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## Savannah (Bosc's) Monitor (*Varanus exanthematicus*)

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### **Widespread Spunk of the Savannah**

The Savannah monitor is a medium to large stocky and sturdily built monitor species that is also sometimes known by the common name of Bosc's monitor in Europe after the French scientist, Louis Bosc that first described this species. As with most monitor species, savannah monitors are highly versatile animals that use their strong claws, limbs, and tails for digging, swimming, and climbing. They are a medium to large sized primarily terrestrial (or ground dwelling) monitor with a large, stocky head, limbs, and tail. Range-wise, savannah monitors range over much of sub-Saharan, western and central Africa, occurring from Senegal, east through Nigeria, the Central African Republic, DR Congo, South Sudan, Ethiopia, Kenya, and Uganda, and south to the Congo River and Zaire.

This species can be grayish, tan, to brown in ground color with numerous white spots and ocelli along their dorsal surface and alternating lighter and darker brown to reddish brown bands on the tail. Compared to many other monitor species, the head is relatively short and bulbous, and the lighter grayish to cream-colored underside and throat can be marked with lighter brown or reddish flecks or markings. Savannah monitors are a popular pet lizard species to maintain, and are perhaps the most widely sold and available monitor species. However, they are a species that require the proper research, care, and husbandry, as well as patience in order to become personable and enjoyable pets.

### **Taxonomy**

**Life:** All living, physical, and animate entities

**Domain:** Eukaryota

**Kingdom:** Animalia

**Phylum/Sub Phylum:** Chordata/Vertebrata

**Class:** Reptilia

**Order:** Squamata

**Suborder:** Lacertilia

**Infraorder:** Platynota

**Family:** Varanidae

**Genus:** Varanus

**Species:** *Varanus exanthematicus*\*

*\*Taxonomy subject to change and revision.*

### **Lifespan and Longevity**

If provided the proper care, savannah monitors can attain longevity of 15 to 25 years or more.

## **Distribution and Habitat**

The savannah, or Bosc's monitor, is widely distributed over much of sub-Saharan, western and central Africa, occurring from Senegal, east through Nigeria, the Central African Republic, DR Congo, South Sudan, Ethiopia, Kenya, and Uganda, and south to the Congo River and Zaire. Within this range, savannah monitors occupy a wide variety of habitats and environments, including savannahs, rocky, semi-arid deserts, grasslands, and scrublands, to open, dry forests and woodlands.

## **Origin/History**

*Varanus exanthematicus* (Bosc, 1792).

Savannah, or Bosc's monitors as they are known in Europe, have historically been a very heavily imported species for many decades for the pet, meat, and leather industries. For instance, an average of 30,574 live specimens were imported into the US each year between 2000 and 2009. The total imports of live specimens in the US between 2000 and 2010 was 325,480 animals. They have also been estimated to account for approximately 48 % of the entire global trade in varanid, or monitor species.

These initial imports of large numbers of savannah monitors often resulted in animals that were in poor condition and failed to thrive in captivity. However, with a greater interest in conservation within their countries of origin, these monitors had become "farmed" in greater numbers, although true captive breeding of savannah monitors remains very uncommon in the U.S. to this day. Unfortunately, exporters had not maintained much other data or information as to when exactly savannah monitors first appeared or were imported for the pet trade, although it can be stated that the vast majority of the trade in live animals from Africa originated from Ghana, Togo, and Benin, most likely since at least the 1980's or early to mid 1990's, or earlier. There is substantial undeclared trade in the species from Sudan, Nigeria and elsewhere.

## **Experience Level Required**

Intermediate/Moderate.

## **Size**

Savannah, or Bosc's monitors range from about 4.0 to 6.0 inches in total snout-to-tail length as hatchlings, but will quickly grow larger. As adults, savannah monitors will average between about 3 ½ to 4 ½ feet, or 42.0 to 54.0 inches in total snout to tail length as adults. Adult snout-to-vent length ranges from about 19.6 to 29.5 inches snout to vent length (SVL). **It is always important to consider the potential size and space requirements of an adult Savannah Monitor prior to obtaining one.**



*Ideal Example Enclosure Setups for Savannah Monitors.*

## **Housing and Enclosure**

***Enclosure System: Primarily Terrestrial.*** Housing must also be sealed and escape proof. Hatchling savannah monitors can be started out in a 10 to 20 gallon long enclosure, but will soon require larger accommodations. Enclosure size should be increased accordingly depending on the animal's size. If standard glass terrariums with screen tops are used at any point, ensure that adequate humidity and temperatures are maintained using additional steps to retain it. Very large, custom designed pens or enclosures are perhaps the most suitable housing for most mid to large sized monitors. As with other monitors, savannah monitors also powerful diggers, and should also be provided with substrates that enable burrowing and retain humidity well such as chemical and pesticide free potting soil, cypress mulch, orchid bark substrates. Be sure to provide at least 18 to 24 inches of substrate. Monitors in general are very intelligent, alert and perceptive animals, and will require sufficient levels of safety, security, and stimulation and enrichment in order to do well in captivity. Provide a hide box and artificial foliage, driftwood, rocks, slabs, or logs for ample basking and hiding opportunities. A large enough water bowl or dish that they can readily enter and exit from that can work with one's enclosure setup and arrangement is also strongly recommended for maintaining adequate longer term hydration, humidity, and quality of life for these monitors. Water should be changed or filtered regularly at a minimum of every other day to maintain cleanliness and sanitary conditions. Savannah monitors are primarily a terrestrial species, but will climb readily if given the opportunity.

### **Temperature, Lighting, and Humidity**

For basking, create a thermal gradient (or a warm side) in the cage/enclosure with an appropriate sized under tank heating pad, ceramic, or radiant heat emitter. In general, the preferred ambient temperatures within the enclosure should be within 80 to 85 degrees F. Basking and warm side temperatures can be allowed to reach up to 120 to 150 degrees F on the warm, basking side. Savannah monitors also require overhead UVA, UVB incandescent and fluorescent lighting using the appropriate wattage bulbs or other heating elements. Spot clean the enclosure for urates, feces, or uneaten food at least twice per week. Be sure to periodically replace the substrate, clean, and disinfect the enclosure and its furnishings at minimum every 2 to 3 months. More specific lighting, heating, and humidity product suggestions and recommendations that can best suit one's needs, as well as those of one's animals can be given as well. Most monitors are able to tolerate a wide gradient of overall relative humidity levels within their enclosures ranging from lows within the 30 to 50% range, to highs as much as 70 to 75% or more, through means of providing them with the correct and suitable substrates, as well as other humid hides and retreats. These husbandry components are perhaps the best ways of ensuring the proper humidity levels for your monitors in captivity.

### **Feeding, Diet, and Nutrition**

***Insectivorous to Carnivorous;*** In the wild, savannah monitors are primarily carnivorous to insectivorous, being more dietary specialists than have been previously believed, including a variety of insects and other invertebrates, crustaceans, arthropods, mollusks, and other invertebrates. They may also eat some small vertebrates including small mammals, birds, bird and reptile eggs, amphibians, and other smaller reptiles, but less commonly. Carrion, or dead and decaying plant and animal material may also be consumed as well.

In captivity, variety is essential to a proper and adequate monitor diet. Savannah monitors should be fed a variety of feeder insects of appropriate size including crickets, roaches, mealworms, superworms, and waxworms supplemented with vitamin D3 and calcium, but do not feed them too many high fat insects. Frozen-thawed rodents of appropriate size and raw food items such as turkey, beef, or eggs can also be offered, but sparingly, if at all, as these food items are high in fat and protein for monitors. Savannah monitors should be given more insects than rodents or other food items in their captive diets. Nevertheless, it is also important to remember not to overfeed any monitors, as they can become very prone to obesity. Feeding schedules can depend on the age, size, and overall health of your monitor, but typically, an appropriate feeding regime

for young and hatchling monitors should be two to three times weekly. Most monitors are very alert, intelligent and personable species that can become food aggressive when in the presence of food, and therefore require additional care when handling. More specific dietary and supplementary product suggestions and recommendations that can best suit one's needs, as well as those of one's animals can be given as well.

### **Handling**

Savannah monitors are a species that may initially be nervous and skittish, particularly young ones, or newly acclimated specimens or those that have otherwise been only recently acquired. They may bite, claw, tail whip, defecate, or otherwise attempt to flee or escape from what they perceive to be a potential threat or predator. However, with regular handling, interaction, captive savannah monitors can become more tame and personable pets to maintain provided that they are handled and interacted with regularly in a calm and deliberative manner.

Most monitors are very different than many other reptiles in terms of their intelligence and perception, and each individual animal may differ in their temperament or personality. Some will come to acclimate with humans and being handled within a matter of a few months, while others may take many years. Two different trains of thought are out there when it comes to handling or "taming" one's monitors. The first is to handle and interact with them daily until they become used to or acclimated to handling. This method sometimes works, and sometimes does not, and depends on the individual animal and one's circumstances. This can also lead to the opposite desired effect, and make an animal further stressed. The other method, or train of thought is to simply leave them alone, and an added or increased trust among one's monitor may come over time with regular cage and enclosure cleaning, maintenance, or other routine duties. Over time, slow steps may be taken to continue to gain trust with, and eventually become able to handle and interact with them. With this second train of thought, many monitors will become more bold and curious, and interactive naturally on their own than if they are forced out of their hiding places or other areas in order to be handled. Moving slowly and deliberately is always better to help make the animal feel secure, rather than fast, rapid, or jerky movements.

Always keep in mind with regards to the second method, however, that large monitors especially, can still be potentially dangerous, or can be capable of delivering serious bites or scratches, and so some proper precautions when it comes to handling and interacting with them are always recommended. Even animals that can normally be considered "tame" can unexpectedly become threatened, or if one's hands and arms smell like their normal food. Any new animal should of course also be allowed to acclimate to its environment and surroundings before handling attempts are made. Overall, each animal is an individual, and these techniques may not be effective for all monitors, but are nonetheless the most commonly utilized. \*\*Also be sure to practice basic cleanliness and hygiene associated with proper husbandry after touching or handling any animals or animal enclosures to prevent the possibility of contracting salmonellosis or any other zoonotic pathogens\*\*

### **Contact**

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