

# Savannah Monitor (Bosc's Monitor)

*Varanus exanthematicus*



**LIFE SPAN:** 15 + years

**AVERAGE SIZE:** up to four feet

**CAGE TEMPS:** Warm side – 85-90° F  
Cool side – 80° F  
Basking – 100-120° F

**CAGE HUMIDITY:** low (hot side, basking area)  
high (cool side and moist box)

\* If temp falls below 75° at night, may need supplemental infrared or ceramic heat for night-time

**WILD HISTORY:** The natural habitat of the savannah monitor is the grassy plains (savannahs) of Africa from Senegal, east to Sudan and south to the Congo region. Savannahs often use underground burrows to stay cool and conversely, large rocks for basking.

**PHYSICAL CHARACTERISTICS:** Savannah monitors are stout-bodied lizards with short, pudgy legs, feet and toes. The toes end in short, strong, sharp claws.

Savannahs range in color from light to dark tan or grey, with red highlights and large oval spots of olive or orange on the back. The bellies range from a light tan, grey or yellow color. The tail is banded and is very powerful. When frightened or threatened, savannahs puff up their body and throat, turn sideways and lash their tail to appear larger. They also use their powerful tails as "rudders" to steer themselves when swimming.

The savannah's head is flat, substantial and rectangular. The jaws of a savannah are designed for crushing the skulls and bones of prey and are therefore quite powerful. Both the upper and lower jaws are lined with hundreds of small, sharp teeth. All monitor species have forked tongues. This tongue shape helps reptiles locate the scent of their prey. Most savannahs' tongues are purple.

The skin of the savannah monitor is thick and pebbly with scales that lie flat. Savannahs are intelligent, powerful and active lizards.

**NORMAL BEHAVIOR & INTERACTION:** Savannah monitors are considered the easiest monitor species to keep and tame. Monitors can grow to be four feet long and are very smart and powerful. The jaws of this lizard are designed to crush bone. Therefore, it is VERY important to tame your lizard early and KEEP him/her tame. Consistent handling and interaction will result in a pet that will tolerate and even enjoy being handled. It goes without saying that a savannah that is not tame can be dangerous.

Savannahs love to dig, so their enclosure should provide for this activity. They also love to push around large pieces of wood and rocks. Savannahs are large, clumsy beasts; but are very endearing, much like a dog.

Due to their intelligence, savannahs are very talented at escaping their enclosures. You will notice your lizard spending much of its day inspecting its cage to discover a new way out, or *creating* a new way out. Be sure to build your monitor enclosure with this in mind. Glass enclosures are always recommended, as savannahs can easily rip up mesh enclosures with their sharp claws.

Because of their size, savannah monitors should be housed alone, but a male and a female or two females can live together if there is substantial room for each lizard. Male savannahs should not be housed together as they will fight.

**NOTE:** DO NOT savannah monitors with other species due to the differences in care, temperatures, and the fact that some species can be highly stressed in the presence of other species. Each species may also harbor different parasites/protozoans/bacteria (even a healthy reptile harbors a small amount at all times), which may make each other ill.

**FEEDING:** Savannah monitors are strictly carnivorous, eating only insects and meat.

There has been much debate as to whether savannahs should be fed insects and rodents, or be kept on a strict diet of insects. The latest research from the most experienced keepers leans toward insects and rodents. The natural diet of the savannah in the wild would be insects, birds, rodents, other lizards and eggs. They are both active hunters and scavengers.

Like many savannah animals, savannah monitors feed very well during the wet season, but must often live off their fat reserves during the dry season. In captivity, with food being served year round and without the expended energy of hunting exercise, savannah monitors can tend toward obesity.

Many savannah keepers offer canned cat and dog foods. Cat food must be strictly avoided, as it has ingredients and vitamin/mineral balances that are dangerous to species other than felines. Dog foods must be relegated only to savannah babies that are struggling to gain weight, and full-grown savannahs that may be ill or immune-compromised. As mentioned earlier, savannahs are very prone to obesity and so are also prone to the subsequent health issues, such as liver disease. Dog foods usually contain fat levels that are much too high for a normal savannah diet. When dog food is fed to struggling babies or ill adult monitors, be sure to feed a high quality, low fat food, but first always take sick pets to your exotic pet veterinarian as soon as possible.

Zoos often feed a mixture of raw turkey (which is low in fat), egg and special supplements, but the balance of these ingredients must be mixed perfectly to maintain optimal health. Also, extreme care must be taken to avoid fast-growing, dangerous bacteria such as salmonella, which can be dangerous to both owner and pet.

Commercially prepared savannah monitor diets are available, but they should never constitute the whole diet of your lizard.

Taking all research into consideration, the best diet for your savannah monitor would be a majority of live insects (they will also get some exercise chasing them) supplemented with pre-killed or frozen/thawed mice. Never feed live rodent prey to a savannah monitor; the rodent can cause injury to the lizard, which then may require veterinary care. Also, the lizard may then be afraid of the rodents, and subsequently stop feeding. Pre-killed or frozen/thawed mice are always the safest way to go.

Rodent prey can be chosen dependent on the lizard's size. Baby lizards should start with a pinkie-sized mouse and gradually step up to a fuzzy mouse as they grow. Adult monitors can easily gulp down adult mice. Savannahs will rarely eat prey that is too big for them. If they do, they will regurgitate the prey.

Insects such as gut-loaded crickets, mealworms, cockroaches, kingworms and wax worms dusted with a supplement should be part of the savannah diet.

Wild caught insects should never be fed, since they can carry disease. All insects should be gut loaded (fed a nutritious diet about 24-hours before being offered to your lizard – see our cricket care sheet).

Be careful to feed the proper size prey for your lizard's size. A good rule of thumb is that a cricket should be never be larger than the distance between the lizard's eyes, or the distance from its eyes to its nose.

When feeding larger insects to your pet, try to make sure the insects have recently molted, as an insect with a large, hard exoskeleton is difficult to digest and may cause impactions.

### **LIGHTNING BUGS MUST NEVER BE FED TO A SAVANNAH MONITOR. THEY ARE POISONOUS.**

Adult Savannah Monitors over three feet long should be fed two to three times weekly, juveniles more often. Savannahs will gorge themselves with whatever is placed in front of them, so be very careful not to overfeed.

Hatchling savannahs up to one foot in length can be fed up to four fuzzy mice every two to three days - depending on your monitor's size.

Juveniles up to three feet in length should be fed one to four fuzzy or small sized mice twice a week.

Adults three or more feet in length can be fed two to three mice twice a week, depending on the size, exercise level, and weight of your pet.

Also feed a good selection of insects from the above list along with the rodent prey until your lizard seems full for that particular feeding.

All uneaten insects should be removed from the enclosure as they can bite your lizard and cause injury, especially to the eyes. Some savannah monitor owners find it easier to feed their pet in a separate enclosure, free of bedding and furniture, this way you can be sure your lizard eats all its insects, the prey cannot hide, and the lizard will not pick up any bedding when grabbing prey and mistakenly ingest it along with the prey.

**SHEDDING:** Unlike snakes, lizards shed their skin in patches, not all in one piece. Your pet may become an overall dull color, and the skin over the eyelids may 'pop' at a certain point and make your lizard look like a bug-eyed bullfrog. Do not peel off the skin if it is not ready to come off. This can be dangerous and painful.

Most lizard species will shed every 4-6 weeks. If the enclosure environment is ideal, the keeper often has no idea that their pet has shed, as it will happen more quickly and the lizard will often eat its own shed skin.

In the wild, lizards have a much easier time with their sheds, as they are generally in a more naturally humid environment and have access to pools or bodies of water in which they can soak at will. Even lizards from arid areas find humid places to go during the shedding process, such as cold, moist burrows under the sand or caves.

The shedding process happens when the lizard's body begins to grow a new layer of skin; that new layer begins to separate from the old and a very thin layer of fluid forms between the two layers. If your pet's enclosure is too dry, this fluid layer will not form properly, making it difficult for your reptile to shed properly.

To create more humidity, the entire tank can be lightly spray misted twice a day during shedding time. Spray once in the morning and once later in the day. Make sure the later spray dries completely before lights go off for the night, as the droplets will not have proper time to dry and may contribute to respiratory disease.

Some lizards may also benefit from a 'moist box' during shedding time. This can be a Tupperware-like container (with the cover on) containing a bed of moist reptile terrarium moss. The container should be big enough for the entire lizard to be inside with an entry door cut in the side just large enough for the lizard to come and go at will. Keep the moss moist but not watery, and place the box on the heating pad in the tank.

If your lizard still has a hard time getting the shed completely off its toes, tail or head; help him by spraying the area with water and gently massaging the skin until it peels off. If the retained shed is severe and cannot be removed easily, see your exotic veterinarian.

**SUPPLEMENTS:** Dust insect food with calcium supplement and vitamin supplements. As a rule, a growing juvenile's food (and a pregnant/gravid female's) should be dusted more often than an adult's. Follow your veterinarian's instructions for applying supplements to avoid over-supplementing food.

Our veterinarian recommends dusting insects with a good quality calcium supplement fortified with vitamin D3, 2-3 times a week. (Avoid using a calcium supplement with added phosphorous, unless specifically directed by your veterinarian, since this can promote kidney disease.)

Always consult your veterinarian for specific directions on supplementing your pet's food, since there are many variables that go into determining the best supplementation regimen for each animal.

**WATER:** All water given to lizards for bathing, swimming or drinking, as well as water used for misting must be 100% free of chlorine and heavy metals. (Not all home water filtration systems remove 100% of the chlorine and heavy metals from tap water). We recommend that you use unflavored bottled drinking water or bottled natural spring water; never use untreated tap water. If tap water is used, you should treat it with a de-chlorinating treatment. If you do not want to chemically de-chlorinate the water, you can leave an open container of tap water out for at least 24 hours. The chlorine will naturally dissipate. Do not use distilled water, which can cause severe medical problems, since it lacks minerals that are essential to important body functions. Change the water in your savannah's enclosure every one to two days.

A daily misting or two with chlorine-free water will also be appreciated. However, care should be taken not to allow the enclosure to become damp. Also, do not mist less than two hours before turning the heat lamps off for the day, as the droplets will not have proper time to dry and may contribute to respiratory disease.

**SOAKING:** Lizards can benefit greatly from a good deep-water soak at least once a week. A plastic tub makes a good reptile bathtub. Fill the container deep enough so the entire lizard's body can be submerged under water, but the head can be out of water. The water should be nice and warm (about 68-70 degrees). Soak your lizard for about a half hour at a time. This is especially helpful during a bad shed or when your dragon might be a bit constipated.

**RECOMMENDED SUPPLIES:**

Cage size should be 5-6 feet long x 4-6 feet deep x 3-4 feet high.	Large dome and 150 watt bulb More than one dome and bulb may be necessary to keep the basking temperature as high as it needs to be.
Under tank heater – placed under same side of tank as basking light. A human-grade heat pad can be used. Make sure the pad does not have an automatic shut-off. Be careful that the heat pad is not too hot for your pet. A medium setting is usually both adequate and safe.	Temperature / humidity gauge – do not stick to side of tank so it can be moved around to check temperatures in all areas
Two dry hide houses One moist box	Coconut fiber substrate, moistened
Large water tub – big enough for lizard to completely submerge in.	Fluorescent UVB Bulb and housing

**HOUSING & ENVIRONMENT:** Lizards are ectothermic, or cold-blooded, which means they are dependent on the temperature of their immediate environment to regulate their body temperature. Therefore, we must create an environment with several heat gradients – warm on one end and cool on the other. With this set-up, your pet can go to either end depending on whether he needs to be warmer or cooler.

**ENCLOSURE SIZE:** A baby savannah monitor can start his life in a 55-gallon aquarium with a metal mesh top, but will promptly outgrow it in a year's time. Give good thought as to whether you want to spend money on a temporary set-up only to buy/build another enclosure after just one year.

An adult savannah monitor's cage size should be AT LEAST 5-6 feet long x 4-6 feet deep and 3-4 feet high.

Because of the large size requirements for savannah monitor enclosures, cages often need to be hand constructed of wood and plexiglass or glass. Savannah monitor cages MUST be made of glass or plexiglass. Mesh cages will be quickly and easily ripped apart by sharp savannah claws.

Take care to not use toxic substances and supplies while building a reptile cage. Waterproof wood surfaces with a low-toxin, water based polyurethane. Plywood and plexiglass are fine to use. If using silicone to seal joints, use only aquarium sealant. **Be sure to allow more than enough time to allow all products to dry properly to avoid poisoning your new pet.**

## **IT IS NOT TRUE THAT A LIZARD WILL ONLY GROW AS LARGE AS ITS ENCLOSURE ALLOWS!!**

**COVER:** Make sure the cage has an escape-proof metal mesh top. It should fit snugly onto the tank and have strong clips locking it on. It is important that the top is METAL mesh, as you will place the heat lamp directly on top of this cover.

**HEAT PAD:** Reptile heat pads can be adhered directly onto the underside of the glass bottom of the tank. Stick the pad on the glass on one of the very far ends of the tank (opposite the water dish). For safety reasons, make sure to attach the rubber feet (contained in the box) at all four corners of the underside of the tank. This will allow air to circulate underneath the tank and prevent the heat from being trapped under the tank. Leave the heat pad ON 24 hours a day.

A human-grade heat pad may be used on the low to medium setting. Do be sure to allow for proper ventilation for safety reasons. **\*\*Be sure to purchase a heat pad without automatic shut-off, which are still available.**

Heat pads specifically manufactured for reptiles and human-grade heat pads are safe to leave on 24 hours a day. **DO NOT** use reptile heat rocks. They heat unevenly and have caused severe thermal burns in reptiles and amphibians.

**HEAT LAMP:** Place the heat dome with the basking bulb on top of the cage directly over where the reptile heat pad has been placed on the underside of one end of the tank. Several heat lamps and bulbs may be necessary to keep the basking area for your savannah as hot as it needs to be. The heat lamp should be turned on in the morning, and off at night. (See “Day/Night Light Cycles” below.

**NOTE!!** : Follow directions carefully with all products – **READ THE INSTRUCTION SHEET!!**

Always choose fixtures with ceramic sockets and be careful to choose the socket that is properly rated for the wattage bulb that you will be using. Do not place the fixtures by dry wood or flammable fabrics.

All heaters should be placed out of the reach of children and all pets – including cats and dogs.

Be very careful to make sure that your caged pet cannot reach and touch the heating device in its own cage. A thermal burn to the face or body can be painful and life threatening.

**BASKING AREA:** A warmer basking area matching the temperature listed at the top of this care sheet must be established on the warm side of the cage. This area is directly under the basking bulb and will be higher in the cage for arboreal species. The basking area should be the warmest area in the enclosure. Maintaining the proper temperature in this spot is extremely important to the health of your pet.

**UVB LIGHT:** Exposure to UVB (ultraviolet B) light is critical in allowing an animal to synthesize vitamin D<sub>3</sub> in their skin and metabolize calcium in their body.

If an animal is not exposed to an adequate level of UVB light, it will gradually develop physical problems from the result of mineral deficiencies such as low blood calcium (hypocalcaemia), soft eggs (females), stunted growth and metabolic bone disorder, which can be fatal if left untreated. In addition, recent studies have linked sub-optimal vitamin D levels with poor immune system function.

All day-active (diurnal) indoor reptiles, amphibians, birds and hermit crabs should be allowed self-selected exposure to UVB lighting for up to 8-12 hours a day. This means they should be able to bask in the light but also get away if desired, much as they might in the wild. Many twilight-active (crepuscular) and night-active (nocturnal) species do get some exposure to the sun and may also benefit from low levels of UVB, which helps regulate their photoperiod and vitamin D levels as well.

Please see our additional “UVB Lighting for Companion Birds and Reptiles” for specific instructions for your particular pet and the UVB bulb that we recommend for him or her.

**HIDE HOUSE/MOIST BOX:** Savannahs love their privacy. Place a hide house inside the cage directly over where you have positioned the heat pad, and directly under the heat lamp above. A second hide house will be very appreciated at the opposite, cool end of the enclosure. Remember, this is a burrowing species – they spend much time underground in the wild. In addition the hide house, it is highly recommended to supply the “moist box” mentioned in the above “shedding” section. Savannah monitors spend the time underground in the wild in *moist* underground burrows. This helps keep them hydrated properly. Since they are unable to burrow down as much in captivity as they would in the wild, a moist box can help give them what they need in this regard.

**WATER CONTAINER:** Savannah monitors love to spend a lot of time in the water. Be sure to supply a LARGE tub of fresh water in the enclosure for bathing and soaking. Lizards often defecate in their water, so be sure to change the container often, as your pet will drink from it as well as bathe in it. Place one or two heavy, flat rocks in the tub so your lizard can't tip it over. Be sure your pet can climb in and out of the container easily – using some flat rocks as a “ramp” may be necessary.

**SUBSTRATE:** Savannah monitors love to dig, so we recommend a loose coconut fiber substrate, available in the reptile department and made by several companies. It is made from the husks of coconuts. This substrate is ideal for savannahs, as it will help hold humidity in. Keep the substrate slightly damp, but not watery.

Shredded aspen bedding can also be used and may be a bit easier to keep clean. Your lizard can still dig in it, but it will not be as messy as the coconut bedding.

The substrate should be about 1-2 feet deep – the deeper the better. Underground rooms or compartments will also create a more natural environment.

\*\*\*Sand mixtures are not recommended. If the sand is ingested, it can cause dangerous impactions.

**BRANCHES/PLANTS:** Large pieces of wood can be included in the enclosure as toys and climbing apparatus for your lizard. He/she will enjoy pushing the pieces around and burrowing underneath them. Live plants are not necessary and will only be torn up and dragged around the enclosure.

Large, flat rocks are perfect for basking and will soak up some of the daytime basking light heat.

Plastic plants can be included for hiding and decoration.

**TEMPERATURES:** Cage temperatures should be monitored daily and kept at the temperatures listed at the top of this page. Use your reptile thermometer to check the temperatures in different places in the cage regularly to make sure they continually match the listed proper temperatures. Several heat lamps and bulbs may be necessary to keep the basking area for your savannah as hot as it needs to be.

\* If the room temperature falls below 75 degrees at night, a supplemental infrared or ceramic heat fixture may be necessary. (These fixtures do not emit a light spectrum that is visible to the monitor, so it will not disturb him at night, but they WILL provide the necessary supplemental heat.)

If your lizard does not receive the proper heat at the proper temperatures along with UVB light, he may become sick with issues such as respiratory disease or MBD and may stop eating, as lizards have a hard time digesting their food without proper heat and light.

**DAY/NIGHT LIGHT CYCLES AND HEATING:** All lizards must have distinct day and night periods in their enclosure to maintain their biological rhythms. Savannah monitors need 8-12 hours of daytime and 8-12 hours of nighttime. However, as the daylight hours change seasonally outside, daylight hours inside the tank should reflect the same.

**The day period must be light, and the night period must be dark.**

A timer should be used to set day/night periods.

**HABITAT MAINTENANCE:** Daily maintenance should consist of spot cleaning by removing soiled substrate, cleaning water bowl thoroughly and wiping glass clean.

The entire tank should be cleaned thoroughly at least once every month with:

- A mild dishwashing liquid (a weak dilution) in warm water, THEN
- Vinegar & water (1:8)  
OR bleach and warm water (1:32)
- Cage “furniture” should also be scrubbed clean with the same dilution.
- RINSE OFF ALL SOAP AND BLEACH THOROUGHLY WITH PLAIN WATER BEFORE RE-INTRODUCING YOUR PET TO ITS ENCLOSURE!!
- NEVER MIX VINEGAR AND BLEACH – IT CREATES A TOXIC SOLUTION
- NOTE: water used for cleaning does not need to be de-chlorinated, as your pet will not be drinking it or bathing in it.

**GROOMING & HYGIENE:** To reduce the risk of contracting and spreading salmonella poisoning, all handlers should wash their hands after handling any lizard.

**SIGNS OF A HEALTHY ANIMAL:** smooth, even skin; no traces of mites (small, reddish brown spots around nostrils, near ears and eyes); clear, bright eyes; rounded, full body; strong, even, smooth jaw line; regular record of healthy feeding and defecating schedule.

It is very important to keep a journal for each animal that records feeding, refusing, defecation, shedding, unusual behavior, changes in behavior and dates of bulb changes. This will help your veterinarian trouble-shoot any health issues.

We recommend physical exams every year or two years with an exotic pet veterinarian for pet reptiles and amphibians. If your vet sees your pet regularly, many common conditions that afflict pet reptiles and amphibians can be caught and treated early. If not caught early enough or if left untreated, many of these conditions can become far worse if not fatal.

**SIGNS OF ILLNESS:** Irregular scales; small reddish brown spots (mites) around mouth, eye area, ear area; irregular jaw line, ‘dents’ in mouth with (or without) cottage cheese-like material (mouth rot); cloudy eyes or dull colored body when not in a shed; dark patches on body; thinned body; irregular feeding and defecating habits. Limp, lethargic, sunken eyes; obvious bite marks or wounds from cage mate or prey.

Red, fluid filled patches may indicate thermal burns. An overweight savannah may be suffering from liver disease.

## **SOME COMMON PROBLEMS INCLUDE:**

<b>HEALTH ISSUE:</b>	<b>SYMPTOMS:</b>	<b>TREATMENT:</b>
<b>Calcium/phosphorus imbalance; MBD</b>	Failure to grow, weakness, limb deformities and fractures, seizures	See exotic pet veterinarian, ensure optimal diet with proper calcium supplementation and UV light
<b>Intestinal parasites (coccidia and pinworms are common)</b>	Failure to grow, loss of appetite, abnormal stools	See exotic pet veterinarian (fecal parasite evaluation and appropriate medication)
<b>Egg binding in females</b>	Abdominal enlargement, decreased appetite, difficulty defecating	See an exotic pet veterinarian immediately.
<b>Obesity / Liver disease</b>	Feed less, obtain blood work to see if damage has been done to the liver	See an exotic pet veterinarian

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