in their second or third year of life, that is, at 12-36 months. Breed only healthy, fully grown animals.

MATING

Mating follows brumation and takes place in April-May, once the lizards have woken and eaten. Males are not fertile in the first two weeks after waking. The male grips the female with his jaws and holds on during mating, and males with large heads have the greatest success.

Put one male together with one to four females. If the female's neck or tail base is wounded, separate the animals.

EGG-LAYING AND CLUTCHES

In northern Europe the female gives birth to live young and does not lay eggs. Gestation lasts 5-12 weeks, and 2-12 young are born in July-August. The young break out of a thin, soft membrane at or just after birth. There is one litter per year.

In egg-laying populations in northern Spain and south-western France the female lays eggs in loose, slightly moist soil. The incubation period is not documented.

The female needs a quiet, humid and hidden place to give birth, and she should have extra calcium and vitamins in the weeks before birth. Allow her to rest after giving birth.

Read more: Incubating eggs

INCUBATION

In viviparous populations the young develop inside the female, and gestation lasts 5-12 weeks. She needs a basking spot and warmth every day throughout gestation, cool nights and fresh water. The more hours she can warm herself, the faster the young develop.

Eggs from egg-laying animals are placed in a container with moist vermiculite, 1:1 by weight with water. Temperature and incubation period are not documented.

REARING THE YOUNG

The young are very small and must be moved to their own enclosure. In groups they can be kept in 50 × 30 × 30 cm with moss, leaf litter, bark and a shallow water bowl. They eat the very smallest insects: fruit flies, springtails, aphids and newly hatched crickets, dusted with calcium and vitamins. Feed daily.

The young grow quickly and should be sorted by size so that the small ones do not lose out in the competition for food. They reach sexual maturity in their second or third year. In the first winter only healthy, well-nourished young brumate, and the others are kept awake.

Health and common mistakes

Most problems are caused by too much heat, too little moisture, a one-sided diet or too little space. The typical ones are:

- Overheating and dehydration. Keep a cool, humid zone, and mist every morning.
- Metabolic bone disease from a lack of UVB and calcium. Provide UVB or sun, and dust the food.
- Ticks and mites, especially outdoors. Examine the lizard regularly.
- Internal parasites and blood parasites. New animals are quarantined, and a faecal sample is taken before brumation.
- Loss of the tail through stress or fights.
- Poor brumation in sick or thin animals. Keep them awake and fed.
- Birth problems if the female is weakened or lacks a quiet place.

A healthy animal has clear eyes, a plump tail and a good appetite. Consult a vet experienced with reptiles if the animal does not eat, loses weight or is lethargic.

Read more: Common diseases and signs of illness

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.