herpy

AGAMAS

Weber's Sailfin Lizard

Hydrosaurus weberi

Hydrosaurus weberi is a large, semi-aquatic agamid from Halmahera and neighbouring islands in Indonesia. The male has a crest on the nape and a tall sail on the tail, and the animal reaches 60-100 cm. It basks on branches over the water and drops into it when threatened. The species is vulnerable in the wild and needs a very large, warm and humid enclosure with a deep water section and powerful UVB.

Family: Agamidae Former name: *Lophura weberi*

KEY FACTS

THE ANIMAL

Adult size	**60-100 cm** total length incl. tail
Weight	**1,400-2,300 g**
Lifespan	**15-25 years**
Active	**By day**
Lifestyle	**Arboreal and semi-aquatic**
Habitat	**Rainforest and wetland**
Difficulty	**Expert**

CARE

Min. enclosure	**200 × 80 × 150 cm** L × W × H for 1 adult
Temperature, day	**26-32 °C**
Basking spot	**35-45 °C**
Temperature, night	**24-27 °C**
Humidity	**75-90%**
Water	**Aquaterrarium** depth 30-50 cm
UVB	**Essential** Ferguson zone 3
Diet	**Insects, fruit, plants and vertebrates**
Kept	**Singly, in pairs or one male with several females**

BREEDING

Reproduction	**Egg-laying**
Clutch size	**2-8 eggs**
Incubation	**60-70 days** at 28-30 °C

PROTECTION AND PAPERWORK

CITES	**Not listed**
EU annex	**Not listed**
IUCN	**Vulnerable (VU)**

About the species

Hydrosaurus weberi is a robust, flattened agamid with a tall body, a long tail and long toes, which the animal uses both to grip branches and to swim. The colours range from green and turquoise to blue, with yellow tones towards the tail, and the animal may have spots or fine speckling along the body. The male has a tall sail on the front part of the tail and a small knob on the snout, which the female lacks; in the female the sail is only a low crest. In the breeding season the male's colours become stronger. The scales along the sides form distinct lines all the way down to the base of the tail.

Adults reach 60-100 cm including the tail and weigh 1.4-2.3 kg. *H. weberi* is smaller than *Hydrosaurus pustulatus* and *Hydrosaurus amboinensis*, slimmer and lighter in build, and its tail is relatively longer. The species is named after the zoologist Max Weber.

The genus *Hydrosaurus* comprises five species. *H. weberi* was described in 1911 and is the only member of the genus on Halmahera and the nearby islands. When the genus was revised in 2020, *Hydrosaurus microlophus* and *Hydrosaurus celebensis* from Sulawesi were separated from *H. amboinensis*; *H. weberi* was not affected. The species is diurnal, solitary and nervous. In the wild *H. weberi* lives 10-15 years, in captivity 15-25 years. The species is not suited to handling and is only for experienced keepers with a great deal of space.

Distribution and habitat

Hydrosaurus weberi lives in the Northern Moluccas in Indonesia: on Halmahera and the nearby islands of Ternate and Morotai. The type locality is Weda on Halmahera. The range is narrow, and the species is found only on these islands.

The IUCN assesses the species as vulnerable (VU). The threats are loss of habitat on the coast and along streams, hunting of the animals for meat and collection for trade. The species has been recorded in Aketajawe-Lolobata National Park on Halmahera.

> **Native range:** Indonesia.

HABITAT

Hydrosaurus weberi lives in lowland rainforest and wetlands close to rivers, streams and the coast. The species is diurnal and partly arboreal: it basks on branches that hang out over the water, and also moves about on the ground. When in danger it runs, often on its hind legs, out into the water, swims away and can stay under water for more than an hour.

The climate is warm and humid all year round. In the wild the species eats plants, fruit, eggs and small vertebrates such as lizards and small mammals. The female buries her eggs in holes in the soil near the water, high enough that they are not flooded.

Care

THE ENCLOSURE

Little is known about the care of *Hydrosaurus weberi* itself. The figures in this section and the following ones are borrowed from the better-known species of the genus, especially *Hydrosaurus pustulatus*, which lives in the same way and grows larger.

An adult needs an enclosure of at least 200 × 80 × 150 cm (length × width × height). The dimensions are large because the animal needs a water section covering up to two thirds of the floor, a land section and high basking spots. For a pair or a male with two females, each dimension must be at least 60 cm larger. This requires a home-built enclosure or a dedicated room; the standard enclosures sold in shops are too small. Young animals can live in around 120 × 50 × 70 cm with a smaller water section, but quickly outgrow it.

Furnish with horizontal and slanted branches that are at least as thick as the animal's body, and with shelves along the walls at different heights. The branches must hang out over the water, so that the animal can flee down into it. The water must be at least 30 cm deep, so that it breaks the fall; in shallow water the animal can injure itself. Make room on the land section for a food bowl and, if there are females, a laying site.

The substrate must tolerate high humidity without rotting: pure cypress bark, other bark mixes for moisture-loving reptiles or equal parts fertiliser-free soil, sand and moistened coconut fibre in a layer of a few centimetres. Cover all sides except the front, and fit a 30 cm high screen at the bottom of the front. This gives security and prevents the animal from rubbing its snout raw against the glass. The enclosure must be lockable, because the animal is fast and nervous.

Read more: Humidity, misting and ventilation

TEMPERATURE

Keep the air at 26-32 °C during the day. The basking spot above a favourite branch or a high shelf should have a surface temperature of 35-45 °C, measured with an infrared thermometer. Start at the low end of the range, and watch the animal: an animal that constantly seeks to get away from the basking spot or down into the water is too hot. At night the temperature drops to 24-27 °C.

Use halogen spotlights in ceramic fittings above the basking spot in the upper part of the enclosure, and put guards around them so the animal cannot touch the bulb. Ceramic heaters keep the warmth at night without giving light. Heat cables under the floor can help, but only if they are fitted according to the manufacturer's instructions, because burns and fire are a real

risk. Use a thermostat on all heat sources, and measure with digital thermometers both at the basking spot and in the cool part.

The animal must always be able to move away from the heat, and it likes to cool off in the water.

Read more: Heat and temperature

HUMIDITY AND WATER

The humidity should be 75-90 %. High humidity is essential for clean shedding, including on the crest, sail and toes. Mist the enclosure at least once a day, or use a fogger or rain system, and keep the substrate evenly damp. The large water section evaporates constantly and helps a great deal.

Moisture and heat make mould and bacteria grow. Provide ventilation both high and low, and replace the substrate when it turns sour or smells. Air that is too dry leaves old skin stuck on the crest, toes and tail.

WATER AND WATER QUALITY

Hydrosaurus weberi uses the water for swimming, fleeing, cooling off and drinking. The water section must be large enough for the animal to dive and swim freely, and at least 30 cm deep; up to two thirds of the floor can be water. Make sure the animal can easily get out again by way of rocks, roots or a slope.

The animal defecates in the water and drinks from it, so the water must be changed daily, and the water section cleaned thoroughly at regular intervals. A powerful filter relieves the work, but does not replace the water change. Use clean tap water at room temperature.

LIGHTING AND UVB

The species is diurnal and basks, so it needs strong light and UVB. Use a powerful UVB tube (T5 HO, 10-12 %) in a reflective fitting covering a large part of the basking area. Ferguson zone 3 suits a diurnal species that basks in open terrain by streams; the zone has not been established for the species and is an estimate. Aim for a UV index of about 3-5 at the animal's back at the basking spot and lower in the shade, check with a UV meter, and replace the tube according to the manufacturer's instructions, typically every 12 months.

Mesh and glass reduce UVB, so mount the tube inside the enclosure with a guard around it, or over a coarse mesh. Keep 12 hours of light a day all year round, controlled by a timer. An extra daylight tube or an LED of 5,000-6,500 K gives a bright, natural enclosure.

Read more: Lighting and UVB

FEEDING

Hydrosaurus weberi is omnivorous, and the diet in the enclosure consists of plants and a moderate amount of animal food. Give plants every day, for example dandelion, stinging nettle, clover, rocket, kale, Chinese cabbage, herbs and edible flowers, supplemented with grated carrot, peas, beans and pumpkin and a little fruit such as berries, melon and banana. Chop it finely for juveniles, and leave the bowl out all day. Prepared food for herbivorous lizards is a good addition.

Juveniles get insects (crickets, cockroaches, locusts, morio worms) and plants every day; young animals have a larger share of insects than adults. Adults get insects a couple of times a week and occasionally a small mouse, prawns, freshwater crayfish or a cleaned fish. The insects should be well fed and dusted with calcium; give calcium with D3 and vitamins once a week, and extra calcium for females that lay eggs. Too much animal food leads to obesity. The animal readily takes food from tongs, and that builds trust.

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

BEHAVIOUR AND HANDLING

The species is nervous and shy. When in danger it runs, often on its hind legs, down into the water and stays on the bottom until the danger has passed. In the enclosure, a frightened lizard throws itself at the glass and rubs its snout raw. Screening, many hiding places and quiet around the enclosure are therefore the most important things.

The animal calms down with time, but it is not an animal for daily handling. Move slowly near the enclosure, and use hand feeding to build trust. If the animal has to be moved, lift it calmly from below instead of chasing it around: a chased animal is stressed, and the long claws scratch. It twists and scratches, but rarely bites.

In the wild the species lives alone and pairs up only in the breeding season. Two males cannot be kept together. A pair or a male with two females can be kept in a very large set-up, but the animals must be able to be separated if stress or injuries arise. Like all reptiles, the animal can carry salmonella, so wash your hands after contact with the animal, the enclosure and the water.

Read more: Quarantine and hygiene

Breeding

SEXUAL MATURITY AND SEXING

The male has a taller sail than the female and a knob on the snout, which the female lacks, and he is larger. In the female the sail is only a low fringe. Young animals cannot be sexed reliably; the sexes only become clearly visible when the animals are well over half grown.

The age at sexual maturity is not documented. Only breed fully grown animals in good condition; a female that is too young or thin is worn down by egg laying.

MATING

Little is known about mating in *Hydrosaurus weberi*. The male displays with crest and sail and takes on stronger colours in the breeding season. What triggers mating in captivity is not documented.

A pair or a male with two females requires a very large enclosure with many hiding places so that the females can withdraw from the male. Watch the animals, and separate them if a female gets wounds or stops eating. Give the females extra calcium and plenty of food before and after mating.

EGG-LAYING AND CLUTCHES

The female lays 2-8 eggs per clutch and can lay several clutches in the same season. In the wild she digs a pit in the soil near the water, but above the flood line.

Provide the female with a laying box on the land section with moist, loose soil and sand, at least 30 cm deep, and cover it partly so that she feels secure. Without a suitable site she can retain the eggs, and that can become life-threatening; contact a vet if she seems strained or does not manage to lay. Females can lay infertile eggs without a male.

INCUBATION

Lift the eggs out carefully without turning them, and place them half buried in damp vermiculite or perlite (roughly equal parts material and water by weight) in a closed box. Keep the eggs at a stable 28-30 °C; the temperature is borrowed from the genus. The eggs hatch after around 65 days.

Check the box regularly for mould, and remove eggs that go mouldy or collapse.

REARING THE YOUNG

The hatchlings are independent from the first day, but do not yet have the male's sail. Put them in an enclosure of about 120 × 50 × 70 cm with branches, a small water section and many hiding places, and screen the sides so that they do not rub their snouts raw. Without a substrate the enclosure is easy to keep clean; the humidity is maintained with misting and water.

Feed every day with small insects, dusted with calcium, and finely chopped plants, and provide UVB from day one. The hatchlings grow fast and must be moved to larger enclosures as they grow. Males become territorial, so divide the young when fighting arises.

Health and common mistakes

Most problems in *Hydrosaurus weberi* are caused by the husbandry: too little heat, too little UVB, air that is too dry or a one-sided diet. Typical problems are:

- Brittle bones (metabolic bone disease) with too little UVB and calcium.
- Snout injuries when the animal runs into the glass. Screen the sides, and keep things calm.
- Skin stuck on the crest, toes and tail when the air is too dry.
- Burns from heat lamps without guards and from heating cables.
- Injuries after jumping into water that is too shallow.

- Skin and mouth infections with dirty water or a wet, sour substrate.
- Obesity with too much animal food.
- Egg-laying problems in females without a suitable laying site.
- Intestinal worms and other parasites, especially in wild-caught animals. Quarantine new animals, and have a faecal sample examined.

A healthy animal has clear eyes, a full body and tail and an intact crest and sail. It eats regularly, basks and seeks the water when frightened. Reptiles hide illness for a long time, so contact a vet experienced with reptiles if the animal loses weight, does not eat, has wounds or swellings, or sits with its mouth open.

Read more: Common diseases and signs of illness Read more: Buying animals: captive-bred, wild-caught and transport

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.