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AGAMAS

Eastern Bearded Dragon

Pogona barbata

Pogona barbata is one of the largest bearded dragons: a sturdy, diurnal agamid of 50-65 cm from the eastern forests and scrub of Australia, with a well-developed, dark beard and a yellow mouth lining. It is more territorial than *Pogona vitticeps*, likes to climb and needs a large enclosure, strong heat and UVB.

Family: Agamidae Former name: *Agama barbata; Amphibolurus barbatus; Grammatophora barbata; Stellio discosomus*

KEY FACTS

THE ANIMAL

Adult size	**50-65 cm** total length incl. tail
Lifespan	**10-15 years**
Active	**By day**
Lifestyle	**Arboreal, terrestrial and burrowing**
Habitat	**Savanna and temperate woodland and meadow**
Difficulty	**Intermediate**

CARE

Min. enclosure	**180 × 60 × 60 cm** L × W × H for 1 adult
Temperature, day	**22-37 °C**
Basking spot	**42-45 °C**
Temperature, night	**12-24 °C**
Humidity	**30-60%**
Water	**Water dish**
UVB	**Essential** Ferguson zone 3
Diet	**Insects and plants**
Kept	**Singly**

BREEDING

Reproduction	**Egg-laying**
Sexually mature	**12-24 months**
Clutch size	**15-35 eggs**
Clutches per year	**2-3**
Incubation	**55-75 days** at 28-30 °C

PROTECTION AND PAPERWORK

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

About the species

Pogona barbata is a heavily built, flattened agamid with a long, triangular head, rather short legs and a long tail. Under the throat there is a well-developed beard, a throat pouch with distinct spines at the back, which the animal flares out when threatened. Rows of enlarged, spiny scales sit at the back of the head, behind the corners of the mouth and in a broad band along the flanks. The scales on the body are uneven: small scales with scattered larger, keeled scales between them.

The base colour is most often grey, but can be reddish, yellowish or brown and changes with mood and body temperature. Excited and warm animals can turn yellowish to orange on the head, flanks and legs. Young animals have a pale, diamond-shaped pattern, which fades with age. The beard and tail tip are dark grey to black, and the inside of the mouth is usually bright yellow. Adults reach about 25 cm from snout to vent and 50-65 cm in total, rarely up to 75 cm. Males grow slightly larger than females and have a broader head, a darker and more marked beard and a pale greenish to bluish colour at the front of the head. Females often have bite marks on the neck after mating.

P. barbata belongs to the Australian agamids (Amphibolurinae) and is the type species of the genus *Pogona*. The species name comes from Latin barbatus (bearded), and the genus name from Greek pogon (beard). The species can be confused with *Pogona vitticeps*, with which it shares a border in the interior of Australia.

The species is markedly territorial. Males defend an area and allow only females and young animals within it, and the pecking order follows size to a large degree: the largest males have the highest lookout posts. The species has over 70 known body postures for basking and communication, and it is more aggressive than *P. vitticeps*.

Distribution and habitat

Pogona barbata lives in eastern and south-eastern Australia, from the area around Cairns in Queensland in the north through New South Wales and Victoria to the southern part of the Eyre Peninsula in South Australia. The coolest regions in the south-east are not included. From the coast the range extends about 1,000 km inland.

The species is among Australia's best-known reptiles, because it is large, sits in conspicuous places and is common in and around towns.

> **Native range:** Australia.

HABITAT

Pogona barbata lives in open forest and scrubland and is often seen in built-up areas. It sits in exposed places such as branches, fallen trunks and fence posts, where it basks and has a view, and retreats to lower, cooler places when it gets too hot. It is diurnal and climbs a lot.

The diet consists of insects, worms, small mammals and plants. In danger the animal prefers to flee or hide. When pressed, it flattens its body, flares the beard, hisses, shows the yellow mouth lining and may hop briefly towards its opponent.

The breeding season runs from August to December, the Australian spring and early summer. The females bury the eggs in damp sand, and the eggs are not guarded.

Care

THE ENCLOSURE

The care of *P. barbata* has been only sparsely described for the species itself. The figures for enclosure, temperature, humidity, light, food, lifespan and incubation are borrowed from the closely related *Pogona vitticeps*, which has the same requirements and is slightly smaller.

A single adult needs an enclosure of at least 180 × 60 × 60 cm. The height should be 90 cm if possible, because the species likes to climb and uses branches as basking spots. The enclosure must be well ventilated with a lid or mesh, so the animal cannot climb out.

Furnish the enclosure with a basking spot at one end, where flat stones and solid branches make it easy to climb up. The basking spot is the highest point and lies closest to the lamps. Provide at least one hide at the warm end and one at the cool end, as well as branches and stones to climb on. The branches must be thick and stable, because the animal is heavy.

The substrate should be diggable. A 10-15 cm layer of fine-grained sand mixed with clean topsoil and clay lets the animal dig and gives greater temperature differences in the substrate. Solid substrate such as unglazed tiles, slate or kitchen paper heats well and is easy to clean. Calcium sand, vitamin sand, crushed walnut shells and bark or wood shavings are unsuitable, because they can cause constipation if swallowed. Loose substrate is replaced completely every 3-6 months.

Keep the animals separately. The species is territorial, and two males must never share an enclosure. Females can live together, but they quarrel over the basking spot, and the subordinate one becomes stressed. Adults and young must always be kept apart.

Read more: Heat and temperature Read more: Humidity, misting and ventilation Read more: Calcium, vitamins and supplements Read more: Incubating eggs

TEMPERATURE

Heat with at least two halogen spots above the basking spot. The surface there should be 42-45 °C measured with an infrared thermometer, and the hot spot should be at least as large as the whole animal including the tail. The air in the enclosure should be 22-37 °C, warmest at the basking end and coolest at the opposite end. The surface at the cool end should be 25-29 °C.

Use an infrared thermometer for the surfaces and a digital thermometer with a probe for the air, and measure only after the lamps have been on for about three hours. Halogen bulbs give short-wave infrared heat like the sun. For an enclosure of 180 × 60 cm, 90-100 W is usually suitable; if the basking spot is too cold, move it closer to the lamp.

At night all heat is switched off, and the temperature may fall to room temperature or lower, down to 12 °C; above 24 °C is too warm. A night-time drop makes the animal bask earlier in the morning. Connect the lamps to a thermostat with the probe at the cool end, so they switch off if the cool side goes above 37 °C.

HUMIDITY AND WATER

Humidity should average 30-60 %, measured at the cool end. It naturally fluctuates: lower at the basking spot, higher at night and near the water. Periods of high humidity do no harm as long as the air is moving and the enclosure can dry out again. Stagnant, wet air and a wet substrate, on the other hand, cause illness. If the humidity is constantly too high, a small fan over the mesh at the cool end helps. Too low humidity causes dehydration and problems with shedding.

Always offer fresh water in a shallow bowl. The animal gets a lot of its water through its food, so greens that have been rinsed and left in water help. A light shower over the furnishings provides droplets that the animal can lick. A damp hide at the cool end helps during shedding.

LIGHTING AND UVB

Pogona barbata depends on strong, white light, which promotes appetite and activity. The enclosure must be very bright, and the basking spot must be the brightest place. This usually requires several lamps, and 75-100 % of the length of the enclosure should be lit.

UVB is necessary, and the species belongs to Ferguson zone 3. Use a T5 HO tube with 10-14 % UVB in a reflective fitting over the warm side, parallel to the heat lamps. The aim is a UV index of 4.0-4.5 at the basking spot, falling to 0 at the cool end. The distance between tube and basking spot depends on the tube, fitting and mesh, so preferably measure with a UV meter. Glass and plastic between tube and animal block UVB. Good T5 HO tubes are replaced after about 12 months, even if they still light up, because the UVB output falls.

LED lamps with UVB are not yet considered safe for reptiles. The light is on 12-14 hours a day in summer and about 10 hours in winter, controlled by a timer.

Read more: Lighting and UVB

FEEDING

P. barbata is omnivorous. In the wild the diet consists of insects, worms, small vertebrates and plant parts. Young animals get mostly insects and adults mostly plants. Animal food makes up about 60-80 % for hatchlings, 60 % for young and 15-30 % for adults. This prevents obesity and gout.

- Hatchlings (0-3 months): insects once daily, as many as the animal will eat, and greens daily.
- Young animals under 25 cm: 5-6 insects the size of the head daily and greens daily, about three times as much as the insects.
- Adults over 25 cm: 3-4 insects twice a week and greens three times a week, a portion the size of the head.
- Gravid females: 4-5 insects twice a week.

Good feeders are dubia roaches, grasshoppers, crickets, black soldier fly larvae and silkworms. Fatty insects such as mealworms and hornworms are treats. The insects must be no larger than the distance between the animal's eyes and must have been fed a good diet for at least 24 hours before being passed on. Wild insects may be sprayed or toxic and should be avoided.

Greens include rocket, pak choi, kale, mustard greens, Chinese cabbage, dandelion, watercress and cactus pads, as well as flowers and weeds from places without pesticides. Cut the leaves into narrow strips. Avocado is toxic. Fruit is a rare treat, because it causes obesity and dental disease.

Dust all insects and all salad with calcium. Sprinkle multivitamin on the salad twice a week for young and gravid animals and once a week for adults.

Read more: Feeder animals: keeping and breeding

BEHAVIOUR AND HANDLING

Pogona barbata is territorial and shows it more clearly than *Pogona vitticeps*. A black, flared beard, an open mouth showing the yellow interior, hissing and a small hop towards the opponent are threats. Quick head bobs up and down show dominance, and arm waving is a sign of submission, which females and young animals use towards larger animals. Dark colour and withdrawn behaviour suggest cold or stress.

Let a new animal get used to the enclosure for about two weeks before it is picked up. Feed from tweezers, and let your hand rest in the enclosure until the animal is calm. Lift it with support under body and legs, and move slowly.

The animals need peace and a fixed daily rhythm. Keep them singly. Animals that share an enclosure quarrel over rank, and the subordinate animal gets less food and a poorer basking spot and falls ill more easily.

Breeding

SEXUAL MATURITY AND SEXING

P. barbata becomes sexually mature after 1-2 years. Males are recognised by a broader head, a darker beard, the pale greenish to bluish colour at the front of the head and distinct femoral pores, females by a narrower tail base and often bite marks on the neck after mating. Animals for breeding must be fully grown and in good condition, and the female must have had plenty of calcium.

Sex determination has not been studied in the species. In *Pogona vitticeps* sex is determined by sex chromosomes (the female is ZW), but very high incubation temperatures can cause genetic males to develop into females.

MATING

In the wild the mating season runs from August to December. The male mounts the female and holds her with bites on the throat and neck, and the female ends the mating by lifting her head almost vertically. A cool rest period in winter is used to bring the animals into breeding condition and is given only to healthy, well-nourished animals.

Put the female in with the male for a short period, and separate them afterwards, because the mating is violent. The female needs extra food and calcium during the breeding season.

EGG-LAYING AND CLUTCHES

A female lays 15-35 eggs per clutch in a pit in damp sand and most often lays two, at most three clutches about six weeks apart. Give her a laying box with a 30-40 cm layer of damp, diggable sand and topsoil. A female that does not find a suitable spot may retain the eggs; this is an emergency that requires a vet.

INCUBATION

The eggs hatch after 55-75 days at 28-30 °C. Place them in an incubator in damp, loose material such as vermiculite, and do not turn them. Keep the temperature stable and below 32 °C, because very high temperatures in *Pogona vitticeps* cause genetic males to develop into females.

REARING THE YOUNG

The hatchlings are independent from hatching. Keep them on solid substrate, for example kitchen paper, until they eat reliably, and give insects and greens daily. They need the same light and heat as adults: a basking spot, UVB and calcium on all food.

Young animals kept together bite each other's toes and tails. Sort them by size, and split them up as soon as they grow unevenly.

Health and common mistakes

Most diseases are caused by faults in husbandry. Sick reptiles hide for a long time that they are ill, so weigh the animal every week, and keep notes on weight, appetite, faeces and shedding. Sudden weight loss is often the first sign.

- Metabolic bone disease from too little UVB, too little calcium or too low a temperature. Signs are soft or crooked jaws and

legs and tremors.

- Obesity and gout from too much animal food and too little water.
- Dental disease and stomatitis; fruit is a risk factor.
- Constipation from too low a temperature, dehydration or parasites.
- Intestinal parasites and mites; have a faecal sample examined when the animal is new.
- Deep fungal infections of the skin (*Nannizziopsis*). The fungus *Nannizziopsis barbatae* was first found in captive *P. barbata* and now also attacks wild Australian lizards.
- Eggs that are not laid, and yolk inflammation in females.

Loss of appetite, lethargy, swollen joints, open-mouth breathing when the animal is not hot, and an animal that stops eating are reasons to see a vet with reptile experience. Reptiles often carry salmonella, so wash your hands after touching animals, enclosure and equipment, and keep the animal and its things away from the kitchen.

Read more: Quarantine and hygiene 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.