

Captive management of green Iguana

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Abstract

The present study focuses on the captive management of the Common Iguana, including enclosure design, feeding practices, behavioural observations, and the maintenance of different colour morphs under captive conditions. The study was conducted during the afternoon hours at Planet Earth Aquarium and Pet Park, Mysuru, where the activities and management practices of captive iguanas were carefully observed. Information regarding habitat maintenance, diet composition, thermoregulation, and animal behaviour was recorded and compared with previously published scientific literature. Proper captive care plays an important role in maintaining the health, growth, and welfare of iguanas in artificial environments. The present report was prepared based on direct observations in captivity along with information collected from reviewed scientific papers and reptile husbandry references.

Keywords: Common Iguana, captive management

Introduction

The Common Iguana or Green Iguana (*Iguana iguana*) is one of the most widely recognized arboreal reptiles belonging to the family Iguanidae under the order Squamata and class

Reptilia. Iguanas are large-bodied lizards native to the tropical and subtropical regions of Central America, South America, and several Caribbean islands (Frye, 1995) ^[10]. Due to their adaptability and popularity in the exotic pet trade, they are now also found in non-native regions such as Florida, where they are considered invasive species (Townsend *et al.*, 2003) ^[20].

Green iguanas are mainly herbivorous reptiles and are highly adapted to arboreal life. They possess strong limbs, sharp claws, and a long muscular tail which helps them in climbing and balancing on trees. According to Bartlett and Bartlett (2001) ^[2], iguanas are diurnal reptiles that spend a major part of their time basking under sunlight to regulate body temperature. In captivity, providing proper temperature gradients, humidity, lighting, and spacious enclosures is essential for their survival and healthy growth. The body coloration of iguanas varies depending on age, environmental conditions, and breeding morphs. Hatchlings and juveniles usually exhibit bright green coloration which provides camouflage among leaves and vegetation. Adult iguanas may develop dull green, brown, grey, black, or orange coloration during breeding seasons or stressful conditions (De Vosjoli, 1992) ^[8]. Selective breeding in captivity has also produced several attractive morphs such as albino, blue, red, and hypo morphs, which are highly valued in the pet industry.

Captive management of iguanas requires special attention because these reptiles are sensitive to improper environmental conditions. A suitable enclosure should mimic their natural habitat by providing climbing branches, basking areas, hiding spaces, and proper ventilation. UVB lighting is particularly important for calcium metabolism and prevention of metabolic bone disease in captive reptiles (Mader, 2006) ^[16]. Temperature maintenance between 26°C and 35°C along with moderate humidity helps maintain proper physiological functions.

Feeding management is another important aspect of captive care. Green iguanas primarily consume leafy vegetables, fruits, flowers, and plant materials. Diets rich in calcium and vitamins are essential to prevent nutritional deficiencies. According to Kaplan (2002) ^[15], improper feeding practices may lead to obesity, renal disorders, or skeletal deformities in captive iguanas. Therefore, balanced nutrition and regular monitoring are necessary for maintaining their health and reproductive fitness.

Behavioural observation is an important component in understanding the welfare of captive reptiles. Iguanas display behaviours such as basking, climbing, territorial movements, feeding, and defensive responses. Environmental enrichment within enclosures helps reduce stress and promotes natural behaviour patterns. Observing these activities in captivity provides valuable information regarding their adaptation and husbandry requirements.

According to the International Union for Conservation of Nature (IUCN), the Green Iguana is currently categorized as Least Concern (LC) because of its wide geographical distribution and stable populations in several regions. However, habitat destruction, illegal wildlife trade, and human interference continue to threaten local populations in certain areas (IUCN, 2024).

The present study was conducted at Planet Earth Aquarium and Pet Park, Mysuru, with the objective of understanding the captive management practices of Common Iguanas. The study mainly focused on enclosure setup, feeding methodology, maintenance of colour morphs, and behavioural observations under captive conditions. Information collected through direct observation was compared with scientific references to understand the importance of proper husbandry techniques in maintaining healthy captive populations of iguanas.

Aims and objective

The aim and objectives of managing Green Iguanas (*Iguana iguana*) in captivity encompass several key aspects aimed at animal welfare and conservation and also to facilitate research to enhance the knowledge for understanding about this creature behaviour and ecology. The objective is to

present about the habitat management, nutrition and health care.

Literature Review

Green Iguana Management and Husbandry Stephan L. Barten, DVM. Veron Hills Animal, Mundelein, IL 60060 Common iguanas is an inappropriate pets to us to our native. These are engrossing creatures, they are versatile iguana and also be challenging to keep them in captive. As per the study its an diurnal and arboreal creatures. They prefer abundance of sunlight and thermoregulation as well as basking. They stay at one tree top the whole day or for the whole weeks to avoid threats. They utilize often open, arid habitats. They spend 9096% of their time resting and only 1% eating. Generally feed on the leaves of the tree veins. Iguanas do prefer high requirements for ultraviolet light for vitamin D and calcium metabolism. These communicate primarily through the visual signals, breeding is seasonal and it is associated with the dry season. Female mate selection is determined by the male fitness, females nest 3-7 weeks after breeding, produce ranging from 14-76 eggs and eggs hatch after 10-14 weeks of incubation at 28-32°C. Cage should be smooth to prevent rostral abrasions, metal screening should be used with a caution snice it doesn't retain heat, the less abrasive are plastic mesh, polyethylene hardware cloth. Ventilation is crucial, as ample air exchange is necessary to prevent the harmful growth of bacteria and fungi. They require vertical space, climbing branches and dry climbing branches approximately the same diameter as the lizard's body should be placed diagonally in the cage and anchored to prevent the toppling. Substrates like flat newspaper, bark chips, wood pulp or commercial animal bedding made from recycled paper. Reptiles require supplement heat in captivity this range are necessary to optimize metabolic process which includes digestion, growth, healing, reproduction also immune system function. Water bowls should be changed and cleaned everyday to avoid bacteria growth, humidity is an important factor. Good ventilation is essential to prevent the growth of bacteria. Even 15-30 min of direct sunlight a week can be quiet beneficial. As per this is a herbivorous lizards diets should be based on a variety of chopped, dark green, leafy vegetables. Greens that contain oxalates, like spinach or goitrogens, like kale should be used sparingly fruits should be minimised because it dilutes the beneficial nutrients of other ingredients. All plants material must washed, chopped and thoroughly mixed. So it will ensure a well balanced diet.

Working Methodology

This project work was held from April 2024 to May 2024 where the visit were carried out around the afternoon sessions, where it included 8 visits for the study purpose in the captive management, the species were observed carefully without any harm and also observed all the activities of the creature. Researcher and keepers in the captive management who worked there were also been consulted to receive information. The iguana which was studied also included it's morph forms. The working was done almost for 2:00 – 3:00 hours. The enclosure construction for this iguana in a captive management will require a detailed planning and considerations to ensure the well-being of the iguana.

As per the study here's a guidelines to build an iguana enclosure in captive management:

- So basically understand the specific needs of this reptile, such as humidity, temperature, lighting, and spacious requirements.
- As per the study, iguanas are arboreal and they need a vertical space for climbing and also a horizontal space for their movement.
- The cage size should be larger in size always for the fully grown iguana, the cage construction will be done with a wire mesh system were it requires a good ventilation source for it and also need to avoid a larges mesh holes due to the chances of getting it's limb stuck.
- The enclosure base will have approximately about 3 feet deep which is covered with the soil layer of red soil and in the middle again a normal soil then finally with the red soil and the height of the cage will range about 6.5-7 feet high and at the top region it is added with a waterproof material sheet for the UV-light rays for the iguana which is essential to the body.
- And also it requires a wooden log set up for it's climbing purpose as well as for it's resting also, and a water bowl is placed and also it's food tray which is provide at afternoon. Make sure the food tray will be not placed exactly below the reptile there is a chance of exposure of it's fecal matter.
- They require additional things such as branches, logs, are provided for climbing opportunities. And also hide areas are included for them to hide and shelter for the iguana to retreat and feel secure for them.
- Regular cleaning is required to prevent the bacterial growth inside the enclosure.
- Ensure that all the materials which are used are safe and non-toxic to the iguana.
- Avoid the sharp edges and small parts which could be ingested.

Results

Diversity

The present study was carried out on the Common Green Iguana (*Iguana iguana*) along with its captive mutant colour morphs such as blue and red iguanas. The Green Iguana is a widely distributed reptile species native to tropical regions extending from southern Brazil and Paraguay to Central America and Mexico. Some populations are also naturally found in the eastern Caribbean islands. Due to their adaptability and popularity in the exotic pet trade, different colour morphs have been developed and maintained under captive conditions. During the present study, variations in body coloration, body size, and behavioural patterns were observed among the different morphs maintained in captivity.

Interesting Observations

During the observational study, several unique morphological and behavioural characteristics of iguanas were recorded. Iguanas possess a long muscular tail which aids in balance, defense, and swimming. Prominent dorsal spines were observed along the upper surface of the neck and back region, giving the reptile a distinctive appearance. One of the most remarkable features noticed was the presence of the parietal eye located on the forehead region. This light-sensitive organ helps the reptile detect movement and changes in light intensity.

Additionally, a well-developed dewlap was observed beneath the chin, which is mainly used in communication, territorial display, and thermoregulation. Large subtympenic scales were also present below the ear region, serving as an identifying characteristic of the species. The iguanas were found to be excellent swimmers and highly arboreal in nature. They frequently preferred basking under sunlight to regulate their body temperature and maintain metabolic activities. Climbing, resting, and basking behaviours were commonly observed during the study period.

Feeding

The present study confirmed that Green Iguanas are primarily herbivorous reptiles. Their diet mainly consisted of approximately 80–90% green leafy vegetables along with fruits such as papaya. Around 10% of the diet included vitamin and protein supplements containing essential nutrients like vitamins D and E for proper growth and development. Leafy vegetables such as spinach were also provided as a source of iron and minerals. In captive management, a balanced diet schedule was carefully maintained to ensure proper health, nutrition, and hygiene of the reptiles. Fresh vegetables and plant materials were cultivated within the captive facility itself to provide safe and nutritious food. Proper feeding management and cleanliness were strictly maintained to prevent nutritional deficiencies and diseases. However, the reptiles were not fed exclusively on a single type of food, as dietary variety is important for maintaining overall health and normal physiological functions in captive iguanas.

Discussion

The present study conducted at Planet Earth Aquarium and Pet Park, Mysuru, provided valuable information regarding the captive management, behaviour, and feeding practices of the Common Green Iguana (*Iguana iguana*) and its colour morphs. The facility maintained a diverse collection of iguanas, including naturally coloured green iguanas along with selectively bred morphs such as blue and red iguanas. These colour variations not only increase the aesthetic value of the reptiles in captivity but also demonstrate the role of selective breeding in the exotic pet industry.

During the observational study, several behavioural and morphological characteristics of iguanas were noted. Iguanas were found to be highly active during daytime and frequently exhibited basking behaviour under sunlight or artificial heat sources. According to Bartlett and Bartlett (2001) [2], basking behaviour is essential in reptiles for thermoregulation, digestion, and maintenance of metabolic activities. In the present captive setup, the iguanas were often observed climbing branches, resting at elevated positions, and moving actively within the enclosure, indicating their arboreal nature.

One of the remarkable observations recorded during the study was the swimming ability of iguanas. The reptiles were observed moving comfortably in water, supporting previous findings that green iguanas are excellent swimmers and can remain underwater for extended periods when threatened (De Vosjoli, 1992) [8]. Their long muscular tail plays an important role in swimming, balance, and defense against predators. Such behavioural adaptations contribute significantly to their survival both in the wild and under captive conditions.

Proper captive management was found to be a major factor influencing the health and longevity of iguanas. Under suitable environmental conditions, iguanas can survive for nearly 15–20 years in captivity (Kaplan, 2002) [15]. Maintenance of appropriate temperature, humidity, enclosure space, and hygiene is essential for their healthy growth and welfare. During the present study, the captive environment was designed to mimic the natural habitat of iguanas by providing climbing structures, basking areas, and proper ventilation.

Lighting and heating were observed to play a crucial role in reptile management. Iguanas require adequate UVB lighting for calcium absorption and bone development. According to Mader (2006) [16], insufficient exposure to UVB light and improper heating can lead to metabolic bone disease, weak skeletal growth, and reduced immunity in captive reptiles. Therefore, maintaining proper environmental temperature gradients and lighting systems is essential for preventing health complications.

Feeding management was another important aspect observed during the study. Green iguanas are primarily herbivorous reptiles that depend mainly on leafy vegetables, fruits, and plant materials for nutrition. The captive diet provided at the facility consisted of fresh green leaves, spinach, papaya, and vitamin supplements to maintain balanced nutrition. Frye (1995) [10] reported that improper feeding practices and nutrient deficiencies may lead to malnutrition, obesity, kidney disorders, and metabolic abnormalities in captive reptiles. Hence, providing a nutritionally balanced and varied diet is necessary for maintaining healthy physiological functions.

Overall, the study highlighted the importance of proper husbandry practices in the successful captive management of iguanas. Adequate enclosure design, balanced nutrition, proper lighting, and environmental enrichment are essential factors that contribute to the health, behaviour, and longevity of captive iguanas. The observations recorded during the present study also emphasize the significance of scientific management practices for improving reptile welfare under captive conditions.

Summary

The present study conducted at Planet Earth Aquarium and Pet Park, Mysuru, provided significant insights into the captive management practices of the Common Green Iguana (*Iguana iguana*) and its colour morphs. Based on repeated visits and detailed observations, it was evident that the reptiles were maintained under well-organized and scientifically designed captive conditions. The enclosure infrastructure was constructed with proper safety measures, adequate ventilation, and suitable environmental conditions that closely resembled the natural habitat of iguanas.

The captive facility provided spacious enclosures equipped with climbing structures, basking areas, and resting spaces which supported the natural arboreal behaviour of the reptiles. According to Bartlett and Bartlett (2001) [2], environmental enrichment and sufficient enclosure space are important for reducing stress and encouraging normal behavioural activities in captive reptiles. The present captive setup successfully maintained these requirements, thereby contributing to the overall welfare of the iguanas.

Proper feeding management was also observed during the study. Fresh green vegetables and plant materials required for feeding the iguanas were cultivated within the captive

management facility itself. This practice ensured the supply of hygienic, nutritious, and chemical-free food for the reptiles. Green iguanas are herbivorous in nature and require a balanced diet rich in leafy vegetables, fruits, vitamins, and minerals for healthy growth and development (Kaplan, 2002) ^[15]. The feeding schedule maintained in the facility appeared balanced and appropriate for maintaining the nutritional health of the animals.

Another important aspect observed during the study was the provision of suitable basking and swimming facilities. Iguanas were provided with adequate space for sun basking, which is essential for thermoregulation and metabolic activities. Exposure to sunlight or UVB radiation is highly important for reptiles because it helps in the synthesis of Vitamin D₃, which supports calcium absorption and healthy bone formation (Mader, 2006) ^[16]. The facility also allowed controlled swimming opportunities within the enclosure zone, which supported the natural swimming behaviour of the reptiles. De Vosjoli (1992) ^[8] reported that green iguanas are excellent swimmers and frequently utilize water bodies for escape, movement, and cooling.

Direct exposure to sunlight for about 15–30 minutes per week was found to be beneficial for the iguanas in maintaining their physiological functions and overall health. Proper ventilation, controlled humidity, and maintenance of environmental temperature further contributed to the successful management of the reptiles in captivity. During observations, iguanas also displayed defensive behaviour by swinging their long muscular tails when disturbed, which acts as a natural protective mechanism against threats.

Overall, the present study concludes that the captive management practices followed at Planet Earth Aquarium and Pet Park, Mysuru, were effective in maintaining the health, behaviour, and welfare of Green Iguanas and their morphs. The availability of balanced nutrition, proper enclosure design, UV exposure, environmental enrichment, and hygienic management collectively supported the successful survival and maintenance of these reptiles under captive conditions.

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