



*Brittany Kay

Mangrove Monitor (*Varanus indicus*) and Quince Monitor (*Varanus melinus*)

Brackish Area Monitors

Mangrove monitors are medium sized monitor species that also go by the common names for this including the mangrove goanna, and western pacific monitor. The Mangrove monitor is a relatively moderate to large sized monitor with heavily versatile claws, limbs/digits, tails, and bodies, as with most monitors. Dorsal ground color ranges from blackish, dark brown, olive brown, to occasionally pale bluish with numerous rows of golden-yellowish, whitish, to paler bluish spots and ocelli and a paler yellow to cream colored belly, or ventral surface. The very closely related Quince Monitor (*Varanus melinus*), is indigenous to the Sula Islands of Indonesia, where this species can be characterized by their oftentimes vibrantly yellow to greenish-yellow coloration overlapped by darker reticulation over their bodies, and alternating bands of black and yellow towards the tail.

These lizards are also very intelligent and perceptive, and are excellent diggers, or burrowers, often using their strong claws, limbs, and tails to dig deep, slightly moist and humid burrows, as well as climb in order to access rocky crevices in order to seek shelter and refuge. As with all other monitors, although Quince and Mangrove monitors are certainly are not for everyone, these large and increasingly popular lizards can make for excellent pets for the right monitor enthusiasts and other enthusiasts in search of, and willing and able to dedicate the time, space, and resources for these large and amazing lizards!

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 indicus**

and *Varanus melinus*

**Taxonomy subject to change and revision.*

Lifespan and Longevity

If provided the proper care, Mangrove monitors can attain longevity of at least 15 to 25 years or more in captivity.

Distribution and Habitat

Mangrove monitors inhabit the damp, moist tropical to sub-tropical forests and woodlands near the coastal rivers, mangroves, inland lakes, and other permanent bodies of water within their range. The Mangrove monitor is a very widely distributed monitor species, ranging from northern Australia, New Guinea, and through the Solomon Islands, to the Marshall Islands, Caroline Islands, Mariana Islands, and other island chains within the Pacific region.

Origin/History

Varanus melinus Böhme & Ziegler, 1997; *Varanus indicus* (Daudin, 1802).

Mangrove monitors have long been available in the pet trade. However, given changes to much of the *Varanus* species, species labeled as “*indicus*” during earlier times may have actually been different species. “Mangrove” monitor would also become somewhat of a generic, catch all name for any varanid imports which simply resembled “*indicus*”. The first successful captive breeding of this species was at the Philadelphia Zoo in 1993.

That being stated, most ‘mangrove monitors’ imported for the pet trade originated from three main locations: the Moluccas, West Papua, and the Solomon Islands. Mangrove monitors have been bred in captivity though infrequently and nearly all available species are imported. This is partly due to the general unsuitability that most of these species show towards captivity as well as the fact that imports are available so cheaply.

Experience Level Required

Intermediate/Moderate to Advanced.

Size

Hatchling to juvenile mangrove monitors typically range from 8.0 to 10.0 inches in total snout to tail length. As adults, Mangrove monitors will vary in size depending on their species and locality, but most will range within 2 to 4 ½ feet, or about 24.0 to 54.0 inches in snout to tail length. Maximum snout-to-vent length for *Varanus indicus* is about 22.8 inches snout-to-vent length (SVL). Maximum snout-to-vent length for *Varanus melinus* is up to about 16.5 inches (SVL).

Housing and Enclosure

Enclosure System: Semi-Arboreal to Arboreal. Housing must also be sealed and escape proof. Hatchling mangrove monitors can be started out in a 10 to 20 gallon tall 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. Adult mangrove monitors will require a minimum of a six foot by three foot terrarium or enclosure. Very large, custom designed pens or enclosures are perhaps the most suitable housing for most mid to large sized monitors. As with other monitors, mangrove 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. Mangrove monitors are primarily a semi-arboreal species, and will climb readily if given the opportunity.

Temperature, Lighting, and Humidity

For lighting and heating, mangrove monitors require higher temperatures, as their biology and natural history indicate being from warmer, more humid Pacific region environments. Maintain ambient temperatures inside the enclosure from 80 to 90 degrees F that can be allowed to drop about 10 degrees F from this at night (ensure that temperatures, daytime or nighttime, do not fall below 70 degrees F for prolonged periods of time). Mangrove monitors will also bask, and require basking temperatures of anywhere from 120 to 130 degrees F. This can be provided through overhead UVA/UVB lighting of appropriate wattage, under tank heating pads (UTHS), ceramic or radiant heat emitters, and/or red bulbs. Temperatures should also be adequately monitored using a reliable thermostat as well. A 10 to 12 hour day/night cycle or photoperiod can also be beneficial. It is also important to always ensure that the animal never comes into direct contact with any heating device or element. 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, particularly water bowls and substrates intended for raising humidity levels (such as cypress mulch, sphagnum moss, etc.). 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, mangrove monitors are primarily carnivorous to insectivorous, and will feed on a wide variety of food including insects and other invertebrates, crustaceans, mollusks, and other invertebrates, as well as many small vertebrates including small mammals, birds, bird and reptile eggs, amphibians, and other smaller reptiles. They will also eat carrion, or dead and decaying plant and animal matter as well.

In captivity, variety is essential to a proper and adequate monitor diet. Mangrove monitors can be fed a variety of feeder insects of appropriate size including crickets, roaches, mealworms, superworms, and waxworms supplemented with vitamin D3 and calcium. 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. 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

Mangrove monitors are a species that may initially be nervous and skittish, particularly 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, mangrove 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 all monitors are capable of delivering 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

Authored by Eric Roscoe. For any additional questions, comments, and/or concerns regarding this animal, group of animals, or this care sheet, please email and contact:

Eric.S.Roscoe@gmail.com

Disclaimer: Note that the information provided in these, or any care sheets, are not intended to be all-exhaustive, and further research and care should always be sought and provided when it comes to any species one may prospectively be interested in. These care sheets are also not intended to serve as substitutes for professional veterinary medical care and husbandry should any animal require it. Always seek proper and professional veterinary care for any animal should the need arise, and be prepared ahead of time for any and all husbandry costs and expenses that may occur with any animal beyond the initial purchase. Any animal owned is ultimately a matter of personal/individual care and responsibility. We cannot make any claims or guarantees regarding any information in this care sheet therein. This care sheet may be reprinted or redistributed only in its entirety.

*Copyright, 2023